

# Muslim immigrants and violent crime: Can religion explain individual violent behavior?

A time series analysis of Danish and Norwegian violent crime data, 2004-2014.



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## Sammendrag

Økt innvandring de siste tiårene har ført til økt støtte til populistiske og innvandrings skeptiske partier øker i Europa. Stigende frykt for innvandring se ut til å henge sterkt sammen med en frykt for Muslimske innvandrere grupper spesielt. Dette kan komme av et sterkt mediefokus på konflikter i Muslimske land, samt at flere terrorangrep i Europa har vært knyttet til Islamske ekstremister.

Ved å analysere voldelig kriminalitetsstatistikk fra Danmark og Norge over en 11-årsperiode, undersøkes det om det finnes grunnlag for å frykte muslimske innvandrere spesielt. Det benyttes en zero-inflated negative binomial regresjonsmodell for å behandle dataen, som inneholder store mengder 0-verdier.

Resultatene viser at personlig religion ikke har noen direkte sammenheng med individuell voldelig kriminalitet. Analysen avdekker en sterk effekt av innvandrere fra land i Nord-Afrika og Midtøsten, som viser at landespesifikke og kulturelle faktorer kan påvirke individets tilbøyelighet til voldelig oppførsel. Analysen viser likevel at voldskriminalitet blant innvandrere fra disse regionene har vært på vei ned siden 2009.

## Abstract

The increase in immigration over the last decades has resulted in more support for populist and anti-immigration parties in Europe. Rising fear of immigration seems to have a strong connection to Muslim immigrants. This could reflect medias strong focus on conflicts and violence in the Middle East, or be due to several terrorist attacks in Europa that has been connected to Islamic extremists.

By analyzing violent crime statistics from Denmark and Norway over an 11-year period, this paper investigates if there is a rational reason for fearing Muslim immigrants. A zero-inflated negative binomial regression model is employed to suit the data, which contains large numbers of zero-values.

The results of this analysis show that there is no direct connection between personal religion and individual violent behavior. A strong positive effect of immigrants from countries in North Africa and the Middle East is however detected. This could indicate that cultural and country specific factors can indeed affect individual behavior. Even though an effect of specific regions are caught, the crime statistics show that crime in immigrant groups from North African and Middle Eastern countries has been decreasing steadily from 2009.

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## 1. Introduction

Conflict in the Middle East has led to increased amounts of immigrants and refugees from Muslim countries in the last decade. Gleditsch and Rudolfson remark that “While the world as a whole is becoming more peaceful, [...] the Muslim world is not.” (Gleditsch and Rudolfson 2016: 4). Fox (2003) argues that media coverage of conflict in the Middle East drives a growing public perception that Islam is violent and dangerous, which in turn sparks a hostile attitude towards Muslim immigrants and refugees. Politicians have also contributed to this perception. Donald Trump has on several occasions expressed fears of Muslims; in a speech on immigration held in Arizona, he proclaimed that more lenient immigration policy would lead to “[...] thousands of more violent horrible crimes, and total chaos and lawlessness” (Golshan 2016). The Norwegian government, led by the right wing parties, has in turn reacted to increased immigration and refugee flow with more restrictive immigrant policies (Wormdal, Bendixen and Horn 2015). In Denmark, the right wing, anti-immigration Danish People’s Party has grown to be the second largest party in the country, and now has a significant influence on Danish immigration policy (Delman 2016).

In 2012, the head of the police security force (PST) told the press that more immigration from Muslim countries would lead to heightened levels of conflict and violence in Norway (Dagbladet 2012). In the last five years, we have seen a rise in islamophobia, and anti-Islam groups like Sons of Odin, Stop the Islamification of Norway (SIAN) and Pegida. In a polling following a Pegida-led protest against Islam, 88% of progress party voters in Norway answered that they agreed with Pegida’s statement “Muslim immigration and influence is a threat to Norwegian society” (Ringheim and Lofstad 2015). In Denmark, anti-immigration sentiments have been more evident in the political sphere. Danish and Norwegian immigration specialists have pointed out that even though anti-immigration attitudes exist in both countries, nationalistic rhetoric has been more evident in Denmark (Haugan 2011).

The differences in immigration policy in the Nordic countries have become more clear over the last 50 years. Norway, Sweden and Denmark have traditionally been positive to humanitarian aid and policy, and Denmark was the first country to ratify the UNs refugee convention. However, when non-economic immigration to Nordic countries grew, fear of how the welfare state would handle immigration also arose (Tølbøll 2016; Haugan 2011). While Sweden adopted a very liberal immigration- and integration policy, Denmark moved in the opposite

direction. Since 1970, Danish governments have continuously made immigration policy stricter (Haugan 2011). Recent cuts in social benefits for refugees and immigrants, a point system and prolonged time limit for family reunification are all part of a further tightening of immigration policy the past five years (Delman 2016; The Local 2015).

Many claim that Denmark now has Europe's strictest immigration policy (Gjerstad 2010). Norway's immigration policy have been less strict than Denmark's, but not as lenient as Sweden's. In Norway, the average time spent in the country before obtaining citizenship is seven years, while Denmark has an average of nine years (Amundsen 2015). Norway has, like Denmark, seen a rise in support for right wing populist parties, and the Norwegian Progress Party entered into a coalition government in 2013. Norway's immigration policy has thus been tightened somewhat, but is still not as strict as Denmark's, as there has been few changes to laws on family reunification or social support for refugees and immigrants.

With growing immigration, the negative tone in the immigration debate seem to get stronger. Tølbøll (2016) points out that the skepticism towards immigration is primarily aimed at non-westerners, and specifically Muslims. Immigration and the welfare state has been problematized by many, maybe most noteworthy by Branco Milanovic. He argues that the welfare state will attract unskilled immigrants who will eventually bring down the welfare system in a "self-fulfilling prophecy of failure" (Milanovic 2017). Danish immigration expert Per Mouritsen also points out that more immigration might threaten the welfare state, as natives might lose the will to redistribute wealth if they think certain groups does not contribute. According to Mouritsen, public surveys have shown that many believe that immigrants generally do not contribute, and are awarded an unfair amount of welfare (Amundsen 2015). Grethe Brochman, leader of the Norwegian committee that study the long-term effects high immigration in Norway, also point out the problem immigration, fear and possible withering away of the welfare society's solidarity concept (Amundsen 2015). Interestingly, it seems like this fear and suspicion, like Tølbøll (2016) mentions, is mainly directed at Muslim immigrants. This might be due to the frequency of Islamic terrorist attacks on Europe during the last couple of decades, or, like Fox (2003) points out, the media coverage of religion-driven conflict in the Middle East. The Muhammed cartoon controversy of 2005 in Denmark might also have heightened the sense of "us" and "them", and contributed to the seemingly growing intertwining of islamophobia and fear of immigration.

With this phenomenon being so prominent in the public and political debate, there exists little research on immigration and national security, apart from research on extremism and terrorism

threats. This could be due to the lack of data on individual-level indicators of security, like crime. Most European countries have tried to counteract this rising xenophobia, and islamophobia, by refusing to collect data where national background is listed. Violent crime data, for example, is not available for most European countries. The exception is Norway and Denmark. Using violent crime as an indicator for a lowered security level in these two Nordic countries, I test if there really is a reason for the growing fear of Islam – are Muslims more violent than others?

As mentioned, detailed individual level data is scarce. I therefore use country level data to make assumptions of immigrant's religious belonging, if they have experienced civil war, et cetera. This method does leave some room for error, but the size of the selection in the data set should make up for possible errors when attributing certain characteristics to immigrants based on their country of origin. I use a zero inflated negative binomial regression appropriate to count data to investigate the connection between religion and violent crime. A wide set of controls are employed to see how robust religion is for explaining variation in violent crime in different immigrant groups in Norway and Denmark. I specifically test if country specific factors such as regime type, civil war and violence levels can explain variations in crime rates in immigrant groups, and if these are more effective explanations than religious affiliations.

