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Transnational Corporations, Economic Development and Human Rights: On the Importance of FDI Composition and Host Country Assets

PhD- thesis in political science

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Preface and Acknowledgments

Five years ago I had just finished my Masters-thesis on the very same issue, and was under the impression that it was only a stone's throw away from a PhD. However, I soon discovered that I had only been scratching the surface of the topic under scrutiny. Today, five years later I have just finished off my PhD-thesis and I still feel a bit puzzled. Yet, this is perhaps my biggest lesson, that the relationships between TNCs, economic development, and human rights are too complex for general statements, and that we only have just begun to understand the complexity of the matter.

Needless to say, more than a few people have played a part in the coming about of this thesis, and you should all know that your assistance has been greatly appreciated. First and foremost I would like to thank my advisor—Jonathon Moses—for his encouragement, his swift feedback, and for his sense of details and structure. I would also like to thank Anton Westveld for his strong participation in several conference papers leading up to the statistical section of this thesis. Colleagues at NTNU—Kristen Ringdal, Kåre Johansen, and Thomas Halvorsen—have all contributed to the statistical analyses with their clarifications and advice, and for this I thank you. Colleagues in the international research community—Charles Ragin, David Roodman, Patrick Royston, and Vera Troeger—also deserve thanks for their comments asked for at different stages. Thanks also go to my PhD-colleagues—Jostein Vik, Stian Saur, and Jo Jakobsen—for making day-to-day research more fruitful and enjoyable. Despite the assistance of all these people, any shortcomings, of course, remain my own.

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Acronyms

CW	Civil War
DI	Domestic Investment
DIR	Domestic Investment Rate
ED	Economic Development
EG	Economic Growth
FDI	Foreign Direct Investment
FDIP	FDI Capital Penetration
FE	Fixed Effects
FIR	Foreign Investment Rate
FRD	Fuel Resource Dependence
fsQCA	fuzzy set/Qualitative Comparative Analysis
GDNGD	Global Development Network's Growth Database
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
GNP	Gross National Product
HC	Human Capital
IMF	International Monetary Fund
IQ	Institutional Quality
ISI	Import Substitution Industrialization
NFRD	Non-Fuel Resource Dependence
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
PCR	Political and Civil Rights
PFDIP	Primary Sector FDI Capital Penetration
PFIR	Primary Sector FIR
PIR	Physical Integrity Rights
POP	Population
PPP	Purchasing Power Parity
QCA	Qualitative Comparative Analysis
RD	Resource Dependence
RE	Random Effects
STFDIP	Secondary and Tertiary Sector FDI Capital Penetration
STFIR	Secondary and Tertiary FIR
TNC	Transnational Corporation
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
WB	World Bank
WDI	World Development Indicators
WID	World Investment Directory
WIR	World Investment Report

1 Introduction

> " We may say that what used to be the class question for the workers' movement in the nineteenth century is the globalization question for transnationally active enterprises at the turn of the twenty-first century—but with the crucial difference that the workers' movement acted as a *countervailing* power, whereas global enterprises have for long *not* been challenged by any other (transnational) power" (Beck 2000:2).

The main objective of this thesis is to examine how the free markets' superior agent, the transnational corporation (TNC) affects economic development and human rights' conditions in the developing world.[1] The topic is controversial and is closely related to the broader controversy associated with globalization (Bhagwati 2004:3-27, de Soto 2000:219-42, Koenig-Archibugi 2003:1-17, Stiglitz 2002:2-22). The economic dimension of globalization can be understood as the integration of national economies into the international economy (Bhagwati 2004:3), or alternatively as increasing integration of markets across political boundaries (Wolf 2004:14). The controversy surrounding globalization becomes clearer, however, once we bring in the political dimension, as globalization points not to the end of politics but to the escape of politics from the categories of the national state (Beck 2000:2). In this perspective globalization—in general—and TNCs—in particular—becomes controversial since power is transferred from the nation state to transnational actors like the TNC, and the general view seems to be that these structural changes favour TNCs at the expense of developing countries: there has been a shift in bargaining power at the host country's expense (Narula and Dunning 2000:160-61, Strange 1994:160-61). It is this development that motivates us to analyse the effects of TNC-presence in the developing world. The argument linking TNCs to economic development and human rights is as complex as it is controversial, and will be introduced below. First, though, we address the state of foreign direct investment to further underline its increasing importance.

[1] Analyses on the effects of TNC-presence are numerous and diverse, and include, e.g., analyses on the effects on child labour (Neumayer and de Soysa 2005) and analyses on the effects income inequality (Bussmann et al. 2005).

1.1 The State of Foreign Direct Investment

The investments made by TNCs—referred to as foreign direct investment (FDI)—have increased tremendously over the last decades. Table 1 below illustrates this. From the Table 1A we find that this applies for developed and developing countries alike, although the larger share of FDI still goes to the former set of countries. From Table 1A we also learn that FDI in the primary sector (i.e., resource extraction) is declining in importance relative to the

Table 1 – Global and Regional Trends in Flows and Stocks of Inward FDI

A) Share and Composition of Inward Stock of FDI to Developed and Developing Countries:

	World	Developed Countries					Developing Countries				
Year	Million US$	Million US$	World Share %	Primary Sector %	Secondary Sector %	Tertiary Sector %	Million US$	World Share %	Primary Sector %	Secondary Sector %	Tertiary Sector %
1970	—	—	—	16.2	60.2	23.7	—	—	—	—	—
1975	—	—	—	12.1	56.5	31.4	—	—	20.6	55.9	23.5
1980	530 244	398 200	75.1	6.7	55.2	38.1	132 044	24.9	22.7	54.6	22.7
1985	794 628	576 045	72.5	9.2	46.2	44.5	218 583	27.5	24.0	49.6	26.4
1990	1 768 589	1 404 411	79.4	10.0	41.0	49.0	364 057	20.6	7.0	46.0	47.0
1995	2 763 117	2 055 763	74.4	—	—	—	697 534	25.2	—	—	—
2000	5 786 029	3 976 356	68.7	6.0	32.0	62.0	1 739 726	30.1	7.0	38.0	55.0
2004	8 902 153	6 469 832	72.7	—	—	—	2 232 868	25.1	—	—	—

B) Regional Share of Inward Stock of FDI to Developing Countries:

	Latin America and the Caribbean		Sub-Saharan Africa		North Africa and Western Asia		Asia and the Pacific		Developing Countries Total	
Year	Million US$	World Share %	Million US$	World Share %	Million US$	World Share %	Million US$	World Share %	Million US$	World Share %
1980	39 835	7.5	28 282	5.3	12 500	2.4	51 457	9 7	132 044	24 9
1985	69 538	8.8	26 011	3.3	46 179	5.8	76 932	9.7	218 583	27.5
1990	118 133	6.7	34 958	2.0	56 552	3.2	154 468	8.7	364 057	20.6
1995	198 664	7.2	54 107	2.0	79 398	2.9	365 531	13.2	697 534	25.2
2000	519 817	9.0	108 380	1.9	108 655	1.9	1 004 272	17.4	1 739 726	30.1
2004	730 627	8.2	154 609	1.7	170 355	1.9	1 182 823	13.3	2 232 868	25.1

C) Regional Share of Inward Flow of FDI to Developing Countries:

	Latin America and the Caribbean		Sub-Saharan Africa		North Africa and Western Asia		Asia and the Pacific		Developing Countries Total	
Year	Million US$	World Share %	Million US$	World Share %	Million US$	World Share %	Million US$	World Share %	Million US$	World Share %
1970	1 681	12.5	832	6.2	583	4.3	842	6.3	3 937	29 3
1975	4 303	15.7	1 305	4.8	2 194	8.0	2 697	9.9	10 498	38.3
1980	7 494	13.6	257	0.5	-3 247	-5.6	3 807	6.9	8 455	15.3
1985	7 270	12.6	987	1.7	2 138	3.7	4 746	8.2	15 143	26.3
1990	9 586	4.6	1 654	0.8	1 611	0.8	22 854	11.0	35 736	17.2
1995	30 167	8.8	4 425	1.3	4 556	1.3	78 409	23.0	117 544	34.5
2000	97 524	7.0	6 608	0.5	7 182	0.5	142 258	10.2	253 179	18.1
2004	67 526	10.4	14 332	2.2	15 110	2.3	137 771	21.3	233 227	36.0

Sources and comments:

A) The inward stock of FDI data are from UNCTAD online (2006a). The share of inward stock of FDI in the primary, secondary and tertiary sector is for pre-1990 from UNCTADs WIR (1993:62) and for 1990 and 2000 from WIR (2004a:30). Note that 2000 data from 2002. The shift seen in the data for the developing countries can be attributed to fewer countries making up the aggregates in the pre-1990 data. Consequently, data should be interpreted with caution as neither pre and post-1990 aggregates are based on a full set of countries.

B) The inward stock of FDI data are from UNCTAD online (2006a).

C) The inward flow of FDI data are from UNCTAD online (2006a).

secondary and the tertiary sectors.[2] Moreover, Tables 1B and 1C illustrate that some regions in the developing world are more successful in terms of attracting FDI than others: Asia leads, followed by Latin America and the Caribbean, with sub-Saharan Africa and the Arab states (North Africa and Western Asia) lagging behind. From Table 2 below we see that, while the rest of the developing world have experienced a shift in the composition of FDI away from the primary sector, sub-Saharan Africa is lagging behind in this respect too.[3, 4] As late as 1999 more than half the total stock of foreign investment in this region were still located in the primary sector. This regional diversity with respect to the shift in the composition of FDI away from the primary sector is theoretically and empirically interesting. This as the composition of FDI is likely to have an influence on the relationship between TNCs, economic development and human rights. This will be further elaborated on in the following.

Table 2 – Regional Trends in Sectoral Composition of Inward FDI

A) Composition of Inward Stock of FDI to Developing Countries for Different Geographical Units:

	Latin America and the Caribbean			Sub-Saharan Africa			North Africa and Western Asia			Asia and the Pacific			Total		
Year	Prim. Sec.%	Secon. Sec. %	Tert. Sec. %	Prim. Sec. %	Secon. Sec. %	Tert. Sec. %	Prim. Sec. %	Secon. Sec. %	Tert. Sec. %	Prim. Sec. %	Secon. Sec. %	Tert. Sec. %	Prim. Sec. %	Secon. Sec. %	Tert. Sec. %
1988	8.8	67.3	23.8	51.8	20.8	27.4	—	—	—	8.4	61.7	29.2	10.3	62.1	27.2
1997	5.7	38.8	55.5	53.4	26.8	19.8	—	—	—	3.4	61.5	32.8	3.8	59.6	34.7

B) Composition of inward stock of FDI in Africa for selected major home countries:

	France				Germany				United Kingdom				United States			
Year	Prim. Sec.%	Secon. Sec.%	Tert. Sec.%	Unsp. %	Prim. Sec.%	Secon. Sec.%	Tert. Sec.%	Unsp. %	Prim. Sec.%	Secon Sec.%	Tert. Sec.%	Unsp. %	Prim. Sec.%	Secon Sec.%	Tert. Sec.%	Unsp. %
1990	39	17	43	1	25	55	20	0	37	26	37	0	57	23	15	5
1997	41	17	27	4	16	64	20	0	37	26	37	0	58	18	14	10

Sources and comments:

A) Data are from UNCTADs WIR (1999b:422-25). For some of the countries data are sampled from the nearest available year. Moreover, data for Sub-Saharan Africa is labelled Africa in the WIR but footnotes reveal that data are collected from sub-Saharan countries only, while data labelled as Asia and the Pacific in WIR could in theory have contained data from Western Asia but again footnotes reveal that data are not collected for any Western Asian states.

B) Data are from UNCTAD (1999a). For some of the countries data are sampled from the nearest available year.

[2] The primary, secondary and tertiary sectors are also referred to as the sectors of resource extraction (mining, agriculture and fishing), manufacturing and services.

[3] The Arab states, though, might very well display the same characteristic as states in sub-Saharan Africa. These states are experiencing the same absolute stock of FDI trend as sub-Saharan Africa (Table 1B), and the oil exporting countries in the region are the largest hosts of investment in absolute terms. For these countries the petroleum industry is receiving the largest share of investments (UNCTAD, 1997:94-6).

[4] In the relatively short time-period displayed we see that the stock of FDI located in the primary sector has decreased from about 10 to about 3 percent (see right hand side of Table 2). Moreover, there is evidence suggesting that this shift has been more profound when viewed over a longer period of time. E.g., while a third of US FDI abroad in 1977 went to the primary sector, this number had decreased to only about 7 percent by 1996 (Spar 1999:61-62).

1.2 The Argument

Historically two opposing traditions have made up the literature on the effects of TNC-presence on host countries' economic development and human rights' conditions. On the one hand we have those viewing TNCs and their investments as largely benign. Their core argument is that FDI is good for host countries' economic growth, and that economic development in the long run is good for host countries' human rights' conditions. On the other hand we have those viewing TNCs and their investments as largely malign. Their core argument is that FDI, as it penetrates host countries' economies, restrains economic growth, and that alliances are formed between TNCs and local elites where the economic and political interests of both motivate the repression of human rights.

A more relativistic or conditional approach—drawing on both pro- and anti-TNC arguments—is, however, adopted in this thesis. More precisely, this thesis expands on an emerging tradition that highlights the importance of context and conditionality, and argues that the effects of TNC activity in developing countries are dependent upon both TNC and host country characteristics. TNC characteristics—on the one hand—since corporations engaged in the primary sector have fewer potential spill-over effects than corporations engaging in secondary or tertiary sector activity, and since development-blocking alliances between TNCs (in need of resources) and the host country government (in need of capital) are more likely when TNCs are engaged in the primary sector. Host country characteristics—on the other hand—are important since the more economically advanced a host country is—and the higher its institutional quality and levels of human capital—the more benefits it is likely to harvest from the presence of foreign corporations. However, the potential positive effects of TNC presence might be overshadowed by the resource curse. That is, countries "blessed" with an abundance of natural resources are often "cursed" with the failure to develop economically, and/or in terms of human rights. Moreover, a TNC can affect a host country's level of human rights both through its own human rights practices and through its interaction with the host country government. Most importantly, however, is the indirect influence on the host country's human rights' conditions exerted through economic development. The latter builds on the economic development thesis which states that economic development is conducive to democracy (and hence human rights) since economic development transforms a society's values and balance of class power. All in all, then, the more developed a host country is economically, institutionally, and in terms of human capital, the more likely it is to benefit economically from the presence of transnational corporations and the more likely it is

to develop and sustain general values that support human rights. The research design to follow renders possible tests of the synthesized framework adopted here, as well as the more traditional pro- and anti-TNC frameworks.

1.3 The Research Design

TNCs can affect host countries economic or human rights conditions both at the local (or plant) level and at the national level. This thesis concentrates on the more general effects and investigates whether or not the effects of FDI on the host-country economy and the host country's general conditions of human rights are benign. Here, both how fast FDI grows (FDI Investment Rate) and how deeply FDI penetrates the local economy (FDI Capital Penetration) is of importance (the latter is the FDI-proxy historically used by dependency theorists as a measure of dependency). Moreover, in this thesis the effect on the economy refers to economic growth while the effects on human rights—due to its multidimensional character—refers—on the one hand—to physical integrity rights and—on the other hand—to political and civil rights. The thesis also investigates the degree of conditionality. That is, whether or not these effects depend on the host country's general level of development and degree of resource dependence, and whether or not the investments are made in the primary sector.

Historically, pro-TNC studies—which argue that TNCs are "engines of development"—have been more statistical oriented, while anti-TNC studies—which argue that TNCs are "tools of exploitation"—have been more case oriented. Thus, both of their favoured research tools—statistical analyses and case studies—need to be carefully designed to account for the apparent ambiguity of the relationship in question. A combined methods strategy is, therefore, preferred. Moreover, a Lakatosian methodological perspective is adopted. In this perspective intuitively contradictory findings might prove to be complementary (rather than contradictory) when based on different levels of analysis and/or proxies. This as they might have tested different context-specific parts of the argument under scrutiny (see Lakatos 1978:68-73). As a consequence, this thesis combines statistical methods, fuzzy-set methods, and comparative case studies. Each method has its pros and cons and taken together the analyses cast a balanced light on the relationships in question: statistical methods examine a larger number of observations and tell us something about the association between the outcome and the individual causal conditions, fuzzy-set methods

examine a smaller set of observations and tell us something about how causal conditions combine in producing the outcome, while the comparative case studies—where only a few observations are examined—tell us something about the causal content of the relationships in question.

1.4 The Contributions and their Implications

Previous literature on the subject has focused either on FDI and economic growth or on FDI and human rights, and has generally been less focused on conditionality. By contrast, the main contributions of this thesis are its holistic approach and its strong theoretical and empirical emphasis on conditionality. The thesis is also more methodologically sophisticated than the average publication, since it combines statistical analyses (controlled for estimator sensitivity) with fuzzy-set methods and cases studies.

Few of the findings outlined above are directly comparable to previous findings in the literature. However, a replication of de Soysa's (2003) statistical analysis of FDI and economic growth confirmed (the pro-TNC view) that the foreign investment rate is positively and significantly associated with economic growth. Moreover, the key argument made in this thesis is supported by all methods applied (and across statistical estimators): the effects of FDI are conditional. That is, FDI *can* help generate economic growth (a growth that will increase the country's economic standing over the long run), and this potentially positive influence on the level of economic development *can* again have a positive influence on a host country's level of human rights. The emphasis here is on *can* and not *will*, since the effect will depend on both TNC characteristics—like the composition of FDI—and on host country characteristics—like the general level of development and the degree of resource dependence. Disregarding this conditionality, the evidence suggest that a high rate of foreign investment in the secondary and tertiary sector has a positive influence on economic growth, and this growth can—if sustained—lead to higher levels of development and, hence, improved levels of human rights. The direct effect of FDI penetration on economic growth, as well as the direct effect of FDI penetration on human rights, is sometimes positive and significant but mostly not robust and insignificant. Hence, there is little evidence supporting the anti-TNC view, which highlights the malign effects of TNC presence. At a simplified level we might, nevertheless, speak of vicious (or less virtuous) and virtuous (or more virtuous) development circles as far as the relationship between TNCs, economic development and human rights are concerned. Vicious—or less virtuous—circles are likely to be present if TNC investment is

made in the primary sector in host countries with high levels of natural resource dependence and low levels of development (economic, institutional and/or human capital wise). Virtuous—or more virtuous—circles, on the other hand, are likely to be present if TNC investments are made in the secondary and tertiary sectors in host countries with low levels of natural resource dependence and high levels of development (economic, institutional and/or human capital wise).

An intuitively contradictory finding in the statistical and fuzzy-set analyses is of particular interest. While, the fuzzy-set and case study analyses find the domestic investment rate (DIR) to be of more importance than the foreign investment rate (FIR, or more precisely secondary and tertiary sector FIR), the statistical analyses—suggests the opposite. However, one plausible explanation for this ambiguity is that FDI in the secondary and tertiary sector (rate-wise) is more productive than domestic investment only as long as the context is benign (that is, in presence of a high domestic investment rate, and in countries with high levels of institutional quality and/or human capital).

These findings necessarily come with some caveats attached. The most important of theses concern the data on the composition of FDI (primary sector investments versus secondary and tertiary sector investments). The quality and the quantity of these data should make one wary about drawing too bold conclusions from the findings in the statistical and the fuzzy-set analyses. This caution is necessary, even though the application of methodological triangulation—to a certain extent—serves as a validity check.

1.5 The Outline

The thesis is divided into three distinct parts. Part I covers the theoretical and methodological framework and the research design, Part II covers the analyses, while Part III covers the concluding section. These parts are outlined here briefly.

The theoretical and methodological framework in Part I is developed in four steps. The main concepts—transnational corporations, foreign direct investment, economic development and human rights—are discussed in Chapter 2. Chapter 3 tracks the historical development of a debate that has been characterized by thesis and antithesis. Chapter 4 gives a methodological and a theoretical justification for a theoretical framework that in essence synthesizes what have traditionally been seen as intuitively contradicting theories. This chapter includes only the relationship between FDI, economic development and human rights. The general theories on economic growth and human rights are referred to before the

respective analyses in Chapter 7 and 8. The design of, and justifications for, a combined methods research strategy is outlined in Chapter 5.

The analyses in Part II consist of separate analyses on FDI and economic growth and FDI and human rights. Each of these two relationships will be tested by way of statistical methods, fuzzy-set methods, and comparative case studies. In Chapter 6 the nature of the data and the choice of statistical estimators are discussed. Chapters 7 and 8 cover, as mentioned, the statistical analyses on economic growth and human rights respectively, while Chapter 9 looks at these findings from a bird's eye view. Chapter 10 discusses the fuzzy-set methods and the attached case studies from a general perspective, while Chapters 11 and 12 cover the analyses of these methods on economic growth and human rights respectively.

A short summary and concluding comments are given in Part III. This section also covers a discussion of the main contributions of the thesis, its policy implications, and avenues for future research.

Part I

Concepts, Theory, and Research Design

2 Main Concepts

A short description of the main concepts used in the thesis will help delimit the subject under study. In this respect, to explain what the thesis is *not* about is as important as to explain its objective. As the title suggests, the thesis will be about how the activity of a TNC in a host country relates to this host country's economic development and its development of human rights. Consequently, the discussion starts off with a clarification of what a 'TNC' and 'the activity of a TNC' is and is not, before the essence of 'development'—economic and human rights wise—is spelled out.

2.1 Transnational Corporations and Foreign Direct Investment

A transnational corporation (TNC) is an enterprise comprising a parent enterprise and its foreign affiliates: A parent enterprise is defined as an enterprise that controls assets of other entities in countries other than its home country, usually by owning an equity capital stake of 10 percent or more of the ordinary shares or voting power for an enterprise, while a foreign affiliate can be a subsidiary enterprise, associate enterprise or a branch.[5] The (initial and all subsequent) investments between the parent enterprise and its affiliates are referred to as foreign direct investment (FDI), and entail a long-term relationship where the investor exerts a significant degree of influence on the management of the enterprise resident in the other economy (UNCTAD 2005a:297-98).[6] TNC investments below the 10 percent threshold, in contrast, entail a temporary investment—with less control and influence—and are referred to as portfolio investments (e.g., stock market investments) (UNCTAD 2002). Although UN

[5] Subsidiary enterprises, associate enterprises and branches–defined below–are all referred to as foreign affiliates or affiliates by the UN. A *subsidiary* is an incorporated enterprise in the host country in which another entity directly owns more than a half of the shareholder's voting power, and has the right to appoint or remove a majority of the members of the administrative, management or supervisory body. An *associate* is an incorporated enterprise in the host country in which an investor owns a total of at least 10 per cent, but not more than half, of the shareholders' voting power. A *branch* is a wholly or jointly owned unincorporated enterprise in the host country which is one of the following: (i) a permanent establishment or office of the foreign investor; (ii) an unincorporated partnership or **joint venture** between the foreign direct investor and one or more third parties; (iii) land, structures (except structures owned by government entities), and /or immovable equipment and objects directly owned by a foreign resident; or (iv) mobile equipment (such as ships, aircraft, gas or oil-drilling rigs) operating within a country, other than that of the foreign investor, for at least one year (UNCTAD 2005a:297-98).

[6] Note that alternative modes of TNC activity—like subcontracting and licensing—are not captured by UN statistics on FDI (UNCTAD 2005a:297-98).

statistical indicators exists for both FDI and portfolio investments, the latter is not an objective of interest as analyses of the effects of these investments would be more about the effects of the international financial system or international capital transactions than the effects of foreign corporate presence per se.[7]

Flows of FDI—as measured by UN indicators—comprise capital provided by foreign direct investors to an FDI enterprise, or capital received from an FDI enterprise by foreign direct investors, and has three components: equity capital (purchase of shares), reinvested earnings and intra-company loans.[8] FDI is also frequently distinguished by its mode of entry. That is, by Greenfield investments (which is the creation of a subsidiary from scratch by one or more foreign investors), extension of capacity (which is an increase in the capital of established foreign direct investment enterprises), and cross-border mergers and acquisitions (M&A) (which is the combination of two or more legal business entities). No distinction is, however, made between these types of FDI in the work that follows.

On the other hand, the following distinguishes inward FDI from outward FDI, flows of FDI from stocks of FDI, and primary sector FDI from secondary and tertiary sector FDI. More explicitly, this thesis looks at inward FDI (which is investments made by foreign TNCs in a particular host country economy) as opposed to outward FDI (which is investments made by domestic TNCs in other economies). It also looks at both flows (annual fluctuations of FDI in the host country) and stocks (total amount of FDI accumulated in the host country), or more precisely at the foreign investment rate (the annual rate of change in stocks) and foreign capital penetration (the stock to GDP ratio). Finally it distinguishes between primary sector FDI (investments made in, e.g., agriculture, fisheries and resource extraction), and secondary and tertiary sector FDI (investments made in manufacturing and services).

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[7] This is not to say that portfolio investments do not have an economic or political impact. Portfolio investments are very mobile and thus subject to capital flight. "That is, investors often withdraw their investment at the slightest risk, choosing to invest their money in countries that have stable political and economic environment. In order to attract and maintain portfolio investment, governments must be willing to provide an environment that limits internal conflict" (Richards et al. 2001:227-36). Negative effects are also plausible as capital disciplines government spending and taxation policies; that is, it restricts the governments' funding of social or welfare programs (Apodaca 2001:595).

[8] More precisely: Equity capital is the foreign direct investor's purchase of shares of an enterprise in a country other than its own. Reinvested earnings comprise the direct investor's share (in proportion to direct equity participation) of earnings not distributed as dividends by affiliates, or earnings not remitted to the direct investor. Such retained profits by affiliates are reinvested. Intra-company loans or intra-company debt transactions refer to short- or long-term borrowing and lending of funds between direct investors (parent enterprises) and affiliate enterprises (UNCTAD 2005a:297-98).

2.2 Economic Development and Human Rights

Development has often been equated with economic development or even—in the more contracted form—with growth in GDP per capita. In such a narrow perspective, many facets of human development are ignored. Economic development or growth need say nothing about the distribution of wealth or of the costs of wealth in terms of human suffering. A more fruitful concept—for the population at large—encompasses a broader human rights' dimension as well as an economic dimension: a perspective best put forward by Amartya Sen in *Development as Freedom* (1999). In this tradition, development cannot take place without economic growth, and cannot be sustained if economic growth does not lead to developments in human rights for the population at large. Sen's argument introduces a dimension of mutual dependence to Lipset's economic development-democracy thesis, which states that economic development must prevail before human rights in general and democracy in particular can be achieved (Lipset 1959). The position of this thesis is, therefore, that development (and underdevelopment) should be treated as a complex interaction of economic development and human rights (broadly defined), and not as mere economic development.

In the following, economic development *per se* is understood as GDP per capita or as growth in GDP per capita, while human rights is understood as a mixture of different dimensions of the complex concept. The main focus of human rights in the perspective here adopted, though, is—on the one hand—on protection against physical abuse, and—on the one hand—on acceptance of political and civil rights.[9] Although human rights and democracy are almost inseparable in the UN tradition (UNCTAD 1999b), there are—as Donnelly (1998:154) suggests—differences: democracy answers who should rule, human rights addresses how governments should rule. Moreover, the link is argued to be weaker in developing countries as the spread of the idea of democracy, as it is currently promoted, relates more to economic growth and development, the interest of global capital and finance and the conditions for globalization, than with human rights and human security; the popular assumption 'if democracy then human rights' is at least questionable for developing countries (Evans 2001:639-40).

[9] See Appendix A, Table A1 for more details on these different human rights' dimensions.

3 Tracking the Historical Development of the Debate[10]

Corporations became increasingly transnational—even global—in reach as today's advanced industrialized countries (the First World) gradually developed from national economies into one global economy. Many late developers (the Third World) faced—and still face—the prospect of a similar development in an environment where the corporations of the First World to varying degrees are penetrating their economies. A question that has divided development theorists for decades is whether the activity of transnational corporations (TNCs) breeds development or underdevelopment in the Third World. Two rich and vibrant theoretical traditions with a contradictory view on the effect of TNC investment have for decades argued their case. However, there is a sign of reconsolidation in the literature, as a synthesized theoretical framework is emerging—one based on the implicit assumptions of conflicting traditions in development theory. This literature highlights the importance of context, and stresses that both development and underdevelopment are plausible outcomes. The activities of some transnational corporations are conducive to development while the activities of others are not, and some host countries have characteristics favourable to development while others do not.

The two more historically-rooted traditions are still very much alive among theorists, policymakers, and activists. Nevertheless, the humble undertaking of this chapter is to trace the maturation of the synthesized argument from the implicit statements of classical liberalism and modernization theory to the explicit thinking of contemporary scholars. In so doing, the basic arguments of the contradictory traditions are also illuminated. The aim is not, however, to give a detailed account of the history of the TNC-development debate; rather it is to sketch out—from a bird's eye view—those events and theoretical developments that can help us understand today's discourse. Moreover, as the main focus in the research community historically has been on economic development and not on the development of human rights, the former will necessarily receive the largest attention in this review. However, the effects of TNCs on host countries' human rights' conditions will also be touched upon, and even more so in the chapters to come. Now let us turn to classical economic liberalism, to see how it all began.

[10] An earlier version of the argument in this chapter was published as an article (Letnes 2006).

3.1 The Initial Thesis – An Engine of Development

Until the 1960s, there was no distinct theory of the TNC as such. Its initial reputation, therefore, has to be extracted from theories of capitalism (in general) and from applied development policies (in particular). After WWII, structuralism and modernization theory also shed some light on the role of the TNC in those early years of development theory. Although challenging in their perception of capitalism, these sources of information all believed that the TNC—through different processes—had a positive role to play in development *per se*.

Classical liberalism was the dominant ideology in Western economies before WWI. It emphasized free markets and minimum state interference (see e.g., Smith 1776). When the growth of corporations that transcended national borders at the turn of the twentieth century was in its infancy, classical liberal theory highlighted national corporations and trade rather than corporate investments in foreign countries. The underlying logic, however, remained the same: individuals and corporations are much more efficient allocators of resources (than states). State intervention only stifles investment and, hence, reduces the wealth of nations. For the benefit of both individuals and the market, though, the state had to maintain rule of law and provide public goods like physical infrastructure.

Marx—and later Lenin—also foresaw a progressive role for capitalism, albeit only in a long-term perspective. The inevitable growth of the proletariat and the destruction of pre-capitalist social structures were ensured as capitalism needed to continually conquer new markets in order to halt its inherent recurring crises. Short-term influence, on the contrary, was harsh for the labour force with working conditions intended to satisfy nothing but the bottom-line interests of the bourgeoisie. Lenin also stressed the monopolistic nature of capitalism, which tended toward economic stagnation and decay (Jenkins 1996:447-52, Marx and Engels 1996:158-64). This line of thought would prove to have great impact on the post-WWII neo-Marxist and Marxist-inspired literature. For contemporary policymakers, however, events rather than Marxist theory initiated a greater role for the state in the economy.

The first half of the twentieth century witnessed two events or currents that had a major impact on applied development policies: nationalism and economic stagnation. The Spanish and Portuguese retreat in Latin America and the collapse of the Ottoman Empire in the Middle East had left behind new nation states that sought to roll back the influence of their former masters—and the threatening weight of the great powers—through greater

economic independence. The Great Depression paralleled this nationalist current and revealed the vulnerability of international market dependence. These developments—coupled with the Keynesian theory that rose in the aftermath of the Depression—added momentum to a shift from market-led towards state-led development. State-stimulated industrialization, or more precisely import substitution industrialization (ISI), was now the dominant development strategy for those who had previously been reduced to resource sites for their colonial masters. This strategy became increasingly attractive as decolonization spread in the 1950s and 1960s. State-led development was particularly appealing to the new nation states since colonialism had left behind a limited industrial base and an immature capitalist class that alone could not push them into the industrial age (Rapley 2002:15-21). The strategy of ISI partly gave birth to and was partly justified by new ideas in the theory of development: modernization theory.

Although there are many variants and contentions, modernization theory held that underdevelopment was only an initial stage for all countries. This initial stage would be overcome by following the rout laid open by the First World. It was the traditional structures and values that had to be modernized, and industrialization was the key to this process as it had been for the early developers of the First World. The advantage of the Third World, however, was that this process could be accelerated by access to First World know-how and capital. Moreover, modernization theory shared one of the basic notions of the Marxist imperialistic literature, that TNCs also helped to undermine development-blocking traditional features found in the developing countries (Le Roux and Graaff 2001:52-54, Rostow 2003:123-32, Törnquist 1999:45-53). Thus, TNC investments were attractive and had a positive contribution to make. This view was even shared by those Third World policymakers that were sceptical of capitalism, as access to foreign capital could speed up development without necessarily giving rise to a local capitalist class (Rapley 2002:30).

A more sophisticated theoretical argument for pursuing an ISI strategy—what became known as the Prebish-Singer thesis—was based on the concept of declining terms of trade. That is: over time, the value of primary commodity exports will decline compared to that of finished imports. This thesis rested on the assumption that prices in more advanced industrialized societies would rise quicker due to differences in income elasticities of demand and due to the search for primary commodity substitutes. As a result, developing countries have to export more of their primary commodities just to maintain their level of imports of finished goods from the developed countries. Part of the solution to this accelerating problem was obvious at the time: developing countries had to rely more on industry for their wealth

and less on the primary sector; they had to industrialize (Prebisch 1950:1-16, Singer 1950:473-85). Even though these structural theorists where more sceptical of the role of capitalism in Third World development, they nevertheless favoured the role of foreign investment in the ISI strategy (Rapley 2002:16).

Hence, the diverse set of theories and applied policies that coloured development theory in the first half or so of the last century all proclaimed a positive role for transnational corporations: a role as an engine of development. However, certain arguments and assumptions had implicit flaws that became explicit through failed policies. Marxist theories on imperialism and modernization theory assumed that capitalism would break down pre-capitalist structures in developing countries as they had in developed countries; and Third World policymakers, modernization theorists and structuralists alike assumed that foreign capital would aid an ISI-strategy that would ensure development as well as economic independence from the former colonial masters. What this first notion failed to see—what dependency theory and world system theory later would emphasize—was that some Third World pre-capitalist structures would be strengthened through alliances with First World capitalism. Moreover, what both notions failed to realize was one implicit assumption vital to both modernization and structural theory: that industry-related foreign direct investment (FDI) had more positive linkages to the host country economies than primary-sector-related FDI. This assumption would later be made explicit by the synthesized theoretical framework.

The failures of state-led development policies became apparent throughout the 1960s and 1970s. The role of capitalism in general and the TNC in particular, thus, became scrutinized as theoretical assumptions proved not to hold. More radical forms of structuralism—dependency theory and world system theory—provided a reaction: the TNC should be regarded as a tool of exploitation.

3.2 The Antithesis – A Tool of Exploitation

For years, the post-WWII economic boom hid the flaws of the ISI strategy. However, critics surfaced as the failure of Third World countries to develop became more and more evident. On the Left, blame rested with the market system as such. Dependency theorists argued that development and underdevelopment were interlinked. First World development depended on Third World underdevelopment for access to markets, raw materials, and a cheap labour supply. The First World drained the Third World of resources, and whatever development

occurred in the Third World depended on First World capitalism (Frank 1978:1-208, Sunkel 1979:216-25, Törnquist 1999:64-69).

World system theorists also pointed to unfavourable market structures and emphasised a core-periphery distinction between and within First and Third World countries. There was an implicit alliance between the core and periphery in the First World and the core in the Third World that led to a dual development both at the world system level (where developed countries could be separated from underdeveloped) and within the peripheral countries (development as well as underdevelopment was the result) (Galtung 1979:155-71, Hymer 1979:393-98, Wallerstein 1974:387-415).

As a consequence, the TNC was no longer seen as a partner in development, but rather as a tool used by developed countries to extract resources from the underdeveloped ones. Few jobs and linkages to other producers in the economy were created as capitalism would not spread beyond the foreign corporations. Local firms could even be displaced, rather than supplemented, by TNCs. Moreover, surplus capital was shipped back home—through tax avoiding arrangements like transfer pricing—rather than being reinvested locally (Gilpin 1987:273-89, Jenkins 1996:443-47). From a human rights' perspective, dual development created a need to control the masses in order for the TNC to maintain its momentum. Instruments of control entailed repression and denials of civil and political rights for residents of the Third World (Hymer 1979:400).

The antithesis—the tools of exploitation school—prescribed a break away from the international market as the solution to failed development policies. A mere political break from the former colonists would not suffice. A full economic break with autonomous national development policies was necessary to break free of dependence and poverty (Gilpin 1987:287). However, a major dilemma was facing the policy prescriptions of this radical Left position: development occurred in some Third World countries, and for none more than for the East Asian Tiger economies of Taiwan, Singapore, Hong Kong and South Korea. It appeared as though capitalism—at some level or another—had a positive contribution to make after all. Nevertheless, the ISI strategy had discredited state-led development policies, and dependency theory and world system theory proved, therefore, to be of little importance in applied development policies. Many of their notions about TNC influence, though, would be picked up by the synthesized theoretical framework. However, for the 1980s and on, less—not more—statism was the prescription as a renewed Right called for a rolling back of the state.

3.3 A Retreat to the Initial Thesis – More Market-Less State

The market supremacy of classical liberalism foresaw a minimal role of the state. The failures of the Third World to catch up were not due to the market as such, but to obstacles to economic development in the Third World countries themselves (Gilpin 1987:267-68). State-led development policies had been too optimistic about human nature. Neoclassical theorists argued that the same selfish behaviour that prevailed in the marketplace would also prevail in the public sector, only with more damaging effects. Although ISI had proven successful in building factories and infrastructure, its export and agricultural performance was poor. Moreover, the bureaucratic mechanisms needed to pursue the strategy of ISI was a breeding ground for inefficiency, corruption, and rent-seeking behaviour (Rapley 2002:36-63).

In the early 1980s, the free market economy returned as the dominating state-market ideology, and eventually found its way back into the Bretton-Woods institutions—the World Bank (WB) and the International Monetary Fund (IMF). Even some Third World policymakers began to be influenced by neoclassical theory as it seemed to offer solutions to the practical problems they faced. Nevertheless, the debt crises—resulting from OPEC oil shocks, liberal lending practices to questionable development projects, and economic stagflation—gave these institutions the leverage they needed to alter development policies in Third World countries. In exchange for loans to manage their debt, Third World countries had to agree to structural adjustment programs aimed at rolling back the state and removing structural blockages to the (assumed) efficient operation of markets. Moreover, export industrialization—exploiting comparative advantage—was recommended over the failed ISI strategy (Rapley 2002:51-66).

As far as the TNCs were concerned, neoclassical writers also criticized rules that restricted foreign investment. The TNC was back as an engine of development. Not only were TNCs seen to have a direct positive effect on economic development, through economic development they also indirectly supported the development of political and civil rights (Meyer 1998:90). The latter indirect relationship could be traced back to Lipset's economic development-democracy thesis (1959), while the former direct relationship rested on the TNC's capacity to transfer capital, know-how, and technology (Balasubramanyam et al. 1999:28-37, Gelleny and Sacko 2001:234-36, Navaretti and Venables 2004:182-83), as well as on the greater efficiency of its internal market (Jenkins 1996:440-43). However, like the ISI strategy of the supporters of state-led development policies before them, neoclassical theory in general and structural adjustment programs in particular ran into problems when

facing the complexity of real life conditions. At some level its prescriptions failed the test of universalism. Perhaps the question was not whether capitalism was good for development or not, but rather when (or in which context) it was good and when it was not.

3.4 The Synthesis – It All Depends

Although partly successful in some Latin American and Asian countries, Rapley (2002:73-133) criticized the neoliberal paradigm for being too optimistic about the market's ability to generate wealth, and too pessimistic about the state's ability to play a positive role in development. For instance, where neoclassical theory speaks of static comparative advantage (ignoring the price inelasticity of primary commodities), the successful developmental-state policies of the East Asian Tigers speak of dynamic comparative advantage, i.e., advantage developed by the state in selected export-oriented industries; where neoclassical theory prescribes openness to attract FDI, capital itself tends to pursue those opportunities that—more often than not—are created by government policies. Moreover, neoclassical reforms seem to be most effective in societies that have already attained a relatively advanced level of development, and that to reach this level a high degree of state guidance is needed. This more nuanced view of the capabilities or limitations of capitalism is also argued by others (see e.g., de Soto 2000:219-41, Lindblom 2001:248), and it is also paralleled by a more nuanced view of the impact of TNCs on Third World economic development as well as its development of human rights.

This does not imply, however, that a synthesized theoretical framework has displaced the neoclassical paradigm. The neoclassical paradigm—speaking of the supremacy of the market in general and the transnational corporation in particular—is very much alive in the literature and in applied development policies. Moreover, the Left is not dead. It has to some extent influenced the synthesized framework presented here, and to a larger extent inspired the discontents of globalization in general (see e.g., Stiglitz 2002). Nevertheless, a synthesized theoretical framework embracing arguments from both the pro-TNC and the anti-TNC thesis will be outlined below. Many of the underlying assumptions of the two opposing schools have matured over the years. Empiricism from applied development policies have erased their most incompatible arguments and highlighted the conditional nature of the relationships in question.

4 A Synthesized Theoretical Framework[11]

'Engines of development' or 'tools of exploitation'? Both expressions have—as we have seen above—been used to describe the transnational corporation's (TNC) activity in the developing world. Intuitively, one of these two seemingly contradictory research traditions on the effects of TNC activity must be at odds with the truth. In this thesis, however, I will argue that these extreme characterizations – each armed with their preferred method and unit of analysis – are merely assessing different aspects of the relationship in question. While aiming to discover general statements or even social laws, social scientists cannot escape the complexity of the real world. Every theory is conditional: standing or falling with its assumptions. It is therefore essential to be aware of the underlying conditions as one attempts to understand sundry contexts and compose policies based on theoretical frameworks. In economic theory and policymaking this is no less true. It is widely held that capitalism needs to operate within a competitive legal framework for society to benefit from its existence. More contested is the notion that certain conditions must be satisfied in order for a host country to benefit from the presence of the free markets' superior agent, the TNC.

Methodological as well as theoretical issues can help bridge the gap between the two research camps referred to above. Although these camps are commonly understood as being incompatible, they needn't be. In a Lakatosian sense, both camps are parts of distinct research programs: the positive findings of the former need not come at the expense of the negative findings of the latter (Lakatos 1978:47-73). Moreover, as will be demonstrated below, several explanatory fruitful theoretical issues can help shed some light on the Janus-faced nature of TNCs' effects on human rights. These issues suggest that FDI benefits are conditional and can help determine whether or not the presence of TNCs will be benign.

4.1 Methodological Justifications

Unravelling the impact of TNCs on economic development and human rights is far from straightforward as both terms are ambiguous in their own regard. By considering the benefits of TNC activity in potential rather than absolute terms, we can—as we shall see—overcome some of the ambiguities introduced in the historical review above. Not all of the

[11] An earlier version of the argument in this chapter was published as an article (Letnes 2004).

contradictory findings, however, are related to theoretical notions of conditionality. Methodological issues help us understand these ambiguities from a different perspective.

Although claiming to describe the very same relationship, statistical analyses – on the one hand – and corporate and country case studies—on the other—often differ in their portrayal of the character of the relationships between TNCs, economic development and human rights. It seems therefore legitimate to ask whether the extent of the conclusions obtained is determined by the method applied: a dilemma not unlike the one witnessed by Reuschemeyer et al. (1992) in their eminent analysis of the relationship between capitalist development and democracy. While anti-TNC theorists generally find their empirical evidence in corporate and country case studies, pro-TNC theorists have generally applied statistical analyses at the national level to strengthen their argument.[12] However, it is the belief of the author that each of these two research camps can be best understood as two distinct – in the Lakatosian sense – scientific research programs (rather than two rival hypotheses). Therefore, the vital question is not whether the method applied determines the conclusion obtained; rather it is which part of the theory is under scrutiny. Thus, there is no single correct answer, only correct answers to particular questions. The following paragraphs aim to demonstrate why.

Lakatos' methodology of scientific research programs (MSRPs) consists of two main elements, the hard core of a program and the construction of a protective belt. The hard core consists of a set of basic axioms, which all proponents of the program accept without question. The protective belt consists of numerous assumptions and hypotheses that can be deduced and exposed to empirical testing. Thus, a research program cannot be falsified on the basis of one empirical test alone. An entire theory can only be replaced by a new one by way of 'sophisticated methodological falsification'.[13] In other words, the new theory must explain the same facts that were accounted for by the old theory, while it at the same time accounts for additional facts that the old theory could not explain (Lakatos 1978:47-52, Meyer 1998:198-201). Lakatos argues that there are almost always competing research programs, and that the 'new' theory therefore only supersedes the old one by a further display of explanatory power (Lakatos 1978:68-73).

[12] This is, however, not without ambiguities, and evidence of statistical analyses and country case studies contradicting the conventional wisdom exist (see e.g., de Soysa 2003:23-62, Lall 1999:270-71).

[13] Lakatos invalidated Popper's notion of falsification, where an attempt is made to falsify a single theory or hypothesis, and termed it naïve falsification (Pheby 1988:55-56). Popper also occupied himself with the idea of sophisticated falsification, but never abandoned his rules for (naïve) falsification (Lakatos 1978:93-94).

When transferred to our two rival research programmes, Lakatos' ideas have profound utility; ambiguous findings become complementary rather than contradictory. That is, ambiguous findings might be the result of different aspects of the theory being tested or as Meyer (1998:198-201) suggests, different levels of analyses being applied. Both research programs might, therefore, be rejected at the protective belt while only being weakened at the hard core.[14] According to Meyer, this is precisely the case as far as the two extreme theories on the relationship between TNC and human rights are concerned:

> The [pro-TNC] view is the most valid description at the international level, where the good done by the majority of [TNCs] outweighs the harm done by other [TNCs]. At this level, random errors cancel out, as a statistician would say, and what we are left with is the good done by the [TNCs] in the aggregate. At this level, the [anti-TNC view] does not hold. To the contrary, when one seeks evidence at the lower level that human rights have been abused by specific [TNCs], such evidence is not hard to find. [The anti-TNC view] stands confirmed at that lower level of analysis. The larger, crucial, theoretical point in all this is that neither theory has been proven false in any final sense. Both have evidence in their support at different levels of analysis and in different contexts (Meyer 1998:200).

An awareness of the importance of contexts and the level of analysis is, therefore, vital in order to unravel the relationship between TNC activity, economic development and human rights. The information loss that occurs when individual-level data are aggregated in statistical analyses needs to be compensated for.[15] That is, in addition to general statements one should be able to separate between the TNCs that do, in fact, promote economic development and/or human rights and those that in fact do not (Meyer 1998:141-43). Or perhaps more fruitfully, one should be able to separate between contexts that favour a benign relationship and those that do not. However, although combining methods is increasingly argued to be the appropriate choice of research strategy (King et al. 1994:5-6, Ragin 1987:69-

[14] At the hard core of both arguments lie ideas about the general impact of TNC activity, which are postulated to be either positive or negative for the human rights' conditions in host countries.

[15] The inability to predict individual behavior on the basis of aggregate relationships is referred to as the 'ecological fallacy' (King 1997:17).

71, Rueschmeyer et al. 1992:12-39), a simple combination of methods will not necessarily do. Since both pro-TNC and anti-TNC studies have been known to highlight only the virtuous or vicious consequence (see e.g., Fabig 1999:313-14, Madely 1999:8-15, Williams 1999:67-68), both of their favoured research tools—statistical analysis and cases studies—need to be carefully designed to account for the apparent ambiguity of the relationship in question.

For country and corporate cases studies a methodological problem arises when case evidence is limited to the search for positive or negative effects only: there is a lack of a control group. In choosing the cases to be examined, there is a tendency to focus on the subject under study (Gleditsch 1998:191-92, Rueschmeyer et al. 1992:30-34). For statistical analysis the problem is not the lack of control group but rather the incapacity of the method—or the reluctance of the researcher—to model causal complexity. Although, this is usually the realm of cases studies, statistical analysis too can model causal complexity. Either by way of more refined measures (e.g., industry level data for FDI) or by way of interactions (e.g., the effect of FDI on economic growth depends on the host countries' level of human capital). Thus, a case study research design needs to ensure the appropriate use of control groups, while a statistical analysis needs to address causal complexity. When designed in such a way, one stands a better chance at unravelling the relationship between FDI, economic development and human rights. To tailor the method (or the combinations thereof) to the research in question is, however, as difficult as it is important. Other methodological and theoretical issues also play an important part in this grand undertaking of ours.

First, combining methods not only allows one to highlight different contexts it also serves as a validity check, and validity within methods is as important as validity between methods. The latter becomes important as the results produced by one method may or may not be replicated by another method, while the importance of the former becomes apparent when one realizes that there is more than one way to measure a variable (Read and Marsh 2002:237-40). Statistical analyses and comparative case studies often assign different—and at the same time controversial—proxies to the same issues.[16] Analyses of the relationships between TNC activity, economic development and human rights are not exceptional in that

[16] When it comes to human rights, the classic way of breaking down the concept is to distinguish between political, civil, social and economic rights (UNDP 2000b:20-21). The Freedom House indicators can illustrate the problems related to proxies; the arguably preferable measure of democracy/human rights in quantitative analyses (Bollen 1993:1224-27, Bollen and Paxton 2000:77, Quinn and Wooley 2001:653). These indicators have been criticized for being highly impressionistic (Poe and Tate 1994:857) and biased toward non-Marxist-Leninist, Christian, monarchies, and older states (Bollen and Paxton 2000:77). Despite this criticism it is important to acknowledge that many of the commonly used indicators of democracy/human rights are highly correlated (Quinn and Wooley 2001:653).

respect, where different proxies or time spans are known to result in different conclusions (see e.g., de Soysa and Oneal 1999:767-79, Firebaugh 2003:327-44, Hafner-Burton 2005a:393-95, Kentor 2003:301-13, Letnes 2002:96-97). As different proxies and different methods (or different levels of analysis) might signify different contexts, it becomes apparent that evidence from two separate analyses cannot be judged as complementary or contradictory without great caution being exercised.

Second, causality often works backwards as well as forwards, and the direct causal effect of the activity of TNCs and host country human rights' scores is indiscernible. Host country human rights' scores are far more likely to be coloured by the actions of the host country government than from the short or long term effects of TNC activity. Conversely, opposite causality reveals a more plausible causal relationship as it is widely acknowledged that high scores on human rights' indicators are conducive to the investment decisions of the TNCs (UNCTAD 1998:180). Nevertheless, statistical analyses can only say something about the degree of correlation between TNC activities (i.e. FDI) on the one hand, and host countries' government respect for human rights, on the other (Freedman 1997:156-57, Goldthorpe 2001:1-20). No robust causal relationships can be secured. For this kind of theoretical investigation, comparative case studies are required (Ragin 1987:69-71, Reuschemeyer et al. 1992:12-39).[17]

Meyer's strategy of combining cross-country statistical analyses and country case studies – highlighting the importance of context and level of analysis – left the two competing research programmes both supported and weakened (Meyer 1998:197-201). However, Meyer stopped short of proposing a new grand theory that could explain the ambiguous findings, and hence replace the old competing research paradigms. Based on the review of prior research and the methodological reflections considered here, it seems apparent that a new theory on the relationship between TNC activity, economic development and human rights has to account for both the findings of the pro-TNC and the anti-TNC proponents.

In the next section I attempt to achieve this with an emphasis on conditionality. More than hammering out a novel theory, though, the scope of this endeavour is to synthesize and make explicit what has previously been only partial, implicit and—to a limited extent—not yet addressed.

[17] There are those statisticians who are optimistic about statistical analyses providing causal directions (see, Freedman 1997:113-60). However, the conventional view is that regression analysis can only say something about the degree of correlations (e.g., Freedman 1997:156-57, Goldthorpe 2001:1-20).

4.2 Theoretical Justifications

As suggested above, the impact of TNCs on human rights' conditions in countries where they operate is likely to be conditional on a host of variables. Dunning (1992:264-81) aptly captures this relativistic perspective when he suggests that the impact "will depend on the kind of FDI undertaken, as well as on country-, industry-, and firm-specific variables leading to it, and resulting from it. The nature of the impact will also vary according to the stages of development being considered."[18] With this relativistic view in mind, it is the ambition of this section to synthesise two intuitively contradictory theoretical and empirical traditions, and to highlight the contexts that favour the one above the other.

4.2.1 The Point of Departure

Chapter 3 above tracked the historical development of two opposing traditions. On the one hand we have those viewing TNCs and their investments as largely benign. Their core argument is that FDI is good for host countries' economic growth, and that economic development in the long run is good for host countries' human rights' conditions. On the other hand we have those viewing TNCs and their investments as largely malign. Their core argument is that FDI, as it penetrates host countries' economies, restrains economic growth, and that alliances are formed between TNCs and local elites where the economic and political interests of both motivate the repression of human rights. Thus, the point of departure is that the synthesized theoretical framework has to integrate these two traditions, and that the research design to follow has to render possible tests of this synthesized framework (as well as tests of the pro- and anti-TNC frameworks).

4.2.2 Outlining the Synthesized Model

To guide the discussion of the synthesized theoretical framework, Figure 1 below models the complex causal relationship between the activity of TNCs and host country human rights' conditions. At the most aggregated level, one can distinguish between the human rights' practices of TNCs and the human rights' practices of host governments. Although

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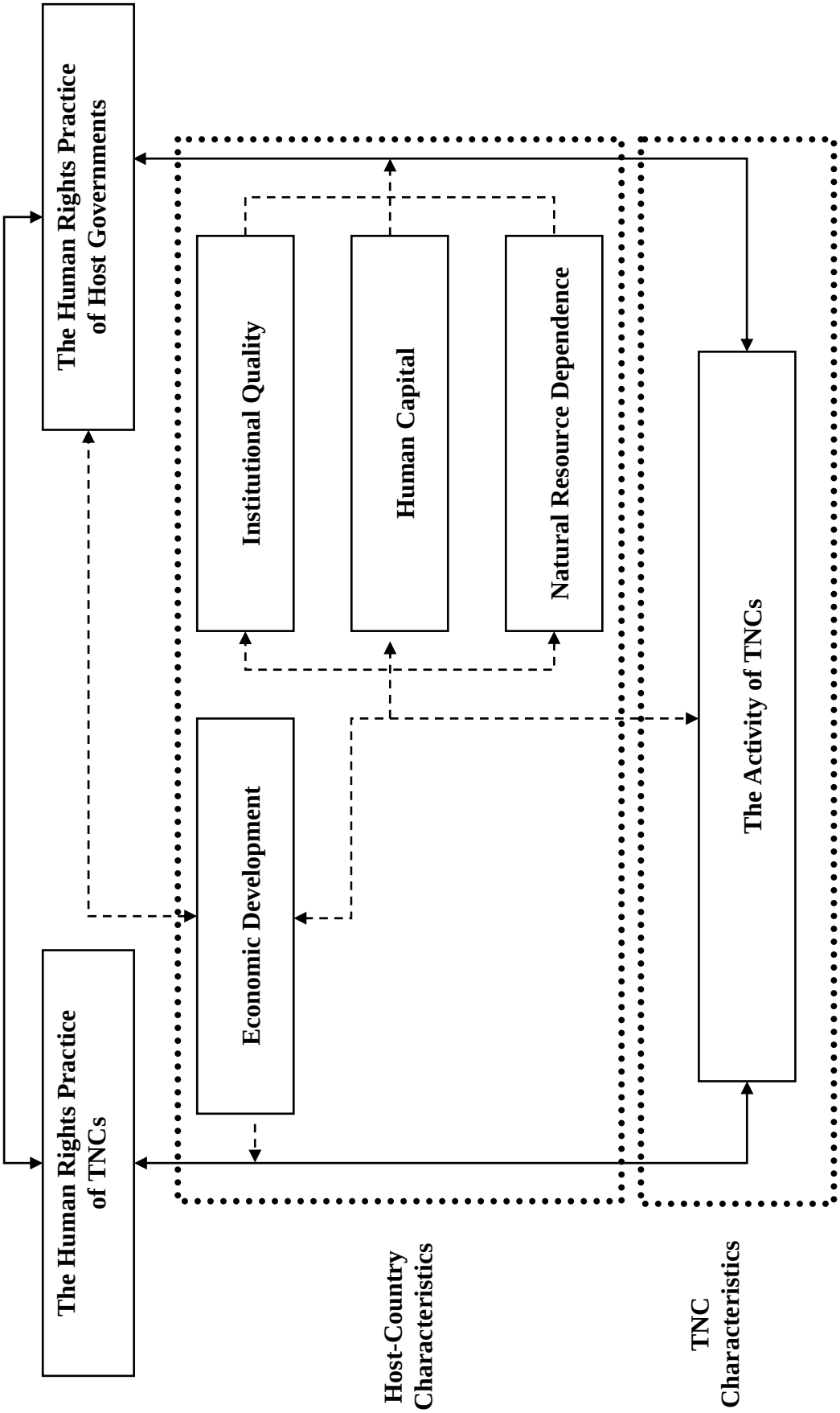
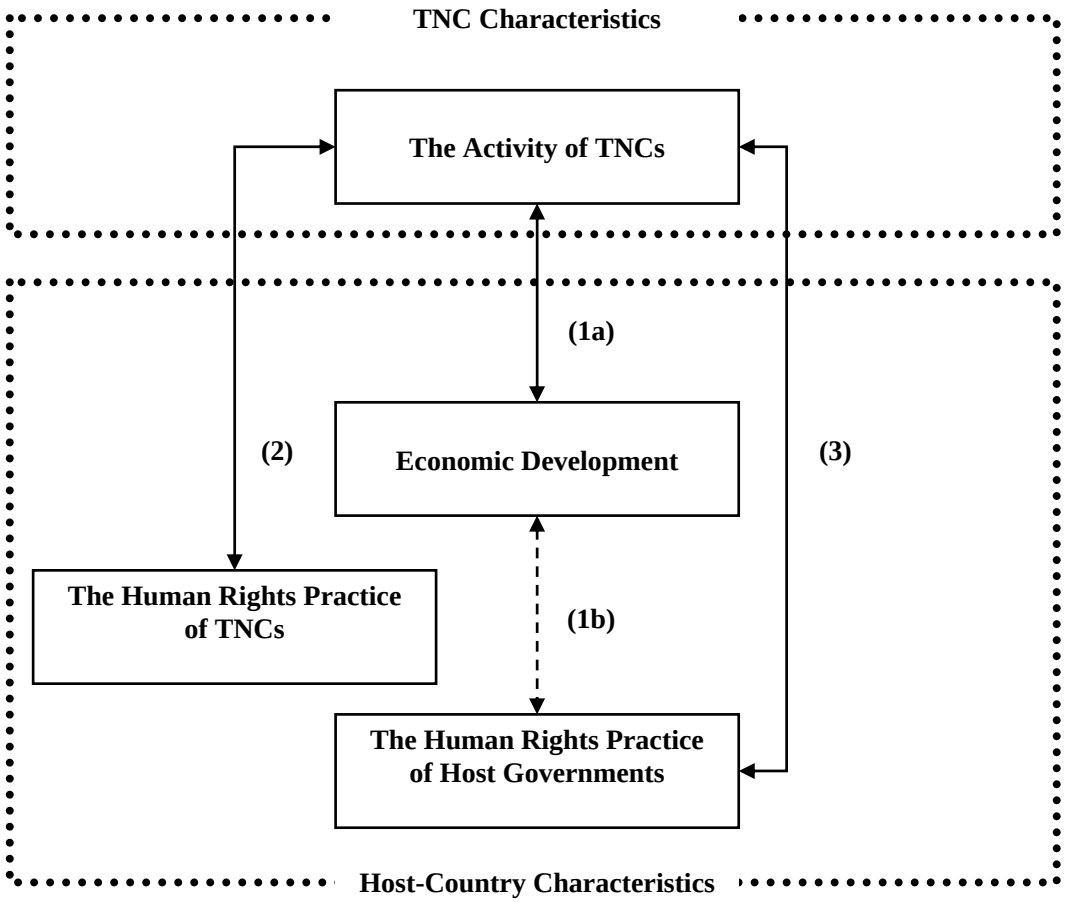
[18] Lipsey and Sjöholm (2005:40) find that the empirical evidence supports this relativistic perspective.

Figure 1: Model of Direct, Indirect and Interaction-Effects in the Relationship Between the TNC, Economic Development, and Human Rights



theoretically and empirically disconnected, the one might—through diffusion of ideas or international or national human rights' standards—have an influence on the other. To determine the overall effect of TNC activity on the human rights' conditions in general it is—for the twin reasons of simplicity and clarity—rational to distinguish TNC characteristics from host-country characteristics. The same rationale can be applied as one distinguishes direct effects on human rights from indirect effects—through their impact on host counties' economies. A simplified version of the model—stripping out the particular host-country characteristics—is illustrated in Figure 2, and the model-explanation that follows should be viewed in light of both figures.

Figure 2: Simplified Model of the Relationship Between the TNC, Economic Development, and Human Rights



Three main relationships between the activity of TNCs and host countries' human rights' conditions are illustrated in Figures 1 and 2. These three relationships are all rooted in the pro- and anti-TNC traditions. First, the key relationship is the relationship between the

activity of TNCs and host countries' economic development (denoted (1a) in Figure 2). This relationship is conditional, and depends on TNC characteristics like the type of activity undertaken—that is, whether investments are made in the primary, or in the secondary and tertiary sector—and on host country characteristics like institutional quality, level of human capital, and level of resource dependence. Causal processes work both ways, indicating, on the one hand, that host country characteristics (economic development included) can both attract foreign investments and help determine the nature of FDI impacts. On the other hand, the activity of TNCs—in one way or another—affects this set of host country characteristics. Moreover, in as far as FDI in this respect is good for host countries' economic development it will also be good for their human rights' conditions (denoted (1b) in Figure 2). The latter follows from the well-established economic development-democracy thesis (Lipset 1994).

Second, the nature of the relationship between the activity of TNCs and their human rights' practices (denoted (2) in Figure 2) is, determined by both TNC and host-country characteristics. That is, by, on the one hand, the type of activity undertaken and, on the other hand, on the general level of host-country development. It is here, as was for the first main relationship, plausible that causal processes work in the opposite direction as well. This is because some countries may encourage FDI from corporations with a reputation for good human rights' practices.

Third, the nature of the relationship between the activity of TNCs and the human rights' practice of host governments is as complex as for the two relationships discussed above (denoted (3) in Figure 2). This relationship is particularly relevant for resource abundant countries, and the theory of the 'resource curse'—which will be outlined below—is important for understanding how the type of TNC activity undertaken relates to the different host country characteristics and host government human rights' practices. The theory of the resource curse is also important for resource-abundant countries as far as the relationship between FDI and economic development is concerned. Again, causal processes can work in both directions. After all, it is plausible to expect host-country human rights' conditions to be a factor in the investment decisions of TNCs. Having outlined the model, the discussion that follows will display the theoretical foundation for the relationships emphasised here.

All three relationships modelled in Figure 2 are—as illustrated by Figure 1—interlinked. Therefore, the theoretical discussion that follows will—rather than discussing each relationship in isolation—focus on how these effects of TNC activity are conditioned by TNC and host-country characteristics.

4.2.3 TNC Characteristics – The Nature of the ”Beast”

At the heart of the relationship between TNCs and their hosts are conflicting objectives. Corporations – organised globally – seek to maximise shareholder returns, while nation states – confined to a particular geographical area – are obliged to a range of social and economic responsibilities (Dunning 1992:276, Evans 1985).[19] Moreover, there are even those that argue that the global economic system is at odds with global environmental and social interests (Korten 1995:13). A more amicable perspective emerges if one has faith in those economic theorists who argue that corporations in certain circumstances are willing to “trade off part or all of surplus profits against other goals” (Dunning 1992:55). Two recent and interlinked developments make the latter notion particularly relevant: ‘corporate social responsibility’ and the ‘spotlight phenomenon’. Internal corporate codes of conduct, more general principles for responsible investment, as well as international legal standards, exist to guide corporations in their investments abroad (Addo 1999:27-31, Shell International Petroleum Company 1998:5-23, United Nations 2006). Generally, however, these standards alone are seen as insufficient. At the legal level, some supranational agreement or authority is necessary to ensure corporate responsibility in human rights’ issues (Bhagwati 2004:190-91, Dunning 2003:32-34, Graham and Woods 2006:881-82, Hedley 1999:224-28, Jenkins 2001:26-30, McClintock 1999:520-21, Monshipouri et al. 2003:987-89, Richter 2001:206-10). At the grass-roots’ level, however, the spotlight phenomenon holds that consumers, shareholders, and NGOs can make corporations more responsible by keeping human rights’ concerns on the agenda (and thereby making them a corporate bottom-line interest) (Bennett 2002:393-410, Klein 2002:439-46, Madely 1999:172-76, No Logo, Spar 1999:70-74).[20]

Although tradeoffs in certain circumstances are probable, and thereby peaceful coexistence is possible, at some level there will always be conflict between the TNCs and their hosts (Evans 1985:216-21, Walters and Blake 1992:124). Winners and losers of these ‘negotiations’ will be determined by their relative bargaining power. The general view seems to be that recent structural changes like globalisation, democratisation and technological

[19] This despite the fact that both modernization theory and the Marxist imperialism literature argue that TNCs also help to undermine development-blocking traditional features found in the developing countries (Le Roux and Graaff 2001:52-54, Rostow 2003:123-32, Törnquist 1999:45-53).

[20] Others support the notion that consumers can also influence corporations through their choice of products/services (Dybicz 2000:25-38, Loomis 1999:147-48, Stolle et al. 2005:262-64). Moreover, case studies of The Co-operative Bank (Williams 1999:67-68) and The Body Shop (Fabig 1999:313-21) indicate that some corporations are already profiting from taking responsibility in human rights’ issues.

innovations in information-technology favour TNCs at the expense of developing countries: there has been a shift in bargaining power at the host country's expense (Narula and Dunning 2000:160-61, Strange 1994:160-61).[21] Moreover, the obsolescing bargaining model, which argues that TNCs loose their favourable entry stage bargaining position with the passage of time, might itself be obsolescent. This as host countries now consider their reputation towards potential investors and UN organisations when they determine their bargaining preferences. Expectations regarding future FDI inflows, not the single investment in question, have ensured a liberalization of foreign investment regimes (Haslam 2004). More particularly, however, it has been argued that although TNCs undermine the authority of the state, this relative effect depends on the size of the host-country economy vis-à-vis the TNC (Madely 1999:2-6, Panic 1998:273). Also, host countries benefit from a high quality state bureaucracy (Evans 1998:220), and from issues at stake being political rather than economic (Moran 1996:424). Nevertheless, one plausible effect of this shift in bargaining power is that host countries end up selling themselves short—thereby reducing possible benefits to the point that net benefits in some worst case scenarios even become negative (Bhagwati 2004:164-65, Narula and Dunning 2000:160-61).

Thus, despite conflicting objectives and the fact that TNCs outweigh many of the smaller economies in bargaining power, TNCs *can* engage in a positive dialogue with respect to host country human rights' conditions (out of either a genuine sense of social responsibility or out of respect for the market force of the spotlight phenomenon). However, no business can survive without paying attention to its immediate bottom-line interests.[22] Thus, the motives of the TNCs—beyond those of profit maximisation *per se*—are likely to have a greater influence on host country human rights' conditions than any well-intended policies, whether genuine or imposed. The motives of the TNCs and their impact on host country human rights' conditions will therefore be the focus of the next section.

4.2.4 TNC Characteristics – The Composition of FDI

The motives and interests of TNCs will change according to the type of activity undertaken. Corporations engaged in primary sector activities will have different motivations than

[21] There are, however, those who argue that the bargaining power of TNCs has been eroded (McKern 1996).

corporations engaging in secondary or tertiary sector activity, and motivations (and effects) might even be industry specific rather than sector specific (Dunning 1992:63, Spar 1999:57-67). Therefore, as the composition of FDI experiences shifts from primary to secondary and tertiary sector investments (Lall 1997:173-76, Spar 1999:57-67, UNCTAD 1999b:26-30, and Table 1 and 2 above), this shift is paralleled by a shift in TNC motives and interests with respect to conditions in the developing world. The central argument of this section is that this shift—*ceteris paribus*—has resulted in a more positive impact of TNC activity, both with respect to economic development and human rights.

Primary sector determinants are often argued to have negative effects on both individuals and the environment (Cypher and Dietz 1997:444-45, Madely 1999:15, Spar 1999:60-61). TNCs investments in the primary sector are mainly concerned with having access to particular raw materials—and/or low cost *unskilled* labour—and the population in general enjoys few positive spill-over effects other than some local employment effects (Spar 1999:60-61). Although there are potential spill-overs from local secondary processing, these are for many countries either limited or stalled by the nature of the product, the real or perceived lack of human capital and physical infrastructure, failed government policies, or by internal corporate concerns (Dunning 1992:454-55). For the general population to benefit, the host government needs to reinvest newly acquired capital for the benefit of the population at large, rather than to fortify and enhance their own position. However, the latter scenario has been far too common as the TNC's need for resources and the host country's need for capital tends to promote strong alliances between TNCs and the host country governments (Galtung 1979:155-71, Spar 1999:60-61, Wallerstein 1974:387-415). The latter notion bares resemblance to the "resource curse" literature, where abundance of natural resources has been seen as a curse to both institutional and economic development, as well as to the general development of human capital (Karl 1997:236-42, Ross 1999:297-322, Sachs and Warner 1995:21, Shafer 1994:35-39). The nature of the resource curse will be discussed more extensively under Section 4.2.6 below.

TNCs become less dependent on development-blocking host government ties when the investments are made in the secondary and tertiary sectors. When they are not limited by resource sites, TNCs have a wider range of possible investment sites from which to choose. Motivated more by the search for low cost *skilled* labour and expanded markets, the

[22] There might also be a collective action problem since corporations reducing profits in order to contribute to improved economic and human rights' conditions might loose out in the competition to other more profit-

implications for host countries also change. Now bottom-line interests—not moral obligations—argue for maintaining the health, training and pay of workers in order to increase their productivity and the quality of their output (Spar 1999:66-67). Evidence of exploitation and abuse of workers is—of course—not hard to come by, but there is also more promising evidence to suggest that workers in foreign-owned corporations receive higher pay and better working conditions than comparable jobs in domestic companies. Thus, there is extensive evidence supporting both the malign and benign position (Brown et al. 2002:45-46, Graham 2000:99-104, Moran 2002:10-22). A more important distinction between the low-value-adding natural-resource based TNC-activities of the primary sector and the higher value-adding TNC-activities in the secondary and tertiary sectors, is that the latter type of investment is considered as having the potential to transform the host country's development trajectory. Its greatest potential contribution, though, is not primarily realized through job creation, nor is it realized through the provision of capital. Its greatest potential contribution lies in its ability to promote know-how and technological upgrading in the host countries through linkages to the local economy (Moran 2002:162-64, Narula and Dunning 2000:160-61). Linkages between the TNCs and the local firms can be both backward and forward. Backward linkages are linkages to potential suppliers, while forward linkages are linkages to potential business customers typically engaged in secondary processing or retail activity. The extent of spill-overs from these potential linkages depend logically on the quantity and quality of the linkages, which again depends on the type of FDI undertaken. Evidence from different industries suggest—*ceteris paribus*—that the more advanced TNC technology applied, the greater the potential for spill-over effects (Dunning 1992:445-72, Moran 2002:108-38).

Two other corporate-related concepts need highlighting, as their existence—if present—might undermine the potential positive effects of FDI. First, the profit-maximising TNC might—if tax regimes in the home and host country allow—ship surplus capital back home through tax avoiding arrangements, such as *transfer pricing.* Transfer pricing is the practice whereby a local TNC affiliate pays the parent corporation a market price premium for internal transactions of goods or services in order to reduce profits and taxes locally and enhance profits at home (Dunning 1992:512-13, Jenkins 1996:443-47). Second, TNC competitors locally might be displaced or *crowded out* by the TNC (Dunning 1992:462-65, Gilpin 1987:273-89, Jenkins 1996:443-47). This need not be the case (see, e.g., Blonigen and Wang 2005:238-41, Long 2005:334)—but is, as Dunning puts it, particularly likely "where

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minded corporations (Kolk and van Tulder 2006:797-99).

local firms have few distinct competitive advantages or have not previously competed with [TNCs], or are unable or unwilling to conclude alliances with other firms, or where the advantages of their [TNC] rivals stem from the economies of size and geographical scope" (1992:465). Hence, it is more likely for local firms to be crowded out the less developed is the host country.

It is important to note that although TNC motives change in favour of the host countries as the composition of FDI changes away from the primary sector, it is not obvious that the net impact of these investments is positive. However, motives alone do not tell a complete story, and that is why we now turn towards host country characteristics and their impact on the interplay between TNCs and their hosts.

4.2.5 Host Country Characteristics – A Stages Approach

From the section above we have seen that both the direct effects of TNC activity on local human rights conditions and the indirect effects through its impact on the local economy depend heavily on both TNC and host country characteristics. The former was elaborated on in the previous section while the latter—although commented on above—will be further elaborated in the sections to come. More precisely, this section will adapt a stages approach, arguing the more economically and institutionally advanced a host country is—and the more created assets it possesses—the more benefits it is likely to harvest from the presence of foreign corporations (see Dunning 1992:272-76). The next section will then investigate more closely the special case of the resource curse, where countries "blessed" with an abundance of natural resources are often "cursed" with the failure to develop economically, or in terms of human rights.

The effects of TNC activity will—according to a stages approach—depend on how developed the host country is in a Rostowian perspective (Rostow 1960). This is not to argue that all countries will progress through each of the stages as predicted by classical modernization theory. Rather, countries with few created assets are less likely to harvest the potential benefits of TNC activity compared to, e.g., a modern Western European country. Created assets is—in this respect—all about the level of industrial development, human capital, and institutional quality, and—although they often parallel each other—they should all be considered if one attempts to determine the nature of the TNC-host country relationship.

Industrial development refers to the diversity and the sophistication of the local economy, and human capital refers—among other things—to the skill of the local work force. The higher a country scores on these dimensions, the more likely TNCs are to form backward linkages to local suppliers and forward linkages to retailers and to local business engaged in secondary processing (see e.g., Blomström and Kokko 2003:20-21, Borenzstein et al. 1998:133-34, de Soysa 2003:57-58, Li and Liu 2005:404, Makki and Somwaru 2004:795-96, Nunnenkamp 2004:673-75). The extent of spill-overs from these potential linkages also depends—as mentioned above—on the type of TNC activity undertaken. In other words: How advanced is the technology applied, and how equipped is the host economy to harvest its potential benefits? Evidence from a wide variety of industries ranging from textiles, oil and mineral industries to the auto and computer electronics industries suggests that the answers to these twin questions are essential as one attempts to unravel the impact of TNCs on the host country economy (Dunning 1992:445-72, Moran 2002:108-38, Vernon 1979).

The quality of institutions is argued to be important for development in general (Acemoglu et al. 2001b:1395-96, Kaufmann et al. 2005:39, Kaufmann and Kraay 2002:16-23, Rodrik et al. 2004:131-65), although there are those that argue that the direction of the causal relationship can be reverse (Glaeser et al. 2004:296-98). Moreover, the quality of institutions in a government/bureaucratic efficiency perspective is likely to be important for the efficient integration of the TNC in the local economy (Globerman and Shapiro 2002:1914-16, Li and Resnick 2003:202-03). Institutional quality should not be understood in a policy perspective as the propensity of governments to interfere in the private sector, nor its ability to attract FDI. Rather, institutional quality should be understood as the ability (i.e. level of quality) and willingness (i.e. level of corruption) of the bureaucracy to handle the interaction with the foreign corporations in the best interests of both the TNC and the host country once the TNC has decided to locate itself in a certain country. It's all about how efficiently the TNC is allowed to operate, and how efficiently the TNC-local firm interaction is allowed to be. That is, institutional quality reflects the degree to which government officials are able to carry out government policies as far as making the most of TNC-host economy linkages.

Another essential feature of the quality of government/bureaucracy is to the extent to which it reflects the bargaining power of the country, vis-à-vis the TNC. In Section 4.2.3 above, it was argued that recent structural changes have shifted the bargaining power in favour of the TNCs, at the expense of the host country (Narula and Dunning 2000:160-61, Strange 1994:160-61), but that the relationship between the two—among other things—

depended upon the quality of state bureaucracy (Evans 1998:220). It is easy to see how the bargaining power might be affected by both the quality of the bureaucrats and their resistance to corruption. A weakened bargaining position might also result in, e.g., corporate tax reductions and worker rights' restrictions used to attract TNCs. The next section—examining the resource curse—sheds some more light on the role of institutions in the relationship between TNCs and their hosts.

4.2.6 Host Country Characteristics – The Resource Curse

The poor economic and democratic performance of many countries that are rich with natural resources—a paradox labelled the "resource curse"—is well documented in the literature, and the quality of governmental institutions has in this respect been argued to be both a cause and an effect, as well as an important feature that distinguishes failure from success (Bulte and Damania 2005:1038-39, Chaudhry 1997:309-18, Collier and Hoeffler 2005:631-32, Jensen and Wantchekon 2004:834, Karl 1997:227-42, Mehlum et al. 2006:16, Ross 1999:297-322, Ross 2001:356-57, Sachs and Warner 1995:21, Shafer 1994:35-39).[23] Although much emphasis has been placed on oil dependence, Ross has demonstrated that the "curse" applies equally well—theoretically and empirically—for countries dependent on mineral resources. The explanations applied to describe the phenomenon in question have implications for the economy as well as for the general conditions of human rights.

First, both the susceptibility to economic shocks in the primary commodity market and the idea of declining terms of trade for primary commodity exporters suggest that there are external explanations for the poor economic performance of countries dependent on natural resources (Prebisch 1950:1-16, Ross 1999:301-04, Singer 1950:473-85). Second, there are poor linkages between the resource and non-resource sectors (Ross 1999:305). As discussed above, this can be related to the quality of institutions, the level of human capital, as well as to the policy-related issues of foreign corporations. Third, the notion of "Dutch Disease" holds that a boom in resource exports can produce economic stagnation through the appreciation of the real exchange rate and through the tendency of the booming sector to draw capital and labour away from the manufacturing and agricultural sectors, thereby raising their production costs (Hausmann and Rigobon 2002:4-7, Ross 1999:304-06). Fourth, rentier state models—

[23] Although there are those who argue against the paradigm (see, e.g., Smith 2004:342-43, Wright 2004:36).

although slightly different in their approaches—hold that when governments gain most of their revenues from natural resources—like oil or minerals—they no longer depend on domestic taxes and becomes less accountable to the people they govern. This has both economic and political implications. Economic development may be hampered as an economically independent state no longer has the incentive to develop industrially, institutionally or in terms of human capital. Patronage and corruption weakens state institutions even further (Bulte and Damania 2005:1038-39, Chaudhry 1997:309-18, Karl 1997:227-42, Mehlum et al. 2006:16, Ross 1999:297-322, Ross 2001:356-57, Sachs and Warner 1995:21, Shafer 1994:35-39). Political or democratic development may be hampered as an economically independent state can use its revenues to either pay-off or repress social pressure for greater accountability (Bulte and Damania 2005:1031, Jensen and Wantchekon 2004:834, Ross 2001:332-36). Resource rents can even motivate conflict (Collier and Hoeffler 2005:631-32). Moreover, a general process of modernization will not result since the economic wealth that is generated does not produce the cultural and social changes associated with development (Ross 2001:356-57). The latter notion will be further emphasised in the section to follow.