The results show that while the variable for immigrant groups from countries with a Muslim population is more robust to many of the controls in the analysis than the other religion variables, the variable is not robust to control for North African and Middle Eastern countries. While the variables for Christian and Catholic dominant countries are largely non-significant, the Muslim dominant country variable show significant and positive results in most of the ZINB models. However, when the regional control is added, the results of the Muslim dominant country variable show high p-values and even a negative Incident rate ratio (IRR). These results show that personal religious belief is not a good predictor of violence on an individual level. However, the effect of the North African and Middle Eastern country variable might indicate that religion can influence regime type and conflict, which may again affect its citizens. Variables employed to investigate factors like national homicide rates, regime type and conflict point to a significant effect of country specific factors having explanatory power for individual violent behavior. This analysis underline that further research is needed on several areas for understanding how national circumstances in the country of origin of immigrants can influence violent behavior in host countries. Religions effect on states and their policies, laws and norms is far from clear, and is an important topic of further investigation.



The key finding of this analysis is important to note in a political environment where immigration is increasing, and populist anti-immigration and islamophobic parties are on the rise in many European countries. There is no evidence to support the popular notion that Muslims are somehow dangerous and violent. Individual religion is not a good predictor of violent crime rates, and thus there should be no reason for an intertwining of fear of immigration and islamophobia.

Additionally, this analysis shows that immigrants from certain regions have higher expected violent crime rates. The reasons for this is not clear, and could be due to both factors endemic to the country of origin of some immigrant groups, or due to conditions in the host country. It is interesting to note that while this analysis shows that immigrant groups from North African and Middle Eastern countries have higher rates of violent crime, the trend is going down, as is violent crime in immigrant groups from Muslim dominant countries. It will be important for future policy regarding immigration and integration to know the risk factors connected to country specific factors, as well as the possible hindrance to integration due to discrimination and educational and economic performance.

## 2. Theoretical framework and literature review

### 2.1. Religion and conflict

Few have attempted to link religion and violent behavior in the literature on immigration and violent crime. However, in conflict research, several have attempted to make this connection. Middle Eastern countries have experienced a disproportionate amount of violent conflict over the last decades, which has prompted the academic endeavor to explain these conflicts by more area specific variables, including religion. The high level of conflict in areas where Islam is the dominant religion may be one of the reasons for a growing fear of Islam in the West. Fox (2003) points out that the media coverage from violent conflicts in the Middle East may contribute to a popular notion that Muslims are violent and dangerous. It is important to understand the connections between religion, political violence and civil war to understand the potential connection between religion and violent behavior on an individual level.

The majority of scientists trying to link Islam and conflict outbreak refer to Samuel Huntington's "clash of civilizations", where he argues that Islam is especially violent, compared to other religions (Huntington 1996). Huntington predicted that the world would face new types of conflict, driven by ethnic and religious differences. This theory has been widely tested, but few have found it to be plausible. However, many have found a link between culture, religion and conflict. This connection is specifically seen in Muslim societies (Fish 2002; Fox 2003; Sørli, Gleditsch and Strand 2005; Gleditsch and Rudolfson 2016).

Fish (2002) argues that there are many misconceptions of Muslim societies, such as less interpersonal trust, lower level of secularism, and more political violence. He does not find any support for Huntington's (1996) theory of more violence in Islamic countries, nor any of the other above-mentioned conceptions. However, he finds significantly higher levels of gender inequality in Muslim societies. This does not directly signify that Islam may cause higher levels of violence, but it can make authoritarianism more likely in Muslim countries, which again may lead to more political violence (Fish 2002). Sørli, Gleditsch and Strand (2005) find similar evidence in their research on conflict outbreak in the Middle East. Their analysis found that regime type might affect conflict outbreak and duration, but that a Muslim majority in a country cannot explain higher levels of violence, even when controls for conflict between Sunni and Shia Muslims are added (Sørli, Gleditsch and Strand 2005). The possible link between religion, regime type and violence will be further discussed in a separate chapter.

De Soysa and Nordås's (2007) study of religion and political terror shows a different picture than the above mentioned, as they find no evidence of a connection between Islam and either repression or political violence. Karakaya's (2015) study of religion and intrastate conflict show the same results, and point to other factors than religion for explaining conflict in the Muslim world. While both De Soysa and Nordås (2007) and Karakaya (2015) argue that political and economic risk factors for conflict such as oil dependency, autocracy, low GDP per capita and state repression is more salient explanations for conflict in Muslim-plurality countries, Karakaya adds a demographic factor. Her study finds that for Muslim-plurality countries, a present youth bulge has the strongest impact on the risk of intrastate conflict (Karakaya 2015). This finding is interesting for the study of individual violent crime in immigrant groups, as most immigrants are young men. The immigrant data does not include age of immigrants, but as we already know from the descriptive crime data from SSB, young men tend to be overrepresented in crime statistics (Skardhammer, Thorsen and Henriksen 2011). The exclusion of a control for age will then probably have little effect on the analysis.

In a study of state failure and Islam, Fox (2003) seeks to discredit one of three hypotheses: Muslims are generally more violent than other religious groups, *some* Muslims are more violent, and Muslims are not more violent than people belonging to other religions. He finds that, when controlling for population size, Muslim groups are generally more involved in domestic conflict. This may not clearly be attributed to religion alone, as many Islamic countries have several other risk factors for domestic conflict, such as natural resource dependency and artificially drawn borders (Sørli, Gleditsch and Strand 2005; De Soysa and Nordås 2007). In a test of conflict intensity<sup>1</sup>, which may be a better instrument for measuring influence of religion directly, Fox finds no evidence of higher intensity in conflicts involving Muslim groups.

As pointed out by several of these academics, religion is hard to operationalize when working with big data sets, and further research may require more qualitative data. The debate on how Islam may be connected to conflict and political violence is far from settled. Recent research on the topic has found evidence that suggest that some types of violence is more likely to occur in Muslim countries. Using PEW's religion dataset and the Uppsala conflict dataset, Gleditsch and Rudolfson illustrates that the Muslim world is indeed, at the moment, more violent than others. In 2012, six armed conflicts with more than 1000 battle related deaths were ongoing. All of these conflicts were located in Muslim countries. They point out that "While the world as a

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<sup>1</sup> Fox (2003) measures intensity by number of combatants, number of combat related deaths and proportion of the country affected by the conflict.

whole is becoming more peaceful [...] the Muslim world is not” (Gleditsch and Rudolfsen 2016: 4). They point out that there may be several reasons for a higher level of conflict in Muslim countries that does not have roots in religion, such as western intervention, artificial borders caused by colonization and resource dependency. However, Gleditsch and Rudolfsen (2016) underline that religion cannot be dismissed as a variable in conflict research, as this factor can affect other variables in unknown ways, in addition to being a factor on its own. The study finds that Muslim countries are not just overrepresented in the latest intrastate conflict data, but also have higher scores in several other violence indicators: violence against unorganized civilians, violence where none of the participants are the state, and serious human rights violations. The results for Christian countries on these indicators were all under the mean score.

In Fox’s (2003) study of violent conflicts from 1965 to 1996, the results show that Muslim groups participate in a disproportionate amount of violent conflicts and that “Muslim groups have been particularly bloody” (Fox 2003: 37). However, this is also true for Christian groups, as they in some periods the study covers participate more in violent conflict than Muslim groups (Fox 2003). These results could indicate that some religions are in fact more violent than others are, but that Christianity is no “better” than Islam. These results are to some extent contradicted by the findings of Gleditsch and Rudolfsen (2016), who find that Christian majority countries score under the mean value on all the above-mentioned indicators of violence. The differing results could just as well indicate that religion simply is not a good measure for explaining violent behavior, as they could indicate that Muslim countries are more violent. How religion is operationalized in the literature differs, and a simple difference in the definition of “Christian” can account for different results in quantitative analyses. The question of operationalization of religion variables will thus be discussed in the method chapter my analysis.

Contemporary research on the possible link between religion and conflict uses more refined methods to try to sort out the effect of different religions on conflict and violence. Better methods for using religion as a factor in quantitative research has shown results that indicate a stronger effect of religion than previous research has found. Basedau, Pfeiffer and Vüllers (2016), like many others, underline that in theory, there are good reason for suspecting a religious effect in conflict and violent behavior. All religions have aspects that can create motive and a possibility to overcome the collective action problem. Isolating different aspects of religion and how they can affect conflict is a goal which is hard to overcome. Basesau,

Pfeiffer and Vüllers (2016) try to solve the problem of detecting different religious effects by distinguishing between religious practice and religious structures. They do not look at specific religious affiliations, but find a general effect of overlapping religious and other identities on conflict in their dataset of 130 developing countries. Some identity markers combined with religious belief can possibly spark or intensify conflict, but it is still unclear if this effect differs between religions.

One could suspect Islam of having more of the mentioned aspects which could influence violence and conflict, as there currently is more conflict in the Muslim world than anywhere else, and researchers like Gleditsch and Rudolfsen (2016) have found results indicating higher levels of different types of violence in Muslim countries. Fish, Jensenius and Mickel (2010) propose that the concept of Jihad could be one of the important aspects that make Islam different from other religions when it comes to explaining the occurrence of religious violence and conflict. They point out that none of the other modern religions has a concept like this, and that if Jihad is an aspect of modern Muslims religious practice, it would not be surprising to see more political violence in Muslim countries. However, many argue that most Muslims interpret the Jihad concept in a non-violent way, and point to an often observed low murder rate in Muslim countries to substantiate this claim. The results from Fish, Jensenius and Mickel's (2016) study of large-scale political violence show unclear results, but concludes that there is no evidence to support a claim that Muslim countries are more prone to political violence than countries with other dominant religions. A test for Islamist effect on large-scale political violence showed that this ideology has an effect, but not necessarily more than other ideologies. The authors do not attempt to link religion and recruiting to extremist ideologies, which could have brought more clarity to the connection between religion and political violence.

It is hard to say on what level trends in conflict data may reflect in the violent crime statistics in western countries, or if it is transferable to personal violence. Given the contradictory findings of research on religion, conflict and political violence, it is interesting to test how religion can influence crime rates. While it is unclear just how big the impact religion has on conflict and political violence and repression compared to political and economic factors, religion does seem to play a role. Some, like Gleditsch and Rudolfsen (2016) find that Muslim societies score higher than others on several violence indicators. On the other hand, De Soysa and Nordås (2007) find that catholic majority countries score higher for political terror.

If religion has a significant impact on conflict and violence on a country level, can it be translated to violence on an individual level? The results from recent conflict research in

Muslim societies suggest that Islam indeed could explain part of the overrepresentation in conflict data. My main hypothesis for this paper assumes that if Islam can explain elevated conflict levels in the Muslim world, religion could also affect individual violent behavior in terms of interpersonal violence. Thus, I propose the following hypothesis:

H1: Muslim immigrants are more violent than non-Muslim immigrants.

## **2.2. Religion and regime type**

It is quite evident from both media and immigration research that the popular notion in the western world is that Muslims are inherently different in some way. Factor like intensity of religion, conservative values, support for patriarchy and autocratic state structures, and lack of support for democratic values are often mentioned as possible reasons for why Muslims can be difficult to integrate into Western democracies (Abou el Fadl et al. 2004; Norris and Inglehart 2002; 2012). Discrimination research done in Western Europe clearly demonstrate how these notions can have implications for Muslim immigrants in the labor market, and possibly elsewhere. How strong these alleged differences between Muslim and other immigrants are, and how they can influence individual violent behavior is unclear.

Research has indeed shown that Muslims tend to be more religious than people belonging to other religions (Norris and Inglehart 2002; 2012). If degree of religiousness is relevant for integration or violent behavior is unclear, although right wing politicians would like to argue that Muslims have a fundamental problem with adapting to a more secular democratic state.

The compatibility of Islam and democracy is widely discussed, both by western scholars and in Muslim academia. In a review book by Khaled Abou El Fadl (2004), scholars from around the world with different connections to Islam discuss how contemporary Islam relate to democratic ideas, and what challenges Muslim countries face when it comes to regime type. In the opening chapter, Abou El Fadl writes that

*“For Islam, democracy poses a formidable challenge. Muslim jurists have argued that law made by a sovereign monarch is illegitimate because it substitutes human authority for God’s sovereignty. But law made by sovereign citizens faces the same problem of legitimacy.”* (Abou El Fadl 2004: 4).

The discussion reveals arguments about why the Muslim world lags behind in democratic development that mirror arguments we have already seen in the conflict literature. Several of the contributors point out that oil dependency, colonialism, and the Wests support of autocratic regimes are to blame for the lack of democracy in the Muslim world, rather than Islam itself.

Several of the contributors point to the fact that many Muslim countries have successfully built democracies, and this underlines the fact that Islam in of itself is not a hindrance of democratic values (Abou el Fadl et al. 2004). Hashemi (2004) point out that while Islam needs to modernize in order to build successful democracies, religion is not incompatible with democracy: “Not too long ago It was similarly argued that Catholicism was and obstacle to democracy and that only countries with a protestant majority respected popular sovereignty” (Hashemi 2004: 51).

The arguments that point out structural flaws in Muslim-dominant countries as the main hindrance for democracy seems to be reflected in the empirical work of scholars such as Fish (2002), Donno and Russet (2004) and Norris and Inglehart (2002; 2012). In a study of the World Value Survey and the European Value Survey, Norris and Inglehart (2002) find that support for key democratic values does not differ significantly between Muslims and Westerners. In their study, they uncover that there is virtually no difference in Muslim and Western societies on three out of four indicators of democratic values. The one where Muslim societies differed were support for religious authorities. However, the authors underline that support for religious authorities were not specific to Muslim societies, but also seen in Sub-Saharan Africa and Catholic Latin America (Norris and Inglehart 2002). Support for religious authorities could be attributed to structural factors. Noah Feldman is one of the contributing authors in Abou El Fadl’s (2004) book who point to the West’s support of autocratic leaders in the Muslim world:

*“The greatest barrier to Islamic democracy now are the autocrats themselves. Dictators and monarchs have repressed the secular and liberal opposition, leaving just enough room for extremist Islam to tell the West that the only choice is between the autocrats and the radicals”* (Feldman, 2004: 61).

Norris and Inglehart’s (2002) results could be interpreted to support the scholars who argue that structural and institutional conditions in many Muslim-majority states are to be blamed for a lack of democratic values, and that religion does not instill negative attitudes towards democracy in Muslims.

It seems that although research suggests that Muslims on average are more deeply religious than members of other religions, this fact should not interfere with belief in democracy. However, there are cultural differences between people in Muslim and western societies that could potentially be hard to combine with liberal democracy. Referring to Huntington’s “clash of civilizations” thesis, Norris and Inglehart write that

*“[...] culture does matter, and indeed matters a lot, so that religious legacies leave a distinct imprint on contemporary values. But Huntington is mistaken in assuming that the core clash between the West and Islamic worlds concerns democracy” (Norris and Inglehart 2002: 235).*

They argue that the divide between Western and Islamic societies “involves Eros far more than Demos”, pointing to their findings concerning social beliefs in gender equality and sexual liberalization (Norris and Inglehart 2002: 236). While the real “clash” in democratic values takes place between Western societies and post-communist states such as Russia, Moldova and Ukraine, a substantial cultural cleavage exists between Western and Muslim societies. Furthermore, Norris and Inglehart’s cohort analysis reveals that this cleavage is growing wider as the younger generations in the West are growing more liberal, the same generations in Islamic societies remain deeply traditional (Norris and Inglehart 2002).

To separate democratic and societal values in the way Norris and Inglehart do may not make sense when discussing Muslim societies’ democratic potential. As noted by Fish (2002), views on gender equality is not separate from democratic thought. In a study of Muslim societies possible democratic deficit, he finds much the same as Norris and Inglehart’s survey based study, but interprets this in another way. Fish (2002) find that among several factors, subjugation of women in Muslim societies may be the most salient factor in explaining differences in regime type between Western and Muslim societies.