The first three explanations are economical and the latter political, and the general view seems to be that the latter has gained ground at the expense of the former. However, the aim of this thesis is not to determine which of these explanations are most valid, rather it is to uncover the nature of the impact that foreign corporations are likely to have in an environment characterised by resource dependence. To the extent that resource-dependent countries suffer from weak institutions and a weak non-resource sector, it seems plausible to expect the economic benefits to be less than in a more benign context. Moreover, to the extent that resource-dependent countries suffer from corruption in state institutions, it seems plausible to expect that the presence of TNCs only serve to exacerbate the problem as they offer another source of corruption (through their economic resources). That is not to say that TNCs are the source of corruption or that the impact of TNCs necessarily are negative, only that they are likely to contribute to the problem of corruption once present.[24] Also, to the extent that host country elites fortify their own position through physical and political repression of the population at large, it seems plausible to expect TNCs—whether consciously or not—to act as an ally. This as TNCs in this scenario, on the one hand, provide an

[24] There is actually evidence of corruption in Africa being bottom-up rather than top-down. Even if a politician wants to be honest, the pressure from his or her supporters is so great that political survival, and in some cases physical survival, depends on using his or her position in the state to dole out favors (Rapley 2002:92-93).

additional source of capital, while they, on the other hand, might benefit from political stability and low labour standards (Galtung 1979:155-71, Hymer 1979:393-98, Wallerstein 1974:387-415). However, the relationship might, as indicated above, also be explained by opposite causality. Host country human rights' scores are far more likely to be colored by the actions of the host country government than from the short or long term effects of TNC activity. Conversely, opposite causality reveals a more plausible causal relationship as it is widely acknowledged that high scores on human rights' indicators is conducive to the investment decisions of the TNCs (Busse 2004:61-62, UNCTAD 1998:180).

4.2.7 Host Country Characteristics – The Second Link

By definition, an indirect effect depends on two distinct relationships. In this case the indirect effects of TNC activity on host countries' human rights' conditions depend on: 1) the relationship between TNC activity and economic development (denoted (1a) in Figure 2); and 2) on the relationship between economic development and human rights or democracy (denoted (1b) in Figure 2).[25] Having already discussed the first, a few comments about the second link in the line of causation are warranted, given its importance to the main argument.

There is a strong tradition for arguing that economic development is conducive to democracy and hence human rights (Burkhart and Lewis-Beck 1994:903-04, Lipset 1994:1-22, Lipset 1959:69-105, Moore 1966:413-32, Rueschmeyer et al. 1992:40-78). The key causal link in the relationship seems to be that economic development transforms a society's balance of class power. Which class is most important in this respect, however, is more contested, and labour (Rueschmeyer et al. 1992:269-81), the middle class (Lipset 1959:100-03), as well as the bourgeoisie (Moore 1966:413-32), are individually argued to be the driving or vital class.[26] This also helps to explain—in a resource curse perspective—why economic

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[25] Human rights and democracy are almost inseparable in the UN tradition (UNCTAD 1999b), and democracy obviously has a great effect on the level of human rights (Poe and Tate 1994:860, Poe et al. 1999:310). Even so, there are also—as Donnelly (1998:154) suggests—differences: democracy answers who should rule, human rights addresses how governments should rule.

[26] Rueschemeyer et al. highlight the significance of labour arguing that only those who have to gain from democracy (i.e. the working class) will be its most reliable promoters and defenders (Rueschmeyer et al. 1992:57). Lipset argued for the significance of a large and mediating middle class (Lipset 1959:69-105), while Moore argued that the bourgeoisie, capitalist class, was essential in breaking down the power of the landed aristocracy (Moore 1966:413-32). It is, however, vital to notice that although these three studies highlight one social class as the most significant in the development of democracy, all three also emphasise the significance of other social classes and forces.

development does not necessarily lead to modernization in general, and democratization in particular. However, it is essential to highlight the importance of democratic maturity and consolidation. Intuitively there is a great difference between countries that gradually develop democratic values through economic development, and countries that introduce democracy as part of IMF/WB induced structural adjustment programs. The former set of countries is, of course, more likely to sustain both democracy and democratic values for the simple reason that the relative economic success is shared by the population at large and the parallel development of human capital is making the regimes more legitimate than the ill performing economies subjugated to harsh economic reforms (Diamond 1996:20-37, Huntington 1991:270-79, Przeworski et al. 1996:39-55). The host countries' stage of development, then, is vitally important for both relationships in the chain of causation from TNC activity to human rights via economic development.

4.2.8 TNC and Host Country Characteristics – Vicious and Virtuous Circles

It appears, then, that the more developed a host country is economically, institutionally, and in terms of human capital, the more likely it is to benefit economically from the presence of transnational corporations and the more likely it is to develop and sustain general values that support human rights. The fact that the effects of TNCs also seem to depend on both the composition of FDI as well as the bargaining power of the host countries vis-à-vis the TNCs simply underscores the importance of conditionality, as I sought to illustrate in Figure 1. We might in fact speak of vicious (or less virtuous) and virtuous (or more virtuous) development circles as far as the relationship between TNCs and host country human rights' conditions is concerned.

Vicious—or less virtuous—circles are likely to be present if TNC investment are made in the primary sector in host countries with high levels of natural resource dependence and low levels of development (economic, institutional and/or human capital wise). Virtuous—or more virtuous—circles, on the other hand, are likely to be present if TNC investments are made in the secondary or tertiary sectors in host countries with low levels of natural resource dependence and high levels of development (economic, institutional and/or human capital wise). Moreover, host countries face a two-edged dilemma. On the one hand, TNCs can aid development by providing assets like human capital and technology. On the other hand, TNCs are more likely to invest in host countries where these assets already exist.

Narula and Dunning (1999:274-79) refer to this phenomenon as "the danger of falling behind", and some areas are falling farther behind than others, especially sub-Saharan Africa (Lall 1997:189, Narula and Dunning 1999:274-79, UNDP 2000b:285).

5 Research Design

Traditionally researchers have designed their research based on a purely quantitative or a purely qualitative approach. The choice necessarily depends on the research in question and the inherent strengths and weaknesses of the two strategies. Quantitative cross-national research takes into account a large number of cases, but considers only a small number of numerically-expressed variables when analyzing phenomena with complex statistical techniques. It is an approach respected for its broad coverage, objectiveness, and ability to test specific hypothesis. Comparative historical research, by contrast, takes into account only a small number of cases, in order to consider all factors that are found to be relevant according to common sense and theoretical reasoning when analysing phenomena in light of their context. It is an approach respected for its ability to analyze historical particularity, historical sequence and causal complexity (Rueschmeyer et al. 1992:12-39), and for its constructive dialogue between theory and evidence (Ruechemeyer 2003: 312). However, both strategies are troubled by biases and weaknesses. The quantitative strategy is biased in favour of structural explanations, and its main weakness is its tendency towards abstract theoretical generalisations. The qualitative comparative strategy, on the other hand, is biased in favour of historical processes and human agency, and its main weakness is therefore its tendency towards particularising (Ragin 1987:69-71).

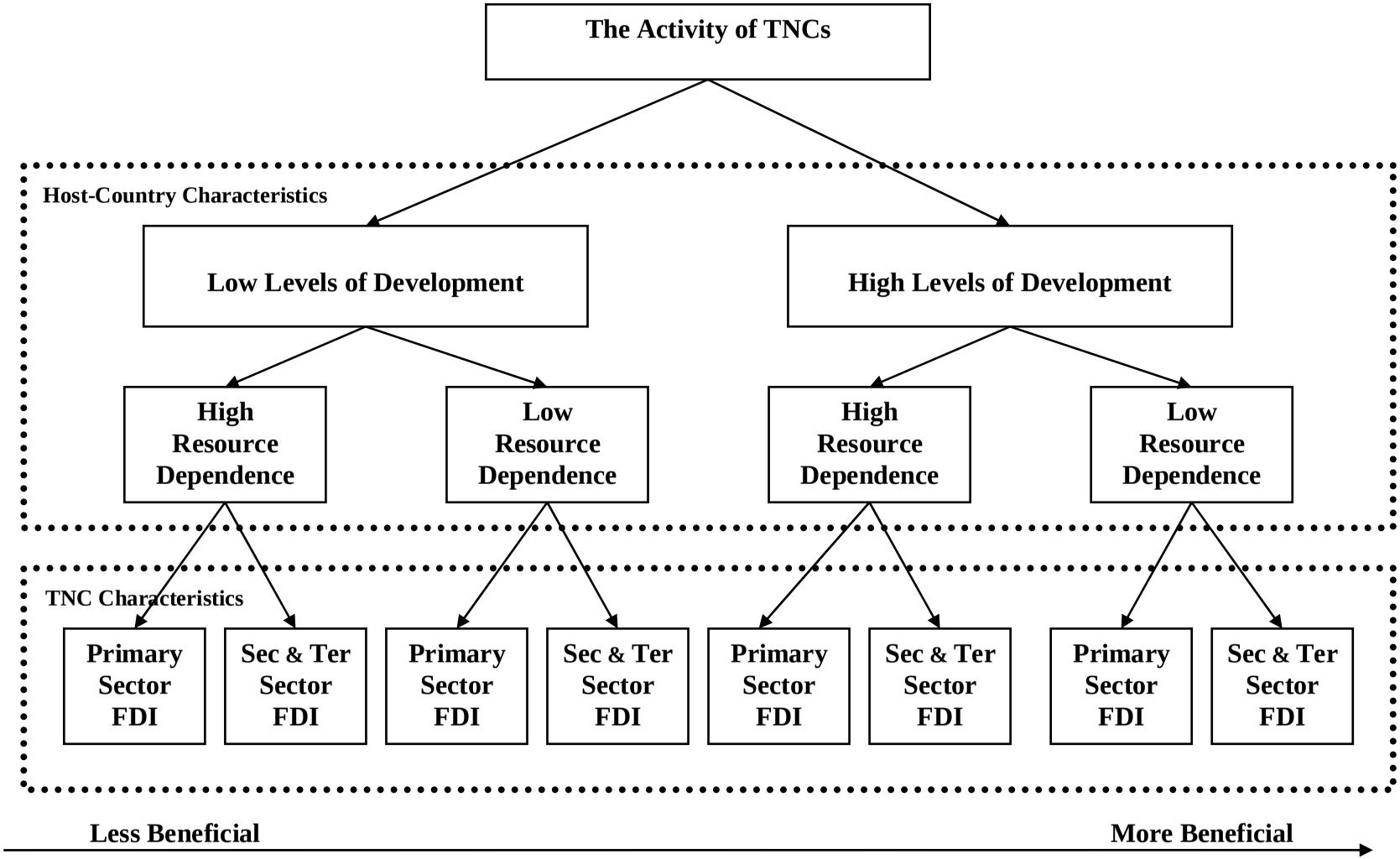
Although researchers have been divided in their preferences regarding these two methodological typologies, scientific arguments have—in the last decade or so—been put forward to reconcile the gap between the two (King et al. 1994:5-6, Ragin 1987:69-71, Ragin 2000:21-42, Rueschmeyer et al. 1992:12-39). That is, a research design combining the two strategies provides a methodological foundation for resisting the seemingly inherent weaknesses and methodological biases mentioned above (Ragin 1987:69-71, Rueschmeyer et al. 1992:12-39). From Part I (Section 4.1) it can be extracted that analyses of the relationship between TNCs, economic development and human rights are also likely to benefit from combining statistical analyses with comparative case studies. The reason for this was justified

in the above mentioned section, and will—along with its attached caveats—only be commented on in this section. The research questions, and the particulars of the research design, however, will be discussed in more detail.

5.1 Research Questions

From the theoretical framework depicted in Figures 1 and 2, and further outlined in section 4.2, it becomes apparent that the relationship between TNCs, host country economic development, and the general development of the host country human rights' conditions is highly relativistic. Moreover, it appears as the more developed a host country is economically, institutionally, and human capital wise, the more likely it is to benefit economically from the presence of transnational corporations and the more likely it is to develop and sustain general values consistent with human rights. That the effects of TNCs also seem to depend on the composition of FDI and the degree of host country natural resource dependence simply underscores the importance of conditionality. Based on the theoretical framework, we might in fact speak of vicious (or less virtuous) and virtuous (or more virtuous) development circles as far as the relationship between TNCs and their hosts is concerned. Vicious—or less virtuous—circles are likely to be present if TNC investment are made in the primary sector in host countries with high levels of natural resource dependence and low levels of development (economic, institutional and/or human capital wise). Virtuous—or more virtuous—circles, on the other hand, are likely to be present if TNC investments are made in the secondary or tertiary sectors in host countries with low levels of natural resource dependence and high levels of development (economic, institutional and/or human capital wise). This conditionality is illustrated in Figure 3 below. E.g., from this illustration it becomes evident that the best-case context—economic growth- and human rights-wise—is when the host-country and TNC characteristics on the right hand side of the illustration is fulfilled. That is, when TNCs invest in countries with high levels of development (economic-, institutional- and human capital-wise) and low levels of resource dependence, and when the investments are made in the secondary and tertiary sectors. It should, however, be noted that the illustration is a simplification of real life complexity and should not be treated in any absolute sense. Thus, one should keep in mind that the historical context might for any host country alter the picture significantly. For instance, some countries

Figure 3: Model of the Conditional Benefits of the Activity of TNCs on Host Countries' Economic Development and Host Countries' Human Rights' Conditions



rich on natural resources do not fit the model as they do very well both economically and human rights wise (e.g., Norway and the Netherlands).

From this theoretical summary, and from the theoretical discussion in Section 4.2 above (see Figures 2 and 3), a few questions stand out as natural points of departure for an empirical investigation. Questions whose answers will help shed light on both the synthesized theoretical framework and on the pro- and anti-TNC theoretical traditions on which it builds. First, do TNCs (i.e., FDI) have a positive effect on the economy and the human rights' conditions on the investment site or in the local community in which they operate (see (2) in Figure 2)? Second, is the effect of FDI on the host-country economy (see (1a) in Figure 2) and the host country's general conditions of human rights (see (1b) and (3) in Figure 2) positive? Third, do the answers to questions 1 and 2 depend on the host country's level of development: economic, institutional and/or human capital wise? Fourth, do the answers to questions 1 and 2 depend on whether the host country is dependent on natural resources or not? Fifth, do the answers to questions 1 and 2 depend on whether the investments are made in the primary sector or not (see Figures 1-3 for questions 3-5)?

5.2 A Combined Methods Strategy

Ideally a research project should be designed to answer all five questions listed above. However, to answer the first question (and the related questions 3-5) of whether the effect of FDI—on the economy and human rights' conditions on the investment site or in the local community in which the TNC operates—is positive or not, becomes problematic when there is no recognized statistical indicator rating these (see (2) in Figure 2).[27] Qualitative reports where TNCs are accused of human rights' abuses are not hard to come by, but hard numbers are. Thus, these direct effects cannot be investigated statistically. They could, though, be tested by way of one or more TNC case studies. However, due to the complexity of the theoretical argument, such a design would need to incorporate many different cases and would easily become overwhelming. This is especially true when the research project is concomitantly engaged with the second question concerning the more general effects. Whether one starts off by analyzing local community effects or the more general effect is,

[27] Although one will be made available in the near future by the 'CIRI Human Rights Data Project' (see Cingranelli and Richards 2005).

however, only a matter of taste, and does not reflect the degree of importance. This thesis will, however, concentrate on the more general questions 2 to 5 above.

The analyses designed to answer question 2 to 5 above combines—as mentioned—quantitative and qualitative methods. However, by combing two independent methods in the same research project one intuitively runs the risk of reaching two irreconcilable conclusions. However, in the Lakatosian perspective adopted in this thesis—building on his notions of "scientific research programs"—the latter concern can be downplayed. Findings that are intuitively contradictory might prove to be complementary when based on different levels of analysis and/or different proxies. This as they might have tested different context specific parts of the argument under scrutiny (see Lakatos 1978:68-73). Thus, a straightforward combination of methods will not necessarily do. However, the proper combination of methods and proxies can help us to answer the research questions outlined above. In this respect it is important—as stressed in Section 4.1 above—to ensure that the statistical analyses address the complexity of the theoretical framework, and that the comparative case studies contain proper use of control groups.

Statistical methods and fuzzy-set methods combined with more in-depth case studies will both be employed. Initially the research questions will be answered by applying statistical tools on a larger set of quantitative data. Separate analyses of the effects of FDI on host country economic growth and levels of human rights will be performed. However, we want to be careful in our selection of proxies since the literature has taught us that different proxies are likely to signify different aspects of the phenomena in question. Hence, in the economic growth analysis it is important to recognize that both the speed of FDI growth and the depth of FDI penetration in the local economy matters, while only the latter will be tested for in the human rights analysis.[28] Overall FDI, FDI broken down at industry level, and FDI in interaction with some host country characteristics, will all be tested for. Moreover, the theoretical framework above and the empirical evidence in the literature suggest that developed and developing countries behave differently with respect to the effects of FDI (Blonigen and Wang 2005:241-42). Separate analyses will, therefore, be performed on the developing countries to see whether or not these effects are in line with the effects from the full sample of countries.

[28] This as there is no theoretical justification for expecting the growth of FDI to have an effect on host countries' levels of human rights. It is the degree of TNC influence that matters, and this is—we argue—best proxied by way of FDI penetration.

The number of observations in the analyses testing the effects of FDI broken down at industry level is, however, very low. The theoretical importance of the industry level approach, nevertheless, justifies a statistical inquiry. As a test of robustness these industry-level FDI data will also be tested by way of fuzzy set methods (see Ragin 2000). A fuzzy-set approach is arguably more suited to handle small-N data. Moreover, it has the additional advantage of allowing for multiple causal combinations, which makes it particularly well-suited to handle the complex theoretical framework adapted here. The fuzzy-set method will—in addition to testing industry-level FDI data—also serve as a test of the robustness in the other findings obtained from the more convectional statistical analyses.

The statistical analyses help us say something about the individual associations attended to in questions 2-5 above.[29] However, they will not be trusted to uncover causality. Fuzzy-set methods are better equipped to handle complex causality through their emphasis on multiple conjunctural causation, and necessary and sufficient conditions (Ragin 2000:203-308). However, the method of fussy sets is explorative in nature as it reveals the combinations of causal conditions linked to the outcome in question. Thus, to unravel the true nature of causality in these causal combinations, comparative case studies are performed (Freedman 1997:156-57, Goldthorpe 2001:1-20, Ragin 1987:69-71, Rueschmeyer et al. 1992:12-39). For reasons of sheer size these case studies will have the character of reality checks more than in-depth cases studies. Thus, four carefully selected case studies will be investigated to uncover potential causality and robustness in the associations previously obtained. In the end—by drawing on all analyses—an attempt will be made to reach an overall conclusion.

[29] To a certain degree, fuzzy-set methods command in-depth knowledge of the cases/variables analysed (Ragin 2000:309-33). This Boolean approach here included analyses of 18 developing countries, and rather than being based on a detailed knowledge of all 18 cases the coding of the variables are more based on a detailed knowledge of the variables themselves, as well as on detailed knowledge of 4 of these 18 cases selected for more in-depth analyses.

Part II

The Analyses

6 The Nature of the Data and the Choice of Estimator

6.1 The Nature of the Data

Data from 84 countries from all five continents are sampled with 5-year intervals from 1980 to 2000 for the economic growth analyses. For the human rights analyses data on 81 countries are sampled annually from 1984 to 2000.[30] Although the original intent was to collect data from as many countries as possible, it was difficult to find data for a number of small and isolated countries,[31] and the generation of foreign and domestic investment indicators further limited the data availability.[32] In general the less developed the country, the less available the data. Needless to say, such asymmetry calls for great caution as far as generalisations are concerned as it might lead to a loss of valuable information at best and severe selection bias at worst (Berk 1983:386-90, King et al. 2001:50-52). After all, one needs to ask oneself whether the sample represents the population of interest. The problem is possibly further exacerbated with the introduction of the FDI composition in the analysis. Data on the composition of FDI is hard to come by even though UNCTAD's World Investment Directory (WID) publishes data on the composition of FDI broken down to primary, secondary and tertiary sector investments (see UNCTAD 2004c).[33] However, for many of the countries there are no data available, or if available only for a limited number of years. This reduces the number of countries analysed for FDI composition effects from 84 (or 81) to 29.[34] Moreover—as there are substantial numbers of missing observations, even among these countries[35]—a multiple imputation (MI) approach has been adopted to check for

[30] The reduced number of countries included in the human rights analyses is a consequence of all predictors being lagged one year.

[31] Isolated due to war and/or regime type (i.e., regime type in general meaning communist or fundamentalist regimes).

[32] The point of departure is de Soysa's work on FDI, democracy and development where both foreign and domestic investment indicators are created to act as control of one another (de Soysa 2003:58-62).

[33] The data used in the analysis presented here are based on data made available by UNCTAD (2004b) on request. This was done to get information in a convenient format for as many countries as possible. See Appendix Table A1 for details concerning quality of the data.

[34] See Appendix Table A1 for details concerning data availability and countries included in the large and small sample respectively.

[35] Note that the missing cases component for each of the three sectoral investment variables is as high as 28%. For the larger data set—excluding the FDI composition variables—the missing value component is only about

the sensitivity of findings in the more common listwise deletion approach used in the standard analyses (see King et al. 2001:51-52 for a discussion of MI versus listwise deletion).[36]

Some caveats are in order, however, before the analyses are initiated. The first concerns the indirect link from FDI to human rights through economic development (see (1a) and (1b) in Figure 2). The caveat arises from the fact that data availability is restricted to a few decades, while it might take generations before potentially positive effects of globalization in general or FDI in particular manifest themselves in human rights' improvements (Howard-Hassmann 2005:39-41).[37] To analyse these long-term processes statistically is, therefore, inherently questionable at best. To the degree that FDI has a significant effect on the human rights' indicators presented below it is therefore not likely be an indirect effect through economic development. It might, however, be that FDI's indirect effect works faster through policy changes induced by the host government's desire to attract FDI.

This leads us directly to the second caveat: a significant association between FDI and economic growth or human rights might also be the result of reverse casual processes (see (1a) and (3) in Figure 2). There is ample evidence in the literature of FDI being attracted by economic development (Choe 2003:54-55), as well as human rights' development (Asiedu 2006:74-75, Jensen 2003:612, Smarzynska and Wei 2000:1-14). The dependence can even be mutual (Chowdhury and Movrotas 2006:17-18). This discussion will be resumed later, and was initiated here only to sharpen our focus as we shortly are about to start interpreting the statistical findings.

4%. For comparison King et al. use a similar MI approach on data sets with a missing component of 22% (2001:65).

[36] The MI approach applied is prepared for STATA by Royston (2004), and here performs 10 imputations for the missing observations (i.e., 10 datasets). The approach builds on van Buuren et al. (1999) and Rubin (1987) and assumes values are "missing at random (MAR)". This statistical term must not be confused with the term "missing completely at random (MCAR)", which would have been the case if no other variable in the data set could help predict why the variable in question is missing. E.g., our most severely missing variables are the compositional FDI variables. A visual check of the countries with missing values on these variables suggested that the original data set was biased against poorer developing countries in general. However, these data are not MCAR as other variables in the data set—like *GDP per capita* and *Secondary Enrolment*—can help predict which cases are likely to have missing data on the composition of FDI data (King et al. 2001:50-51).

[37] A process whereby economic development leads to improved human rights conditions took about 200 years for the Western world, and took about 50 years for South Koran and Taiwan (Howard-Hassmann 2005:39).

6.2 On the Choice of Estimator

There is an ongoing discussion on the choice of proper estimators in economic growth analyses. This discussion concerns the choice of a proper estimator in analyses with lagged dependent variables for panels containing data on a mix of economic and political indicators (see e.g., Beck 2001:271-93, Bond et al. 2001:1-28, Green et al. 2001:441-68). A central feature of this discussion is the trade-off between efficiency and consistency, where the more efficient estimator will become inconsistent if certain assumptions are not met.[38]

A dynamic panel model—like the one described here—can be expressed in equation form as: $y_{it} = \beta_0 y_{it-1} + \beta_1 X_{it} + (\alpha_i + \varepsilon_{it})$, where y_{it} is the dependent variable, y_{it-1} is the lagged dependent variable, X_{it} is one or more independent variables, α_i is the part of the error term that captures all time-constant (or fixed) factors that affect y_{it}, and ε_{it} is the part of the error term that captures all time-varying (or idiosyncratic) factors that affect y_{it}. The sources to efficiency and consistency is—in this respect—all about how the independent variables, the regressors, relate to the two unit effects (i.e., error terms) (Wooldridge 2003:439). The Ordinary Least Square (OLS) or the Random Effects (RE) estimators are more efficient than their more consistent Fixed Effects (FE) and Generalized Methods of Moments (GMM) estimators, and will—in this respect—be consistent as well, as long as the regressors are not correlated with any of the two unit effects. However, this assumption is—under real life conditions—hardly ever met in any strict sense. The following paragraphs aim to illustrate how the assumption can be violated and how these estimators handle the respective violations.

Omitting a relevant time-constant or *fixed–effects* variable from a model will make the efficient OLS and RE estimators inconsistent if the omitted variable is correlated with one or more of the regressors. This bias—sometimes referred to as the *unobserved (or firm) heterogeneity bias*—will manifest itself when, e.g., a historical country-specific phenomenon—not captured by the model—have a constant (or nearly constant) effect on the dependent variable, and the same phenomenon also has a constant (or nearly constant) effect on one or more of the regressors in the model. In this case the regressor in question is

[38] An *efficient* estimator is the one, among a group of unbiased estimators, that produces the minimum variance for a given sample size N. Consistency applies to a single sample, and an estimator is *consistent* if it approaches—in a statistical sense—the true mean as N gets large (note that inconsistency might bias both coefficients estimates and their standard errors) (Gujarati 1995:779-84). See (Scheve and Slaughter 2004) for a good illustration of how different model specifications affect the choice of estimator in an FDI-economic growth perspective.

endogenous as it is correlated with its time-constant unit effect, and the OLS and RE estimators will be rendered inconsistent (Wooldridge 2003:89-95, 439). A consistent estimator in this context is—as the cause of the problem suggest—the less efficient FE estimator (Green et al. 2001:442-46, Wooldridge 2003:439).

However, even if tests suggest that the unit effects—time constant or not—are correlated with one or more of the explanatory variables, the cure (i.e., FE) can be worst than the illness as the FE estimator produces very inefficient estimates for slowly or rarely changing variables (i.e. variables with low "within" variance) (Beck and Katz 2001:492-93, Wooldridge 2002:286). This clearly applies for analyses in political science as political indicator—like, e.g., democracy—often exhibits such characteristics (Beck and Katz 2001:492-93). Another feature of the FE estimator is that it cannot analyse variables that do not change over time as these variables are eliminated in the estimation process (Wooldridge 2003:484). The latter two problems are also recognized by Plümper and Troeger (2005) who propose a cure as they design a hybrid three-stage FE estimator. This estimator—on the one hand—estimates slowly or rarely changing variables and time-constant variables by way of OLS estimation (where both their between and within variance is exploited). Variables with sufficient within variation are—on the other hand—estimated by way of FE. This estimator—labeled Fixed Effects vector decomposition (FEVD)—is necessarily less efficient but more consistent than the OLS estimator and more efficient but less consistent than the FE estimator (Plümper and Troeger 2005:8-10).[39]

The presence of a lagged dependent variable—the feature creating the dynamism in the model—makes the picture a bit more complicated though (even if the idiosyncratic unit effects are not serially correlated). A lagged dependent variable creates the same effect as an omitted time-constant variable as it will be correlated with the time-constant unit effect. Hence, the OLS and RE estimator is rendered biased and inconsistent (Baltagi 2001:130-31). The FE estimator would be consistent if this was the only effect induced by the lagged dependent variable. However, as the lagged dependent variable—by way of construction—also is correlated with the idiosyncratic unit effect, the FE estimator will be biased, and its consistency will depend on a large number of observations in the time dimension (Baltagi 2001:129-31, Kiviet 1995:53-55). Moreover, the FE estimator will not be consistent in the

[39] The Fixed Effects vector decomposition estimator seems to have problems handling the many slowly or rarely changing variables. That is, when many of the regressors have a between/within variation ratio above 2.5, the estimator seems to overestimate the explanatory power of the model, and hence explain too much of the variation in the data. Consequently, the analyses based on this estimator were disregarded.

presence of *endogeneity* created by any time-varying omitted variables being correlated with one or more of the regressors. Neither will the FE estimator be consistent in the presence of *endogeneity* created by *simultaneity*, where a simultaneity bias arises when one or more of the regressors is jointly determined with the dependent variable (Wooldridge 2002:284-85, Wooldridge 2003:484, 525-31). Instrument variable (IV) techniques can, however, ensure consistency under such conditions. One IV estimator, the system-GMM estimator, combines *first differencing*—to deal with unobserved country specific fixed effects—with lagged levels and lagged differences of regressors used as instruments—to deal with the endogeneity of all regressors (the lagged dependent variable included).[40] However, the consistency of the system-GMM estimator rests on two assumptions: 1) on the validity of the instruments as far as over-identifying restrictions is concerned (i.e., whether the instruments, as a group, appear exogenous); and 2) on the idiosyncratic unit effects not being serially correlated (Bond et al. 2001:1-4, Carkovic and Levine 2005:199-202). Note, however, that although the system-GMM estimator has substantially reduced the finite (or small) sample bias found to cause serious efficiency problems for the difference-GMM-estimator in analysis with slowly or rarely changing variables, part of the problem still remains (Blundell and Bond 1998:138-39, Bond et al. 2001:3).[41] Although the substantial issues may be resolved in this way, there remain some practical difficulties. In small samples, the number of instruments is restricted by a limited number of observations, which again has consequences for how many variables can be treated as endogenous (Roodman 2006b). The latter will be further elaborated on in the analysis below. For now, these substantial and practical finite sample issues—along with issues discussed above—argue for multiple estimators being employed to check for the sensitivity of the issue.

There is, however, another important issue that influences the choice of estimator. In order to allow for inferences about the larger population—from which the data are sampled—three options are available. Two of these are related: one is that the data are not really a sample but rather a (close to) perfect representation in the cross-section dimension; the other is where the sample is genuinely random. Due to our poor-country bias, none of these two options are, however, legitimate in the analyses presented below. Hence, we must rule out the

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[40] Instruments for regressors are lagged levels (e.g., X_{t-2}, X_{t-3}, ..) and lagged differences (e.g., ΔX_{t-2}, ΔX_{t-3}, ..) of the corresponding regressors (Bond et al. 2001:5-10, Carkovic and Levine 2005:199-202).

[41] The GMM estimator applied here incorporates a finite sample correction that further alleviates the infinite sample bias (Windmeijer 2005), and the forward orthogonal deviation option to preserve sample size in panels with gaps (an alternative to differencing) (Roodman 2006a:1).

fixed effects estimator. This leaves us with the third option: to choose an estimator that is equipped to allow for inferences about the population when the sample is non-random. Both the RE and the system-GMM estimator can handle this context as they both compute coefficients and standard errors based on between—as well as within—unit (e.g., country) variability (Beck 2001:284, Hsaio 2003:43). Moreover, although a lagged dependent variable induces endogeneity problems for the RE and OLS estimators, it can at the same time—at least to some extent—alleviate the endogeneity induced by autocorrelation (i.e., serial correlation in the unit effects). This is because a lagged dependent variable improves the specification of the model by accounting for historical factors (time constant or not) that are difficult to account for in other ways (Beck and Katz 1996:9-10, Wooldridge 2003:300). Thus, the choice seems to be between the efficient (but not so consistent) RE estimator and the consistent (but not so efficient) system-GMM estimator. However, since the small sample problem incapacitates the system-GMM estimator in many of the analyses called for, the RE estimator is considered the proper choice of estimator in these panel analysis. This is because of its favourable finite sample, inference, and slowly or rarely changing regressor capabilities. However, analyses utilizing alternative estimators will also be performed to check for the sensitivity of the estimator issue (i.e., OLS with Newey-West standard errors, Random Effects with AR option, and—where possible—system-GMM).

7 Statistical Analysis: The Economic Growth Analysis

7.1 Outlining Models and Analyses

Researchers have to be careful about how phenomena are operationalised, as different proxies are likely to signify different aspects of the phenomena in question. Hence, we want to make sure that the proxy we choose is the one that best represent our theory (see de Soysa and Oneal 1999:767-75 for a discussion of the importance of proxies in the FDI-Economc Growth debate). The models and analyses presented below build on the contribution made by de Soysa (2003:58-66), where the effect on economic growth from two separate proxies of FDI are analysed in an endogenous growth model. That is, both how fast FDI grows (FDI Investment Rate) and how deeply FDI penetrates the local economy (FDI Capital Penetration) is important. The latter is the FDI-proxy historically used by dependency theorists to measure dependency, and if any of our two proxies should display a negative association with economic growth we expect it to be the penetration measure (see de Soysa 2003:51-58). In the Lakatosian perspective the two proxies cannot be expected to yield similar findings since they represent different dimensions of FDI, but to the extent that they do this will add robustness to the findings obtained.

Older—classical and neoclassical—growth theories stressed that the factors affecting growth, capital, labour and land were all exogenous and that the return to capital were diminishing. Hence, poor countries would grow faster than rich countries. However, later—endogenous—growth theories argue that the diminishing returns to capital can be counteracted by technological innovations and human capital formation (Kurz and Salvadori 2003:13-21, Thirlwall 2003:126-85). Moreover, the potential beneficial economic effects of FDI has—in this perspective and as demonstrated above—also been linked to the availability or level of human capital in the host countries (also see, e.g., Borenzstein et al. 1998:133-34, de Soysa and Oneal 1999:769, Makki and Somwaru 2004:795-96). Thus, the importance of growth as endogenous and not exogenous is essential.

In his study, de Soysa controls for all the usual suspects, such as domestic investments, market size, trade, initial economic standing, and human capital. The rational for the latter is that the productivity of capital may be affected by host country conditions, but also that host country conditions can be a powerful determinant for TNC when investment decisions are made. Initial analyses attempt to replicate this model with updated data, and

the model is thereafter—based on the theoretical examination in Part I—extended to include institutional quality and resource dependence, as well as the influence of civil war as added controls. These models can be stipulated as follows (the justifications for the different controls will be given below):

$$\text{Economic Growth}_{it} = ß_0$$
$$+ ß_1\text{FDI Investment Rate}_{it} + ß_2\text{Domestic Investment Rate}_{it}$$
$$+ ß_3\text{FDI Capital Penetration}_{it} + ß_4\text{Domestic Capital Penetration}_{it}$$
$$+ ß_5\text{Market Size}_{it} + ß_6\text{Trade}_{it} + ß_7\text{Initial Economic Standing}_{it} + ß_8\text{Human Capital}_{it}$$
$$+ ß_9\text{Dummy 1980-85}_{it} + ß_{10}\text{Dummy 1985-90}_{it} + ß_{11}\text{Dummy 1990-95}_{it}$$
----------extended model----------
$$+ ß_{12}\text{Institutional Quality}_{it} + ß_{13}\text{Fuel Resource Dependence}_{it}$$
$$+ ß_{14}\text{Non-Fuel Resource Dependence}_{it} + ß_{15}\text{Civil War}_{it}$$
$$+ (\alpha_i + \varepsilon_{it})$$

, where α_i is the time-constant (or fixed) unit effects, and ε_{it} is the time-varying (or idiosyncratic) unit effect.

Moreover, the same theoretical examination makes it fruitful to test a model breaking up the FDI variables into their—on the one hand—primary sector components and—on the other hand—secondary and tertiary sector components.[42] This model will, however, due to data constraints described in Section 5.1 above, be tested on a smaller set of countries. The same data constraints also warranted tests on multiple imputed versions of the data sets for these two extended models. This model can be stipulated as follows:

$$\text{Economic Growth}_{it} = ß_0$$
$$+ ß_1\text{Primary Sector FDI Investment Rate}_{it}$$
$$+ ß_2\text{Secondary and Tertiary Sector FDI Investment Rate}_{it}$$
$$+ ß_3\text{Domestic Investment Rate}_{it}$$
$$+ ß_4\text{Primary Sector FDI Capital Penetration}_{it}$$
$$+ ß_5\text{Secondary and Tertiary Sector FDI Capital Penetration}_{it}$$

[42] There justification for this categorization is based on the theoretical investigations suggesting that there is a dividing line between these two groups—as far as the resource curse and general spillover-effects concerns—that cannot be matched by a similar line between secondary and tertiary sector investments.

$+ ß_6\text{Domestic Capital Penetration}_{it}$

$+ ß_7\text{Market Size}_{it} + ß_8\text{Trade}_{it} + ß_9\text{Initial Economic Standing}_{it} + ß_{10}\text{Human Capital}_{it}$

$+ ß_{11}\text{Dummy 1980-85}_{it} + ß_{12}\text{Dummy 1985-90}_{it} + ß_{13}\text{Dummy 1990-95}_{it}$

$+ ß_{14}\text{Institutional Quality}_{it} + ß_{15}\text{Fuel Resource Dependence}_{it}$

$+ ß_{16}\text{Non-Fuel Resource Dependence}_{it} + ß_{17}\text{Civil War}_{it}$

$+ (\alpha_i + \varepsilon_{it})$

, where α_i is the time-constant (or fixed) unit effects, and ε_{it} is the time-varying (or idiosyncratic) unit effect.

As there are strong indications of the effects of foreign capital being conditional on host country development characteristics (like level of economic development, quality of institutions, or level of human capital, as well as on its level of resource dependence), we will also test for the interactions between FDI and these variables. However, before we undertake the analyses, it is important to discuss the operationalisation and the expected effects of the different variables included in the models.

7.2 The Dependent Variable

As the investigation was launched by replicating de Soysa (2003: 123-4), I follow as closely as possible his lead in the construction of all proxies. Hence, 10-year and 5-year average economic growth rates are constructed as linear fits of the annual growth rates (i.e., least square growth) so as to minimize the effects of extreme points (see Appendix A, Table A1 for details on the construction and sources for all the variables applied).

7.3 The Independent Variables and Their Expected Effects

Although time is denoted as *t* (and not, e.g., *t-5*) in the models above, the independent variables will be lagged 5 years or averaged over the 5-year period depending on prior operationalisations (de Soysa 2003:58-62) and the availability of the data.[43]

[43] In addition to being theoretically sound, lagging variables will allow us to control for opposite causality (i.e., whether a significant correlation is the result of the dependent variables having an effect on the regressors rather than the regressors having an effect on the dependent variables) since the mechanism works through time.

7.3.1 Foreign Direct Investment

Foreign Direct Investment (FDI), the proxy for TNC presence, is operationalised by way of both flows (annual rate of change in stocks, i.e. FDI Investment Rate or FIR for short) and penetration (stock of FDI to GDP ratio, i.e., FDI Capital Penetration) (see Appendix A, Table A1 for details). The rationale for the former is to capture the short-term effect of FDI (i.e., the effect of foreign capital influx), while the rationale for the latter is to capture the long-term effects of FDI (i.e., the effect of foreign capital as it accumulates in—or penetrates—the domestic economy).

These proxies and their interpreted effects—that for de Soysa (2003:49-66) yielded positive effects of flows and insignificant effects of penetration—are, however not undisputed. Dependency theorists have for decades argued—both theoretically and empirically—that flows might have a short term positive effect, while the long-term effects of foreign economic penetration are adverse (Bornschier and Chase-Dunn 1985:80-106, Boswell and Dixon 1990:540-59, Dixon and Boswell 1996a:543-62, Dixon and Boswell 1996b:576-84). They found their evidence by way of operationalisations identical or similar to the ones herein applied, but their interpreted effects were—for two reasons—ultimately proven false (de Soysa and Oneal 1999:767-75, Firebaugh 1992:117-18, Firebaugh 1996:563-64). First, when the foreign investment rate (flow/stock) and foreign capital penetration (stock) is included in the same regression equation, a negative penetration coefficient should be interpreted as a denominator effect (in FIR) and not as evidence of the adverse effects of penetration (Firebaugh 1992:117-18).[44] Second, a comparison of foreign and domestic investment should be based on a dollar for dollar rather than by a percentage for percentage comparison (Firebaugh 1996:565-66).[45] However, a more recent operationalisation of TNC

[44] Consider that the foreign investment rate is essentially a flow/stock measure, while foreign penetration is essentially a stock measure. Then, holding the stock constant, the faster the flow the greater the investment rate. Holding the flow constant: the larger the stock the smaller the investment rate. Thus, a positive flow coefficient and a negative stock coefficient in the same regression equation indicate a beneficial investment effect: low stocks yield high FIR (or flow to stock ratio) and high FIR is associated with high growth. Conversely, a negative flow coefficient and a positive stock coefficient indicate an adverse investment effect: high stocks yield low FIR (or flow to stock ratio) and low FIR is associated with low growth. The former beneficial investment scenario was the finding of dependency theorists (Firebaugh 1992:117-18).

[45] Although the coefficients of domestic investments (flows or stocks) in general are larger than those of foreign investment, so are their absolute levels of capital. Thus, a one percent increase in domestic investment adds much more money to the economy than a percentage increase in foreign investment. The productivity of foreign versus domestic investment should, therefore, be based on a dollar for dollar comparison. Such a comparison gauges foreign investment as more productive than domestic investment (de Soysa and Oneal 1999:775, Firebaugh 1996:565-66).

presence—FDI concentration—give some impetus to their main argument as FDI concentration is found to be negatively associated with economic growth (Kentor and Boswell 2003:308-11).

FDI concentration—is operationalised by Kentor and Boswell (2003:304-06) as the share of FDI stock accounted for by the top investing country—and captures the *structure* of dependence rather than the *overall level* of dependence measured by penetration. The theoretical argument is tied to the autonomy of the state where less concentration is argued to give the local government more leverage in terms of control over natural resources, encouraging links between foreign and domestic sectors, and the general development and diversification of the local economy. In the same way that we argued for distinguishing primary sector investments from secondary and tertiary investments, there are arguably three reasons why it is better to capture the structural aspect of dependence by way of the composition of FDI (rather than by way of concentration).[46] The first reason is that the causal link between FDI composition and its hypothesized positive and negative effects are more direct and transparent than the link between FDI concentration and its effect. After all, the former is about the degree of positive linkages between foreign and domestic sectors and how these depend on the composition of FDI, while the latter is more about the opportunities that state autonomy provides to create the same linkages. These opportunities are, however, here argued to depend on the composition of FDI. Second, FDI concentration—at least as applied by Kentor and Boswell (2003:304-06)—focuses on the concentration of penetration only, while FDI composition gives us the opportunity to test for differences in effects for flows as well as for penetration. Third, FDI composition—when broken down at the industry level—is a measure of both the structure and level of dependence, while FDI concentration is all about structure. Thus, although FDI concentration can be combined with a standard penetration measure, parsimony argues for the all-in-one package measure. The structure of dependence is, as a consequence, operationalised as FDI composition broken down at the industry level. The dividing line—as far as the resource curse and general spillover effects are concerned—is between, on the one hand, a primary sector component and, on the other hand, a secondary and tertiary sector component. The effect on economic growth is, for reasons outlined in the theoretical framework above and based on case study evidence (Akinlo 2004:636-37),

[46] The structure of dependence as captured by the FDI concentration measure is—at least to some extent—similar to the structure as captured by the primary sector penetration measure applied in the analysis breaking down the composition of FDI into industrial sectors. This is because, intuitively, both FDI concentration and primary sector penetration are highest in countries that are abundant in natural resources. The degree of

expected to be more positive for secondary and tertiary sector investments than for primary sector investments.

Besides controversies surrounding proxies, the choice of an estimator can also influence the findings. Carkovic and Levine (2005:195-220) are critical to the performance of most estimators applied to standard growth models, and—for reasons indicated in Section 5.2 (On the Choice of Estimator) above—they argue in favor of the system-GMM estimator. In doing so, they find—contrary to the conventional view—that FDI inflows exercise no significant influence on economic growth.[47] This finding is—by applying the same estimator—supported by Kosack and Tobin (2006:236-37). This calls for sensitivity analysis and caution as far as the choice of estimator is concerned.

7.3.2 Domestic Investment

The Domestic Investment Rate and Domestic Capital Penetration are included to control and check for the potential difference in productivity between foreign and domestic investment. They are operationalised in the same fashion as the investment measure referred to above (see Appendix A, Table A1 for details). Dependency theorists found that, percentage for percentage, domestic investments were more productive than foreign (Dixon and Boswell 1996a:551-52), while a dollar for dollar comparison has been subsequently argued to be more appropriate. In the latter context, foreign investment productivity outperforms domestic investment productivity (de Soysa 2003:62-66) (see Appendix A, Table A1 for details).

7.3.3 Market Size

Market Size is included as a control for domestic demand or economics of scale, and is operationalised as total GDP (logged) (see Appendix A, Table A1 for details) (de Soysa 2003:61). The size of the market also acts as a control for the fact that crowding out effects are more likely in smaller economies since larger economies are argued to leave enough space for domestic firms to grow (Long 2005:334).

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correlation between FDI concentration as of 1967 (data from Kentor and Boswell (2003:307)) and primary sector penetration as of 1980 (data herein applied) is about 0.40. Note that this is based on only eight observations.

[47] The flow versus penetration research referred to immediately above in general applies to different versions of the OLS estimator.

7.3.4 Trade

Trade is included as a control for world market interaction and trade dependence and is operationalised as total trade (exports and imports) to GDP (logged) (see Appendix A, Table A1 for details) (de Soysa 2003:60-61). The gains from trade can be both static—gains from comparative advantage—and dynamic—gains from market access and impact on production capabilities (Thirlwall 2003:626), where the latter produce gains similar to those of FDI as skills and technologies can be acquired.

7.3.5 Initial Economic Standing

Initial Economic Standing is included to capture the theoretical expectations of convergence where poor countries are expected to grow faster than rich countries due to the diminishing return of capital. It is operationalised as (logged) GDP per capita (PPP) (see Appendix A, Table A1 and de Soysa (2003:61), inasmuch as purchasing power parity data are well suited for comparisons across regions (UNDP 2000b:144-45).

7.3.6 Human Capital

The rational for including Human Capital as a control is—on the one hand—that human capital might affect the productivity of FDI, and—on the other hand—that FDI might be attracted by host countries' level of human capital. de Soysa operationalised human capital by way of a principal component factor analysis on school enrolment, fertility, and under-five mortality rates (de Soysa 2003:60-61). This factor correlates by 0.92 with gross secondary school enrolment as defined in Appendix A. Thus, in the replication analysis and throughout the thesis, human capital is operationalised as gross secondary school enrolment only. Education is argued to have positive effects on both the growth and the distribution of income (Gundlach et al. 2004:92-102) (see Appendix A, Table A1 for details).

7.3.7 Time

Time dummy variables are commonly included to check for period-specific shifts as they summarize the prevalent global conditions at a given period of time and reflect worldwide recessions and booms, changes in the allocation and cost of international capital flows, and technological innovations (Carkovic and Levine 2005:200, de Soysa 2003:62-66, Loayza and Soto 2002:14-15).

7.3.8 Institutional Quality

Institutional Quality is the first of four controls added to de Soysa's model. All four controls were included to better reflect the theoretical framework outlined in Part I. The rationale for including institutional quality as a control parallels to some extent the rationale for including human capital. In other words, institutions—on the one hand—might affect the productivity of FDI, and—on the other hand—FDI might be attracted by the quality of host country institutions. The former relationship is supported in the theoretical framework above, while the latter relationship—of opposite causality—also finds support in the literature (Globerman and Shapiro 2002:1914-16, Li and Resnick 2003:202-03, Smarzynska and Wei 2000:1-14). There are, however, important distinctions between human capital and quality of institutions as the former refers to the skill of the work force, while the latter refers to the efficiency of FDI operation as far as the interaction between the TNC and the host government is concerned. The quality of institutions is operationalised as the combined measures of bureaucratic quality and corruption (see Appendix A, Table A1 for details).

7.3.9 Resource Dependence

To the extent that resource dependent countries suffer from the resource curse—as outlined in Part I, e.g., weak institutions and a weak non-resource sector—it seems plausible to expect the economic benefits of FDI to be less than in a more benign context. Moreover, to the extent that the resource curse manifests itself as corruption in state institutions, it seems plausible to expect that the presence of TNCs only serve to exacerbate the problem as they offer another

source of corruption through their economic resources.[48] Hence, resource dependence is an important control for FDI in general and primary sector FDI in particular. That is, the argued negative effect of primary sector investments on the dependent variable could be spurious as this effect might be hiding the bad economic development records of resource abundant economies. Note also that colonies that implemented resource-extractive-oriented institutions inherited institutions detrimental to economic development (Acemoglu et al. 2001b). The operationalisation of resource dependence here reflects the literature and makes a distinction between Fuel (i.e. mostly oil) and Non-Fuel Resource Dependence (their respective shares in exports) (see e.g., Ross 2001:338) (see Appendix A, Table A1 for details).

7.3.10 Civil War

A Civil War dummy acts as a control for the detrimental effect on growth exercised by severe internal conflict (Murdoch and Sandler 2004:150). The dummy is coded 1 for countries that have experienced 25 battle related deaths in any year within the 5-year period considered (see Appendix A, Table A1 for details).

7.4 Data Screening

The importance of data screening cannot be overstated as the data applied for a given model can produce a bias that invalidates the assumptions of the estimator, and, hence, the results of the analysis (see, e.g., Hamilton 1992:116-36, Pennings et al. 1999:201-18, Wooldridge 2002:653-57). This section will provide a short discussion on the data screening, and comment on how this screening has influenced the proxies, the model, the potential estimators, as well as the future conclusion.

The analysis of economic growth is not one single analysis, but rather it is complementary analyses on different sets (or subsets) of data. First, the analysis replicates de Soysa and will be performed on an updated dataset reconstructed according to instructions provided by the author (2003:123-24). Second, another analysis will be performed on an updated model with variables constructed along the same lines as in the replication model. Due to the data availability of the added variables, this analysis and the subsequent ones will

[48] That is not to say that TNCs are the source of corruption or that the impact of TNCs are necessarily negative, only that they are likely to contribute to the problem of corruption once present.

be performed on a shorter time-span (and shorter time intervals) than the replication analysis. Analyses including all countries as well as a subset of countries—including developing countries only—will be performed. Third, final analyses will be performed on a smaller version of the previous dataset, reduced due to the low availability of data on the FDI variables when broken down to their industrial composites. Analyses including all countries as well as a subset of countries—including developing countries only—will also be performed on this reduced version of the dataset. Obviously, the screening of the data and the subsequent discussion need to reflect analyses performed on all sets and subsets of data (see Appendix A—Tables A2 to A6—for descriptive statistics for these datasets).

The data screening process is comprised of evaluations of potentials sources of bias including analyses of missing data, influential observations, normality, multicollinearity, heteroscedasticity, autocorrelation, linearity and model specifications.[49] For the analyses in general the screening indicated that one or more severe outliers highly influenced the analysis in general and the foreign investment rate (FIR) and the primary sector penetration in particular. As a result, these observations were excluded from the analysis.[50] The screening furthered revealed that the trade variables would benefit from a log transformation. Even without the excluded observations some minor problems related to non-normality, heteroscedasticity and autocorrelation were encountered, suggesting the use of panel estimators (like Random Effects or system-GMM) or OLS with Newey-West standard errors

[49] All analyses were performed in STATA and commands used are referred to in parenthesis. *Influence analysis* is an analysis of outliers through graphical indicators like leverage-versus-squared-residual plot (lvr2plot), added-variable plots (avplots), and statistical indicators like Cook's D statistics (cooksd), DFITS (dfits) statistics and scatter plots of DFBETAs (dfbeta). Tests of *normally distributed residuals* are comprised of visual test like histograms, kernel density plots (kdensity), quantiles of variable versus quantiles of normal distribution plots (qnorm), standardized normal probability plots (pnorm), and different statistical tests of normality, skewness and kurtosis (sktest, iqr and swilk). Tests of *multicollinearity* analyse correlation matrixes and VIF-tests. Tests of *heteroscedasticity* are comprised of visual tests like residual versus fitted plots (rvfplot), and statistical tests like White's general test (whitetst) and Breusch-Pagan/Cook-Weisberg (hettest) test. Tests of *autocorrelation* look at correlations in residuals over time and Wooldridge test for serial correlation in panel-data models (xtserial). Tests of *nonlinearity* detect nonlinear patterns by way of plotting the standardized residuals against each of the regressors in the regression model. Tests of *model specifications* are comprised of statistical tests like the specification link test for single-equation models (linktest) and Ramsey's regression specification error test for omitted variables (ovtest).

[50] For the replication analysis three observations were excluded (Democratic Republic of Congo (Zaire) in 1980, Tunisia in 1980 and Kuwait in 1980 were all excluded due to high influence in general and high influence on FIR in particular). For the full dataset analyzing the effects of overall FDI, Syria in 1985 was excluded (high influence on the FIR), while Papua New Guinea in 1995 was excluded (due to high influence on primary sector penetration) from the restricted dataset analyzing the effects of FDI composition (but only in the analysis where all countries were included, i.e., not the developing country analysis). The stability of these analysis (excluding these cases) was confirmed by comparing the original analysis with an analysis excluding top 10 influential observations (confirmed by both Cooks'D and DFITS), as well as with an analysis excluding these 'actually excluded' influential observations only.

that can better account for these sub-optimal OLS features (see Section 6.2 for discussion on estimators).

In addition to the problems outlined above, the screening of the restricted dataset—used in the analyses of the effects of FDI composition—also revealed some potential problems with multicollinearity. Primary sector penetration and Non-Fuel Resource Dependence are highly correlated when all countries are included as well as when we look at the developing countries alone (see Appendix A—Tables A7 to A11—for the correlation matrixes). The original measure of Non-Fuel Resource Dependence (labeled alternative measure in the matrix tables) comprised of 'ores and metals' only and yielded correlations of 0.90 with Primary Sector FDI Capital Penetration. This resulted in instability as far as these two variables were concerned.[51] Creating a new measure by combining 'ores and metals' with 'agricultural raw materials' only slightly reduced the correlations (0.83-0.87) but nevertheless produced the stability missing with the originally intended measure, and this without compromising the theoretical foundation for the operationalisation of the variable. Note also that initial economic standing and human capital are highly correlated (as expected) without causing any instability. Still, caution should be exercised when drawing conclusions based on analyses conducted with the restricted dataset, as few observations—at least to some extent—make them sensitive to outliers and model specifications.

7.5 The Analysis

The economic growth analysis (see (1a) in Figure 2) builds on de Soysa's contribution (2003:46-66), which again is part of a larger discourse including both dependency theorists (Dixon and Boswell 1996a:543-62, Kentor and Boswell 2003:301-13) and neo-liberals (Borenzstein et al. 1998:115-35, Firebaugh 1996:563-75). This empirical investigation, therefore, commences with a replication of de Soysa's contribution. Following the replication analysis, the effects of FDI on economic growth will be tested on a new set of data constructed to test a theoretically-founded updated version of de Soysa's model. For this updated model the overall, compositional, and conditional effects of FDI will be tested and

[51] Instability here refers to the stability of coefficients and the significance of these two variables when leaving the one or the other out of the analysis. Instability also refers to how stable the models are as far as outliers are concerned. Note that the new measure of Non-Fuel Resource Dependence makes the VIF values drop from around 10 to about 5 for the analyses including all countries, while the VIF-values in the Developing country analyses are stable or increase slightly. The VIF values for the other variables regardless of the Non-Fuel Resource Dependence measure remain stable at a comfortable level (between 5 and 8 for the highest values).

described before the effects of some sensitivity analyses will be discussed. The economic growth analyses will end with a more thorough discussion of the effects of FDI.

7.5.1 The Replication

The result of the replication analysis is displayed in Table 3 below. Models A and B provide results as presented by de Soysa (2003:Table 3.4 Model 3 and 6), while Models C and D are straightforward replication of Models A and B respectively (with updated data, but the same estimator – OLS with robust standard errors). The findings when comparing Model A with Model C are very similar for the investments variables, and the only difference for the other variables is that Trade is now insignificant (see text below table for specifics on models and variables). By logging the investment variables—pulling in the outliers—Model E also makes FDI Capital Penetration significant. Further investigations, however, reveal that the significance of logged FDI Capital Penetration hangs on DIR being logged as well. Although Model F displays the analysis of the developing countries only, it is strikingly similar to the results from Model C, which includes both developed and developing countries. Model G replicates Model B, replacing the robust OLS estimator with a Random Effects estimator. This has little impact on the results. Model H displays a replication with data on the same time-span and interval as applied throughout the rest of the analysis presented below. That is, the time-span is now reduced from 1970-1999 to 1980-2000, and the intervals are reduced from 10 to 5 years. The findings remain largely in the same range as the previous non-interaction models. Thus, FDI Investment Rate, Domestic Investment Rate, Domestic Capital Penetration, Market Size, and Human Capital are all positively associated with growth, and statistically significant. There is also support for the argument that poorer countries are growing faster than richer countries, as Initial Economic Standing is negatively associated with growth, and statistically significant. However, FDI Capital Penetration is now positively and significantly associated with growth. This is interesting, as prior findings on the effects FDI capital penetration on growth have been mostly negative or insignificant (see, e.g., de Soysa and Oneal 1999:771-75, Dixon and Boswell 1996a:551-54, Firebaugh 1996:569-72, Kentor 1998:1030-43). Reasonable explanations could be shorter time-intervals, shorter time-span, and/or a fewer countries analyzed. Nevertheless, a closer examination—as displayed in Table 4 and Table 5 below—revel that this significant effect from FDI Capital Penetration is

not robust against alternative model specifications. Concerning the differential productivity of foreign and domestic capital, the data suggest flow wise—dollar for dollar—that foreign capital is 2.6 times more productive than domestic capital when analyzing all countries, and 2.4 times more productive when analyzing developing countries only.[52] These productivity findings match those of de Soysa (2003:62).

The theoretical outline in Part I stressed that the effects of FDI on economic growth are conditional on a range of host country conditions. de Soysa also argued for conditional impacts and found—as indicated by Model B—that the effect of FDI Investment Rate on Economic Growth was more positive for higher levels of Human Capital (2003:64-66). This interaction was replicated in Model D, but not by the new data set created to test the updated models based on the theoretical framework outlined above (see Section 7.5.4 below).[53] Along with the significant effect of Human Capital when the interaction is not included, it nevertheless testifies to the endogenous character of the model. That is, diminishing returns to capital can be counteracted by human capital formation. Let us now take a closer look at how FDI relates to growth in the updated models.

[52] From Table 3 it can be seen that the coefficient for FIR is less than that for DIR. However, a percentage by percentage comparison is not very fruitful since a one percentage increase in the domestic investment rate constitutes more influx than a one percentage increase in the FDI Investment Rate. The median value (the median is less influenced by extreme vales than the mean) of Domestic Capital Penetration is 32.4 and 32.1 times greater than the median value of FDI Capital Penetration for all countries and developing countries respectively. Thus, the dollar for dollar comparison between the two coefficients (Model B) is the ratio between the coefficient for DIR (0.43) and the product of the coefficient for FIR and the relative size of the two forms of penetration (0.035x32.4=1.134). This suggests that one dollar of foreign investment boosts growth 2.6 times more than a similar amount from domestic sources (de Soysa 2003:62).

[53] The interaction also holds for developing countries only, and for a robust Random Effects estimator. The interaction between Domestic Investment Rate and Human Capital is—as it was for de Soysa—found to be insignificant.

Table 3 – Economic Growth:
Replication Analyses of de Soysa (2003:62-66)

	Model A de Soysa 10-year 1970-1999 Robust OLS	Model B de Soysa 10-year 1970-1999 Robust OLS	Model C Replication 10-year 1970-1999 Robust OLS	Model D Replication 10-year 1970-1999 Robust OLS	Model E Replication 10-year 1970-1999 Robust OLS	Model F Replication 10-year 1970-1999 Robust OLS	Model G Replication 10-year 1970-1999 Robust RE	Model H Replication 5-year 1980-2000 Robust RE
FDI Investment Rate (FIR)	0.034**	0.063***	0.035***	0.029***	1.34***	0.033***	0.035***	0.041***
	(2.4)	(4.8)	(2.94)	(2.59)	(4.15)	(2.70)	(3.20)	(2.93)
Domestic Investment Rate (DIR)	0.42***	0.43***	0.43***	0.38***	4.50***	0.44***	0.41***	0.45***
	(8.9)	(9.9)	(9.42)	(7.20)	(10.32)	(8.73)	(8.89)	(8.50)
FDI Capital Penetration	-0.0042	0.0048	0.0075	0.017	0.61***	0.0034	0.0098	0.030*
	(-0.47)	(0.61)	(0.56)	(1.37)	(3.62)	(0.24)	(0.68)	(1.75)
Domestic Capital Penetration	0.0044***	0.0034***	0.0063***	0.0056***	1.63***	0.0059***	0.0079***	0.0067***
	(3.1)	(3.0)	(3.63)	(3.41)	(4.62)	(3.06)	(4.05)	(3.76)
Market Size	0.28***	0.27***	0.30***	0.27***	0.32***	0.31***	0.35***	0.48***
	(3.7)	(3.8)	(3.27)	(3.01)	(3.44)	(2.80)	(2.79)	(3.67)
Trade	0.007**	0.004*	0.0050	0.0018	0.0031	0.0062	0.0058	0.49
	(2.3)	(1.7)	(1.31)	(0.48)	(0.95)	(1.56)	(1.30)	(1.04)
Initial Economic Standing	-1.4***	-1.3***	-0.89**	-0.85**	-1.42***	-1.06***	-1.03**	-1.30***
	(-5.7)	(-5.9)	(-2.58)	(-2.55)	(-4.17)	(-2.86)	(-2.54)	(-3.22)
Human Capital	1.2***	0.93***	0.036***	0.023**	0.040***	0.039***	0.034***	0.038**
	(8.1)	(3.7)	(3.55)	(2.02)	(4.16)	(3.36)	(3.03)	(2.38)
FIR * Human Capital	—	0.024***	—	0.00080***	—	—	—	—
		(3.5)		(2.59)				
DIR * Human Capital	—	-0.0017	—	0.0013	—	—	—	—
		(-0.07)		(1.56)				
Time Dummy 1970-1980	0.90***	0.89***	-1.34***	-1.42***	-0.60	-1.57***	-0.89*	—
	(2.7)	(2.9)	(-2.82)	(-2.88)	(-1.32)	(-2.76)	(-1.89)	
Time Dummy 1980-1990	-0.12	-0.17	-0.55*	-0.36	-0.31	-0.99***	-0.34	—
	(-0.44)	(-0.68)	(-1.82)	(-1.23)	(-1.02)	(-2.68)	(-1.27)	
Time Dummy 1980-1985	—	—	—	—	—	—	—	-2.53***
								(-5.24)
Time Dummy 1985-1990	—	—	—	—	—	—	—	-0.32
								(-0.87)

Time Dummy 1990-1995	—	—	—	—	—	—	—	-0.60* (-1.76)
Constant	4.8** (2.5)	4.0** (2.3)	-4.14* (-1.74)	-3.32 (-1.39)	-20.57*** (-7.65)	-3.14 (-1.11)	-4.57 (-1.55)	-7.18 (-1.45)
Number of Countries	98	98	89	89	89	70	89	84
Number of Observations	247	247	238	237	241	185	238	320
R-squared	0.65	0.67	0.58	0.61	0.60	0.60	0.57	0.46

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Democratic Republic of Congo in 1980", "Tunisia in 1980", and "Kuwait in 1980" observations in Model C, F, G, and these 3 plus the "Syria in 1990" observation in Model D. These cases affected the FIR and FDI variables the most. In the analyses in Model E, logging FIR, DIR, FDI and DI, these outliers are pulled in and kept in the analyses. In the analyses of the data set created for this thesis displayed in Model H the "Syria in 1985" observation was excluded for its influence on FIR in particular.

Note that GDP per capita PPP for Models A-G are in constant 1985 US$, while in Model F and throughout the thesis we use current prices. The correlation between the 1985 constant prices and the current prices is 0.92. The former data were not updated after 1999, so new data were constructed for the thesis. Moreover, de Soysa operationalised human capital by means of a principal component factor analysis on school enrolment, fertility, and under-five mortality rates. The common factor correlates by 0.92 with gross secondary school enrolment as defined in Appendix A, Table A1. Thus, human capital is operationalised as gross secondary school enrolment throughout this thesis.

Models A & B: Analysis from de Soya (2003:Table 3.4 - Model 3:p 66). Robust OLS regression on both developed and developing countries.
Models C & D: Replication of de Soysa's analysis in Model A & B respectively. Robust OLS regression on both developed and developing countries.
Model E: Replication of de Soysa's analysis in Model A. Robust OLS regression on both developed and developing countries. Logging FIR and DIR (ln(13+X) and ln(5+X) respectively), and FDI and Domestic Capital Penetration (ln(1+X) and ln(X) respectively). Running analyses with logged FIR/DIR and FDI/DI separately results in similar significant findings when logging FIR/DIR only, while FDI Capital Penetration is insignificant and similar to Model B when logging FDI/DI only. More precisely, FDI Capital Penetration (logged or not) becomes significant only when logging DIR.
Model F: Replication of de Soysa's analysis in Model A. Robust OLS regression on developing countries only.
Model G: Replication of de Soysa's analysis in Model A. Robust random effects regression on both developed and developing countries.
Model H: Replication of de Soysa's analysis in Model A. Robust random effects regression on both developed and developing countries on a new dataset. A new dataset on 5-year intervals from 1980 to 2000 was created for this thesis. The shorter time span is due to new variables being added to the model employed by de Soysa (2003:58-62). The new variables are theoretically founded. Note that Trade is logged.

7.5.2 The Overall Effects of FDI

Tables 4 and 5 below introduce new variables to the replication model presented in Table 3. These variables represent what is argued to be valuable factors as far as the relationship between FDI and economic growth is concerned (see the theoretical outline in Part I). Tables 4 and 5 display the analyses including all countries and developing countries respectively.

Model A is de Soysa's model as displayed in Model F in Table 3 above, while Model B is the new model adding some theoretically-founded variables. Models C-G test the robustness of the findings in Model B by logging the (more or less) positively-skewed investment and resource variables (see text below table for specifics on models and variables). Finally Model H tests the robustness of the findings in Model B by treating the missing values with multiple imputations (MI). This latter technique was utilized first and foremost for the FDI composition analysis below, but the result is nevertheless displayed for the full sample as well.

Most variables in Table 4—including both developed and developing countries—behave as in the replication analyses displayed in Table 3. FDI Investment Rate, the Domestic Investment Rate, and Domestic Capital Penetration all have a robust positive and significant association with Economic Growth, while FDI Capital Penetration, although positive, does not display a robust significant association to Economic Growth. Thus, FDI growth (i.e., FIR) seems to be good for economic growth, while the positive effect of FDI penetration on the local economy is less obvious. As for the added variables, Institutional Quality (positive association) and Fuel and Non-Fuel Resource Dependence (negative associations) perform as expected with significant or close to significant coefficients. Note, however, that he positively skewed resource variables display a low level of significance and coefficient instability when logged (Models C and G). Civil War, surprisingly enough, has—*ceteris paribus*—no significant effect on economic growth. The new variables add significantly (although not dramatically) to the explanatory power of the model, and this—with Trade as an exception—without having any major impact on the other variables (when compared de Soysa's model). The latter testifies to the robustness of these variables. When it comes to differential productivity effects of foreign and domestic capital it follows from the same reasoning as for the replication analysis that flow wise—dollar for dollar—foreign capital is 2.1 times more productive than domestic capital. Appendix B—Table B1—Models A-D displays the results from some alternative estimators from the standard Model B

applying different estimators (OLS with Newey-West standard errors, Random Effects controlling for first-order autocorrelation, and system-GMM). Overall these estimators support the findings here discussed.[54]

Table 5 displays—as mentioned—the results of the same analysis including only developing countries. Overall the results are in the same range as for the all country analyses in Table 4. However, the effect of Trade, Institutional Quality and Fuel and Non-Fuel Resource Dependence are less significant for this group of countries. Moreover, the FDI Investment Rate and the Domestic Investment Rate have both increased their coefficients but domestic more so than foreign, so that the productivity ratio—in favor of foreign capital—now has been reduced to 1.6. That is, the productivity gains from FDI relative to domestic capital are lower for developing than for developed countries. Appendix B—Table B1—Models E-H, displays the results from the alternative estimators. As for the analysis including all countries above, these estimators in general support the findings produced by the Random Effects estimator. The exception is the system-GMM estimator in Model H, which is significant only when logged and treated for influential outliers. Thus, the findings for developing countries are robust, but not as robust as for the analyses including both developed and developing countries.

[54] FDI Investment Rate, the Domestic Investment Rate, and Domestic Capital Penetration all still display a robust positive and significant association with Economic Growth, while FDI Capital Penetration, although positive, is not significant when regressed with a Random Effects estimator that controls for first-order autocorrelation.

Table 4 – Economic Growth
Robust Random Effects Estimation of Developed and Developing Countries in Full and Multiple Imputed (MI) Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
FDI Investment Rate (FIR)	0.041***	0.037***	0.040***	1.34**	0.042***	1.47***	1.52***	0.041***
	(2.93)	(2.66)	(2.91)	(2.51)	(2.81)	(2.60)	(2.65)	(2.97)
Domestic Investment Rate (DIR)	0.45***	0.44***	0.47***	0.41***	0.44***	0.42***	0.45***	0.45***
	(8.50)	(7.82)	(8.20)	(7.55)	(8.12)	(7.85)	(7.99)	(9.03)
FDI Capital Penetration	0.030*	0.025	0.027	0.026*	0.36	0.38	0.41	0.032**
	(1.75)	(1.62)	(1.60)	(1.79)	(1.38)	(1.51)	(1.51)	(2.43)
Domestic Capital Penetration	0.0067***	0.0077***	0.0068***	0.0073***	2.21***	2.03***	1.81***	0.0070***
	(3.76)	(4.28)	(3.86)	(4.08)	(4.03)	(3.75)	(3.30)	(3.71)
Market Size	0.48***	0.45***	0.43***	0.46***	0.43***	0.44***	0.41***	0.42***
	(3.67)	(3.65)	(3.14)	(3.73)	(3.45)	(3.56)	(2.95)	(3.26)
Trade	0.49	0.74*	0.35	0.71*	0.69*	0.68*	0.28	0.52
	(1.04)	(1.82)	(0.77)	(1.79)	(1.70)	(1.72)	(0.63)	(1.59)
Initial Economic Standing	-1.30***	-1.39***	-1.43***	-1.41***	-1.38***	-1.40***	-1.45***	-1.37***
	(-3.22)	(-3.65)	(-3.46)	(-3.74)	(-3.62)	(-3.73)	(-3.59)	(-3.81)
Human Capital	0.038**	0.029**	0.032**	0.027**	0.027**	0.026**	0.030**	0.029**
	(2.38)	(2.21)	(2.32)	(2.14)	(2.08)	(2.04)	(2.18)	(2.49)
Time Dummy 1980-1985	-2.53***	-2.47***	-2.75***	-2.34***	-2.09***	-2.01***	-2.33***	-2.48***
	(-5.24)	(-5.44)	(-5.70)	(-5.32)	(-4.52)	(-4.42)	(-4.67)	(-5.53)
Time Dummy 1985-1990	-0.32	-0.39	-0.48	-0.24	-0.41	-0.25	-0.35	-0.37
	(-0.87)	(-1.04)	(-1.23)	(-0.65)	(-1.02)	(-0.64)	(-0.84)	(-1.06)
Time Dummy 1990-1995	-0.60*	-0.67*	-0.73**	-0.53	-0.65*	-0.52	-0.61*	-0.68**
	(-1.76)	(-1.81)	(-2.02)	(-1.44)	(-1.85)	(-1.46)	(-1.69)	(-1.97)
Institutional Quality	—	0.15*	0.20**	0.16*	0.15*	0.16*	0.21**	0.16**
		(1.83)	(2.32)	(1.93)	(1.76)	(1.88)	(2.54)	(1.98)
Fuel Resource Dependence	—	-0.037	-0.0071	-0.049	-0.034	-0.046	-0.027	-0.031
		(-1.23)	(-0.11)	(-1.62)	(-1.16)	(-1.57)	(-0.41)	(-1.33)
Non-Fuel Resource Dependence	—	-0.059*	0.073	-0.059*	-0.062*	-0.062*	0.018	-0.049*
		(-1.78)	(0.52)	(-1.86)	(-1.86)	(-1.91)	(0.14)	(-1.65)
Civil War	—	-0.22	-0.21	-0.27	-0.18	-0.23	-0.21	-0.30
		(-0.73)	(-0.67)	(-0.90)	(-0.57)	(-0.75)	(-0.66)	(-1.02)
Constant	-7.18	-6.75*	-5.09	-10.64**	-16.75***	-20.25***	-17.69***	-5.34
	(-1.45)	(-1.68)	(-1.15)	(-2.31)	(-3.91)	(-4.32)	(-3.50)	(-1.52)

Number of Countries	84	84	84	84	84	84	84	84
Number of Observations	320	320	320	320	320	320	320	335
R-squared	0.46	0.49	0.47	0.49	0.49	0.49	0.48	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Syria in 1985" observation (Models A-C, E and H). The case affected the FIR variable the most. In the analyses logging FIR (i.e., Models D, F and G) the "United Arab Emirates in 2000" observation was excluded for the same reason.

Model A: Standard model in reduced form.
Model B: Standard model.
Model C: Standard model: Logging Fuel and Non-Fuel Resource Dependence (ln(X)).
Model D: Standard model: Logging FIR (ln(21+X)). DIR is not logged as it is normally distributed in original form.
Model E: Standard model: Logging FDI and Domestic Capital Penetration (ln(1+X) and ln(X) respectively).
Model F: Standard model: Logging FIR, FDI and Domestic Capital Penetration.
Model G: Standard model: Logging FIR, FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model H: Standard model: Replacing missing values by way of multiple imputations.

Table 5 – Economic Growth
Robust Random Effects Estimation of Developing Countries in Full and Multiple Imputed (MI) Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
FDI Investment Rate (FIR)	0.038**	0.034**	0.036**	1.29**	0.040**	1.47**	1.51**	0.038***
	(2.52)	(2.23)	(2.41)	(2.16)	(2.35)	(2.27)	(2.30)	(2.57)
Domestic Investment Rate (DIR)	0.57***	0.54***	0.57***	0.51***	0.55***	0.51***	0.55***	0.54***
	(8.82)	(7.92)	(8.28)	(7.65)	(7.95)	(7.64)	(7.67)	(10.22)
FDI Capital Penetration	0.033*	0.029	0.032	0.032*	0.38	0.43	0.47	0.035**
	(1.72)	(1.63)	(1.63)	(1.86)	(1.09)	(1.30)	(1.34)	(2.48)
Domestic Capital Penetration	0.0085***	0.0091***	0.0085***	0.0087***	2.56***	2.33***	2.18***	0.0084***
	(4.22)	(4.43)	(4.25)	(4.20)	(3.72)	(3.41)	(3.14)	(4.27)
Market Size	0.47***	0.49***	0.45**	0.52***	0.44**	0.48***	0.43**	0.47***
	(2.86)	(3.00)	(2.43)	(3.15)	(2.52)	(2.75)	(2.08)	(2.93)
Trade	0.19	0.44	0.026	0.42	0.44	0.44	-0.012	0.27
	(0.36)	(0.90)	(0.05)	(0.88)	(0.88)	(0.92)	(-0.02)	(0.70)
Initial Economic Standing	-1.42***	-1.43***	-1.46***	-1.45***	-1.41***	-1.44***	-1.48***	-1.40***
	(-3.27)	(-3.49)	(-3.36)	(-3.56)	(-3.40)	(-3.50)	(-3.44)	(-3.76)
Human Capital	0.029*	0.026*	0.030*	0.025*	0.024*	0.023	0.026*	0.027**
	(1.83)	(1.84)	(1.93)	(1.74)	(1.67)	(1.61)	(1.75)	(2.07)
Time Dummy 1980-1985	-3.31***	-3.05***	-3.34***	-2.86***	-2.60***	-2.46***	-2.79***	-3.05***
	(-5.47)	(-5.40)	(-5.61)	(-5.25)	(-4.45)	(-4.40)	(-4.60)	(-5.52)
Time Dummy 1985-1990	-0.16	-0.11	-0.19	0.097	-0.11	0.11	0.022	-0.067
	(-0.37)	(-0.25)	(-0.42)	(0.22)	(-0.24)	(0.25)	(0.04)	(-0.16)
Time Dummy 1990-1995	-0.35	-0.29	-0.35	-0.11	-0.31	-0.11	-0.20	-0.29
	(-0.83)	(-0.66)	(-0.79)	(-0.24)	(-0.73)	(-0.27)	(-0.46)	(-0.70)
Institutional Quality	—	0.068	0.11	0.070	0.068	0.073	0.13	0.079
		(0.67)	(1.16)	(0.69)	(0.68)	(0.73)	(1.35)	(0.73)
Fuel Resource Dependence	—	-0.034	-0.0073	-0.048	-0.030	-0.044	-0.025	-0.029
		(-1.10)	(-0.10)	(-1.54)	(-0.99)	(-1.46)	(-0.34)	(-1.20)
Non-Fuel Resource Dependence	—	-0.049	0.056	-0.049	-0.053	-0.052	-0.0037	-0.041
		(-1.39)	(0.37)	(-1.44)	(-1.49)	(-1.51)	(-0.03)	(-1.33)
Civil War	—	-0.36	-0.35	-0.42	-0.30	-0.36	-0.34	-0.43
		(-1.04)	(-0.99)	(-1.21)	(-0.84)	(-1.03)	(-0.94)	(-1.33)
Constant	-5.41	-6.55	-4.28	-10.67**	-17.73***	-21.59***	-18.49***	-5.64
	(-0.92)	(-1.35)	(-0.79)	(-1.97)	(-3.61)	(-4.06)	(-3.14)	(-1.37)

Number of Countries	63	63	63	63	63	63	63	63
Number of Observations	241	241	241	241	241	241	241	251
R-squared	0.50	0.52	0.51	0.53	0.52	0.53	0.51	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Syria in 1985" observation (Models A-C, E and H). The case affected the FIR variable the most. In the analyses logging FIR (i.e., Models D, F and G) the "United Arab Emirates in 2000" observation was excluded for the same reason.

Model A: Standard model in reduced form.
Model B: Standard model.
Model C: Standard model: Logging Fuel and Non-Fuel Resource Dependence (ln(X)).
Model D: Standard model: Logging FIR (ln(21+X)). DIR is not logged as it is normally distributed in original form.
Model E: Standard model: Logging FDI and Domestic Capital Penetration (ln(1+X) and ln(X) respectively).
Model F: Standard model: Logging FIR, FDI and Domestic Capital Penetration.
Model G: Standard model: Logging FIR, FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model H: Standard model: Replacing missing values by way of multiple imputations.