*“Due perhaps to cultural sensibility or to an understandable reluctance to characterize nearly one-third of the world’s polities as intractably resistant to popular rule, scholars have tended to treat the relationship between Islam and democracy circumspectly and have steered clear of examining it rigorously. The evidence presented here, however, reveals a link that is too stark and robust to ignore, neglect or dismiss” (Fish 2002: 13).*

Fish’s results do show that Islam-dominant states are less democratic, and that gender equality is a significant explanatory factor. It is however not clear why and how this factor could have implications for democratic development. Alexander and Welzel (2011) reveal similar results in a paper based on cross national survey data. Their research reveal what they note as a “remarkably robust” tendency of support for patriarchal values in Muslim societies. A higher degree of support for patriarchal structures in Muslim societies are robust when controlled for several factors, including levels of democracy, oil dependency, mobilization of women in the work force and power structures (Alexander and Welzel 2011: 20). Contrary to Fish (2002), Alexander and Welzel (2011) stress the uncertainty of how support for patriarchal values and



subjugation of women in Muslim societies relate to culture, religion and democratic structures. Donno and Russet (2004) point out this unaddressed flaw in Fish's (2002) analysis in their replication of his study. They also find that Islamic states have a higher probability of autocratic regimes, but are skeptical of Fish's conclusion that oppression of women alone can explain this. Their replication of Fish's analysis also show that Arabic countries stand out as most likely to have autocratic regimes, which can indicate that Fish (2002) overlook important cultural factors that could have an impact. Like many of the earlier mentioned scholars, Donno and Russet (2004) point to the fact that cultures can change, and that many cultures connected to holistic religions such as Catholicism have previously been unlikely to build democracies.

The exact causal link between Islam, regime type and conflict is far from clear, as is the connection between Muslim values and democracies. Even so, there seems to exist a consensus that Islam has some fundamental issues when it comes democracy. How that may affect individual Muslims is, again, uncertain. Norris and Inglehart (2012) conclude in a study on Muslim immigrant's adaption to western societies that Muslims, contrary to popular belief, do not come with fixed and unmalleable values. In line with assimilation theory, their data show that Muslim immigrants, like others, gradually adapt to the host country's norms and values. This study is also based on World Value Survey, and, unsurprisingly, find similar results as Norris and Inglehart's previous research. The largest discrepancies between Western and Islamic culture is religiousness, gender roles and sexual norms. Norris and Inglehart's (2012) study additionally examines to what degree Muslim immigrants seem to adapt to Western culture, by comparing adaption to western culture to the degree of separation from their society of origin. They conclude that Muslims do adapt, but do not fully assimilate: "[...] Muslim migrants living in Western societies are located roughly in the center of the cultural spectrum, located between the publics living in Islamic and Western societies" (Norris and Inglehart 2012: 18).

This research suggests that if Islam indeed influences regime type, then religion could indirectly also affect individual's views on societal structures and norms. The question then is; in what way could it possibly influence individual violent behavior?

There is extensive research on how regime types can influence crime and homicide rates in a state. Lin (2007) finds that how democratic and non-democratic states punish different types of crime can affect crime rates. Democracies punish major crime like homicide harsher and minor crime less harsh than non-democracies, where the discrepancy in punishment between major and minor crime is smaller. Thus, in his analysis, the effect of democracy on crime is negative

for serious crime and positive for minor crime. Lin (2007) attributes the effect to deterrence, which in democracy is stronger for major crime than minor crime: “Examination of country level data leads to the conclusion that democracy increases crimes with lower severity [...], but decreases serious crime like homicide” (Lin 2007: 481). This finding coincides with Karstedt’s (2006) study, which finds that societies with high levels of violent crime are concentrated around autocracies. Karstedt theorizes that democratic values like individualism and egalitarianism could reduce levels of violence, and underlines that levels of democracies in a state matters for the effect of democracy on crime (2006).

Interestingly, the effect of levels of democracy and autocracy on crime levels seem to mirror regime type’s effect on civil war outbreak. In an analysis of policy variation and crime, Neumayer (2003) refers to a well-known study by Hegre et al. (2001) which show a curve linear effect of democracy on civil war. He notes that his results for effect of democracy on crime show similar tendencies: “Hegre et al. (2001) find that harsh autocracies and coherent democracies have few civil wars, while our results suggest that they have fewer homicides than intermediate regimes” (Neumayer 2003: 620). There are still several unanswered questions in the research on regime type and crime rates, such as what factors are the most important in driving the negative effect of democracy on homicide and other violent crimes. However, there seems to be a consensus that autocratic regimes generally have higher levels of homicide and violence. How religion may affect a state’s regime type will not be tested in this study. However, I hypothesize that regime type is a more important factor in explaining violence in different immigrant groups than what religion is dominant in the country is.

H2: Regime type influences interpersonal violent behavior more than religion does.

In line with Donno and Russett’s (2004) finding of an additional regional effect for Arabic countries on regime type, I also control for regional effects with a dummy for North African and middle eastern countries in my analysis.

How higher levels of violence in immigrant’s home country may affect violent behavior will be further discussed in the following chapter.

### **2.3. Culture of violence**

If political structures and regime type can influence a state’s chance of civil war outbreak and political violence, it is not farfetched to assume that these factors can affect individual citizens’

norms and values too. Neumayer (2003) criticizes the research done on variations in homicide rates for being too preoccupied with cultural factors, which in his opinion can be altered by what policies a state chooses to pursue. Neumayer argues that a states government can influence citizen's views on human life and acceptable conflict resolution. This way, a violent government can set a bad example and encourage violent crime in its citizens:

*“Even where the execution of state ordered violence is backed up by law, as is, for example, the case with the death penalty, the consecutive disrespect for the sanctity of all human life might encourage violent crime within society.”* (Neumayer 2003: 622).

Neumayer's (2003) analysis does find a positive effect of use of the death penalty on a state's homicide rates. He does however point out the possible endogenous effect, where a high homicide rate could be the reason a state uses the death penalty. Furthermore, Neumayer's analysis find a negative effect of economic growth on homicide rates. There is no clear consensus on how a country's economy can influence crime rates. The effect of income rates versus income inequality is debated in conflict theory as well. Neumayer (2003) does not find an effect of income inequality on homicide rates, but Lin (2007) finds a positive effect of inequality on all crime, in addition to a negative effect of higher GDP. I include controls for both homicide rates and GDP in the immigrant group's country of origin to test the effect of these factors on violent crime in Norway and Denmark.

Like Neumayer (2003) points out, there is reason to believe that country specific factors can influence individual's values and behaviors. The culture of violence theory assumes that war and conflict may have unknown effects on the civilian population, even after the conflict is resolved (Steenkamp 2005). The theory that big temporary shocks in a society can influence citizen's behavior is well established. Voors et al. (2012) underline that big shocks like civil war can have a persistent effect on people's preferences and outlook on life, and that this effect is widely accepted in the field of social psychology. They examine the effect of violent conflict on economic behavior in Burundi, based on the theory that conflict can change how people behave in various ways. They found that individuals in communities that were exposed to higher levels of violence during a conflict changed their economic preferences afterwards. The differences manifested in more altruistic behavior, but the people who experienced more violence also tended to be more risk seeking (Voors et al. 2012).

Steenkamp (2005) points to the fact that many countries that have experienced long periods of violent intrastate conflict have a heightened level of violence even after peace agreements have

been reached. This may indicate that violence cannot be explained solely by political grievance theory, and that war can influence a society's norms and values even beyond the economic effect Voors et al. (2012) find in their field research. Steenkamp argues that prolonged periods of war increases the tolerance of violence not only in combatants, but in the population in general: "The conflict thus created a culture of violence, which produces a socially permissive environment within which the use of violence continues, even though violent politics has officially ended" (Steenkamp 2005: 254).

Steenkamp (2005) defines a culture of violence as a system of norms, values and attitudes that allows and stimulates to use of violence as an acceptable way of resolve conflicts. In building a culture of violence, violence loses its political value and transitions into everyday life of the civilian population – violence becomes trivial and a socially acceptable way of attaining power and status. She underlines that a culture of violence is necessary to build in a war, but that the culture may hurt society if its establishment does not automatically end when the war does (Steenkamp 2003). If the theory of culture of violence is correct, one should expect that immigrants and refugees who come from countries that has experienced longer periods of peace should be less violent.

Empirical testing of a culture of violence has been done with data on yellow and red cards given in football, with varying results. In a study from 2008 with data from European football, the authors found a strong positive correlation between players who had experienced civil war and violent behavior on the football field (Miguel, Saiegh and Satyanath 2008). One interpretation of this result is that a culture of violence develops in intrastate wars, and that this culture can follow people who leave the country in question (ibid.). Cuesta and Bohórques (2011) replicated this study with several new control variables and an additional data set from the Latin American equivalent of the European data Miguel, Saiegh and Satyanath (2008) analyzed. As a result, they did not find the same statistically significant link between civil war and violent behavior in football. However, they conclude that the results may not discredit the effect of a culture of violence, but the concept is hard to define and operationalize (Cuesta and Bohórques 2011).

Even though the effect of ongoing civil war on violent behavior in immigrants is not clear, conflict can certainly have an effect on individuals. From the literature, we can see that the effect of violence can significantly alter people's values and behavior in a way that can make violent behavior more plausible. This connection is not yet made between personal religious beliefs and violence. Since conflict and violence is a more tangible factor than religion, I

hypothesize that a concrete effect of a culture of violence may be a stronger predictor of violent behavior than religion:

H3: A culture of violence can explain violent behavior better than religion can.

To test how long a potential effect of civil war on violent crime, I include a control for peace years in immigrant's country of origin.

## **2.4. Religion and discrimination**

Adida, Laitin and Valfort (2010; 2013; 2014; 2016) have performed several experiments based studies on discrimination of immigrants in Western countries. In their book "Why Muslim Integration Fails in Christian-Heritage Societies", they use these studies to shed light on how common islamophobia is in western European countries, and if there is a specific religious aspect to labor market discrimination. To distinguish between ethnicity and religion in studies like these is, as mentioned, complicated. In the tests performed by Adida, Laitin and Valfort (2016), the experimental design makes it possible to distinguish between ethnic and religious discrimination. The authors point out that scientists have assumed that there is a connection between religion and discrimination for some time, but no one has been able to prove it. Experiments on discrimination of people with foreign-sounding names has shown remarkable results in areas like apartment rentals and job recruitment, but none of these studies has concluded with discrimination being aimed at people from a country with a specific dominant religion.

Adida, Laitin and Valfort (2016) distinguish between two different types of discrimination to get a clear picture of how protruding pure islamophobia is in hiring processes, and what can be attributed to what they refer to as "statistical discrimination". Statistical discrimination is defined as discrimination based on assumptions about language ability, degree of religiosity, and adhering to rituals that could potentially impede on an individual's ability to function well in a Western work environment, such as prayer, fast, and gender equality issues. An in-group out-group experiment performed in France tested group threat theory, which assumes that people subconsciously discriminate against a non coethnic from an outgroup: "People tend to be more hostile toward outgroup members, even when they do not expect these outgroup members to represent any real threat to them" (Adida, Laitin and Valfort (2016: 94). Increasing the number of Muslims in an outgroup resulted in increased hostility from the in-group. The authors refer to this as the "Hortefeux effect", based on the French politician Brice Hortefeux's

speech where he argued that one Muslim is fine, but many Muslims are problematic. The experiment cannot point to reasons for irrational fear of Muslims, but it does show that there are grounds for assuming that irrational, taste based discrimination of Muslims do exist in France. A survey of Christian and Muslim immigrants further showed that Muslim have higher levels of felt hostility towards them from the French society than Christian immigrants. The survey also showed stronger connections between Senegalese Muslims and their country of origin than Senegalese Christian immigrants (Adida, Laitin and Valfort (2016).

Correspondence experiments are the main method researchers have used to uncover discrimination in the labor market. Carlsson and Rooth (2007) uncovered significant discrimination of job applicants with an Arabic sounding name, and that this type of discrimination is more evident in low-skilled work. The researchers behind the Swedish analysis point out that their results mirror those of similar research done on the labor market in Germany and the Netherlands. In an analysis of survey data from the European Social Survey, Adida, Laitin and Valfort find evidence of religion being a more important factor than country of origin for explaining discrimination:

*“[...] the immigration backlash throughout Europe is not merely about foreigners from regions outside of Europe threatening national culture; rather, and despite more than a century of secularization, the backlash is most powerfully directed at Muslims.”* (Adida, Laitin and Valfort (2013: 18).

To further track the effect religion has on discrimination levels, Adida, Laitin and Valfort conducted several small N experiments in France, including correspondence tests. By writing résumés for fictional Senegalese applicants with Christian and Muslim names, and pairing them with a fictional native French applicant, they were able to isolate the religion factor in labor market discrimination. The results showed that the response rates for the native French and Christian Senegalese applicant was respectively 27 and 21 percent. This difference is not statistically significant. The Senegalese Muslim applicant, however, had a response rate of 8 percent. On average, the Senegalese Muslim applicant got 2,5 less positive responses from similar work places (Adida, Laitin and Valfort 2016: 24).

If immigrants are systematically discriminated against in the labor market, it can have severe consequences for integration. Islamophobia can possibly lead to a self-fulfilling prophecy of Muslims posing a threat to society. As Adida, Laitin and Valfort write;

*“[...] hiring discrimination against Muslims leads to the constitution of Muslim ghettos on the peripheries of Western cities in which skyrocketing unemployment rates feed crime and violence and further undermine social cohesion”* (Adida, Laitin and Valfort 2016: 10).

There are currently no evidence of religious discrimination in Norway and Denmark as of now, but with continuous immigration from Muslim countries, it is not farfetched to assume that these countries will face, or are already facing, the same problems as bigger European countries, such as France and Germany.

An analysis of immigrant's economic performance in Europe show that immigrants systematically underperform. In Western European countries, the foreign-born population is twice as likely to be unemployed, and for many groups this trend continues over immigration generations (Dancygier and Laitin 2014). In Adida, Laitin and Valfort's (2010) analysis of Christian and Muslim Senegalese immigrants in France, the results showed that the Muslim immigrants performed significantly poorer economically than their Christian counterparts did. If discrimination in the labor market continue unchecked, it may influence Muslim immigrant's incentive to strive for better economic performance. In a study of durable inequalities in Indian caste systems, Hoff and Pandey (2004) find that historically discriminated groups have a hard time forging ahead if or when discrimination ceases. This process may take a long time, but if a certain group is discriminated against over longer periods of time, it may disadvantage a group over generations by influence group member's expectations (Hoff and Pandey 2004). This effect is of course not an imminent threat, but it underlines the importance of understanding how discrimination and disadvantages for Muslim immigrants may influence their integration process, economic and educational performance, and proneness to criminal and violent behavior.

There is currently no specific EU legislation against religious discrimination, except what little falls under laws on ethnic- and racial discrimination. Hellyer (2009) points out that as long as religious discrimination is not taken seriously, there will be no change: “This is likely to continue to be the case as long as it is assumed that religious discrimination does not pose a significant threat to the fulfilment of one of basic freedoms laid down by the EU.” (Hellyer 2009: 138). Thomson and Crul (2007) point out that several socio-economic factors has the potential to hinder integration. Lower knowledge of the language in the host country of immigrants can for example have an impact on the education of second-generation immigrants, as involvement in the school system is difficult without sufficient language skills. In both the

US and Western Europe, some argue that the second generation of immigrants are “assimilated downwards”, and have a higher chance of staying in a low socioeconomic class. Thomson and Crul (2007) argue that this scenario is more probable now than before, as more diverse immigration can lead to higher levels of racial and ethnic discrimination. As we have seen from Adida, Laitin and Valfort’s (2016) research on the labor market in France, religious discrimination may also be factored in to the kinds of discrimination Thomson and Crul (2007) fear.