7.5.3 The Compositional Effects of FDI

Little has yet been published on the effects of FDI broken down at the industry level, and the analyses presented in Tables 6 and 7 below are, therefore, of particular interest.[55] As for the analyses above several tests of the robustness of the findings is performed. Models E-I test the robustness of the findings in Model D by logging the (more or less) positively skewed investment and resource variables (see text below table for specifics on models and variables), while Model J tests the robustness of the findings in Model D by treating the missing values with multiple imputation. Data on the composition of FDI broken down at industry level is—as mention above—restricted and available for fewer countries than data on overall FDI (same dataset, only fewer observations). Nevertheless, we see from Table 6, Models A and C, that the significant and positive findings for FIR, DIR, and Domestic Capital Penetration hold for this restricted sample as well (when including both developed and developing countries). Moreover, the association between Foreign Capital Penetration and Economic Growth is—as it was for the full sample in Table 4, Model B—insignificant. More interesting, however, is the robust significant finding that the secondary and tertiary sector drives the positive effects for FIR. The effect of Primary Sector FIR is—in contrast—insignificant. Moreover, neither Primary Sector FDI Capital Penetration nor Secondary and Tertiary Sector FDI Capital Penetration display a significant relationship with Economic Growth. Thus, there is some support for the argument outlined in the theoretical framework above stating that FDI in the secondary and tertiary sector is more beneficial for the host country economy than FDI in the primary sector. This, however, only holds for the rate of change in FDI and not for the penetration of FDI. When it comes to the differential productivity effects of foreign and domestic capital, foreign capital influx in the secondary and tertiary sector is—dollar for dollar—3.9 times more productive than domestic capital, while influx in the primary sector, considering the insignificance of the variable, is outperformed by domestic investment (based on Model D). Keeping in mind the low number of observations, it is also worth stressing that these findings also hold when replacing missing observations by way of multiple imputations (Model J). The productivity ratio in favor of FDI in the secondary and tertiary sectors relative to domestic investment in general is then, however, reduced to 2.3.[56] For the other variables, it is worth mentioning that both Institutional Quality and Civil War now have a significant

[55] The author has no knowledge of any statistical analysis being published on the subject in question.

[56] Assuming that the median for the two variables remain in the same range after the multiple imputations.

effect in accordance with our expectations, while the size of the market and level of human capital now are insignificant. The results based on alternative estimators are displayed in Appendix B—Table B2, Models A-D. Again, these estimators in general support the findings produced by the Random Effects estimator. The exception is once more the system-GMM estimator in Model D, which is only significant when logged and treated for outliers.

For the developing countries the results are displayed in Table 7 below. As the number of observations now decreases even further, our cautiousness against putting too much trust in the results should increase correspondingly. The results of the analysis including developing countries only are, in spite of the small-N, similar to the analyses including all countries with respect to our investment variables. We see from Models A and C that the significant and positive findings for FIR and DIR hold for developing countries as well, while the findings for Foreign and Domestic Capital Penetration now both are insignificant. It is still the secondary and tertiary sector that drives the positive effects for FIR. This finding is significant and robust (see text below table for specifics on models and variables). The effect of Primary Sector FIR is—by contrast—insignificant. Moreover, neither Primary Sector FDI Capital Penetration nor Secondary and Tertiary Sector Capital Penetration display a significant relationship with Economic Growth. Thus, there is support—even in developing countries—for the argument that FDI in the secondary and tertiary sector are more beneficial for the host country economy than FDI in the primary sector. This, however, still only holds for the rate of change in FDI and not for the penetration of FDI. When it comes to the differential productivity effects of foreign and domestic capital, foreign capital influx in the secondary and tertiary sector is—dollar for dollar—8.4 times more productive than domestic capital, while influx in the primary sector, considering the insignificance of the variable, is outperformed by domestic investment (based on Model D). Considering the low number of observations, it is worth stressing though, that these findings also hold when replacing missing observation by way of multiple imputations (Model J). As for the analysis including all countries, the productivity ratio in favor of FDI in the secondary and tertiary sectors relative to domestic investment in general is smaller in the MI analysis. The ratio is now reduced to 4.7 in favor of FDI.[57] For the other variables, the overall results are similar to the findings in the analysis including all countries. However, significance is harder to obtain as exemplified by Domestic Capital Penetration and Initial Economic Standing. The results based on alternative estimators displayed in Appendix B—

[57] Assuming that the median for the two variables remains the same range after the multiple imputations.

Table 6 – Economic Growth
Robust Random Effects Estimation of Developed and Developing Countries in Restricted and Multiple Imputed (MI) Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I	Model J
FDI Investment Rate (FIR)	0.091***	—	0.086***	—	—	—	—	—	—	—
	(4.95)		(5.14)							
Primary Sector FIR	—	-0.00038	—	-0.0019	-0.0015	-0.13	0.00054	0.013	-0.059	-0.0019
		(-0.13)		(-0.62)	(-0.51)	(-0.31)	(0.14)	(0.03)	(-0.13)	(-0.52)
Secondary and Tertiary Sector FIR	—	0.065***	—	0.062***	0.062***	6.74***	0.055**	6.03**	5.66**	0.042*
		(3.02)		(2.77)	(2.81)	(2.76)	(2.41)	(2.36)	(2.25)	(1.92)
Domestic Investment Rate (DIR)	0.57***	0.55***	0.50***	0.52***	0.55***	7.89***	0.52***	8.04***	8.65***	0.59***
	(6.58)	(6.34)	(6.06)	(6.00)	(6.30)	(5.66)	(5.88)	(5.66)	(6.04)	(9.94)
FDI Capital Penetration	0.031	—	0.050	—	—	—	—	—	—	—
	(1.19)		(1.45)							
Primary Sector FDI Capital Penetration	—	-0.018	—	-0.012	-0.0053	-0.0085	0.13	0.12	0.080	0.060
		(-0.45)		(-0.14)	(-0.10)	(-0.10)	(0.70)	(0.65)	(0.46)	(1.05)
Secondary & Tertiary Sector FDI Capital Penetration	—	0.038	—	0.039	0.033	0.028	-0.15	-0.19	-0.32	0.037
		(0.80)		(0.82)	(0.64)	(0.59)	(-0.36)	(-0.46)	(-0.73)	(1.28)
Domestic Capital Penetration	0.0067*	0.0079*	0.0093*	0.011**	0.010**	0.013**	2.95**	3.25**	2.74**	0.0053*
	(1.73)	(1.93)	(1.94)	(2.26)	(2.45)	(2.43)	(2.35)	(2.51)	(2.50)	(1.76)
Market Size	0.22	0.12	0.16	0.14	0.19	0.16	0.24	0.26	0.19	0.090
	(1.35)	(0.65)	(0.80)	(0.75)	(0.87)	(0.85)	(1.20)	(1.25)	(0.83)	(1.03)
Trade	0.49	0.64	0.31	0.23	0.049	0.30	0.35	0.40	0.13	0.45
	(0.67)	(1.07)	(0.37)	(0.30)	(0.07)	(0.39)	(0.45)	(0.50)	(0.19)	(1.59)
Initial Economic Standing	-0.40	-0.24	-1.76**	-1.69**	-1.57**	-1.82**	-1.73**	-1.85**	-1.68***	-0.84**
	(-0.65)	(-0.37)	(-2.47)	(-2.37)	(-2.43)	(-2.43)	(-2.42)	(-2.47)	(-2.57)	(-2.24)
Human Capital	0.024	0.019	0.026	0.029	0.029	0.028	0.023	0.023	0.019	0.014*
	(1.09)	(0.91)	(1.22)	(1.48)	(1.55)	(1.35)	(1.18)	(1.12)	(0.98)	(1.70)
Time Dummy 1980-1985	-1.54**	-2.01***	-1.90**	-2.62***	-2.81***	-2.77***	-2.52***	-2.69***	-3.31***	-2.48***
	(-2.43)	(-2.82)	(-2.38)	(-3.20)	(-3.05)	(-3.36)	(-2.81)	(-2.95)	(-3.15)	(-5.33)
Time Dummy 1985-1990	-0.021	-0.75	-0.93	-1.73***	-1.73***	-1.89***	-1.94***	-2.07***	-2.15***	-0.58
	(-0.03)	(-1.18)	(-1.51)	(-2.69)	(-2.82)	(-2.84)	(-2.75)	(-2.82)	(-3.05)	(-1.03)
Time Dummy 1990-1995	0.10	-0.19	-0.25	-0.58	-0.64	-0.62	-0.39	-0.43	-0.60	-0.74*
	(0.23)	(-0.41)	(-0.56)	(-1.19)	(-1.28)	(-1.22)	(-0.72)	(-0.78)	(-1.09)	(-1.70)
Institutional Quality	—	—	0.47***	0.42**	0.39**	0.47***	0.50***	0.53***	0.56***	0.30***
			(2.70)	(2.44)	(2.20)	(2.57)	(2.72)	(2.76)	(2.67)	(2.85)

Fuel Resource Dependence	__	__	-0.065 (-1.14)	-0.036 (-0.66)	-0.045 (-0.35)	-0.024 (-0.41)	-0.044 (-0.82)	-0.026 (-0.48)	0.090 (0.62)	0.0042 (0.14)
Non-Fuel Resource Dependence	__	__	-0.064 (-0.94)	0.037 (0.37)	0.28 (0.72)	0.033 (0.35)	0.062 (0.61)	0.060 (0.61)	0.22 (0.64)	-0.10* (-1.87)
Civil War	__	__	-1.27** (-2.33)	-1.46** (-2.46)	-1.37** (-2.50)	-1.48** (-2.45)	-1.45** (-2.30)	-1.43** (-2.23)	-1.22** (-2.09)	-0.63** (-2.02)
Constant	-9.33 (-1.42)	-7.76 (-1.30)	2.51 (0.23)	2.74 (0.37)	1.35 (0.18)	-46.44*** (3.75)	-12.83 (-1.25)	-60.92*** (-4.18)	-55.99*** (-3.65)	-1.29 (-0.43)
Number of Countries	29	29	29	29	29	29	29	29	29	29
Number of Observations	77	77	77	77	77	77	78	78	78	114
R-squared	0.72	0.72	0.76	0.75	0.75	0.74	0.71	0.70	0.70	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Nigeria in 1990" and the "Papua New Guinea in 1995" observations (Models A-F, and J). The former case affected the Secondary and Tertiary Sector FIR variable, while the latter affected the Primary Sector FDI Capital Penetration variable. In the analyses logging the FDI composites (i.e., Models G, H and I) only the "Nigeria in 1990" observation was excluded.

Model A: Standard model in reduced form: Replacing FIR and FDI Capital Penetration composites with Total FIR and Total FDI Capital Penetration.
Model B: Standard model: Replacing FIR and FDI Capital Penetration composites with Total FIR and Total FDI Capital Penetration.
Model C: Standard model in reduced form.
Model D: Standard model.
Model E: Standard model: Logging Fuel and Non-Fuel Resource Dependence (ln(X)).
Model F: Standard model: Logging FIR composites and DIR (FIR composites with ln(100+X) and DIR with ln(10+X)).
Model G: Standard model: Logging FDI Capital Penetration composites and Domestic Capital Penetration (all ln(X))
Model H: Standard model: Logging FIR and FDI Capital Penetration composites, DIR, and Domestic Capital Penetration.
Model I: Standard model: Logging FIR and FDI Capital Penetration composites, DIR, Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model J: Standard model: Replacing missing values by way of multiple imputations.

Table 7 – Economic Growth
Robust Random Effects Estimation of Developing Countries in Restricted and Multiple Imputed (MI) Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I	Model J
FDI Investment Rate (FIR)	0.10***	—	0.093***	—	—	—	—	—	—	—
	(3.44)		(2.90)							
Primary Sector FIR	—	0.026	—	0.020	0.015	2.31	0.018	2.14	1.61	0.0081
		(1.57)		(1.08)	(0.86)	(1.07)	(0.80)	(0.82)	(0.63)	(0.49)
Secondary and Tertiary	—	0.099***	—	0.11***	0.11***	11.64***	0.10***	10.68***	10.82***	0.076**
Sector FIR		(3.51)		(3.65)	(3.62)	(3.42)	(2.73)	(2.60)	(3.06)	(2.07)
Domestic Investment Rate (DIR)	0.67***	0.57***	0.55***	0.50***	0.53***	8.36***	0.44***	7.47***	8.52***	0.62***
	(4.64)	(4.46)	(4.35)	(4.04)	(4.24)	(3.73)	(3.10)	(2.94)	(3.66)	(4.87)
FDI Capital Penetration	0.033	—	0.012	—	—	—	—	—	—	—
	(1.02)		(0.22)							
Primary Sector	—	0.0079	—	0.049	0.0078	0.061	0.24	0.22	0.12	0.062
FDI Capital Penetration		(0.16)		(0.52)	(0.14)	(0.69)	(0.62)	(0.56)	(0.35)	(0.75)
Secondary & Tertiary Sector	—	-0.076	—	0.033	0.0079	0.0091	-0.30	-0.37	-0.31	0.070
FDI Capital Penetration		(-0.77)		(0.38)	(0.08)	(0.11)	(-0.37)	(-0.44)	(-0.42)	(0.77)
Domestic Capital Penetration	0.0076	0.0058	0.0092	0.0058	0.0072	0.0085	1.33	1.81	2.14	0.0062
	(0.99)	(0.79)	(1.12)	(0.67)	(0.86)	(0.96)	(0.57)	(0.75)	(0.97)	(1.02)
Market Size	0.40	0.20	0.051	-0.29	-0.17	-0.34	-0.20	-0.28	-0.48	0.072
	(1.03)	(0.53)	(0.10)	(-0.70)	(-0.48)	(-0.82)	(-0.45)	(-0.62)	(-1.03)	(0.21)
Trade	0.16	0.61	0.48	0.31	-0.063	0.24	0.41	0.31	-0.27	0.29
	(0.18)	(0.86)	(0.55)	(0.44)	(-0.09)	(0.32)	(0.49)	(0.35)	(-0.28)	(0.47)
Initial Economic Standing	-1.09	-0.72	-1.47**	-1.02	-1.21	-1.13	-1.22	-1.29	-1.51	-1.06**
	(-1.24)	(-0.81)	(-1.90)	(-1.11)	(-1.40)	(-1.20)	(-1.14)	(-1.18)	(-1.52)	(-2.36)
Human Capital	0.011	0.014	0.013	0.021	0.024	0.024	0.019	0.021	0.022	0.016
	(0.38)	(0.53)	(0.69)	(1.20)	(1.27)	(1.31)	(0.91)	(1.00)	(1.07)	(1.52)
Time Dummy 1980-1985	-1.75*	-1.14	-1.64	-0.91	-1.41	-1.27	-1.17	-1.49	-2.29	-2.04*
	(-1.86)	(-0.99)	(-1.21)	(-0.69)	(-0.87)	(-0.92)	(-0.84)	(-1.03)	(-1.37)	(-1.87)
Time Dummy 1985-1990	0.60	0.83	0.016	0.38	-0.061	0.11	-0.087	-0.31	-0.85	1.16
	(0.54)	(0.79)	(0.01)	(0.37)	(-0.06)	(0.10)	(-0.07)	(-0.24)	(-0.56)	(1.28)
Time Dummy 1990-1995	0.34	1.09	0.48	1.12	0.82	0.91	1.64	1.46	0.96	0.54
	(0.32)	(1.03)	(0.48)	(1.20)	(0.84)	(0.90)	(1.49)	(1.26)	(0.84)	(0.57)
Institutional Quality	—	—	0.42	0.58**	0.54**	0.66**	0.73**	0.80***	0.88**	0.30
			(1.33)	(2.15)	(2.11)	(2.44)	(2.44)	(2.70)	(2.43)	(1.07)

Fuel Resource Dependence	__	__	-0.071 (-1.15)	-0.014 (-0.23)	0.025 (0.13)	0.013 (0.20)	-0.030 (-0.46)	-0.0021 (-0.03)	0.20 (0.89)	0.0099 (0.20)
Non-Fuel Resource Dependence	__	__	-0.021 (-0.22)	-0.057 (-0.45)	0.025 (0.35)	-0.074 (-0.61)	0.011 (0.09)	0.0014 (0.01)	0.030 (0.07)	-0.081 (-0.81)
Civil War	__	__	-1.30* (-1.77)	-1.41 (-1.52)	-1.58* (-1.74)	-1.46 (-1.58)	-1.74* (-1.84)	-1.74* (-1.84)	-1.76* (-1.90)	-0.91* (-1.71)
Constant	-7.38 (-0.85)	-6.31 (-0.70)	2.47 (0.19)	6.54 (0.63)	6.57 (0.63)	-75.86*** (-3.83)	0.51 (0.04)	-76.08*** (-3.40)	-70.23*** (-2.88)	-0.59 (-0.07)
Number of Countries	16	16	16	16	16	16	16	16	16	16
Number of Observations	43	43	43	43	43	43	44	44	44	62
R-squared	0.80	0.83	0.84	0.88	0.88	0.88	0.83	0.83	0.84	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Nigeria in 1990" and the "Papua New Guinea in 1995" observations (Models A-F, and J). The former case affected the Secondary and Tertiary Sector FIR variable, while the latter affected the Primary Sector FDI Capital Penetration variable. In the analyses logging the FDI composites (i.e., Models G, H and I) only the "Nigeria in 1990" observation was excluded.

Model A: Standard model in reduced form: Replacing FIR and FDI Capital Penetration composites with Total FIR and Total FDI Capital Penetration.
Model B: Standard model: Replacing FIR and FDI Capital Penetration composites with Total FIR and Total FDI Capital Penetration.
Model C: Standard model in reduced form.
Model D: Standard model.
Model E: Standard model: Logging Fuel and Non-Fuel Resource Dependence (ln(X)).
Model F: Standard model: Logging FIR composites and DIR (FIR composites with ln(100+X) and DIR with ln(10+X)).
Model G: Standard model: Logging FDI Capital Penetration composites and Domestic Capital Penetration (all ln(X))
Model H: Standard model: Logging FIR and FDI Capital Penetration composites, DIR, and Domestic Capital Penetration.
Model I: Standard model: Logging FIR and FDI Capital Penetration composites, DIR, Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model J: Standard model: Replacing missing values by way of multiple imputations.

Table B2—Models E-F support the findings produced by the Random Effects estimator here discussed.

7.5.4 The Conditional Effects of FDI

The theoretical discussion in Part I suggested that the effects of FDI on host countries' economic growth depended on both corporate and host country characteristics. The importance of TNC characteristics found empirical support in the significance of FDI composition in the previous section, and this section tests the importance of host country characteristics. More explicitly this section—on the one hand—attempts to answer whether FDI depends on host country development characteristics like level of economic development, quality of institutions, or level of human capital, and—on the other hand—whether FDI depends on the host countries' dependence on natural resources. Thus, the interaction terms including FDI Investments Rate or FDI Capital Penetration, on the one hand, and Initial Economic Standing, Institutional Quality, Human Capital, Fuel and Non-Fuel Resource Dependence, on the other, were tested for significant contributions.[58]

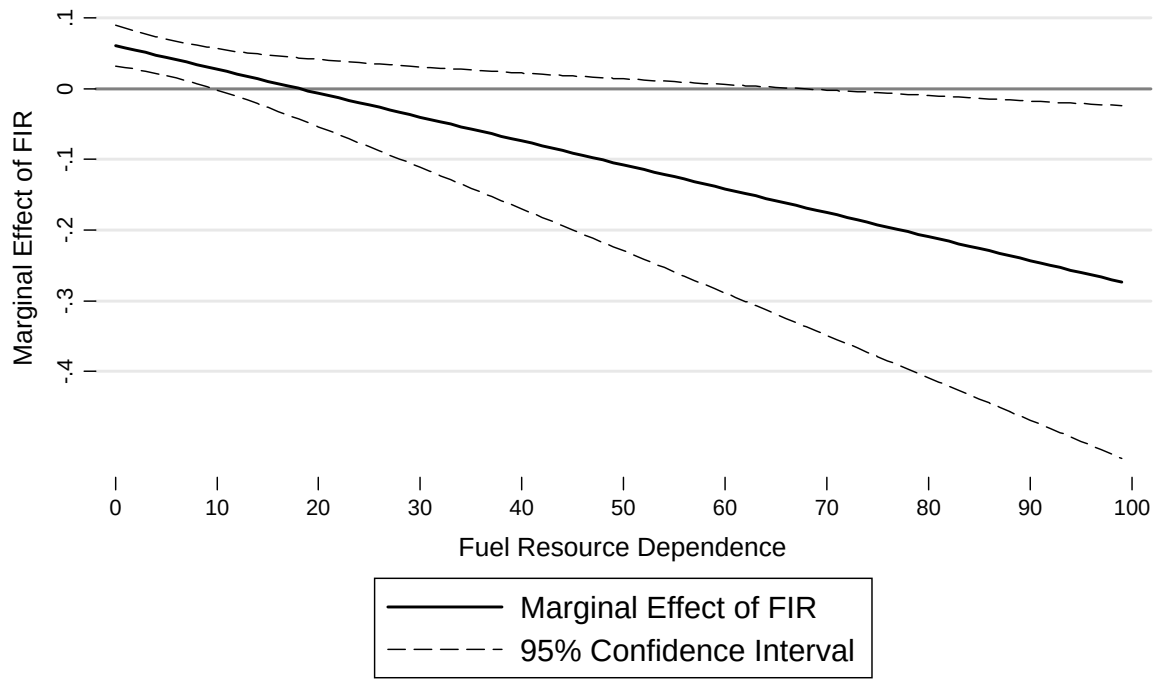
de Soysas' (2003:64-66) finding—supported by Borenzstein et al. (1998:134)—of a significant and positive interaction between FDI Investment Rate and Human Capital—as indicated in the replication analysis above—was replicated when tested on a data set with identical time-intervals and time-span, but not when tested on the data set used throughout this thesis. This lack of significance in an analysis based on the same model—only with shorter time-intervals, shorter time span, and fewer countries covered—does not necessarily undermine the previous findings altogether. It does, however, testify to a lack of robustness for the interaction in question. Some other conditional effects were supported by analyses on this latter data set though. Fuel Resource Dependence (testing the effect of FDI Investment Rate in the full sample) and Initial Economic Standing (testing the effects of the FDI Capital Penetration composites in the restricted sample) both have a significant and robust impact on the relationship between FDI and growth.

Table 8 below displays the significant interaction between FDI Investment Rate and Fuel Resource Dependence both when including all countries (Models A-D) and developing

[58] We here apply the conservative approach of only recognizing significant interactions. This although marginal effects (e.g., effects of FIR on growth)—according to Brambor et al. (2006:74)—can be significant for substantively relevant values of the modifying variable (e.g., Fuel Resource Dependence) even if the coefficient in the interaction term is insignificant.

countries only (Models E-H). From the coefficients we see that the association between Economic Growth and FDI Investment Rate is decreasingly positive the more dependent host countries are on fuel resources (mostly oil), and when the export value of fuel surpasses 18 percent of GDP the association between Economic Growth and FDI Investment Rate is even increasingly negative the higher the dependence on fuel resources. This figure applies both when including all countries and when including developing countries only. However, since the interpretation of marginal effects cannot be judged by coefficients alone, we follow the recommendations made by Brambor et al. (2006:63-82) and generate marginal effects with a 95% confidence interval.[59] In Figure 4 below these marginal effects are illustrated for the analysis including developing countries only. The confidence interval for higher values of Fuel Resource Dependence is rather wide, which makes the idea of a straightforward threshold dubious. We might, however say that host countries with a Fuel Resource Dependence below 10 have a positive association with growth, while host countries with Fuel

Figure 4: Marginal Effect of FIR on Economic Growth
As Fuel Resource Dependence Changes



[59] The marginal effects are calculated following instructions and computer codes (for STATA) made available online (Brambor et al. 2007).

Table 8 – FIR & Economic Growth: Dependent on Fuel Resource Dependence
Robust Random Effects Estimation of Developed and Developing Countries in Full Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A	**Model B**	**Model C**	**Model D**	**Model E**	**Model F**	**Model G**	**Model H**
FDI Investment Rate (FIR)	0.037***	0.061***	0.039***	0.062***	0.034**	0.060***	0.035**	0.061***
	(2.66)	(4.67)	(2.95)	(4.79)	(2.23)	(4.02)	(2.45)	(4.15)
Domestic Investment Rate (DIR)	0.44***	0.42***	0.49***	0.47***	0.54***	0.52***	0.60***	0.58***
	(7.82)	(7.79)	(7.50)	(7.78)	(7.92)	(7.82)	(7.18)	(7.43)
FDI Capital Penetration	0.025	0.031**	0.026	0.032**	0.029	0.035*	0.029	0.035*
	(1.62)	(1.96)	(1.65)	(1.99)	(1.63)	(1.89)	(1.62)	(1.88)
Domestic Capital Penetration	0.0077***	0.0078***	0.0072***	0.0073***	0.0091***	0.0092***	0.0088***	0.0089***
	(4.28)	(4.27)	(4.39)	(4.33)	(4.43)	(4.32)	(4.57)	(4.44)
Market Size	0.45***	0.47***	0.44***	0.46***	0.49***	0.51***	0.50***	0.49***
	(3.65)	(3.85)	(3.47)	(3.69)	(3.00)	(3.11)	(2.70)	(2.85)
Trade	0.74*	0.81**	0.87**	0.94**	0.44	0.55	0.56	0.67
	(1.82)	(2.01)	(2.18)	(2.33)	(0.90)	(1.13)	(1.16)	(1.36)
Initial Economic Standing	-1.39***	-1.28***	-1.41***	-1.30***	-1.43***	-1.30***	-1.44***	-1.32***
	(-3.65)	(-3.73)	(-3.61)	(-3.64)	(-3.49)	(-3.49)	(-3.47)	(-3.42)
Human Capital	0.029**	0.023**	0.030**	0.025**	0.026*	0.020	0.028*	0.022*
	(2.21)	(2.08)	(2.25)	(2.10)	(1.84)	(1.57)	(1.91)	(1.66)
Time Dummy 1980-1985	-2.47***	-2.11***	-2.39***	-2.02***	-3.05***	-2.64***	-2.92***	-2.52***
	(-5.44)	(-5.28)	(-5.47)	(-5.09)	(-5.40)	(-5.30)	(-5.42)	(-5.07)
Time Dummy 1985-1990	-0.39	-0.20	-0.39	-0.19	-0.11	0.10	-0.077	0.13
	(-1.04)	(-0.58)	(-1.01)	(-0.55)	(-0.25)	(0.26)	(-0.18)	(0.34)
Time Dummy 1990-1995	-0.67*	-0.54	-0.67*	-0.54	-0.29	-0.21	-0.29	-0.21
	(-1.81)	(-1.48)	(-1.80)	(-1.49)	(-0.66)	(-0.48)	(-0.65)	(-0.48)
Institutional Quality	0.15*	0.14*	0.15*	0.14	0.068	0.055	0.081	0.068
	(1.83)	(1.69)	(1.76)	(1.62)	(0.67)	(0.56)	(0.78)	(0.67)
Fuel Resource Dependence	-0.037	-0.022	-0.019	-0.0036	-0.034	-0.020	-0.016	-0.0020
	(-1.23)	(-0.95)	(-0.63)	(-0.14)	(-1.10)	(-0.85)	(-0.50)	(-0.07)
Non-Fuel Resource Dependence	-0.059*	-0.066**	-0.058*	-0.064*	-0.049	-0.056	-0.048	-0.055
	(-1.78)	(-1.97)	(-1.74)	(-1.91)	(-1.39)	(-1.56)	(-1.35)	(-1.51)
Civil War	-0.22	-0.18	-0.27	-0.22	-0.36	-0.28	-0.40	-0.32
	(-0.73)	(-0.61)	(-0.86)	(-0.74)	(-1.04)	(-0.84)	(-1.12)	(-0.93)

FDI Investment Rate (FIR)* Fuel Resource Dependence	—	-0.0035** (-2.32)	—	-0.0035*** (-2.64)	—	-0.0034** (-2.23)	—	-0.0034** (-2.52)
Domestic Investment Rate (DIR)* Fuel Resource Dependence	—	—	-0.0058 (-1.21)	-0.0058 (-1.39)	—	—	-0.0057 (-1.21)	-0.0057 (-1.38)
Constant	-6.75* (-1.68)	-8.34** (-2.28)	-7.13* (-1.76)	-8.73** (-2.28)	-6.55 (-1.35)	-8.40* (-1.88)	-6.69 (-1.35)	-8.54* (-1.81)
Number of Countries	84	84	84	84	63	63	63	63
Number of Observations	320	320	320	320	241	241	241	241
R-squared	0.49	0.51	0.49	0.52	0.52	0.54	0.52	0.55

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Syria in 1985" observation. The case affected the FIR variable the most.

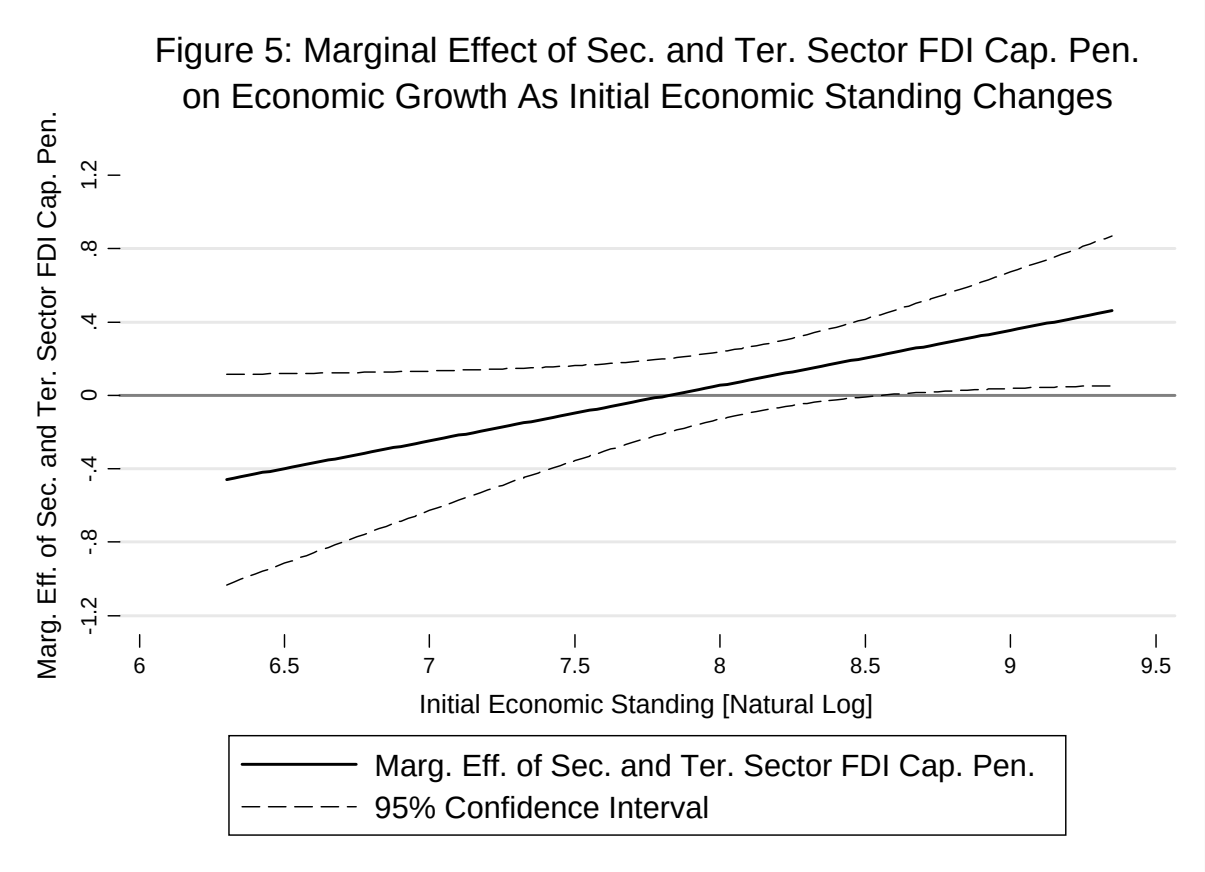
Models A-H are identical to the standard model referred to in the tables above, the only difference being the interactions.

Resource Dependence above 68 have a negative association with growth. However, since no country has a score above 64 we cannot say with 95 percent confidence that any of the fuel resource dependent countries is negatively associated with growth. Thus, since 38 of the 241 observations in question have a Fuel Resource Dependence above 10, we cannot say with 95 percent confidence that FIR in these countries are positively associated with growth. This holds for countries like the United Arab Emirates, Algeria, Bolivia, the Democratic Republic of Congo, Ecuador, Kuwait, Malaysia, Nigeria, Oman, Papua New Guinea, Saudi Arabia, Syria, Tunisia, and Venezuela. When logging FIR or deleting the most influential cases the analyses remain significant. The threshold calculated based on the coefficients, however, increases to between 30 and 35 in the analyses including all countries, and to between 35 and 40 for the analyses including developing countries only. The latter analyses mean that the lower and upper thresholds based on the confidence intervals of the marginal effects now increases to about 15 and infinity respectively. Thus, 29 observations—including countries like United Arab Emirates, Algeria, the Democratic Republic of Congo, Kuwait, Nigeria, Oman, Saudi Arabia, Syria, and Venezuela—are still above the lower threshold questioning a positive association between FIR and Economic Growth.

Table 9 below displays the significant interaction between Secondary and Tertiary Sector FDI Capital Penetration and Initial Economic Standing both when including all countries (Models A-D) and when including developing countries only (Models E-H). From the coefficients in Models A-D we see—when including all countries—that the association between Economic Growth and Secondary and Tertiary Sector FDI Capital Penetration is decreasingly positive the lower the Initial Economic Standing, and for GDP per capita (PPP) values below 6500US$ the association is even increasingly negative the lower the GDP per capita (PPP). This finding is robust as it holds both when controlling for outliers and when FDI is logged. Moreover, the effect is similar when including developing countries only (Models E-H). The threshold, however, is now about 2500US$, and although robust against outliers it does not hold when FDI is logged.[60] As for the interaction above we follow the recommendations made by Brambor et al. (2006:63-82) and generate marginal effects with a 95% confidence interval (Brambor et al. 2007). In Figure 5 below these marginal effects are illustrated for the analysis including developing countries only. The confidence interval for higher and lower values of Initial Economic Standing is rather wide, which makes the idea of

[60] In the latter case countries below the threshold are Bangladesh, Bolivia, Indonesia, Nigeria, Pakistan, Papua New Guinea and Thailand.

a straightforward threshold dubious. We might, however, say that host countries with an Initial Economic Standing above 8.58 (i.e., about 5300US$) have a positive association with growth, while we cannot say with 95 percent certainty that any host countries have a negative association with economic growth.[61] The former positive association holds for 10 out of 43 observations, including observations from countries like Argentina, Brazil, Colombia, Republic of Korea, Thailand and Venezuela. Again, I remind the reader of the small number of observations. In spite of the small-N though, these findings are—when including both developed and developing countries—supported when replacing Initial Economic Standing with the two other host country development characteristics, Human Capital and Institutional



[61] From the sample including both developed and developing countries we find that the threshold for where the marginal effects are positive is about 11200US$, while the threshold for where the marginal effects are negative is about 1500US$.

Table 9 – FDI Capital Penetration & Economic Growth: Dependent on Initial Economic Standing
Robust Random Effects Estimation of Developed and Developing Countries in Restricted Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A	**Model B**	**Model C**	**Model D**	**Model E**	**Model F**	**Model G**	**Model H**
Primary Sector FIR	-0.0019	-0.0040	-0.0011	-0.0032	0.020	0.026	0.017	0.021
	(-0.62)	(-1.33)	(-0.41)	(-1.21)	(1.08)	(1.30)	(1.08)	(1.17)
Secondary and Tertiary	0.062***	0.082***	0.074***	0.090***	0.11***	0.13***	0.14***	0.15***
Sector FIR	(2.77)	(4.05)	(2.99)	(4.07)	(3.65)	(3.97)	(5.21)	(5.02)
Domestic Investment Rate (DIR)	0.52***	0.52***	0.53***	0.54***	0.50***	0.46***	0.50***	0.47***
	(6.00)	(5.93)	(6.15)	(6.28)	(4.04)	(3.82)	(4.31)	(4.01)
Primary Sector	-0.012	0.57	-0.024	0.52	0.049	-0.79	0.058	-0.42
FDI Capital Penetration	(-0.14)	(0.75)	(-0.27)	(0.68)	(0.52)	(-0.66)	(0.67)	(-0.37)
Secondary & Tertiary Sector	0.039	-1.62***	0.072	-1.48***	0.033	-2.53*	0.056	-2.36*
FDI Capital Penetration	(0.82)	(-3.20)	(1.39)	(2.91)	(0.38)	(-1.92)	(0.65)	(-1.90)
Domestic Capital Penetration	0.011**	0.0092**	0.066**	0.051*	0.0058	0.0024	0.078**	0.058
	(2.26)	(1.97)	(2.28)	(1.89)	(0.67)	(0.32)	(1.97)	(1.61)
Market Size	0.14	0.072	0.018	-0.021	-0.29	-0.045	-0.29	-0.086
	(0.75)	(0.35)	(0.08)	(-0.10)	(-0.70)	(-0.10)	(-0.74)	(-0.21)
Trade	0.23	0.20	0.024	0.042	0.31	0.74	0.37	0.70
	(0.30)	(0.27)	(0.03)	(0.06)	(0.44)	(0.89)	(0.55)	(0.87)
Initial Economic Standing	-1.69**	-2.29***	-0.13	-0.90	-1.02	-2.76**	1.42	-0.75
	(-2.37)	(-2.91)	(-0.10)	(-0.73)	(-1.11)	(-2.55)	(0.80)	(-0.38)
Human Capital	0.029	0.028	0.031	0.027	0.021	0.030**	0.014	0.023
	(1.48)	(1.43)	(1.54)	(1.41)	(1.20)	(2.05)	(0.74)	(1.46)
Time Dummy 1980-1985	-2.62***	-2.64***	-2.21**	-2.27**	-0.91	0.29	0.0038	0.80
	(-3.20)	(-3.08)	(-2.50)	(-2.52)	(-0.69)	(0.22)	(0.00)	(0.62)
Time Dummy 1985-1990	-1.73***	-1.44**	-1.63***	-1.31**	0.38	1.60	0.92	1.80
	(-2.69)	(-2.26)	(-2.49)	(-2.04)	(0.37)	(1.30)	(0.91)	(1.51)
Time Dummy 1990-1995	-0.58	-0.28	-0.70	-0.38	1.12	1.83	1.18	1.74
	(-1.19)	(-0.59)	(-1.44)	(-0.82)	(1.20)	(1.55)	(1.33)	(1.56)
Institutional Quality	0.42**	0.34*	0.39**	0.29	0.58**	0.50	0.47*	0.44
	(2.44)	(1.85)	(2.11)	(1.57)	(2.15)	(1.54)	(1.73)	(1.41)
Fuel Resource Dependence	-0.036	0.0082	-0.037	0.0072	-0.014	0.0061	-0.0065	0.016
	(-0.66)	(0.14)	(-0.73)	(0.13)	(-0.23)	(0.10)	(-0.12)	(0.28)

Non-Fuel Resource Dependence	0.037	0.017	0.053	0.027	-0.057	-0.10	-0.068	-0.11
	(0.37)	(0.13)	(0.53)	(0.21)	(-0.45)	(-0.79)	(-0.58)	(-0.88)
Civil War	-1.46**	-0.96	-1.53**	-0.99	-1.41	-1.09	-1.22	-0.94
	(-2.46)	(-1.44)	(-2.45)	(-1.47)	(-1.52)	(-1.37)	(-1.33)	(-1.13)
Primary Sector FDI CP *	—	-0.079	—	-0.073	—	0.12	—	0.070
Initial Economic Standing		(-0.85)		(-0.78)		(0.76)		(0.47)
Secondary & Tertiary FDI CP *	—	0.18***	—	0.17***	—	0.32**	—	0.30**
Initial Economic Standing		(3.37)		(3.12)		(1.99)		(1.98)
Domestic Capital Penetration *	—	—	-0.0066*	-0.0051	—	—	-0.0091*	-0.0069
Initial Economic Standing			(-1.91)	(-1.57)			(-1.74)	(-1.48)
Constant	2.74	10.67	-6.74	1.89	6.54	12.42	-12.94	-2.55
	(0.37)	(1.34)	(-0.71)	(0.19)	(0.63)	(1.05)	(-0.89)	(-0.16)
Number of Countries	29	29	29	29	16	16	16	16
Number of Observations	77	77	77	77	43	43	43	43
R-squared	0.75	0.76	0.76	0.77	0.88	0.90	0.89	0.91

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Syria in 1985" observation. The case affected the FIR variable the most.

Models A-H are identical to the standard model referred to in the tables above, the only difference being the interactions.

Quality.[62] These significant interactions with Secondary and Tertiary Sector FDI Capital Penetration—of course—underscore the conditional character of FDI.

7.5.5 Sensitivity Analysis

A number of sensitivity analyses were conducted to assess the robustness of the findings presented here. First, the analysis is in itself a sensitivity analysis since it initially is a replication of de Soysa's significant contribution (2003:62-66). de Soysas' findings are by and large replicated applying the same model, the same operationalisations, and updated data (see Table 3). Second, some alternative measures are highly correlated with the ones here preferred, and although they are not tested here they still testify to the validity of the applied operationalisations.[63] Third, an alternative sample—including developing countries only—has been analyzed, since there is some concern about mixing rich and poor countries in empirical studies of FDI and growth (see Blonigen and Wang 2005:241-42). This poor country sample displays some differences compared to the full country sample, such as the existence of some productivity differences between FDI and domestic capital. Fourth, updating the model with a series of theoretically-justifiable variables did not substantially influence the relationship between FDI and economic growth (see Table 4). Tests with alternative model specifications and with other variables were also conducted to reduce the likelihood of an omitted variable bias. This included logging the positively skewed investment and resource variables, and tests of variables on religion, legal origin, savings, democracy, international war and population growth. None of these alternative specifications

[62] The coefficient calculated threshold when Initial Economic Standing is replaced with Human Capital is about 70 (secondary school enrollment ratio in percent). This holds even when the FDI Capital Penetration composites are logged. The confidence interval calculated thresholds for when the marginal effects of Human Capital is negatively and positively associated with growth are 30 and 84 respectively. The threshold when Initial Economic Standing is replaced with Institutional Quality is 7.0 (scale from 0-10). This holds also when the FDI Capital Penetration composites are logged (and outliers are controlled for). The confidence interval calculated thresholds for when the marginal effects of Institutional Quality are negatively and positively associated with growth are 1.8 and 8.6 respectively.

[63] As discussed above, de Soysa uses gross secondary school enrollment as a proxy for human capital. This thesis does too, as described in Appendix A, Table A1. The institutional quality measure created here correlates 0.85 with the comparable indexes 'government effectiveness' and 'control of corruption' for the period 1996-2000. Finally, fuel resource dependence correlates 0.75 with a fuel dummy coded 1 for countries where 50 percent or more of total exports of goods and services are from fuels (mainly oil) in the period 1988-92. This dummy is available from Global Development Network's Growth Database (GDNGD) (Easterly and Sewadeh 2005).

had any substantial impact on the analyses.[64] Fifth, analyses breaking FDI down into its industrial components were also conducted, and revealed significant sectoral differences on how FDI is associated with economic growth. Sixth, the sensitivity of a possible in-sample, poor-country bias—where poor countries have more missing observations than rich countries—was checked using a multiple imputation (MI) approach.[65] The analyses displayed small differences compared to the original data, and, hence, did not suggest the existence of an in-sample, poor-country bias. Finally, parallel analyses employing—on the one hand—similar estimators (i.e., OLS with Newey-West standard errors and Random Effects controlling for first-order autocorrelation), and—on the other hand—a more consistent but less efficient estimator (i.e., a system-GMM estimator) were conducted. In general these findings supported the conclusions drawn based on the Random Effects estimator.

7.6 Theory versus Evidence: FDI and Economic Growth

In this chapter we have looked at the relationship between FDI and economic growth. Based on the theoretical framework the effect of FDI was expected to be positive, but conditionally so depending on both TNC and host country characteristics. The following paragraphs will attempt to give an account on how the findings obtained match the theory constructed.

The effects on economic growth from two distinct dimensions of TNC-activity have been tested. That is, both the effect of FDI growth (FIR) and FDI penetration have been accounted for. In the literature the former is—both by those arguing the positive effects of FDI and by those arguing the negative effects of FDI—widely held to have a positive impact on economic growth. However, those arguing the negative effects of FDI regard the latter proxy as a measure of dependence, and its effects on economic growth is—both theoretically and empirically—more contested (see Chapters 2 and 3 above for references and a more in-depth discussion of the two intuitively contradictory stands, and Section 7.3.1 for a discussion of the two proxies). In the analyses here performed the two proxies display a difference in the strength and character in their respective associations with economic growth. This is no

[64] Democracy and population growth are highly correlated with other development indicators (like initial economic standing, human capital, and institutional quality) and multicollinearity issues surface when all these variables are included. However, swapping democracy with, e.g., institutions and population growth with, e.g., initial economic standing, does not significantly alter the relationship between FDI and economic growth.

[65] An in-sample, poor-country bias differs from a not-in-sample, poor-country bias, where the latter is a bias created by poor countries being excluded from the analysis altogether due to low data availability. While the former was checked for by way of a multiple imputations approach, the latter bias can not be checked for.

surprise considering our Lakatosian approach, where different dimensions of a phenomenon might display differences in their impacts on another phenomenon. Thus, since they are proxies of different dimensions of FDI and behave differently with respect to economic growth, it seems only reasonable that the discussion to follow also is centered around these dimensions as well. The discussion will be initiated with an emphasis on the overall and conditional character of the relationship between FIR and growth.

Initially de Soysa's (2003:62-66) FDI-economic growth analysis—finding that the FDI Investment Rate (FIR) is positively and significantly associated with economic growth—was replicated. This finding is very robust, as it holds for different model specifications and different estimators. Domestic Investment Rate has a positive association with growth too, but foreign capital is—dollar for dollar for the expanded model developed in this thesis—2.1 times more productive than domestic capital when all countries are considered, and 1.6 times when considering developing countries only. Thus, the widely supported positive relationship between FIR and growth is supported in this thesis too.

However, further analyses revealed that this positive association is not unconditional. Breaking down FDI at the industry level reveals that there are significant differences between—on the one hand—Primary Sector FIR, and—on the other hand—Secondary and Tertiary Sector FIR. The differential impact is in accordance with the theoretical framework outlined above since the Primary Sector FIR is insignificantly associated with growth, while Secondary and Tertiary Sector FIR display a robust positive and significant association to the dependent variable. Thus, the composition of FIR matters and, e.g., investments in resource extraction is not as good for growth as investments in manufacturing.[66]

Moreover, further analyses also revealed that the positive association in question is conditional on some host-country characteristics. Previous empirical investigations have supported that the nature of the relationship between FIR (or FDI flows) and Economic Growth depends on the level of human capital (Borenzstein et al. 1998:134, de Soysa 2003:64-66). This particular interaction was here supported in the sample created to replicate de Soysa's analyses in Section 7.5.1 above, but not for the sample created for the updated model developed in this thesis.[67] Although this lack of replicability does not necessarily

[66] The conservative estimates of the productivity differences—when considering all countries and developing countries respectively—is that that foreign capital in the secondary and tertiary sector is—dollar for dollar—2.3 and 4.7 times more productive than domestic capital in general. The conservative estimates here refer to the analysis of the multiple imputed samples. The respective figures for the original samples are 3.9 and 8.4 in favor of foreign capital.

undermine the previous findings altogether, it does, however, testify to a lack of robustness for the interaction in question. A conditional effect that was confirmed, however, was the effect that the association between Economic Growth and FIR is decreasingly positive the more dependent host countries are on fuel resources (mostly oil). Moreover, when the export value of fuel is above 10 percent of GDP we cannot say with 95 percent certainty that the association between Economic Growth and FIR is positive (although it need not be negative).[68] Thus, although the overall effect of FIR on growth is positive, it is conditional and might depend on both the composition of FIR and on the host country characteristics like fuel resource dependence and level of human capital. We now turn to the penetration effects of FDI.

Previous investigations have found FDI penetration to be negatively or insignificantly associated with growth. Tested here, FDI Capital Penetration is positively associated with Economic Growth, but the significance of the relationship fails several tests of robustness (see Tables 3-5 above). Thus, in spite of the general lack of significance this finding for overall FDI, nevertheless, contradicts the findings of those who argue that FDI penetration has a negative effect on growth. One might only speculate that the more positive character of the relationship here displayed is due to more recent and revised data. Moreover, this position—which we might call an "anti-TNC" position—also fails to draw any support from the FDI composition analysis, as neither Primary Sector FDI Capital Penetration nor Secondary and Tertiary Sector FDI Capital Penetration display a significant relationship with Economic Growth. That is, the argued negative impacts from the resource extractive TNCs find no support in the composition analyses performed here. There is, however, some support for this anti-TNC view when we take into account the importance of host-country characteristics. Moreover, the association between Economic Growth and Secondary and Tertiary Sector FDI Capital Penetration is decreasingly positive, the lower the Initial Economic Standing. More precisely—based on the confidence intervals in Figure 5 above—we can say with 95 percent certainty that host countries in the developing world with a Initial Economic Standing above 8.58 (i.e., about 5300US$) are positively associated with growth, while we cannot say with 95 percent certainty that any host countries in developing world are negatively associated with

[67] The model was updated with some theoretically-founded variables including the quality of institutions, degree of resource dependence and civil war. This also affected the number of years and countries covered. The test here referred to was, of course, also tested with identical models. The interaction was then still insignificant.

[68] This finding holds both for the sample including all countries and for the sample including developing countries. A less conservative estimate of the threshold in question for developing countries is 15 (obtained by logging FIR or deleting most influential observations).

economic growth.[69] That is, richer developing countries stand a better chance of benefiting from high FDI penetration in the secondary and tertiary sector that poorer countries, but no host country in the developing world is likely to experience negative effects on growth from high FDI penetration in these sectors. Recalling the low number of observations in these analyses, it is a sign of robustness that these findings—when including both developed and developing countries—even finds support when Initial Economic Standing is replaced with the two other host country development characteristics, Human Capital and Institutional Quality.[70] In summing up the FDI penetrations findings, therefore, we can say that FDI penetration generally appears to be positive (although not significantly so), but that richer developing countries might benefit more from a high penetration in the secondary and tertiary sector than poorer developing countries. There is, therefore, no support for the view that FDI capital penetration has a negative effect on growth, only that the degree of benefits from FDI penetration depend on both the composition of FDI and on the host countries general level of development.

The importance of host country characteristics has so far only been discussed relative to how FDI is associated with economic growth. The following, therefore, focuses on how these host-country characteristics themselves relate to economic growth. Here, two important groups of host-country characteristics have been identified. On the one hand we find general development characteristics like economic development, human capital, and institutional quality, and on the other hand we find the degree of natural resource dependence. The former group of characteristics behaves as expected. That is, Initial Economic Standing displays a robust negative association with Economic Growth, while Human Capital and Institutional Quality display a robust positive association with the dependent variable.[71] Thus, poorer countries grow faster than richer countries, but this can be compensated for by higher levels of human capital and institutional quality. The endogenous growth model, therefore, seems

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[69] From the sample including both developed and developing countries we find—based on confidence intervals—that the threshold for where the marginal effects are positive is about 11200US$, while the threshold for where the marginal effects are negative is about 1500US$.

[70] See Section 6.5.4 for details on the Human Capital and Institutional Quality Analysis, but keep in mind that the findings for those two variables do not hold when including developing countries only.

[71] The coefficient of Initial Economic Standing is negative and significant for all analyses in Tables 4-7, except for some of the model specifications in the small-N analyses in Table 7. The coefficient of Human Capital is positive for all analyses in Tables 4-7, but significantly so only for the large-N analyses in Tables 4 and 5. The coefficient of Institutional Quality is positive for all analyses in Tables 4-7, and significantly so for most specifications and tables except for the large-N analyses of developing countries in Table 5.

justified. The degree of resource dependence, however, only partly behaves as expected. According to the resource curse literature (see Sections 4.2.6 and 7.3.9 above for a discussion of the subject) negative effects should be expected, and—although mostly insignificantly so—this holds for both Fuel and Non-Fuel Resource Dependence under standard specifications. Tests of alternative specifications, by logging the variables, were performed as these variables are highly positively skewed, and resulted in highly insignificant findings for both. This suggests that the negative association might only hold for host countries with high levels of resource dependence.[72]

Overall the FDI-growth findings are fairly robust, but there are, however, important caveats that should not be underestimated. First, although not contradictory, the findings of other more consistent system-GMM sometime question the strength and the degree of significance of the relationship between FDI and economic growth. Second, the low number of observations in the FDI-composition analyses make the findings—at least to some extent—sensitive to outliers and model specifications. In this respect, however, it should be noted that the findings based on the multiple imputed data sets are in accordance with the general findings. Third, a poor-country bias arises as poor countries—due to low data availability—are excluded from the analysis more frequently than rich countries.[73] Finally, statistical analyses can only say something about the degree of correlation between FDI, on the one hand, and host country economic growth, on the other. No robust causal relationships can be secured (Freedman 1997:156-57, Goldthorpe 2001:1-20). Moreover, opposite causality, where economic growth attracts FDI, is as likely as the scenario where FDI spurs economic growth (see, e.g., Choe 2003:54-55, Chowdhury and Movrotas 2006:17-18).

[72] Note that these findings only hold for the large-N analyses in Tables 4-5. In the small-N analyses in Tables 6-7 the coefficients for these two variables mostly display a low level of significance.

[73] This is a out-of-sample poor country bias. Out-of-sample as in contrast to the in-sample poor country bias accounted for by way of the multiple imputation approach (see Section 6.1 above for a discussion of the nature of the data).

8 Statistical Analysis: The Human Rights Analysis

8.1 Outlining Models and Analyses

The models and analyses presented below are not replication analyses, but nevertheless build on influential contributions in the literature (see, e.g., Apodaca 2001:590-600, de Soysa 2003:106-14, Poe and Tate 1994:853-71, Poe et al. 1999:292-311, Richards et al. 2001:219-39). As for the economic growth analyses above, one needs to be careful about how phenomena are operationalised, as different proxies are likely to signify different aspects of the phenomena in question. Contrary to the growth analysis, however, it is not the operationalisation of FDI but rather the operationalisation of the dependent variable that needs to be fine-tuned.

As there is no theoretical justification for expecting the FDI Investment Rate to have an effect on a host country's level of human rights, only the FDI Capital Penetration measure of FDI will be integrated into the models below (as a proxy for the presence of TNCs). Human rights, on the other hand, is a complex concept and will be proxied here by two separate dimensions of human rights: physical integrity rights (PIR) and political and civil rights (PCR). Traditionally the former has been linked to governments' response to dissent and/or perceived threat (Poe et al. 1999:292-96), while the latter has been linked to degree of democratisation (Casper and Tufis 2003:197, de Soysa 2003:97-105, Poe et al. 1999:304-10, Richards et al. 2001:229).[74] However, in the perspective adopted here, these dimensions are related as they both reflect instruments of control available to an authoritarian government. That is, an authoritarian government can remain in power by way of physical repression and/or by way of repression of political and civil rights. The former is seen as a more fundamental set of rights than the latter, and the presence of TNCs is arguably related to both dimensions.[75] According to the anti-TNC view the host country governments' ability to repress increases as the presence of TNCs increases. This is because an authoritarian host

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[74] Several measures of democracy are made available for empirical analysis (e.g., data from Polity IV, Vanhanen, and Freedom House). Although highly correlated (Quinn and Wooley 2001:653) they are not, however, interchangeable (Casper and Tufis 2003:202-03). The rights-based approach adopted here justifies the selection of the more rights-based measures on political and civil rights from Freedom House (2004) over the other more institution-based measures from Polity IV (Marshall et al. 2004) and Vanhanen (2000).

[75] The correlation between the two dimensions is far from perfect (about 0.54 in the annual 1984-2000 human rights sample, N=1075).

country government and the TNCs have a common interest in keeping the host country population down and under control (e.g., political stability and low labor standards – see Sections 3.2 and 4.2.6). The pro-TNC argument highlights the positive indirect impact on human rights through positive effects on economic growth, and economic growth and level of economic development will, therefore, be included as important controls. Other controls common to the repression literature are also included. The expected effects and the justifications for the different controls will be given below.

$$\text{Human Rights}_{it} = ß_0$$
$$+ ß_1\text{Human Rights Lagged}_{it}$$
$$+ ß_2\text{FDI Capital Penetration}_{it} + ß_3\text{Domestic Capital Penetration}_{it}$$
$$+ ß_4\text{Democracy}_{it} + ß_5\text{Population Size}_{it} + ß_6\text{Economic Standing}_{it}$$
$$+ ß_7\text{Economic Growth}_{it} + ß_8\text{Civil War}_{it} + ß_9\text{Ethnolinguistic Fractionalization}_{it}$$
$$+ ß_{10}\text{Institutional Quality}_{it} + ß_{11}\text{Fuel Resource Dependence}_{it}$$
$$+ ß_{12}\text{Non-Fuel Resource Dependence}_{it} + ß_{13}\text{-}ß_{27}\text{Time Dummies}_{it}$$
$$+ (\alpha_i + \varepsilon_{it})$$

, where α_i is the time-constant (or fixed) unit effects, and ε_{it} is the time-varying (or idiosyncratic) unit effect.

As in the economic growth analysis, the theoretical examination in Part I suggests that it is fruitful to test a model where the FDI variables are broken up into a primary sector component, on the one hand, and secondary and tertiary sector components, on the other. The data is, however, constrained for reasons described in Section 6.1 above. Hence, these models will be tested on a smaller set of countries, as well as on a multiple imputed (MI) version of the dataset. This latter model can be stipulated as follows:

$$\text{Human Rights} = ß_0$$
$$+ ß_1\text{Human Rights Lagged}_{it}$$
$$+ ß_2\text{Primary Sector FDI Capital Penetration}_{it}$$
$$+ ß_3\text{Secondary and Tertiary Sector FDI Capital Penetration}_{it}$$
$$+ ß_4\text{Domestic Capital Penetration}_{it}$$
$$+ ß_5\text{Democracy}_{it} + ß_6\text{Population Size}_{it} + ß_7\text{Economic Standing}_{it}$$
$$+ ß_8\text{Economic Growth}_{it} + ß_9\text{Civil War}_{it} + ß_{10}\text{ Ethnolinguistic Fractionalization}_{it}$$

$+ ß_{11}\text{Institutional Quality}_{it} + ß_{12}\text{Fuel Resource Dependence}_{it}$

$+ ß_{13}\text{Non-Fuel Resource Dependence}_{it} + ß_{14}\text{-}ß_{28}\text{Annual Time Dummies}_{it}$

$+ (\alpha_i + \varepsilon_{it})$

, where α_i is the time-constant (or fixed) unit effects, and ε_{it} is the time-varying (or idiosyncratic) unit effect.

As there are indications that the effects of foreign capital are conditional on host country development characteristics—like level of economic development or level of human capital, as well as on its level of resource dependence—we will also test for the interactions between FDI and these variables. However, before we begin the analyses, we need to account for the operationalisation and expected effects of the different variables included in the models above.

8.2 The Dependent Variable

As described in Section 2.2, human rights is a complex concept that is not easily captured or operationalised by a single dimension or proxy. Hence, two different dimensions of human rights will be analyzed here in order to serve justice to this apparent complexity: physical integrity rights and a combined measure of political and civil rights.[76, 77] There are three separate measures for physical integrity rights: one from the CIRI database (Cingranelli and Richards 2005) and two from the political terror scale (PTS) (Gibney 2005b). The former is the preferred measure, but sensitivity analyses on the latter two have also been performed and will be commented on in the discussion to follow.[78] The physical integrity rights' index is

[76] The latter is almost self-explanatory, while the former is a scaled variable coded on torture, extrajudicial killing, political imprisonment and disappearance based on country reports from Amnesty International and the US State Department. For more information on all variables see Appendix A, Table A1.

[77] Note that Hafner-Buron and Tsutsui (2005:1401-02) argue that it is better to use human rights' indicators than ratification of human rights treaties as proxies for human rights. This is because there is a strong international pressure to ratify human rights' treaties combined with relatively low costs of ratification. Consequently, many governments ratify without the will or the capability to behave according to the ratified treaties.

[78] The CIRI measure is preferred over the PTS measurers as it draws on country reports from both Amnesty International and the US State Department, while the latter two are independent measure, one based on country reports from Amnesty International and one based on country reports from the US State Department. Moreover, although the two proxies examine the same components (politically-motivated imprisonment, torture, disappearance and murder) Richards et al. (2001:225-27) argue that the PTS "suffers from an a priori asserted pattern of respect for rights that does not hold up to empirical testing". The root of the controversy is how the measure is determined: the PTS assigns one figure for the group of components (Gibney 2005a), while the PIR scale assigns figures for each component before they are aggregated on a 9-point ordinal additive scale (Richards

coded (on a 9-point ordinal scale) based on country reports from Amnesty International and the US State Department.[79] The political and civil rights measure is a combined index (on a 13-point ordinal scale) based on data on political rights and civil liberties from Freedom House (2004) (see Appendix A, Table A1 for details on construction and sources for all the variables applied).[80]

8.3 The Independent Variables and Their Expected Effects

Although denoted *t* in the models above, the analyses follow a conventional approach and systematically lag all independent variables 1 year (see, e.g., Gerring et al. 2005:351-52, Melander 2005:160). In addition to being theoretically sound, lagging variables will allow us to control for opposite causality (i.e., whether a significant correlation is the result of the dependent variables having an effect on the regressors rather than the regressors having an effect on the dependent variables) since the mechanism works through time.

8.3.1 Human Rights Lagged

A lagged dependent variable, often incorporated in prior research, is also included. The theoretical justification for this is that it controls for a country's history or disposition to use repression and violence against it citizens (see e.g., Apodaca 2001:593, Poe et al. 1999:304-07, Richards et al. 2001:229-30). In addition it acts as a control of heteroscedasticity and serial correlation common in time-series cross-section analysis (Beck and Katz 1995:644-45, Beck and Katz 1996:9-10).

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et al. 225-27). We agree with the principle that an additive scale might be less biased, although they are all widely used proxies in the literature (see e.g., Apodaca 2001:592-93, Cingranelli and Richards 1999:518-19, Poe and Tate 1994:854-55, Poe et al. 1999:292-99, Richards et al. 2001:225-27). Note that the two-tailed Pearson correlation between the CIRI and PTS based measures in the pre-multiple imputed data set is about 0.83 when including all countries, and about 0.73 when including developing countries only.

[79] While the CIRI indicator is originally coded on a 9-point scale, the political terror scale indicators are coded on two separate 5-pont scales (see Appendix A Table A1 for details).

[80] The Freedom House data are argued to have some caveats attached. That is, they have been criticised for being highly impressionistic (Poe and Tate 1994:857), and biased toward non-Marxist-Leninist, Christian, monarchies, and older states (Bollen and Paxton 2000:77). They are, nevertheless, included as they together with the physical rights data well represent the argued complexity of human rights.

8.3.2 Foreign Direct Investment

Foreign Direct Investment (FDI), the proxy for TNC presence, is operationalised by way of FDI Capital Penetration (see Appendix A, Table A1 for details).[81, 82, 83] The rationale is to capture the effect of foreign capital as it accumulates in—or penetrates—the domestic economy. Given the theoretical discussion in Part I and the time-span concerns expressed in Section 5.1, we expect FDI to exercise a stronger indirect effect (through economic development) than direct effect on human rights.

The structure of dependence is, as in the economic growth analysis, operationalised as FDI composition broken down at the industry level. The dividing line—as far as the resource curse and general spillover effects is concerned—is between a primary sector component on the one hand, and a secondary and tertiary sector component, on the other. The theoretical outline in Part I suggests that spillover effects are fewer and that TNC-host country elite alliances are potentially more harmful in the primary sector. Overall investments and investments in the secondary and tertiary sectors are, therefore, both expected to have a more positive association with human rights than investments in the primary sector. Moreover, it is also expected that the effect of FDI will depend on host country development characteristics like level of economic development and institutional quality, as well as on the level of resource dependence. Note also that the caveats attached to these proxies, as outlined under the discussion of the independent variables in the economic growth analysis above, applies for the human rights' analyses as well (see Appendix A, Table A1 for details on FDI variables).

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[81] FDI flows and FDI penetration are both commonly used measures for the influence of FDI on democracy/human rights. For analyses with FDI flows see e.g. Apodaca (2001:FDI per capita) and Richards et al. (2001:Flow of FDI). For an analysis with FDI penetration see e.g., de Soysa (2003:106-14 Inward Stock of FDI/GDP). This thesis only look at FDI penetration as we believe that the effect of TNC presence on host country's level of human rights is best captured by a stable measure like FDI Capital Penetration, rather than by a measure like FDI flows (relative to GDP or not) that may display substantial year-to-year fluctuations.

[82] Richards et al. (2001:228) argue in favour of absolute measures of FDI as the ratio measures only estimates relative effects. In this analysis, however, we argue in favour of using the GDP relative measures as it captures the degree of economic penetration. That, is 10 billion US$ worth of investment in China cannot be compared to 10 billion US$ worth of investment in Zambia.

[83] Note also that different indicators of FDI have been found to produce different effects on repression, where, for instance, FDI/GDP is more robust than net FDI (Hafner-Burton 2005a:393-95).

8.3.3 Domestic Investment

Domestic Capital Penetration is included as a control to check that the effects of FDI are not merely overall investment effects. They are operationalised in the same fashion as the investment measure referred to above (see Appendix A, Table A1 for details).

8.3.4 Democracy

Democracy is included as a commonly used control variable since we expect democracy to influence human rights positively (see Appendix A, Table A1 for details). However, democracy is highly correlated with several of the human rights' dimensions here applied. This problem can be avoided through a dummy operationalisation, where highly democratic countries are coded 1. This threshold operationalisation is also theoretically supported in the literature since the positive benefits of democracy, in terms of human rights, only accrues above a certain level of democratization (Davenport and Armstrong 2004:551-53). Note also that Evans (2001:639-40) argues that the link is weaker in developing countries. This is because the spread of the idea of democracy, as it is currently promoted, relates more often to economic growth and development, the interest of global capital and finance and the conditions for globalization than it does to human rights and human security. The popular assumption 'if democracy then human rights' is at least questionable. A check for democracy then becomes a check for whether highly democratic countries behave differently—human rights wise—than less democratic countries after controlling for all other variables in the model (see Appendix A, Table A1 for details).

8.3.5 Population Size

Population Size is included since a large population is argued to create stress on the nation's resources, and thereby create social tension. In the end, governments in these situations might resort to repression to keep the masses under control. In addition a large population is (by shear number) more likely to suffer human rights' violations in absolute terms (Poe et al. 1999:294) (see Appendix A, Table A1 for details).

8.3.6 Economic Standing

Economic Standing and Economic Growth (see below) are included as controls for the theorized indirect effect of FDI on human rights. This relationship rests on a long standing tradition in political science which argues that economic development is conducive to democracy and, hence, human rights (Burkhart and Lewis-Beck 1994:903-04, Lipset 1994:1-22, Lipset 1959:69-105, Moore 1966:413-32, Rueschmeyer et al. 1992:40-78). That is, as far as FDI generates economic growth, it will increase the country's economic standing in the longer run, and this will eventually affect the country's level of democracy/human rights. There is, as a consequence, a difference between the expected short-term and long-term effects of FDI. If FDI—on the one hand—generates growth in the short run, this growth might or might not be conducive to human rights. If FDI—on the other hand—generates long-run economic development, then this economic development will most likely be conducive to human rights. Initial economic standing is, as a consequence, expected to be positively associated with all human rights' dimensions as the more developed countries are less likely to repress the rights of their citizens (see, e.g., Poe et al. 1999) (see Appendix A, Table A1 for details).

8.3.7 Economic Growth

Hundreds of years were needed for the long-term positive effects of economic growth to affect human rights in Western democracies. General globalization trends have reduced this lag for today's less developed countries, but it is still likely to take many decades for the effects to materialize (Howard-Hassmann 2005:38-40). Consequently, the short timeframe of statistical analyses like this will not be able to catch any of these long-term positive effects. The question then is whether the short or medium-term effects are conducive to human rights or not. Theories of fast growing developmental states suggest that these countries owe part of their success to the successful repression of human rights for the population at large, but argue also that this is by no means universally true (Leftwich 1995:400-27, Poe et al. 1999:294). Thus, no clear-cut relationship is expected (see Appendix A, Table A1 for details).

8.3.8 Civil War

A civil war scenario is likely to have a substantially detrimental effect on all dimension of human rights, and is as a consequence a necessary control in an analysis like this (see, e.g., Apodaca 2001:595, Poe and Tate 1994:859-60, Poe et al. 1999:297, Richards et al. 2001:229-30) (see Appendix A, Table A1 for details).

8.3.9 Ethnological Fractionalization

The level of Ethnolinguistic Fractionalization acts as a control for possible ethnic or social tension, which again might lead to the repression of human rights. The idea of repression and dictatorship as inherently more plausible in ethnic diverse countries is, however, not unambiguously supported in the literature (see Fish and Brooks 2004:144-66 for a good discussion on the subject) (see Appendix A, Table A1 for details).

8.3.10 Institutional Quality

Institutional Quality is operationalised as the combined measures of bureaucratic quality and level of corruption (see Appendix A, Table A1 for details). It is included as a control since weak institutions—corruption and low quality bureaucracy—are argued to be one feature of the resource curse (see the theoretical outline in Part I). In this context, this concept is particularly important for primary sector investments located in resource-rich countries (see 'resource dependence' below).

8.3.11 Resource Dependence

To the extent that resource dependent countries suffer from the resource curse—as outlined in Part I—it seems plausible to expect the human rights benefits of FDI to be less in these resource-cursed nations than in a more benign context. Moreover, to the extent that the resource curse manifests itself as corruption in state institutions, it seems plausible to expect that the presence of TNCs only serves to exacerbate the problem as they offer another source

of corruption through their economic resources.[84] Hence, resource dependence is an important control for FDI in general and primary sector FDI in particular. That is, the argued negative effect of primary sector investments on the dependent variable could be spurious as this effect might be hiding the bad democracy/human rights' records of resource-abundant economies (Ross 2001:356-57). Note also that colonies that implemented resource-extractive-oriented institutions inherited institutions detrimental to economic development (Acemoglu et al. 2001b). The operationalisation of resource dependence here mirrors the literature and makes a distinction between Fuel (i.e. mostly oil) and Non-Fuel Resource Dependence (their respective shares in exports) (see e.g., Ross 2001:338) (see Appendix A, Table A1 for details).

8.3.12 Time

Time dummy variables are commonly included to check for period-specific shifts as they summarize the prevalent global conditions at a given period of time and reflect worldwide recessions and booms, changes in the allocation and cost of international capital flows, and technological innovations (Carkovic and Levine 2005:200, de Soysa 2003:62-66, Gerring et al. 2005:350, Loayza and Soto 2002:14-15). The 15 annual dummy variables applied here are—for the sake of space and lucidity—omitted from the results displayed in the tables below.

8.4 Data Screening

Data screening is as vital for the human rights' analyses as it was for the economic growth analyses above. Here too, the data in a given model can produce a bias that invalidate the assumptions of the estimator, and, hence, the results of the analysis (see, e.g., Hamilton 1992:116-36, Pennings et al. 1999:201-18, Wooldridge 2002:653-57). This section will, therefore, provide a short discussion on the screening of the data, and comment on how this screening has influenced the proxies, the model, and the potential estimators. Note, however, that the analysis of human rights is not one single analysis, but rather it is a complementary

[84] As mentioned in the economic growth analysis: That is not to say that TNCs are the source of corruption or that the impact of TNCs are necessarily negative, only that they are likely to contribute to the problem of corruption once present.

analysis on different sets (or subsets) of data, as well as on different proxies of human rights. As a result, the screening of the data and the subsequent discussion need to reflect analyses performed on all these proxies and subsets of data (see Appendix A, Tables A12 to A15 for descriptive statistics for these datasets).

The data screening process is comprised of evaluations of potentials sources of bias including analysis of missing data, influential observations, normality, multicollinearity, heteroscedasticity, autocorrelation, linearity and model specifications.[85] For the analyses in general the screening indicated that some outliers were present, but that their effects were either insignificant or cancelled out one another. Hence, no observations were excluded from the analyses. The screening furthered revealed that the trade variables would benefit from a log transformation. However, even with a lagged dependent variable some problems related to non-normality, heteroscedasticity and autocorrelation were encountered. This suggested the use of panel estimators (like Random Effects, Fixed Effects or system-GMM) or OLS with Newey-West standard errors that could better account for these sub-optimal OLS features.[86] Moreover, since the dependent variables all are ordinal, the use of a random effects ordered probability estimator seems appropriate for those measures of human rights captured by the shortest scale (i.e., the PTS based measures of Physical Integrity Rights (see Melander 2005:160 for similar logic).[87]

In addition to the problems outlined above, the screening of the restricted dataset—used in the analyses of the effects of FDI composition—also revealed some potential problems with multicollinearity, as was the case in the economic growth analyses. Primary Sector FDI Capital Penetration and Non-Fuel Resource Dependence are highly correlated both when including all countries and developing countries only (see Appendix Tables A16 to A19 for correlation matrixes). The original measure of Non-Fuel Resource Dependence (labeled the alternative measure in the matrix tables) comprised of 'ores and metals' only and yielded correlations of about 0.84-89 with Primary Sector FDI Capital Penetration. This

[85] See the section on economic growth for a description of the particular tests.

[86] See the discussion in Section 6.2 for a discussion of how we deal with both autocorrelation and heteroscedasticity.

[87] Beck (2001:273) has argued that ordinal variables with 7-point scales (and more) can be treated as continuous. However, since the PTS based measures of Physical Integrity Rights are on a 5-point scale an ordinal estimator seems justified.

resulted in instability for some of the analyses as far as these two variables were concerned.[88] Creating a new measure by combining 'ores and metals' with 'agricultural raw materials' only slightly reduced the correlations (0.78-82) but nevertheless produced the stability that was missing in part with the originally intended measure, and this without compromising the theoretical foundation for the operationalisation of the variable. Note also that the Economic Standing and Institutional Quality in the all country analyses are highly correlated (as expected) without causing any instability. Yet, caution should be exercised when drawing conclusions based on analyses on the restricted dataset, as few observations—at least to some extent—make them sensitive to outliers and model specifications.

8.5 The Analysis

The human rights' analysis builds on important contributions in the literature. This literature has been mostly focused on physical integrity rights, but it also looks at the effect of FDI on democracy (see, e.g., Apodaca 2001:590-600, de Soysa 2003:106-14, Poe and Tate 1994:853-71, Poe et al. 1999:292-311, Richards et al. 2001:219-39). Two different dimensions on human rights will—for reasons highlighted in Section 8.1—be investigated here—Physical Integrity Rights (PIR) and Political and Civil Rights (PCR)—for their overall, compositional and conditional association with FDI (see (3) in Figure 2). The second link in the indirect relationship between FDI and human rights will also be tested. That is, the relationship between economic development and human rights (see (1b) in Figure 2). A mostly descriptive account of these findings will be given before some sensitivity analyses are discussed. At the end a more thorough discussion of the effects of FDI in light of the theoretical framework will be attempted.

8.5.1 The Overall Effects of FDI

Tables 10-11 display the effects of overall FDI Capital Penetration on Physical Integrity Rights (PIR). Model A is a reduced model, displayed to check for the influence of Institutional Quality and Fuel and Non-Fuel Resource Dependence, later introduced in the

[88] Instability here refers to the stability of coefficients and significance of these two variables when leaving the one or the other out of the analysis. Instability also refers to how stable the models are as far as outliers are concerned.

Table 10 – Human Rights – Physical Integrity Rights (PIR):
Robust Random Effects Estimation of Developed and Developing Countries in Full and MI Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Lagged Dependent	0.60***	0.59***	0.41***	0.58***	0.58***	0.42***	0.84***	1.16***
	(22.51)	(21.34)	(14.26)	(21.22)	(21.16)	(14.18)	(6.85)	(8.90)
FDI Capital Penetration	0.0049*	0.0039	0.0039	0.0051*	0.073**	0.0045	0.0047	0.0082**
	(1.77)	(1.42)	(1.27)	(1.71)	(2.03)	(1.35)	(1.24)	(2.10)
Domestic Capital Penetration	-0.00067	-0.00061	-0.0011*	-0.00042	-0.15	-0.00061	-0.0014	-0.00093
	(-1.13)	(-1.02)	(-1.75)	(-0.71)	(-0.98)	(-1.05)	(-1.02)	(-1.15)
Democracy	0.36***	0.29***	0.41***	0.27***	0.26***	0.36**	0.30**	0.42***
	(3.92)	(3.04)	(3.70)	(2.88)	(2.76)	(2.48)	(2.05)	(2.73)
Population Size	-0.15***	-0.16***	-0.25***	-0.15***	-0.15***	-0.25***	-0.26***	-0.20***
	(-5.96)	(-6.14)	(-8.30)	(-5.21)	(-5.25)	(-5.51)	(-3.79)	(-4.19)
Economic Standing	0.31***	0.24***	0.38***	0.27***	0.27***	0.28***	0.34***	0.48***
	(6.13)	(3.92)	(5.46)	(4.24)	(4.28)	(3.73)	(5.73)	(3.59)
Economic Growth	0.0016	0.00066	0.0052	-0.00023	-0.00040	0.0057	-0.010	-0.0037
	(0.19)	(0.08)	(0.56)	(-0.03)	(-0.05)	(0.79)	(-0.97)	(-0.37)
Civil War	-0.84***	-0.83***	-1.41***	-0.85***	-0.88***	-0.95***	-0.68***	-0.58***
	(-6.06)	(-6.04)	(-9.97)	(-6.18)	(-6.33)	(-4.52)	(-3.93)	(-2.79)
Ethnolinguistic Fractionalization	-0.0052***	-0.0049***	-0.0076***	-0.0051***	-0.0053***	-0.0077***	-0.016***	-0.012***
	(-3.17)	(-2.98)	(-4.00)	(-3.12)	(-3.20)	(-2.70)	(-4.49)	(-3.37)
Institutional Quality	—	0.060**	0.052*	0.056**	0.059**	0.064**	0.11*	0.11***
		(2.23)	(1.75)	(2.07)	(2.21)	(2.03)	(1.83)	(2.59)
Fuel Resource Dependence	—	-0.0026	-0.011**	-0.037**	-0.039**	-0.0049	-0.0015	0.010
		(-0.53)	(-2.15)	(-2.27)	(-2.32)	(-0.79)	(-0.13)	(1.21)
Non-Fuel Resource Dependence	—	0.0052	0.0029	0.031	0.019	0.0061	0.0045	0.015
		(0.60)	(0.28)	(1.10)	(0.73)	(0.57)	(0.31)	(0.78)
Constant	1.89***	3.18***	4.60***	2.63***	3.31***	4.97***	—	—
	(2.72)	(4.44)	(5.79)	(3.38)	(2.70)	(4.34)		
Number of Countries	81	81	81	81	81	81	81	81
Number of Observations	1075	1075	1075	1075	1075	1296	1073	1073

R-squared / Log Likelihood	0.76	0.77	0.72	0.77	0.77	__	-847.67	-731.29

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Model A: Standard model in reduced form.
Model B: Standard model.
Model C: Standard model: Lagged Dependent increased from 1 to 4 years.
Model D: Standard model: Logging (natural logarithm) Fuel and Non-Fuel Resource Dependence.
Model E: Standard model: Logging (natural logarithm) FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model F: Standard model: Replacing missing values by way of multiple imputations.
Model G: Standard model: Dependent variable, Physical Integrity Rights, is based on the Amnesty International part of the Political Terror Scale.
See Appendix A1 for more detailed information about the variable. As the variable is a 5-point scale and robust random effects ordered probit estimator was employed. Note that cut-offs are not displayed.
Model H: Standard model: Dependent variable, Physical Integrity Rights, is based on the US State Department component of the Political Terror Scale.
See Appendix A1 for more detailed information about the variable. As the variable is a 5-point scale and robust random effects ordered probit estimator was employed. Note that cut-offs are not displayed.