If certain immigrant groups have a harder time obtaining good education and entering the labor market, we might see a higher degree of violent behavior in these groups related to a lower socioeconomic status. Many of the problems discussed in the literature concerning ethnic, racial, and religious discrimination may be hard to track, as data is not readily available. More time may also be needed to track trends in immigration generations education levels and job situation. Discrimination per se is not the focus of this study – however, immigrant’s possibility to integrate could be an important factor in explaining violent behavior in different immigrant groups. Constant, Gataullina and Zimmermann’s (2009) “ethnosizing”-measure for tracking immigrant’s way of adapting to a host country find that there are several factors in addition to culture that influence this. Level of education is one of them, where a study on German data show that immigrants with higher education are more likely to interact with natives and identify with the host country. The same analysis shows that young immigrants have a higher chance of assimilating or integrating, but a higher probability of separating from the host country. Constant, Gataullina and Zimmermann (2009) describe the separation state in their ethnosizing model as an immigrant who has strong commitment to their country of origin, and low commitment to the host country.

Data on immigrant group’s participation and placement in the labor market is not available for Norway or Denmark. Education data is however available for Norway, and I will test my hypothesis H4 on Norwegian immigrant’s education data. If some groups are actually less able to obtain education and better their economic status, this could affect certain group’s representation in violent crime statistics. Furthermore, if the groups in question have factors like religion in common, I hypothesize that lower the lack of education may be a more salient explanation for violent behavior than religion in itself:

H4: Low education influences violent crime more than religion does.





## 3. Data and method

### 3.1. Dependent variables

I perform two separate analyses on datasets on violent crime in Norway and Denmark.

The dependent variable for Norway is constructed from data from Statistics Norway<sup>2</sup>. The variable include people indicted for violent crime from 2002-2014 sorted by citizenship. The variable include all types of violent crime except sexual offences, and has a max value of 143. To measure the differences in violent crime incidents in Norway's immigrant population, Norwegian offenders are dropped. The variable is controlled for size of immigrant group, based on population data from Statistics Norway<sup>3</sup> 2000-2017. The numbers from 2000-2003 and 2015-2017 are dropped since the time series for violent crime stretches from 2004-2014. Countries with no immigrants living in Norway are listed as missing.

The dependent variable for Denmark is constructed from data from Statistics Denmark<sup>4</sup>, and include all violent crimes except sexual offences between 2004 and 2014, sorted by native Danes and immigrants indicted for violent offences. The variable has a max value of 169. The Danish data differs slightly from the Norwegian data, as immigrants in this data set are defined as someone who is born in another country with two non-Danish parents, whereas in the Norwegian data, immigrants are counted as someone with a different citizenship than Norwegian. Like the Norwegian dependent variable, the Danish violent crime variable is controlled for size of immigration group, so that violent crimes is measured relative to the number of immigrants from a specific country. The population data set for Denmark "FOLK2" is obtained from Statistics Denmark<sup>5</sup>. Countries with no immigrants living in Denmark are listed as missing.

Given the differences in definitions in the two datasets, the data is not pooled, but rather analyzed separately. The separate analysis for the two countries also makes it possible to catch the effect of Norwegian immigrants in Denmark and vice versa.

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<sup>2</sup><https://www.ssb.no/statistikkbanken/selecttable/hovedtabellHjem.asp?KortNavnWeb=lovbrudde&CMSSubjectArea=sosiale-forhold-og-kriminalitet&checked=true>

<sup>3</sup><https://www.ssb.no/statistikkbanken/selecttable/hovedtabellHjem.asp?KortNavnWeb=folkemengde&CMSSubjectArea=befolkning&checked=true>

<sup>4</sup><http://www.statbank.dk/statbank5a/selectvarval/define.asp?PLanguage=1&subword=tabssel&MainTable=STRAF11&PXSID=146190&tablestyle=&ST=SD&buttons=0>

<sup>5</sup> <http://www.statistikbanken.dk/statbank5a/default.asp?w=1280>

### 3.2 Independent variables

All independent variables are the same for the analyses on Norway and Denmark, except the education variable which is only employed for the Norwegian analysis. This is due to the Danish data's lack of details country of origin for immigrants and their education level.

The education variable in the Norwegian analysis is constructed from the data set "09623" from Statistics Norway<sup>6</sup> for the time period 2004-2015. The variable measures people over the age of 16 with no education in each immigrant group. The variable has some shortcomings, as it only counts degree of education by education level completed. Alas, the "no education" variable counts everyone who has not finished primary school as people with no education. We can then expect that the variable include immigrants with anything between zero and seven years of education. Regardless, the variable measures the segment with the least education in Norway, and should thus work for the purposes of this analysis, which is testing low educations influence on violent behavior. The variable is adjusted for population size, and then logged to reflect the proportion of the immigrant population over the age of 16 with no completed education. Even though the variable is logged, it is quite skewed, as relatively few are placed in the "no education" group (see Appendix 3). This could interfere with the p-values of the variable.

The control variable for population size is also based on the population data sets "FOLK2" and "09623" from Statistics Denmark and Statistics Norway, respectively. The population variable is logged, and measures how the size of an immigrant group influences the number of violent crime incidents in different immigrant groups.

The religion-specific variables are all based on the World Religion Database<sup>7</sup> (Maoz and Henderson 2013). Since this data set only has data on the religious demography of the world in 5-year periods, the data is interpolated to fill in the annual values. This should not affect the result much, as religion in each country is relatively stable over time. The religion dominance variables are constructed from the share-variables. The religion dominance variables are constructed from the share-variables. The Muslim, Christian and catholic dominance variables are dummy coded, where the countries with a share of Muslims above 80 percent is coded 1, and the countries with a lower share is coded 0. The Christian dominance variable is coded in the same way. By setting the limit for the religion dominance countries at 80 percent, we can

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<sup>6</sup><https://www.ssb.no/statistikkbanken/selecttable/hovedtabellHjem.asp?KortNavnWeb=utniv&CMSSubjectArea=utdanning&checked=true>

<sup>7</sup> [http://www.worldreligiondatabase.org/wrd\\_default.asp](http://www.worldreligiondatabase.org/wrd_default.asp)

be relatively sure that a violent crime incident in an immigrant group from a Muslim dominant country was committed by a Muslim, even though it leaves some room for error. As noted by scholars like De Soysa and Nordås (2007) and Donno and Russett (2005) point out that Catholicism is, much like Islam, a holistic religion, and has previously been connected to political violence and authoritarian regimes. In addition, Norris and Inglehart (2002) find a gap in democratic values between Western countries and post-communist countries like Russia and Ukraine, which tend to have large Catholic or Orthodox Christian populations. A control for Catholic dominant countries is constructed from a logged Protestant share variable like the Christian- and Muslim-share variables. This variable should detect if an effect of Christian dominance on violent crime is driven by countries with a dominant Catholic Christian population.

The variable that measures years of autocracy has a scale of 0-10, and is based on data from the Polity2<sup>8</sup> data set (Marshall, Gurr, and Jaggers 2016). The variable variance stretches from -10 to 10, where -10 is the score for the least democratic states. The Polity2 data is coded so that states with a score lower than -6 is counted as autocratic states in the autocracy variable. States with a score respectively over or under the benchmark for autocracy and democracy are coded 0. The variable constructed from the Polity2 data is then coded to measure time periods of autocracy in different countries over different periods of time, and not just the time series used in the crime data from Norway and Denmark. This is done by use of the Binary time-series-cross-section (BTSCS) program for STATA (Beck, Katz and Tucker 1998; Tucker 1999).

The variables for ongoing civil war and peace years draw on data from the Uppsala Conflict Data Program<sup>9</sup>. The variable for ongoing civil war is dichotomous, coded 1 for countries with active civil war and 0 for countries without. Peace years are measured continuously, and has a reach of 0 to 67 years. The variable is constructed in the same manner of the years of autocracy variable, by use of the Binary time-series-cross-section (BTSCS) program (Beck, Katz and Tucker 1998; Tucker 1999).