Table 11 – Human Rights – Physical Integrity Rights (PIR):
Robust Random Effects Estimation of Developing Countries in Full and MI Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Lagged Dependent	0.51***	0.51***	0.34***	0.51***	0.50***	0.43***	0.81***	1.15***
	(15.84)	(15.72)	(10.74)	(15.69)	(15.81)	(13.52)	(7.88)	(8.95)
FDI Capital Penetration	0.0060**	0.0062**	0.0069**	0.0066**	0.10**	0.0057*	0.0078**	0.0089**
	(1.97)	(2.00)	(2.02)	(1.96)	(2.20)	(1.68)	(1.91)	(1.96)
Domestic Capital Penetration	-0.00045	-0.00031	-0.00057	-0.00017	-0.063	-0.00039	-0.0013	-0.00081
	(-0.72)	(-0.50)	(-0.93)	(-0.27)	(-0.37)	(-0.75)	(-1.42)	(-1.12)
Democracy	0.21**	0.21**	0.30***	0.20**	0.19*	0.21*	0.16	0.25*
	(2.17)	(2.12)	(2.70)	(2.03)	(1.91)	(1.78)	(1.26)	(1.78)
Population Size	-0.28***	-0.28***	-0.38***	-0.26***	-0.26***	-0.33***	-0.27***	-0.24***
	(-7.51)	(-7.21)	(-9.74)	(-6.55)	(-6.64)	(-8.02)	(-3.94)	(-3.79)
Economic Standing	0.085	0.11*	0.20***	0.14**	0.14**	0.033	0.059	0.20**
	(1.47)	(1.69)	(2.83)	(2.01)	(2.02)	(0.44)	(0.63)	(2.09)
Economic Growth	0.0052	0.0056	0.011	0.0044	0.0044	0.0093	-0.010	-0.0015
	(0.58)	(0.63)	(1.13)	(0.50)	(0.49)	(1.24)	(-1.23)	(-0.15)
Civil War	-0.98***	-1.00***	-1.54***	-1.02***	-1.04***	-1.04***	-0.89***	-0.73***
	(-7.05)	(-7.17)	(-11.35)	(-7.36)	(-7.47)	(-5.67)	(-5.25)	(-4.03)
Ethnolinguistic Fractionalization	-0.0050**	-0.0052**	-0.0079***	-0.0053**	-0.0054**	-0.0053**	-0.0074*	-0.0065**
	(-2.21)	(-2.27)	(-3.33)	(-2.32)	(-2.40)	(-1.97)	(-1.91)	(-2.12)
Institutional Quality	—	-0.023	-0.066*	-0.025	-0.020	-0.0037	0.012	0.023
		(-0.67)	(-1.84)	(-0.74)	(-0.60)	(-0.11)	(0.27)	(0.51)
Fuel Resource Dependence	—	-0.0038	-0.012**	-0.037**	-0.038**	-0.0051	0.0050	0.0089
		(-0.78)	(-2.33)	(-2.10)	(-2.13)	(-0.86)	(0.73)	(1.23)
Non-Fuel Resource Dependence	—	0.0026	-0.0010	0.014	0.0014	0.0032	0.015	0.011
		(0.30)	(-0.10)	(0.48)	(0.05)	(0.31)	(0.76)	(0.63)
Constant	6.14***	6.74***	8.95***	6.19***	6.39***	8.39***	—	—
	(6.16)	(6.77)	(8.70)	(5.86)	(4.39)	(7.90)		
Number of Countries	60	60	60	60	60	60	60	60
Number of Observations	758	758	754	758	758	960	756	756

R-squared / Log Likelihood	0.65	0.65	0.60	0.66	0.66	__	-686.52	-614.81

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Model A: Standard model in reduced form.
Model B: Standard model.
Model C: Standard model: Lagged Dependent increased from 1 to 4 years.
Model D: Standard model: Logging (natural logarithm) Fuel and Non-Fuel Resource Dependence.
Model E: Standard model: Logging (natural logarithm) FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model F: Standard model: Replacing missing values by way of multiple imputations.
Model G: Standard model: Dependent variable, Physical Integrity Rights, is based on the Amnesty International part of the Political Terror Scale.
See Appendix A1 for more detailed information about the variable. As the variable is a 5-point scale and robust random effects ordered probit estimator was employed. Note that cut-offs are not displayed.
Model H: Standard model: Dependent variable, Physical Integrity Rights, is based on the US State Department component of the Political Terror Scale.
See Appendix A1 for more detailed information about the variable. As the variable is a 5-point scale and robust random effects ordered probit estimator was employed. Note that cut-offs are not displayed.

standard model (Model B). Model C checks for the influence of the lagged dependent variable by increasing its lag from 1 to 4 years.[89] Models D-E test the robustness of the findings in Model B by logging the (more or less) positively skewed investment and resource variables. Model F tests the robustness of the findings in Model B by treating the missing values with multiple imputation (MI). Finally, Models G-H tests the standard Model B against the two alternative measures of Physical Integrity Rights (see text below table for specifics on models and variables).[90]

From Table 10 we see that FDI Capital Penetration has a robust positive association with Physical Integrity Rights (PIR) when analyzing both developed and developing countries. The significance of the association is, however, not robust as it is only significant in the reduced model or when logging Resource Dependence (logging FDI Capital Penetration alone has no effect). The association is also significant when PIR is proxied by the PTS measure based on reports from the US State Department, but not by the PTS measure based on reports from Amnesty International. The results displayed in Table 11 below show more robust findings for the analyses including developing countries only. Now both the sign and the significance of the association between FDI Capital Penetration and PIR are robust. Appendix B, Table B3 displays the results from the alternative estimators, and these estimators support the findings produced by the Random Effects estimator. In other words, the positive and significant association between FDI Capital Penetration and PIR is not robust for the analyses including both developed and developing countries, but is so for the analyses including developing countries only. These finding do not necessarily support a positive effect of FDI Capital Penetration on PIR (since causation cannot be judged in this analyses alone). They do, however, contradict the argument of those who held that FDI Capital Penetration (or TNC presence) has a negative effect on Physical Integrity Rights (i.e., a positive effect on government repression).

The controls generally behave as expected as far as the nature of the relationship with the dependent variable is concerned, although the level of significance varies (as displayed in Tables 10 and 11). Democracy has a positive and significant association with PIR, while

[89] With a one-year lag, a country's current human rights level might be overwhelmingly a function of its human rights level in the previous year, while the influence of other variables then might be artificially suppressed (Ross 2001:340).

[90] In addition alternative tests on reduced models excluding economic development and economic growth respectively revealed that these controls do not exercise a significant impact on the relationship between FDI and human rights. That is, the effects of FDI are, in this respect, independent of economic factors. This finding applies for the relationship between FDI and human rights throughout the thesis (i.e., Tables 10-17).

Population Size, Civil War and Ethnolinguistic Fractionalization have a negative and significant association with PIR. Economic Standing and Institutional Quality have a positive and significant association with PIR when including both developed and developing countries. However, when including only developing countries the former association turns insignificant, while the latter—although generally insignificantly so—turns negative for the CIRI-based PIR measure. The association between Fuel Resource Dependence and PIR is negative and significant when increasing the lag of the lagged dependent or when being logged, but otherwise it is inconclusive. Economic Growth and Non-Fuel Resource Dependence display a low level of significance with the dependent variable, and the character of the relationship is, as a consequence, inconclusive.

Tables 12-13 below display the effects of overall FDI Capital Penetration on Political and Civil Rights (PCR). Model A is a reduced model, displayed to check for the influence of Institutional Quality and Fuel and Non-Fuel Resource Dependence, later introduced in the standard model (Model B). Models C-E check for the influence of the lagged dependent variable (and democracy) by first increasing its lag from 1 to 4 years, and later by removing the lagged dependent (and/or democracy) from the model.[91] Models F-G test the robustness of the findings in Model B by logging the (more or less) positively-skewed investment and resource variables. Finally, Model H tests the robustness of the findings in Model B by treating the missing values with multiple imputation (MI) (see text below table for specifics on models and variables).

From Table 12 we see that FDI Capital Penetration has a negative but insignificant association with Political and Civil Rights (PCR) when analyzing both developed and developing countries (Model B). The association is, moreover, not robust to alternative tests (due to its low level of significance the association—for some of the tests—even turns positive). The results when analyzing only developing countries displayed in Table 13 mirror those produced when including both developed and developing countries. Moreover, Appendix B, Table B4, displays the results from the alternative estimators, and these estimators support the findings based on the Random Effects estimator here displayed. Thus, neither those arguing for a positive effect TNC presence, nor those arguing for a negative effect, can draw any support from these analyses.

[91] As for the economic growth analysis: With a one-year lag, a country's current human rights level might be overwhelmingly a function of its human rights level in the previous year, while the influence of other variables then might be artificially suppressed (Ross 2001:340).

Table 12 – Human Rights – Political and Civil Rights:
Robust Random Effects Estimation of Developed and Developing Countries in Full and MI Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Lagged Dependent	0.90***	0.89***	0.34***	__	__	0.90***	0.89***	0.88***
	(51.36)	(43.97)	(9.53)			(48.53)	(48.23)	(44.00)
FDI Capital Penetration	-0.0020	-0.0018	-0.0017	0.00042	0.0029	-0.00082	0.017	-0.0026
	(-1.00)	(-0.83)	(-0.28)	(0.06)	(0.36)	(-0.41)	(0.68)	(-1.63)
Domestic Capital Penetration	-0.00041	0.000015	0.0011	0.0022**	0.0029***	-0.00021	-0.15	-0.00014
	(-0.72)	(0.03)	(1.03)	(2.17)	(2.79)	(-0.38)	(-1.04)	(-0.35)
Democracy	0.48***	0.50***	2.20***	2.27***	__	0.49***	0.49***	0.57***
	(4.37)	(4.58)	(11.00)	(10.72)		(4.46)	(4.47)	(4.81)
Population Size	-0.016	-0.027	-0.063	-0.035	0.068	0.0033	0.0095	-0.031*
	(-0.82)	(-1.23)	(-0.84)	(-0.30)	(0.38)	(0.18)	(0.55)	(-1.70)
Economic Standing	0.057	0.10**	0.64***	1.11***	1.46***	0.11**	0.11**	0.070
	(1.46)	(2.00)	(4.38)	(5.70)	(5.51)	(2.08)	(2.22)	(1.47)
Economic Growth	0.0040	0.0047	0.014	0.014	0.0077	0.0035	0.0025	0.0082
	(0.53)	(0.62)	(1.12)	(1.20)	(0.71)	(0.47)	(0.32)	(1.28)
Civil War	-0.11	-0.13	-0.21	-0.43**	-0.72***	-0.12	-0.12	-1.00
	(-1.29)	(-1.61)	(-1.13)	(-2.13)	(-3.27)	(-1.45)	(-1.51)	(-1.47)
Ethnolinguistic Fractionalization	-0.00065	-0.00064	-0.0057	-0.0096	-0.012	-0.0010	-0.0014	-0.00070
	(-0.58)	(-0.54)	(-1.35)	(-1.34)	(-1.10)	(-0.92)	(-1.19)	(-0.63)
Institutional Quality	__	-0.017	0.069	0.12**	0.14**	-0.015	-0.017	-0.018
		(-0.90)	(1.41)	(2.14)	(2.36)	(-0.79)	(-0.91)	(-1.10)
Fuel Resource Dependence	__	-0.014**	-0.020	-0.012	0.0041	-0.030*	-0.030*	-0.012**
		(-2.51)	(-1.57)	(-0.88)	(0.34)	(-1.88)	(-1.90)	(-2.53)
Non-Fuel Resource Dependence	__	-0.0054	0.0090	0.028	0.035	0.036	0.037	0.00037
		(-0.97)	(0.44)	(0.98)	(1.04)	(1.41)	(1.46)	(0.06)
Constant	0.79*	0.84*	0.97	-0.67	-4.38	0.12	0.76	1.03**
	(1.74)	(1.85)	(0.55)	(-0.24)	(-1.06)	(0.26)	(0.87)	(2.24)
Number of Countries	81	81	81	81	81	81	81	81
Number of Observations	1078	1078	1078	1078	1078	1078	1078	1296
R-squared / Log Likelihood	0.95	0.95	0.81	0.64	0.37	0.95	0.95	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Model A: Standard model in reduced form.
Model B: Standard model.
Model C: Standard model: Lagged Dependent increased from 1 to 4 years.
Model D: Standard model: Dropping Lagged Dependent.
Model E: Standard model: Dropping Lagged Dependent and Democracy
Model F: Standard model: Logging (natural logarithm) Fuel and Non-Fuel Resource Dependence.
Model G: Standard model: Logging (natural logarithm) FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model H: Standard model: Replacing missing values by way of multiple imputations.

Table 13 – Human Rights – Political and Civil Rights:
Robust Random Effects Estimation of Developing Countries in Full and MI Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Lagged Dependent	0.90***	0.88***	0.31***	—	—	0.90***	0.89***	0.87***
	(49.82)	(42.00)	(8.16)			(47.24)	(46.92)	(40.87)
FDI Capital Penetration	-0.0024	-0.0021	-0.0024	-0.0021	-0.000034	-0.0013	0.012	-0.0024
	(-1.07)	(-0.76)	(-0.33)	(-0.26)	(-0.00)	(-0.53)	(0.34)	(-1.31)
Domestic Capital Penetration	-0.00033	0.00018	0.0012	0.0022**	0.0027**	-0.000082	-0.13	-0.000032
	(-0.53)	(0.29)	(1.02)	(1.96)	(2.31)	(-0.13)	(-0.79)	(-0.07)
Democracy	0.48***	0.52***	2.13***	2.15***	—	0.50***	0.50***	0.59***
	(4.26)	(4.59)	(10.60)	(10.47)		(4.45)	(4.44)	(4.78)
Population Size	-0.019	-0.030	-0.10	-0.098	-0.023	0.0048	0.012	-0.040
	(-0.71)	(-0.98)	(-0.95)	(-0.61)	(-0.10)	(0.19)	(0.49)	(-1.41)
Economic Standing	0.048	0.10*	0.41**	0.52*	0.75**	0.11*	0.12**	0.057
	(0.93)	(1.84)	(2.09)	(1.54)	(2.02)	(1.93)	(2.00)	(1.06)
Economic Growth	0.0063	0.0074	0.020	0.019	0.012	0.0058	0.0046	0.0094
	(0.80)	(0.94)	(1.54)	(1.62)	(1.05)	(0.74)	(0.56)	(1.40)
Civil War	-0.11	-0.15	-0.26	-0.54**	-0.86***	-0.14	-0.14	-0.094
	(-1.14)	(-1.62)	(-1.27)	(-2.53)	(-3.66)	(-1.49)	(-1.51)	(-1.22)
Ethnolinguistic Fractionalization	-0.00094	-0.00087	-0.00040	0.0047	0.011	-0.0013	-0.0015	-0.00040
	(-0.58)	(-0.54)	(-0.06)	(0.43)	(0.68)	(-0.85)	(-0.94)	(-0.22)
Institutional Quality	—	-0.040	0.00058	0.042	0.072	-0.030	-0.033	-0.041*
		(-1.42)	(0.01)	(0.63)	(1.02)	(-1.04)	(-1.17)	(-1.84)
Fuel Resource Dependence	—	-0.015***	-0.018	-0.0074	0.0053	-0.035*	-0.033*	-0.013***
		(-2.61)	(-1.37)	(-0.56)	(0.43)	(-1.95)	(-1.88)	(2.69)
Non-Fuel Resource Dependence	—	-0.0066	0.0052	0.020	0.025	0.030	0.032	-0.0015
		(-1.13)	(0.25)	(0.70)	(0.73)	(1.00)	(1.07)	(-0.25)
Constant	0.96	1.05	3.54	4.37	1.38	0.12	0.76	1.36**
	(1.42)	(1.57)	(1.33)	(1.06)	(0.25)	(0.18)	(0.71)	(1.99)
Number of Countries	60	60	60	60	60	60	60	60
Number of Observations	761	761	761	761	761	761	761	960
R-squared / Log Likelihood	0.91	0.91	0.67	0.40	0.03	0.91	0.91	—

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Model A: Standard model in reduced form.
Model B: Standard model.
Model C: Standard model: Lagged Dependent increased from 1 to 4 years.
Model D: Standard model: Dropping Lagged Dependent.
Model E: Standard model: Dropping Lagged Dependent and Democracy
Model F: Standard model: Logging (natural logarithm) Fuel and Non-Fuel Resource Dependence.
Model G: Standard model: Logging (natural logarithm) FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model H: Standard model: Replacing missing values by way of multiple imputations.

The controls generally behave as expected as far as the nature of the relationship with the dependent variable is concerned, although the level of significance varies a lot. Democracy has a robust positive and significant association with PCR. Economic Standing has a positive and mostly significant association, and Economic Growth has a positive but insignificant association with the dependent variable. The association for Civil War and Ethnolinguistic Fractionalization respectively, is negative or mostly negative (although mostly insignificant for both). Institutional Quality and the dependent variable display a negative—although mostly insignificant—association. However, this association is positive and significant when altering the lagged dependent in Models C-E. The association for Fuel and Non-Fuel Resource Dependence respectively, is for the former mostly negative and significant (except when altering the lagged dependent in Models C-E) and for the latter mostly positive, but insignificant. The association between Population and the dependent variable is—due to a generally low level of significance—inconclusive.

8.5.2 The Compositional Effects of FDI

The results of the analysis of the effects of the composition of FDI Capital Penetration on Physical Integrity Rights (PIR) are displayed in Table 14 for the analyses including both developed and developing countries, and in Table 15 for the analyses including developing countries only. Models A and C display the results of the reduced and standard models for total FDI Capital Penetration, while Models B and D display the results of the reduced and standard models when FDI Capital Penetration is broken down to its composites: Primary Sector and Secondary and Tertiary Sector Capital Penetration. Models E-J test the robustness of the findings in Model D (see text below table for specifics on models and variables).

The main finding for the analyses including both developed and developing counties in Table 14 below is that FDI Capital Penetration is positively and significantly associated with PIR (Models A and C), and that this positive association is driven by investments in the secondary and tertiary sectors (Models B and D). Investments in the primary sector have no significant association with PIR (although mostly positive). These latter findings hold both for an increased lag of the lagged dependent (Model E) and for alternative measures of PIR (Models I-J). They are, however, neither robust when logging the variables on resource dependence and/or investment (Models F-G), nor when treating missing variables by way of multiple imputations (Model H). When analyzing developing countries only (Table 15) these findings—although similar—become even less robust as the positive and significant

association between Secondary and Tertiary Sector FDI Capital Penetration and PIR in general is insignificant (holding only for the alternative models, Models E and I). Note, however, that the association between Primary Sector FDI Capital Penetration and PIR now is mostly negative, although insignificantly so. Appendix B—Table B5—displays the results from the alternative estimators, and these estimators support the findings produced by the Random Effects estimator.[92] That is, although there are evidence suggesting that investments in the secondary and tertiary sectors are more positive than investments in the primary sector, these findings are not very robust and apply even less for developing countries than for the sample including both developed and developing countries.

As for these strength and character of the associations between the controls and the dependent variable, these should be viewed in light of the equivalent findings in the full sample analyses displayed in Tables 10 and 11. As in those tables, the controls generally behave as expected, as far as the nature of the relationship with the dependent variable is concerned. The number of observations is, however, low and the strength and character of the relationships sometime suffer from this. Where the findings deviate, more trust should be put in the results displayed in the full sample analyses in Tables 10 and 11.

The analysis on the effects of FDI on Political and Civil Rights (PCR) is displayed in Table 16 for the analyses including both developed and developing countries, and in Table17 for the analyses including developing countries only. Models A and C display the results of the reduced and standard models for total FDI Capital Penetration, while Models B and D display the results of the reduced and standard models when FDI Capital Penetration is broken down to its composites: Primary Sector and Secondary and Tertiary Sector Capital Penetration. Models E-J test the robustness of the findings in Model D (see text below table for specifics on models and variables).

The analyses including both developed and developing counties in Table 16 indicate that FDI Capital Penetration is positively but not significantly associated with PIR (Models A and C). When FDI Capital Penetration is broken down to the industry level, the results indicate that Primary Sector Capital Penetration has a positive association with the dependent variable. However, the significance of this association is not robust as it does not hold for a number of the sensitivity analyses, including the reduced model in Model A and the multiple imputed sample in Model J. The association between Secondary and Tertiary Sector FDI

[92] Note that results based on the system-GMM estimator could not be obtained as the number of observations is too low compared to the number of groups (countries) and variables.

Table 14 – Human Rights – Physical Integrity Rights (PIR)
Robust Random Effects Estimation of Developed and Developing Countries in Restricted and MI Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I	Model J
Lagged Dependent	0.57***	0.59***	0.56***	0.57***	0.22***	0.58***	0.56***	0.42***	1.24***	1.10**
	(9.64)	(10.08)	(9.44)	(9.34)	(3.34)	(9.88)	(9.37)	(9.27)	(2.94)	(5.26)
FDI Capital Penetration	0.024***	—	0.023**	—	—	—	—	—	—	—
	(2.94)		(2.18)							
Primary Sector	—	0.011	—	-0.0073	0.0076	0.0057	0.051	0.016	0.030	0.012
FDI Capital Penetration		(0.71)		(-0.33)	(0.21)	(0.36)	(1.29)	(0.73)	(0.62)	(0.37)
Secondary & Tertiary Sector	—	0.027**	—	0.019*	0.029**	0.016	0.16	-0.00097	0.047**	0.056**
FDI Capital Penetration		(2.46)		(1.75)	(1.96)	(1.33)	(1.29)	(-0.11)	(2.28)	(2.39)
Domestic Capital Penetration	-0.0021*	-0.0023*	-0.0032**	-0.0038***	-0.0049**	-0.0027**	-0.79**	-0.0036**	-0.0022	-0.0031*
	(-1.71)	(-1.76)	(-2.25)	(-2.57)	(-2.36)	(-2.03)	(-2.17)	(-2.00)	(-1.09)	(-1.88)
Democracy	0.34*	0.25	0.32*	0.28	0.57**	0.25	0.27	0.28	0.25	0.44*
	(1.82)	(1.37)	(1.79)	(1.45)	(2.38)	(1.34)	(1.45)	(1.36)	(0.98)	(1.83)
Population Size	-0.045	-0.089**	-0.068	-0.056	-0.15*	-0.12*	-0.10	-0.088	-0.21	-0.35*
	(-1.01)	(-1.98)	(-1.44)	(-1.16)	(-1.91)	(-1.89)	(-1.52)	(-1.17)	(-1.24)	(-1.86)
Economic Standing	0.55***	0.49***	0.40**	0.39**	0.68***	0.29	0.31*	0.74***	0.31	0.68*
	(4.59)	(4.10)	(2.49)	(2.34)	(2.73)	(1.63)	(1.79)	(4.47)	(0.85)	(1.69)
Economic Growth	-0.015	-0.0098	-0.017	-0.018	-0.033*	-0.014	-0.013	-0.024	-0.015	-0.013
	(-0.78)	(-0.51)	(-0.90)	(-0.96)	(-1.69)	(-0.75)	(-0.68)	(-1.63)	(-0.67)	(-0.98)
Civil War	-0.72***	-0.67**	-0.65**	-0.59**	-1.12***	-0.66**	-0.75***	-0.91***	-0.38	-0.78
	(-2.70)	(-2.49)	(-2.40)	(-2.16)	(-3.31)	(-2.41)	(-2.70)	(-2.92)	(-1.04)	(-1.24)
Ethnolinguistic Fractionalization	-0.0087***	-0.0062**	-0.0077**	-0.0073**	-0.014**	-0.0050	-0.0079**	-0.012**	-0.012	-0.014*
	(-2.58)	(-1.99)	(-2.31)	(-2.13)	(-2.45)	(-1.42)	(-2.05)	(-2.39)	(-1.56)	(-1.68)
Institutional Quality	—	—	0.082	0.078	0.10	0.10	0.11*	-0.032	0.14	0.24*
			(1.35)	(1.25)	(1.21)	(1.58)	(1.65)	(-0.62)	(1.43)	(1.87)
Fuel Resource Dependence	—	—	0.018	0.028**	0.033*	0.045	0.021	0.020*	0.030	0.050**
			(1.47)	(2.37)	(1.93)	(1.26)	(0.51)	(1.84)	(1.15)	(2.27)
Non-Fuel Resource Dependence	—	—	-0.023	0.022	-0.016	-0.048	-0.030	0.016	-0.027	-0.029
			(-0.81)	(0.64)	(-0.33)	(-0.43)	(-0.27)	(0.52)	(-0.37)	(-0.66)
Constant	-1.03	0.14	-0.51	-0.41	0.59	1.16	4.47	0.062	—	—
	(-0.85)	(0.12)	(-0.36)	(-0.29)	(0.25)	(0.66)	(1.63)	(0.03)		
Number of Countries	29	29	29	29	29	29	29	29	29	29

Number of Observations	301	301	301	301	300	301	301	464	301	301
R-squared / Log Likelihood	0.82	0.81	0.82	0.82	0.76	0.82	0.82	__	-198.33	-168.35

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Model A: Standard model in reduced form: Replacing FDI penetration composites with Total FDI Capital Penetration.
Model B: Standard model in reduced form.
Model C: Standard model: Replacing FDI penetration composites with Total FDI Capital Penetration.
Model D: Standard model.
Model E: Standard model: Lagged Dependent increased from 1 to 4 years.
Model F: Standard model: Logging (natural logarithm) Fuel and Non-Fuel Resource Dependence.
Model G: Standard model: Logging (natural logarithm) FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model H: Standard model: Replacing missing values by way of multiple imputations.
Model I: Standard model: Dependent variable, Physical Integrity Rights, is based on the Amnesty International part of the Political Terror Scale. See Appendix A1 for more detailed information about the variable. As the variable is a 5-point scale and robust random effects ordered probit estimator was employed. Note that cut-offs are not displayed.
Model J: Standard model: Dependent variable, Physical Integrity Rights, is based on the US State Department component of the Political Terror Scale. See Appendix A1 for more detailed information about the variable. As the variable is a 5-point scale and robust random effects ordered probit estimator was employed. Note that cut-offs are not displayed.

Table 15 – Human Rights – Physical Integrity Rights (PIR)
Robust Random Effects Estimation of Developing Countries in Restricted and MI Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I	Model J
Lagged Dependent	0.53***	0.56***	0.50***	0.55***	0.21**	0.56***	0.55***	0.59***	1.07***	0.79***
	(7.44)	(7.62)	(6.69)	(7.24)	(2.38)	(7.46)	(7.18)	(12.72)	(5.89)	(3.57)
FDI Capital Penetration	0.019	—	0.040**	—	—	—	—	—	—	—
	(1.54)		(2.13)							
Primary Sector	—	-0.010	—	-0.024	-0.047	-0.015	-0.0037	-0.0011	-0.017	0.013
FDI Capital Penetration		(-0.51)		(-0.91)	(-1.53)	(-0.69)	(-0.04)	(-0.08)	(-0.65)	(0.27)
Secondary & Tertiary Sector	—	0.026	—	0.025	0.086**	0.025	0.25	0.0012	0.045**	0.051
FDI Capital Penetration		(0.92)		(0.84)	(2.41)	(0.89)	(1.25)	(0.13)	(2.31)	(1.16)
Domestic Capital Penetration	-0.0014	-0.0019	-0.0013	-0.0023	-0.0041*	-0.0023	-0.70*	-0.0018	-0.0017	-0.0031
	(-1.14)	(-1.25)	(-0.83)	(-1.39)	(-1.93)	(-1.51)	(-1.65)	(-1.11)	(-0.82)	(-0.85)
Democracy	0.031	0.044	0.12	0.092	0.38	0.084	0.047	-0.031	0.090	0.42**
	(0.14)	(0.19)	(0.53)	(0.38)	(1.38)	(0.35)	(0.21)	(-0.20)	(0.39)	(1.96)
Population Size	-0.14	-0.30**	-0.27	-0.28	-0.53**	-0.32*	-0.27	-0.094	-0.16	-0.35***
	(-1.19)	(-2.20)	(-1.44)	(-1.37)	(-2.34)	(-1.68)	(-1.53)	(-1.52)	(-0.72)	(-3.37)
Economic Standing	0.086	-0.011	0.0017	-0.015	-0.052	-0.10	-0.044	0.20	0.063	0.71**
	(0.54)	(-0.06)	(0.01)	(-0.06)	(-0.17)	(-0.46)	(-0.20)	(1.49)	(0.22)	(2.39)
Economic Growth	-0.0094	-0.0022	-0.0034	-0.0067	-0.020	-0.0062	-0.0082	-0.0056	-0.020	-0.0095
	(-0.40)	(-0.10)	(-0.15)	(-0.29)	(-0.77)	(-0.27)	(-0.36)	(-0.27)	(-0.79)	(-0.47)
Civil War	-1.07***	-0.98***	-1.06***	-0.95***	-1.66***	-0.94***	-0.97***	-1.13***	-0.78***	-1.61***
	(-3.84)	(-3.53)	(-3.25)	(-2.91)	(-4.59)	(-3.01)	(-2.90)	(-7.50)	(-2.58)	(-3.82)
Ethnolinguistic Fractionalization	-0.0058	-0.0044	-0.0066	-0.0059	-0.016***	-0.0056	-0.0077	-0.0046**	-0.015***	-0.030***
	(-1.09)	(-0.81)	(-1.21)	(-1.02)	(-2.70)	(-0.85)	(-0.95)	(-2.10)	(-4.34)	(-6.26)
Institutional Quality	—	—	0.0051	0.023	0.036	0.054	0.038	-0.096**	0.0034	0.19
			(0.05)	(0.23)	(0.32)	(0.61)	(0.46)	(-2.27)	(0.03)	(1.46)
Fuel Resource Dependence	—	—	-0.011	0.0073	-0.0072	0.034	0.032	-0.00020	0.018	0.066**
			(-0.55)	(0.44)	(-0.35)	(0.58)	(0.56)	(-0.02)	(1.00)	(1.96)
Non-Fuel Resource Dependence	—	—	-0.065	0.023	0.031	0.011	0.020	0.039*	0.046	0.032
			(-1.34)	(0.51)	(0.66)	(0.07)	(0.14)	(1.86)	(0.85)	(0.36)
Constant	4.69*	7.70**	6.31	6.87	13.32**	8.24*	9.98**	3.34**	—	—
	(1.78)	(2.44)	(1.36)	(1.41)	(2.41)	(1.91)	(2.09)	(2.04)		
Number of Countries	16	16	16	16	16	16	16	16	16	16

Number of Observations	157	157	157	157	156	157	157	256	157	157
R-squared / Log Likelihood	0.65	0.65	0.66	0.65	0.54	0.65	0.65	__	-133.35	-111.30

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Model A: Standard model in reduced form: Replacing FDI penetration composites with Total FDI Capital Penetration.
Model B: Standard model in reduced form.
Model C: Standard model: Replacing FDI penetration composites with Total FDI Capital Penetration.
Model D: Standard model.
Model E: Standard model: Lagged Dependent increased from 1 to 4 years.
Model F: Standard model: Logging (natural logarithm) Fuel and Non-Fuel Resource Dependence.
Model G: Standard model: Logging (natural logarithm) FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model H: Standard model: Replacing missing values by way of multiple imputations.
Model I: Standard model: Dependent variable, Physical Integrity Rights, is based on the Amnesty International part of the Political Terror Scale. See Appendix A1 for more detailed information about the variable. As the variable is a 5-point scale and robust random effects ordered probit estimator was employed. Note that cut-offs are not displayed.
Model J: Standard model: Dependent variable, Physical Integrity Rights, is based on the US State Department component of the Political Terror Scale. See Appendix A1 for more detailed information about the variable. As the variable is a 5-point scale and robust random effects ordered probit estimator was employed. Note that cut-offs are not displayed.

Table 16 – Human Rights – Political and Civil Rights
Robust Random Effects Estimation of Developed and Developing Countries in Restricted and MI Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I	Model J
Lagged Dependent	0.81***	0.80***	0.81***	0.79***	0.26***	—	—	0.79***	0.80***	0.82***
	(17.25)	(16.38)	(17.29)	(15.93)	(3.96)			(16.18)	(16.52)	(23.50)
FDI Capital Penetration	0.0019	—	0.0095	—	—	—	—	—	—	—
	(0.42)		(1.62)							
Primary Sector	—	0.0077	—	0.030**	0.064**	0.017	0.026	0.016	0.047**	0.024
FDI Capital Penetration		(0.84)		(2.11)	(2.30)	(0.60)	(0.82)	(1.57)	(2.04)	(1.48)
Secondary & Tertiary Sector	—	0.0012	—	0.0014	-0.023	-0.036**	-0.041**	0.010	-0.035	0.0014
FDI Capital Penetration		(0.21)		(0.24)	(-1.44)	(-1.96)	(-2.14)	(1.35)	(-0.37)	(0.21)
Domestic Capital Penetration	-0.00017	-0.00011	0.00053	0.00080	0.0025	0.0047***	0.0051***	0.00046	0.089	0.00043
	(-0.29)	(-0.18)	(0.78)	(1.15)	(1.61)	(3.19)	(3.29)	(0.74)	(0.51)	(0.52)
Democracy	0.37**	0.35**	0.40**	0.34*	1.19***	0.58**	—	0.35*	0.38**	0.37**
	(1.99)	(1.90)	(2.11)	(1.80)	(4.73)	(2.19)		(1.85)	(1.96)	(2.74)
Population Size	0.00082	0.0061	-0.024	-0.035	-0.15**	-0.16	-0.15	-0.021	0.00050	0.0016
	(0.04)	(0.28)	(-0.87)	(-1.17)	(-2.08)	(-1.11)	(-1.10)	(-0.60)	(0.01)	(0.06)
Economic Standing	0.31***	0.33***	0.31**	0.35**	1.37***	1.92***	2.09***	0.41***	0.38***	0.25**
	(3.19)	(3.02)	(2.18)	(2.40)	(5.35)	(6.15)	(6.80)	(2.88)	(2.87)	(2.50)
Economic Growth	0.0032	0.0021	0.0074	0.0072	-0.00038	-0.0062	-0.014	0.0056	0.0076	-0.0065
	(0.24)	(0.16)	(0.52)	(0.52)	(-0.02)	(-0.33)	(-0.74)	(0.42)	(0.56)	(-0.55)
Civil War	-0.059	-0.074	-0.086	-0.13	-0.26	0.027	0.023	-0.074	-0.097	-0.064
	(-0.43)	(-0.54)	(-0.64)	(-0.91)	(-1.16)	(0.12)	(0.10)	(-0.55)	(-0.70)	(-0.57)
Ethnolinguistic Fractionalization	-0.0040**	-0.0040**	-0.0037	-0.0020	-0.00042	-0.0024	-0.0019	-0.0028	-0.0037*	-0.0043**
	(-2.03)	(-2.19)	(-1.62)	(-0.82)	(-0.07)	(-0.21)	(-0.17)	(-1.43)	(-1.91)	(-2.63)
Institutional Quality	—	—	-0.016	7.4E-6	0.068	0.25***	0.24***	-0.022	-0.0094	-0.013
			(-0.48)	(0.00)	(0.91)	(3.12)	(2.93)	(-0.68)	(-0.31)	(-0.50)
Fuel Resource Dependence	—	—	-0.014	-0.014	-0.044*	-0.0072	-0.0098	-0.043*	-0.039	-0.014**
			(-1.48)	(-1.41)	(-1.80)	(-0.33)	(-0.46)	(-1.82)	(-1.51)	(-2.16)
Non-Fuel Resource Dependence	—	—	-0.020	-0.037*	-0.046	0.036	0.037	-0.063	-0.042	-0.020
			(-1.07)	(-1.74)	(-1.19)	(0.73)	(0.69)	(-0.99)	(-0.71)	(-0.95)
Constant	-0.36	-0.49	0.028	-0.33	-1.70	-5.35*	-6.60**	-1.17	-1.43	-0.11
	(-0.60)	(-0.74)	(0.03)	(-0.33)	(-0.93)	(-1.75)	(-2.22)	(-1.10)	(-1.07)	(-0.16)
Number of Countries	29	29	29	29	29	29	29	29	29	29

Number of Observations	300	300	300	300	300	300	300	300	300	463
R-squared / Log Likelihood	0.94	0.94	0.94	0.94	0.85	0.75	0.71	0.94	0.94	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted and resulted in the exclusion of the "Nigeria in 1985" observation. The case affected the overall analysis.

Model A: Standard model in reduced form: Replacing FDI penetration composites with Total FDI Capital Penetration.
Model B: Standard model in reduced form.
Model C: Standard model: Replacing FDI penetration composites with Total FDI Capital Penetration.
Model D: Standard model.
Model E: Standard model: Lagged Dependent increased from 1 to 4 years.
Model F: Standard model: Dropping Lagged Dependent.
Model G: Standard model: Dropping Lagged Dependent and Democracy
Model H: Standard model: Logging (natural logarithm) Fuel and Non-Fuel Resource Dependence.
Model I: Standard model: Logging (natural logarithm) FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model J: Standard model: Replacing missing values by way of multiple imputations.

Table 17 – Human Rights – Political and Civil Rights
Robust Random Effects Estimation of Developing Countries in Restricted and MI Sample

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I	Model J
Lagged Dependent	0.79***	0.77***	0.80***	0.75***	0.27***	—	—	0.74***	0.74***	0.85***
	(13.70)	(11.43)	(13.60)	(10.98)	(3.70)			(10.58)	(10.33)	(22.84)
FDI Capital Penetration	0.0033	—	0.015	—	—	—	—	—	—	—
	(0.42)		(1.33)							
Primary Sector	—	0.010	—	0.031*	0.078**	0.11***	0.17***	0.017	0.040	0.019
FDI Capital Penetration		(0.86)		(1.64)	(2.50)	(3.23)	(4.59)	(1.30)	(0.64)	(1.10)
Secondary & Tertiary Sector	—	-0.014	—	-0.015	-0.10**	-0.16***	-0.21***	-0.015	-0.20	0.0012
FDI Capital Penetration		(0.45)		(-0.47)	(-2.12)	(-3.20)	(-3.93)	(-0.48)	(-0.84)	(0.11)
Domestic Capital Penetration	-0.00034	-0.000048	0.00031	0.00059	0.0016	0.0041**	0.0068***	0.00084	0.19	0.000095
	(-0.43)	(-0.06)	(0.30)	(0.62)	(0.97)	(2.39)	(3.27)	(1.00)	(0.78)	(0.10)
Democracy	0.55**	0.52**	0.56**	0.49**	1.56***	1.60***	—	0.51**	0.57**	0.44***
	(2.34)	(2.23)	(2.42)	(2.12)	(5.27)	(5.12)		(2.23)	(2.40)	(3.00)
Population Size	-0.0012	0.025	-0.047	-0.052	-0.36*	-0.48**	-0.31	-0.040	-0.080	-0.00095
	(-0.01)	(0.35)	(-0.37)	(-0.40)	(-1.84)	(-2.23)	(-1.35)	(-0.37)	(-0.82)	(-0.01)
Economic Standing	0.38***	0.44***	0.34*	0.42*	1.34***	1.43***	1.47***	0.57***	0.54***	0.23
	(2.61)	(2.64)	(1.66)	(1.92)	(4.78)	(4.95)	(4.67)	(2.73)	(2.57)	(1.59)
Economic Growth	0.0043	0.0045	0.010	0.0099	0.015	0.0059	-0.015	0.011	0.012	-0.010
	(0.25)	(0.26)	(0.58)	(0.56)	(0.54)	(0.20)	(-0.46)	(0.66)	(0.69)	(-0.65)
Civil War	0.020	-0.032	0.012	-0.062	-0.15	-0.21	-0.62	-0.043	-0.045	-0.068
	(0.12)	(-0.18)	(0.06)	(-0.33)	(-0.52)	(-0.64)	(-1.55)	(-0.24)	(-0.23)	(-0.53)
Ethnolinguistic Fractionalization	-0.0089**	-0.0072*	-0.0086**	-0.0048	-0.00027	0.0077	0.021**	-0.0029	-0.0026	-0.0080***
	(-2.43)	(-1.76)	(-2.01)	(-1.04)	(-0.04)	(0.92)	(2.62)	(-0.66)	(-0.54)	(-3.14)
Institutional Quality	—	—	-0.023	0.0040	0.10	0.19	0.14	-0.036	-0.0073	-0.015
			(-0.32)	(0.06)	(0.81)	(1.49)	(0.90)	(-0.64))	(-0.14)	(0.34)
Fuel Resource Dependence	—	—	-0.014	-0.011	-0.044*	-0.043**	-0.055**	-0.080**	-0.077**	-0.0096
			(-0.96)	(-0.71)	(-1.83)	(-2.20)	(-2.54)	(-1.99)	(-1.98)	(-1.13)
Non-Fuel Resource Dependence	—	—	-0.031	-0.041	-0.12**	-0.17***	-0.21***	-0.11	-0.11	-0.018
			(-1.03)	(-1.13)	(-2.38)	(-3.16)	(-3.60)	(-1.30)	(-1.37)	(-0.78)
Constant	-0.47	-1.08	0.66	0.27	2.74	5.13	1.65	-1.14	-0.77	0.12
	(-0.26)	(-0.68)	(0.22)	(0.09)	(0.62)	(1.06)	(0.31)	(-0.43)	(-0.28)	(0.07)
Number of Countries	16	16	16	16	16	16	16	16	16	16

Number of Observations	156	156	156	156	156	156	156	156	156	255
R-squared / Log Likelihood	0.85	0.85	0.86	0.86	0.69	0.64	0.55	0.86	0.86	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted and resulted in the exclusion of the "Nigeria in 1985" observation. The case affected the overall analysis.

Model A: Standard model in reduced form: Replacing FDI penetration composites with Total FDI Capital Penetration.
Model B: Standard model in reduced form.
Model C: Standard model: Replacing FDI penetration composites with Total FDI Capital Penetration.
Model D: Standard model.
Model E: Standard model: Lagged Dependent increased from 1 to 4 years.
Model F: Standard model: Dropping Lagged Dependent.
Model G: Standard model: Dropping Lagged Dependent and Democracy
Model H: Standard model: Logging (natural logarithm) Fuel and Non-Fuel Resource Dependence.
Model I: Standard model: Logging (natural logarithm) FDI and Domestic Capital Penetration, Fuel and Non-Fuel Resource Dependence.
Model J: Standard model: Replacing missing values by way of multiple imputations.

Capital Penetration and the dependent variable is inconclusive. Although positive but insignificant in the standard model (Model D), it becomes negative and even significantly so for some of the sensitivity analyses (Models E-H). When analyzing developing countries only (Table 17) the results still indicate that Primary Sector Capital Penetration has a positive association with the dependent variable. However, the significance of the association is still not robust to alternative specifications. The association between Secondary and Tertiary Sector FDI Capital Penetration and the dependent variable now is mostly negative, although it is only significantly so when the lag of the lagged dependent (Model E) variable is increased or dropped altogether (Models F-G). Appendix B—Table B6—displays the results from the alternative estimators, and these estimators support the findings produced by the Random Effects estimator in the analyses including both developed and developing countries, but questions the positive and significant association for primary sector investments in the analyses including developing countries only (Table 17, Model D).[93] Further investigations of the robustness in the finding for Primary Sector FDI Capital Penetration reveal that it is not robust against the inclusion of other relevant variables (see discussion of sensitivity analysis below), which leads us to conclude that the coefficient probably is positive but insignificant. Thus, although there seems to be some differences in the effects between the two FDI composition measures, these findings lack both significance and robustness. Moreover, insofar as the negative—but generally insignificant—effect of Secondary and Tertiary Sector FDI Capital Penetration needs explanation, it can logically be explained as an effect being conditioned by the level of economic development. Thus, from the analyses of conditional effects below we find that FDI capital penetration in the secondary and tertiary sectors is dependent on a host country's economic standing, suggesting that the association in question is more positive (or less negative) for richer developing countries.

As for the strength and character of the associations between the controls and the dependent variable, these should be viewed in light of the equivalent findings in the full sample analyses displayed in Tables 12 and 13. As in those tables, the controls generally behave as expected as far as the nature of the relationship with the dependent variable is concerned. The number of observations are, however, low and the strength and character of the relationships sometimes suffers from this. Where the findings deviate, more trust should be put in those displayed in the full sample analyses in Tables 12 and 13.

[93] Note that results based on the system-GMM estimator could not be obtained as the number of observations are too low compared to the number of groups (countries) and variables.

8.5.3 The Conditional Effects of FDI

The theoretical discussion in Part I suggested that the effects of FDI on host country human rights' conditions depended on both corporate and host-country characteristics. While the importance of FDI composition was supported only to a limited extent in the previous section, this section investigates whether there is empirical evidence supporting the importance of host-country characteristics. More explicitly, this section—on the one hand—attempts to answer whether FDI depends on host-country development characteristics like the level of economic development and quality of institutions, and—on the other hand—whether FDI depends on the host country's dependence on natural resources.[94] Based on these analyses, Economic Standing (testing the effects of the FDI Capital Penetration composites in the restricted sample) is the only host-country characteristic that has a significant and robust impact on the relationship between FDI and human rights, and this only for Political and Civil Rights.

Table 18 below displays the significant interaction between Secondary and Tertiary Sector FDI Capital Penetration and Economic Standing both when including developed as well as developing countries (Models A-D) and developing countries only (Models E-H). From the coefficients in Models A-D we find—when including both developed and developing countries—that the association between Secondary and Tertiary Sector FDI Capital Penetration and the dependent variable, Political and Civil Rights is decreasingly positive the lower the Economic Standing, and for GDP per capita (PPP) values below 11000US$ the association is even increasingly negative the lower the GDP per capita (PPP) (Model D). This finding is robust as it holds when controlling for outliers and when the investment variables are logged. Moreover, the effect is similar in the models including developing countries only (Models E-H). The threshold, however, is now about 4100US$, but it still holds when controlling for outliers and when the investment variables are logged (Model H).[95] Moreover, it also holds when the lag of the lagged dependent is increased from

[94] As in the economic growth analysis, we apply the conservative approach of only recognizing significant interactions. This although marginal effects—according to Brambor et al. (2006:74)—can be significant for substantively relevant values of the modifying variable even if the coefficient in the interaction term is insignificant.

[95] In this latter case countries below the threshold are Bangladesh, Bolivia, Indonesia, Nigeria, Pakistan, Peru, Philippines, Papua New Guinea and Thailand.

Table 18 – FDI Capital Penetration & Political and Civil Rights: Dependent on Initial Economic Standing
Robust Random Effects Estimation of Developed and Developing Countries in Restricted Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A	**Model B**	**Model C**	**Model D**	**Model E**	**Model F**	**Model G**	**Model H**
Lagged Dependent	0.79***	0.76***	0.79***	0.76***	0.75***	0.75***	0.75***	0.75***
	(15.93)	(13.69)	(15.94)	(13.75)	(10.98)	(10.69)	(10.96)	(10.68)
Primary Sector	0.030**	0.11	0.031**	0.11	0.031*	0.30	0.032	0.30
FDI Capital Penetration	(2.11)	(1.28)	(2.11)	(1.17)	(1.64)	(0.65)	(1.58)	(0.64)
Secondary & Tertiary Sector	0.0014	-0.19*	0.0015	-0.19*	-0.015	-0.57**	-0.015	-0.57**
FDI Capital Penetration	(0.24)	(-1.67)	(0.24)	(-1.66)	(-0.47)	(-2.33)	(-0.45)	(-2.32)
Domestic Capital Penetration	0.00080	0.00087	0.00041	0.00028	0.00059	0.00019	0.000019	0.00048
	(1.15)	(1.30)	(0.07)	(0.04)	(0.62)	(0.19)	(0.00)	(0.05)
Democracy	0.34*	0.33*	0.33*	0.33*	0.49**	0.46**	0.49**	0.46**
	(1.80)	(1.77)	(1.77)	(1.67)	(2.12)	(1.98)	(1.98)	(1.85)
Population Size	-0.035	-0.047*	-0.034	-0.046*	-0.052	-0.057	-0.051	-0.058
	(-1.17)	(-1.72)	(-1.20)	(-1.73)	(-0.40)	(-0.45)	(-0.39)	(-0.45)
Economic Standing	0.35**	0.26*	0.34	0.24	0.42**	-0.0066	0.40	0.0015
	(2.40)	(1.79)	(1.42)	(1.01)	(1.92)	(-0.02)	(1.08)	(0.00)
Economic Growth	0.0072	0.0063	0.0072	0.0062	0.0099	0.011	0.0098	0.011
	(0.52)	(0.43)	(0.52)	(0.43)	(0.56)	(0.58)	(0.56)	(0.67)
Civil War	-0.13	-0.092	-0.13	-0.089	-0.062	0.13	-0.060	0.13
	(-0.91)	(-0.61)	(-0.90)	(-0.57)	(-0.33)	(0.58)	(-0.32)	(0.56)
Ethnolinguistic Fractionalization	-0.0020	-0.0017	-0.0020	-0.0017	-0.0048	-0.0077	-0.0049	-0.0077
	(-0.82)	(-0.73)	(-0.83)	(-0.73)	(-1.04)	(-1.51)	(-1.04)	(-1.51)
Institutional Quality	7.4E-6	0.010	0.00049	0.011	0.0040	0.035	0.0042	0.035
	(0.00)	(0.31)	(0.01)	(0.31)	(0.06)	(0.46)	(0.06)	(0.46)
Fuel Resource Dependence	-0.014	-0.0098	-0.014	-0.0094	-0.011	0.0026	-0.010	0.0024
	(-1.41)	(-0.90)	(-1.47)	(-0.89)	(-0.71)	(0.16)	(-0.70)	(0.15)
Non-Fuel Resource Dependence	-0.037*	-0.048**	-0.037*	-0.049**	-0.041	-0.057	-0.041	-0.057
	(-1.74)	(-2.30)	(-1.66)	(-2.10)	(-1.13)	(-1.59)	(-1.11)	(-1.53)
Primary Sector FDI CP *	—	-0.010	—	-0.011	—	-0.035	—	-0.035
Economic Standing		(-0.96)		(-0.89)		(-0.58)		(-0.56)
Secondary & Tertiary FDI CP *	—	0.020*	—	0.020*	—	0.068**	—	0.068**
Economic Standing		(1.72)		(1.72)		(2.23)		(2.27)

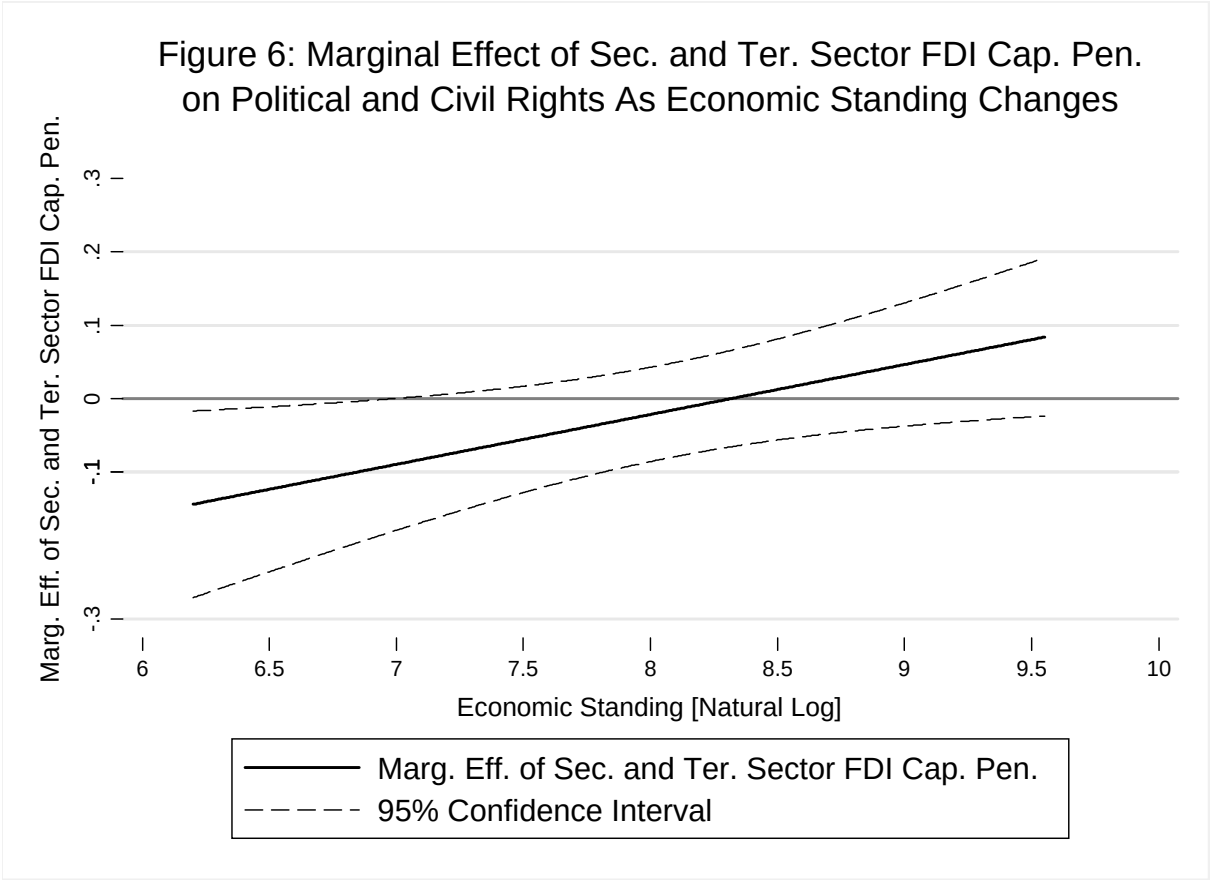
Domestic Capital Penetration * Economic Standing	—	—	0.000045 (0.07)	0.000069 (0.09)	—	—	0.000069 (0.06)	-0.000035 (-0.03)
Constant	-0.33 (-0.33)	1.28 (1.11)	0.10 (0.06)	1.05 (0.54)	0.27 (0.09)	4.02 (1.15)	0.44 (0.12)	3.73 (0.94)
Number of Countries	29	29	29	29	16	16	16	16
Number of Observations	300	300	300	300	156	156	156	156
R-squared	0.94	0.94	0.94	0.94	0.86	0.86	0.86	0.86

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted and resulted in the exclusion of the "Nigeria in 1985" observation. The case affected the overall analysis.

Models A-H are identical to the standard model referred to in the human rights' tables above, the only difference being the interactions.

1 to 4 years.[96]

However, as in the economic growth analyses the interpretation of marginal effects cannot be judged by the coefficients in the interaction model alone. Again we follow the recommendations made by Brambor et al. (2006:63-82) and generate marginal effects with a 95% confidence interval.[97] In Figure 6 below these marginal effects are illustrated for the analysis including developing countries only. The confidence interval for higher and lower values of Initial Economic Standing is rather wide, which makes the idea of a straightforward threshold dubious. We might, however say that host countries with an Initial Economic Standing below 7 (i.e., about 1100US$) have a negative association with growth, while we cannot say with 95 percent certainty that any host countries have a positive association with economic growth.[98] The former negative association holds for Nigeria only (4 out of 156



[96] Note, though, that the interaction does not hold when replacing Economic Standing with the other host country development characteristics, Institutional Quality.

[97] The marginal effects are calculated following instructions and computer codes (for STATA) made available online (Brambor et al. 2007).

[98] From the sample including both developed and developing countries we find that there is no threshold for where the marginal effects are positive or negative. This since the upper and lower limit of the confidence interval is always positive and always negative, respectively.

observations). Nevertheless, this finding suggests that FDI capital penetration in the secondary and tertiary sectors might be less beneficial for the host country's level of political and civil rights, the poorer the host country is. Thus, that the association between FDI and host countries' human rights' conditions depends on host country characteristics and the composition of FDI is to some extent confirmed by this finding.

8.5.4 Sensitivity Analysis

A number of sensitivity analyses were conducted to assess the robustness of the findings presented here. Many of them parallel those in the empirical growth analyses above. First, human rights have been operationalised by four different proxies covering two dimensions of human rights. This is a test of the sensitivity and complexity of the concept 'human rights'. Second, some alternative measures are highly correlated with the ones here preferred, and although they are not tested here they still testify to the validity of the applied operationalisations.[99] Third, an alternative sample—using only developing countries—has been analyzed, since there is some concern about mixing rich and poor countries in empirical studies of FDI and growth (see Blonigen and Wang 2005:241-42). The findings revealed some differences across these samples, and the sample with only developing countries is the preferred sample since the theoretical framework outlined in Part I is most relevant for developing countries. Fourth, tests on alternative model specifications—including logging of the positively-skewed investment and resource variables, increasing the lag of the lagged dependent and dropping the lagged dependent and/or Democracy variables—were performed. With the exception of the analyses of Physical Integrity Rights including developing countries only, these alternative model specifications served to question the robustness of the original findings. Fifth, tests of variables on religion, legal origin, international war and trade were also conducted to reduce the likelihood of omitted variable bias. In general these variables did not have any significant impact on the analyses.[100, 101] Sixth, analyses breaking down FDI

[99] In particular: A) The Institutional Quality measure created here correlates 0.85 with the comparable indexes 'government effectiveness' and 'control of corruption' for the period 1996-2000; and B) Fuel Resource Dependence correlates 0.75 with a fuel dummy coded 1 for countries where 50 percent or more of total exports of goods and services are from fuels (mainly oil) in the period 1988-92. This dummy is available from Global Development Network's Growth Database (GDNGD) (Easterly and Sewadeh 2005).

[100] There were two exceptions. The first exception was British legal history, which was significant in the restricted sample analyzing the effect on Physical Integrity Rights when including both developed and developing countries (Table 14, Model D). Adding legal history dummies made Secondary and Tertiary Sector FDI Capital Penetration insignificant. This only serves to underline the lack of robustness in the relationship in

into its industrial components were also conducted, and in some of the analyses revealed sectoral differences on how FDI is associated with human rights. Seventh, the sensitivity of a possible in-sample poor-country bias—where poor countries have more missing observations than rich countries—was checked for by using a multiple imputation (MI) approach. For the full sample the MI findings supported the original findings. However, for the restricted sample—displaying the largest number of missing observations—these MI analyses for the most part only served to underline the lack of robustness displayed in the association between the FDI Capital Penetration variables and the dependent variable. Finally, parallel analyses employing—on the one hand—similar estimators (i.e., OLS with Newey-West standard errors and Random Effects controlling for first-order autocorrelation), and—on the other hand—a more consistent but less efficient estimator (i.e., a system-GMM estimator) were conducted. In general these findings supported the conclusions based on the Random Effects estimator.

8.6 Theory versus Evidence: FDI and Human Rights

In this chapter we have looked at the relationship between FDI and human rights. Based on the theoretical framework the link between FDI and host government human rights' performance was expected to be weaker than the link between FDI on economic growth. This is because the main positive effect of FDI on human rights is argued to work indirectly through economic development (see Figure 2 for a model of these relationships). Some positive and negative direct theoretical linkages still apply though, and the following paragraphs will attempt to give an account on how the findings obtained match the theory constructed.

The effects of FDI on two distinct dimensions of human rights have been tested: physical integrity rights (PIR) and political and civil rights (PCR) (see (3) in Figure 2). That is, whether FDI—on the one hand—is associated with more or less repression, and whether it—on the other hand—is associated with more or less political and civil freedom. Those

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question. The same robustness was also questioned by other model specifications (see Table 14). The second exception was that the addition of proxies for trade and religion in the restricted sample analyzing the effect on Political and Civil Rights (both for the analyses including developed and developing countries and the analyses including developing countries only) (Tables 16 and 17). Adding these variables made Primary Sector FDI Capital Penetration insignificant. Here too this only serves to underline the lack of robustness in the relationship in question (the same robustness that is also questioned by other model specifications (see Tables 16 and 17).

[101] Trade operationalised as (exports+imports)/GDP did not have an impact on the analyses conducted here. Note, however, that Hafner-Burton (2005b:623-24) did find preferential trade agreements to have an impact on government repression, but this is not tested here.

highlighting the positive effects of FDI on human rights mostly argue that the positive effects work through economic development, while those highlighting the negative effects argue that FDI revenues are used by host country elites to repress the physical, political and civil rights of the opposition (see Section 3.2). Moreover, the theoretical framework argues that the findings, if significant, might depend on the composition of FDI, as well as on host-country characteristics like the general level of development and the degree of resource dependence. In the analyses performed here the two human rights' dimensions display some differences in the strength and character of their respective associations with FDI. This is no surprise considering our Lakatosian approach where a phenomenon might display differences in its impacts on different dimensions of another phenomenon. Thus, since they are proxies of different dimensions of human rights and behave differently with respect to FDI, it seems only reasonable that the discussion to follow also is centered around these two dimensions as well. The discussion will be initiated with an emphasis on the overall and conditional character of the relationship between FDI Capital Penetration and Physical Integrity Rights.

Previous investigations on FDI and PIR have used a flow-based measure of FDI, and have found that FDI is positively and significantly (Apodaca 2001:597) or insignificantly associated with PIR (Richards et al. 2001:231). However, operationalised in this way FDI becomes a measure more of global flows of capital than of the TNC presence. This thesis, therefore, focuses on a stock based measure of FDI that captures the degree to which TNCs penetrate host-country economies. This proxy, FDI Capital Penetration, is positively associated with Physical Integrity Rights, but the significance of the relationship is only robust for the sample that includes developing countries only (Tables 10 and 11). The insignificance displayed in the sample including both developed and developing countries is of less importance though, since it is the effect of FDI in developing countries that is the focus of this thesis. Although these findings do not necessarily support a positive effect of FDI Capital Penetration on PIR (since causation cannot be judged by this analyses alone). They do, however, contradict the argument of those who argue that FDI Capital Penetration (or TNC presence) have a negative effect on Physical Integrity Rights (i.e., a positive effect on government repression). Moreover, this anti-TNC view also fails to draw any support from the FDI composition analysis (Tables 14 and 15). Although, Secondary and Tertiary Sector FDI Capital Penetration in general displays a more positive association with PIR than Primary Sector FDI Capital Penetration, neither of the two display a robust significant association with

the dependent variable. Finally, since FDI is not conditional on the host country's general development characteristics, nor on the host country's degree of resource dependence, the anti-TNC view is left short of support in analyses performed here. The pro-TNC view—on the other hand is supported by the positive association between FDI Capital Penetration and PIR.

As for the analyses of PIR, a previous investigation on FDI and PCR used a flow-based measure of FDI, and found that FDI then was positively and significantly associated with PCR (Richards et al. 2001:231). de Soysa investigated the effect of FDI penetration—as here operationalised—on democracy, and—despite the different proxy "human rights"—he too found a positive and significant association (2003:112). However, no significant association between FDI penetration and PCR was exposed in the analyses performed here (Tables 12 and 13).[102] Several reasonable explanations can be attributed to the differential findings. First, although "democracy" and "political and civil rights" are similar measures, they are nevertheless significantly different. de Soysa (2003:90-95) employs the Vanhanen proxy for democracy (measuring the degree of political competition and political participation), and the analyses here employ a more broad-based rights-oriented dependent variable. Second, different controls are applied. Third, the analyses differ in the number of years and countries covered.

Nevertheless, the insignificance of the relationship between FDI and PCR, leave both those arguing the pro- and anti-TNC views unsupported. The findings when breaking down FDI into its industrial composites, however, lend some weak support to the anti-TNC view. Although there initially (Tables 16 and 17) seems to be some differences in the effects between—on the one hand—Primary Sector FDI Capital Penetration and—on the other hand—Secondary and Tertiary Sector FDI Capital Penetration, these findings lack both significance and robustness. However, when taking into account the level of economic development there is some evidence suggesting that the association between FDI penetration in the secondary and tertiary sectors and political and civil rights is more positive (or less negative) for richer developing countries. Thus, we find that Primary Sector FDI Capital Penetration is insignificantly related to Political and Civil Rights, while the association between Secondary and Tertiary Sector FDI Capital Penetration and PCR depends on the host country's level of economic development. For poorer countries the latter association might even be negative. In the sample analyzed, however, only Nigeria is poor enough to display

[102] In general the association in question was negative, but a at very low level of significance.

such a negative association. Nevertheless, this latter finding lends some conditional support to the anti-TNC view, which argue that dependence of FDI leads to the repression of political and civil rights.

Two control variables are of particular interest since they might help shed some light on the postulated indirect relationship between FDI and human rights (through economic development) (see (1a) and (1b) in Figure2). That is, as far as FDI generates economic growth, it will also increase the country's economic standing over the long run, and, thereby, influence the country's level of democracy/human rights. There is, however, a difference between expected short-term and long-term effects of FDI. If FDI—on the one hand—generates growth in the short run, this growth might or might not be conducive to human rights. If FDI—on the other hand—generates long-run economic development, then this economic development will most likely be conducive to human rights. Economic Standing is, as a consequence, expected to be positively associated with both human rights' dimensions, as the more developed countries are less likely to repress the rights of their citizens, while no clear-cut relationship is expected between Economic Growth and human rights. The analyses in general support the argument that economic development (Economic Standing) is good for both physical integrity rights[103] and political and civil rights.[104] For economic growth, the picture is less positive as the coefficient displays inconsistency and a low level of significance in association with both PIR and PCR. Thus, the analyses tend to provide support for the second link in the relationship between FDI, economic development and human rights only as far as FDI spurs growth that over time led host countries to a higher level of economic development.

Another theoretically interesting host country characteristic is the degree of natural resource dependence. According to the resource curse literature (see Sections 4.2.6 and 7.3.9 above for a discussion of the subject) negative effects on human rights should be expected. The analyses differentiate between fuel (mostly oil) and non-fuel resource dependence, and reveal—on the one hand—that Fuel Resource Dependence is negatively (but not robustly so)

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[103] The association between Economic Standing and PIR is robust positive and mostly significant for the full sample both when analyzing all countries as well as developing countries only (Tables 10 and 11). In the restricted samples (Tables 14 and 15) this only holds for the sample including all countries, while the sample including developing countries the association in question displays inconsistency at low levels of significance (low-N).

[104] The association between Economic Standing and PCR is robust positive and mostly significant for both the full and the restricted sample, and both when analyzing all countries and developing countries only (Tables 12, 13, 16 and 17).

associated with both PIR[105] and PCR[106], while Non-Fuel Resource Dependence—on the other hand—is insignificantly related to both measures of human rights, in general. Thus, the evidence only to a limited degree supports the argument that the richer host countries are in oil, the more do they repress the rights of their citizens.

The FDI-human rights findings highlighted here are fairly robust, but there are, however, important caveats that should not be underestimated. These caveats, by and large, mirror those of the economic growth analysis referred to in Section 7.6 above. That is, when digesting the findings one should keep in mind that the finding—at least to some degree—are sensitive with respect to alternative estimators, number of observations, and a poor country bias. The latter bias arises as poor countries—due to low data availability—are excluded from the analyses more frequently than rich countries.[107] Finally, statistical analyses can only say something about the degree of correlation between FDI, on the one hand, and host country economic growth, on the other. No robust causal relationships can be secured (Freedman 1997:156-57, Goldthorpe 2001:1-20). Moreover, the scenario of opposite causality, where democracy/human rights attracts FDI, is perhaps more likely than the scenario where FDI spurs human rights (Asiedu 2006:74-75, Busse 2004:61-62, Jensen 2003:612).

[105] The association between Fuel-Resource Dependence and PIR is negative and significant when the lag of the lagged dependent variable is increased and when the resource variables are logged (Tables 10 and 11). This, however, does not hold for the two PTS based (alternative) measures of PIR. Moreover, the findings based on the restricted sample display inconsistency and a low level of significance (Tables 14 and 15).

[106] The association between Fuel-Resource Dependence and PCR is negative and significant for all analyses except when the lag of the lagged dependent is increased or deleted altogether (Tables 12 and 13). This negative association is even more robust when based on the restricted sample (Tables 16 and 17).

[107] This is an out-of-sample poor country bias. In contrast to the in-sample poor country bias, out-of-sample bias is accounted for by way of the multiple imputation approach (see Section 5.1 above for a discussion of the nature of the data).

9 The Statistical Analyses From A Bird's Eye View

This chapter will—from a bird's eye view and in light of the research questions outlined in Section 4.1—take a look at the empirical evidence elaborated on in the two chapters immediately above. This is because those chapters contain many details, which can make it harder to see the forest through the trees. This chapter will, therefore, also serve to sharpen our focus before we initiate the more comparatively-oriented investigations.

If one key argument could be extracted from the theoretical discussion in Part I, it would be that FDI *can* help generate economic growth, a growth that will increase the country's economic standing over the long run, and, thereby, also increase that country's level of democracy/human rights. The emphasis here is on *can* and not *will*, since the effect will depend on both TNC and host country characteristics. In the former case this broadly means the composition of FDI; in the latter case this broadly means the general level of development—economic, institutional, and human capital wise—and the degree of resource dependence. Thus, as the important effects on human rights are long-term—and go through the potential economic benefits of FDI—we expect to find a stronger relationship between FDI and economic growth than between FDI and human rights.

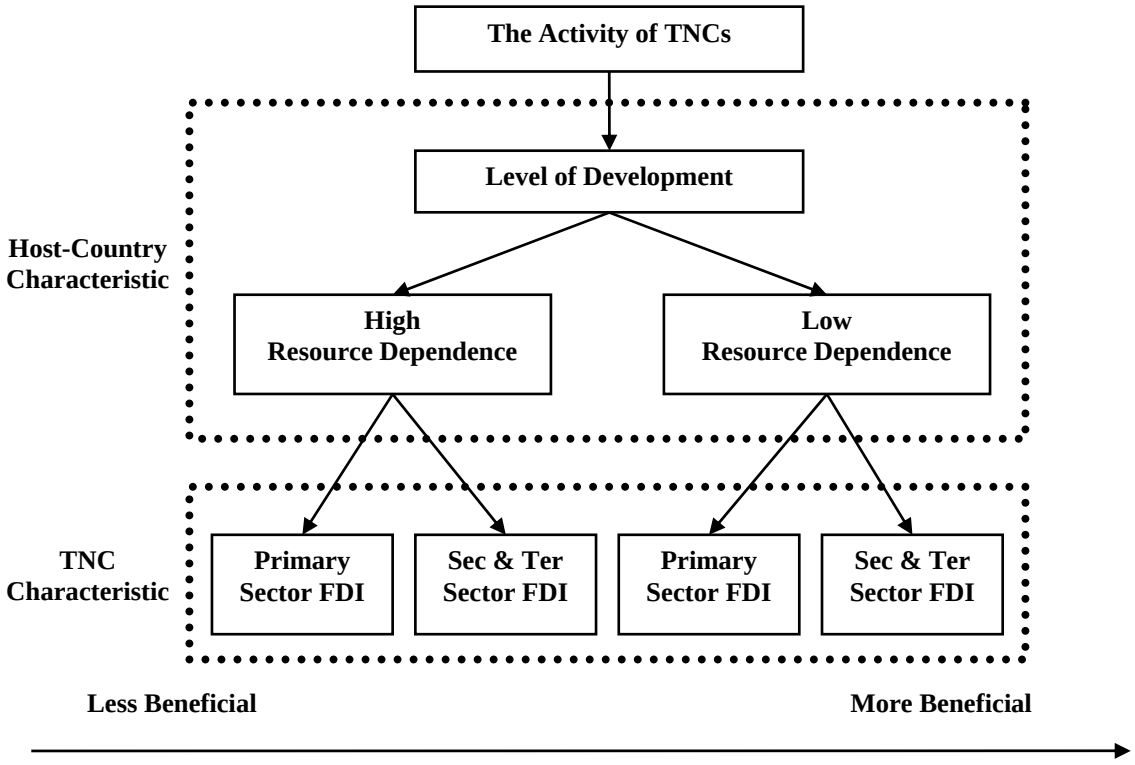
Based on this theoretical foundation some research questions were stated (see Section 4.1): First, is the effect of FDI on the host-country economy and the host country's general conditions of human rights positive? Second, does the answer to the first question depend on the host country's level of development: economic, institutional and/or human capital wise? Third, does the answer to the first question depend on whether the host country is dependent on natural resources or not? Fourth, does the answer to the first question depend on whether the investments are made in the primary sector or not?[108]

Figure 7 below is a simplification of Figure 3, and attempts to illustrate the conditionality underpinning these research questions. By and large, this relativistic view on the effects of TNC activity is supported by the statistical evidence (as outlined in Chapters 7 and 8). Thus, since this view draws on both a pro-TNC and an anti-TNC view—highlighting the mostly positive and mostly negative effects of FDI respectively—these intuitively contradictory views are both supported and weakened by the evidence available. The

[108] Note, however, that local human rights' effects—at the site of TNC operation—could not be tested for with the country-level data here applied. This was initially one of the research questions, but was dropped as less aggregated data and/or case studies are needed for this task.

following sections implicitly demonstrate this as the research questions are answered for economic growth and human rights respectively.

Figure 7: Simplified Model of the Conditional Benefits of the Activity of TNCs



9.1 FDI and Economic Growth

There is strong evidence supporting an argument that the growth of FDI (FDI Investment Rate or FIR for short) is positively associated with economic growth, and, moreover, there is no evidence suggesting—as anti-TNC theorists argue—that FDI penetration is negatively associated with economic growth (see (1a) in Figure 2). On the contrary, there is some evidence (although not robust) suggesting that FDI penetration is positively associated with economic growth. Thus, even if a high FIR leads to a high share of FDI in the local economy, this most likely has positive effects. Moreover, foreign capital in developing countries outperforms its domestic counterpart—as far as FIR is concerned—by a factor of 1.6 (dollar

for dollar).[109] At the most aggregate level, therefore, three are only positive effects of FDI, and the answer to question one—growth-wise—has to be Yes.

However, further analyses revealed that the positive association between growth of FDI (or FIR) and economic growth is driven by investments in the secondary and tertiary sectors. This since Primary Sector FIR is insignificantly associated with growth, while Secondary and Tertiary Sector FIR display a robust positive and significant association to the dependent variable.[110] Thus, the composition of FIR matters and, hence, the answer to question four—growth-wise—has to be Yes.

The importance of host country characteristics is also confirmed. There is some evidence (although not robust) suggesting that the positive association between growth of FDI (or FIR) and economic growth is more positive the higher the level of human capital,[111] and some more robust evidence suggesting that the association in question is less positive the more dependent host countries are on fuel resources (mostly oil) (negative effects might never be the case though).[112] There is also some evidence suggesting that FDI penetration at the industry level is dependent on important host-country characteristics. This as the association between Economic Growth and Secondary and Tertiary Sector FDI Capital Penetration is decreasingly positive the lower the Initial Economic Standing, although no host country in the developing world is likely to experience negative effects on growth from high FDI penetration in these sectors.[113] At some level, therefore, the growth of FDI and/or FDI penetration depends on both the host country's level of development and level of natural resource dependence, and the answers to question two and three—growth-wise—both have to be Yes. Note, however, that positive answers are dependent on how development and natural

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[109] In a sample including both developed and developing countries the factor in favor of foreign capital is 2.1.

[110] This finding holds both for the sample including all countries and for the sample including developing countries only.

[111] This is only supported in the replication analysis in Section 7.5.1, but not in the main analysis in Section 7.5.4.

[112] When the export value of fuel is below 10 percent we can say with 95% certainty that the association between FIR and growth is positive. Moreover, when the export value of fuel is above 10 percent of GDP we cannot say with 95 percent certainty that the association between Economic Growth and FIR is positive (although it need not be negative). This finding holds both for the sample including all countries and for the sample including developing countries only.

[113] We cannot say with 95 percent certainty that the association in question ever will be negative. The significance of this association holds both for the sample including all countries and for the sample including developing countries only. Note that for the sample including both developed and developing countries the association also holds when replacing Initial Economic Standing with Institutional Quality or Human Capital.

resources are defined.[114] Although the positive associations in questions might be less positive in certain contexts, the available evidence never supports the anti-TNC view of a negative association between FDI and economic growth. As we have answered question one to four positively for economic growth, we now turn to see how the research questions should be answered with respect to human rights.

9.2 FDI and Human Rights

Based on the theoretical framework, the link between FDI and the host government human rights' performance is expected to be weaker than the link between FDI and economic growth. This is because the main positive effect of FDI on human rights is argued to work indirectly through economic development, and these FDI-growth effects might take decades before they manifest themselves in human rights' improvements (see (1b) in Figure 2). Nevertheless, the effects of FDI on two distinct dimensions of human rights have been tested: physical integrity rights (PIR) and political and civil rights (PCR) (see (3) in Figure 2). The question is: Will FDI—on the one hand—be associated with more or less repression, and will it—on the other hand—be associated with more or less political and civil freedom? Many of the tests performed produced findings that lack both significance and robustness, which confirm the theoretical expectations of the above-mentioned weaker link. The following paragraphs demonstrate this as research questions one to four above are answered for the effects of FDI on the two respective dimensions of human rights: PIR and PCR.

At the most aggregate level there is strong evidence supporting an argument that FDI penetration in developing countries is positively associated with PIR, while no significant association is found to exist between FDI penetration and PCR.[115] These findings contradict the argument of those that argue that FDI penetration has a negative effect on human rights, while they partly support the argument of positive effects. At the most aggregate level, therefore, the answer to question one has to be Yes for PIR, and No for PCR. At the industrial level—separating between primary sector FDI and secondary and tertiary sector

[114] On the one hand it holds for economic development, but not for institutional development or development of human capital. On the other hand it holds for fuel resource dependence but not for non-fuel resource dependence.

[115] The association between FDI penetration and PIR—for the sample including both developed and developing countries—is robust positive, although the significance of the relationship is not robust. The association between FDI penetration and PCR for the sample including both developed and developing countries is insignificant.

FDI—no robust significant association is found to exist for either PIR or PCR. Thus, the answer to question four is—for both dimensions of human rights—No; the composition of FDI penetration does not matter.

As far as the importance of host-country characteristics is concerned, neither the association between FDI penetration and PIR, nor the association between FDI penetration and PCR are conditional on the host country's degree of resource dependence. Thus, the answer to question three has to be No. As far as the associations in question are dependent on the host country's general development characteristics, this is not the case for PIR. However, when taking into account the level of economic development there is some evidence suggesting that the association between FDI penetration in the secondary and tertiary sectors and PCR is more positive (or less negative) the richer the host countries are. Although this finding suggests that the effects of FDI are negative for poorer countries, this only holds for Nigeria in the sample analyzed here. Support for the anti-TNC view—arguing that dependence of FDI leads to repression of political and civil rights—is, therefore, only limited. The answer to question two—about the importance of the host country's level of development is, nevertheless, No for PIR and Yes for PCR. Note, however, that the latter positive answer depends on how development is defined.[116]

9.3 FDI, Economic Development and Human Rights

Two control variables in the human rights' analyses are of particular interest since they might help shed some light on the postulated indirect relationship between FDI and human rights (through economic development). That is, as far as FDI generates economic growth, it will also increase the country's economic standing over the long run, and, thereby, influence a country's level of democracy/human rights (see (1b) in Figure 2). There is, however, a difference between expected short-term and long-term effects of FDI. If FDI—on the one hand—generates short-run growth, this growth might or might not be conducive to human rights. If FDI—on the other hand—generates long-run economic development, then this economic development will most likely be conducive to human rights. The evidence

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[116] It only holds for economic development, not for institutional development or development of human capital. On the other hand it holds for fuel resource dependence but not for non-fuel resource dependence.

available supports these expectations, as no significant association is found to exist between economic growth and any of the two human rights' dimensions, while a significant and positive association is found between economic standing and both human rights' dimensions. Thus, the analyses tend to provide support for the second link in the relationship between FDI, economic development and human rights, but only as far as FDI spurs growth that over time leads host countries to a higher level of economic development.

Generally speaking, therefore, the key argument made in this thesis is supported by the statistical analyses. That is FDI *can* help generate economic growth, a growth that will increase the country's economic standing over the long run, and, thereby, also increase that country's level of human rights. The emphasis here is on *can* and not *will*, since the effect will depend on both TNC characteristics—like the composition of FDI—and on host country characteristics—like the general level of development and the degree of resource dependence. Some caveats remains however, and two of them are particularly important for the choice of research design.[117] First, the low number of observations in the FDI-composition analyses makes the findings—at least to some extent—sensitive to outliers and model specifications. Second, statistical analyses can only say something about the degree of correlation between FDI, on the one hand, and host country economic growth or human rights, on the other. No robust causal relationships can be secured (Freedman 1997:156-57, Goldthorpe 2001:1-20). Moreover, a significant statistical association might also be the result of reverse casual processes. There is ample evidence in the literature of FDI being attracted by economic development (Choe 2003:54-55), as well as human rights' development (Asiedu 2006:74-75, Jensen 2003:612, Smarzynska and Wei 2000:1-14). The dependence can even be mutual (Chowdhury and Movrotas 2006:17-18). To address these sorts of issues quantitative investigations only can take us so far. Comparative-oriented studies seem necessary both to serve as a validity check and to unravel the nature of causality in the relationships in question.

[117] Other caveats are discussed in the respective analyses on economic growth and human rights.

10 Qualitative Comparative Analysis

There are, according to Skocpol and Somers (1994:72-95), three logics of comparative oriented studies: parallel demonstration of theory, contrast of context, and macro-causal analysis. Researchers following the first logic select cases that allow them to demonstrate the validity of their theory, while researchers following the second logic select cases that allow them to demonstrate that case-specific differences yield cases-specific outcomes. This part of the thesis acknowledges the importance of context stressed in the second logic, but, nevertheless, follows the third logic as it attempts to make causal inferences about the relationships under scrutiny. This causal objective—along with the objective of validation of the statistical findings—necessarily influences the design of the comparative analyses. So does the complexity of the theoretical argument. Thus, the comparative design needs to cover enough cases to provide a meaningful validation of the statistical findings, it needs to allow for different causal conditions to interact with each other, and it needs to disentangle the causal mechanisms that link the hypothesized causal conditions to the outcome. It is the belief of the author that a design combining fuzzy-set methods and country case studies meet these ends.

Fuzzy-set methods is a descriptive tool designed to help researchers make sense of their cases (Ragin 2006b:309-10). It allows for the analyses of a large number of cases, and it allows for multiple conjunctural causation. The latter in essence opens up for the possibility that causal conditions may combine in different ways, and that different combinations of causal conditions may produce the same outcome (Ragin 2000:102). In other words, fuzzy-set methods reveal for the researcher different causal combinations that are linked to the outcome. It is, however, non-inferential in character, and country case studies are needed in order to reveal the nature of causality for the different causal combinations in question. The logic of this design are discussed in the sections that follow, before it is applied to the analyses of the effects of FDI on economic growth (Chapter 11) and human rights respectively (Chapter 12).

10.1 Fuzzy-Set Methods: Multiple Conjunctural Causation[118]

Fussy-set methods is a synthetic strategy that—according to Ragin (1987:82-84)—integrates the best features of the case-oriented and the variable-oriented (statistical) approach. That is, it is able to address a large number of cases while it at the same time allows for causal complexity in the form of multiple conjunctural causation. This latter feature contrasts and complements the variable-oriented approach, where variables (or casual conditions) are assumed to be capable of influencing the probability of the outcome regardless of the values on the other variables (i.e., the variables compete in producing the highest net effect) (Ragin 2006a:14-15). However, the novelty of fuzzy-set methods warrants a more detailed discussion of its concepts and logic.

10.1.1 Fussy Sets Versus Crisp Sets: Degree of Membership

Set methods does—as mentioned—work with cases as wholes and not with variables *per se*. Cases are viewed as configurations, and are examined in terms of their multiple memberships in sets (Ragin 2000:122). A set is the equivalent of a variable, but unlike a variable it distinguish between relevant and irrelevant variation (Ragin Forthcoming 2007b). An example can help illustrate this. A variable commonly used as a proxy for development is "national income per capita". According to this operationalization we can say that Norway is more developed than the USA (since income per capita is higher in Norway than in the USA). Theoretically, however, it is sometimes more useful to think of development as a set, and in set terminology a country is either in the set "developed" or out of the set "developed". That is, since both Norway and USA have a high national income per capita they are both considered as developed, and, hence, they are theoretically equivalent with respect to development.

This dichotomous categorization of sets as either in or out is termed "crisp" sets. Crisp sets contrasts with fuzzy sets, which are categorized by their "degree" of membership in a set.[119] That is, in fuzzy sets an object can take on any value between 1 or 0, while in crisp

[118] The development of fuzzy-set methods in social science—as applied here—is based largely on the contributions of Ragin (2000). Hence, this discussion of fuzzy sets refers mostly to his publications. However, in the recent years others have started to make contributions too (Compasss 2006).

[119] There are different types of fuzzy sets ranging from a three-value fuzzy set to a continuous fuzzy set. In the former type an object takes on the value 1 if fully in, 0.5 if neither in or out, and 0 if fully out of the set. In the

sets an object can only take on the value 1 and 0 (Ragin 2000:153-55). In analyses containing complex concepts it is both theoretically and methodologically meaningful to choose a fuzzy set approach over a crisp set. This is theoretically meaningful, since many cases are neither in or out of the case, but somewhere in between; and methodologically meaningful, since it is possible to manipulate the breakpoint between in and out of the set in ways that—for crisp sets in particular—enhance the consistency of the evidence with the set-theoretic claim in question.[120] Thus, fuzzy sets is preferred here as it better copes with the complexity of the theoretical framework, and as it better copes with problems related to arbitrary dichotomization (Ragin 2000:256-57, Ragin Forthcoming 2007b:22).

10.1.2 The Logic of Fuzzy-Set Methods

In fuzzy-set methods cases are—as mention above—viewed as configurations, and a central feature of configurational thinking is the vector space (or property space). The vector space is an analytic device that helps us sort different kinds of cases based on their membership-scores in different sets (i.e., different causal conditions). That is, cases with similar characteristics are grouped together (e.g., all with membership scores above the breakpoint of 0.5 on the causal conditions in question).[121] In total there are 2^k logically possible groups or causal combinations that all are listed in a truth table (where k is number of variables). These

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latter type an object can take on any value between 1 and 0, where a numerical score between 1 and 0.5 indicates that degree of membership is more in than out and scores between 0.5 and 0 indicate that degree of membership is more out than in (Ragin 2000:155-60). The analyses to follow apply the continuous type of fuzzy set.

[120] An example can illustrate how robust crisp and fuzzy sets are towards manipulations of the breakpoints. Consider the causal condition A and the outcome B. One case with a fuzzy membership score 1.0 in A and 0.6 in B would have a crisp membership score of 1.0 in A and 1.0 in B. From the crisp-set perspective, this case is compatible with the argument that A is sufficient for B, while this obviously do not hold from a fuzzy-set perspective (since the full membership in A is associated with just about half the membership in the outcome B) (see Ragin 2000:256).

[121] An example may illustrate this logic. Consider the causal conditions A and B, and the fact that a case with a membership-score above 0.5 in A or B will be more in than out of that causal condition. With 2 causal combinations (k) there are $2^k = 4$ corners in the vector space: A and B, A and not B, not A and B, and not A and not B. Since most empirical cases fall short of full membership in the different causal combinations, most cases will plot in the interior of the vector space rather than in its corners. A case with a membership score of 0.8 in A and 0.6 in B will have a membership score of 0.6 in the causal combination A and B. This since the membership score in a causal combination is the minimum score in the individual causal conditions. The membership score in the other vector space corners will—based on the same logic—be as follows. A not B: minimum of 0.8 and (1-0.6) = 0.4. Not A and B: minimum of (1-0.8) and 0.6 = 0.2. Not A and not B: minimum of (1-0.8) and (1-0.6) = 0.2. Cases will almost always have only one memberships-score above 0.5 in the logically possible causal combinations available, and, hence, one corner in the vector space that it is closest to (here: A and B). Thus, it is the cases that are closest (i.e. membership score above 0.5) to the same corner that are grouped together (Ragin 2000:181-89).

different groups are, however, likely to differ on how many cases they represent and on how consistently they are associated with the outcome in question.[122] Thus, frequency and consistency thresholds are used to determine whether or not a particular causal combination is theoretically and empirically interesting (Ragin Forthcoming 2007a:8-14).[123] Those causal combinations that pass these thresholds are the ones—out of 2^k—considered most powerful in explaining the outcome in question (and, hence, are coded 1 for expected outcome in the truth table). However, these causal combinations might be unnecessarily complex and—if so—can be simplified by way of Boolean algebra.

Boolean minimization can help reduce the causal combinations (coded 1 for expected outcome in the truth table) in three ways.[124] The most conservative solution is obtained by the use of Boolean minimization on these most powerful causal combinations only. The latter two solutions are obtained by including the "reminders" in the truth table (the counterfactuals) in the minimization process. Reminders are the result of limited diversity or the fact that not all causal combinations have an empirical match (or have too few cases to pass the frequency threshold). The most parsimonious solution is obtained by treating the reminders as "don't

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[122] More precisely, consistency here relates to the consistency of the empirical evidence for each vector space corner (i.e., each causal combination) with the argument that degree of membership in the corner is a subset of degree of membership in the outcome. In fuzzy sets a subset relation is indicated when membership scores in one set (e.g. a causal condition or combination of causal conditions) are consistently less than or equal to membership scores in another set (e.g. the outcome) (Ragin Forthcoming 2007a:8-10). The logic of this subset relation is demonstrated by the opposite situation where the membership in the causal condition is considerably larger than the membership in the outcome. I.e., the cause is present but not the outcome.

[123] The frequency threshold depends on the total number of cases analyzed. If the number of cases is large then a threshold above one can be set, but with only a few cases available all causal combinations with at least one case with a memberships score above 0.5 should be analysed (Ragin Forthcoming 2007a:10-12). The consistency threshold reflects degree of consistency—and not perfect consistency—since social science data is rarely perfect. However, the threshold must not be set too low since this will include causal combinations that are inconsistently associated with the outcome. Ragin recommends that the consistency thresholds should not be less than 0.75 (Ragin Forthcoming 2007a:12-14). In crisp-set analyses—where the cause and the outcome is either present or absent—this means that at least 3 out of 4 cases in the causal combination should be associated with the outcome.

[124] Boolean minimization work in two steps. The first principle states that if two causal combinations differ in only one causal condition, then this particular causal condition can be considered irrelevant. An example can help illustrate (in the following note that capital letters denote causal condition with membership score above 0.5—i.e., cases are characterized by presence of causal condition—while small letters denote causal condition with membership score below 0.5—i.e., cases are characterized by absence of causal condition). If we have three causal combinations: ABC, ABc, and Ab. Then the former two (ABC and ABc) can be simplified to AB, while the third (Ab) and this latter one (AB) can be simplified to A. The second principle state that a causal combination is set to imply another if the membership of the second is a subset of the membership of the first. E.g., consider the causal combinations A and ABc. Then A implies ABc because it embraces all members of ABc. ABc is included in A as ABc is a special case of the causal combination A. A prime implicant chart can—as will be demonstrated in the analyses to follow—be used to determine whether all the minimized causal combinations are necessary to cover all the causal combinations that are expected to yield the outcome in question (Ragin 1987:93-98).

care's", meaning that we are not concerned about whether the outcome is present or not for these counterfactual causal combinations. The intermediate solution makes use of theory as well as the counterfactuals, and differs from the most parsimonious solution in its distinction between "easy" and "difficult" counterfactuals (where the former is in accordance with theory while the latter contradicts common theoretical knowledge).[125] While the most parsimonious solution don't care whether the counterfactual is easy or difficult, the intermediate solution allows for a theoretical founded simplification of the conservative solution as it makes use of easy counterfactuals only (Ragin and Sonnett 2005:182-93). In the fussy-set analyses below we consider only the most complex and the intermediate solution to be of interest.

At this stage—probably left with several causal combinations that all are associated with the outcome—we need to evaluate the importance of both the individual causal conditions and the causal combinations. In fuzzy-set methods the appropriate tools are—on the one hand—the idea of necessary and sufficient conditions, and—on the other—the concepts of consistency and coverage. The search for necessary and sufficient conditions in fuzzy-set analysis resembles Mill's "indirect method of difference" (Ragin 2000:91-93). A causal condition is said to be necessary if it is present in all causal combinations that lead to the outcome in question, and is said to be sufficient if its presence alone leads to the outcome in question. The weakness of Mill's method is, however, that it is often the case that causes are neither necessary nor sufficient, and to deny such causes is to deny the complexity and diversity of social phenomena.[126] That is, if a causal condition is an important part of one of the causal combinations linked to the outcome then it is neither necessary nor sufficient, but is still of general interest. Thus, fuzzy-set methods is better equipped to handle real life complexity (Ragin 2000:91-93). Fuzzy-set methods is also equipped to handle deviant cases that challenge universal claims of necessity and sufficiency, either by way of "linguistic

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[125] An example may illustrate. Consider the causal combination ABC and the reminder (counterfactual) ABc. If the causal condition, C, according to common theoretical knowledge is expected to be associated with the outcome then the counterfactual ABc is consider "difficult". If, however, the outcome according to the theory is expected to be associated with the absence of C, then the counterfactual is considered "easy" (Ragin and Sonnett 2005:188-90).

[126] A causal condition is: **necessary and sufficient** if it is the only condition producing the outcome (and when the absence of the cause is associated with the absence of the outcome); is **necessary but not sufficient** if it is contained in all combinations linked with the outcome, but cannot produce this outcome alone; is s**ufficient but not necessary**, if it is capable of producing the outcome on its own, but at the same time there are other combination also linked to the outcome; and is **neither necessary nor sufficient** for the outcome, if it produces the outcome only if combined with other conditions. Indeed there might be paths towards the outcome that do not contain the causal condition in question at all, or ones that contain the absence of the causal condition (Schneider and Grofman 2006:18).

qualifiers", or by way of "consistency" and "coverage".[127] Linguistic qualifiers take into account only whether or not the cases are in accordance with the claims of necessity and sufficiency. Hence, if, e.g., 80 percent of the cases are significantly consistent with the notion of necessity then we might claim that the causal condition (or causal combination) in question is "almost always" necessary (Ragin 2000:109-10).[128] Consistency and coverage, by contrast, also take into account the membership scores, and make use of the fact that cases with high membership in the causal condition provide the most relevant consistent and inconsistent cases (Ragin 2006b:5).[129] In this context—in the language of Ragin—consistency assesses the degree to which instances of an outcome agree in displaying the causal condition thought to be necessary, whereas coverage assesses the "relevance" of the causal condition—the degree to which instances of the causal condition are paired with instances of the outcome" (2006b:2). In this respect it is important to acknowledge that a causal combination might be very consistent—as all cases linked to the causal combination are also linked to the outcome—but not very relevant (at lest not empirically)—as only a small portion of the cases are covered by the causal combination in question (Ragin 2006b:9). Consistency and coverage are preferred over linguistic qualifiers as analytic tools in the analysis to follow since they take into account the degree of fit (i.e., membership scores).

The method of fuzzy sets—therefore—leaves us with causal conditions and/or causal combinations that are all linked to the outcome. It also leaves us with an idea of how consistently the different combinations are linked to the outcome, and how relevant they are for the outcome. In this way it is an exploratory technique that helps us make sense of our cases. It aids causal interpretation. However, more in-depth case studies are needed to unravel the true nature of the causal combinations extracted based on the method of fuzzy sets (Ragin Forthcoming 2007a:17).

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[127] Deviant cases may result from some cases being influenced by geographically or historically restricted causes not considered in the model, and from imperfect data (Ragin 2000:108-09).

[128] Other linguistic qualifiers suggested by Ragin (2000:109-10) are "more often than not" at the 50 percent benchmark, and "usually" for the 65 percent benchmark.

[129] Consider a case with a high membership score (e.g., 0.8) in the cause and a high membership score in the outcome (e.g. 0.9), and a case with a low membership score in the cause (e.g., 0.1) and a high membership score in the outcome (e.g. 0.9). They are both counted equally when assessed by way of linguistic qualifiers (the cause is a subset of the outcome), but clearly the latter must be considered less relevant since one cannot use this case as in-depth evidence of the argument in question. That is, although the case does not contradict the argument it cannot cause the outcome when the cause is not present (Ragin 2006b:5).

10.2 Fuzzy-Set Methods: Case Studies and the Nature of Causality

The way to unravel the causal nature of the different causal combinations suggested by the application of fuzzy sets is to conduct case analyses of countries representing the different causal combinations in question. This is the case, as neither the statistical analyses nor the analyses of fuzzy sets are trusted to unravel causality (as discussed in Section 5.2 above). Case studies aim to identify the causal mechanisms (i.e., processes and intervening conditions) that link causal conditions to an outcome (Mahoney 2003:363). In this context, therefore, the cases studies—on the one hand—can help us avoid mistaking a spurious correlation for a causal association, and—on the other—can make us more confident about the true causality in the suggested causal combinations (Mahoney 2003:63-65).

10.3 Fuzzy-Set Methods: Case Selection

A major concern when selecting cases is to not select cases based on the dependent variable alone (Geddes 1990:131-32, King et al. 1994:107-08). Any intentional case selection runs the risk of selecting cases that fit the theory (King et al. 1994:142, Rueschmeyer et al. 1992:30). Ideally cases should be selected so as to ensure variation in both the independent and dependent variables. If this is not done, one might find no relationship even when a relationship in fact exists,[130] or one might find relationships when in fact no relationship exists (Geddes 1990:132-33, King et al. 1994:128-38, Ragin 1987:36-42).[131]

Case selection refers here to the case study analyses as well as to the analyses of fuzzy sets. One of the advantages of fuzzy-set methods is that it allows for the analyses of a much larger number of observations than what has normally been the case in comparative analyses.

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[130] Consider the outcome Y and the causal conditions X, cases A-B where X and Y is present, and cases C-D where both X and Y is absent (other causal conditions are left out for the sake of simplicity). A statistical analysis based on many A's and B's would find no correlation since there are no variations in the dependent variable (as would have been the case if cases C-D were included). A comparative analyses based on cases A-B would perhaps state that the presence of X is related to the presence of Y (Mill's method of agreement), but could not logically state that X causes Y since it is not known whether the absence of X is associated with the absence of Y (as would have been the case if cases C-D were included – Mill's indirect method of difference) (Geddes 1990:132-33, Ragin 1987:36-42).

[131] Consider the outcome Y and the causal conditions X, and the cases A-B where X and Y is present, cases C-D where X is present and Y is absent. An analyses based on cases A-B could state that X might cause Y, but this conditional conclusion would have been disregarded with the inclusion of cases C-D (Geddes 1990:132-33, Ragin 1987:36-42).

In the fuzzy-set analyses that follow we take a closer look at the most theoretically interesting countries. That is, we look at developing countries with information available on FDI broken down at the industry level. From the statistical analyses we know that this information is available for 16 countries. However, since the African continent is biased in this set of countries we have made it more geographically balanced by tracking down information on two additional countries thereby taking the number of cases to be examined to 18.[132] The process by which these 18 countries were selected ensures objectivity with respect to selecting only cases favorable to the theory, while the diversity of these 18 countries ensures variation in both the dependent and independent variables considered. The cases subsequently selected for the more in-depth analyses of the causal combinations (suggested by the fuzzy-set methods) are not, however, subject to the same critical evaluation of case-selection bias. This is because they are not included to discern potential significant causal conditions from insignificant ones. These particular cases are included only to investigate the causal character of the causal combinations already suggested by the fuzzy-set approach.

Thus, the design of the comparative qualitative part of this thesis is to use fuzzy-set methods to extract causal combinations that are linked to the outcome in question, and to use case studies to examine the causal character of these causal combinations. The chapters that follow will apply this design in two separate analyses of the effects of FDI on economic growth and human rights respectively.

[132] Data on FDI broken down at industry level from 16 developing countries is made available from UNCTAD (2004b). Similar data on two additional African countries (Botswana and Zambia) were added to this set of countries (see Appendix C1 and C2). These two countries were selected as they represent both success and failure with respect to economic development and development of human rights.

11 QCA: The Economic Growth Analysis

This chapter will—as stated in the pervious chapter—apply the methods of fuzzy sets on data from 18 developing countries. These analyses will be accompanied by some case studies that were themselves selected on the basis of the causal combination suggested by the fuzzy-set approach. The main analytic strategy of these analyses is to yield information that help answer the research questions asked in Section 5.1.[133]

11.1 Fuzzy-Set Methods: The Model

The causal conditions included in the model will—as for the statistical analyses—be based on the theoretical framework developed above. However, since fuzzy-set methods become increasingly complex with increasing number of causal conditions, we follow Ragins' advice and keep the number of causal conditions in the range of three to eight (Forthcoming 2007a:19). The model will, therefore, be somewhat reduced compared to the model analysed in the statistical analyses, and will only include those causal conditions considered most important based on the theoretical framework and the statistical analyses on economic growth. In its most basic form the model include the following causal conditions (sets):

High Economic Growth = High FDI Investment Rate (FIR)
+ High FDI Capital Penetration (FDIP)
+ High Domestic Investment Rate (DIR)
+ Low Initial Economic Development (POOR)
+ High Human Capital (HC)
+ High Institutional Quality (IQ)
+ High Resource Dependence (RD)

In this model FIR and FDI Capital Penetration will be tested for both total effects and compositional (primary sector versus secondary and tertiary sectors) effects. Also, Resource Dependence could be both total or compositional (Fuel versus Non-Fuel).

[133] See Yin (2003:112-14) for a discussion of analytic strategies in case-oriented research. The analytic strategy here adopted resembles what Yin labels "relying on theoretical propositions" and "thinking about rival explanations".

11.2 Fuzzy-Set Methods: The Calibration

In fuzzy-set methods the causal conditions are sets (not variables), and one of the most basic features of set thinking is—as discussed in Chapter 10—that not all variation in a causal condition is relevant. Hence, the different sets need to be calibrated. This calibration—the process by which the degree of membership in a set is decided—should be based on externally determined criteria, as inductively derived criteria—like the sample mean—will be arbitrary and open to contestation. Thus, the externally determined criteria must reflect agreed-upon thresholds and benchmarks based on collective social knowledge or the researcher's own accumulated knowledge. Unfortunately, this knowledge base is still limited for most causal conditions (Ragin Forthcoming 2007b:8-11). The calibrations here performed, nevertheless, aim to be explicit, systematic, and externally founded. Thus, Appendix C1 show the criteria of the four-value coding scheme by which the causal conditions are transformed from variables—as used in the statistical analyses—into continuous fuzzy sets,[134, 135] while Table 19 below shows final membership scores for the 18 countries considered.

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[134] The four categories are "in the set", "more in than out of the set", "more out than in the set", and "out of the set". Ragin (Forthcoming 2007b:18-20) use a six-value coding scheme: "in the set", "probably in the set", "more in than out of the set", "probably out of the set", "more out than in the set", and "out of the set" (also, see Ragin 2000:Table 6.1). Ragin, though, is open for other coding schemes (Forthcoming 2007b:Endnote 10), and the four-value scheme is here preferred—for simplicity—as it difficult to identify the externally determined criteria by which to base the calibration. The logic of the two different schemes are, however, the same and there is no reason to suspect the one here adopted to be inferior to the one suggested by Ragin (confirmed by Ragin in e-mail correspondence in November 2006).

[135] The calibration process follows the logic outlined by Ragin (Forthcoming 2007b:18-20): 1) Criteria are set for all sets (causal conditions) defining the values that determine whether a case is neither in or out of the set (i.e., the breakpoint), are "in the set" or are "out of the set" (see Appendix C1). 2) Qualitative coding: All cases are then assigned a log odds based on its membership ("in the set" = 4, "more in than out of the set" = 1, "more out than in the set" = -1, and "out of the set" = -4). 3) Estimate predicted qualitative coding (PQC) using the initial variable as independent and the qualitative coding (log odds) as dependent in a regression analysis (usually curvelinear estimation (e.g., cubic) is necessary in order to derive a good fit. Note that data from all 63 developing countries are used in this regression (the FDI composite are of course the exception since data on only 18 developing countries are available for these sets). 5) This PQC is then transformed into membership scores by first exponating the predicted odds (to turn them into simple odds, and then converting these odds into membership scores. Formula: Degree of Membership (DoM) = EXP(PQC) /[1+EXP(PQC].

Table 19 – Fuzzy-Set Membership Scores: Economic Growth

Country	EG	FIR	PFIR	STFIR	FDIP	PFDIP	STFDIP	DIR	POOR	HC	IQ	RD	FRD	NFRD
Argentina	0.30	0.92	0.98	0.79	0.13	0.02	0.03	0.48	0.16	0.97	0.81	0.02	0.02	0.02
Bangladesh	0.68	0.13	0.09	0.06	0.01	0.02	0.01	0.96	0.97	0.14	0.01	0.01	0.01	0.02
Bolivia	0.14	0.88	0.87	0.98	0.79	0.25	0.07	0.34	0.81	0.69	0.02	0.79	0.16	0.18
Brazil	0.25	0.74	0.15	0.36	0.11	0.02	0.05	0.79	0.25	0.78	0.96	0.02	0.02	0.02
Botswana	0.98	0.01	0.04	0.03	0.99	0.98	0.09	0.98	0.55	0.73	0.93	1.00	0.01	1.00
Colombia	0.57	0.96	0.99	0.73	0.19	0.02	0.02	0.87	0.52	0.85	0.77	0.05	0.06	0.02
Indonesia	0.98	0.23	0.01	0.97	0.09	0.03	0.02	0.94	0.86	0.69	0.01	0.71	0.61	0.02
Korea, Republic of.	0.99	0.97	0.37	0.99	0.01	0.02	0.01	0.99	0.34	0.99	0.97	0.02	0.02	0.02
Malaysia	0.98	0.83	0.02	0.92	0.98	0.02	0.99	0.98	0.32	0.89	0.97	0.68	0.51	0.02
Nigeria	0.22	0.70	0.97	0.60	0.94	0.14	0.90	0.01	0.71	0.23	0.03	1.00	1.00	0.02
Pakistan	0.81	0.72	0.16	0.97	0.02	0.02	0.02	0.88	0.94	0.12	0.11	0.01	0.01	0.02
Peru	0.05	0.94	0.36	0.97	0.12	0.02	0.02	0.64	0.58	0.96	0.15	0.26	0.03	0.08
Philippines	0.09	0.86	0.05	0.97	0.09	0.02	0.03	0.56	0.76	0.97	0.04	0.03	0.02	0.02
Papua New Guinea	0.47	0.33	0.03	0.03	0.99	0.98	0.01	0.51	0.69	0.05	0.89	0.98	0.06	0.98
Paraguay	0.15	0.65	0.08	0.33	0.08	0.02	0.04	0.82	0.42	0.48	0.01	0.01	0.01	0.02
Thailand	0.99	0.98	0.05	0.99	0.12	0.02	0.04	0.98	0.74	0.63	0.90	0.02	0.02	0.02
Venezuela	0.10	0.93	1.00	0.35	0.07	0.02	0.02	0.05	0.08	0.43	0.40	0.97	0.95	0.02
Zambia	0.01	0.41	0.02	1.00	0.92	0.80	0.09	0.01	0.79	0.14	0.05	0.97	0.02	0.99

EG =Economic Growth, FIR= Foreign Investment Rate, PFIR = Primary Sector FIR, STFIR = Secondary and Tertiary Sector FIR, FDIP = FDI Capital Penetration, PFDIP = Primary Sector FDI Capital Penetration, STFDIP = Secondary and Tertiary Sector FDI Capital Penetration, DIR = Domestic Investment Rate, POOR = Initial Economic Development, HC= Human Capital, IQ = Institutional Quality, RD = Resource Dependence (Fuel and Non-Fuel), FRD = Fuel Resource Dependence, NFRD = Non-Fuel Resource Dependence.

11.3 Fuzzy-Set Methods: The Analyses

Having the membership scores for all causal conditions (sets) we are now able to estimate the causal conditions most consistently associated with the outcome economic growth.[136] Separate analyses will be conducted for overall FDI and for FDI when broken down to its composites, primary sector FD and secondary and tertiary sector FDI.

11.3.1 The Overall Effects of FDI

The model outlined above—in its most parsimonious form—yields the following truth table (where 1 denotes that a country is "more in that out" of that particular causal condition):

Table 20 – Fuzzy-Set Truth Table: Overall FDI and Economic Growth

Country	FIR	FDIP	DIR	POOR	HC	IQ	RD	EG	Consistency
Indonesia	0	0	1	1	1	0	1	1	0.991
Botswana	0	1	1	1	1	1	1	1	0.991
Papua New Guinea	0	1	1	1	0	1	1	1	0.967
Colombia & Thailand	1	0	1	1	1	1	0	1	0.957
Malaysia	1	1	1	0	1	1	1	1	0.939
Pakistan	1	0	1	1	0	0	0	1	0.844
Bangladesh	0	0	1	1	0	0	0	1	0.826
Brazil & Korea	1	0	1	0	1	1	0	0	0.742
Argentina	1	0	0	0	1	1	0	0	0.734
Paraguay	1	0	1	0	0	0	0	0	0.702
Zambia	0	1	0	1	0	0	1	0	0.560
Peru & Philippines	1	0	1	1	1	0	0	0	0.535
Bolivia	1	1	0	1	1	0	1	0	0.526
Venezuela	1	0	0	0	0	0	1	0	0.516
Nigeria	1	1	0	1	0	0	1	0	0.450

The causal combinations presented in the truth table are the ones with a match in the empirical data.[137] Since we only have 18 cases available we follow Ragin's view on the frequency threshold and consider all these causal combinations relevant for further analyses (Forthcoming 2007a:10-12). Moreover, we also follow Ragin with respect to how consistently causal combinations should be linked to the outcome, and consider only relevant

[136] By application of the "Fuzzy Sets Truth Table Algorithm" in Ragin's software package fsQCA (Ragin 2007).

[137] From the outline of the method of fuzzy sets in chapter 10 above we have that a country is part of a causal combination if its membership in that particular causal combination exceeds 0.5. Cases will almost always have only one memberships-score above 0.5, and this causal condition is, therefore, the one that best fits the case in question (Ragin 2000:181-89).

those causal combinations with a consistency score above 0.75 (which here also corresponds with a natural gap in consistency) (Forthcoming 2007a:12-14). Hence, those causal combinations that pass both these thresholds are coded one for the outcome Economic Growth (EG) in the truth table, since they are the once considered most powerful in explaining the outcome in question. The most conservative solution is obtained by the use of Boolean minimization on the seven most powerful causal combinations only. The outcome presented in Table 21 below, reduce the number of causal combinations from seven to five (capital letters denote presence of causal condition, while small letters denote absence of causal condition).[138]

Table 21 – Fuzzy-Set Solution Table: Overall FDI and Economic Growth

Country(*)	Causal Combination	Raw Coverage	Unique Coverage	Consi-stency
Colombia & Thailand	FIR*fdip*DIR*POOR*HC*IQ*rd	0.253	0.179	0.957
Bangladesh & Pakistan	fdip*DIR*POOR*hc*iq*rd	0.290	0.175	0.812
Botswana & PNG	fir*FDIP*DIR*POOR*IQ*RD	0.172	0.110	0.968
Malaysia	FIR*FDIP*DIR*poor*HC*IQ*RD	0.122	0.058	0.939
Indonesia	fir*fdip*DIR*POOR*HC*iq*RD	0.131	0.046	0.991
Solution coverage:	0.711			
Solution consistency:	0.895			

(*) That only a limited number of countries are listed does not mean that the excluded countries are not part of these causal combinations. It only means that these countries have a membership below 0.5 for these particular combinations that are most consistently related to the outcome.

The way to read this table is—on the one hand—to analyze it with respect to necessity and sufficiency, and—on the other hand—to analyze it with respect to consistency and coverage. Irrespective of consistency, we might state that each causal combination is a sufficient causal combination—since it is able to predict the outcome—and no causal combination is a necessary causal combination—since other causal combinations can predict the outcome too. Thus, there are several distinct routes to economic growth. This causal complexity is, however, somewhat moderated by the fact that high Domestic Investment Rate (DIR) is a necessary—although not a sufficient—causal condition (it is a part of all causal combinations). Consistency cannot, however, be disregarded as none of these causal combinations are 100 percent consistently associated with the outcome. Moreover, the "unique coverage" of these combinations tells us which of them are most relevant (Ragin

[138] Bangladesh and Pakistan combine and make FIR redundant causal condition, while Botswana and Papua New Guinea combine and make Human Capital (HC) a redundant causal condition.

2006b:2).[139] Thus, the three causal combinations listed at the top of Table 21 are more relevant than the latter two due to their higher unique coverage, while the first can be judged—despite its equal unique coverage—to be more powerful than the second due to its higher consistency. Moreover, "solution coverage" and "solution consistency" tells us something about the coverage and consistency of all the causal combinations combined. Thus, they are useful tools both when assessing the solution of a specific model, and when one wants to compare the solution of two alternative models (Ragin 2006b:18-19). In this case we see that the consistency of the model is fairly high, and that this consistency come at the expense of the relatively modest coverage.

As explained when discussing the logic of fuzzy-set methods in the previous chapter, this solution can be reduced even further by incorporating easy (i.e., theoretically sound) counterfactuals in the Boolean minimization process. Since, seven causal conditions theoretically yield $2^7 = 128$ causal combinations and only 15 causal combinations are covered by the data (see Table 20 above), the implementations of easy counterfactuals should have the potential of simplifying the solution significantly. However, the model analyzed still yields a complex solution where most causal conditions are part of all the causal combinations. As far as FIR and FDI Capital Penetration (FDIP) is concerned, both the absence and the presence of these two causal conditions are associated with the outcome. This is useful information in itself, but, nevertheless, leads us to ask whether not too many causal combinations are modeled by too few cases. If the model can be simplified and yield a solution with increased solution coverage and relatively high solution consistency, then the most parsimonious solution is to be preferred (Ragin 2006b:18-19).

The model tested above contains seven causal conditions, and of the seven only DIR is seen as necessary. Thus, potentially some of the other variables are superfluous. In the statistical analyses FDI Capital Penetration was weakly associated with Economic Growth, and we, therefore, tested an alternative model excluding this variable. We also tested if the exclusion of any of the other potentially superfluous causal conditions helped improve the solution. The questions we asked us in this process were of the kind: Is being economically poor necessary for experiencing high growth rates? This testing resulted in the model: EG = FIR+DIR+HC+IQ+RD, which yielded a truth table, and a complex and parsimonious solution as illustrated below (Tables 22-23).

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[139] Unique coverage is obtained by partitioning the raw coverage. It is somewhat analogous to the partitioning of explained variation in multiple regression (Ragin 2006b:14).

Table 22 – Fuzzy-Set Truth Table: Overall FDI and Economic Growth – Simplified Model

Country	FIR	DIR	HC	IQ	RD	EG	Consistency
Botswana	0	1	1	1	1	1	0.992
Indonesia	0	1	1	0	1	1	0.992
Papua New Guinea	0	1	0	1	1	1	0.967
Malaysia	1	1	1	1	1	1	0.915
Bangladesh	0	1	0	0	0	1	0.827
Pakistan & Paraguay	1	1	0	0	0	2	0.809
Brazil, Colombia, Republic of Korea & Thailand	1	1	1	1	0	4	0.775
Argentina	1	0	1	1	0	1	0.746
Zambia	0	0	0	0	1	1	0.560
Peru & Philippines	1	1	1	0	0	2	0.521
Bolivia	1	0	1	0	1	1	0.412
Nigeria & Venezuela	1	0	0	0	1	2	0.369

Again, the causal combinations presented in the truth table are the ones with a match in the empirical data. Moreover, by applying the same thresholds for frequency and consistency as above we obtain seven causal combinations (the ones coded one for Economic Growth, EG, in Table 22 above) that are considered powerful in explaining the outcome in question. As above, the most conservative solution is obtained by the use of Boolean minimization on the seven most powerful causal combinations only. The outcome presented in Table 23 below, reduces the number of causal combinations from five to four (capital letters denote presence of causal condition, while small letters denote absence of causal condition).[140]

Table 23 – Fuzzy-Set Solution Table: Overall FDI and Economic Growth – Simplified Model

Country(*),(**)	**Causal Combination**	**Raw Coverage**	**Unique Coverage**	**Consi-stency**
Brazil, **Colombia**, **Republic of Korea**, **Malaysia** & **Thailand**	FIR*DIR*HC*IQ	0.448	0.348	0.802
Bangladesh, **Pakistan** & **Paraguay**	DIR*hc*iq*rd	0.292	0.175	0.787
Botswana & **Indonesia**	fir*DIR*HC*RD	0.235	0.046	0.995
Botswana & **Papua New Guinea**	fir*DIR*IQ*RD	0.217	0.007	0.974
Solution coverage:	0.865			
Solution consistency:	0.817			

(*) That only a limited number of countries are listed does not mean that the excluded countries are not part of these causal combinations. It only means that these countries have a membership below 0.5 for these particular combinations that are most consistently related to the outcome.
(**) Countries denoted in bold are unique for that causal combination.

[140] Bangladesh and Pakistan combine and make FIR redundant causal condition, while Botswana and Papua New Guinea combine and make Human Capital (HC) a redundant causal condition.

Compared to the solution of more complex model illustrated in Table 21 above, we see that the reduced number of causal conditions included in the simplified model results in increased solution coverage and decreased solution consistency. The increased coverage is to be expected since reducing the number of causal conditions in the model is likely to lead to more countries sharing the same causal characteristics. That this relatively large increase in coverage (from about 0.71 to about 0.87) has not led to a significantly lower reduction in consistency (from about 0.90 to about 0.82) testifies to the soundness of the simplified model. This, since there always will be a tradeoff between coverage and consistency (Ragin 2006b:9). The four causal combinations are all sufficient but not necessary for experiencing high growth rates. As in the more complex model, the Domestic Investment Rate is a necessary—although not a sufficient—causal condition (it is a part of all causal combinations). Consistency cannot, however, be disregarded as none of these causal combinations are 100 percent consistently associated with the outcome. Before we discuss the details of the solution we simplify it even further by the use of "easy" counterfactuals (as explained above).[141] The simplified—but still theoretically sound—solution is illustrated in Table 24 below.

Table 24 – Fuzzy-Set Solution Table: Overall FDI and Economic Growth – Simplified Model and Easy Counterfactuals

Country(*),(**)	Causal Combination	Raw Coverage	Unique Coverage	Consi-stency
Brazil, Botswana, **Colombia**, **Republic of Korea**, **Malaysia, PNG** & **Thailand**	DIR*IQ	0.648	0.403	0.843
Bangladesh, **Pakistan** & **Paraguay**	DIR*hc*rd	0.353	0.143	0.817
Botswana & **Indonesia**	fir*DIR*HC	0.320	0.051	0.912
Solution coverage:	0.918			
Solution consistency:	0.817			

(*) That only a limited number of countries are listed does not mean that the excluded countries are not part of these causal combinations. It only means that these countries have a membership below 0.5 for these particular combinations that are most consistently related to the outcome.
(**) Countries denoted in bold are unique for that causal combination.

[141] This minimization assumes that the sets FIR, DIR, HC, and IQ should contribute to the outcome when present, while RD should contribute to the outcome when absent. To assume that FIR should contribute when present is not controversial since the anti-TNC view argues the malign effects of FDI penetration not FIR. Thus, this minimization seems theoretically most valid. Alternative theoretical assumptions yield similar solutions: A solution is obtained if it is assumed that FIR should contribute when absent: EG = DIR*IQ*HC+DIR*hc*rd+ fir*DIR*(IQ+HC). A solution is obtained if it is assumed that RD should contribute when present: EG = DIR*IQ+DIR*hc+ fir*DIR.

The application of easy counterfactuals significantly alters the solution, and results in an increased coverage that does not come at the expense of decreased consistency. Since, this simplified model—compared with the most complex model outlined above—yields a solution with increased solution coverage and still relatively high solution consistency, this most parsimonious solution is to be preferred (Ragin 2006b:18-19). This solution can be spelled out as: EG = DIR(IQ + hc*rd + fir*HC).

Apart from the solution coverage and solution consistency this latter parsimonious solution gives us some additional vital information. First, the most important route to high growth rates is through high DIR combined with high levels of Institutional Quality (based on unique coverage). Second, FIR is not seen as a necessary causal condition in any of the three causal combinations. Third, some resource poor countries experience high growth rates in the presence of high DIR in spite of low levels of Human Capital. Finally, some countries experience high growth rates in presence of high DIR, high levels of Human Capital, and low FIR. This latter route to high growth rates can be used as evidence to support an argument that growth can be achieved in spite of low levels of FIR (pro-TNC view) and as evidence to support an argument that growth is best achieved in the absence of high FIR (anti-TNC view). It should be noted though that the latter causal combination—considering its low unique coverage—has a low representation in the empirical data. Nevertheless, this significance of DIR over FIR is also illustrated in Figures 8 and 9 below. Here countries above the diagonal contradict the notion that the causal condition in question is a necessary condition.[142] We see that DIR as a necessary causal condition is very consistent (with Nigeria (NGA) as the most apparent exception since growth here is higher than predicted by DIR alone), while there are many countries contradicting the necessity of FIR as a causal condition.[143] Moreover, the many countries in the lower right corner suggest that high FIR is not sufficient to achieve Economic Growth.[144] The following section examines whether or not the effects of the FDI composites mirror those seen here for overall FDI.

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[142] For plots of membership in causal condition (or causal combinations) versus membership in outcome, the following applies. If all countries are on the diagonal the causal condition is seen as both necessary and sufficient; if all countries are below the diagonal the causal condition is seen as necessary but not sufficient; and if all countries are above the diagonal the causal condition is seen as sufficient but not necessary.

[143] E.g., Botswana (BWA) has achieved high growth rates in the absence of FIR.

[144] E.g., Peru (PER) has not achieved high growth rates in the presence of FIR.

Figure 8: Necessity of DIR as Causal Condition

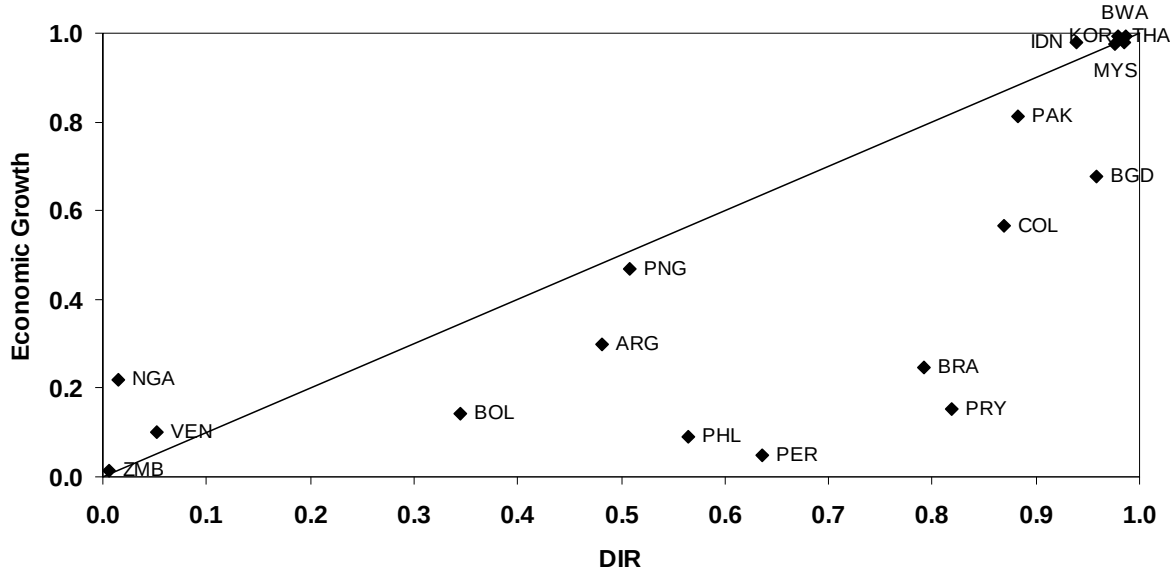
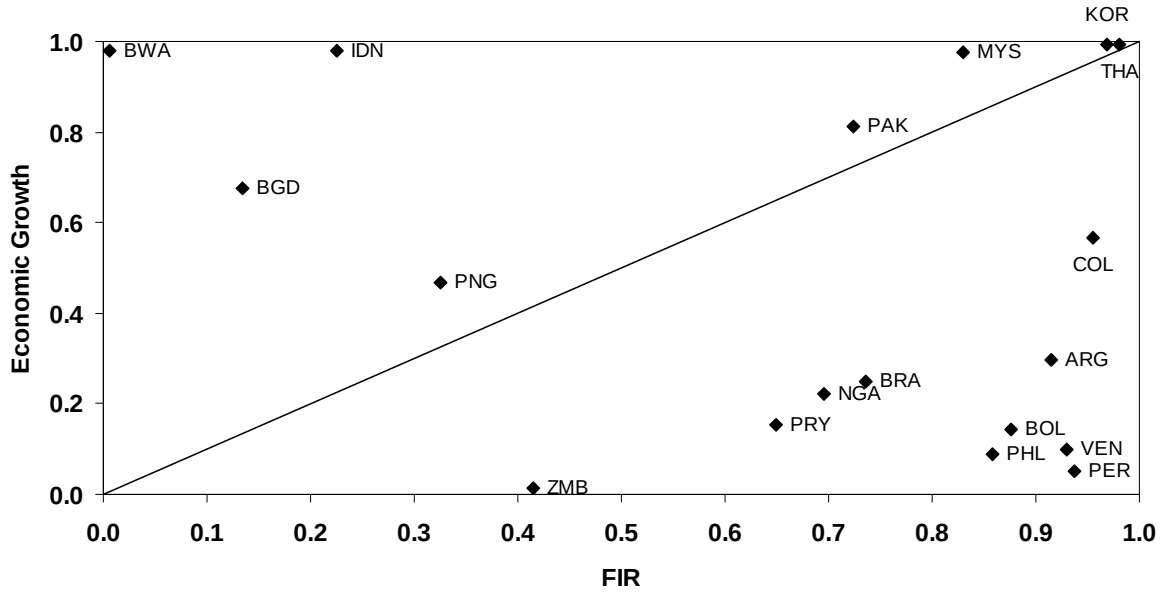


Figure 9: Necessity of FIR as Causal Condition



11.3.2 The Compositional Effects of FDI

The fuzzy-set analyses above revealed that overall FDI (whether it is FIR or FDI Capital Penetration) is not a necessary causal condition in any of the causal combinations linked to the outcome Economic Growth. The analyses to follow will investigate whether or not the same holds for the FDI composites at the industry level. The model can now be stipulated as:

High Economic Growth = High Primary Sector FDI Investment Rate (PFIR)
+ High Secondary and Tertiary Sector FIR (STFIR)
+ High Primary Sector FDI Capital Penetration (PFDIP)
+ High Sec. and Tert. Sector FDI Capital Penetration (STFDIP)
+ High Domestic Investment Rate (DIR)
+ Low Initial Economic Standing (POOR)
+ High Human Capital (HC)
+ High Institutional Quality (IQ)
+ High Resource Dependence (RD)[145]

This model is necessarily even more complex than for overall FDI above, and it is as a consequence even more difficult to obtain a solution of any scientific interest.[146] Thus, as for the analyses of overall FDI we expect some of the causal conditions to be superfluous, and test for simplified models that yield a solution with increased solution coverage and relatively high solution consistency. If obtainable, this more parsimonious solution is to be preferred (Ragin 2006b:18-19). As in the previous tests, High FDI Capital Penetration and Economically Poor turned out to be superfluous sets. This leaves us with the following simplified model: EG = PFIR + STFIR + DIR + HC + IQ + RD, and a truth table as illustrated by Table 25 below (where 1 denotes that a country is "more in that out" of that particular causal condition).[147] The causal combinations presented in the truth table are the ones with a

[145] Here, Resource Dependence is both Fuel and Non-Fuel Resource Dependence. Tests of the respective composites were also performed without this improving the solution coverage and/or solution consistency.

[146] With 18 cases and 9 causal conditions the solution obtained contains 6 different causal combinations with 8-9 different causal conditions each. Solution coverage and solution consistency is 0.67 and 0.91 respectively.

[147] By application of the "Fuzzy Sets Truth Table Algorithm" in Ragins' software package fsQCA (Ragin 2007).

match in the empirical data. Moreover, by applying the same thresholds for frequency and consistency as above we obtain

Table 25 – Fuzzy-Set Truth Table: Composition of FDI and Economic Growth – Simplified Model

Country	PFIR	STFIR	DIR	HC	IQ	RD	EG	Consistency
Botswana	0	0	1	1	1	1	1	1.000
Papua New Guinea	0	0	1	0	1	1	1	0.962
Republic of Korea & Thailand	0	1	1	1	1	0	1	0.911
Malaysia	0	1	1	1	1	1	1	0.908
Pakistan	0	1	1	0	0	0	1	0.893
Indonesia	0	1	1	1	0	1	1	0.843
Colombia	1	1	1	1	1	0	1	0.801
Argentina	1	1	0	1	1	0	0	0.740
Bangladesh & Paraguay	0	0	1	0	0	0	0	0.669
Brazil	0	0	1	1	1	0	0	0.581
Venezuela	1	0	0	0	0	1	0	0.488
Nigeria	1	1	0	0	0	1	0	0.487
Peru & Philippines	0	1	1	1	0	0	0	0.481
Bolivia	1	1	0	1	0	1	0	0.438
Zambia	0	1	0	0	0	1	0	0.361

seven causal combinations (the ones coded one for Economic Growth, EG, in Table 25 above) that are considered powerful in explaining the outcome in question.[148] The most conservative solution is obtained by the use of Boolean minimization on the seven most powerful causal combinations only. The outcome presented in Table 26 below, reduce the number of causal

Table 26 – Fuzzy-Set Solution Table: Composition of FDI and Economic Growth – Simplified Model

Country(*)	**Causal Combination**	**Raw Coverage**	**Unique Coverage**	**Consi-stency**
Colombia, Republic of Korea, & Thailand	STFIR*DIR*HC*IQ*rd	0.382	0.293	0.859
Botswana & Papua New Guinea	pfir*stfir*DIR*IQ*RD	0.192	0.153	0.977
Pakistan	pfir*STFIR*DIR*hc*iq*rd	0.200	0.102	0.893
Indonesia & Malaysia	pfir*STFIR*DIR*HC*RD	0.203	0.087	0.894
Solution coverage:	0.774			
Solution consistency:	0.882			

(*) That only a limited number of countries are listed does not mean that the excluded countries are not part of these causal combinations. It only means that these countries have a membership below 0.5 for these particular combinations that are most consistently related to the outcome.

[148] Since we only have 18 cases available we follow Ragin's view on the frequency threshold and consider all these causal combinations are relevant for further analyses (Forthcoming 2007a:10-12). Moreover, we also follow Ragin with respect to how consistently causal combinations should be linked to the outcome, and consider only relevant those causal combinations with a consistency score above 0.75 (which here also corresponds with a natural gap in consistency) (Forthcoming 2007a:12-14).

combinations from seven to four (capital letters denote presence of causal condition, while small letters denote absence of causal condition). The use of easy (i.e., theoretically sound) counterfactuals simplifies this complex solution somewhat.[149] As can be seen from Table 27 below, these easy counterfactuals simplifies some of the causal combinations without affecting the solution coverage and consistency.

Table 27 – Fuzzy-Set Solution Table: Composition of FDI and Economic Growth – Simplified Model & Easy Counterfactuals

Country(*),(**)	Causal Combination	Raw Coverage	Unique Coverage	Consi-stency
Colombia, Republic of Korea, & Thailand	STFIR*DIR*HC*IQ*rd	0.382	0.242	0.859
Botswana, Malaysia & **Papua New Guinea**	pfir*DIR*IQ*RD	0.266	0.153	0.943
Pakistan	pfir*STFIR*DIR*hc*rd	0.260	0.102	0.912
Indonesia & Malaysia	pfir*STFIR*DIR*HC*RD	0.203	0.087	0.894
Solution coverage:	0.774			
Solution consistency:	0.882			

(*) That only a limited number of countries are listed does not mean that the excluded countries are not part of these causal combinations. It only means that these countries have a membership below 0.5 for these particular combinations that are most consistently related to the outcome.
(**) Countries denoted in bold are unique for that causal combination.

As for the analyses of overall FDI we analyze this FDI-composite solution table (Table 27) with respect to the questions of necessity and sufficiency, and consistency and coverage.[150] Irrespective of consistency, we might state that each causal combination is a sufficient causal combination—since it is able to predict the outcome—and no causal combination is a necessary causal combination—since other causal combinations can predict the outcome too. Moreover, a high Domestic Investment Rate (DIR) is—as it was for the analyses of overall FDI above—a necessary (although not a sufficient) causal condition,

[149] This minimization assumes that the sets STFIR, DIR, HC, and IQ should contribute to the outcome when present, while PFIR and RD should contribute to the outcome when absent. All of this is in accordance with the theoretical framework outlined at the outset. The distinction between PFIR and STFIR is also justified by figure 10 and 11 below. Thus, this minimization seems theoretically valid and is inline with the complex solution suggested above. Moreover, a similar solution is obtained if it is assumed that RD should contribute when present: EG = STFIR*DIR*HC*IQ + pfir*DIR*IQ*RD + pfir*STFIR*DIR*hc + pfir*STFIR*DIR*RD. PFIR becomes superfluous if PFIR is assumed to contribute to the outcome when present, EG = STFIR*DIR*IQ + DIR*IQ*RD + STFIR*DIR*hc*rd + STFIR*DIR*HC*RD. This underlines the positive impact of STFIR relative to PFIR.

[150] Compared to the solution of the most complex model (all nine causal conditions included) we note that the reduced number of causal conditions included in the simplified model result in increased solution coverage (up from 0.67 to 0.78) and a relatively stable solution consistency (down from 0.91 to 0.88). This testifies to the soundness of the simplified model.

as it is a part of all causal combinations. However, the necessity of DIR is not absolute since none of these causal combinations are 100 percent consistently associated with the outcome. Moreover, "solution coverage" and "solution consistency" tell us that substituting overall FDI with the FDI composites yields a solution with more consistency but less coverage (compare Table 24 and Table 27). That is, the enhanced causal prediction achieved by including the FDI composites comes at the expense of reduced causal relevance.

The most parsimonious solution illustrated in Table 27 above can be stipulated as:

EG = STFIR*DIR*HC*IQ*rd + pfir*DIR*IQ*RD + pfir*STFIR*DIR*hc*rd + pfir*STFIR*DIR*HC*RD.

Apart from DIR being the only necessary causal condition (as it is part of all causal combinations), this solution gives us some vital information as far as the relationship between the FDI composites and Economic Growth is concerned. First, the four causal combinations should be seen as four alternative causal combinations all powerfully linked to the outcome Economic Growth. Second, the most powerful causal combination linked to the outcome is STFIR*DIR*HC*IQ*rd (based on unique coverage). That is, high growth rates are most likely in countries independent of natural resources and where high levels of DIR, Human Capital, and Institutional Quality are combined with high FIR in the secondary and tertiary sectors. Third, in three out of four causal combinations the absence of Primary sector FIR is seen as a necessary causal condition. Moreover, in three out of four causal combinations the presence of Secondary and Tertiary Sector FIR is seen as a necessary causal condition. That is, low FIR in the primary sector can almost be seen to be as conducive to growth as high FIR in the secondary and tertiary sectors.[151] This latter finding highlights the importance of FDI composites, as described in the theoretical framework. The important distinction between primary sector FIR and secondary and tertiary sector FIR is also illustrated in Figures 10-11, which highlight the necessity of the two respective causal conditions (countries above the diagonal contradict the notion that the causal condition in question is a necessary condition). Here we see that Primary Sector FIR is not as consistently associated with a necessary causal condition as are Secondary and Tertiary Sector FIR.

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[151] Almost, since STFIR has a higher unique coverage in its three causal combinations.

After some reflection on the sensitivity of these fuzzy-set analyses, Section 11.4 below will investigate the causal content of the combinations here found to be linked to the outcome Economic Growth. The focus will be on the solution found when applying the composition of FDI rather than overall FDI, since the former better represents the theoretical framework.

Figure 10: Necessity of Primary Sector FIR as Causal Condition

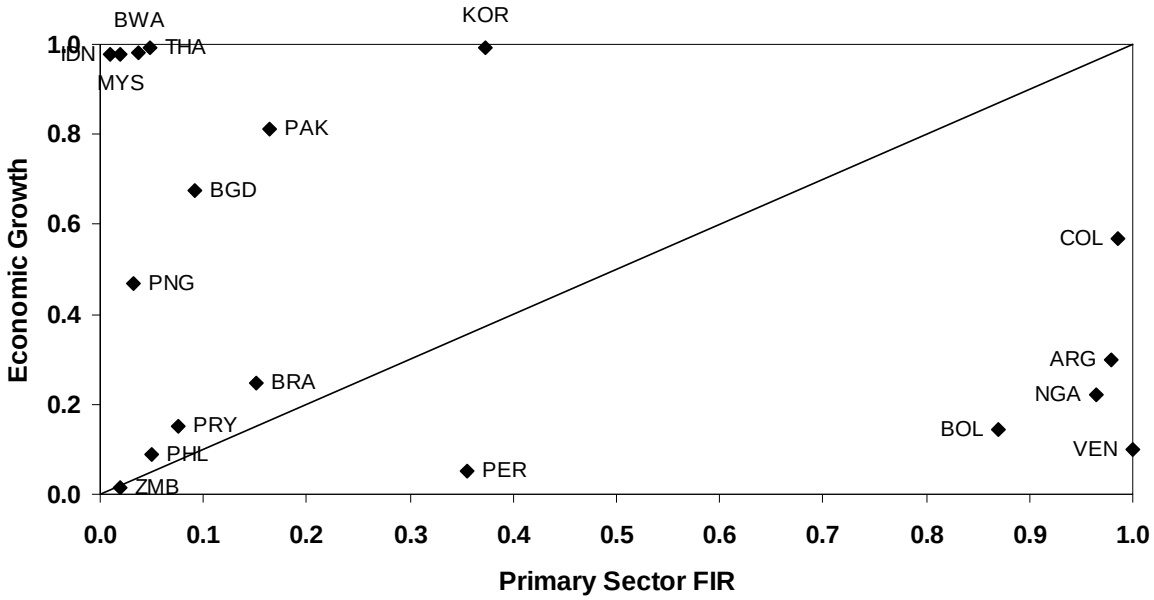
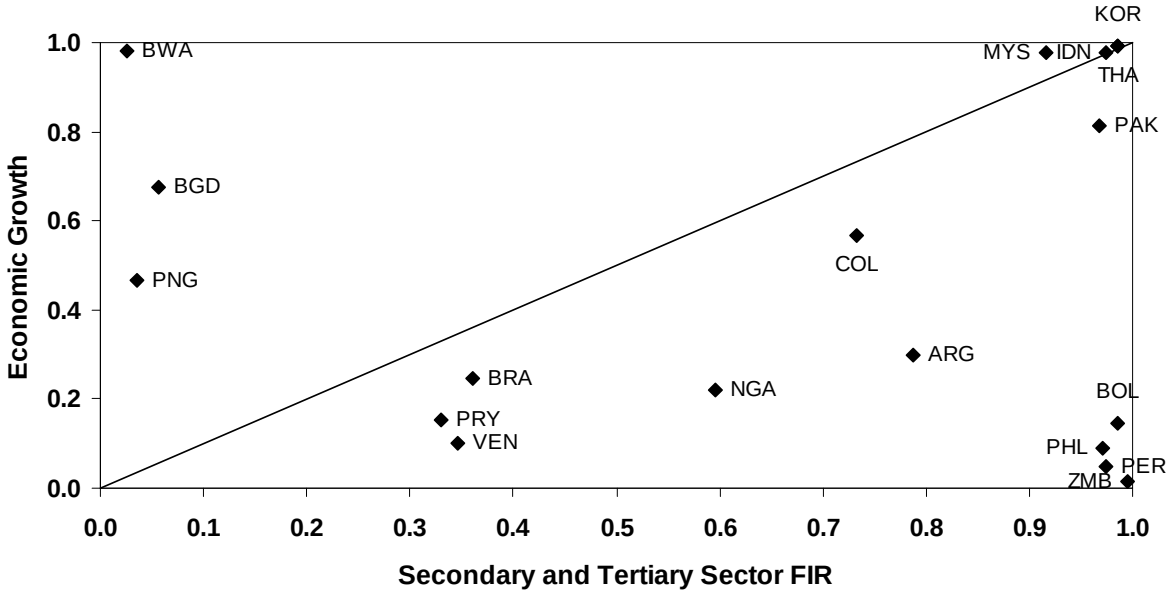


Figure 11: Necessity of Secondary and Tertiary Sector FIR as Causal Condition



11.3.3 Sensitivity Analysis

The sensitivity analysis conducted here can be divided in two categories: alternative calibration of membership scores and alternative causal conditions.

In the former group it was particularly difficult to find external criteria to calibrate the causal condition Human Capital. This difficulty results from the fact that levels of Human Capital in developed countries cannot be used as a benchmark since the levels seen in developing countries necessarily (almost by definition) will be lower. In addition to these two causal conditions, alternative calibrations were also tested for Economic Growth, Institutional Quality and the different types of Resource Development. For the other causal conditions the calibration was more intuitive, and levels normally seen in developed countries were for many used as benchmarks (see Appendix C1). These alternative calibrations were eventually dropped, either because they had no impact on the solution or because they neglected natural thresholds in the data and, therefore, yielded significantly less relevant solutions (i.e., lower coverage).

In the latter group alternative causal conditions like Civil War and Market Size—tested for in the statistical analyses—were dropped from the fuzzy-set model as fuzzy-set methods becomes unwieldy if models including too may causal conditions are tested on too few cases (Ragin Forthcoming 2007a:19). In the sensitivity analyses, however, alternative models including these causal conditions were tested for without any of them displaying any significant contribution to the fuzzy-set model outlined above. Moreover, some of the causal conditions included in the original fuzzy-set model (i.e., FDI Capital Penetration and Economically Poor) were dropped as they proved superfluous. Thus, these latter causal conditions also testify to the robustness of the model.

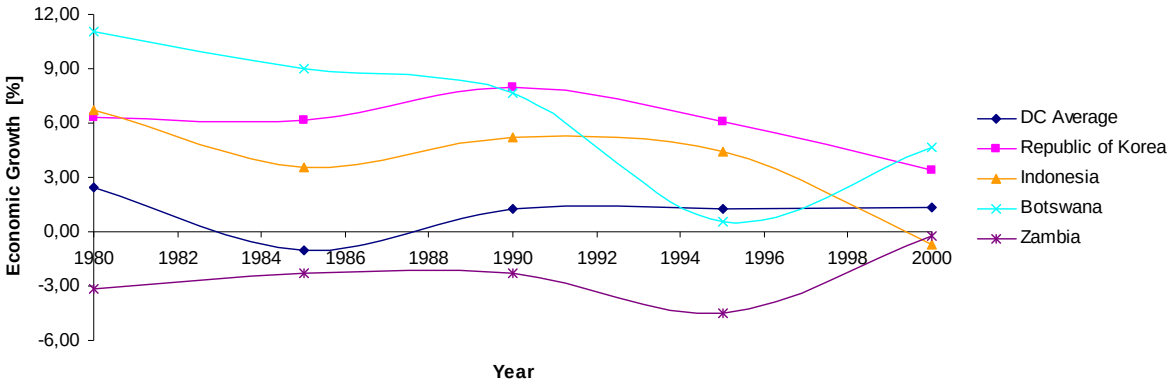
11.4 Case Studies: FDI and Economic Growth

Fuzzy-set methods is seen as an exploratory technique (Ragin Forthcoming 2007a:14), and the fuzzy set exploratory analyses above suggested that four causal combinations were sufficiently linked to the outcome Economic Growth (capital letters denote presence of causal condition, while small letters denote absence of causal condition):

EG = STFIR*DIR*HC*IQ*rd + pfir*DIR*IQ*RD + pfir*STFIR*DIR*hc*rd + pfir*STFIR*DIR*HC*RD.

Having established the association between a causal combination and the outcome we can now investigate the nature of causality for the causal combinations in question. This is important as it will give us a sense of the relative causal importance of the different causal conditions under consideration. Thus, we select for further investigation three cases (Republic of Korea, Botswana, and Indonesia) to reveal the causal character of the economically successful cases, and one case (Zambia) to reveal the causal character of a country that failed to experience high economic growth.[152,153,154] Figure 12 shows the level

Figure 12: Economic Growth in Selected Countries Relative to the Developing Country Average



[152] See truth Table 25 and solution Table 27 above for an overview of the causal conditions linked to each case and the countries and causal combinations linked to the outcome.

[153] The possibility principle advises researchers to select only negative cases where the outcome of interest is possible. Here the outcome, economic growth, is considered possible in Zambia since the Secondary and Tertiary Sector FIR scores are high in this country (Mahoney and Goertz 2004:659).

[154] The causal combination pfir*STFIR*DIR*hc*rd—represented by Pakistan—will, therefore, not be subject to further investigation. This decision is based mainly on time and space constraints, and the fact that causal combinations containing resource dependence are considered more interesting with respect to the theoretical framework.

of growth throughout the period for these countries relative to the developing country average.[155] The drop seen in Korea and Indonesia at the end of the period considered is the direct effect of the Asian financial crisis. This effect was, however, only temporary (Cerra and Saxena 2003:9-11). Selecting two cases from Asia and two from Sub-Saharan Africa allows us to control for possible spurious variables like, e.g., the Asian financial crisis and the AIDS crisis in Sub-Saharan Africa. In each of these cases the focus will be on the role of the causal combination and its composites in general, and on the role of FDI and its composites in particular. Moreover, in order to ensure comparability with the statistical and fuzzy-set analyses the main focus in the cases studies will be on the 1980-2000 time period. In the end the different causal combinations (or cases) will be discussed relative to each other, and relative to the other cases included in the fuzzy-set analyses.

11.4.1 Republic of Korea

The Republic of Korea (henceforth referred to as Korea) represents the causal combination STFIR*DIR*HC*IQ*rd, which is considered the most relevant of the causal combinations linked to Economic Growth in the fuzzy-set analyses (based on unique coverage). Thus, Economic Growth is associated with a high rate of foreign investment (FIR) in the Secondary and Tertiary Sector, a high rate of domestic investment (DIR), high levels of Human Capital and Institutional Quality and low levels of Resource Dependence. Although this causal combination applies for Colombia and Thailand as well, the following paragraphs attempt to reveal the causal character of this combination as far as Korea is concerned.[156]

Throughout the era from the Second World War until the financial crises erupting in Asia's financial markets in 1997 the Republic of Korea has been considered a story of success as far as economic growth is concerned. Regarded as one of the East Asian Tigers and as a classical developmental state, the Korean government took centre stage in development and facilitated the conditions favourable to growth (Booth 1999:302-08, McNicoll 2006:12). It has been extensively argued in the literature that Korea's economic success can be attributed to its export orientation, its high levels of domestic capital investments, its high-quality

[155] Figures are calculated as for the statistical analyses on economic growth above.

[156] Thailand is, like Korea, more in than out of the Economic Growth set. Colombia, by contrast, is more in than out of the set. That is, economic growth is higher in the former two than in the latter. Colombia is, nevertheless, a part of the same causal combination since its lower level of growth can be explained by generally lower levels on the causal conditions STFIR, DIR, HC, and IQ.

institutions, its insulated and highly efficient bureaucracy, and to its high levels of human capital (Acemoglu et al. 2004:18-20, Awokuse 2005:696, Booth 1999:302-08, Easterly 1994:14-16, Kwack and Sun 2005:276-77, Lee 2005:684-85, Parris 2003:33-41, Pyo 2001:102-04, Yuhn and Kwon 2000:22).[157] Moreover, the role of the government in sectoral transformation—steering the economy towards ever more advanced sectors—has also been highlighted (Kwack and Sun 2005:276-77, Pyo 2001:102-04, Shafer 1994:95-106). This focus on industrialization was of course necessitated by the county's lack of natural resources (Booth 1999:310-11).

Initially Korea did not use FDI as a principal component of her overall development strategy (Bhagwati 2004:180, Booth 1999:306, Parris 2003:36). However, in 1984 Korea took the first steps towards liberalizing its FDI-regime, and the level of foreign investments have since increased proportional to this liberalization and fundamentally so after FDI-reforms undertaken following the financial crisis in 1997 (Brooks and Hill 2004:12-33, UNCTAD 2000b:429, UNCTAD 2006a). These investments have almost entirely been allocated to the secondary and tertiary sectors (about 99 percent of total FDI) (UNCTAD 2004b), and the effects are argued to be positive as far as manufacturing growth (Hong 1997:88-89) and knowledge diffusion (Lee 2004:65) is concerned. Moreover, FDI is not found to have crowded out domestic investment (Kim and Seo 2003:619-20), although some negative effects on income inequality have been detected (Mah 2002:1009). As far as the financial crisis is concerned, FDI demonstrated stability and is found to have weathered the crisis far better than domestic private investment (Athukorala 2003:209-11).[158]

This short evaluation of the nature of causality in the causal combination in question—here represented by Korea—reveals that all the causal conditions are causally related to the outcome Economic Growth. That is, high FIR in the Secondary and Tertiary Sector, high DIR, high levels of Human Capital and Institutional Quality have all contributed to growth in Korea. However, the latter three contributions appear to have been more important than the FDI composite as FDI in Korea was very restricted until the mid 1980s.

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[157] Korea's high levels of human capital (or education) in particular—but also its high-quality institutions and bureaucracy and its export orientation—in part must be attributed to policies implemented and values transferred during the Japanese occupation from 1910 to 1945 (Booth 1999:302-05, Lee 1984:346-52).

[158] Researchers differ in their opinion concerning the underlying causes of the financial crisis, but FDI is not seen as having a negative impact. The key explanations concentrate around a weakened state that failed in its implementation of economic liberalisation, lack of regulatory financial institutions that should have preceded the liberalisation (Chang 1998:1557-59, Lee 2000:129-30), lack of transparency in the public and private sector (Lane et al. 1999:72-73), and poor corporate governance (Das 2000:17-20).

Low levels of Resource Dependence also played a part—albeit only indirectly so—since the absence of natural resources meant that comparative advantage had to be developed rather than extracted. Although not part of the model here investigated, the importance of export orientation should of course not be neglected.

11.4.2 Botswana

Botswana represents the causal combination pfir*DIR*IQ*RD. Thus, Economic Growth is associated with a low rate of foreign investment (FIR) in the Primary Sector, high rate of domestic investment (DIR), high levels of Institutional Quality and high Resource Dependence. Although this causal combination applies for Malaysia and Papua New Guinea as well, the following paragraphs attempt to reveal the causal character of this combination as far as Botswana is concerned.

This landlocked country became a British colony for strategic (not economic) reasons, and as it gained independence in 1966 it was recognised as one of the poorest countries in the world with severe economic problems and widespread poverty (Goudie and Neyapti 1999:125, Omer-Cooper 1994:270-77). The British colonial legacy was a poorly developed social and physical infrastructure, and a meagre administration (Goudie and Neyapti 1999:127). Forty years later Botswana is considered something as rare as an African economic success (UNCTAD 1999a:23). Although different in some respects, similarities with the developmental state of Korea exists as the government of Botswana too took centre stage in development (Acquah 2005:52-53, Beaulier 2003:238, Iimi 2006:24, Leith 2000:25-27, Maundeni 2001:129-30, Molutsi 2004:170-79, Narayana et al. 2005a:19-21, OECD 2002:49, Samatar 1997:704-06). More precisely, it has been extensively argued that the main reasons for Botswana's economic success can be attributed to good governance of its vast diamond resources (discovered in the early 1970s) (Goudie and Neyapti 1999:125-44, Modise 1999:95, Omer-Cooper 1994:270-77, Rakner 1996:17-39, Sillery 1974:180-81). That is, growth can be explained by high-quality institutions and an insulated and efficient bureaucracy with low levels of corruption (Acemoglu et al. 2001a:32-33, Beaulier 2003:238, Busu and Srinivasan 2002:22, Iimi 2006:24, OECD 2002:49, Taylor 2003a:54-56). Moreover, a central role has also been subscribed to the country's export orientation, its high levels of domestic capital investments, its high levels of human capital, and to its high level of political stability (Acemoglu et al. 2001a:32-33, Busu and Srinivasan 2002:22, Dunning

2005:474-76, Goudie and Neyapti 1999:129-35, Narayana et al. 2005a:19-21, OECD 2002:49, Sentsho 2005:146, Sillery 1974:70-79).[159] It appears, though, as Botswana has escaped the resource curse haunting many developing countries rich in natural resources.[160] However, a resource curse light has, nevertheless, been argued since its exceptional mineral revenues has reduced the incentives for economic diversification with low sectoral transformation (Dunning 2005:474-76, Good 2002:39, Jenkins and Thomas 2002:23, Kapunda and Akinkugbe 2005:167-68, Mogotsi 2002:154, OECD 2006:139, Siphampe 2003:13-14) and low human capital efficiency (Hagen 1999:26-28, Narayana et al. 2005b:200-01, OECD 2002:49) as a result. Thus, Botswana's resource dependence and its lack of economic diversification make sense when compared to Korea's lack of natural resources and its need for and success in sectoral transformation. Another factor of concern for Botswana is, of course, the negative implications of the AIDS epidemic that has so severely affected the country's general development the last decade or so (Haacker 2002:36-37, MacFarlan and Sgherri 2001:31, Narayana et al. 2005b:200-01, OECD 2006:139).[161]

In the causal combination—represented here by Botswana—the absence of a high rate of foreign investment (FIR) in the Primary Sector is one of the causal conditions linked to Economic Growth. Moreover, for the period considered—1980 to 2000—Botswana experienced not only a low rate of foreign investment (FIR) in the Primary Sector but also a low Secondary and Tertiary Sector FIR as well. Thus, based on the rate of foreign investment alone it appears as though FDI has not been essential for Botswana's economic success. However, since the absence of Primary Sector FIR is linked to Economic Growth in the causal combination considered, the question is not only whether or not FDI is good for the economy, but whether the *absence* of (Primary Sector) FDI actually has been a condition

[159] In Botswana a stable democratic environment rests upon a legitimate government that to some degree is built on the structures of the traditional chiefdoms (Goudie and Neyapti 1999:140, Samatar 1997:705). Moreover, ethnicity has formed a base neither for policies of discrimination and segregation nor for the concentration of power or prestige (Goudie and Neyapti 1999:139, Modise 1999:95). In addition political stability has resulted from favourable economic conditions, limited corruption, a capable administration, a democratic tradition, and the establishment of appropriate institutions (Danevad 1993:150, Goudie and Neyapti 1999:125-29, Samatar and Oldfield 1995:667).

[160] Due to good governance and political stability, as argued above, as well as to the stability of the world diamond market (significantly more stable than the market for many other mineral resources). Botswana's importance as a diamond producer has given it unusual leverage over De Beers, as well as important market power of its own (Dunning 2005:474-76).

[161] The epidemic will affect income through declining levels of experience (or human capital) (Haacker 2002:36-37), through reduced labor productivity and capital accumulation (MacFarlan and Sgherri 2001:31), as well as through increased strain on health care and the educational system in general (UNDP 2000a:16-22). Given an HIV prevalence of 36 percent in 2000 (UNDP 2000a:9) further deterioration is expected.

favouring economic growth. The answer to this question is not straightforward. Although the Primary Sector FIR is low for the period considered, the level of Primary Sector FDI Capital Penetration is high.[162] The latter is due to the high rates of investment in the mining sector in the early 1970s by the South African company de Beers, the company that discovered the diamond deposits (Goudie and Neyapti 1999:131). The government of Botswana ensured national influence in the sector, though, by demanding less-than-majority ownership. However, contrary to many other resource-rich African countries, Botswana never went so far as to nationalize its mining industry.[163,164] This partnership with foreign corporations—most notably de Beers—is agued to be of significant importance for Botswana's economic development. Considering that Botswana at independence was ranked as one of the poorest countries in the world, FDI brought with it all the positive components of the FDI package (capital investment, technology, access to markets, and all types of skills (e.g., managerial, technical, professional and organizational skills) (UNCTAD 2003:15-22). All in all, therefore, it make sense to say that the low rate of foreign investment (FIR) in the Primary Sector in the 1980-2000 period did not contribute to Economic Growth. That is, Botswana experienced growth in this period *in spite of* and not *because of* a low Primary Sector FIR. However, it might very well be that this latter positive view on Primary Sector FDI in Botswana depends on the strong sectoral presence and the good governance exercised by the national government.

This short evaluation of the nature of causality in the causal combination in question—here represented by Botswana—reveals that all the causal conditions—except for the absence of a high Primary Sector FIR—are causally related to the outcome Economic

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[162] The composition of FDI (both FIR and FDI Capital Penetration) has historically been located in the mining sector. Later (fuelled by the growth in the economy) the country has also attracted some market-seeking investments (UNCTAD 1999a:23). The mining sector, nevertheless, dominates the composition of FDI Capital Penetration with a share of about 80 percent in 2000 (almost exclusively located in the mining sector) (UNCTAD 2006b). This in spite of government policies attempting to attract non-primary FDI in order to diversify the economy away from the mineral sector (Smith 1995:49).