Controls for other conditions in immigrant's country of origin such as GDP and homicide rates are based on data from the World Bank's Development Indicators<sup>10</sup>. GDP of each country in the data set is measured in US dollars, and divided by the country's population to generate a variable for GDP per capita. Homicide rates are measured per 100 000 people in the country in

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<sup>8</sup> <http://www.systemicpeace.org/inscrdata.html>

<sup>9</sup> <http://ucdp.uu.se/?id=1>

<sup>10</sup> <http://data.worldbank.org/data-catalog/world-development-indicators>

question, and is log transformed. An additional country-specific variable measures rates of corruption in each country. The data for good governance variable is obtained from the PRS group's "International Countries Risk Guide"<sup>11</sup>, and uses corruption levels as a proxy. The International Countries Risk guide give each country a score between 1 and 6. 1 indicates the highest level of corruption, and thus the lowest degree of good governance in this variable.

The political terror variable is based on data from "The political terror scale"<sup>12</sup> The variable measures the level of political security in a country, taking factors such as state's practice of political murder, torture, and freedom of speech and opinion, among others, to calculate each country's score (Gibney et al. 2016). The scale reaches from 1 to 5, where 1 is the lowest degree of political terror.

To control for possible regional effects, a regional dummy variable for North African and Middle Eastern countries is constructed. In the regional dummy for North Africa and the Middle East, countries in these areas are coded 1, while all other are coded 0. The countries in the regional dummy variable are Algeria, Bahrain, Cyprus, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestinian territories, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, United Arabian Emirates, Yemen and Western Sahara. This region is used as control because of the high density of Arabic countries with a Muslim dominant population.

### **3.3. Zero inflated negative binomial regression**

Since the dependent variables of violent crime incidents in Denmark and Norway are based on count data, the variables are overdispersed. Most people do not commit violent crimes, and therefore, the data set has a high amount of zero-values. The overdispersion is too large for an OLS regression model to fit, and this model thus show results with high p-values.

To account for the large number of zeroes in the dependent variable, I employ a zero inflated negative binomial regression model (ZINB) with time fixed effects. This model is appropriate for count data, as it assumes that the zero-values and count values are due to different processes, and allows a separation of these mechanisms. (Greene 1994). The ZINB regression models the excessive zeroes independently, so that results for the count-data regulated for over-dispersion is presented in a separate table.

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<sup>11</sup> <http://epub.prsgroup.com/products/icrg>

<sup>12</sup> <http://www.politicalterroryscale.org/Data/>

The ZINB regression presents two tables, one for the count data and one for the inflated zero-data. The count-table show results similar to a regular negative binomial regression, while the inflated table show a logit of the likelihood of excessive zeros that the negative binomial regression might not account for (Cameron 2010; IDRE UCLA 2017). A Young test was run to test if the ZINB model fit the data better than a regular negative binomial regression. The Young test was significant at a 0,01 level, which show that the ZINB model is significantly better for estimating results in the violent crime data sets.

The results of the ZINB regression are shown in incident rate ratios (IRR) for the variables. The IRR show the expected increase or decrease in violent crime rates for the different groups in the data, given changes in the independent variables.

### 3.4. Descriptive statistics

<b>Summary statistics</b>					
VARIABLES	Observarions	Mean	St. Deviation	Minimum	Maximum
Active civil war	1,714	0.148	0.355	0	1
Peace years	1,714	26.42	22.40	0	67
Violent crime Norway	2,244	4.530	15.17	0	143
Violent crime Denmark	1,935	5.629	19.03	0	169
North Africa Middle East	2,424	0.0998	0.300	0	1
Good governance	1,529	2.558	1.151	0	6
Political terror	1,515	2.620	1.126	1	5
GDP per capita, logged	2,100	8.218	1.595	4.947	11.97
Size of immigrant group, Norway	1,956	4.973	2.613	0	11.36
Muslim dominant country	2,059	0.177	0.382	0	1
Christian dominant country	2,059	0.404	0.491	0	1
Catholic dominant country	1,892	0.107	0.310	0	1
Homicide levels	1,875	8.120	12.42	0	91.79
Uneducated population share, logged	2,318	-3.833	7.096	-11.51	7.967
Autocratic years	1,785	2.422	3.278	0	10
Size of immigrant group, Denmark	1,946	5.568	2.556	0	15.43



## 4. Results

### 4.1. Zero inflated negative binomial regression models

In this chapter, tables of several ZINB regression models with different control variables are presented. The dependent variable in the count model is incidents of violent crime indictments. The inflated models presents a logistic regression of a variables log odds of having excessive zeroes. Two tables with different independent variables will be presented for Denmark and Norway.

### 4.2. Norway table 1

In the first table, several controls are added one by one to see how they affect the main dominant religion variables.

In model 1, only size of immigrant group is controlled for, and this variable is positive and significant. This is not surprising, as group size will affect the chance that the group contains someone indicted of a criminal offence. An increase of 1 percent in immigrant group size equals an increase in expected crime rate by a factor of around 1,80. The variable's IRRs stay quite stable over the four models, as does the log odds of the inflated model. The inflated model show that the variable has a lower odds of having excess zeroes in the data. The variable does not seem to affect the Muslim dominant variable, as this is significant on the 0,01 level and has an IRR of 2,45. Both of the other religion dummies are slightly negative and not significant.

Overall, the Muslim dominant country variable is robust throughout table 1. The IRRs decrease somewhat when different controls are added, but overall the values are much higher for this group than any of the other religion variables. In model 4, when all controls for table 1 are present, the IRR is 1,80, which signifies that when all other variables are held constant, immigrants from Muslim dominant countries have an expected crime rate 1,8 times higher than those from countries with a Muslim population under 80 percent. In the inflated model, the variable shows a lower probability of having excess zeroes, and the probability is stable and significant in the four models. The GDP per capita and active civil war variables seem to have the largest effect on the variable, as the IRR drops from 2,45 in model 1 to 2,12 in model 2, where the GDP per capita control is added. The IRR drops from 2,12 in table 2 to 1,85 in model 3, where the active civil war control is added. The Christian and Catholic dominant variables



are not significant in either of the models. The IRRs of the Christian dominant variable vary from slightly negative in model 1 to slightly positive in model 2, 3 and 4. The Catholic variable is only slightly positive in model 3, where civil war and peace years are added as controls. In the inflated models, the Christian dominant variable is not significant. The Catholic variable, however, have significant results in the inflated model. The odds ratio of 2,26 in model 4 indicated that groups from Catholic dominant countries have higher odds of having excessive zeroes. This could explain the non-significant results in the count model.

Table 1 Norway					
	VARIABLES	Model 1	Model 2	Model 3	Model 4
<b>Count model</b>	Muslim dominant country	2.45*** (0.21)	2.12*** (0.19)	1.85*** (0.19)	1.80*** (0.21)
	Christian dominant country	0.97 (0.09)	1.05 (0.09)	1.16 (0.11)	1.18 (0.13)
	Catholic dominant country	0.99 (0.15)	0.97 (0.14)	1.02 (0.16)	0.97 (0.17)
	Size of immigrant group	1.86*** (0.05)	1.95*** (0.05)	1.88*** (0.06)	1.87*** (0.06)
	GDP per capita		0.87*** (0.02)	0.91*** (0.03)	0.92** (0.04)
	Active civil war			1.53*** (0.17)	1.53*** (0.23)
	Peace years			1.00 (0.00)	1.00 (0.00)
	Political terror				1.03 (0.06)
	Constant	0.18*** (0.04)	0.38*** (0.10)	0.29*** (0.08)	0.26*** (0.12)
	<b>Inflated model</b>	Muslim dominant country	0.22*** (0.06)	0.21*** (0.06)	0.23*** (0.07)
Christian dominant country		0.95 (0.22)	1.00 (0.23)	1.07 (0.26)	1.17 (0.31)
Catholic dominant country		2.63*** (0.94)	2.80*** (1.01)	2.68*** (1.01)	2.26** (0.89)
Size of immigrant group		0.21*** (0.02)	0.21*** (0.02)	0.20*** (0.02)	0.21*** (0.02)
GDP per capita			0.95 (0.06)	0.94 (0.07)	0.93 (0.08)
Active civil war				1.34 (0.40)	1.36 (0.47)
Peace years				1.00 (0.01)	1.00 (0.01)
Political terror					0.96 (0.13)
Constant		77,617.87*** (51,516.78)	118,512.82*** (93,804.66)	140,635.36*** (120,897.92)	116,512.33*** (131,406.12)
Observations		1,786	1,729	1,566	1,242

Robust standard errors in parantheses

\*p<0,10 \*\*p<0,05 \*\*\*p<0,01

The GDP per capita in country of origin seems robust, with low p-values in all models. A one percent increase in GDP per capita decreases the expected rates of violent crime incidents by a factor of 0,87, 0,91 and 0,92 in models 2, 3 and 4. The inflated models show negative values, but these are not significant.