[163] The level of state ownership was lower in Botswana than was normal for the region. Botswana did not nationalize its mining industry but did make demands for less-than-majority ownership. E.g., it demanded between 15 and 25 percent of the total shares of stock in the largest mining companies, free of charge. It also insisted on an option to buy up to 50 percent of all shares), and it taxed companies' profits at rates up to 70 percent (Quinn 2002:100-01). Botswana exercised this "right" to buy 50 percent of all share in 1975 (Goudie and Neyapti 1999:131). Moreover, Botswana obtained 5.3 percent of De Beers Consolidated mines in 1988. Despite nearly 50 percent ownership in the mining sector, Botswana's public sector only constituted 7.3 percent of GDP at factor cost in 1978 (Quinn 2002:100-01).

[164] Botswana has a track record of fair and equitable dealings with international investors spanning 30 years. This has enabled the government to get away with measures such as holding shares in mining companies and drawing royalty payments (Matshediso 2005:206).

Growth. That is, a high rate of domestic investment (DIR), high levels of Institutional Quality and a high level of Resource Dependence (or more precisely resource abundance) have all contributed to growth in Botswana. More precisely, it is this exact combination of causal conditions that has contributed to growth. Thus, the tricky causal conditions in this causal combination is Resource Dependence and Primary Sector FIR. The former—when thought of as resource abundance—has given the government the means to pursue economic growth, while it—when thought of as resource dependence—has diminished the prospect of future growth as these resource rents have diminished the need of the government to pursue economic diversification. The latter—in the case of Botswana—appears not to be causally related to growth, as Economic Growth in Botswana took place *in spite of* and not *because of* a low rate of foreign investment (FIR) in the Primary Sector. This latter conclusion hinges on the positive contributions made by high rate of foreign investment (FIR) in the Primary Sector in the 1970s, which again seems to depend on a strong sectoral presence and the good governance exercised by the national government. Of course, this lack of causality between a low rate of foreign investment (FIR) in the Primary Sector and high Economic Growth seen in Botswana is not necessarily mirrored in the cases characterized by the same causal combination, Malaysia and Papua New Guinea. However, this contradiction seen in the result from the fuzzy-set analyses and the cases study of Botswana does highlight the importance of country specific contexts. Malaysia, Papua New Guinea, or any other country that share the same causal combination may very well benefit economically from a low rate of foreign investments (FIR) in the Primary Sector, but the case of Botswana at least should make one wary about the character of the relationship in question. Finally, the importance of political stability in Botswana might be worth noting, even though it is not captured in the model investigated here.

11.4.3 Indonesia

Indonesia represents the causal combination pfir*STFIR*DIR*HC*RD. Thus, Economic Growth is associated with a low rate of foreign investment (FIR) in the Primary Sector, a high rate of foreign investment (FIR) in the Secondary and Tertiary Sectors, a high rate of domestic investment (DIR), high levels of Human Capital and a high degree of Resource Dependence. Although this causal combination applies for Malaysia as well, the following

paragraphs attempt to reveal the causal character of this combination as far as Indonesia is concerned.[165]

In 1966 Indonesia was ranked as one of the poorest countries in the developing world (Jomo and Rock 1998:20-33).[166] However, Indonesia's New Order (under the political leadership of General Suharto and guaranteed by the military)—which lasted from 1966 to 1998—was successful as far as economic growth is concerned (Bevan et al. 1999:241-43, Booth 1999:301-02, Ricklefs 1981:277). This success is explained by political stability, good macroeconomic policies, high DIR (e.g., in primary education), and abundant reserves of natural resources (Bevan et al. 1999:241-43, Booth 1999:308-16, Jomo and Rock 1998:20-33, McNicoll 2006:12, Ricklefs 1981:272-75). In particular credit for good governance has been given for the economic diversification achieved by steering the economy from an import substitution economy—focused primarily on agriculture and resource extraction—to a more export-oriented economy—focused more on manufacturing (encouraged by the mid-80s decline in oil prices) (Agrawal 1995:1-5, Akita and Hermawan 2000:282-83, Chalmers and Hadiz 1997:30-32, Jomo and Rock 1998:20-33). The successful macroeconomic policies—in general—and economic diversification—in particular—also contributed in limiting the negative impacts of the resource curse (Roemer 1994:1-16, Rosser 2004:19-20, Usui 1996:897, Usui 1997:159-61). However, the curse is not escaped altogether as rent-seeking activity and corruption within the state institutions are widespread (Booth 1999:302-17, Jomo and Rock 1998:20-33, Karl 1997:208-13).

Prior to the mid-1980s FDI in Indonesia was—due to their abundant reserves of natural resources—dominated by investments in the primary sector.[167] However, after the political liberalisation of the economy in the mid-80s official government policy stated that

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[165] Malaysia represents both the causal combination pfir*DIR*IQ*RD (discussed under Botswana) and the causal combination pfir*STFIR*DIR*HC*RD (discussed here for Indonesia). This is possible since Malaysia fits the compounded causal combination pfir*STFIR*DIR*HC*IQ*RD.

[166] In addition to being a failure as a national unifying force, Dutch colonialism left behind a weak developmental state in general (Booth 1999:310-11) and a weak educational legacy in particular (Bevan et al. 1999:199, Booth 1999:311-12). The Second World War and revolution from 1940 to 1949 left the country ravaged as Indonesia gained independence in 1950 (Bevan et al. 1999:207). Moreover, the period from independence until the New Order in 1966 was an era of political instability, poor economic management, and deteriorating terms of trade (Bevan et al. 1999:209-35).

[167] Initially agriculture and mining were the main determinants of FDI (in 1937 the composition of FDI Capital Penetration was as follows: agriculture 56 percent, mining 19 percent, services 13 percent, and other 12 percent) (Lindblad 1998:14). Later—after the liberalisation of the FDI-regime in 1967—FDI was attracted more by the oil and gas extraction industries (from 1970 to 1990 the oil share of FDI Capital Penetration increased from 45 to 75 percent) (Lindblad 1998:193).

manufacturing exports should reduce the dependency on oil, and FDI was to provide the advanced technology required for the technological upgrading of production in manufacturing (Lindblad 1998:191). These intentions reveal themselves in the empirical evidence confirming that secondary and tertiary sector FDI is becoming the key portion of new FDI in Indonesia, increasing from about 20 percent in 1988 to about two-thirds in 1996 (Lindblad 1998:193, UNCTAD 2000a:241-42, UNCTAD 2006a).[168,169] The effects of this high FIR in the secondary and tertiary sectors was positive for productivity, technology transfer, as well as for wages (Arnold and Javorcik 2005:27, Blalock and Gertler Forthcoming:25-26, Blomström and Sjöholm 1999:922-23, Lipsey and Sjöholm 2004:422, Marwah and Tavakoli 2004:410-11). However, these positive effects are not unconditional as they depend on the level of local competition, on the sector considered, on local research and development activity, and on the extent of the technology gap (where large gaps yield large spillovers). Moreover, at a more general level these effects could have been even more positive as the level of human capital is considered as the main bottleneck in the potential transfer of technology, limiting the absorptive capacity of Indonesian labourers (Lindblad 1998:197-98, Takii 2005:539).[170] As far as the financial crisis in 1997 is concerned (as well as the crisis in the 1930s), FDI demonstrated stability (Athukorala 2003:210-11, Lindblad 2003:179-80), and is found to have played a crucial role in the recovery of manufacturing exports from Indonesia in 1999 (Athukorala 2003:210-11).[171]

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[168] In 1988 80 percent of the composition of FDI Capital Penetration were in the primary sector (Lindblad 1998:26). From 1992 to 1996 the share of the primary sector in FDI Capital Penetration was reduced from about 60 percent to about one-third. These figures where estimated by combining total FDI data from UNCTAD (2006a) and non-petroleum FDI data from WID (UNCTAD 2000a:241-42). Moreover, FDI flow data from 1999-2001 (UNCTAD 2004b), and total FDI data from (UNCTAD 2006a) indicate that the 1997-2000 period was characterized by disinvestment (10 percent in the primary sector and 90 percent in the secondary and tertiary sectors). A conservative estimate of the share of the primary sector in total stock of FDI in 2000 would, therefore, be equal to the 1996 level (one-third).

[169] Thus, Indonesia is—for the 1980-2000 period—coded "out of the set" Primary Sector FIR and "in the set" Secondary and Tertiary Sector FIR. These investments, nevertheless, result in Indonesia being coded "out of the set" Primary Sector FDI Capital Penetration and "out of the set" Secondary and Tertiary Sector FDI Capital Penetration.

[170] Indonesia invested heavily in primary sector education at the expense of post-primary education (Booth 1999:312-13).

[171] Researchers differ in their opinion concerning the underlying causes of the financial crisis, but FDI is not seen as having a negative impact. It is argued that the financial crisis has its origin in a shift in political and social power in the mid-80s away from the economic nationalists and toward liberal market-oriented technocrats. Although the intensions were improved economic efficiency and the creation of a level playing field, the outcome was inefficiency and non-transparency as the economic coalitions surrounding the Suharto family were empowered (Robinson and Rosser 1998:1596-99). Serious economic problems began to emerge: a lack of efficiency and transparency in both the public and the private sector, a lack of control and regulation of the financial system, and the liquidity vulnerability of the private sector (Lane et al. 1999:9-16), as well as poor

This short evaluation of the nature of causality in the causal combination in question—here represented by Indonesia—reveals that the independent conditions all (except perhaps for the absence of Primary Sector FIR) are causally related to the outcome Economic Growth. That is, a high rate of foreign investment (FIR) in the Secondary and Tertiary Sector, a high rate of domestic investment (DIR), high levels of Human Capital and Resource Dependence (or more precisely resource abundance) have combined and contributed to growth in Indonesia. However, for several of these causal conditions this interpretation is not that straightforward. As Human Capital is considered a bottleneck in the transfer of technology, higher levels of human capital are argued to have generated even more spillovers from the foreign investments made in the secondary and tertiary sectors. Moreover, Resource Dependence—when thought of as resource abundance—has given the government the means to pursue economic growth, while it—when thought of as resource dependence—has diminished the prospect of future growth as it has contributed to rent-seeking activity and corruption within the state institutions. Furthermore, the effects of both Primary Sector FIR and Secondary and Tertiary Sector FIR are a bit ambiguous. The latter appears to be positive but not unconditionally so, while the former is argued to contribute to growth when absent (i.e., low levels). However, the logic of this latter interpretation only seems to hold if a high rate of foreign investment (FIR) in the Primary Sector comes at the expense of a high Secondary and Tertiary Sector FIR. Thus, there is no support for an argument that a low level of foreign investment (FIR) in the Primary Sector *per se* is contributing to economic growth. Moreover, although it is not part of the model here investigated, the importance of good governance—as exemplified by the policy-induced economic diversification—should of course not be neglected.

11.4.4 Zambia

Zambia does not represent any of the causal combinations linked to the outcome Economic Growth in the fuzzy-set analyses above. The country is, nevertheless, of interest since it is equally important to reveal the causal character of a country that failed to experience high economic growth. Especially since this country also experienced a high FIR in the Secondary and Tertiary Sectors in the period considered.

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corporate governance in general (Das 2000:24-25). These problems surfaced in the mid-90s, and peaked with the financial crisis in 1997 (Lane et al. 1999:9-16, Robinson and Rosser 1998:1596-99).

As Zambia gained independence in 1964 it was recognised as one of the most prosperous countries in Sub-Saharan Africa due to its large and—at the time—relatively modern copper industry. The rest of the economy was, however, practically untouched by the British colonists, resulting in a dual economic structure, extreme poverty, and an inadequate educational system (Goudie and Neyapti 1999:98,120, McCulloch et al. 2000:3-4, Roberts 1976:135, Sklar 1975:192, Wills 1985:401).[172] However, a vicious circle of political conflict and poor governance, and poor development in the resource sector—all features related to the resource curse—resulted in indebtedness and a series of standby agreements with the IMF/WB. Each reform process led to reversals in policy and bred a fertile environment for favouritism and corruption within both the public and private sectors that still remain (Goudie and Neyapti 1999:112-20, McCulloch et al. 2000:3-4, OECD 2004:339, Shafer 1994:88-93, Simutanyi 1996:837, Taylor 2006:281). Increasing opposition and escalating economic problems led to a democratic election and a change in government in 1991. The newly-elected government of the Third Republic negotiated a new agreement with the IMF and the WB.[173] However, the new government faced the problems of the past, the contemporary problem of AIDS, and unrealistically high expectations, and its contribution to the Zambian economy was little more than increased poverty and a lack of economic diversification (Cheru 2000:529-30, McCulloch et al. 2000:25-28, OECD 2004:339).[174]

The role of FDI in the economic development of Zambia is as much a question about nationalization as it is a question about FDI *per se*. At independence a large international mining industry was already in place in Zambia, and transnational companies controlled the business through their Zambian subsidiaries (Roberts 1976:230-31, Sklar 1975:180, Wills 1985:399). However, by independence the mineral royalties were owned by Zambia, and in 1969 the government acquired a 51 per cent share of 26 major foreign owned companies (Roberts 1976:230-31, Sklar 1975:180, Wills 1985:399).[175] Initially management was trusted

[172] The lack of human capital has since functioned as both a cause and a consequence of the deterioration in economic performance in Zambia (Goudie and Neyapti 1999:113, World Bank 2001:131).

[173] This was at the time the last of many attempts by the IMF and the WB to stabilise and adjust the Zambian economy. Others stand-by agreements had been initiated in 1973, 1976, 1978, 1983, 1984, and 1986 (Goudie and Neyapti 1999:112).

[174] Zambia has an HIV prevalence of 20 per cent in 2000 (UNDP 2000b:9), and negative effects are expected on economic growth due to loss of labour, higher investment risk, and due to increased strain on the educational system (Cheru 2000:529-30, Haacker 2002:36-37).

[175] Assisted by the British government, the Zambian government bought all the mineral royalties from the British South Africa Company the evening before Independence Day (Roberts 1976:222).

to the former majority shareholders, however, from 1975 the government took over the responsibility for management and sales from both the Anglo American Group and the RST group that had until then controlled the copper mines (Roberts 1976:231). The intention was increased investments in the mining sector. However, too much power was consolidated in the hands of too few people. Combined with a lack of qualified domestic personnel, reduced copper prices, and reduced profits for the TNCs, the result was reduced efficiency, corruption, and disinvestments (Brautigam et al. 2002:543-44, Quinn 2002:195, Roberts 1976:230-31, Sklar 1975:187-204). However, as part of the investment and rehabilitation program in the copper mines starting in 1986, some FDI started to flow into the country again (Goudie and Neyapti 1999:112-23, Simutanyi 1996:836). Nevertheless, as a new investment regime was initialised with the Third Republic in 1991 the absolute level of FDI was relatively low and the composition of the FDI was mainly from the primary sector with some elements from the secondary and tertiary sectors (Sklar 1975:183, UNCTAD 1997:435-38, White 1995:66).[176] A Privatisation Act—part of the IMF/WB structural adjustment plan of 1991 mentioned above—was passed in 1992, resulting in the privatization of about 119 parastatals from 1992 to 2001 (Craig 2002:563-70). 72 of these parastatals were sold to foreign investors, of which the larger share was located in the secondary and tertiary sectors (McCulloch et al. 2000:11-12, Rolfe and Woodward 2004:16-21).[177] Thus, by 2000 the composition of FDI has shifted towards the secondary and tertiary sectors that now constituted about two-thirds of all FDI (UNCTAD 2006b). The size of these—mostly privatization based—investments were relatively large (Rolfe and Woodward 2004:16-21). However, the resulting high Secondary and Tertiary Sector FIR does not appear to have any major—positive or negative—impacts on growth, as the economy remained in recession even after the initiation of the privatization process in 1992.[178,179] The same goes for the low Primary Sector FIR. If anything, the

[176] At the beginning of the nineties the industrialisation process was in its infancy, and efforts at economic diversification and technological improvement in agriculture had failed (White 1995:166). The exception was the copper industry, where, e.g., a metal fabric plant (in partnership with the international mining companies) was an attempt to diversify the economy (Sklar 1975:183, White 1995:166).

[177] 20 out of 43 investments sold to foreigners outside South Africa, were sold to existing shareholders, and many purchased back their original investments previously nationalized (including Zambian Consolidated Copper Mines – ZCCM which was sold 2000) (McCulloch et al. 2000:11-12, Rolfe and Woodward 2004:16-21).

[178] Zambia would have been coded as out of the set Economic Growth even for the 1992-200 period as the growth rate for this period—as here calculated—roughly equals the growth rate for the entire 1980-2000 period, about -2 percent.

[179] Moreover, the alternative—the sale of the former state owned enterprises to local investors—is argued to be deeply flawed as it has allowed for the corrupt acquisition of assets by those linked to the ruling political party (Parker and Kirkpatrick 2003:15-21).

Zambian case shows that a high rate of foreign investment (FIR) in the Primary Sector might be a good alternative when compared to majority state ownership.

This short evaluation of Zambia's unsuccessful economic development has shed some more light on the causal conditions behind the economically successful cases of the Republic of Korea, Botswana, and Indonesia. Zambia is—for the 1980-2000 period here considered—characterized by bad governance, a low Domestic Investment Rate, low Institutional Quality, low levels of Human Capital and high levels of Resource Dependence. Except for Resource Dependence these causal conditions were all—when present—positively linked to Economic Growth in the successful cases analyzed immediately above. Resource Dependence (or resource abundance) was also positively linked to growth, but only in the presence of a high DIR and high Institutional Quality and/or Human Capital. Neither a low rate of foreign investment (FIR) in the Primary Sector, nor a high Secondary and Tertiary Sector FIR appears to contribute to growth in Zambia (either positively or negatively). Contrasted with the case of Indonesia, it seems plausible that the lack of positive contribution from a high rate of foreign investment (FIR) in the Secondary and Tertiary Sector in Zambia can be linked to its low rate of domestic investment (DIR), and its low level of Institutional Quality and Human Capital. Moreover, the cases of Zambia show that a Primary Sector FDI might be a good alternative when compared to majority state ownership. Thus, the case of Zambia highlights the conditional character of FDI. This will be further emphasized below, when some general conclusion are drawn from these fuzzy-set and cases study analyses.

11.5 Fuzzy-Set Methods and Case Studies : Theory versus Evidence

The fuzzy-set analyses intended—like the statistical analyses above—to test the theoretical framework suggesting that the effect of FDI on economic growth is conditional depending on both TNC and host country characteristics. In general FIR was found to be more powerfully linked to the outcome than FDI Capital Penetration. The latter was found be superfluous both for overall FDI and for the composites of FDI. Thus, the fuzzy set exploratory analyses above suggested that the following four causal combinations were sufficiently linked to the outcome Economic Growth (capital letters denote presence of causal condition, while small letters denote absence of causal condition):

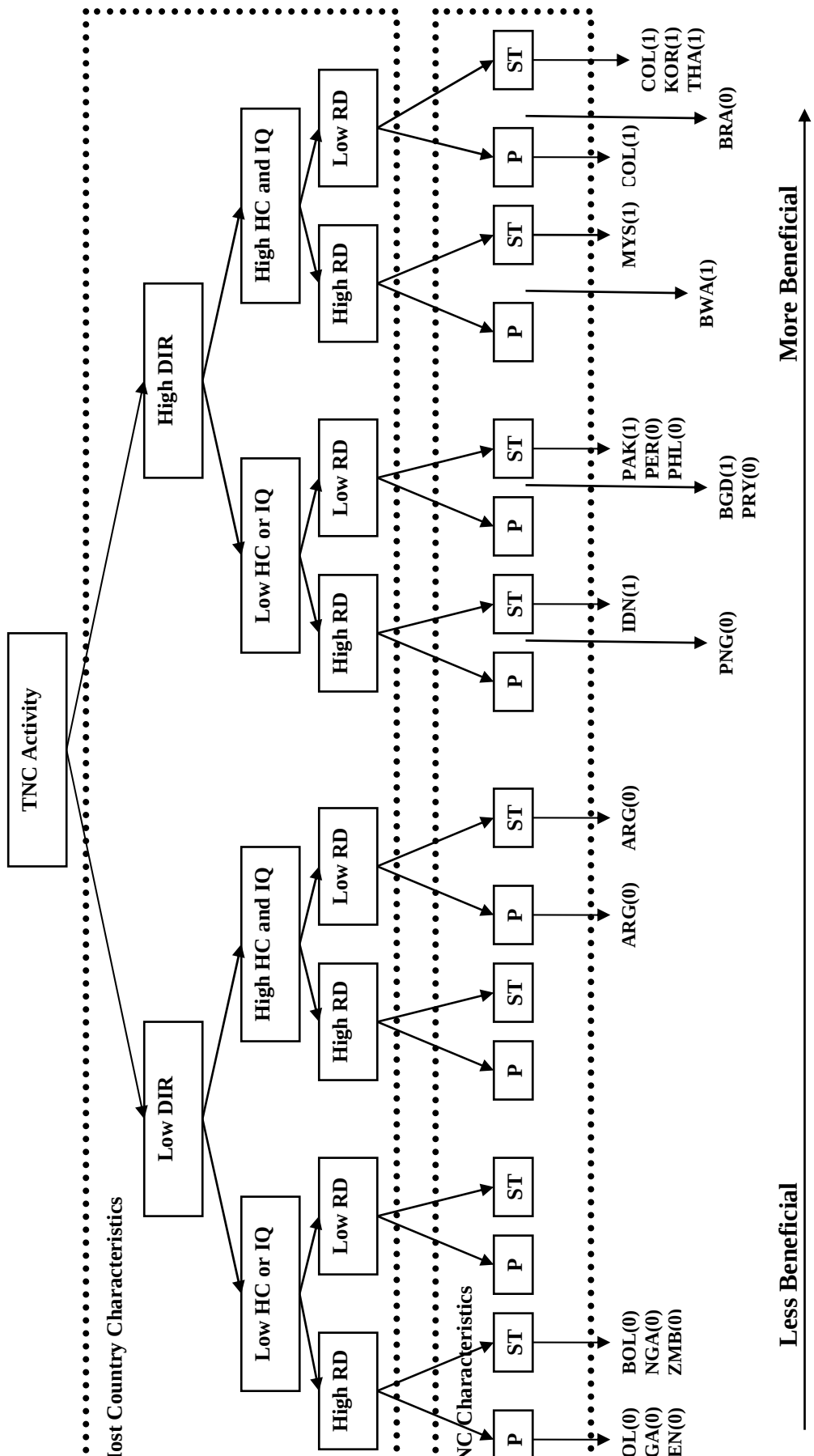
EG = STFIR*DIR*HC*IQ*rd + pfir*DIR*IQ*RD + pfir*STFIR*DIR*hc*rd + pfir*STFIR*DIR*HC*RD).

Moreover, four cases (the Republic of Korea, Botswana, Indonesia, and Zambia) were investigated to reveal the causal character of these combinations. The following paragraphs, therefore, attempts to summarize how FIR relates to the other causal conditions and to economic growth: Do the findings obtained match the theory constructed?

The most noticeable result in the fuzzy-set and case study analyses was the finding that a high Domestic Investment Rate (DIR) seems to be a necessary causal condition. A high DIR was found to be conducive to economic growth in all causal combinations linked to the outcome in the fuzzy-set analyses, and in all three cases of high economic growth in the case studies. Moreover, a high DIR was found to be lacking in the one case (Zambia) that did not experience economic growth. However, a high DIR is not a necessary and sufficient causal conditions since it cannot predict high economic growth (independent of other causal conditions). This is also evident in the four case studies. The point is further illustrated in Figure 13 below.[180] Here all the countries in the fuzzy-set analyses are plotted in a diagram showing their causal combination on an economic beneficial scale, and whether or not this causal combination is associated with economic growth. From the figure we see many of the

[180] In the figure P and ST denote Primary Sector and Secondary and Tertiary Sector FIR respectively. Countries denoted (1) are "more in than out of the set" Economic Growth, while countries denoted (0) are "more out of than in the set" Economic Growth. Also, countries where the arrow starts off between P and ST are coded "more out of than in the set" for both Primary Sector FIR and Secondary and Tertiary Sector FIR.

Figure 13: Modified Model of the Conditional Benefits of the Activity of TNCs on Host Countries' Economic Growth



countries characterized by a high DIR are also characterized by high growth, while none of countries characterized by a low DIR are characterized by high growth.

A high overall FIR, by contrast, is not seen as necessary in any of the causal combinations found to be linked to economic growth (see Section 11.3.1 above).[181] However, when analyzing the composites of FDI by way of fuzzy-set methods, both low Primary Sector FIR and high Secondary and Tertiary Sector FIR are found to be conducive to economic growth (but only so in combination with other theoretically-relevant causal conditions). This conditional character of the effects of the FDI composites on economic growth was illustrated in the theoretical framework in Figures 3 and 7. However, these figures neglected the conditional link to DIR that was made so apparent by the fuzzy-set analyses. Moreover, new statistical analyses of the interaction effects between FIR and DIR that reveal that the effect of Primary Sector FIR in developing countries is negative for countries with low levels of DIR.[182]

The diagram in Figure 12 above incorporates this necessary character of DIR into the model of FDI conditionality and illustrates how the different countries covered by the fuzzy-set analyses locate themselves on the beneficial scale. Overall, the figure illustrates a good fit between the empirical data and the modified theoretical framework. On the left hand side we see again that countries with low levels of DIR are always out of the set Economic Growth (EG). I.e., both high Primary Sector FIR and high Secondary and Tertiary Sector FIR are associated with low levels of Economic Growth in these countries. On the right hand side, however, we see that countries with high levels of DIR are more inclined to experience high growth rates. Moreover, for countries with high rates of domestic investment (DIR) and high levels of Human Capital and Institutional Quality, five out of six countries are more in than out of the set Economic Growth (with Brazil as the only exception). To emphasize the strong link between Secondary and Tertiary Sector FIR and Economic Growth, we also see that

[181] It should be noted that the causal condition low FIR (in combination with high DIR and high HC) was a part of one of the causal combinations linked to the outcome. This causal combination was, however, low on unique coverage (i.e., not very relevant). Nevertheless, this latter route to high growth rates can be used as evidence to argue that growth was achieved in spite of low levels of FIR (pro-TNC view) and as evidence to argue that growth was best achieved in the absence of high FIR (anti-TNC view). However, Indonesia (one of the countries that represent this causal combination) is—as the case study reveals—better characterized by the FDI composites. This is because a high Secondary and Tertiary FIR in Indonesia was found to contribute to economic growth.

[182] When running checks on the interactions FIR*DIR, PFIR*DIR, and STFIR*DIR in the statistical analyses, significant effects were found for PFIR*DIR. I.e., in developing countries with DIR lower than 5.2, the effect of Primary Sector FIR on economic growth is negative. Remember that in the fuzzy-set analyses countries with DIR above 3 are more in than out of the set and countries with DIR above 6 are in the set high DIR.

Secondary and Tertiary Sector FIR is high for four of these five countries linked to Economic Growth, while it is low for the only country (Brazil) not linked to the Economic Growth outcome. Finally, to emphasize the strong link between Primary Sector FIR and Economic Growth, we see that Primary Sector FIR is low for seven out of eight countries linked to Economic Growth.

The Korean and Indonesian case studies confirm the positive impact of a high Secondary and Tertiary FIR on growth. At the same time these cases suggests that foreign investments in these sectors are only contributing to growth in the presence of good governance as represented by a high DIR and high levels of Institutional Quality and/or Human Capital. The cases studies of Botswana, Indonesia and Zambia question, however, the causality in this association between a low Primary Sector FIR and Economic Growth. In the case of Botswana growth is experienced *in spite of* and not *because of* a low Primary Sector FIR. In the case of Indonesia the causal logic holds only if investments in the primary sector come at the expense of investments in the secondary and tertiary sectors (which does not appear to be the case). Finally, in the case of Zambia, if anything, it is the lack of primary sector investments that has contributed to economic stagnation (rather than its presence). In the Zambian case, majority state ownership drove out foreign investments in the mineral sector thereby contributing to the countries lack of economic success.

Dependence on natural resources resembles the conditional character displayed by the FDI composites. In other words, natural resource dependence is only positive for growth if the revenues are managed properly. In this perspective that natural resource dependence needs to be combined with a high rate of domestic investment (DIR) and high levels of Institutional Quality and/or Human Capital. Even under these conditions, however, resource dependence has some negative effects on efficiency and corruption in the state institutions and/or on the need of the government to initiate economic diversification.

There are, however, a few caveats that need to be mentioned with respect to the fuzzy-set analyses. First, although data on the composition of FDI are available for selected years for all countries included in the fuzzy-set analyses, data for the entire 1980-2000 period are harder to come by. For the countries with low data frequency, estimations are made based on other sources (see Appendix C2). This, of course, is not an ideal situation, but is considered adequate since these values only are used to help code countries as “in the set” or “out of the set” high FDI Capital Penetration and high FIR. It is not whether the values are based on raw data or estimates that matters, all that is needed is a good approximation. Second, given the relatively small number of cases, all of the causal combinations linked to the outcome in the

truth tables (see, e.g., Tables 20 and 25 above) are considered equally relevant. Thus, in spite of their unequal representation in the empirical data, a causal combination represented by just a single country can eliminate potentially important causal conditions from a causal combination represented by several countries in the empirical data.[183] It should be said, however, that this does not appear to be the case here. Third, although some of the fuzzy-set analyses find that DIR is a necessary causal condition and some causal combinations are seen as sufficient, this pattern is never 100 percent consistent. Thus, some countries might be part of a causal combination but are nevertheless not linked to the outcome in question (e.g., Brazil). Finally, the case studies reveal that there are causal conditions not modeled in the fuzzy-set analyses that still are highlighted as important causal conditions with respect to economic growth. Among, these are good governance and industrialization strategy (i.e., import substitution industrialization versus export-orientation). The former is arguably well represented by DIR, Institutional Quality and Human Capital, while the latter—when proxied by Trade—proved not to contribute to the explanatory power.[184] Nevertheless, there is a reasonable match between the findings obtained and the theory constructed. We now turn to the fuzzy-set FDI-human rights analysis to see whether or not methodological triangulation can shed some new light on this relationship.

[183] E.g., FIR*DIR*HC*IQ*RD (4 cases) combine with fir*DIR*HC*IQ*RD (1 case) and yield DIR*HC*IQ*RD.

[184] Trade or (Exports + Imports)/GDP (see Appendix A1 for a definition) is perhaps not the best operationalization for the industrialization strategy since it displays the same value for the export-oriented Korea and more inward-oriented Zambia. Another explanation might be that in the 1980-2000 period considered, the industrialization strategy might be superfluous since the more inward-oriented ISI-strategies were more popular prior to 1980s.

12 QCA: The Human Rights Analysis

This chapter will—as stated in Chapter 10—apply the methods of fuzzy sets on data from 18 developing countries. These analyses will be accompanied by some case studies selected based on the causal combination suggested by the fuzzy-set approach. The main analytic strategy of these analyses is to yield information that help answer the research questions asked in Section 5.1.

12.1 Fuzzy-Set Methods: The Model

The causal conditions included in the model will—as for the statistical analyses on human rights—be based on the theoretical framework developed above. However, since fuzzy-set methods become increasingly complex with increasing number of causal conditions, we follow Ragin's advice and keep the number of causal conditions in the range of three to eight (Ragin Forthcoming 2007a:19). The model will, therefore, be somewhat reduced compared to the human rights model analysed in the statistical analyses, and will only include those causal conditions considered most important based on the theoretical framework and the statistical analyses on economic growth. However, as for the statistical analyses on human rights we will investigate two separate dimensions of human rights: physical integrity rights (PIR) and political and civil rights (PCR). In its most basic form the models include the following causal conditions (sets):

High PIR or PCR = High Initial PIR or PCR (iPIR or iPCR)
+ High FDI Capital Penetration (FDIP)
+ High Economic Growth (EG)
+ High Economic Development (ED)
+ Large Population (POP)
+ High Ethnolinguistic Fractionalisation (EF)
+ High Resource Dependence(RD)
+ Civil War (CW)

In this model FDI Capital Penetration will be tested for both total effects and compositional (primary sector versus secondary and tertiary sectors) effects. Also, Resource Dependence could be both total and compositional (Fuel versus Non-Fuel).

12.2 Fuzzy-Set Methods: The Calibration

The calibration for these fuzzy-set human rights analyses will follow the logic outlined in the fuzzy-set economic growth analyses in Section 11.2 above. Thus, the aim is still for the calibration to be explicit, systematic, and externally founded. Appendix C1 shows the criteria of the four-value coding scheme by which the causal conditions are transformed from variables—as used in the statistical analyses—into continuous fuzzy sets, while Table 28 below shows the final membership scores for the 18 countries considered (see Section 11.2 above for more detailed information about the calibration process).

Table 28 – Fuzzy-Set Membership Scores: Human Rights

Country	PIR	iPIR	PCR	iPCR	FDIP	PFDIP	STFDIP	EG	ED	POP	EF	RD	FRD	NFRD	CW
Argentina	0.11	0.02	0.90	0.05	0.13	0.02	0.03	0.30	0.96	0.08	0.66	0.02	0.02	0.02	0.03
Bangladesh	0.11	0.66	0.56	0.78	0.01	0.02	0.01	0.68	0.03	0.82	0.03	0.01	0.01	0.02	0.95
Bolivia	0.64	0.04	0.96	0.78	0.79	0.25	0.07	0.14	0.07	0.02	0.92	0.79	0.16	0.18	0.03
Brazil	0.11	0.32	0.77	0.60	0.11	0.02	0.05	0.25	0.72	0.96	0.93	0.02	0.02	0.02	0.03
Botswana	0.96	0.98	0.96	0.89	0.99	0.98	0.09	0.98	0.54	0.01	0.79	1.00	0.01	1.00	0.03
Colombia	0.02	0.02	0.32	0.89	0.19	0.02	0.02	0.57	0.26	0.09	0.94	0.05	0.06	0.02	0.99
Indonesia	0.02	0.04	0.56	0.11	0.09	0.03	0.02	0.98	0.06	0.99	0.55	0.71	0.61	0.02	0.97
Korea, Republic of.	0.64	0.32	0.96	0.11	0.01	0.02	0.01	0.99	0.98	0.14	0.01	0.02	0.02	0.02	0.03
Malaysia	0.64	0.66	0.07	0.60	0.98	0.02	0.99	0.98	0.70	0.04	0.92	0.68	0.51	0.02	0.08
Nigeria	0.04	0.89	0.32	0.89	0.94	0.14	0.90	0.22	0.03	0.74	0.29	1.00	1.00	0.02	0.03
Pakistan	0.04	0.02	0.04	0.03	0.02	0.02	0.02	0.81	0.04	0.82	0.86	0.01	0.01	0.02	0.20
Peru	0.11	0.32	0.77	0.89	0.12	0.02	0.02	0.05	0.22	0.04	0.95	0.26	0.03	0.08	0.99
Philippines	0.04	0.02	0.90	0.11	0.09	0.02	0.03	0.09	0.08	0.31	0.48	0.03	0.02	0.02	0.99
Papua New Guinea	0.64	0.98	0.90	0.95	0.99	0.98	0.01	0.47	0.09	0.01	0.82	0.98	0.06	0.98	0.85
Paraguay	0.64	0.11	0.56	0.11	0.08	0.02	0.04	0.15	0.24	0.01	0.15	0.01	0.01	0.02	0.08
Thailand	0.64	0.11	0.90	0.60	0.12	0.02	0.04	0.99	0.27	0.24	0.67	0.02	0.02	0.02	0.37
Venezuela	0.32	0.89	0.32	0.98	0.07	0.02	0.02	0.10	0.87	0.04	0.92	0.97	0.95	0.02	0.08
Zambia	0.64	0.32	0.16	0.11	0.92	0.80	0.09	0.01	0.04	0.02	0.71	0.97	0.02	0.99	0.03

PIR =Physical Integrity Rights, iPIR =Initial Level of Physical Integrity Rights, PCR = Political and Civil Rights, iPCR = Initial Level of Political and Civil Rights, FDIP = FDI Capital Penetration, PFDIP = Primary Sector FDI Capital Penetration, STFDIP = Secondary and Tertiary Sector FDI Capital Penetration, EG = Economic Growth, ED = Economically Developed, POP = Population, EF = Ethnolinguistic Fractionalisation, RD = Resource Dependent, FRD = Fuel Resource Dependent, NFRD = Non-Fuel Resource Dependent, and CW = Civil War

12.3 Fuzzy-Set Methods: The Analyses

Having the membership scores for all causal conditions (sets) we are now able to estimate the causal conditions most consistently associated with the outcome human rights.[185] Separate analyses are conducted for overall FDI and for FDI when broken down to its composites, primary sector FDI and secondary and tertiary sector FDI.

12.3.1 FDI & Physical Integrity Rights

As in the fuzzy-set economic growth analyses above, the analyses on the effects of FDI on PIR revealed a better fit—based on coverage and consistency—when including the two FDI composites rather than overall FDI. The following, therefore, focuses on the FDI composite analyses only. Moreover, as Ethnolinguistic Fractionalisation proved to be superfluous, the model produced the following truth table (where 1 denotes that a country is "more in that out" of that particular causal condition):[186]

Table 29 – Fuzzy-Set Truth Table: Composition of FDI and Physical Integrity Rights

Country	iPIR	PFDIP	STFDIP	EG	ED	POP	RD	CW	PIR	Consi-stency
Botswana	1	1	0	1	1	0	1	0	1	1.000
Papua New Guinea	1	1	0	0	0	0	1	1	1	1.000
Malaysia	1	0	1	1	1	0	1	0	1	0.978
Zambia	0	1	0	0	0	0	1	0	1	0.919
Thailand	0	0	0	1	0	0	0	0	1	0.896
Bolivia	0	0	0	0	0	0	1	0	1	0.873
Korea, Republic of	0	0	0	1	1	0	0	0	1	0.863
Paraguay	0	0	0	0	0	0	0	0	1	0.818
Argentina	0	0	0	0	1	0	0	0	0	0.535
Venezuela	1	0	0	0	1	0	1	0	0	0.526
Colombia	0	0	0	1	0	0	0	1	0	0.524
Bangladesh	1	0	0	1	0	1	0	1	0	0.462
Brazil	0	0	0	0	1	1	0	0	0	0.430
Pakistan	0	0	0	1	0	1	0	0	0	0.409
Indonesia	0	0	0	1	0	1	1	1	0	0.321
Nigeria	1	0	1	0	0	1	1	0	0	0.286
Peru & Philippines	0	0	0	0	0	0	0	1	0	0.249

[185] By application of the "Fuzzy Sets Truth Table Algorithm" in Ragin's software package fsQCA (Ragin 2007).

[186] Ethnolinguistic Fractionalisation is a proxy for an ethnically fractionalised population that might or might not signal a (politically and/or economically) divided population. That the causal condition is superfluous – based on coverage and consistency—indicates that linguistic fractionalisation does not necessarily signal ethnic conflict.

The causal combinations presented in Table 29 are the ones with a match in the empirical data.[187] We apply the same frequency and consistency thresholds as in the fuzzy-set growth analyses above, and consider all causal combinations with a match in the empirical data and a consistency score above 0.75 as relevant (which here also corresponds with a natural gap in consistency) (Forthcoming 2007a:10-14). Hence, those causal combinations that pass both these thresholds are coded one for the outcome Economic Growth (EG) in the truth table, since they are the once considered most powerful in explaining the outcome in question. The most conservative solution is obtained by the use of Boolean minimization on the eight most powerful causal combinations only. The outcome presented in Table 30 below, reduces the number of causal combinations from eight to six (capital letters denote presence of causal condition, while small letters denote absence of causal condition).

Table 30 – Fuzzy-Set Solution Table: Composition of FDI and Physical Integrity Rights

Country(*),(**)	Causal Combination	Raw Coverage	Unique Coverage	Consi-stency
Thailand & **Korea**	ipir*pfdip*stfdip*EG*pop*rd*cw	0.299	0.204	0.837
Malaysia	iPIR*pfdip*STFDIP*EG*ED*pop*RD*cw	0.142	0.099	0.978
Botswana	iPIR*PFDIP*stfdip*EG*ED*pop*RD*cw	0.138	0.082	1.000
Bolivia & **Paraguay**	ipir*pfdip*stfdip*eg*ed*pop*cw	0.300	0.077	0.816
Papua New Guinea	iPIR*PFDIP*stfdip*eg*ed*pop*RD*CW	0.131	0.074	1.000
Bolivia & **Zambia**	ipir*stfdip*eg*ed*pop*RD*cw	0.253	0.069	0.866

Solution coverage: 0.842
Solution consistency: 0.876

(*) That only a limited number of countries are listed does not mean that the excluded countries are not part of these causal combinations. It only means that these countries have a membership below 0.5 for these particular combinations that are most consistently related to the outcome.
(**) Countries denoted in bold are unique for that causal combination.

As in the fuzzy-set growth analyses above, we evaluate the solution—on the one hand—with respect to necessity and sufficiency, and—on the other hand—with respect to consistency and coverage. Irrespective of consistency, we might state that each causal combination is a sufficient causal combination—since it is able to predict the outcome—and no causal combination is a necessary causal combination—since other causal combinations can predict the outcome too. Thus, there are several distinct routes to higher levels of

[187] From the outline of the method of fuzzy sets in chapter 10 above we have that a country is part of a causal combination if its membership in that particular causal combination exceeds 0.5. Cases will almost always have only one membership-score above 0.5, and this causal condition is, therefore, the one that best fits the case in question (Ragin 2000:181-89).

Physical Integrity Rights. This causal complexity is, however, somewhat moderated by the fact that a small population seems to be a necessary—although not a sufficient—causal condition (it is a part of all causal combinations). Consistency cannot, however, be disregarded as none of these causal combinations are 100 percent consistently associated with the outcome. The "solution coverage" and "solution consistency" tell us that the model fits the data reasonably well, and that the causal combinations pooled are consistently associated with the outcome. Moreover, the causal combination listed at the top of Table 30 is the most relevant due to its higher unique coverage (Ragin 2006b:2). Also, this solution is the most parsimonious solution that can be theoretically justified since the implementation of easy counterfactuals in the Boolean minimization procedure does not yield a further simplification of the solution.

The model analyzed yields a fairly complex solution where most causal conditions are part of all the causal combinations. As far as FDI Capital Penetration is concerned, its presence—both when considering the Primary Sector and the Secondary and Tertiary Sectors—is almost never associated with higher levels of PIR when the initial level of PIR is low.[188] That is, in the 1980 to 2000 period here considered, countries with low levels of FDI Capital Penetration—as opposed to high levels of penetration—more frequently experience a shift from lower to higher levels of PIR. However, this might only be a coincidence as a model stripped for FDI Capital Penetration—see solution Table 31 below—display similar

Table 31 – Fuzzy-Set Solution Table: Composition of FDI and Physical Integrity Rights – Simplified Model

Country(*)	Causal Combination	Raw Coverage	Unique Coverage	Consi-stency
Bolivia, Paraguay & Zambia	ipir*eg*ed*pop*cw	0.371	0.255	0.800
Thailand & Korea	ipir*EG*pop*rd*cw	0.347	0.204	0.857
Botswana & Malaysia	iPIR*EG*ED*pop*RD*cw	0.250	0.132	0.988
Papua New Guinea	iPIR*eg*ed*pop*RD*CW	0.156	0.088	0.868
Solution coverage:	0.857			
Solution consistency:	0.846			

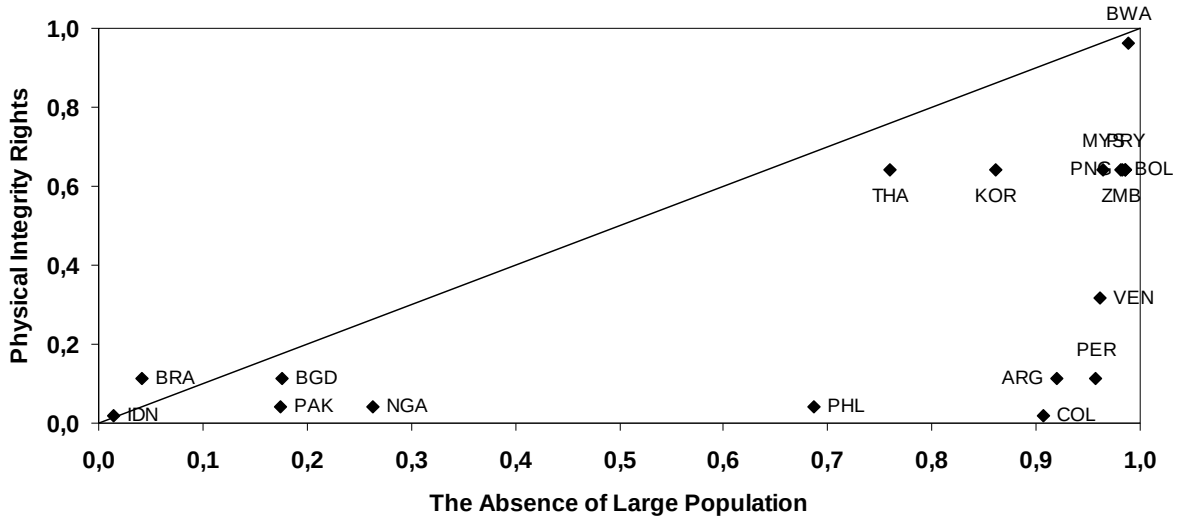
(*) That only a limited number of countries are listed does not mean that the excluded countries are not part of these causal combinations. It only means that these countries have a membership below 0.5 for these particular combinations that are most consistently related to the outcome.

[188] From Tables 29-30 we find that the least relevant causal combination ipir*stfdip*eg*ed*pop*RD*cw (represented by Bolivia and Zambia in Table 30) opens up for the possibility that a high FDI capital penetration level in the primary sector can be associated with high levels of PIR despite low initial levels of PIR (represented by the case of Zambia).

levels of coverage and consistency as the model just discussed.[189] That is, both overall FDI Capital Penetration and its sectoral composites might be superfluous.

This possibility, as well as the individual and combined importance of the other causal conditions will be further discussed *in* and *after* the human rights case studies in Section 12.4 below. For now we note only that the absence of a large Population seems to be a necessary condition for a higher level of PIR, that both higher and lower levels of Economic Growth and Economic Development are associated with the outcome, and that lower levels of Resource Dependence and Civil War are frequently associated with the outcome. The absence of a large Population as a necessary causal condition is also illustrated in Figure 14 below. Here countries above the diagonal contradict the notion that the causal condition in question is a necessary condition.[190] Moreover, the many countries in the lower right corner suggest that the absence of a large Population is not sufficient to achieve higher levels of PIR.[191] The following section attempts to determine if the pattern here revealed is matched for the human rights dimension of political and civil rights.

Figure 14: The Absence of Large Population as a Necessary Causal Condition



[189] Only the complex solution is displayed as the solution incorporating easy counterfactuals in the Boolean minimization procedure displays a significantly lover consistency.

[190] For plots of membership in causal condition versus membership in outcome, the following applies. If all countries are on the diagonal the causal condition is seen as both necessary and sufficient; if all countries are below the diagonal the causal condition is seen as necessary but not sufficient; and if all countries are above the diagonal the causal condition is seen as sufficient but not necessary.

[191] E.g., Peru (PER) has not achieved higher level of PIR in the absence of a large Population.

12.3.2 FDI and Political & Civil Rights

The fuzzy-set analyses on Political & Civil Rights (PCR) mirror those on Physical Integrity Rights above as the analyses on the effects of FDI on PCR revealed a better fit—based on coverage and consistency—when including the two FDI composites than when including overall FDI only. It is for this reason that the following discussion will focus on the FDI composite analyses. Moreover, several causal conditions proved to be superfluous, leaving us with the following simplified model: PCR = iPCR + PFDIP + STFDIP + EG + ED + RD, and a truth table as illustrated by Table 32 below (where 1 denotes that a country is "more in that out of" that particular causal condition).[192, 193]

Table 32 – Fuzzy-Set Truth Table: Composition of FDI and Political & Civil Rights

Country	iPCR	PFDIP	STFDIP	EG	ED	RD	PCR	Consistency
Botswana	1	1	0	1	1	1	1	1.000
Papua New Guinea	1	1	0	0	0	1	1	1.000
Argentina	0	0	0	0	1	0	1	1.000
Brazil	1	0	0	0	1	0	1	1.000
Bolivia	1	0	0	0	0	1	1	1.000
Korea, Republic of	0	0	0	1	1	0	1	1.000
Peru	1	0	0	0	0	0	1	0.954
Indonesia	0	0	0	1	0	1	1	0.881
Paraguay & Philippines	0	0	0	0	0	0	1	0.881
Bangladesh, Colombia & Thailand	1	0	0	1	0	0	1	0.865
Pakistan	0	0	0	1	0	0	0	0.706
Venezuela	1	0	0	0	1	1	0	0.626
Nigeria	1	0	1	0	0	1	0	0.613
Zambia	0	1	0	0	0	1	0	0.540
Malaysia	1	0	1	1	1	1	0	0.436

The causal combinations presented in the truth table are the ones with a match in the empirical data. Moreover, by applying the same thresholds for frequency and consistency as above we obtain ten causal combinations (those coded one for Political & Civil Rights, PCR, in Table 32 above) that are considered powerful in explaining the outcome in question (Forthcoming 2007a:10-14). The most conservative solution is obtained by the use of

[192] By application of the "Fuzzy Sets Truth Table Algorithm" in Ragin's software package fsQCA (Ragin 2007).

[193] Ethnolinguistic Fractionalisation, Population, and Civil War all proved to be superfluous. This, as solution coverage increased and solution complexity decreased when these causal conditions were dropped from the model (both individually and in combination).

Boolean minimization on the ten most powerful causal combinations only. The outcome presented in Table 33 below, reduces the number of causal combinations from ten to six (capital letters denote presence of causal condition, while small letters denote absence of causal condition).

Table 33 – Fuzzy-Set Solution Table: Composition of FDI and Political & Civil Rights

Country(*),(**)	Causal Combination	Raw Coverage	Unique Coverage	Consi-stency
Argentina, **Brazil**, **Paraguay**, Peru & **Philippines**	pfdip*stfdip*eg*rd	0.427	0.134	0.893
Bolivia & **Papua New Guinea**	iPCR*stfdip*eg*ed*RD	0.195	0.109	1.000
Argentina & **Korea**	ipcr*pfdip*stfdip*ED*rd	0.300	0.098	0.985
Bangladesh, Colombia, Peru & **Thailand**	iPCR*pfdip*stfdip*ed*rd	0.295	0.052	0.834
Botswana	iPCR*PFDIP*stfdip*EG*ED*RD	0.088	0.048	1.000
Indonesia	ipcr*pfdip*stfdip*EG*ed*RD	0.102	0.041	0.881
Solution coverage:	0.825			
Solution consistency:	0.875			

(*) That only a limited number of countries are listed does not mean that the excluded countries are not part of these causal combinations. It only means that these countries have a membership below 0.5 for these particular combinations that are most consistently related to the outcome.
(**) Countries denoted in bold are unique for that causal combination.

The use of theoretically sound easy counterfactuals does not simplify this complex solution any further. Moreover, a solution obtained by dropping the FDI composites from the model indicates that these composites add explanatory power to the model (based on solution coverage and solution consistency). Thus the solution as presented in Table 33 above is the most appropriate as well as the most parsimonious solution.

As in the fuzzy-set analyses above, we evaluate the solution—on the one hand—with respect to necessity and sufficiency, and—on the other hand—with respect to consistency and coverage. Irrespective of consistency, we might state that each causal combination is a sufficient causal combination—since it is able to predict the outcome—and no causal combination is a necessary causal combination—since other causal combinations can predict the outcome too. Thus, there are several distinct routes to higher levels of Political & Civil Rights. This causal complexity is, however, somewhat moderated by the fact that the absence of high Secondary and Tertiary Sector FDI Capital Penetration seems to be a necessary—although not a sufficient—causal condition (it is a part of all causal combinations). Consistency cannot, however, be disregarded as none of these causal combinations are 100

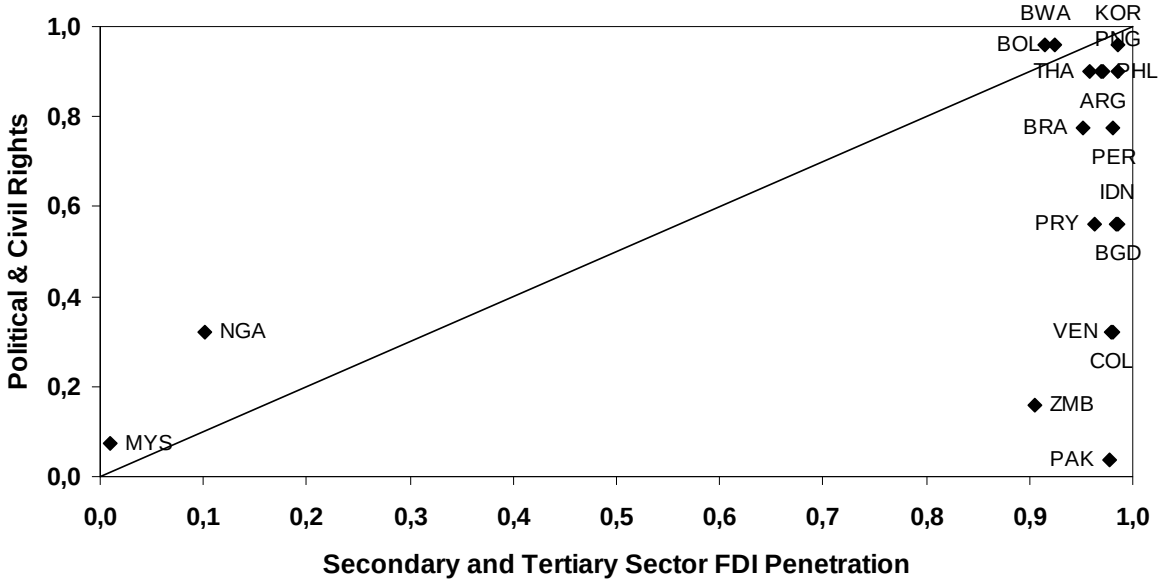
percent consistently associated with the outcome. Moreover, "solution coverage" and "solution consistency" tell us that the model fits the data reasonably well, and that the causal combinations pooled are consistently associated with the outcome. Note also that the causal combination listed at the top of Table 33 is considered most relevant due to its higher unique coverage (Ragin 2006b:2).

The model analyzed yield a fairly complex solution. As far as FDI Capital Penetration is concerned, higher levels—both when considering the Primary Sector and the Secondary and Tertiary Sectors—is never associated with higher levels of PIR when the initial level of PIR is high. That is: in the 1980 to 2000 period considered, countries with high levels of FDI Capital Penetration—as opposed to low levels of penetration—never experience a shift from lower to higher levels of PIR. Moreover, the absence of high Secondary and Tertiary Sector FDI Capital Penetration seems to be a necessary causal condition. The causal importance of the FDI composites must, however, be viewed in light of the fact that only 3 out of 18 countries display high Primary Sector FDI Capital Penetration and only 2 out of the 18 countries analyzed display a high Secondary and Tertiary Sector FDI Capital Penetration (Nigeria and Malaysia). Thus, the causal importance of the FDI composites—as well as the individual and combined importance of the other causal conditions—will be further discussed *in* and *after* the human rights case studies in Section 12.4 below. For now we note only that the absence of high Secondary and Tertiary Sector FDI Capital Penetration seems to be a necessary condition for a higher level of PCR, and that both higher and lower levels of Economic Growth, Economic Development and Resource Dependence are associated with the outcome. The absence of high Secondary and Tertiary Sector FDI Capital Penetration as a necessary causal condition is also illustrated in Figure 15 below. Here countries above the diagonal (e.g., Nigeria, NGA) contradict the notion that the causal condition in question is a necessary condition.[194] Moreover, the fact that many countries are located in the lower right corner suggests that high Secondary and Tertiary Sector FDI Capital Penetration is not sufficient to achieve higher levels of PCR.[195]

[194] For plots of membership in causal condition versus membership in outcome, the following applies. If all countries are on the diagonal the causal condition is seen as both necessary and sufficient; if all countries are below the diagonal the causal condition is seen as necessary but not sufficient; and if all countries are above the diagonal the causal condition is seen as sufficient but not necessary.

[195] E.g., Pakistan (PAK) has not achieved a higher level of PCR in the absence of high Secondary and Tertiary Sector FDI Capital Penetration.

Figure 15: The Absence of High Secondary and Tertiary Sector FDI Penetration as a Necessary Causal Condition



After some reflection on the sensitivity of these fuzzy-set analyses, Section 12.4 below will investigate the causal content of the combinations here found to be linked to the outcomes PIR and PCR. The focus will be on the solution found when applying the FDI composites rather than overall FDI, since the former better represents the theoretical framework.

12.3.3 Sensitivity Analysis

The sensitivity analysis here mirrors the one conducted in the fuzzy-set economic growth analyses, and can be divided in two categories: alternative calibration of membership scores and alternative causal conditions.

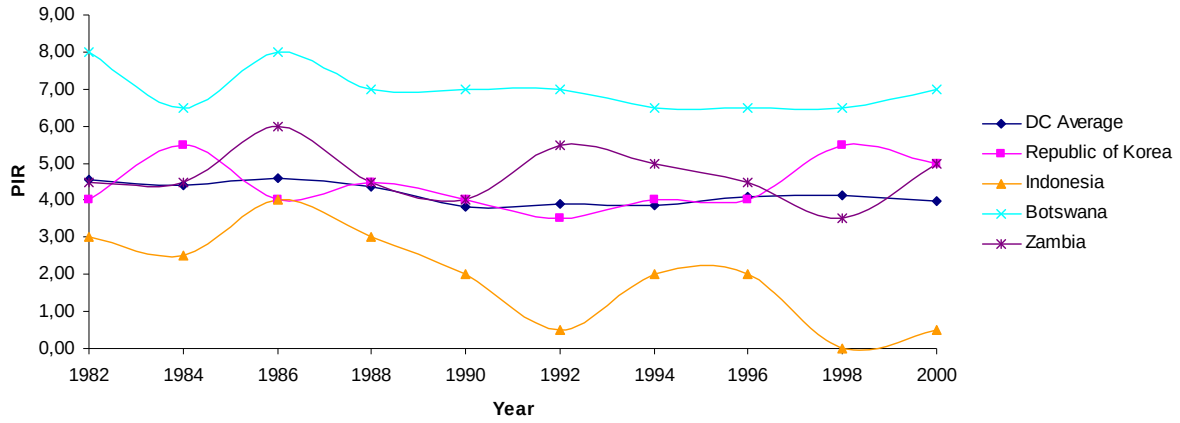
Alternative calibrations were tested for Large Population, Ethnolinguistic Fractionalization, and the different types of Resource Dependence. For the other causal conditions the calibration was more intuitive, and levels normally seen in developed countries were for many used as benchmarks (see Appendix C1). These alternative calibrations were eventually dropped, either because they had no impact on the solution or because they neglected natural thresholds in the data and, therefore, yielded significantly less relevant solutions (i.e., lower coverage).

In the latter group alternative causal conditions like Democracy and Institutional Quality—tested for in the statistical analyses—were dropped from the initial fuzzy-set model as fuzzy-set methods becomes unwieldy if models including too may causal conditions are tested on too few cases (Ragin Forthcoming 2007a:19). In sensitivity analyses, however, alternative models including these causal conditions were tested without any of them displaying any significant contribution to the fuzzy-set model outlined above. Moreover, some of the causal conditions included in the original fuzzy-set model (i.e., Ethnolinguistic Fractionalisation in the PIR analyses, and Ethnolinguistic Fractionalisation, Population and Civil War in the PCR analyses) were dropped as they proved superfluous. Thus, these latter causal conditions also testify to the robustness of the model.

12.4 Case Studies: FDI and Human Rights

As mentioned above, the method of fuzzy-sets is seen as an exploratory technique (Ragin Forthcoming 2007a:14). Case studies are, therefore, needed in order to unravel the causal content of the causal combinations linked to the outcomes Physical Integrity Rights (PIR) and Political & Civil Rights (PCR). However, the complexity of the solutions displayed in Tables 30, 31 and 33 above makes an evaluation of all causal combinations unmanageable. The cases studies investigated in the economic growth analyses above were: the Republic of Korea, Botswana, Indonesia and Zambia. These cases are also representative of the relevant causal combinations linked to human rights. Thus, since these cases represent a mix of relevant causal combinations and human rights nonperformance, and since economic development is empirically and theoretically linked to human rights, the same four countries will also be the subject of analysis in the case studies on human rights. Figures 16-17 display the level of Physical Integrity Rights and Political and Civil Rights throughout the period for these countries relative to the developing country average.[196]

Figure 16: Physical Integrity Rights for Selected Countries Relative to Developing Country Average

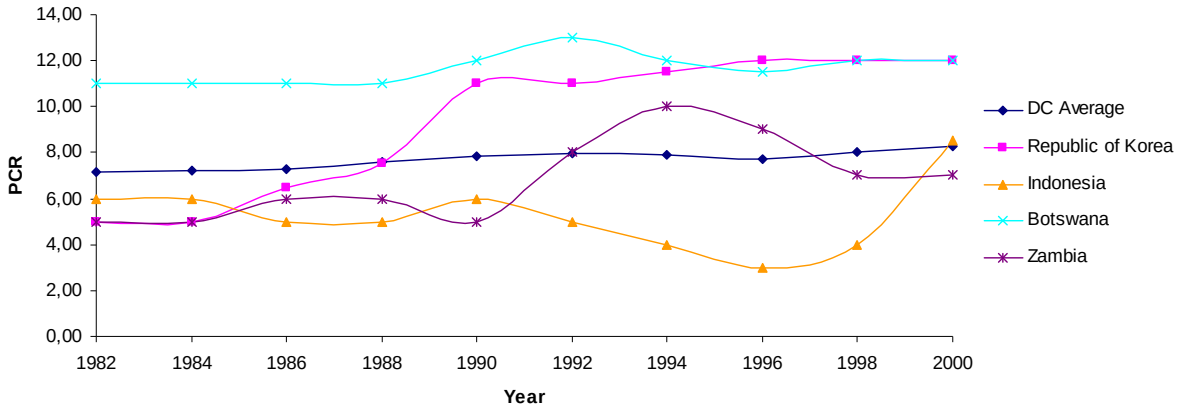


In each of these cases the focus will be on the role of the causal combination and its causal conditions in general, and on the role of FDI and its composites in particular. Moreover, for reasons of comparability with the statistical and fuzzy-set analyses the main focus will be on the 1980-2000 time period. In the end, the different causal combinations (or

[196] Due to year-to-year fluctuations, the figures are presented as 2-year averages to smooth out the curves.

cases) will be discussed relative to each other, and relative to the other cases included in the fuzzy-set analyses.

Figure 17: Political and Civil Rights for Selected Countries Relative to Developing Country Average



12.4.1 Republic of Korea

The Republic of Korea (henceforth referred to as Korea) has in the 1980-2000 period made some significant progress with respect to human rights. This rather successful progress is also displayed in the fuzzy-set analyses above, where Korea in the Physical Integrity Rights (PIR) analyses represents the causal combination ipir*pfdip*stfdip*EG*pop*rd*cw, while in the Political & Civil Rights (PCR) analyses it represents the causal combination ipcr*pfdip*stfdip*ED*rd.[197,198] Both of these causal combinations are among the most relevant causal combinations linked to their respective outcomes (based on unique coverage), and this despite low initial levels of PIR and PRC. Thus it seems like the absence of a high FDI Capital Penetration (both in the primary and the secondary and tertiary sectors) are conducive to both PIR and PCR. The following paragraphs attempt to reveal the causal character of these combinations as far as Korea is concerned.

[197] PIR = ipir*pfdip*stfdip*EG*pop*rd*cw. That is, high levels of PIR are linked to a low level of initial PIR, low Primary as well as Secondary and Tertiary Sector FDI Capital Penetration, high Economic Growth, the absence of a large Population, low Resource Dependence, and the absence of Civil War. This causal combination is also represented by Thailand (see Table 30 above).

[198] PCR = ipcr*pfdip*stfdip*ED*rd. That is, high levels of PCR are linked to a low level of initial PCR, low Primary as well as Secondary and Tertiary Sector FDI Capital Penetration, high Economic Development, and low Resource Dependence. This causal combination is also represented by Argentina (see Table 33 above).

In the aftermath of the Japanese WWII capitulation and under the influence of the U.S. military government in 1948, the establishment of the Republic of Korea commenced with a democratization from above (Yong and Young 191). However, the Korean War and political turmoil followed, and from the early 1960s the country was ruled by an alliance between the military and technocrats (Sang-Kin 1995:8-10). This bureaucratic authoritarian regime ruled all institutions of society with an iron grip, and successfully steered the Korean economy to ever more advanced industrialization (Cho 2002:205-06, Sang-Kin 1995:8-10).[199] However, a byproduct of this successful economic development was the development and strengthening of the working, the middle as well as the capitalist class (Sang-Kin 1995:8-10). All classes benefited economically but were excluded and repressed politically (Sang-Kin 1995:10-13). The growing discontent from the political exclusions and repression led to demonstrations in the 1980s for reforms with respect to both physical integrity rights and political and civil rights. Forces from all classes of society—individually and in interaction with each other—ensured continuity in a push for democratisation that initially peaked with the 1987 presidential election (Cho 2002:205-06, Chu 2000:197-200, Flanagan and Lee 2000:653-57, Neary 2002:75-78, Pak 1998:48-66, Sang-Kin 1995:10-13, Thompson 1996:637-39, White 1995:58-64). Although democracy has consolidated considerably since then, the National Security Law still justifies some human rights abuses (Cho 2002:208, Neary 2002:75-78). This affects physical integrity rights more than political and civil rights, and the story of democratization in Korea is, nevertheless, a classical example of the economic development–democracy thesis outlined in the theoretical framework above (Section 4.2.7). That is, advanced industrialisation leads first to a parallel shift in class structures and values, and then to democratisation (Ingelhart 1997:160-63, Rueschmeyer et al. 1992:58).

If we now view this historical development of democracy and human rights in Korea in light of the causal combinations outlined at the outset of this cases study, we see that the only causal conditions linked to the outcomes when present are Economic Growth and Economic Development. Needless to say this corresponds well with the development-democracy thesis just discussed. The other causal conditions are all linked to the outcomes when absent. This is uncontroversial as far as Population, Resource Dependence and Civil War are concerned. This is because these causal conditions—if present—are argued to have a negative influence on human rights. However, when it comes to FDI Capital Penetration, the interpretation is not that straightforward. Korea did not use FDI as a principal component of

[199] See Section 11.4.1 above for a fuller evaluation of conditions behind Koreas economic success.

its overall development strategy (Bhagwati 2004:180, Booth 1999:306, Parris 2003:36), and the low levels of FDI Capital Penetrations displayed in its causal combinations linked to the outcomes, PIR and PCR, testament to that fact. Thus, the influence of FDI on human rights in Korea has historically been insignificant. However, this is not to say that the counterfactual—the effect of FDI Capital Penetration if present—would have been insignificant. That is, we cannot say that low levels of FDI Capital Penetration contributed to the positive development of human rights, only that this development took place in a context of low levels of FDI Capital Penetration. This apparent ambiguity will be further discussed in Section 12.4.5 below, where lessons from all four cases studies are highlighted.

12.4.2 Botswana

In the 1980-2000 period Botswana has consolidated its initial favorable human rights conditions. This successful consolidation is also displayed in the fuzzy-set analyses above, where Botswana in the Physical Integrity Rights (PIR) analyses represents the causal combination iPIR*PFDIP*stfdip*EG*ED*pop*RD*cw, while in the Political & Civil Rights (PCR) analyses it represents the causal combination iPCR*PFDIP*stfdip*EG*ED*RD. [200,201] Although both of these causal combinations are unique for Botswana (see Tables 30 and 33 above), they are nevertheless causally interesting since a high Primary Sector Capital Penetration is linked to both a high PIR and a high PCR.[202] The following paragraphs attempt to reveal the causal character of these combinations.

Botswana has, unlike most African countries, been a stable democracy since it gained independence in 1966 (Goudie and Neyapti 1999:125, Omer-Cooper 1994:270-77, Sillery

[200] PIR = iPIR*PFDIP*stfdip*EG*ED*pop*RD*cw. That is, high levels of PIR are linked to a low level of initial PIR, high Primary and low Secondary and Tertiary Sector FDI Capital Penetration, high Economic Growth and high Economic Development, a small Population, high Resource Dependence, and the absence of Civil War. This causal combination is represented by Botswana alone (see Table 30 above).

[201] PCR = iPCR*PFDIP'stfdip*EG*ED*RD. That is, high levels of PCR are linked to a low level of initial PCR, high Primary and low Secondary and Tertiary Sector FDI Capital Penetration, high Economic Growth and Economic Development, and a high Resource Dependence. This causal combination is represented by Botswana alone (see Table 33 above).

[202] Although unique when including the FDI composites, by displaying the solution for PIR when dropping these composites, Table 31 shows that the more parsimonious—but equally powerful—solution for Botswana is sheared with Malaysia. This is because these countries only differ with respect to the FDI composites. Botswana has a high Primary Sector FDI Capital Penetration, while Malaysia has a high Secondary and Tertiary Sector FDI Capital Penetration.

1974:155-59).[203] This stable democratic environment is resting upon a legitimate government that to some degree is built on the structures of the traditional chiefdoms (Acemoglu et al. 2001a:32-33, Goudie and Neyapti 1999:140, Molutsi 2004:170, Samatar 1997:705).[204] Moreover, political stability has benefited significantly from the sustained high economic growth rates made possible by good governance, high-quality institutions and political stability in general, and good governance of its vast mineral resources in particular (Danevad 1993:150, Goudie and Neyapti 1999:125-29, Modise 1999:95, Omer-Cooper 1994:270-77, Rakner 1996:17-39, Samatar and Oldfield 1995:667, Sillery 1974:180-81). Thus, democracy and development have been mutually beneficial in Botswana (Molutsi 2004:175). However, democracy in Botswana is not without authoritarian features as the same party has been in government since independence (Makgala 2005:303, Van Binsbergen 1995:22-28), and since the human rights conditions for the minority people—San and Bakgalagadi—has frequently been criticized (Hitchcock 2002:822-24, Molutsi 2004:163, Taylor 2003b:283).[205]

If we now view this historical development of democracy and human rights in Botswana in light of the causal combinations outlined at the outset of this case study, we see that the causal conditions linked to the outcomes when present (except for high initial levels of the dependent causal condition) are Economic Growth, Economic Development and Resource Dependence. Needless to say this corresponds well with our earlier discussion of economic conditions. Moreover, it is not controversial to find that the absence of a large Population and Civil War are linked to PIR (as it was for the case of Korea above), since the presence of these causal conditions is argued to have a negative influence on Physical Integrity Rights. When it comes to high Resource Dependence and high Primary Sector FDI Capital Penetration the interpretations become less straightforward. Neither high Resource Dependence nor high Primary Sector FDI Capital Penetration appears to have any direct effect on the levels of PIR and PCR. However, since the economy has benefited from both resource abundance and high FDI penetration in the primary sector (see Section 11.4.2 above), the human rights conditions have also benefited indirectly from this resource

[203] Initially this can be explained by its British colonial heritage (Goudie and Neyapti 1999:125, Omer-Cooper 1994:270-77, Sillery 1974:155-59).

[204] Moreover, ethnicity has—due to good governance—formed a base neither for policies of discrimination and segregation nor for the concentration of power or prestige (Goudie and Neyapti 1999:139, Modise 1999:95, Molutsi 2004:167-69, Samatar 1997:690-93).

[205] The opposition, though, has (aided by the growing income inequalities) increased its electoral support from 20 per cent at independence to 43 per cent in 1999 (African Election Database 2006:Internet, Goudie and Neyapti 1999:143).

abundance and FDI penetration. Thus, there is evidence supporting a positive—albeit indirect—contribution on the human rights' conditions in Botswana from a high Primary Sector FDI Capital Penetration.

12.4.3 Indonesia

Indonesia has in the 1980-2000 period made no progress in what was initially a low level of Physical Integrity Rights. However, the country made some progress with respect to Political & Civil Rights at the end of the period. Thus, Indonesia is only represented in a causal combination linked to the outcomes in the latter of the two human rights dimensions in the fuzzy-set analyses above. The causal combination in question—ipcr*pfdip*stfdip*EG*ed*RD—is unique for Indonesia (see Table 33 above), and the following paragraphs attempt to reveal its causal character as well as the reasons behind Indonesia's nonperformance with respect to PIR.[206]

From the economic growth analyses of Indonesia in Section 11.4.3 above we find that Indonesia was economically successful in the 1980-2000 period. It owed this success largely to political stability and good economic governance in general (Bevan et al. 1999:241-43, Booth 1999:308-16, Jomo and Rock 1998:20-33, McNicoll 2006:12, Ricklefs 1981:272-75), and successful economic diversification in particular (Agrawal 1995:1-5, Akita and Hermawan 2000:282-83, Chalmers and Hadiz 1997:30-32, Jomo and Rock 1998:20-33). This political stability and economic success, though, came at the expense of human rights as both PIR and PCR were systematically undermined throughout the rule of Suharto's New Order (Berger 1997:346-53, Human Rights Watch 1994:136, Ricklefs 1981:273-79, Schwarz 1997:119-28). However, the sustained growth, and the successful economic diversification from an oil-based towards a manufacturing based economy, brought changes in the balance of power between social classes (Dunning 2005:453, Robinson and Rosser 1998:1596-99). Still, a growing middle class remained loyal as long as it benefited from the policies of the New Order, and the business community and the military remained loyal as long as they benefited from their close relations to the state and the Suharto family (Bellin 2000:186-88, Berger 1997:352-53, Cribb and Brown 1995:50-53). However, from the early 1990s this

[206] PCR = ipcr*pfdip*stfdip*EG*ed*RD. That is, high levels of PCR are linked to a low level of initial PCR, low Primary and Secondary and Tertiary Sector FDI Capital Penetration, high Economic Growth, low Economic Development, and high Resource Dependence. This causal combination is represented by Indonesia alone (see Table 33 above).

standstill came to an end as a more progressive, organised and active opposition, as well as escalating economic problems and regional and religious unrest challenged the legitimacy of the ruling regime (Bellin 2000:186-88, Berger 1997:352-53, Cribb and Brown 1995:50-53, Robinson and Rosser 1998:1596-99).[207,208] The New Order under the leadership of Suharto sought with military force to suppress the growing opposition but could not prevent its own collapse, and in 1997 (general election) and 1999 (presidential election) democratic elections were held in Indonesia (Bellin 2000:186-88, Berger 1997:352-53, Cribb and Brown 1995:50-53, Schwarz 1997:124-28).[209]

If we now view this historical development of democracy and human rights in Indonesia in light of the causal combination outlined at the outset of this case study, we see that the causal conditions linked to the outcome when present are Economic Growth and Resource Dependence. Needless to say this corresponds well with what has been discussed as far as growth is concerned. Moreover, the fact that a low level of Economic Development is linked to the outcome only suggests that achievements in human rights can be made despite countries being poor. When it comes to high Resource Dependence and low FDI Capital Penetration in the primary sector as well as in the secondary and tertiary sectors, the interpretations become less straightforward. However, two factors might help us in the interpretation. First, there is no evidence suggesting that the penetration of FDI in Indonesia is bad for human rights.[210] Second, a high FIR in the secondary and tertiary sectors in the 1980-2000 period considered (see Section 11.4.3 above) increased the degree of Secondary and Tertiary Sector FDI Capital Penetration significantly towards the end of the period.[211]

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[207] Indonesia suffered a number of serious economic problems like the lack of efficiency and transparency in both the public and the private sector, the lack of control and regulation of the financial system, and liquidity vulnerability of the private sector, as well as poor corporate governance in general. These problems surfaced in the mid-90s, and peaked with the financial crisis in 1997 (Das 2000:24-25, Lane et al. 1999:9-16, Robinson and Rosser 1998:1596-99).

[208] Separatist movements exist in Aech, Irian Java and East Timor, ethnic unrest exists in West Kalimantan and Bantam and religious unrest exists in Maluku and Eastern Nusatenggara (Cribb and Brown 1995:160-63, Harymurti 1999:70, Schwarz 1997:124-28, Törnquist 2000:409, Wilson 2001:27-28).

[209] This democracy was superficial, however, and the financial crisis erupting in 1997 together with separatist movements, ethnic and religious unrest, the politics of Islam and the politics of the military all threatened to destabilize the democratic transition (Cribb and Brown 1995:153-63, Harymurti 1999:82-83, Törnquist 2000:408-21).

[210] There is, on the contrary, some evidence of positive effects on wages (Harrison and Scorse 2004:28-29).

[211] If the levels of Secondary and Tertiary Sector FDI Capital Penetration seen towards the end of the 1980-2000 period had been the average level, then Indonesia would have been classified as more in than out of the set high Secondary and Tertiary Sector FDI Capital Penetration.

Thus, since the economy has benefited from resource abundance and a high FIR in the secondary and tertiary sectors (see Section 11.4.3 above), so too have the human rights conditions indirectly benefited from this resource abundance and FDI presence. That is, the evidence does not suggest that the absence of FDI Capital Penetration in the secondary and tertiary sectors are causally linked to the outcome. However, since we do not know the effect of the counterfactual high Primary Sector FDI Capital Penetration, the question remains open with respect to the necessity of low FDI penetration in the primary sector. That is, we cannot say whether or not low levels of FDI Capital Penetration contributed to the positive development of human rights, only that this development took place in a context of low levels of FDI Capital Penetration. This apparent ambiguity will be further discussed in Section 12.4.5 below where lessons from all four cases studies are highlighted. As far as the nonperformance of PIR in Indonesia is concerned, the evidence highlights the importance of internal (government policy and regional conflicts) rather that external factors like FDI.

12.4.4 Zambia

Zambia made some progress with respect to Political & Civil Rights in the 1980-2000 period but failed to achieve democratic consolidation. The result was increased authoritarian features towards the end of the period. However, the country made some progress with respect to Physical Integrity Rights. Thus, Zambia is only represented in a causal combination linked to the outcomes in the latter of the two human rights dimensions in the fuzzy-set analyses above. The causal combination in question—ipir*stfdip*eg*ed*pop*RD*cw—suggests that Zambia's high level of Primary Sector FDI Capital Penetration is of no importance. The following paragraphs attempt to reveal the character of this causal combination as well as the reasons behind the nonperformance with respect to PCR.[212]

Although initially liberal in style, by the late 1960s the Zambian government had launched a policy of state-corporatism or African socialism, which brought the nationalisation of bureaucracy and industry (i.e., increased share of Zambian citizens), centralised control, and more independence from white-dominated Southern Africa (Goudie and Neyapti

[212] PIR = ipir*stfdip*eg*ed*pop*RD*cw. That is, high levels of PCR are linked to a low level of initial PIR, low Secondary and Tertiary Sector FDI Capital Penetration, absence of high Economic Growth, low Economic Development, absence of a large Population, high Resource Dependence, and absence of Civil War. This causal combination is shared with Bolivia (see Table 30 above).

1999:101-09, McCulloch et al. 2000:3-4, Roberts 1976:225-31, Wills 1985:391-401). These developments—in combination with a lack of qualified personnel and a dramatic fall in the price of copper—led to economic failure in general, and to inefficiency and widespread corruption and malpractice in both the public and the private sector in particular (all features related to the resource curse – see Section 11.4.4 for a more thorough discussion on the economic failure in Zambia). Increased political, regional, and social conflicts followed, resulting in the construction of the Second Republic (or the one-party state) under the leadership of Kaunda in 1973 (Burnell 2005:126-29, Goudie and Neyapti 1999:95-107, Roberts 1976:225-35, Wills 1985:391-401).[213,214]

However, economic conditions worsened and resulted in indebtedness and a series of failed standby agreements with the IMF/WB (Goudie and Neyapti 1999:112-20). Moreover, labour repression persisted throughout the Second Republic, and the ZCTU (Zambia Congress of Trade Unions)—initially an attempt of the government to centralise the labour movement and to control it within national policy—became the main centre of opposition to UNIP (the government party) (Goudie and Neyapti 1999:109-11). By the late 1980s a growing opposition encompassed business, farmers, students and trade unions as well as fractions within the UNIP (Goudie and Neyapti 1999:107-11, Gyimah-Boadi 2004:100, Simutanyi 1996:825). Kaunda made an effort to increase the legitimacy of the government through a conference on political and economic reform, but he failed and in the end a new constitution was adopted in 1991 introducing the Third Republic under the leadership of President Chiluba and the MMD (Movement for Multi-party Democracy) (Goudie and Neyapti 1999:107, Pletcher 2000:132-33).

The newly elected government of the Third Republic negotiated a new agreement with the IMF and the WB. However, it faced the economic problems of the past and proved to be unsuccessful with respect to growth. Moreover, by repressing the opposition and through questionable electoral practices it proved that—despite a democratic transition—a democratic consolidation was yet to come about (Bartlett 2000:429, Bratton 1999:581-83, Bratton et al. 1999:808, Burnell 2000:2, Feeney 1999:349, Goudie and Neyapti 1999:115-20, Sandbrook 1996:85, White 1995:70-71). Contrasting this history of restricted political and civil rights,

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[213] In the First Republic political conflict stemmed mainly from competition for higher-ranked political and bureaucratic posts rather than historical, ideological or ethnic roots (Goudie and Neyapti 1999:106).

[214] These harmful conditions were further exacerbated by the agricultural inefficiency, the severe repercussions of the first oil shock, and the negative effects of conflicting neighbouring countries in the mid-70s (Goudie and Neyapti 1999:111-16, McCulloch et al. 2000:3-4, Roberts 1976:237-50).

Zambia has experienced a relatively low level of political violence (i.e., relatively high level of PIR). Independence was gained peacefully, and Kaunda—during the First Republic—demonstrated an unwillingness to use political violence. The 1991 peaceful transition to democracy is a testament to the latter (Burnell 2005:126-29). Thus, the restrictions imposed on political and civil rights have—at least not to the same extent—been followed up with violations of physical integrity rights.

If we now view this historical development of democracy and human rights in Zambia in light of the causal combination outlined at the outset of this case study, we see that the only causal conditions linked to the outcome PIR when present is Resource Dependence. Considering also the absence of both high Economic Growth and Economic Development, it seems reasonable to argue that Zambia experienced improvements in the level of PIR *in spite of* and not *because of* its resource dependence and economic failure. Moreover, that the absence of a large Population and Civil War are linked to PIR is uncontroversial—as it was for the case of Korea and Botswana above—since the presence of these causal conditions is argued to have a negative influence on Physical Integrity Rights. When it comes to low Secondary and Tertiary Sector FDI Capital Penetration (and also the high Primary Sector FDI Capital Penetration), the interpretation again becomes a bit more troublesome. However, from the growth analysis of Zambia in Section 11.4.4 above we find that Zambia failed to experience economic growth, despite a high Secondary and Tertiary Sector FIR. Moreover, the growth analysis also indicates that it was not FDI in the influential copper sector *per se*, but rather the partial nationalization and the government exercised control of the foreign mining corporations that that was bad for growth. Thus, FDI Capital Penetration does not appear to have any significant impact on either PIR or PCR in Zambia. Thus, the story of PIR and PCR in Zambia is not a story of FDI, but a story of state failure, and in this respect it is more than remarkable that the country managed to establish and to sustain a nonviolent political culture and experience increased levels of PIR. The following section will draw lessons on the importance of FDI Capital Penetration on host country's human rights' conditions from all the four cases now investigated.

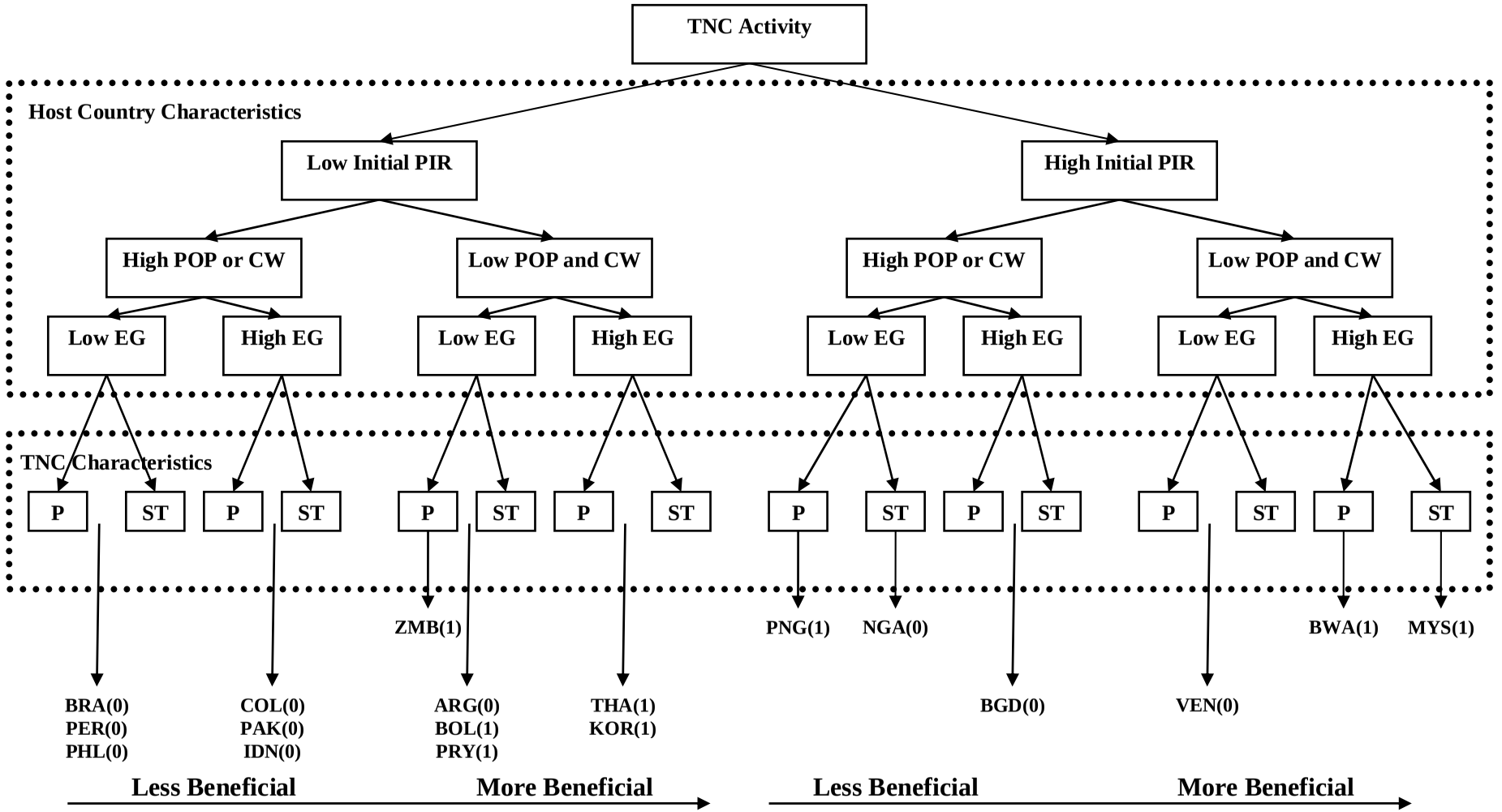
12.5 Fuzzy-Set Methods and Cases Studies: Theory versus Evidence

The fuzzy-set human rights analyses intended—like the statistical analyses above—to test the theoretical framework which suggested that the effect of FDI on economic growth depends conditionally on both TNC and host country characteristics. In general the fuzzy-set relationship between FDI and human rights was found to be less significant than the fuzzy-set relationship between FDI and economic growth (found in Chapter 11 above). In fact, the possibility—raised in the fuzzy-set human rights' analyses above—that FDI Capital Penetration is a superfluous causal condition for both PIR and PCR became plausible after the case studies of the Republic of Korea, Botswana, Indonesia and Zambia. However, the possibility that FDI has a positive impact on host countries human rights' through a positive impact on economic growth, remains open since several of the causal combinations linked to human rights contain Economic Growth and/or Economic Development as a causal condition. The discussion that follows separates between the two human rights dimensions (physical integrity rights and political and civil rights) before some more general comments are made at the end.

In the analyses of the relationship between FDI and physical integrity rights, the fuzzy-set analyses in Tables 30-31 suggest that the FDI penetration composites are redundant. This is because a model that excludes the composites matches the original model in explanatory power (i.e., solution coverage and consistency). The case studies support this fuzzy-set finding, as FDI proved not to be a significant causal condition in any of the four countries analysed. Thus, both the fuzzy-set and the case evidence support the irrelevance of FDI Capital Penetration as far as PIR is concerned. As for the other causal conditions, even the most parsimonious solution of the fuzzy-set PIR analyses is fairly complex. Figure 18 below illustrates this as all the countries in the fuzzy-set analyses are plotted in a chart showing their causal combinations on a human rights beneficial scale, and showing whether or not these causal combination are associated with the presence of high PIR.[215] The figure distinguishes—as seen from the top of the chart—between keeping a high initial level of PIR and developing from a lower to a higher level of PIR. Two facts stand out. First, four out of five countries associated with the presence of high FDI Capital Penetration (primary or

[215] In the figure P and ST denote Primary Sector and Secondary and Tertiary Sector FIR respectively. Countries denoted (1) are "more in than out of the set" Physical Integrity Rights, while countries denoted (0) are "more out of than in the set" Physical Integrity Rights. Also, countries where the arrow starts off between P and ST are coded "more out of than in the set" for both Primary Sector FIR and Secondary and Tertiary Sector FIR.

Figure 18: Modified Model of the Conditional Benefits of the Activity of TNCs on Host Countries' Physical Integrity Rights

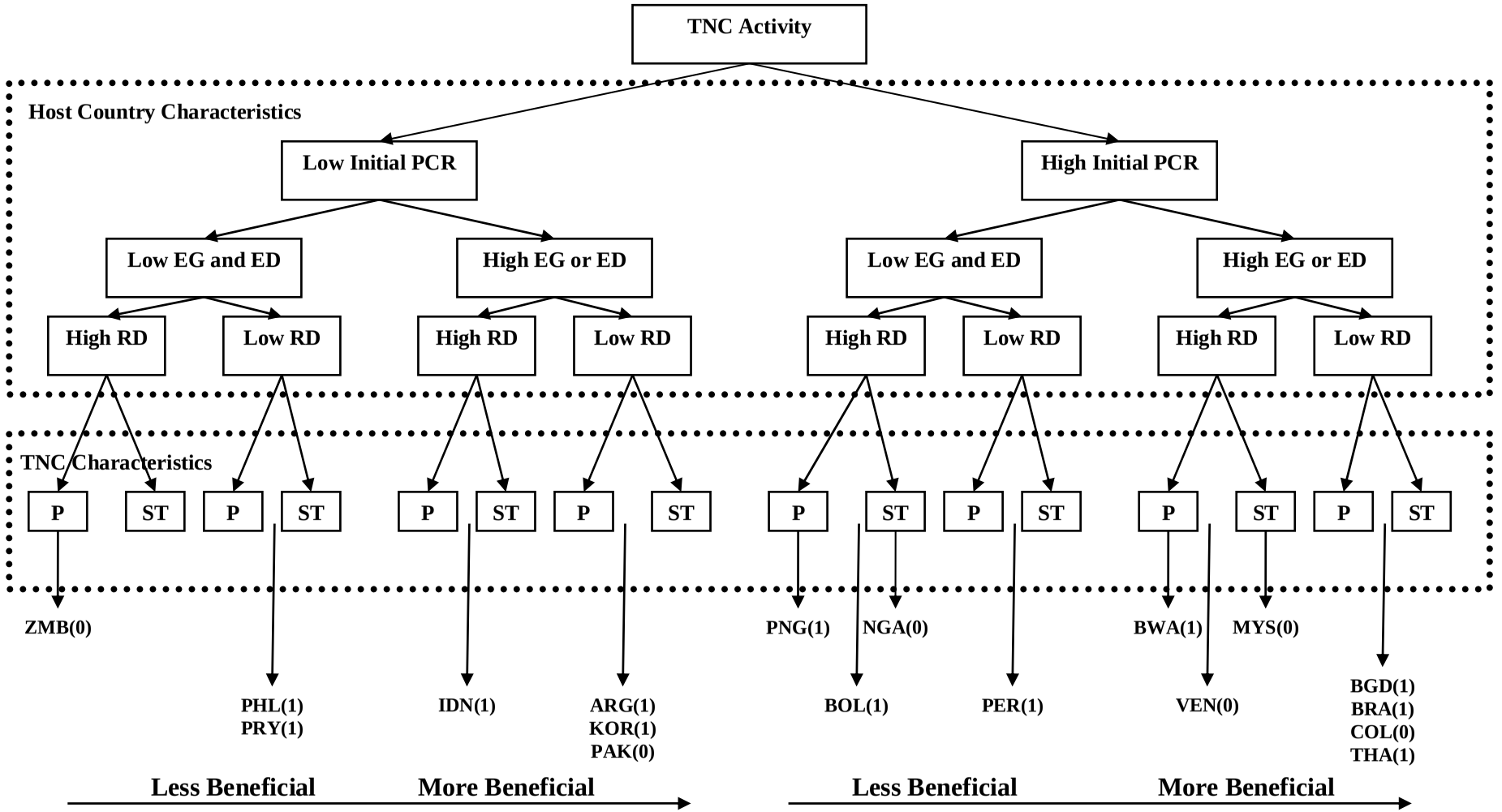


secondary and tertiary), are also associated with high PIR. This, of course, contradicts the argument that a high level of FDI penetration has a negative effect on a host country's human rights' conditions. (Keep in mind, of course, that a high level of Primary Sector FDI Capital Penetration is argued to have no significant impact on the level of PIR in Botswana and Zambia). Second, the figure also illustrates the combined importance of—but still the insufficiency of—large Population and Civil War, since eight out of nine countries where at least one of these causal conditions are present are also associated with low PIR, and since seven out of nine countries where these causal conditions are absent are also associated with high PIR.

In the analyses of the relationship between FDI and Political & Civil Rights the fuzzy-set analyses in Tables 33 initially suggest that a low Secondary and Tertiary Sector FDI Capital Penetration is a necessary causal condition with respect to PCR. However, only two out of eighteen countries are coded with a high Secondary and Tertiary Sector FDI Capital Penetration. The indicated necessity might, therefore, be trivial since almost all countries share this specific characteristic. Moreover, FDI penetration proved not to be a significant causal condition in any of the four countries analysed (in spite of the high Primary Sector FDI Capital Penetration seen in Zambia and Botswana, and the low Secondary and Tertiary Sector FDI Capital Penetration seen in all four case studies). Thus, the evidence from the case studies support an argument about the insignificance (or triviality) of FDI Capital Penetration as far as PCR is concerned. As for the other causal conditions, the solution of the fuzzy-set PIR analyses is as complex as for the PIR analyses above. Figure 19 below illustrates this, as all the countries in the fuzzy-set analyses are plotted in a chart showing their causal combination on a human rights beneficial scale, and show whether or not these causal combination are associated with the presence of high PIR.[216] The figure distinguishes—as seen from the top of the chart—between keeping a high initial level of PIR developing from a lower to a higher level of PIR. The agued complexity is illustrated by the fact that there are countries supporting as well as countries contradicting the necessity of Economic Growth, Economic Development and Resource Dependence as far as PCR is concerned (e.g., only four out of eight Resource Dependent countries are associated with a low level of PIR).

[216] In the figure P and ST denote Primary Sector and Secondary and Tertiary Sector FIR respectively. Countries denoted (1) are "more in than out of the set" Physical Integrity Rights, while countries denoted (0) are "more out of than in the set" Physical Integrity Rights. Also, countries where the arrow starts off between P and ST are coded "more out of than in the set" for both Primary Sector FIR and Secondary and Tertiary Sector FIR.

Figure 19: Modified Model of the Conditional Benefits of the Activity of TNCs on Host Countries' Political & Civil Rights



All in all, then, the fuzzy-set and case study analyses of the relationship between FDI and human rights (PIR and PCR) indicate that the former has no significant direct impact on the latter. However, although it appears like FDI has no direct influence on human rights, the evidence does not exclude the possibility of a positive indirect effect through economic development. The human rights' case studies revealed that high Economic Growth and high levels of Economic Development were contributing positively to the relatively high levels of PIR and PCR seen in the Republic of Korea and Botswana, while Economic Growth contributed positively to the relatively high levels of PCR seen in Indonesia. Moreover, Figures 15-16 above also suggest that the level of Economic Growth and/or Economically Developed is positively associated with higher levels of PIR and/or PCR for a number of other countries. However, as the case study of Indonesia and, e.g., the countries Venezuela (VEN) and Pakistan (PAK) in Figures 18-19 indicate, high levels of Economic Development (Venezuela) or high Economic Growth (Indonesia and Pakistan) are not sufficient causal conditions either for PIR or for PCR. Moreover, the case studies and the fuzzy-set analyses (illustrated in Figures 18 and 19) also illustrate another important point worth mentioning at the end: There is more than one route to higher (or lower) levels of PIR and PCR. For instance, Zambia managed to develop from a lower to a higher level of PIR in spite of economic failure and resource dependence, while Colombia experienced a fall from a high to a low level of PCR in spite of relatively high levels of Economic Growth and low levels of Resource Dependence.

Before we turn to the concluding part of the thesis it may be wise to restate the caveats highlighted in the fuzzy-set economic growth analyses mentioned in Section 11.5 above. First, although data on the composition of FDI are available for selected years for all countries included in the fuzzy-set analyses, data for the entire 1980-2000 period are harder to come by. For the countries with low data, frequency estimations are made based on other sources (see Appendix C2). This, of course, is not an ideal situation, but is considered adequate since these values only are used to help code countries as "in the set" or "out of the set" high FDI Capital Penetration. It is not whether the values are based on raw data or estimates that matters, all that is needed is a good approximation. Second, when the number of cases is as low as it is here, all causal combinations linked to the outcome in the truth tables are considered equally relevant. Thus, in spite of their unequal representation in the empirical data, a causal combination only represented by a single country can eliminate potentially important causal conditions from a causal combination represented by several countries in the empirical data. This does not appear to be the case here, though, since it proved difficult to

simplify the initial complex causal combinations with Boolean algebra. Third, a causal combination linked to the outcome is rarely 100 percent consistent. Thus, some countries might be part of a causal combination but are nevertheless not linked to the outcome in question (e.g., Colombia).[217]

[217] From Table 33 we find that Bangladesh, Colombia, Peru, and Thailand are strongly linked to the outcome PCR through their membership in the causal combination iPCR*pfdip*stfdip*ed*rd. However, this causal combination is not 100 percent consistent, in part because Colombia is not linked to the outcome.

PART III

Summary and Concluding Comments

13 Summary and Concluding Comments

This thesis is motivated by what has been argued to be the increased power of the transnational corporation (TNC) in a globalised world. How does the free market's superior agent, the TNC, affect economic development and human rights' conditions in the developing world? A thorough theoretical, methodological, and empirical evaluation has now been carried out, and the following chapter provides a short account of this enterprise.

13.1 Theoretical and Methodological Origin

For decades, researchers have been divided in their view on how the activity of transnational corporations (TNCs) affect the developing world. This thesis, however, expands on an emerging tradition that highlights the importance of context and conditionality, and argues that both methodological and theoretical issues can help bridge the gap between seemingly contradictory research traditions. In a Lakatosian sense, both camps are parts of distinct research programs, and the positive findings of the pro-TNC view need not come at the expense of the negative findings of the anti-TNC view. That is, ambiguous findings might be the result of different aspects of the theory being tested, or different units of analysis being applied. Both research programs might, therefore, be rejected at the protective belt (i.e., the assumptions and the hypotheses)—while only being weakened at the hard core (i.e., the basic axioms) (Lakatos 1978:47-73). In this perspective, a theory on the relationship between TNC activity, economic development and human rights has to account for both the findings of the pro-TNC and the anti-TNC proponents. Thus, the theoretical framework developed in Part I is a synthesis of divided theoretical traditions from the past, and the bridging element is—as mentioned—the emphasis on context and conditionality.

More specifically, this thesis argues that TNC activity in developing countries are depends upon both TNC and host country characteristics.[218] TNC characteristics matter—on the one hand—since corporations engaged in the primary sector have fewer potential spill-over effects than corporations engaged in secondary or tertiary sector activity. The greater potential contribution from investments in the secondary and tertiary sector lies in the TNC's ability to promote know-how and technological upgrading in the host countries through

[218] See chapter 4 for the complete—more detailed and nuanced—version of the theoretical framework.

(backward and forward) linkages to the local economy (in addition to providing jobs and capital). *Ceteris paribus*, the more advanced TNC technology applied, the greater the potential for spill-over effects. Moreover, a limited number of natural resource sites makes development-blocking alliances between TNCs (in need of resources) and the host country government (in need of capital) more likely when TNCs are engaged in the primary sector. Host country characteristics—on the other hand—are important since the more economically advanced a host country is—and the higher the institutional quality and the level of human capital—the more benefits it is likely to harvest from the presence of foreign corporations. The potential positive effects of these host country characteristics might, however, be counteracted by the resource curse, where countries "blessed" with an abundance of natural resources are often "cursed" with the failure to develop economically, and/or in terms of human rights.

Figure 2 (copied from section 4.2.1): Simplified Model of the Relationship between the TNC, Economic Development, and Human Rights

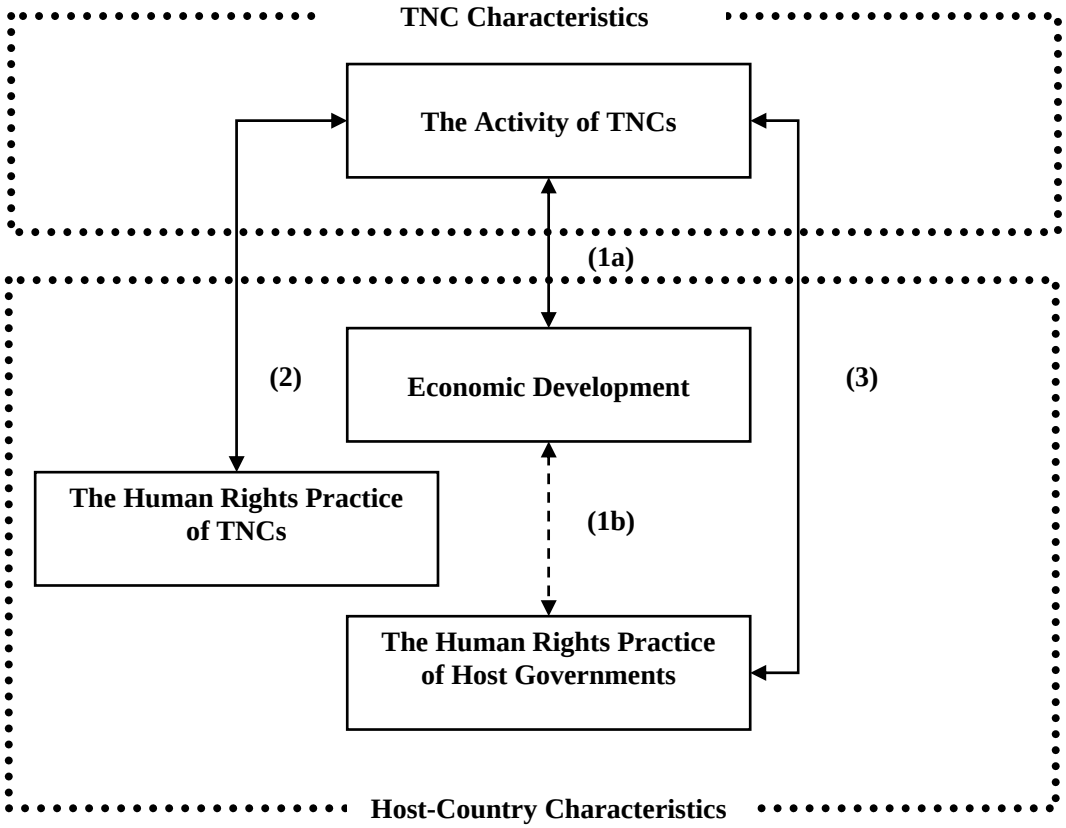


Figure "2" above illustrates this conditionality in a schematic form. Here TNC activity affects a host country's level of human rights through its own human rights practices (2) and through their interaction with the host country government (3). Most importantly, however, is the indirect influence on host countries human rights conditions exerted through economic development (1a and 1b). The latter builds on the economic development thesis, which states that economic development is conducive to democracy (and hence human rights) since economic development transforms a society's balance of class power. Thus, the more developed a host country is economically, institutionally, and in terms of human capital, the more likely it is to benefit economically from the presence of transnational corporations and the more likely it is to develop and sustain general values that support human rights. Since the most important effects on human rights are long-term—and go through the potential economic benefits of FDI—it is expected that the relationship between FDI and economic growth is stronger than that between FDI and human rights.

13.2 Research Design

Ideally, a research project should be designed to investigate all three links denoted in Figure 2 above. However, to investigate whether the effect of FDI—on the economy and human rights' conditions on the investment site or in the local community in which the TNC operates—is positive or not, becomes problematic when there is no recognized statistical indicator for rating these. Qualitative reports where TNCs are accused of human rights' abuses are not hard to come by, but hard numbers are. Thus, these direct effects cannot be investigated statistically. They could, though, be tested by way of one or more TNC case studies. Due to the complexity of the theoretical argument, however, such a design would need to incorporate many different cases and would easily become overwhelming. This is especially true when the research project is concomitantly engaged with more general effects (see 1a, 1b, and 3 in Figure 2). Whether one starts off by analyzing local community effects or the more general effect is, however, only a matter of taste, and does not reflect the degree of importance. This thesis, however, concentrated on the more general effects.

Thus, this thesis sought to answer the following questions: First, is the effect of FDI on the host-country economy (see (1a) in Figure 2) and the host country's general conditions of human rights (see (1b) and (3) in Figure 2) positive? Second, do the answers to the first question depend on the host country's level of development: economic, institutional and/or

human capital wise? Third, do the answers to the first question depend on the host country's degree of natural resource dependence? Fourth, do the answers to the first question depend on whether or not the investments are made in the primary sector?

Historically both pro-TNC and anti-TNC studies have been known to highlight only the virtuous or vicious consequences, and both of their favoured research tools—statistical analysis and cases studies—need to be carefully designed to account for the apparent ambiguity of the relationship in question. A combined methods strategy therefore seemed appropriate. While a simple combination of methods is increasingly argued to be the appropriate choice of research strategy, this will not necessarily do. A comparative research design needs to ensure the appropriate use of control groups, while a statistical design needs to address causal complexity (e.g., interactions). The risk that a combined methods strategy could result in two irreconcilable conclusions can be downplayed in the Lakatosian perspective adopted here: findings that are intuitively contradictory might prove to be complementary when based on different levels of analysis and/or different proxies. This is because they might have tested different context specific parts of the argument under scrutiny (see Lakatos 1978:68-73).

As a consequence, this thesis combines statistical methods, fuzzy-set methods and comparative case studies. Initially the research questions were answered by applying statistical tools on a larger set of quantitative data. Separate analyses of the effects of FDI on host country economic growth and levels of human rights were performed. Moreover, in the economic growth analysis it is important to recognize that both the speed of FDI growth and the depth of FDI penetration in the local economy matters, while only the latter is of theoretical importance in the human rights analysis. Overall FDI, FDI broken down at industry level, and FDI in interaction with some host country characteristics, are all tested. The number of observations in the analyses testing the effects of FDI broken down at industry level is, however, very low. For this reason, a more appropriate comparative method—fuzzy-sets—was also used to test these industry-level FDI data. A fuzzy-set approach has the advantage of allowing for multiple causal combinations, which makes it particularly well-suited to handle the complex theoretical framework adopted here (Ragin 2000:203-308). The fuzzy-set method—in addition to testing industry-level FDI data—also served as a test of the robustness in the other findings obtained from the more conventional statistical analyses. However, neither the statistical nor the fuzzy-set analyses are trusted to uncover causality. To unravel the true nature of causality, four carefully selected comparative case studies were

performed on the causal combinations suggested by the fuzzy sets analyses (the Republic of Korean, Botswana, Indonesian, and Zambian cases are reality checks more than in-depth case studies).

13.3 Research Findings

This discussion is divided according to the three central dimension in the relationship between FDI, economic development and human rights as illustrated in Figure 2: The two direct relationships (FDI and economic growth, and FDI and human rights); and the indirect relationship (FDI, economic development and human rights). This discussion is followed by some important caveats, before some final comments are made with respect to policy implications and future research.

13.3.1 FDI and Economic Growth

Based on the theoretical framework outlined in Chapter 4, the link between FDI and the host countries economic growth is expected to be positive as far as the speed of FDI growth (the foreign investment rate, or FIR for short) is concerned. As far as FDI penetration is concerned, the expected effect is a bit more ambiguous—as anti-TNC theorists argue that a high penetration of FDI in the local economy inhibits economic growth. Overall, the statistical, the fuzzy-set and the case study analyses suggest that FDI penetration is most likely a superfluous causal condition, and that the rate of foreign investment in the secondary and tertiary sectors is positively, significantly and causally associated with economic growth. However, while the statistical analyses suggest that FIR is more productive than the rate of domestic investment (DIR), the fussy-set and case study analyses suggest that DIR, nevertheless, is of more fundamental importance. The following paragraphs briefly review these findings.

There is strong evidence in the statistical analyses supporting an argument—held by pro- and anti-TNC theorists alike—that the growth of FDI (FDI Investment Rate or FIR for short) is positively associated with economic growth (see Chapter 7 for details). However, there is no evidence in the statistical analyses to suggest—as anti-TNC theorists argue—that FDI penetration is negatively associated with economic growth. On the contrary, there is some evidence (although not robust) suggesting that FDI penetration is positively associated

with economic growth. Thus, even if a high FIR leads to a higher share of FDI in the local economy, this most likely has insignificant or positive effects. Moreover, the statistical analyses suggest that foreign capital in developing countries outperforms its domestic counterpart—as far as FIR is concerned—by a factor of 1.6 (dollar for dollar). However, further analyses revealed that the positive association between growth of FDI (or FIR) and economic growth is driven by investments in the secondary and tertiary sectors. This is because primary sector FIR is insignificantly associated with growth, while secondary and tertiary sector FIR display a robust positive and significant association to the dependent variable.

The fuzzy-set analyses and country case studies confirm the insignificance or redundancy of FDI capital penetration as far as explaining high economic growth is concerned (see Chapter 11 for details). Moreover, the same analyses also confirm the primacy of secondary and tertiary sector FIR over primary sector FIR. This is because a low (never a high) rate of foreign investment in the primary sector is often (3 out of 4 causal combinations) linked to the high economic growth outcome, while a high (never a low) rate of foreign investment in the secondary and tertiary sectors is often (3 out of 4 causal combinations) linked to the same outcome. Moreover, the four case studies suggest that a low primary sector FIR is a redundant causal condition, while a high secondary and tertiary sector FIR in Korea and Indonesia is causally and positively associated with economic growth. The latter association, however, is weak and is only found in the presence of good governance, as represented by a high rate of domestic investment, high levels of institutional quality and/or human capital. Furthermore, the fuzzy-set analyses question the primacy of FIR over DIR (domestic investment rate). This is because a high DIR was found to be conducive to economic growth in all causal combinations linked to the outcome, and in all three cases of high economic growth in the case studies. Moreover, a high DIR was found to be lacking in the one case (Zambia) that did not experience economic growth. Thus, a high DIR is seen as a necessary causal condition. However, a high DIR is not a sufficient causal condition since it cannot predict high economic growth (independent of other causal conditions). It is not necessarily a contradiction that the fuzzy-set and case study analyses find DIR to be of more importance than FIR while the statistical analyses. A plausible explanation—here indicated—can be that FIR in the secondary and tertiary sector is more productive than the domestic investment rate only as long as the context is benign, i.e., in the presence of a high domestic investment rate, and high levels of institutional quality and/or human capital.

The statistical analyses also confirm the importance of host country characteristics, as there is some evidence (although not robust) suggesting that the positive association between growth of FDI (or FIR) and economic growth is more positive the higher the level of human capital.[219] There is also some more robust evidence suggesting that the association in question is less positive (although never negative) the more dependent host countries are on fuel resources (mostly oil). In addition, there is some evidence suggesting that FDI penetration at the industry level is dependent on important host-country characteristics. This is because the association between economic growth and secondary and tertiary sector FDI penetration is decreasingly positive (although not likely negative), the lower the initial economic standing. At some level, therefore, the growth of FDI and/or FDI penetration depends on both the host country's level of development and its level of natural resource dependence. Note also that, although the positive associations in question might be less positive in certain contexts, the available evidence never support the anti-TNC view of a negative association between FDI penetration and economic growth. The fuzzy-set and case study analyses confirm the importance of host country characteristics. This is because a high investment rate in the secondary and tertiary sectors is causally associated with high economic growth only in the presence of a high rate of domestic investment (often combined with high levels of institutional quality and/or human capital). The case of Indonesia show that a high rate of investment in the secondary and tertiary sector can be associated with high economic growth even in presence of high resource dependence (when combined with a high rate of domestic investment and high levels of human capital). More generally, the fuzzy set analyses indicate that a high level of resource dependence is only positive for growth if the revenues are managed properly. In this perspective a high level of resource dependence needs to be combined with a high rate of domestic investment (DIR) and high levels of Institutional Quality and/or Human Capital. Even under these conditions, however, resource dependence has some negative effects on efficiency and corruption in the state institutions (as seen in Indonesia) and/or on the need of the government to initiate economic diversification (as seen in Botswana). Moreover, the fuzz-set analyses also indicate that a high rate of investment in the primary sector is never associated with high economic growth (neither in the presence or absence of high resource dependence).

[219] This is only supported in the replication of de Soysa (2003) in Section 7.5.1, but not in the main analysis in Section 7.5.4.

13.3.2 FDI and Human Rights

The effects of FDI on two distinct dimensions of human rights have been tested: physical integrity rights (PIR) and political and civil rights (PCR). In other words, we have examined whether FDI—on the one hand—is associated with more or less repression, and whether it—on the other hand—is associated with more or less political and civil freedom. Based on the theoretical framework the link between FDI and the host government human rights' performance is expected to be weaker than the link between FDI and economic growth. This is because the main positive effect of FDI on human rights is argued to work indirectly through economic development, and these FDI-growth effects might take decades before they manifest themselves in human rights improvements. Some direct effects are, nevertheless, expected by those who highlight the negative effects of TNC activity. This is because a large penetration of FDI (particularly in the primary sector) signifies development-blocking alliances between the TNCs and the host country elites, where the large FDI revenues are used to repress the physical, political and civil rights of the opposition (see Section 3.2 for further details). Overall the findings from the statistical, fuzzy-set, and case study analyses suggest that FDI has no significantly direct effects on human rights (i.e., FDI penetration is a redundant causal condition). There is, however, some evidence in the statistical analyses that both contradict and support an argument about the negative effects of TNCs on human rights. The following paragraphs briefly review these findings.

Many of the tests performed in the statistical analyses produced findings that lack both significance and robustness (see Chapter 7 for details). This confirms the theoretical expectations of the above-mentioned weaker link. At the most aggregate level there is, however, evidence supporting an argument that FDI penetration in developing countries is positively associated with PIR, while no significant association is found to exist between FDI penetration and PCR. These findings contradict the argument of those who hold that FDI penetration has a negative effect on human rights, while they partly support the argument of positive effects. In the Lakatosian perspective some differences in the findings for the two human rights' dimensions are not to be regarded as contradictory, since different findings for different aspects of the theory are to be expected. Moreover, at the industrial level—separating between primary sector FDI and secondary and tertiary sector FDI—no robust significant association is found to exist for either PIR or PCR. The findings obtained from the fuzzy-set and case study analyses suggest that FDI penetration (both in the primary sector and

in the secondary and tertiary sectors) is a superfluous causal condition with respect to human rights (both physical integrity rights and political and civil rights). Moreover, the case studies of Botswana and Zambia suggest that FDI is not causally related to human rights even though a high level of FDI penetration in the primary sector is associated with high levels of physical integrity rights (PIR). This finding also suggests that the positive association between FDI penetration and PIR in developing countries found in the statistical analyses is not necessarily causal.

As far as the importance of host-country characteristics is concerned, neither the association between FDI penetration and PIR, nor the association between FDI penetration and PCR are—in general—conditional on the host country's general development characteristics or degree of resource dependence. This holds for the statistical, the fuzzy-set, and the case study analyses alike. This, of course, does not suggest that these host country characteristics are not important determinants of a host country's human rights conditions. It only suggests that FDI is superfluous (independent of these host country characteristics). One exception is found in the statistical analyses, where there is some evidence suggesting that the association between FDI penetration in the secondary and tertiary sectors and political and civil rights (PCR) is more positive (or less negative) the richer the host countries are. Although this finding suggests that the effects of FDI are negative for poorer countries, this only holds for Nigeria in the sample analyzed here. Support for the anti-TNC view—which argues that dependence of FDI leads to repression of political and civil rights—is, therefore, very limited. Note also that the latter significant finding is dependent on how development is defined.[220]

13.3.3 FDI, Economic Development, and Human Rights

Having discussed the direct effects of FDI on economic growth and human rights, this section focuses on the indirect relationship between FDI and human rights through economic development. There is, in this respect, a difference between the expected short-term and long-term effects of FDI. If FDI—on the one hand—generates growth in the short run, this growth might or might not be conducive to human rights. However, if FDI—on the other hand—generates long-run economic development, then this economic development will most likely

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[220] It only holds for economic development, not for institutional development or development of human capital. On the other hand it holds for fuel resource dependence but not for non-fuel resource dependence.

be conducive to human rights (hence, the economic development–democracy thesis). The statistical, the fuzzy-set, and the case study analyses all suggest that this latter indirect relationship is a possibility. That is, although it is plausible that a high rate of foreign investment in the secondary and tertiary sectors has a positive effect on economic growth, it is not certain that this positive effect on economic growth will lead to higher levels of human rights. The following paragraphs briefly review these findings.

As the discussion of FDI and economic growth above revealed, the statistical, the fuzzy-set, and the case study analyses all strongly suggest that a high rate of foreign investment in the secondary and tertiary sectors is positively, significantly and causally associated with economic growth. However, this association in the fuzzy-set and case study analyses presupposes a high rate of domestic investment, and high levels of institutional quality and/or human capital. The first link in the indirect causal relationship is, nevertheless, supported. The second link—from economic growth to human rights—is, however, more ambiguous. In the statistical analyses no significant association is found to exist between economic growth and the two human rights' dimensions, while a significant and positive association is found between the level of economic development (or economic standing) and both dimensions of human rights. Thus, the statistical analyses tend to provide support for the second link, but only as far as FDI spurs a growth that over time leads host countries to a higher level of economic development.

In the fuzzy-set and case study analyses this latter positive finding is partly supported. Partly, as high economic growth and high levels of economic development are parts of some of the causal combinations linked to high levels of human rights (both PIR and PCR), but always so in combination with other causal conditions. Moreover, when present, the human rights' case studies reveal that high economic growth and high levels of economic development were contributing positively to the relatively high levels of human rights (PIR and PCR) seen in the Republic of Korea and Botswana, while economic growth contributed positively to the relatively high levels of political and civil rights seen in Indonesia. However, as, the case study of Indonesia and, e.g., the countries Venezuela and Pakistan indicate (see Figures 15-16 above), high levels of economic development (Venezuela) or high economic growth (Indonesia and Pakistan) are sufficient causal conditions neither for PIR nor for PCR. All in all, then, the fuzzy-set and case study analyses suggest that a positive effect of FDI on economic growth is not necessarily transformed to a positive effect on human rights.

13.3.4 Contributions Made to the Literature and Some Caveats

Generally speaking, therefore, the key argument made in this thesis is supported by the analyses. That is, FDI *can* help generate economic growth (a growth that will increase the country's economic standing over the long run), and this potential positive influence on the level of economic development *can* again have a positive influence on a host country's level of human rights. The emphasis here is on *can* and not *will*, since the effect will depend on both TNC characteristics—like the composition of FDI—and on host country characteristics—like the general level of development and the degree of resource dependence.

Previous literature on the subject has focused either on FDI and economic growth or on FDI and human rights, and have generally been less focused on conditionality. The main contributions of this thesis are, therefore, the holistic approach and the strong theoretical and empirical emphasis on conditionality. The thesis is also more methodological sophisticated than the average publication, since it combines statistical analyses (tested for estimator sensitivity) with fuzzy-set methods and cases studies. Few of the findings outlined above are directly comparable to previous findings in the literature. However, a replication of de Soysa's (2003) analysis of FDI and economic growth confirmed that the foreign investment rate is positively and significantly associated with economic growth. Beyond this replication a general conclusion would be that the effects of FDI on both host countries economic growth and their human rights conditions are positive, provided a benign context. In spite of this conditionality, there is little evidence suggesting that FDI has a negative effect on either economic growth or human rights. In fact the case studies of Republic of Korea, Botswana, Indonesia, and Zambia suggest that investments in the primary sector are insignificantly associated with both economic growth and human rights. This applies irrespective of whether FDI is proxied as an investment rate or level of penetration, and irrespective of whether FDI is made in the primary or in the secondary and tertiary sectors.

We might, nevertheless, speak of vicious (or less virtuous) and virtuous (or more virtuous) development circles as far as the relationship between TNCs, economic development, and human rights is concerned. Vicious—or less virtuous—circles are likely to be present if TNC investment are made in the primary sector in host countries with high levels of natural resource dependence and low levels of development (economic, institutional and/or human capital wise). Virtuous—or more virtuous—circles, on the other hand, are likely to be present if TNC investments are made in the secondary or tertiary sectors in host countries with low levels of natural resource dependence and high levels of development (economic,

institutional and/or human capital wise). Moreover, as the Korean, Botswana, Indonesian, and Zambian case studies suggest, a high rate of foreign investment in the secondary and tertiary sectors might—in a benign context—have positive effects on productivity and economic diversification. One intuitively contradictory finding in the statistical and fuzzy-set analyses, though, is of particular interest before the policy implications are discussed below. That is, the fuzzy-set and case study analyses find DIR to be of more importance than FIR (or more precisely secondary and tertiary sector FIR), while the statistical analyses—productivity-wise—suggests the opposite. One plausible explanation for this ambiguity is that FIR in the secondary and tertiary sector is more productive than the domestic investment rate, only as long as the context is benign. That is, in the presence of a high domestic investment rate, and high levels of institutional quality and/or human capital.

These findings necessarily come with some caveats attached. Although these are discussed under the respective analyses, two are so important that their repetition is warranted. First, the low number of observations in the statistical FDI-composition analyses makes the findings—at least to some extent—sensitive to outliers and model specifications. Applying the methods of fuzzy-sets to the same set of countries, of course, serves as a validity check (similar findings), but these analyses are also sensitive to the small-N since minimization by way of Boolean algebra becomes more difficult when the diversity in the causal combinations is limited. Second, although data on the composition of FDI are available for selected years for all countries included in the fuzzy-set analyses, data for the entire 1980-2000 period are harder to come by. For countries with low data frequency, estimations are made based on other sources (see Appendix C2). This, of course, is not an ideal situation, but is considered adequate since these values are only used to help code countries as "in the set" or "out of the set" high FDI Capital Penetration and high FIR. It is not whether the values are based on raw data or estimates that matters, all that is needed is a good approximation. These caveats are, necessarily, also a topic of discussion when policy implications and future research are discussed.

13.4 Policy Implications and Future Research

These analyses address the effects of FDI on a host country's general levels of economic growth and human rights, and they do not address the effects of FDI on economic growth and human rights at the sites of TNC operation. The policy implications should, of course, be viewed in light of this limitation.

The findings outlined in this thesis are based on reasonably representative samples of developing countries, and the policy implications—taking the findings in this thesis as a given—are fairly straightforward. FDI in the secondary and tertiary sectors should be encouraged insofar as the context is benign. That is, insofar as the host country is characterised by high rates of domestic investments, high institutional quality, and high levels of human capital. A high degree of resource dependence is not harmful in this benign context. Should the host country lack any of these characteristics then policies should address these shortcomings. This, of course, is a long-term project while the effects of FDI on economic growth (and to a certain degree human rights) are more immediate. However, there is little indication of any negative effects of FDI on either economic growth or human rights. Thus, general policies directed at restricting FDI in a period of structural adjustment do not to be warranted. Still, the relativistic character of the findings suggests that each country is unique, and that investment-regime policies should be tailored to the country in question. The latter position is strengthened by the fact that these analyses do not address the effects of FDI on economic growth and human rights at the sites of TNC operation. Moreover, this relativistic position is also strengthened by the limitations imposed by these analyses by the lack in both quantity and quality of data on the composition of FDI (i.e., at the industry level).

Thus, many avenues for future research stand out. Here I would like to highlight three which I consider of particular importance. First, local effects of FDI at the site of TNC operation would complement the analyses of the more general effects performed here. Second, focus should be given to improving both the quantity and the quality of the FDI-composition data. Finally, the conditional character of the findings suggests that even more refined conditionality can be present. For instance, are the effects of secondary sector FDI any different from tertiary sector FDI, or are the effects of capital intensive FDI any different from labour intensive FDI? The driving question should always be in which context is FDI benign and in which is it malign?

Appendix A Descriptive Information for Variables and Data

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
Countries Included		
Large sample: 84 countries in economic growth analysis 81 countries in human rights analysis (countries denoted in bold are not included)		These countries—as well as the time span—were chosen based on indicators being available for the dependent variables, for FDI and DI, and for the institutional indicators. There were basically two reasons for the limited amount of countries. The first—as mentioned above—that information were lacking on key variables, and the second that countries for reasons of isolation, war or onset of independence lack these data for a significant period of time. 84c: Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Bolivia, **Botswana**, Brazil, Cameroon, Canada, Chile, China, Colombia, Congo Rep., Costa Rica, Cote d'Ivoire, Denmark, Dominican Republic, Ecuador, Egypt Arab Rep., El Salvador, Finland, France, Gambia The, Germany, Ghana, Greece, Guatemala, **Guyana**, Haiti, Honduras, Iceland, India, Indonesia, Israel, Italy, Jamaica, Japan, Kenya, Korea Rep., Kuwait, Madagascar, Malawi, Malaysia, Mali, Mexico, Morocco, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Papua New Guinea, Paraguay, Peru, Philippines, Portugal, Saudi Arabia, Senegal, Singapore, South Africa, Spain, Sri Lanka, **Sudan**, Sweden, Switzerland, Syrian Arab Republic, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Uganda, United Arab Emirates, United Kingdom, United States, Uruguay, Venezuela, Zambia, and Zimbabwe
Small sample: 29 countries		The data on FDI broken down by industry (i.e., primary, secondary, and tertiary investments) are only available for a limited number of countries. Data on 54 countries were made available on request from UNCTAD (2004b). These data were further limited for reasons described in the large sample description immediately above, and in the end data for 29 countries were included in the analysis. Argentina, Australia, Austria, Bangladesh, Bolivia, Brazil, Canada, Colombia, Denmark, France, Germany, Iceland, Indonesia, Italia, Malaysia, Netherlands, Nigeria, Norway, Pakistan, Papua New Guinea, Paraguay, Peru, Philippines, Portugal, Korea Rep., Thailand, United Kingdom, USA, and Venezuela

[221] Some of the variables listed are not used explicitly in the statistical analysis. These variables have, however, been included among the rest to construct the multiple data sets applied. This is according to recommendations made to increase efficiency of MI algorithms (Honaker et al. 2003).

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
Dependent Variables		
Physical Integrity Rights Scale [0-8]	physint	Physical integrity rights from the CIRI human rights database by Cingranelli and Richards (2005). Coded based on country reports from Amnesty International and US State Department. This is an index obtained by adding the 4 independently coded indicators: Torture, Extrajudicial Killing, Political Imprisonment and Disappearance. It ranges from 0 (no government respect for these four rights) to 8 (full government respect for these four rights) See manual for more detailed information on the coding (Cingranelli and Richards 2005).
Political Terror Scale Scale [1-5]	invptsai & invptsus	The Political Terror Scale by Gibney (2005b) consists of two independently coded variables based on Amnesty International and US State Department reports respectively. The original coding for these indicators are here inverted so that a high value signals good human rights practices. This makes them more comparable to the physical integrity rights measure from the CIRI database above. Rather than coding Torture, Extrajudicial Killing, Political Imprisonment and Disappearance separately the Political Terror Scale constructs a combined measure (see manual for more detailed information on the coding (Gibney 2005a)). Values missing based on Amnesty International reports are replaced with values based on US State Department values where available and visa versa (following Poe et al. 1999). The indicators ranges from 1 (no government respect for these four rights) to 5 (full government respect for these four rights). The correlations with the proxy CIRI based proxy for physical integrity rights are 0.82 and 0.83 for the Amnesty and State Department based measures respectively.
Political & Civil Rights Scale [2-14]	invprcl	The political & civil rights variable is a combined variable based on data on Political Rights and Civil Liberties from Freedom House (2004), and is included as an alternative proxy for human rights. The ratings process for the political rights variable is based on a checklist of 10 political rights questions grouped into the three subcategories: Electoral Process (3 questions), Political Pluralism and Participation (4), and Functioning of Government (3). The ratings process for Civil Liberties is based on a checklist of 15 civil liberties questions grouped into the three subcategories: Freedom of Expression and Belief (4 questions), Associational and Organizational Rights (3), Rule of Law (4), and Personal Autonomy and Individual Rights (4). The combined indicator is inverted so that high levels signify high levels of human rights (on scale from 2 to 14). The correlation between the Polity IV based democracy indicator (see below) and this combined political and civil rights indicator is about 0.89, while the correlation with the corresponding Polity IV democracy dummy is about 0.79.

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
Economic Growth [%]	lsgr	Economic growth is here operationalised as least square growth of GDP per capita (PPP) logged and in constant 2000 US$. As this method—which is the method used by the World Bank—takes into account all available observations during a period (in our case 5-year), the resulting growth rates reflect general trends that are not unduly influenced by exceptional value (see World Bank 2005b: statistical notes). Data for GDP per capita (PPP) are from World Bank's World Development Indicators (WDI) (2004). Data on seasonally adjusted deflator for calculating 2000 prices is made available by the Federal Reserve Bank of St. Louis (2005).
Independent Variables		
FDI Capital Penetration (Inward Stock of FDI/GDP) [%]	stfdigdp	The Stock of FDI relative to GDP is a proxy for the how deep the foreign nationals penetrate the local economy. The total stock data were obtained by first converting data on FDI inward stock reported in 1980 (UNCTAD 2005b) to constant 2000 US$. Then the FDI inward flows (also converted to constant 2000 US$) (UNCTAD 2005b) was added to the 1980 stock to obtain annual stock data up to 2000. A 5 percent per annum depreciation rate was considered. Data on a seasonally-adjusted deflator for calculating 2000 prices is made available by the Federal Reserve Bank of St. Louis (2005). For Switzerland (1982), Iceland (1981), Mexico (1981), Mauritania (1981, and Saudi Arabia (1982) a later starting point was used as no stock data was available for 1980. Note also that FDI data for Belgium include investments for Luxembourg. The GDP data—from WB's WDIs (2004)—is also converted to 2000 prices. For the 5-year growth data the value for Stock of FDI/GDP for a given year is the starting value for that 5-year period (i.e., value for 1985 is from 1980), while the value for the annual human rights data is the value from the previous year. Correlates 0.99 with data released from UNCTAD (2006a).
Primary Sector FDI Capital Penetration (Inward Stock of Primary Sector FDI/GDP) [%]	stpfdigdp	The Stock of FDI can be broken down to Primary, Secondary and Tertiary Sector stock of FDI. Data on FDI by industrial sector was made available by request from UNCTAD's statistical division (2004b). However, these data are only available for a limited number of countries. The data received from UNCTAD is applied unaltered. It should be noted, however, that the quality of the data is somewhat questionable for a number of countries. Note especially that data for Bangladesh is on approval basis (i.e., higher than what is actually invested), that data for Indonesia excludes the petroleum and banking sectors, and that data for Malaysia and Nigeria are significantly lower than the total stock data published by UNCTAD in their annual World Investment Report (WIR). Data for some of the years covered by a number of other countries either deviates significantly from the data on total stock of FDI published by UNCTAD's WIR or contains a significant share

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
		of unallocated investments. These data are nevertheless included. Both the Stock of FDI data and the GDP data (from WB's WDIs (2004),) are converted to constant 2000 prices. Data on a seasonally-adjusted deflator for calculating 2000 prices is made available by the Federal Reserve Bank of St. Louis (2005). For the 5-year growth data the value for Stock of FDI/GDP for a given year is the starting value for that 5-year period (i.e., value for 1985 is from 1980), while the value for the annual human rights data is the value from the previous year.
Secondary & Tertiary Sec. FDI Capital Penetration (Inward Stock of Secondary & Tertiary Sect. FDI/GDP) [%]	ststfdigdp	See comments under Primary Sector Stock of FDI above.
FDI Investment Rate (FIR) [%]	firan	Foreign investment rate is the annual percentage change of foreign capital stock over a period of time. For the 5-year economic growth data it is derived as $[(\sqrt[5]{(\text{Stock of FDI}_t/\text{Stock of FDI}_{t-5})) - 1] \times 100$, and for the annual human rights data it is derived as $[(\sqrt[1]{(\text{Stock of FDI}_t/\text{Stock of FDI}_{t-1})) - 1] \times 100$. It is a proxy for the foreign nationals' level of activity over the last year or years. The Stock of FDI data is obtained as reported above.
Primary Sector FDI Investment Rate [%]	pfir	Primary sector foreign investment rate is the annual percentage change of primary sector foreign capital stock over a period of time. For the 5-year economic growth data it is derived as $[(\sqrt[5]{(\text{Primary Sector Stock of FDI}_t/\text{Primary Sector Stock of FDI}_{t-5})) - 1] \times 100$, and for the annual human rights data it is derived as $[(\sqrt[1]{(\text{Primary Sector Stock of FDI}_t/\text{Primary Sector Stock of FDI}_{t-1})) - 1] \times 100$. It is a proxy for the foreign nationals' level of activity in the primary sector over the last year or years. The Primary Sector Stock of FDI data is obtained as reported above.
Secondary and Tertiary Sector FDI Investment Rate [%]	stfir	See comments under Primary Sector FIR above.

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
Domestic Capital Penetration (Stock of DI/GDP) [%]	stdigpp	The Stock of DI relative to GDP is a proxy that needs to be included to check the effect of foreign investment relative to domestic investment. From WDI we have that gross capital formation (or gross domestic investment) consists of outlays on additions to the fixed assets of the economy (i.e., physical and social infrastructure improvements) plus net changes in the level of inventories (stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress"). The Stock of Domestic Investment was obtained by first accumulating gross domestic investment from WB's WDI (2004) with a 5% depreciation rate with 1970 as the starting point. All values were converted to constant 2000 US$ as for the Stock of FDI indicator above. Then from 1980 and on the Stock of Domestic Investment was computed as gross domestic investment minus the stock of FDI calculated above. The 10-year accumulating period is consistent with UNCTAD's estimating procedure for stock of FDI for many countries where FDI stock in 1980 was unavailable. For United Arab Emirates (1973) and Germany (1971) a later starting point was used as no gross domestic investment data was available for 1970. Note also that values for Mauritius (all), Austria (1970), Spain (1970), Netherlands (1970), New Zeeland (1970) and Portugal (1970) are from Global Development Network's Growth Database (GDNGD) (Easterly and Sewadeh 2005) and not WB's WDI. This is not considered a problem as the gross domestic investment data from GDNGD and the WB are almost identical (correlates at 0.999). The WB data was preferred as the GDNGD data only are updated until 1999. Moreover, the shortcomings that applies stock of FDI above applied equally here (this follows logically from they way the indicator is constructed). The GDP data is from WB's WDIs (2004). For the 5-year growth data the value for Stock of DI/GDP for a given year is the starting value for that 5-year period (i.e., value for 1985 is from 1980), while the value for the annual human rights data is the value from the previous year.
Domestic Investment Rate [%]	diran	Domestic investment rate is the annual percentage change of domestic capital stock over a period of time. For the 5-year economic growth data it is derived as $[(\sqrt[5]{(\text{Stock of DI}_t/\text{Stock of DI}_{t-5})}) - 1] \times 100$, and for the annual human rights data it is derived as $[(\sqrt[1]{(\text{Stock of DI}_t/\text{Stock of DI}_{t-1})}) - 1] \times 100$. The Stock of DI data is obtained as reported above.
Market Size - Logged (GDP) [US$]	lngdp	The Gross Domestic Product is from WB's WDI (2004), and is included as a proxy for the size of the market. For the 5-year growth data the value for a given year is the starting value for that 5-year period (i.e., value for 1985 is from 1980), while the value for the annual human rights data is the value from the previous year.
Trade - Logged ((Export and Imports)/GDP) [%]	trade	Trade is defined as (Exports + Imports)/GDP, and is included as a proxy for economic openness or trade dependence. The data are from WB's WDI (2004). Note, however, that data for Singapore is from Global Development Network's Growth Database (GDNGD) (Easterly and Sewadeh 2005). This is not considered a

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
		problem as the trade data from GDNGD and the WB are almost identical (correlates at 0.98). For the 5-year growth data the value for a given year is the average over the preceding 5-year period (i.e., value for 1985 is the average over the period 1980-1985), while the value for the annual human rights data is the value from the previous year.
(Initial) Economic Standing - Logged (GDP per capita (PPP)) [US$]	lngdpcap	GDP per capita (PPP) is included as a proxy for initial level of economic development. The data are from WB's WDI (2004). For the 5-year growth data the value for a given year is the starting value for that 5-year period (i.e., value for 1985 is from 1980), while the value for the annual human rights data is the value from the previous year.
Economic Growth	growth	Economic growth is operationalised as for the dependent variable economic growth above. However, since this variable is used as a control in the annual human rights analysis, the period is here 1 year and not 5.
Human Capital (Secondary School Enrolment) [%]	secenrol	Gross secondary school enrolment is the ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. It is included as a proxy for human capital. The data are from WB's WDI (2004). Countries with values higher than 100% were—following UNDP in their construction of the Human Development Index—set to 100%. Data prior to 1990 are only available at 5-year intervals and the value for secondary enrolment for a given year is, therefore, the starting value for that 5-year period (i.e., value for 1985 is from 1980).
Institutional Quality (Bureaucracy & Corruption) Scale [0-10]	burcap	The institutional quality is included as a proxy for the quality of local institutions. It is a combined (additive) measure of data on bureaucratic quality and corruption obtained from the International Country Risk Guide (The PRS Group 2004). The indicator is constructed to assess the level of efficiency in the TNC-host country government interaction, and are scaled from 0 to 10 where 10 indicated high quality institutions. Bureaucratic quality and corruption were initially scaled from 0-4 and 0-6 respectively, and the latter index was reversed so as high values should reflect high quality institutions. Giving 'bureaucracy' and 'corruption' equal weight does not alter the result and the original scaling is therefore preferred. The PRS data are available on a monthly basis and annual averages are used as a base in these analyses. For the 5-year growth data the value for a given year is the average over the preceding 5-year period (i.e., value for 1985 is the average over the period 1980-1985), while the value for the annual human rights data is the value from the previous year. Similar measures are made available for a shorted time-span by the WB (Kaufmann et al. 2005). The Institutional Quality measure created here correlates 0.85 with the comparable indexes 'government

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
		effectiveness' and 'control of corruption' for the period 1996-2000. Moreover, these WB-indexes correlates 0.94 internally and both correlates 0.94 with a third measure of government quality 'rule of law'. This as to illustrate the high internal correlation of commonly used proxies for institutional quality.
Fuel Resource Dependence [Exports in % of GDP]	fuelgdp	A proxy for Fuel Resource dependence is included as this variable acts as a control for the effect of the resource curse as well as for primary sector investments, and is operationalised as the share of fuel in exports. Fuel comprises of coal, petroleum (and petroleum products), gas (natural and manufactured) and electric current, but its main constituent is oil or petroleum. The data are obtained from WB's WDI (2004) where they are presented as the share in merchandise exports. However, they here altered to reflect the share in total exports for reasons of comparability with the literature (see e.g., Ross 2001:338). For the 5-year growth data the value for a given year is the average over the preceding 5-year period (i.e., value for 1985 is the average over the period 1980-1985), while the value for the annual human rights data is the value from the previous year. Following the practice of Sachs and Warner (1999) and Ross (2001), the export figures for Singapore and Trinidad and Tobago are corrected to reflect net exports, since both states are transhipment points for raw materials extracted by nearby states. The values for both states are set at 0.01.
Non-Fuel Resource Dependence [Exports in % of GDP]	romgdp	A proxy for Non-Fuel Resource dependence is included as this variable acts as a control for the effect of the resource curse as well as for primary sector investments., and is operationalised as the share of fuel in exports. Non-Fuel comprises a combination of two indicators ' agricultural raw materials' and 'ores and metals' (their share in merchandise exports) as provided by WB's WDI (2004). The former croup comprises of hide and skins (raw), crude rubber, cork, wood, pulp, textile fibres and crude animal and vegetable materials, while the latter group comprises of ores and other minerals, and non-ferrous metals. The data as provided by WB's WDI (2004) is presented as the share in merchandise exports. However, they here altered to reflect the share in total exports for reasons of comparability with the literature (see e.g., Ross 2001:338). For the 5-year growth data the value for a given year is the average over the preceding 5-year period (i.e., value for 1985 is the average over the period 1980-1985), while the value for the annual human rights data is the value from the previous year. Following the practice of Sachs and Warner (1999) and Ross (2001), the export figures for Singapore and Trinidad and Tobago are corrected to reflect net exports, since both states are transhipment points for raw materials extracted by nearby states. The values for both states are set at 0.01.
Civil War [Dummy]	civwar	The dummies for civil war and international war are coded 1 for countries that have experienced 25 battle related deaths in any year within the 5-year period considered for the economic growth data, and within the previous year for the human rights data. Data are obtained from the Armed Conflict project at PRIO

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
		(Gleditsch et al. 2002). Civil war is operationalised as type 3 (internal) and 4 (internal with external intervention) conflict with more than 25 battle-related deaths per year (Strand et al. 2004:10-11).
Savings [% of GDP]	savgdp	Savings or Gross domestic savings are calculated as GDP less final consumption expenditure (total consumption). The data are from WB's WDI (2004). For the 5-year growth data the value for a given year is the average over the preceding 5-year period (i.e., value for 1985 is the average over the period 1980-1985), while the value for the annual human rights data is the value from the previous year.
Debt [% of GDP]	debtgdp	Debt or Long-term debt is debt that has an original or extended maturity of more than one year. It has three components: public, publicly guaranteed, and private nonguaranteed debt. The data are from WB's WDI (2004) and are only available for developing countries. For the 5-year growth data the value for a given year is the average over the preceding 5-year period (i.e., value for 1985 is the average over the period 1980-1985), while the value for the annual human rights data is the value from the previous year.
ODA [% of GDP]	odagdp	Data for ODA or official development assistance and official aid are from WB's WDI (2004) and are only available for developing countries. For the 5-year growth data the value for a given year is the average over the preceding 5-year period (i.e., value for 1985 is the average over the period 1980-1985), while the value for the annual human rights data is the value from the previous year.
Population Size – Logged	pop	Population size is included as a control. The data are from WB's WDI (2004). For the 5-year growth data the value for a given year is the starting value for that 5-year period (i.e., value for 1985 is from 1980), while the value for the annual human rights data is the value from the previous year.
Population Growth [%]	popgr	Population growth is included as a control. The data are from WB's WDI (2004), and the value for a given year is the annual average over the preceding period of time considered. For the 5-year economic growth data it is derived as $[(\sqrt[5]{(pop_t/pop_{t-5})}) - 1] \times 100$, and for the annual human rights data it is derived as $[(\sqrt[1]{(pop_t/pop_{t-1})}) - 1] \times 100$.
Democracy [Dummy]	pol2dum	The polity2 variable from Polity IV dataset (Marshall et al. 2004) is included as a proxy for democratic development. The original polity2 variable is scaled from -10 to10 and has here been modified by adding 11 to all cases. High levels signify high level of democratic values. Note that values for Iceland have been coded by author to be 21. This is not controversial as it corresponds with coding by Freedom House. For the 5-year growth data the value for a given year is the starting value for that 5-year period (i.e., value for 1985 is from

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
		1980), while the value for the annual human rights data is the value from the previous year. Davenport and Armstrong (2004:547-51) find that an alternative Polity IV measure of democracy ranging from 0-10 only has significant effect on physical integrity rights for values equal to or above 8. We find his argument convincing and recode the 1-21 range scale to a dummy coded 1 for countries with a democracy score equal to or higher than 19.
Legal Origin [Dummy]		Dummy for legal origin from Global Development Network's Growth Database (GDNGD) (Easterly and Sewadeh 2005). The legal dummy is a group of dummies contain dummies for British, German, Socialist, Scandinavian, and French legal origin. The latter is used a reference category.
International War [Dummy]	intwar	See Civil War above.
Developing Counties [Dummy]	dcdum	This is a dummy for developing countries (or non-OECD high income countries). Republic of Korea is an OECD member today but for the most of the period it has not been and is, therefore coded 1 here. Data extracted from WB.org (2005a).
Ethnolinguistic Fractionalization [%]	ethnfrac	Data on ethnolinguistic fractionalization is from La Porta et al. (1999:238). The indicator is in percent where high values signify high ethnolinguistic fractionalization, and consist of five component indices: (1) index of ethnolinguistic fractionalization in 1960, which measures the probability that two randomly selected people from a given country will not belong to the same ethnolinguistic group (the index is based on the number and size of population groups as distinguished by their ethnic and linguistic status); (2) probability of two randomly selected individuals speaking different languages; (3) probability of two randomly selected individuals do not speak the same language; (4) percent of the population not speaking the official language; and (5) percent of the population not speaking the most widely used language. The value is a constant for each country.
Protestant Population [%]	La_prot	Protestant population is in percent of total population and is from La Porta et al. (1999). The value is from 1980 and is a constant for each country. The data is made available at http://mba.tuck.dartmouth.edu/pages/faculty/rafael.laporta/publications.html
Catholic Population [%]	La_cat	See comment under Protestant Population above.

Table A1 – Countries and Variables in Statistical Analyses[221]

Proxy	Short Name	Description, Source and Quality of Data
Muslim Population [%]	La_mus	See comment under Protestant Population above.
Other Population [%]	La_oth	See comment under Protestant Population above.

Table A2 – Economic Growth – Descriptive Statistics: Replication Analyses

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Economic Growth (LS)	%	238	1.25	2.64	-8.01	8.91
FDI Investment Rate	%	238	12.52	16.92	-11.2	100.8
Domestic Investment Rate	%	238	5.47	4.99	-3.48	26.3
FDI Capital Penetration	% of GDP	238	11.1	14.9	0.0017	81.2
Domestic Capital Penetration	% of GDP	238	198.9	95.4	35.5	845.8
Market Size	GDP US$ (Log)	238	23	2.25	18.5	29.4
Trade	% of GDP (Log)	238	67.4	48.8	11	379.4
Initial Economic Standing	GDP per capita (PPP) US$ (Log)	238	7.92	1.047	5.83	9.9
Human Capital	%	238	46.2	31.2	1.42	119.5
Time Dummy 1980-1985		238			0	1
Time Dummy 1985-1990		238			0	1

Table A3 – Economic Growth – Descriptive Statistics: All Countries – Full Sample

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Economic Growth (LS)	%	320	0.96	3.1	-12.9	11.3
FDI Investment Rate	%	320	8.84	12.8	-19.8	115
Domestic Investment Rate	%	320	3.98	3.24	-5.54	15.5
FDI Capital Penetration	% of GDP	320	12.3	12.7	0.11	75.6
Domestic Capital Penetration	% of GDP	320	229.7	92.7	69.2	756.6
Market Size	GDP US$ (Log)	320	24	2.01	19.6	29.6
Trade	% of GDP (Log)	320	4.03	0.53	2.63	5.95
Initial Economic Standing	GDP per capita (PPP) US$ (Log)	320	8.21	1.13	5.8	10.2
Human Capital	%	320	55	29.6	4.65	100
Time Dummy 1980-1985		320			0	1
Time Dummy 1985-1990		320			0	1
Time Dummy 1990-1995		320			0	1
Institutional Quality	[0-10]	320	5.69	2.49	0	10
Fuel Resource Dependence	% of GDP	320	5.26	10.5	0	63.6
Non-Fuel Resource Dependence	% of GDP	320	3.73	5.86	0.01	32
Civil War	[Dummy]	320	0.28	0.45	0	1

Table A4 – Economic Growth – Descriptive Statistics: Developing Countries – Full Sample

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Economic Growth (LS)	%	241	0.66	3.44	-12.9	11.3
FDI Investment Rate	%	241	8.23	13.5	-19.8	115
Domestic Investment Rate	%	241	3.99	3.49	-2.42	15.5
FDI Capital Penetration	% of GDP	241	13	13.9	0.11	75.6
Domestic Capital Penetration	% of GDP	241	231.1	102	69.2	756.6
Market Size	GDP US$ (Log)	241	23.4	1.63	19.6	27.3
Trade	% of GDP (Log)	241	4.05	0.56	2.63	5.95
Initial Economic Standing	GDP per capita (PPP) US$ (Log)	241	7.76	0.91	5.8	10.1
Human Capital	%	241	42.7	22.6	4.65	100
Time Dummy 1980-1985		241			0	1
Time Dummy 1985-1990		241			0	1
Time Dummy 1990-1995		241			0	1
Institutional Quality	[0-10]	241	4.61	1.74	0	9.5
Fuel Resource Dependence	% of GDP	241	6.4	11.7	0	63.6
Non-Fuel Resource Dependence	% of GDP	241	4.28	6.61	0.01	32
Civil War	[Dummy]	241			0	1

Table A5 – Economic Growth – Descriptive Statistics: All Countries – Restricted Sample

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Economic Growth (LS)	%	78	1.59	2.75	-6.92	9.05
FDI Investment Rate	%	78	11.2	9.9	-5.96	41.4
Primary Sector FIR	%	78	10.3	38.7	-78.6	283.2
Sec. & Tertiary Sector FIR	%	78	10.7	12.6	-32	43.3
Domestic Investment Rate	%	78	4.17	3.25	-2.39	14.1
FDI Capital Penetration	% of GDP	78	10.9	10.2	0.77	59.8
Primary Sec. FDI Capital Pen.	% of GDP	78	2.46	5.05	0	32.9
Sec. & T. Sec. FDI Cap. Pen.	% of GDP	78	7.74	5.19	0.71	22.6
Domestic Capital Penetration	% of GDP	78	229.7	65.8	116.8	493.2
Market Size	GDP US$ (Log)	78	25.5	1.8	21.6	29.6
Trade	% of GDP (Log)	78	3.9	0.56	2.67	5.1
Initial Economic Standing	GDP per capita (PPP) US$ (Log)	78	8.79	1.07	6.23	10.2
Human Capital	%	78	68.2	29.9	11.5	100
Time Dummy 1980-1985		78			0	1
Time Dummy 1985-1990		78			0	1
Time Dummy 1990-1995		78			0	1
Institutional Quality	[0-10]	78	6.78	2.45	1.08	10
Fuel Resource Dependence	% of GDP	78	4.79	8.3	0	43.4
Non-Fuel Resource Dep.	% of GDP	78	2.99	4.77	0.06	27.7
Civil War	[Dummy]	78			0	1

Table A6 – Economic Growth – Descriptive Statistics: Developing Countries – Restricted Sample

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Economic Growth (LS)	%	78	1.59	2.75	-6.92	9.05
FDI Investment Rate	%	78	11.2	9.9	-5.96	41.4
Primary Sector FIR	%	78	10.3	38.7	-78.6	283.2
Sec. & Tertiary Sector FIR	%	78	10.7	12.6	-32	43.3
Domestic Investment Rate	%	78	4.17	3.25	-2.39	14.1
FDI Capital Penetration	% of GDP	78	10.9	10.2	0.77	59.8
Primary Sec. FDI Capital Pen.	% of GDP	78	2.46	5.05	0	32.9
Sec. & T. Sec. FDI Cap. Pen.	% of GDP	78	7.74	5.19	0.71	22.6
Domestic Capital Penetration	% of GDP	78	229.7	65.8	116.8	493.2
Market Size	GDP US$ (Log)	78	25.5	1.8	21.6	29.6
Trade	% of GDP (Log)	78	3.9	0.56	2.67	5.1
Initial Economic Standing	GDP per capita (PPP) US$ (Log)	78	8.79	1.07	6.23	10.2
Human Capital	%	78	68.2	29.9	11.5	100
Time Dummy 1980-1985		78			0	1
Time Dummy 1985-1990		78			0	1
Time Dummy 1990-1995		78			0	1
Institutional Quality	[0-10]	78	6.78	2.45	1.08	10
Fuel Resource Dependence	% of GDP	78	4.79	8.3	0	43.4
Non-Fuel Resource Dep.	% of GDP	78	2.99	4.77	0.06	27.7
Civil War	[Dummy]	78			0	1

Table A7 – Economic Growth – Correlation Matrix – Replication Analyses

N=238	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Economic Growth	1								
(2) FDI Investment Rate	0.30	1							
(3) Domestic Investment Rate	0.52	0.29	1						
(4) FDI Capital Penetration	0.19	-0.29	0.21	1					
(5) Domestic Capital Penetration	0.05	-0.04	-0.51	0.02	1				
(6) Market Size	0.15	-0.21	-0.22	-0.09	0.15	1			
(7) Trade	0.21	-0.03	0.10	0.63	0.14	-0.23	1		
(8) Initial Economic Standing	0.20	-0.13	-0.02	0.16	0.07	0.66	0.16	1	
(9) Human Capital	0.25	-0.16	-0.16	0.08	0.25	0.63	0.16	0.86	1

Table A8 – Economic Growth – Correlation Matrix: All Countries – Full Sample

N=320	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Economic Growth	1													
(2) FDI Investment Rate	0.28	1												
(3) Domestic Investment Rate	0.30	-0.07	1											
(4) FDI Capital Penetration	0.13	-0.11	-0.12	1										
(5) Domestic Capital Pen.	0.18	0.16	-0.46	0.21	1									
(6) Market Size	0.29	0.18	0.15	-0.21	-0.08	1								
(7) Trade	0.06	-0.01	-0.08	0.55	0.25	-0.34	1							
(8) Initial Economic Standing	0.17	0.14	0.02	0.00	0.06	0.66	0.14	1						
(9) Human Capital	0.29	0.16	0.03	-0.02	0.13	0.62	0.13	0.83	1					
(10) Institutional Quality	0.26	0.14	0.05	0.06	0.00	0.57	0.11	0.71	0.69	1				
(11) Fuel Resource Dependence	-0.10	-0.06	-0.07	0.20	0.18	-0.04	0.33	0.02	-0.02	-0.1	1			
(12) Non-Fuel Resource Dep.	-0.20	-0.08	-0.20	0.27	0.15	-0.36	0.31	-0.18	-0.18	-0.16	-0.09	1		
(13) Non-F. Res. Dep. [Alt. M.]	-0.22	-0.06	-0.22	0.21	0.16	-0.29	0.24	-0.12	-0.13	-0.16	-0.09	0.94	1	
(14) Civil War	-0.06	-0.09	0.07	-0.07	-0.12	-0.08	-0.23	-0.28	-0.24	-0.29	-0.09	-0.02	-0.03	1

Table A9 – Economic Growth – Correlation Matrix: Developing Countries – Full Sample

N=241	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Economic Growth	1													
(2) FDI Investment Rate	0.27	1												
(3) Domestic Investment Rate	0.32	-0.02	1											
(4) FDI Capital Penetration	0.15	-0.10	-0.10	1										
(5) Domestic Capital Pen.	0.17	0.15	-0.54	0.23	1									
(6) Market Size	0.27	0.19	0.24	-0.21	-0.06	1								
(7) Trade	0.08	-0.03	-0.03	0.58	0.28	-0.34	1							
(8) Initial Economic Standing	0.07	0.09	0.07	0.11	0.11	0.47	0.27	1						
(9) Human Capital	0.25	0.14	0.08	0.09	0.22	0.38	0.26	0.66	1					
(10) Institutional Quality	0.24	0.13	0.11	0.24	0.04	0.34	0.22	0.40	0.31	1				
(11) Fuel Resource Dependence	-0.08	-0.03	-0.07	0.18	0.18	0.12	0.33	0.22	0.17	0.05	1			
(12) Non-Fuel Resource Dep.	-0.18	-0.07	-0.20	0.26	0.15	-0.34	0.31	-0.09	-0.09	-0.09	-0.13	1		
(13) Non-F. Res. Dep. [Alt. M.]	-0.21	-0.05	-0.23	0.20	0.16	-0.27	0.25	-0.02	-0.04	-0.09	-0.13	0.94	1	
(14) Civil War	-0.03	-0.09	0.06	-0.12	-0.12	0.06	-0.27	-0.16	-0.09	-0.17	-0.15	-0.05	-0.07	1

Table A10 – Economic Growth – Correlation Matrix: All Countries – Restricted Sample

N=78	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) Economic Growth	1																	
(2) FDI Investment Rate	0.39	1																
(3) Primary Sector FIR	0.07	0.13	1															
(4) Sec. & Tertiary Sector FIR	0.43	0.51	0.08	1														
(5) Domestic Investment Rate	0.58	-0.01	0.00	0.29	1													
(6) FDI Capital Penetration	-0.05	-0.20	0.01	-0.19	-0.16	1												
(7) Primary. Sec. FDI Cap. Pen.	-0.22	-0.20	-0.10	-0.13	-0.21	0.78	1											
(8) Sec. & T. Sec. FDI Cap. Pen.	0.09	-0.09	0.08	-0.19	-0.26	0.28	0.00	1										
(9) Domestic Capital Pen.	0.04	0.10	0.19	-0.07	-0.38	0.10	0.02	0.05	1									
(10) Market Size	0.19	0.10	0.03	0.11	0.03	-0.27	-0.38	0.33	-0.22	1								
(11) Trade	0.25	0.05	0.10	0.02	0.07	0.41	0.23	0.17	0.15	-0.30	1							
(12) Initial Economic Standing	0.19	0.14	0.07	0.17	-0.08	-0.14	-0.18	0.27	-0.06	0.61	0.04	1						
(13) Human Capital	0.29	0.14	0.07	0.14	0.03	-0.19	-0.24	0.28	-0.10	0.54	0.15	0.88	1					
(14) Institutional Quality	0.32	0.04	0.10	0.13	0.08	0.02	-0.11	0.30	-0.08	0.50	0.21	0.83	0.77	1				
(15) Fuel Resource Dependence	-0.32	-0.14	0.02	-0.43	-0.38	0.23	0.13	0.03	0.38	-0.26	0.22	-0.41	-0.38	-0.3	1			
(16) Non-Fuel Resource Dep.	-0.16	-0.19	-0.04	-0.1	-0.02	0.78	0.83	-0.12	-0.02	-0.52	0.35	-0.26	-0.30	-0.12	0.10	1		
(17) Non-F. Res. Dep. [Alt. M.]	-0.28	-0.18	-0.04	-0.13	-0.16	0.68	0.90	-0.20	0.05	-0.51	0.20	-0.23	-0.29	-0.17	0.08	0.92	1	
(18) Civil War	-0.18	-0.04	-0.07	0.09	-0.01	0.23	0.29	-0.05	0.00	-0.25	0.06	-0.34	-0.28	-0.30	-0.05	0.32	0.33	1

Table A11 – Economic Growth - Correlation Matrix: Developing Countries – Restricted Sample

N=44	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) Economic Growth	1																	
(2) FDI Investment Rate	0.38	1																
(3) Primary Sector FIR	0.09	0.52	1															
(4) Sec. & Tertiary Sector FIR	0.41	0.56	0.35	1														
(5) Domestic Investment Rate	0.64	0.08	-0.10	0.35	1													
(6) FDI Capital Penetration	0.05	-0.22	-0.12	-0.29	-0.18	1												
(7) Primary. Sec. FDI Cap. Pen.	0.01	-0.22	-0.14	-0.21	-0.21	0.84	1											
(8) Sec. & T. Sec. FDI Cap. Pen.	-0.04	-0.08	-0.29	-0.23	-0.24	-0.01	-0.18	1										
(9) Domestic Capital Pen.	0.02	0.14	0.28	-0.20	-0.49	0.14	0.04	0.23	1									
(10) Market Size	0.11	0.26	0.17	0.25	0.18	-0.59	-0.64	0.26	-0.09	1								
(11) Trade	0.30	0.00	-0.02	0.01	0.20	0.48	0.30	-0.05	0.15	-0.40	1							
(12) Initial Economic Standing	0.04	0.23	0.23	0.28	0.16	-0.22	-0.25	-0.05	-0.03	0.56	-0.23	1						
(13) Human Capital	0.20	0.24	0.04	0.22	0.31	-0.35	-0.38	-0.01	-0.10	0.45	-0.04	0.64	1					
(14) Institutional Quality	0.44	0.02	0.09	0.11	0.47	0.14	-0.02	-0.09	-0.07	0.42	0.09	0.47	0.22	1				
(15) Fuel Resource Dependence	-0.32	-0.14	0.09	-0.54	-0.46	0.19	0.04	0.18	0.41	-0.18	0.24	-0.46	-0.38	-0.30	1			
(16) Non-Fuel Resource Dep.	0.00	-0.26	-0.15	-0.16	-0.06	0.88	0.87	-0.23	-0.04	-0.70	0.44	-0.22	-0.33	0.09	0.02	1		
(17) Non-F. Res. Dep. [Alt. M.]	-0.14	-0.25	-0.10	-0.19	-0.20	0.79	0.90	-0.28	0.02	-0.70	0.28	-0.22	-0.34	-0.05	0.02	0.93	1	
(18) Civil War	-0.12	-0.05	-0.10	0.12	-0.10	0.24	0.33	-0.04	0.07	-0.31	0.19	-0.17	-0.05	-0.05	-0.14	0.39	0.39	1

Table A12 – Human Rights – Descriptive Statistics: All Countries – Full Sample

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Physical Int. Rights (CIRI)	[0-8]	1075	4.97	2.39	0	8
PIR (CIRI) – Lag	[0-8]	1075	4.99	2.40	0	8
PIR (PTS Amnesty Int.)	[1-5]	1075	3.50	1.19	1	5
PIR (PTS AI) – Lag	[1-5]	1075	3.50	1.20	1	5
PIR (PTS US State Dep.)	[1-5]	1075	3.66	1.17	1	5
PIR (PTS US) – Lag	[1-5]	1075	3.67	1.15	1	5
Political and Civil Rights	[2-14]	1075	9.83	3.64	2	14
Pol. And Civil Rights – Lag	[2-14]	1075	9.79	3.65	2	14
FDI Capital Penetration	% of GDP	1075	14.69	14.51	0.00	113.94
Domestic Capital Penetration	% of GDP	1075	255.59	79.76	91.54	756.56
Democracy	Dummy	1075	0.54	0.50	0.00	1.00
Population Size	Log	1075	16.59	1.50	12.43	20.95
Economic Standing	GDP per capita (PPP) US$ (Log)	1075	8.58	1.06	5.91	10.43
Economic Growth	%	1075	1.77	4.57	-21.19	50.15
Civil War	Dummy	1075	0.20	0.40	0.00	1.00
Ethnolinguistic Frac.	%	1075	49.73	25.23	1.70	98.00
Institutional Quality	[0-10]	1075	6.12	2.40	0.00	10.00
Fuel Resource Dependence	% of GDP	1075	3.90	8.59	0.00	52.53
Non-Fuel Resource Dep.	% of GDP	1075	2.76	4.58	0.01	37.97
Non-Fuel Res. Dep. [Alt. M.]	% of GDP	1075	1.68	3.94	0.00	37.51

Table A13 – Human Rights – Descriptive Statistics: Developing Countries – Full Sample

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Physical Int. Rights (CIRI)	[0-8]	758	3.97	2.11	0	8
PIR (CIRI) – Lag	[0-8]	758	3.99	2.12	0	8
PIR (PTS Amnesty Int.)	[1-5]	758	3.00	1.03	1	5
PIR (PTS AI) – Lag	[1-5]	758	3.01	1.05	1	5
PIR (PTS US State Dep.)	[1-5]	758	3.16	1.01	1	5
PIR (PTS US) – Lag	[1-5]	758	3.17	1.00	1	5
Political and Civil Rights	[2-14]	758	8.23	3.17	2	14
Pol. And Civil Rights – Lag	[2-14]	758	8.19	3.17	2	14
FDI Capital Penetration	% of GDP	758	15.85	15.90	0.00	113.94
Domestic Capital Penetration	% of GDP	758	261.30	90.17	91.54	756.56
Democracy	Dummy	758	0.34	0.47	0.00	1.00
Population Size	Log	758	16.58	1.52	13.92	20.95
Economic Standing	GDP per capita (PPP) US$ (Log)	758	8.08	0.84	5.91	9.99
Economic Growth	%	758	1.64	5.28	-21.19	50.15
Civil War	Dummy	758	0.27	0.44	0.00	1.00
Ethnolinguistic Frac.	%	758	56.76	22.62	1.70	98.00
Institutional Quality	[0-10]	758	4.91	1.63	0.00	10.00
Fuel Resource Dependence	% of GDP	758	4.84	9.87	0.00	52.53
Non-Fuel Resource Dep.	% of GDP	758	3.10	5.33	0.01	37.97
Non-Fuel Res. Dep. [Alt. M.]	% of GDP	758	1.99	4.63	0.00	37.51

Table A14 – Human Rights – Descriptive Statistics: All Countries – Restricted Sample

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Physical Int. Rights (CIRI)	[0-8]	301	5.45	2.34	0	8
PIR (CIRI) – Lag	[0-8]	301	5.49	2.34	0	8
PIR (PTS Amnesty Int.)	[1-5]	301	3.73	1.24	1	5
PIR (PTS AI) – Lag	[1-5]	301	3.71	1.25	1	5
PIR (PTS US State Dep.)	[1-5]	301	3.88	1.19	1	5
PIR (PTS US) – Lag	[1-5]	301	3.88	1.18	1	5
Political and Civil Rights	[2-14]	301	11.51	2.65	3	14
Pol. And Civil Rights – Lag	[2-14]	301	11.52	2.65	3	14
FDI Capital Penetration	% of GDP	301	12.55	9.96	0.73	58.70
Primary Sec. FDI cap. Pen.	% of GDP	301	2.58	5.29	0.00	44.76
Sec. & T. Sec. FDI cap. Pen.	% of GDP	301	9.22	5.95	0.87	38.64
Domestic Capital Penetration	% of GDP	301	246.43	68.55	146.81	568.08
Democracy	Dummy	301	0.72	0.45	0.00	1.00
Population Size	Log	301	17.17	1.44	12.43	19.45
Economic Standing	GDP per capita (PPP) US$ (Log)	301	9.06	0.98	6.13	10.43
Economic Growth	%	301	2.15	3.84	-17.64	15.14
Civil War	Dummy	301	0.15	0.36	0.00	1.00
Ethnolinguistic Frac.	%	301	46.33	27.24	2.00	81.70
Institutional Quality	[0-10]	301	6.99	2.42	1.00	10.00
Fuel Resource Dependence	% of GDP	301	3.78	6.98	0.00	43.39
Non-Fuel Resource Dep.	% of GDP	301	2.79	4.22	0.04	28.94
Non-Fuel Res. Dep. [Alt. M.]	% of GDP	301	1.71	3.31	0.00	24.79

Table A15 – Human Rights – Descriptive Statistics: Developing Countries – Restricted Sample

	Units	N	Mean	Standard Deviation	Minimum	Maximum
Physical Int. Rights (CIRI)	[0-8]	157	3.69	1.85	0	8
PIR (CIRI) – Lag	[0-8]	157	3.75	1.88	0	8
PIR (PTS Amnesty Int.)	[1-5]	157	2.80	0.95	1	5
PIR (PTS AI) – Lag	[1-5]	157	2.78	0.96	1	5
PIR (PTS US State Dep.)	[1-5]	157	2.99	0.95	1	5
PIR (PTS US) – Lag	[1-5]	157	3.01	0.94	1	5
Political and Civil Rights	[2-14]	157	9.52	2.22	3	13
Pol. And Civil Rights – Lag	[2-14]	157	9.53	2.23	3	13
FDI Capital Penetration	% of GDP	157	13.39	11.62	0.73	58.70
Primary Sec. FDI cap. Pen.	% of GDP	157	2.98	6.87	0.00	44.76
Sec. & T. Sec. FDI cap. Pen.	% of GDP	157	7.51	4.46	0.87	24.75
Domestic Capital Penetration	% of GDP	157	259.05	85.57	157.10	568.08
Democracy	Dummy	157	0.47	0.50	0.00	1.00
Population Size	Log	157	17.42	1.01	15.15	19.09
Economic Standing	GDP per capita (PPP) US$ (Log)	157	8.26	0.68	6.13	9.54
Economic Growth	%	157	2.15	5.02	-17.64	15.14
Civil War	Dummy	157	0.24	0.43	0.00	1.00
Ethnolinguistic Frac.	%	157	59.37	24.04	2.80	81.70
Institutional Quality	[0-10]	157	5.05	1.56	1.00	8.50
Fuel Resource Dependence	% of GDP	157	5.01	8.74	0.00	43.39
Non-Fuel Resource Dep.	% of GDP	157	3.64	5.56	0.04	28.94
Non-Fuel Res. Dep. [Alt. M.]	% of GDP	157	2.23	4.43	0.00	24.79

Table A16 – Human Rights – Correlation Matrix: All Countries – Full Sample

N=1075	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) Physical Int. Rights (CIRI)	1																			
(2) PIR (CIRI) – Lag	0.85	1																		
(3) PIR (PTS Amnesty Int.)	0.82	0.81	1																	
(4) PIR (PTS AI) – Lag	0.79	0.82	0.86	1																
(5) PIR (PTS US State Dep.)	0.83	0.83	0.86	0.85	1															
(6) PIR (PTS US) – Lag	0.80	0.84	0.84	0.86	0.89	1														
(7) Political and Civil Rights	0.54	0.54	0.53	0.52	0.56	0.57	1													
(8) Pol. and Civil Rights – Lag	0.54	0.54	0.52	0.52	0.56	0.57	0.97	1												
(9) FDI Capital Penetration	0.11	0.12	0.12	0.13	0.11	0.10	-0.07	-0.07	1											
(10) Domestic Capital Pen.	-0.12	-0.12	-0.12	-0.11	-0.16	-0.17	-0.22	-0.21	0.08	1										
(11) Democracy	0.44	0.45	0.42	0.41	0.46	0.47	0.79	0.79	-0.05	-0.14	1									
(12) Population Size	-0.36	-0.35	-0.33	-0.33	-0.32	-0.31	-0.11	-0.11	-0.27	-0.01	-0.02	1								
(13) Economic Standing	0.57	0.57	0.56	0.55	0.62	0.61	0.62	0.62	0.00	-0.10	0.53	-0.11	1							
(14) Economic Growth	0.02	0.02	0.02	0.03	0.05	0.04	0.04	0.03	0.04	-0.14	0.00	0.14	0.06	1						
(15) Civil War	-0.55	-0.56	-0.54	-0.54	-0.52	-0.52	-0.16	-0.15	-0.12	-0.04	-0.13	0.21	-0.24	-0.02	1					
(16) Ethnolinguistic Frac.	-0.32	-0.33	-0.31	-0.30	-0.31	-0.31	-0.22	-0.21	0.24	0.05	-0.16	0.01	-0.26	-0.05	0.17	1				
(17) Institutional Quality	0.58	0.59	0.59	0.60	0.62	0.63	0.60	0.61	0.03	-0.11	0.56	-0.05	0.74	0.09	-0.28	-0.30	1			
(18) Fuel Resource Dep.	-0.09	-0.09	-0.07	-0.06	-0.06	-0.07	-0.34	-0.33	0.04	0.35	-0.23	-0.09	-0.06	-0.04	-0.05	0.04	-0.17	1		
(19) Non-Fuel Resource Dep.	0.03	0.04	0.04	0.03	0.02	0.01	-0.09	-0.08	0.17	0.07	-0.07	-0.24	-0.12	-0.04	-0.06	0.20	-0.10	-0.06	1	
(20) Non-F. Res. Dep. [Alt. M.]	0.01	0.02	0.01	0.00	0.00	0.00	-0.08	-0.08	0.13	0.07	-0.04	-0.21	-0.08	-0.08	-0.03	0.19	-0.12	-0.06	0.93	1

Table A17 – Human Rights – Correlation Matrix: Developing Countries – Full Sample

N=758	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) Physical Int. Rights (CIRI)	1																			
(2) PIR (CIRI) – Lag	0.76	1																		
(3) PIR (PTS Amnesty Int.)	0.72	0.69	1																	
(4) PIR (PTS AI) – Lag	0.66	0.72	0.77	1																
(5) PIR (PTS US State Dep.)	0.73	0.73	0.78	0.75	1															
(6) PIR (PTS US) – Lag	0.68	0.74	0.74	0.77	0.82	1														
(7) Political and Civil Rights	0.19	0.18	0.15	0.15	0.20	0.22	1													
(8) Pol. and Civil Rights – Lag	0.18	0.18	0.13	0.14	0.20	0.21	0.95	1												
(9) FDI Capital Penetration	0.28	0.30	0.28	0.28	0.28	0.27	0.02	0.02	1											
(10) Domestic Capital Pen.	-0.07	-0.08	-0.07	-0.06	-0.12	-0.13	-0.20	-0.20	0.09	1										
(11) Democracy	0.09	0.10	0.05	0.05	0.11	0.12	0.66	0.65	0.03	-0.10	1									
(12) Population Size	-0.53	-0.51	-0.49	-0.48	-0.49	-0.48	-0.16	-0.16	-0.31	0.03	-0.03	1								
(13) Economic Standing	0.19	0.19	0.16	0.16	0.26	0.25	0.24	0.24	0.14	-0.03	0.17	-0.21	1							
(14) Economic Growth	-0.01	-0.01	-0.02	0.00	0.02	0.02	0.01	0.00	0.05	-0.14	-0.03	0.15	0.05	1						
(15) Civil War	-0.55	-0.56	-0.55	-0.56	-0.53	-0.52	0.01	0.03	-0.19	-0.04	0.03	0.24	-0.08	-0.01	1					
(16) Ethnolinguistic Frac.	-0.05	-0.07	-0.04	-0.03	-0.05	-0.04	0.13	0.14	0.19	0.05	0.16	-0.12	0.09	-0.03	0.04	1				
(17) Institutional Quality	0.13	0.16	0.16	0.20	0.21	0.23	0.16	0.16	0.23	-0.02	0.20	-0.02	0.41	0.11	-0.15	0.05	1			
(18) Fuel Resource Dep.	0.02	0.01	0.04	0.05	0.06	0.05	-0.32	-0.31	0.01	0.35	-0.17	-0.08	0.09	-0.04	-0.11	-0.02	-0.09	1		
(19) Non-Fuel Resource Dep.	0.13	0.14	0.14	0.13	0.12	0.12	-0.02	-0.02	0.14	0.05	0.01	-0.23	-0.05	-0.04	-0.08	0.19	-0.06	-0.10	1	
(20) Non-F. Res. Dep. [Alt. M.]	0.12	0.12	0.12	0.09	0.11	0.11	0.00	0.00	0.12	0.05	0.05	-0.21	0.01	-0.08	-0.06	0.19	-0.06	-0.10	0.94	1

Table A18 – Human Rights – Correlation Matrix: All Countries – Restricted Sample

N=301	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) Physical Int. Rights (CIRI)	1																					
(2) PIR (CIRI) – Lag	0.88	1																				
(3) PIR (PTS Amnesty Int.)	0.86	0.84	1																			
(4) PIR (PTS AI) – Lag	0.84	0.85	0.88	1																		
(5) PIR (PTS US State Dep.)	0.86	0.85	0.90	0.89	1																	
(6) PIR (PTS US) – Lag	0.84	0.85	0.86	0.88	0.90	1																
(7) Political and Civil Rights	0.66	0.66	0.65	0.66	0.70	0.70	1															
(8) Pol. and Civil Rights – Lag	0.65	0.65	0.62	0.64	0.69	0.69	0.95	1														
(9) FDI Capital Penetration	0.01	0.01	0.04	0.04	0.06	0.07	-0.15	-0.14	1													
(10) Prim. Sec. FDI Cap. Pen.	-0.06	-0.06	-0.08	-0.11	-0.06	-0.04	0.01	0.03	0.61	1												
(11) S. & T. Sec. FDI Cap. Pen.	0.23	0.24	0.30	0.30	0.29	0.30	0.13	0.15	0.50	0.02	1											
(12) Domestic Capital Pen.	-0.19	-0.17	-0.15	-0.15	-0.15	-0.15	-0.11	-0.09	0.01	-0.06	0.05	1										
(13) Democracy	0.43	0.43	0.39	0.39	0.42	0.43	0.65	0.65	-0.08	0.13	0.15	-0.03	1									
(14) Population Size	-0.26	-0.26	-0.26	-0.26	-0.26	-0.27	-0.25	-0.26	-0.17	-0.29	0.08	-0.12	-0.11	1								
(15) Economic Standing	0.69	0.68	0.71	0.70	0.72	0.72	0.80	0.77	-0.13	-0.21	0.28	-0.19	0.47	-0.16	1							
(16) Economic Growth	0.05	0.05	0.10	0.13	0.09	0.11	-0.06	-0.11	0.03	0.01	-0.02	-0.23	-0.20	0.06	0.04	1						
(17) Civil War	-0.50	-0.52	-0.45	-0.48	-0.47	-0.48	-0.26	-0.24	0.15	0.22	-0.06	-0.03	-0.13	0.05	-0.28	-0.12	1					
(18) Ethnolinguistic Frac.	-0.51	-0.51	-0.51	-0.49	-0.49	-0.47	-0.41	-0.38	0.30	0.14	0.05	0.02	-0.15	0.36	-0.47	-0.15	0.33	1				
(19) Institutional Quality	0.73	0.73	0.72	0.72	0.73	0.74	0.73	0.72	-0.02	-0.08	0.27	-0.20	0.45	-0.19	0.84	0.12	-0.31	-0.46	1			
(20) Fuel Resource Dep.	-0.09	-0.12	-0.05	-0.05	-0.04	-0.05	-0.23	-0.18	0.23	0.13	0.06	0.58	-0.09	-0.13	-0.30	-0.09	-0.10	0.12	-0.21	1		
(21) Non-Fuel Resource Dep.	-0.13	-0.12	-0.17	-0.18	-0.14	-0.12	-0.14	-0.12	0.64	0.78	-0.10	0.02	-0.06	-0.38	-0.31	0.05	0.21	0.28	-0.12	0.10	1	
(22) Non-F. Res. Dep. [Alt. M.]	-0.18	-0.16	-0.23	-0.24	-0.19	-0.17	-0.02	-0.01	0.44	0.84	-0.19	0.06	0.06	-0.39	-0.28	-0.05	0.30	0.21	-0.15	0.04	0.89	1.00

Table A19 – Human Rights – Correlation Matrix: Developing Countries – Restricted Sample

N=157	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) Physical Int. Rights (CIRI)	1																					
(2) PIR (CIRI) – Lag	0.74	1																				
(3) PIR (PTS Amnesty Int.)	0.71	0.65	1																			
(4) PIR (PTS AI) – Lag	0.66	0.70	0.71	1																		
(5) PIR (PTS US State Dep.)	0.73	0.70	0.75	0.76	1																	
(6) PIR (PTS US) – Lag	0.66	0.72	0.68	0.72	0.77	1																
(7) Political and Civil Rights	0.09	0.11	0.03	0.08	0.19	0.21	1															
(8) Pol. and Civil Rights – Lag	0.06	0.08	-0.03	0.04	0.17	0.18	0.87	1														
(9) FDI Capital Penetration	0.17	0.16	0.16	0.12	0.20	0.21	-0.18	-0.16	1													
(10) Prim. Sec. FDI Cap. Pen.	-0.03	-0.02	-0.09	-0.15	-0.04	-0.01	0.11	0.15	0.61	1												
(11) S. & T. Sec. FDI Cap. Pen.	0.02	0.03	0.06	0.01	0.06	0.08	-0.37	-0.31	0.31	-0.18	1											
(12) Domestic Capital Pen.	-0.09	-0.06	-0.02	-0.02	0.02	0.02	0.07	0.11	-0.01	-0.09	0.17	1										
(13) Democracy	-0.08	-0.07	-0.16	-0.15	-0.10	-0.07	0.37	0.38	-0.04	0.23	-0.07	0.12	1									
(14) Population Size	-0.18	-0.17	-0.15	-0.14	-0.23	-0.24	-0.23	-0.25	-0.47	-0.55	0.24	-0.07	0.00	1								
(15) Economic Standing	0.05	0.05	0.09	0.08	0.16	0.15	0.41	0.33	-0.14	-0.31	0.06	-0.09	-0.09	0.00	1							
(16) Economic Growth	0.10	0.09	0.18	0.25	0.17	0.19	-0.12	-0.20	-0.01	-0.01	-0.13	-0.28	-0.26	0.08	0.08	1						
(17) Civil War	-0.57	-0.60	-0.51	-0.57	-0.56	-0.56	-0.09	-0.06	0.10	0.22	-0.03	-0.01	0.03	-0.10	-0.10	-0.14	1					
(18) Ethnolinguistic Frac.	-0.23	-0.26	-0.35	-0.33	-0.27	-0.24	-0.04	0.02	0.32	0.16	0.24	0.02	0.28	-0.14	-0.15	-0.26	0.25	1				
(19) Institutional Quality	0.14	0.17	0.13	0.14	0.21	0.24	0.21	0.16	0.06	-0.10	-0.05	-0.08	-0.12	0.22	0.52	0.30	-0.25	-0.16	1			
(20) Fuel Resource Dep.	0.06	-0.01	0.14	0.14	0.17	0.15	-0.19	-0.09	0.22	0.03	0.20	0.59	0.03	-0.16	-0.33	-0.12	-0.18	0.15	-0.21	1		
(21) Non-Fuel Resource Dep.	0.02	0.04	-0.06	-0.08	0.01	0.05	0.02	0.06	0.72	0.82	-0.19	-0.07	0.08	-0.63	-0.27	0.06	0.22	0.30	0.05	0.02	1	
(22) Non-F. Res. Dep. [Alt. M.]	-0.12	-0.09	-0.23	-0.26	-0.13	-0.10	0.16	0.19	0.52	0.89	-0.27	-0.01	0.21	-0.59	-0.29	-0.05	0.32	0.26	-0.10	-0.03	0.89	1

Appendix B Tests of Estimator Sensitivity in Statistical Analyses

Table B1 – Economic Growth: Test of Estimator Sensitivity in Full Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A Robust RE	**Model B NW OLS**	**Model C RE w/AR1**	**Model D System GMM**	**Model E Robust RE**	**Model F NW OLS**	**Model G RE w/AR1**	**Model H (*) System GMM**
FDI Investment Rate (FIR)	0.037***	0.039***	0.031***	0.029**	0.034**	0.36**	0.027**	0.015
	(2.66)	(2.80)	(2.86)	(2.04)	(2.23)	(2.37)	(2.07)	(1.00)
Domestic Investment Rate (DIR)	0.44***	0.45***	0.43***	0.41***	0.54***	0.54***	0.54***	0.52***
	(7.82)	(8.43)	(8.64)	(8.31)	(7.92)	(8.49)	(8.47)	(7.81)
FDI Capital Penetration	0.025	0.025*	0.021	0.029*	0.029	0.029*	0.025	0.038*
	(1.62)	(1.90)	(1.47)	(1.93)	(1.63)	(1.88)	(1.48)	(1.88)
Domestic Capital Penetration	0.0077***	0.0072***	0.0082***	0.0055***	0.0091***	0.0084***	0.0096***	0.0070***
	(4.28)	(4.03)	(4.18)	(3.47)	(4.43)	(4.21)	(4.11)	(3.87)
Market Size	0.45***	0.43***	0.47***	0.53**	0.49***	0.47***	0.51***	0.56**
	(3.65)	(3.58)	(3.51)	(2.42)	(3.00)	(3.00)	(2.87)	(2.29)
Trade	0.74*	0.69*	0.81*	0.78	0.44	0.41	0.51	0.48
	(1.82)	(1.86)	(1.86)	(1.58)	(0.90)	(0.91)	(0.93)	(0.74)
Initial Economic Standing	-1.39***	-1.34***	-1.46***	-1.73*	-1.43***	-1.36***	-1.50***	-1.73*
	(-3.65)	(-3.75)	(-5.37)	(-1.71)	(-3.49)	(-3.68)	(-4.80)	(-1.77)
Human Capital	0.029**	0.028**	0.029***	0.039**	0.026*	0.027**	0.026**	0.033*
	(2.21)	(2.35)	(3.07)	(2.03)	(1.84)	(2.05)	(2.29)	(1.80)
Time Dummy 1980-1985	-2.47***	-2.53***	-2.48***	-2.59***	-3.05***	-3.10***	-3.08***	-3.06***
	(-5.44)	(-5.57)	(-5.20)	(-4.83)	(-5.40)	(-5.52)	(-5.21)	(-4.42)
Time Dummy 1985-1990	-0.39	-0.39	-0.46	-0.41	-0.11	-0.081	-0.20	-0.12
	(-1.04)	(-1.05)	(-1.14)	(-1.01)	(-0.25)	(-0.19)	(-0.41)	(-0.26)
Time Dummy 1990-1995	-0.67*	-0.68*	-0.69**	-0.68**	-0.29	-0.30	-0.31	-0.32
	(-1.81)	(-1.85)	(-1.97)	(-2.07)	(-0.66)	(-0.68)	(-0.73)	(-0.85)
Institutional Quality	0.15*	0.16**	0.18**	0.14	0.068	0.10	0.10	0.089
	(1.83)	(2.10)	(2.00)	(1.18)	(0.67)	(1.02)	(0.80)	(0.63)
Fuel Resource Dependence	-0.037	-0.035	-0.042***	-0.033	-0.034	-0.033	-0.039**	-0.032
	(-1.23)	(-1.32)	(-2.61)	(-0.87)	(-1.10)	(-1.23)	(-2.15)	(-0.88)
Non-Fuel Resource Dependence	-0.059*	-0.054*	-0.063**	-0.045*	-0.049	-0.043	-0.052	-0.021
	(-1.78)	(-1.83)	(2.22)	(-1.66)	(-1.39)	(-1.40)	(-1.64)	(-0.64)

Civil War	-0.22 (-0.73)	-0.22 (-0.75)	-0.23 (-0.68)	-0.35 (-0.95)	-0.36 (-1.04)	-0.36 (-1.09)	-0.40 (-0.95)	-0.37 (-0.78)
Constant	-6.75* (-1.68)	-6.50* (-1.76)	-6.93* (-1.79)	-5.71 (-1.39)	-6.55 (-1.35)	-6.50 (-1.48)	-6.71 (-1.38)	-5.69 (-1.25)
Number of Countries	84	84	84	84	63	63	63	63
Number of Observations	320	320	320	320	241	241	241	241
R-squared	0.49	0.49	0.48	—	0.52	0.52	0.52	—
Baltagi-Wu test for serial autocorrelation	—	—	2.23	—	—	—	2.22	—
Hansen test of over identifying restrictions	—	—	—	10.17 (0.60)	—	—	—	15.72 (0.20)
Arellano-Bond test for autocorrelation	—	—	—	-1.66 (0.10)	—	—	—	-1.46 (0.14)

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses except for Model B and F which displays t-ratios. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Syria in 1985" observation. The case affected the FIR variable the most.

Models A and E: Robust Random Effects regression.
Models B and F: Robust Newey-West OLS regression. I.e, controlling for heteroscedasticity and autocorrelation up to some lag (here 1 year). R^2 same as for standard OLS regression.
Models C and G: Random Effects regression controlling for first-order autocorrelation. A value of the Baltagi-Wu LBI-statistic (the unbalanced panel data equivalent of the Durbin-Watson statistic) far below 2 indicates that correction for serial correlation is clearly necessary (exact critical values are not available in the literature) (Baltagi and Wu 1999:814-23, Kögel 2003:856).
Models D and H: Arellano Bond's robust system GMM regression. The Windmeijer finite-sample correction and the forward orthogonal deviation options are applied. The latter to preserve sample size in panels with gaps (an alternative to differencing) (Roodman 2006a:1). Initial Economic Standing treated as endogenous. All other regressors treated as predetermined (i.e., eq(level) option) with the exception of the three time dummies, which are treated as strictly exogenous. All lagged levels used as instruments for first-difference equations and equations and contemporaneous first differences used as instruments for levels equations. Note that the GMM-assumptions seems OK since neither the Hansen test of overidetifying restrictions nor the Arrellano-Bond test, which focuses on the additional instruments used by the system GMM estimator, detects any problem with instrument validity (Bond et al. 2001:19, Kosack and Tobin 2006:225).

(*) Note that FIR in Model H is sensitive to outliers. Logging FIR (ln(21+FIR)) and deleting the most influential variables (2 most positive and 2 most negative detected by DFBETA) makes the variable significant.

Table B2 – Economic Growth: Test of Estimator Sensitivity in Restricted Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A Robust RE	**Model B NW OLS**	**Model C RE w/AR1**	**Model D (*) System GMM**	**Model E Robust RE**	**Model F NW OLS**	**Model G RE w/AR1**	**Model (**) System GMM**
Primary Sector FIR	-0.0019	-0.0015	-0.0012	-0.0040	0.020	0.020	0.018	—
	(-0.62)	(-0.45)	(-0.26)	(-0.78)	(1.08)	(1.16)	(0.98)	
Secondary and Tertiary Sector FIR	0.062***	0.060**	0.063***	0.041	0.11***	0.11***	0.11***	—
	(2.77)	(2.55)	(3.39)	(0.87)	(3.65)	(3.76)	(3.66)	
Domestic Investment Rate (DIR)	0.52***	0.58***	0.54***	0.50***	0.50***	0.50***	0.41***	—
	(6.00)	(7.87)	(6.47)	(3.59)	(4.04)	(4.52)	(3.21)	
Primary Sector FDI Capital Penetration	-0.012	0.013	0.0060	-0.0056	0.049	0.049	0.030	—
	(-0.14)	(0.18)	(0.08)	(-0.05)	(0.52)	(0.51)	(0.27)	
Secondary & Tertiary Sector FDI Capital Penetration	0.039	0.040	0.041	0.025	0.033	0.033	-0.00050	—
	(0.82)	(1.09)	(0.89)	(0.56)	(0.38)	(0.36)	(-0.00)	
Domestic Capital Penetration	0.011**	0.0098**	0.011**	0.012	0.0058	0.0058	0.0065	—
	(2.26)	(2.04)	(2.41)	(1.53)	(0.67)	(0.64)	(0.83)	
Market Size	0.14	0.12	0.14	0.29	-0.29	-0.29	-0.20	—
	(0.75)	(0.80)	(0.77)	(1.26)	(-0.70)	(-0.67)	(-0.37)	
Trade	0.23	0.31	0.34	0.41	0.31	0.31	0.34	—
	(0.30)	(0.52)	(0.63)	(0.54)	(0.44)	(0.46)	(0.42)	
Initial Economic Standing	-1.69**	-1.02*	-1.24**	-1.79	-1.02	-1.02	-1.49	—
	(-2.37)	(-1.70)	(-1.96)	(-1.51)	(-1.11)	(-1.11)	(-1.62)	
Human Capital	0.029	0.02	0.021	0.034	0.021	0.021	0.032	—
	(1.48)	(1.07)	(1.31)	(1.43)	(1.20)	(1.17)	(1.38)	
Time Dummy 1980-1985	-2.62***	-2.46***	-2.38***	-2.64***	-0.91	-0.91	-0.88	—
	(-3.20)	(-3.05)	(-2.73)	(-3.00)	(-0.69)	(-0.73)	(-0.71)	
Time Dummy 1985-1990	-1.73***	-1.42**	-1.50**	-1.44	0.38	0.38	0.098	—
	(-2.69)	(-2.29)	(-2.33)	(-1.61)	(0.37)	(0.38)	(0.08)	
Time Dummy 1990-1995	-0.58	-0.57	-0.52	-0.74	1.12	1.12	1.20	—
	(-1.19)	(-1.11)	(-0.99)	(-0.89)	(1.20)	(1.15)	(1.26)	
Institutional Quality	0.42**	0.33**	0.35**	0.37	0.58**	0.58**	0.65*	—
	(2.44)	(2.12)	(2.05)	(1.55)	(2.15)	(2.02)	(1.87)	
Fuel Resource Dependence	-0.036	-0.021	-0.033	-0.047	-0.014	-0.014	-0.035	—
	(-0.66)	(-0.44)	(-0.89)	(-0.51)	(-0.23)	(-0.23)	(-0.67)	
Non-Fuel Resource Dependence	0.037	0.0024	0.015	0.039	-0.057	-0.057	-0.025	—
	(0.37)	(0.03)	(0.17)	(0.32)	(-0.45)	(-0.43)	(-0.18)	

Civil War	-1.46** (-2.46)	-1.22** (-2.27)	-1.37*** (-2.57)	-1.42 (-1.52)	-1.41 (-1.52)	-1.41 (-1.52)	-1.63** (-2.03)	__
Constant	2.74 (0.37)	-1.45 (-0.25)	-0.73 (-0.11)	-0.53 (-0.07)	6.54 (0.63)	6.54 (0.64)	7.95 (0.55)	__
Number of Countries	29	29	29	29	16	16	16	__
Number of Observations	77	77	77	77	43	43	43	__
R-squared	0.75	0.76	0.76	__	0.88	0.88	0.87	__
Baltagi-Wu test for serial autocorrelation	__	__	2.57	__	__	__	3.15	__
Hansen test of over identifying restrictions	__	__	__	13.83 (0.13)	__	__	__	__
Arellano-Bond test for autocorrelation	__	__	__	-1.06 (0.29)	__	__	__	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses except for Model B and F which displays t-ratios. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. Influence analyses were conducted and resulted in the exclusion of the "Nigeria in 1990" and "Papua New Guinea in 1995" observations. The former case affected the Secondary and Tertiary Sector FIR variable, while the latter affected the Primary Sector FDI Capital Penetration variable. See Table B1 above for details on estimators.

(*) Note that FIR in Model D is sensitive to outliers. Logging FIR (ln(100+FIR)) and deleting the most influential variables (3 most positive and 3 most negative detected by DFBETA) makes the variable significant.
(**) Note that analyses displayed in Model H as number of instruments are less than number of groups (countries) and create unstable estimates.

Table B3 – Human Rights – Physical Integrity Rights: Test of Estimator Sensitivity in Full Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A Robust RE	**Model B NW OLS**	**Model C RE w/AR1**	**Model D System GMM**	**Model E Robust RE**	**Model F NW OLS**	**Model G RE w/AR1**	**Model H System GMM**
Lagged Dependent	0.59***	0.59***	-0.064**	0.13*	0.51***	0.51***	-0.069*	0.11*
	(21.34)	(20.98)	(-2.00)	(1.94)	(15.72)	(15.02)	(-1.82)	(1.78)
FDI Capital Penetration	0.0039	0.0039	0.011*	0.013**	0.0063**	0.0063**	0.013*	0.012***
	(1.42)	(1.56)	(1.75)	(2.08)	(2.00)	(2.17)	(1.78)	(2.69)
Domestic Capital Penetration	-0.00061	-0.00061	-0.00087	-0.0023*	-0.00031	-0.00031	-0.00059	-0.0011
	(-1.02)	(-1.31)	(-1.02)	(-1.95)	(-0.50)	(-0.64)	(-0.61)	(-1.04)
Democracy	0.29***	0.29***	0.50***	0.50**	0.21**	0.21**	0.29	0.23
	(3.04)	(3.26)	(2.74)	(2.23)	(2.12)	(2.22)	(1.48)	(1.37)
Population Size	-0.16***	-0.16***	-0.43***	-0.35***	-0.28***	-0.28***	-0.61***	-0.52
	(-6.14)	(-6.39)	(-5.68)	(-4.15)	(-7.21)	(-7.45)	(-6.90)	(-8.38)
Economic Standing	0.24***	0.24***	0.60***	0.46***	0.11*	0.11*	0.14	0.096
	(3.92)	(4.24)	(4.74)	(3.45)	(1.69)	(1.83)	(0.99)	(0.78)
Economic Growth	0.00066	0.00066	-0.0064	0.000037	0.0056	0.0056	-0.0038	0.0094
	(0.08)	(0.08)	(-0.81)	(0.00)	(0.63)	(0.65)	(-0.43)	(0.80)
Civil War	-0.83***	-0.83***	-1.28***	-1.95***	-1.00***	-1.00***	-1.52***	-1.79***
	(-6.04)	(-6.48)	(-7.39)	(-5.01)	(-7.17)	(-7.58)	(-7.65)	(-6.18)
Ethnolinguistic Fractionalization	-0.0049***	-0.0049***	-0.018***	-0.012**	-0.0052**	-0.0052**	-0.014***	-0.012**
	(-2.98)	(-3.30)	(-4.02)	(-2.17)	(-2.27)	(-2.54)	(-2.58)	(-2.08)
Institutional Quality	0.060**	0.060**	0.15***	0.14**	-0.023	-0.023	0.0071	-0.0086
	(2.23)	(2.40)	(3.02)	(2.53)	(-0.67)	(-0.73)	(0.12)	(-0.15)
Fuel Resource Dependence	-0.0026	-0.0026	-0.0050	-0.0048	-0.0038	-0.0038	-0.0034	-0.0035
	(-0.53)	(-0.55)	(-0.53)	(-0.39)	(-0.78)	(-0.78)	(-0.34)	(-0.50)
Non-Fuel Resource Dependence	0.0052	0.0052	0.024	0.022	0.0026	0.0026	0.015	0.019
	(0.60)	(0.60)	(1.23)	(1.19)	(0.30)	(0.30)	(0.77)	(0.85)
Constant	3.18***	2.30***	7.98***	5.78***	6.74***	6.10***	14.83***	12.17***
	(4.44)	(3.55)	(4.72)	(2.73)	(6.77)	(6.43)	(7.28)	(7.10)
Number of Countries	81	81	81	81	60	60	60	60
Number of Observations	1075	1075	1075	1075	758	758	758	758
R-squared	0.77	0.77	0.59	__	0.65	0.65	0.47	__

Baltagi-Wu LBI test for serial autocorrelation	—	—	2.13	—	—	—	2.12	—
Hansen test of over identifying restrictions	—	—	—	33.14 (0.32)	—	—	—	27.90 (0.58)
Arellano-Bond test for autocorrelation	—	—	—	1.79 (0.07)	—	—	—	1.53 (0.13)

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses except for Model B and F which displays t-ratios. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Models A and E: Robust Random Effects regression.
Models B and F: Robust Newey-West OLS regression. I.e, controlling for heteroscedasticity and autocorrelation up to some lag (here 1 year). R^2 same as for standard OLS regression.
Models C and G: Random Effects regression controlling for first-order autocorrelation. A value of the Baltagi-Wu LBI-statistic (the unbalanced panel data equivalent of the Durbin-Watson statistic) far below 2 indicates that correction for serial correlation is clearly necessary (exact critical values are not available in the literature) (Baltagi and Wu 1999:814-23, Kögel 2003:856).
Models D and H: Arellano Bond's robust system GMM regression. The Windmeijer finite-sample correction and the forward orthogonal deviation options are applied. The latter to preserve sample size in panels with gaps (an alternative to differencing) (Roodman 2006a:1). Initial Economic Standing treated as endogenous. All other regressors treated as predetermined (i.e., eq(level) option) with the exception of the three time dummies, which are treated as strictly exogenous. Levels lagged 1 year used as instruments for first-difference equations and equations and contemporaneous first differences used as instruments for levels equations. Note that the GMM-assumptions seems OK since neither the Hansen test of overidetifying restrictions nor the Arrellano-Bond test, which focuses on the additional instruments used by the system GMM estimator, detects any problem with instrument validity (Bond et al. 2001:19, Kosack and Tobin 2006:225).

Table B4 – Human Rights – Political and Civil Rights: Test of Estimator Sensitivity in Full Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A Robust RE	**Model B NW OLS**	**Model C RE w/AR1**	**Model D System GMM**	**Model E Robust RE**	**Model F NW OLS**	**Model G RE w/AR1**	**Model H System GMM**
Lagged Dependent	0.89***	0.89***	0.68***	0.96***	0.88***	0.88***	0.67***	1.02***
	(43.97)	(42.73)	(32.76)	(9.88)	(42.00)	(40.87)	(26.53)	(10.36)
FDI Capital Penetration	-0.0018	-0.0018	-0.0015	-0.0016	-0.0021	-0.0021	-0.0012	-0.00063
	(-0.83)	(-0.81)	(-0.39)	(-0.50)	(-0.76)	(-0.75)	(-0.25)	(-0.27)
Domestic Capital Penetration	0.000015	0.000015	0.00026	-0.00042	0.00018	0.00018	0.00032	-0.000091
	(0.03)	(0.03)	(0.45)	(-0.78)	(0.29)	(0.31)	(0.44)	(-0.18)
Democracy	0.50***	0.50***	1.35***	0.28	0.52***	0.52***	1.31***	0.062
	(4.58)	(4.40)	(10.04)	(0.64)	(4.59)	(4.42)	(8.18)	(0.15)
Population Size	-0.027	-0.027	-0.042	-0.0032	-0.030	-0.030	-0.054	0.012
	(-1.23)	(-1.21)	(-1.06)	(-0.11)	(-0.98)	(-0.97)	(-0.97)	(0.38)
Economic Standing	0.10**	0.10*	0.26***	0.047	0.10*	0.10*	0.19**	0.063
	(2.00)	(1.95)	(3.46)	(0.47)	(1.84)	(1.79)	(1.98)	(0.89)
Economic Growth	0.0047	0.0047	0.0039	0.0095	0.0074	0.0074	0.0055	0.013*
	(0.62)	(0.64)	(0.69)	(1.29)	(0.94)	(0.96)	(0.81)	(1.80)
Civil War	-0.13	-0.13	-0.32***	-0.14*	-0.15	-0.15	-0.36***	-0.17**
	(-1.61)	(-1.57)	(-2.95)	(-1.88)	(-1.62)	(-1.59)	(-2.60)	(-2.26)
Ethnolinguistic Fractionalization	-0.00064	-0.00064	-0.00089	0.00096	-0.00087	-0.00087	0.0013	-0.00043
	(-0.54)	(-0.53)	(-0.39)	(0.74)	(-0.54)	(-0.52)	(0.38)	(-0.26)
Institutional Quality	-0.017	-0.017	0.0063	-0.025	-0.040	-0.040	-0.049	-0.054**
	(-0.90)	(-0.92)	(0.20)	(-0.99)	(-1.42)	(-1.43)	(-1.12)	(-2.07)
Fuel Resource Dependence	-0.014**	-0.014***	-0.023***	-0.0053	-0.015***	-0.015***	-0.024***	-0.0016
	(-2.51)	(-2.57)	(-3.92)	(-0.47)	(-2.61)	(-2.67)	(-3.44)	(-0.17)
Non-Fuel Resource Dependence	-0.0054	-0.0054	-0.0066	-0.0026	-0.0066	-0.0066	-0.010	-0.0059
	(-0.97)	(-0.92)	(-0.59)	(-0.25)	(-1.13)	(-1.09)	(-0.76)	(-0.72)
Constant	0.84*	0.84*	1.29	0.17	1.05	1.10	2.29*	-0.31
	(1.85)	(1.80)	(1.40)	(0.23)	(1.57)	(1.58)	(1.74)	(-0.37)
Number of Countries	81	81	81	81	60	60	60	60
Number of Observations	1078	1078	1078	1078	761	761	761	761
R-squared	0.95	0.95	0.94	__	0.91	0.96	0.90	__

Baltagi-Wu LBI test for serial autocorrelation	—	—	1.91	—	—	—	1.92	—
Hansen test of over identifying restrictions	—	—	—	39.65 (0.11)	—	—	—	31.67 (0.38)
Arellano-Bond test for autocorrelation	—	—	—	-0.75 (0.45)	—	—	—	-0.88 (0.38)

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses except for Model B and F which displays t-ratios. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Models A and E: Robust Random Effects regression.
Models B and F: Robust Newey-West OLS regression. I.e, controlling for heteroscedasticity and autocorrelation up to some lag (here 1 year). R^2 same as for standard OLS regression.
Models C and G: Random Effects regression controlling for first-order autocorrelation. A value of the Baltagi-Wu LBI-statistic (the unbalanced panel data equivalent of the Durbin-Watson statistic) far below 2 indicates that correction for serial correlation is clearly necessary (exact critical values are not available in the literature) (Baltagi and Wu 1999:814-23, Kögel 2003:856).
Models D and H: Arellano Bond's robust system GMM regression. The Windmeijer finite-sample correction and the forward orthogonal deviation options are applied. The latter to preserve sample size in panels with gaps (an alternative to differencing) (Roodman 2006a:1). Initial Economic Standing treated as endogenous. All other regressors treated as predetermined (i.e., eq(level) option) with the exception of the three time dummies, which are treated as strictly exogenous. Levels lagged 1 year used as instruments for first-difference equations and equations and contemporaneous first differences used as instruments for levels equations. Note that the GMM-assumptions seems OK since neither the Hansen test of overidetifying restrictions nor the Arrellano-Bond test, which focuses on the additional instruments used by the system GMM estimator, detects any problem with instrument validity (Bond et al. 2001:19, Kosack and Tobin 2006:225).

Table B5 – Human Rights – Physical Integrity Rights: Test of Estimator Sensitivity in Restricted Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A Robust RE	**Model B NW OLS**	**Model C RE w/AR1**	**Model D System GMM**	**Model E Robust RE**	**Model F NW OLS**	**Model G RE w/AR1**	**Model H System GMM**
Lagged Dependent	0.57***	0.57***	0.062	__	0.55***	0.55***	-0.0037	__
	(9.34)	(9.01)	(0.98)		(7.24)	(7.11)	(-0.04)	
Primary Sector	-0.0073	-0.0073	0.0079	__	-0.024	-0.024	-0.027	__
FDI Capital Penetration	(-0.33)	(-0.37)	(0.23)		(-0.91)	(-1.00)	(-0.58)	
Secondary & Tertiary Sector	0.019*	0.019**	0.026	__	0.025	0.025	0.027	__
FDI Capital Penetration	(1.75)	(1.97)	(1.15)		(0.84)	(0.88)	(0.59)	
Domestic Capital Penetration	-0.0038***	-0.0038***	-0.0039**	__	-0.0023	-0.0023	-0.0025	__
	(-2.57)	(-2.68)	(-2.27)		(-1.39)	(-1.50)	(-1.06)	
Democracy	0.28***	0.28***	0.37	__	0.092	0.092	0.12	__
	(1.45)	(1.57)	(1.35)		(0.38)	(0.42)	(0.33)	
Population Size	-0.056	-0.056	-0.14	__	-0.28	-0.28	-0.67**	__
	(-1.16)	(-1.32)	(-1.15)		(-1.37)	(-1.43)	(-2.03)	
Economic Standing	0.39**	0.39**	0.87***	__	-0.015	-0.015	-0.049	__
	(2.34)	(2.41)	(3.19)		(-0.06)	(-0.07)	(-0.11)	
Economic Growth	-0.018	-0.018	-0.033*	__	-0.0067	-0.0067	-0.017	__
	(-0.96)	(-0.97)	(-1.68)		(-0.29)	(-0.30)	(-0.62)	
Civil War	-0.59**	-0.59**	-1.10***	__	-0.95***	-0.95***	-1.63***	__
	(-2.16)	(-2.33)	(-3.46)		(-2.91)	(-2.98)	(-3.62)	
Ethnolinguistic Fractionalization	-0.0073**	-0.0073**	-0.017**	__	-0.0059	-0.0059	-0.016	__
	(-2.13)	(-2.46)	(-2.53)		(-1.02)	(-1.27)	(-1.45)	
Institutional Quality	0.078	0.078	0.16	__	0.023	0.023	0.11	__
	(1.25)	(1.38)	(1.63)		(0.23)	(0.24)	(0.64)	
Fuel Resource Dependence	0.028**	0.028**	0.036*	__	0.0073	0.0073	0.010	__
	(2.37)	(2.48)	(1.85)		(0.44)	(0.45)	(0.39)	
Non-Fuel Resource Dependence	0.022	0.022	0.017	__	0.023	0.023	0.0023	__
	(0.64)	(0.72)	(0.34)		(0.51)	(0.57)	(0.03)	
Constant	-0.41	-0.41	-0.90	__	6.87	6.87	16.47**	__
	(-0.29)	(-0.33)	(-0.28)		(1.41)	(1.50)	(2.02)	
Number of Countries	29	29	29	__	16	16	16	__

Number of Observations	301	301	301	__	157	157	157	__
R-squared	0.82	0.82	0.74	__	0.65	0.65	0.47	__
Baltagi-Wu LBI test for serial autocorrelation	__	__	2.16	__	__	__	2.19	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses except for Model B and F which displays t-ratios. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Models A and E: Robust Random Effects regression.
Models B and F: Robust Newey-West OLS regression. I.e, controlling for heteroscedasticity and autocorrelation up to some lag (here 1 year). R^2 same as for standard OLS regression.
Models C and G: Random Effects regression controlling for first-order autocorrelation. A value of the Baltagi-Wu LBI-statistic (the unbalanced panel data equivalent of the Durbin-Watson statistic) far below 2 indicates that correction for serial correlation is clearly necessary (exact critical values are not available in the literature) (Baltagi and Wu 1999:814-23, Kögel 2003:856).
Models D and H: Cannot make valid analyses as number of observations are low compared to number of groups (countries) and variables.

Table B6 – Human Rights – Political and Civil Rights: Test of Estimator Sensitivity in Restricted Sample

	Developed and Developing Countries (A-D)				Developing Countries (E-H)			
	Model A Robust RE	**Model B NW OLS**	**Model C RE w/AR1**	**Model D System GMM**	**Model E Robust RE**	**Model F NW OLS**	**Model G RE w/AR1**	**Model H System GMM**
Lagged Dependent	0.79***	0.79***	0.66***	__	0.75***	0.75***	0.61***	__
	(15.93)	(14.06)	(15.97)		(10.98)	(9.70)	(9.37)	
Primary Sector FDI Capital Penetration	0.030**	0.030**	0.033*	__	0.031*	0.031	0.035	__
	(2.11)	(2.11)	(1.79)		(1.64)	(1.60)	(1.22)	
Secondary & Tertiary Sector FDI Capital Penetration	0.0014	0.0014	-0.00017	__	-0.015	-0.015	-0.036	__
	(0.24)	(0.23)	(-0.01)		(-0.47)	(-0.47)	(-1.09)	
Domestic Capital Penetration	0.00080	0.00080	0.00089	__	0.00059	0.00059	0.0011	__
	(1.15)	(1.29)	(0.91)		(0.62)	(0.66)	(0.69)	
Democracy	0.34*	0.34*	0.62***	__	0.49**	0.49**	0.74***	__
	(1.80)	(1.67)	(3.94)		(2.12)	(1.99)	(3.02)	
Population Size	-0.035	-0.035	-0.056	__	-0.052	-0.052	-0.092	__
	(-1.17)	(-1.22)	(-1.08)		(-0.40)	(-0.45)	(-0.49)	
Economic Standing	0.35**	0.35**	0.55***	__	0.42*	0.42*	0.62**	__
	(2.40)	(2.27)	(3.74)		(1.92)	(1.93)	(2.28)	
Economic Growth	0.0072	0.0072	0.0046	__	0.0099	0.0099	0.0084	__
	(0.52)	(0.59)	(0.35)		(0.56)	(0.59)	(0.40)	
Civil War	-0.13	-0.13	-0.17	__	-0.062	-0.062	-0.18	__
	(-0.91)	(-0.93)	(-1.06)		(-0.33)	(-0.32)	(-0.68)	
Ethnolinguistic Fractionalization	-0.0020	-0.0020	-0.0019	__	-0.0048	-0.0048	-0.0033	__
	(-0.82)	(-0.86)	(-0.66)		(-1.04)	(-1.03)	(-0.56)	
Institutional Quality	7.4E-6	7.4E-6	0.0014	__	0.0040	0.0040	-0.0014	__
	(0.00)	(0.00)	(0.03)		(0.06)	(0.06)	(-0.01)	
Fuel Resource Dependence	-0.014	-0.014	-0.014	__	-0.011	-0.011	-0.012	__
	(-1.41)	(-1.53)	(-1.34)		(-0.71)	(-0.77)	(-0.72)	
Non-Fuel Resource Dependence	-0.037*	-0.037*	-0.038	__	-0.041	-0.041	-0.046	__
	(-1.74)	(-1.83)	(-1.45)		(-1.13)	(-1.24)	(-1.01)	
Constant	-0.33	-0.0019	-0.67	__	0.27	0.49	0.56	__
	(-0.33)	(-0.00)	(-0.47)		(0.09)	(0.18)	(0.12)	
Number of Countries	29	29	29	__	16	16	16	__
Number of Observations	300	300	300	__	156	156	156	__

R-squared	0.94	0.94	0.94	__	0.86	0.86	0.85	__
Baltagi-Wu LBI test for serial autocorrelation	__	__	2.07	__	__	__	2.11	__

Main entries are coefficients, generated using STATA version 9.2. Z-ratios in parentheses except for Model B and F which displays t-ratios. Coefficients statistically significant at the 0.1, 0.05 and 0.01 level are denoted by *, ** and ***, respectively. All predictors are lagged one year. Annual dummy variables are included to provide a further control for time-specific effects. The results for these dummies are, however, not displayed in the table. Influence analyses were conducted, and although some outliers are present they exercise no significant influence on the analyses here presented.

Models A and E: Robust Random Effects regression.
Models B and F: Robust Newey-West OLS regression. I.e, controlling for heteroscedasticity and autocorrelation up to some lag (here 1 year). R^2 same as for standard OLS regression.
Models C and G: Random Effects regression controlling for first-order autocorrelation. A value of the Baltagi-Wu LBI-statistic (the unbalanced panel data equivalent of the Durbin-Watson statistic) far below 2 indicates that correction for serial correlation is clearly necessary (exact critical values are not available in the literature) (Baltagi and Wu 1999:814-23, Kögel 2003:856).
Models D and H: Cannot make valid analyses as number of observations are low compared to number of groups (countries) and variables.

Appendix C Calibration of Fuzzy-set Membership Scores

Table C1 – Calibration of Fuzzy-Set Membership Scores

Fuzzy Sets	Variable Name	Description	Coding				Justifications & Comments
			Out of the set = -4	More out than in = -1	More in than out = 1	In the set = 4	
High Economic Growth	EG	1980-2000 annual economic growth rate. Calculated as least square growth as in statistical analyses. See Appendix A for sources.	$x < 0$	$1.0 > x > 0$	$4 > x > 1.0$	$x > 4$	**Breakpoint**: Economic growth in developing countries is judged as more in than out of the set "High Economic Growth" if it is equal or higher than normal growth values in developed countries (i.e., >1.0). An alternative breakpoint also tested judged countries as more in than out of the set "High Economic Growth" if it growth surpasses the average growth in developed countries. I.e., the country is catching up economically. The average growth is here calculated for the 21 developed countries that are part of the statistical analyses (see Appendix A1). **In the set:** If economic growth is in the range of the high economic growth rates experienced by the "Tiger" economies of the developing world. I.e., Republic of Korea, Malaysia, Thailand, Indonesia and Botswana. **Out of the set:** If a country is experiencing negative growth. I.e., recession.

Table C1 – Calibration of Fuzzy-Set Membership Scores

Fuzzy Sets	Variable Name	Description	Coding				Justifications & Comments
Respect for Political and Civil Rights	PCR	Based on data from Freedom House as reported in statistical analyses. Value for 2000 is selected, but where fluctuations in the data is seen then this value is adjusted to reflect the trend. See Appendix A for sources.	$x > 11$	$11 > x > 8$	$8 > x > 5$	$x < 5$	**Breakpoint:** To be more in than out of the set a country needs to do more good than bad. I.e., breakpoint above theoretical mean of 8. **In the set:** If countries are coded as "free" (x>=11) by Freedom House (natural threshold). **Out of the set:** If countries are coded as "non-free" (x<=5) by Freedom House (natural threshold). **Comment:**
Respect for Physical Integrity Rights	PIR	Based on data from Freedom House as reported in statistical analyses. Value for 2000 is selected, but where fluctuations in the data is seen then this value is adjusted to reflect the trend. See Appendix A for sources.	$x > 6$	$6 > x > 4$	$4 > x > 2$	$x < 2$	**Breakpoint:** To be more in than out of the set a country needs to do more good than bad. I.e., breakpoint above theoretical mean of 4. **In the set:** The "in the set" and "out of the set" thresholds follow the same logic as for Political and Civil Rights above. I.e., an equal proportion of the upper and lower range of the scale is reserved for "in the set" and "out of the set" respectively. That is, "in the set" if countries are coded as 6 or higher by Freedom House. **Out of the set:** If countries are coded as 2 or lower by Freedom House.
High FIR	FIR	1980 to 2000 foreign investment rate (FIR). Calculated as in statistical analysis. See Appendix A for sources.	$x > 10$	$10 > x > 6.5$	$6.5 > x > 2.5$	$x < 2.5$	**Breakpoint:** FIR in developing countries is judged as more in than out of the set "High FIR" if it is equal to or higher than normal values in developed countries (based on data from 21 developed countries included in statistical analyses). **In the set:** If values are higher than normal values in developed and developing countries (i.e., change in slope – natural threshold in data). **Out of the set:** If values are lower than normal values in developed and developing countries (i.e., change in slope – natural threshold in data).

Table C1 – Calibration of Fuzzy-Set Membership Scores

Fuzzy Sets	Variable Name	Description	Coding				Justifications & Comments
High Primary Sector FIR	PFIR	1980 to 2000 primary sector foreign investment rate. Calculated as in statistical analysis. See Appendix C22 for sources.	$x > 10$	$10 > x > 6.5$	$6.5 > x > 2.5$	$x < 2.5$	See FIR. Seems logical to use same thresholds for FIR, PFIR, and STFIR. **Comment:** Estimations are made for some of the countries as data for the entire 1980-2000 period is hard to come by. See Table C2 below for comments on all the 18 countries included.
High Secondary and Tertiary Sector FIR	STFIR	1980 to 2000 secondary and tertiary sector foreign investment rate. Calculated as in statistical analysis. See Appendix C2 for sources.	$x > 10$	$10 > x > 6.5$	$6.5 > x > 2.5$	$x < 2.5$	See FIR. Seems logical to use same thresholds for FIR, PFIR, and STFIR. **Comment:** Estimations are made for some of the countries as data for the entire 1980-2000 period is hard to come by. See Table C2 below for comments on all the 18 countries included.
High FDI Capital Penetration	FDIP	1980-2000 average. Calculated as in statistical analysis. See Appendix A for sources.	$x > 30$	$30 > x > 20$	$20 > x > 10$	$x < 10$	**Breakpoint:** FDI Capital Penetration in developing countries is a proxy for FDI Dependence. Values are judged as more in than out of the set "High FDI Capital Penetration" if they are higher than normal values in developed countries (i.e., change in slope – natural threshold in data from the 21 developed countries included in statistical analyses). I.e., more dependent than the average developed country. **In the set:** If values are higher than all values in developed countries (natural threshold in data). **Out of the set:** If values are lower than normal values in developed and developing countries (i.e., change in slope – natural threshold in data).
High Primary Sector FDI Capital Penetration	PFDIP	1980-2000 average. Calculated as in statistical analysis. See Appendix C2 for sources.	$x > 25$	$25 > x > 20$	$20 > x > 10$	$x < 10$	See FDI Capital Penetration. Seems logical to use same thresholds for FIR, PFIR, and STFIR. The "In the Set" threshold is, however, lowered somewhat since values for FDI composites naturally will be lower than total FDI. **Comment:** Estimations are made for some of the countries as data for the entire 1980-2000 period is hard to come by. See Table C2 below for comments on all the 18 countries included.

Table C1 – Calibration of Fuzzy-Set Membership Scores

Fuzzy Sets	Variable Name	Description	Coding				Justifications & Comments
High Secondary and Tertiary Sector FDI Capital Penetration	STFDIP	1980-2000 average. Calculated as in statistical analysis. See Appendix C2 for sources.	x > 25	25 > x>20	20 > x >10	x <10	See FDI Capital Penetration. Seems logical to use same thresholds for FIR, PFIR, and STFIR. The "In the Set" threshold is, however, lowered somewhat since values for FDI composites naturally will be lower than total FDI. **Comment:** Estimations are made for some of the countries as data for the entire 1980-2000 period is hard to come by. See Table C2 below for comments on all the 18 countries included.
High DIR	DIR	1980 to 2000 domestic investment rate (DIR). Calculated as in statistical analysis. See Appendix A for sources.	x > 6	6 > x > 3	3 > x > 1	x < 1	**Breakpoint:** DIR in developing countries is judged as more in than out of the set "High DIR" if it is equal to or higher than normal values in developed countries (based on data from 21 developed countries included in statistical analyses). **In the set:** If values are higher than normal values in developed and developing countries (i.e., change in slope – natural threshold in data). **Out of the set:** If values are lower than normal values in developed and developing countries (i.e., change in slope – natural threshold in data).
Low Initial Economic Development	POOR	Level of economic development in 1980. Based on WB's Operational Lending Categories – GNI per capita US$ in 1980 (Atlas Methodology) (2007).	X<370: LC I	370<X<1510: LC II & III	1510<x<2735: LC IV	x>2735: LC >IV	**Breakpoint:** Is based on World Bank's distinction between "lower middle" and "upper middle" income countries (1510US$ per capita in 1980), and further distinction is based on lending categories (LC). Note that calculation of Predicted Qualitative Coding (PQC) is based on a logarithmic model for curve estimation. This as it yields a better fit than what is achieved by the cubic model used for the other causal conditions. **In the set:** If countries are classified according to lending category I ("low income" countries). **Out of the set:** If countries are classified according to lending category V or higher (estimated based on 1982 value).

Table C1 – Calibration of Fuzzy-Set Membership Scores

Fuzzy Sets	Variable Name	Description	Coding				Justifications & Comments
High Economic Development	ED	For Human Rights analysis this is the average economic standing (1980-2000). Based on WB's Operational Lending Categories – GNI per capita US$ in 1990 (Atlas Methodology) (2007).	x>4300	7620>x>2465	2465>x>610	X<610	**Breakpoint:** Based on distinction between "lower middle" and "upper middle" income countries (2465US$ per capita) . **In the set:** Threshold set at distinction between "upper middle" income countries and countries no longer eligible for WB lending (i.e., IBRD Graduation). **Out of the set:** Threshold set at distinction between "low" and lower middle" income countries.
High Human Capital	HC	1980-2000 average. Calculated as for statistical analyses. See Appendix A for sources.	x > 60	60 > x > 40	40 > x > 20	x < 20	**Breakpoint:** Uncertain about breakpoint, but natural threshold at about 40. Alternative more conservative breakpoint at 50 also tested. **In the set:** Higher than normal values in developing countries (positive change in slope – natural threshold) => Larger than 60 **Out of the set:** Lower than normal values in developing countries (negative change in slope – natural threshold) => Less than 20.
High Institutional Quality	IQ	1984-2000 average. Calculated as for statistical analyses. See Appendix A for sources.	x > 6	6 > x > 4.9	4.9 > x > 3.8	x < 3.8	**Breakpoint:** Since IQ is based on proxy scaled from 0 10 then breakpoint is set at the theoretically mean 5. I.e., countries with values above 5 have institutions that are more good than bad (natural threshold at 4.9). An alternative more conservative breakpoint of 5.65 (natural threshold) was also tested. **In the set:** Higher than normal values (positive change in slope – natural threshold) => Larger than 6.0. This include developmental states like Korea and Botswana. **Out of the set:** Lower than normal values (negative change in slope – natural threshold) => Less than 3.8. This include cleptocracies like Nigeria.

Table C1 – Calibration of Fuzzy-Set Membership Scores

Fuzzy Sets	Variable Name	Description	Coding				Justifications & Comments
High Resource Dependence	RD	1980-2000 average. Calculated as for statistical analyses. See Appendix A for sources.	x > 18	18 > x > 10	10 > x > 5	x < 5	**Breakpoint:** Resource Dependence in developing countries is judged as more in than out of the set "High Resource dependence" if it is higher than normal values in developed countries (i.e., change in slope – natural threshold in data from the 21 developed countries included in statistical analyses). I.e., more dependent than the average developed country. **In the set:** If values are higher than all values in developed countries (natural threshold in data). **Out of the set:** If values are equal to normal values in developed and developing countries (i.e., change in slope – natural threshold in data). **Alternative coding:** Dummy coded 1 for X>18. **Comment:** Value for Botswana are too low in raw data, and is adjusted to reflect that diamonds accounts for 80 percent of Botswana's exports (Botswana 2007).
High Fuel Resource Dependence	FRD	1980-2000 average. Calculated as for statistical analyses. See Appendix A for sources.	x > 18	18 > x > 10	10 > x > 5	x < 5	See Resource Dependence above. **Alternative coding:** Dummy coded 1 for X>18.
High Non-Fuel Resource Dependence	NFRD	1980-2000 average. Calculated as for statistical analyses. See Appendix A for sources.	x > 18	18 > x > 10	10 > x > 5	x < 5	See Resource Dependence above. **Alternative coding:** Dummy coded 1 for X>18. **Comment:** See comment for Botswana in RD above.
Democracy [Dummy]	DEM	1980-2000 average. Calculated as for statistical analyses. See Appendix A for sources.	x>19 Coded 1			x<19 Coded 0	**Breakpoint:** Set to 19 as in statistical analyses. **Alternative coding:** Botswana, Bolivia, and Colombia are also coded 1 since they score just below the breakpoint. I.e., alternative breakpoint is 18.

Table C1 – Calibration of Fuzzy-Set Membership Scores

Fuzzy Sets	Variable Name	Description	Coding				Justifications & Comments
Large Population	POP	1980-2000 average. Calculated as for statistical analysis. See Appendix A for sources.	$x > 120$	$120 > x > 80$	$80 > x > 30$	$x < 30$	**Breakpoint:** Breakpoint set at natural threshold of 80 million (change in slope). Only a limited number of countries have a higher population than the breakpoint. **In the set:** Only countries with a very large population size is considered in the set. Threshold set to natural threshold of 120 million. **Out of the set:** Only countries with normal to small populations are considered out of the set. Threshold set to natural threshold of 30 million.
High Ethnolinguistic Fractionalization	EF	Constant for each country. As for statistical analysis. See Appendix A for sources.	$x > 75$	$75 > x > 49$	$49 > x > 25$	$x < 25$	**Breakpoint:** Breakpoint set at theoretical mean of 50 (natural threshold at 49. **In the set:** Only countries with above normal values are considered in the set. Threshold set to 75 million (natural threshold – change in slope). **Out of the set:** Only countries below normal values for developing countries are considered out of the set. Threshold set to 25 (natural threshold – change in slope). **Alternative coding (dummy):** Used Dummy with breakpoint of 75.
High Impact of Civil War	CW	Number of years with presence of civil war. See Appendix A for sources.	$x > 10$	$10 > x > 3$	$3 > x > 0$	$x = 0$	**Breakpoint:** Only a few years with presence of civil war is assumed not to have a big impact on economic growth. Natural threshold at 3 years. **In the set:** If years with presence of civil war exceeds 10 (natural threshold. **Out of the set:** If no years with presence of civil war.
Legal Origin [Dummies]	LEGBRIT or LEGFREN	As for statistical analyses. See Appendix A for sources.					Countries in sample have a British (8 countries) or a French (9 countries) legal system (exception is Korea – German legal system).

Table C1 – Calibration of Fuzzy-Set Membership Scores

Fuzzy Sets	Variable Name	Description	Coding	Justifications & Comments
Religion [Dummies]	CATH or MUSL	Dummies created based on more than 50% in one religious group or not. See Appendix A for sources.		Most countries in sample have a Catholic (8 countries) or Muslim (5 countries).

Table C2 – Fuzzy-Set Data on Composition of FDI (by Industry)

Country	Description
Overall comment	**Reliability:** Although data are available for selected years for all the 18 countries included in the fuzzy-set analyses, data for the entire 1980-2000 period is harder to come by. For these countries estimations are made based on other sources (as indicated for the respective countries below). These, mix of raw data and estimates are then used to code countries as "in the set" or "out of the set" high FDI Capital Penetration. Thus, what is needed is a good approximation and not 100 percent certainty. Note that the most unreliable estimates are the ones made for Paraguay. Even these estimates are fairly robust though.
Argentina	**FDI Penetration:** Data from on stock of FDI from 1980-2000 made available by request from UNCTAD's statistical division (2004b). Missing years are interpolated. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Bangladesh	**FDI Penetration:** FDI penetration has been low and stable over the 1980-2000 period (same average over the 1995-2000 period) (UNCTAD 2006b). The penetration levels on approved stock of FDI by industry from 1995-2000 and are both in the range of the overall penetration levels (UNCTAD 2004b). Thus, primary sector FDI penetration and the secondary and tertiary sector FDI penetration for the 1980-2000 period are assumed to be stable and equal to the levels seen for the 1990-1995 period just commented on. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** The 1980-97 period was—based on overall stock data—characterized by disinvestment (UNCTAD 2006b). Data on approved stock of FDI by industry from 1995 to 2000 (UNCTAD 2004b), also indicate that flows of FDI took of in Botswana as late as in 1997. Thus, primary sector FIR and secondary and tertiary Sector FIR is assumed to be low for the 1980-2000 period. The approved stock of FDI by industry from 1995 to 2000 (UNCTAD 2004b) indicate that flows are equally shared between the primary and the secondary and tertiary sectors. Thus, the primary sector FIR and the secondary and tertiary sector FIR for the 1980-2000 period are set to equal the overall rate for foreign investment FIR.
Bolivia	**FDI Penetration:** Data on stock of FDI from 1980-1989 made available by request from UNCTAD's statistical division (2004b). Data on flows of FDI by industry from 1990-2000 from same source can be added to the 1980-1989 stock data. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Brazil	**FDI Penetration:** Data on stock of FDI from 1980-2000 made available by request from UNCTAD's statistical division (2004b). Missing year is

Table C2 – Fuzzy-Set Data on Composition of FDI (by Industry)

Country	Description
	interpolated. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Botswana	**FDI Penetration:** The composition of FDI has historically been located in the mining sector. Later (fuelled by the growth in the economy) the country has also attracted some market-seeking investments (UNCTAD 1999a:23). The mining sector, nevertheless, dominates the composition of FDI Capital Penetration with a share of about 80 percent in 2000 (almost exclusively located in the mining sector) (UNCTAD 2006b). This in spite government policies attempting to attract non-primary FDI in order to diversify the economy away from the mineral sector (Smith 1995:49). Since good data exist for 1992, a conservative estimate would be to assume that the pre-1992 levels of primary sector FDI penetration is equal to the 1992 level (i.e. 75 percent of total FDI), and that this level has increased gradually towards the 80 percent level seen in 2000. These sectoral shares are used to calculate the sectoral penetration levels (based on overall FDI levels). The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Colombia	**FDI Penetration:** Data on stock of FDI by industry from 1970-1990 from UNCTAD's WID (UNCTAD 1994). Also data on stock of FDI by industry from 1996-2000 (UNCTAD 2004b). FDI flow data can be used to calculate stocks for the 1993-166 period. Missing years are interpolated. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI.FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Indonesia	**FDI Penetration:** In 1988 80 percent of the composition of FDI Capital Penetration were in the primary sector (Lindblad 1998:26). From 1992 to 1996 the share of the primary sector in FDI Capital Penetration was reduced from about 60 percent to about one-third. These figures where estimated by combining total FDI data from UNCTAD (2006a) and non-petroleum FDI data from WID (UNCTAD 2000a:241-42). Moreover, FDI flow data from 1999-2001 (UNCTAD 2004b), and total FDI data from (UNCTAD 2006a) indicate that the 1997-2000 period was characterized by disinvestment (10 percent in the primary sector and 90 percent in the secondary and tertiary sectors). A conservative estimate of the share of the primary sector in total stock of FDI in 2000 would, therefore, be equal to the 1996 level (one-third). Missing years are interpolated. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Republic of Korea	**FDI Penetration:** Data on stock of FDI from 1980-2000 made available by request from UNCTAD's statistical division (2004b). The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A). Since, primary sector FDI

Table C2 – Fuzzy-Set Data on Composition of FDI (by Industry)

Country	Description
	in Korea historically has been limited, the increased FDI flows in the sector seen in the 1998-2000 period generates a high primary sector FIR that is not representative for the 1980-2000 period as a whole. Thus, the primary sector FIR for Korea is calculated based on the 1980-1998 period (this adjusts the FIR in the sector downwards from 12 to 4 percent).
Malaysia	**FDI Penetration:** Data on stock of FDI from 1980-1995 made available by request from UNCTAD's statistical division (2004b). However, the data cover only companies above a certain size and is, therefore, only used to estimated the share of the primary sector in total FDI (fall from about 20 percent in 1980 to about 5 percent in 1995). A 5 percent share of primary sector stock of FDI in total FDI is also assumed for the 1996-2000 period since the trend in the share of the primary sector indicate a stabilization at this level This data is then used to estimate the primary sector and the secondary and tertiary sector FDI penetration (the result is the same if only 1980-1995 period is considered). The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Nigeria	**FDI Penetration:** Data on stock of FDI from 1980-1995 made available by request from UNCTAD's statistical division (2004b). However, data on stock of FDI by industry in local currencies is available from 1970-2003 (Nigeria 2004). These latter data are used to calculate the share of primary sector FDI in total FDI, which again is used to estimate the primary sector and the secondary and tertiary sector FDI penetration. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Pakistan	**FDI Penetration:** Good data from 1980, 1988-1997 made available by request from UNCTAD's statistical division (2004b). Flow of FDI by industry from 1997-2000 from same source is used to calculate the stock for the this period. Missing data is interpolated. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Peru	**FDI Penetration:** Data on stock of FDI from 1980-2000 made available by request from UNCTAD's statistical division (2004b). The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Philippines	**FDI Penetration:** Data on stock of FDI from 1990-2000 made available by request from UNCTAD's statistical division (2004b). Identical data from 1987-1998 available from UNCTADs' WID (UNCTAD 2000b:422). Total FDI penetration is increasing over the period, but since it is

Table C2 – Fuzzy-Set Data on Composition of FDI (by Industry)

Country	Description
	stable at a low level in the first seven years the average penetration values is still about the same for the periods 1980-2000 and 1887-2000. It is, therefore assumed that FDI composite penetrations for the 1987-2000 period is representative for the 1980-2000 period as well. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration data (for 1987-2000), and as in the statistical analyses (see Appendix A). Considering the low level of FDI flows in the seven first years this approximation seems ok.
Papua New Guinea	**FDI Penetration:** Data on stock of FDI from 1988-1997 made available by request from UNCTAD's statistical division (2004b). The share of the primary sector FDI in total FDI for this stable at 92 percent. This share is used to estimate the primary sector and the secondary and tertiary sector FDI penetration (about same result if a 92 percent share is assumed for the entire 1980-2000 period). The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration data (for 1988-1997), and as in the statistical analyses (see Appendix A) (about same result if a 92 percent share is assumed for the entire 1980-2000 period).
Paraguay	**FDI Penetration:** Data on stock of FDI from 1995-2000 made available by request from UNCTAD's statistical division (2004b). Data on flows of FDI by industry is available for the 1992-2000 period (UNCTAD 2006b), and can be subtracted from stock data to create stocks for the 1992-1995 period. Since the levels of overall FDI penetration was stable until the late 1990s (UNCTAD 2006a), and level of FDI flows were low in the 1980s (2004b), it seems reasonable to assume that the stable levels seen in the 1992-2000 period for primary sector FDI penetration and secondary and tertiary sector FDI penetration (until 1998) is representative for the entire 1980-2000 period. The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the assumed stable FDI Penetration data above, and as in the statistical analyses (see Appendix A). (about same result if only 1992-2000 period is considered).
Thailand	**FDI Penetration:** Data on stock of FDI from 1980-2000 made available by request from UNCTAD's statistical division (2004b). The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).
Venezuela	**FDI Penetration:** Data on stock of FDI from 1980-2000 made available by request from UNCTAD's statistical division (2004b). The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).

Table C2 – Fuzzy-Set Data on Composition of FDI (by Industry)

Country	Description
Zambia	**FDI Penetration:** The composition of FDI has historically been located in the mining sector, and prior to the privatization program in the early 1990s almost all investments were located in the primary sector (assume here about 90 percent) (Sklar 1975:183, UNCTAD 1997:435-38, White 1995:66). However, the privatization program increased significantly the share of foreign investments in the secondary and tertiary sectors (McCulloch et al. 2000:11-12, Rolfe and Woodward 2004:16-21). Thus, by 2000 the stock of FDI in the primary sector only constituted about one-third of the total stock of FDI (UNCTAD 2006b). These sectoral shares are used to calculate the sectoral penetration levels (based on overall FDI levels). The data looks ok and make sense when comparing FDI composite trends with trends of overall FDI Penetration. **FIR:** FIR calculated based on the FDI Penetration above, and as in the statistical analyses (see Appendix A).

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