Active civil war is significant on the 0,01 level in both models. Groups from countries with active civil wars have an expected violent crime rate 1,53 higher than immigrants from countries without civil wars, when all other variables are held constant. The inflated models, however, are positive but not significant. Peace years has little effect, and is not significant in either the count model or the inflated model. This might indicate that effect of a conflict on violent behavior does not change much over time. The political terror variable, as mentioned, decreases the effect of Muslim dominant country somewhat. However, the variable is not significant in any of the models.

#### **4.3. Norway table 2**

In table 2, a new set of controls are added to see how they affect the main independent religion variables.

Once again, the size of an immigrant group is very robust, and stay significant on the 0,01 level in all five models. A one percent increase in the size of an immigrant group equals an increase in in expected violent crime rates by a factor of between 1,87 and 2,10, depending on the controls added in the different models. The inflated model show that this variable has lower odds of having excessive zeroes, and this result is significant on the 0,01 level as well.

The Muslim dominant country variable is robust to the controls in the first four models, with p-values under 0,01. The IRRs of the variable indicate that immigrant from countries with a Muslim population over 80 percent has a between 1,78 and 2,27 higher rate of violent crime than immigrants from countries with lower Muslim shares. Of the controls in the first four models, the control for homicide rate seems to affect the Muslim variable the least, while years of autocracy decreases the effect of Muslim dominance somewhat.

Table 2  
Norway

VARIABLES		Model 1	Model 2	Model 3	Model 4	Model 5	
<b>Count model</b>	Muslim dominant country	1.91*** (0.21)	2.27*** (0.26)	1.84*** (0.19)	1.78*** (0.20)	0.82 (0.10)	
	Christian dominant country	1.18* (0.11)	1.16 (0.11)	1.22** (0.12)	1.24* (0.13)	1.21** (0.10)	
	Catholic dominant country	1.02 (0.15)	1.04 (0.15)	0.84 (0.14)	1.01 (0.16)	0.96 (0.13)	
	Size of immigrant group	1.91*** (0.07)	1.98*** (0.06)	1.94*** (0.06)	1.87*** (0.07)	2.10*** (0.06)	
	GDP per capita	0.91*** (0.03)	0.93** (0.03)	1.00 (0.04)	0.93* (0.03)	0.82*** (0.02)	
	Active civil war	1.51*** (0.15)	1.17 (0.13)	1.39*** (0.15)	1.50*** (0.16)	1.16 (0.11)	
	No education population share	0.99 (0.01)					
	Homicide rate		1.01* (0.01)				
	Good governance			0.85*** (0.04)			
	Years of autocracy				1.02 (0.02)		
	North Africa Middle East dummy					3.52*** (0.47)	
	Constant	0.27*** (0.08)	0.13*** (0.04)	0.15*** (0.05)	0.26*** (0.08)	0.26*** (0.06)	
	<b>Inflated model</b>	Muslim dominant country	0.22*** (0.07)	0.17*** (0.06)	0.21*** (0.07)	0.25*** (0.08)	0.37*** (0.13)
		Christian dominant country	1.13 (0.28)	0.72 (0.21)	1.04 (0.27)	1.04 (0.26)	1.02 (0.25)
		Catholic dominant country	2.73*** (1.03)	3.00*** (1.18)	3.25*** (1.26)	2.51** (0.95)	2.48** (0.95)
Size of immigrant group		0.23*** (0.03)	0.19*** (0.02)	0.18*** (0.02)	0.20*** (0.02)	0.18*** (0.02)	
GDP per capita		0.93 (0.07)	0.82** (0.08)	0.85* (0.09)	0.90 (0.08)	0.99 (0.08)	
Active civil war		1.47 (0.45)	1.70 (0.61)	1.45 (0.48)	1.33 (0.40)	1.82* (0.57)	
No education population share		0.93*** (0.02)					
Homicide rate			1.02 (0.02)				
Good governance				1.54*** (0.21)			
Years of autocracy					0.94 (0.04)		
North Africa Middle East dummy						0.28*** (0.11)	
Constant		67,628.85*** (59,127.44)	824,777.96*** (899,512.39)	209,972.96*** (216,556.97)	192,203.01*** (187,929.81)	171,272.82*** (151,360.43)	
Observations		1,557	1,313	1,241	1,463	1,566	

Robust standard errors in parantheses

\*p<0,10 \*\*p<0,05 \*\*\*p<0,01

Good governance also seem to have a small effect, but overall, the Muslim variable does not change much for any of the controls in model 1, 2, 3 and 4. However, model 5 show interesting results. The control for North African and Middle Eastern countries changes the Muslim dominant variable's effect drastically. Not only does the significance level of the variable go from under 0,01 in the previous models to over 0,10 in model 5, the variable is now negative. The IRR of the Muslim dominant variable in model 5 show that the expected violent crime rate is 0,82 lower for immigrants from Muslim dominant countries. The regional control for North African and Middle Eastern countries, on the other hand, is significant on the 0,01 level, and show that immigrants from countries included in this variable is expected to have a violent crime rate over 3 times higher than immigrants from other countries. In the inflated model, the Muslim dominant show a statistically significant result in all models, with between 0,17 and 0,37 lower odds of having excess zeroes in the data. The regional dummy also show lower odds of excessive zeroes in the inflated model. The remarkable effect of the regional dummy on the Muslim variable indicate that there might be factors in the countries included in the North African and Middle Eastern variable that are not accounted for in this data set, and that is more important for explaining violent crime than religion is.

The Catholic variable behaves much the same as in table 1, and is not significant in any of these models either. In the inflated model, however, the variable is significant on the 0,01 level and indicate that this variable have higher odds of having excess zeroes. The Christian variable, however, show different results in this table. The variable is positive in all tables, and significant on the 0,10 level in model 1 and 4, and on the 0,05 level in model 3 and 5. In model 2, when homicide rate is used as a control, the Christian variable have high p-values. This may indicate that homicide rates are more effective for explaining variance in violent behavior in immigrant groups from different Christian dominant countries. The good governance control variable, on the other hand, gives the Christian variable significance, and an expected crime rate 1,22 times higher than immigrants from countries with other dominant religions, when all other variables are held constant. This result indicates that many of the Christian countries in the data may be well governed with low corruption, and that this may be the reason why Christian dominant country is not significant in many of the models, not that the Christian religion is more peaceful than others. The Christian dominant variable behaves opposite of the Muslim dominant variable in model 5, where the regional dummy is added. The variable becomes significant on the 0,05 level in this model as well, whereas the Muslim variable loses it's significance. The inflated

model show no significant results for this variable, and it is therefore unclear how probable it is that there are excessive zeroes in the data.

The good governance variable is significant on the 0,01 level, and negative. One step up on the good governance scale indicated an expected decrease in violent crime rate by a factor of 0,85. However, the inflated model also show significantly higher odds of having excess zeroes. The homicide rate variable is significant on the 0,10 level, and the IRR indicates that a 1 percent increase in homicide levels equals an increase of expected violent crimes by a factor of 1,01. Years of autocracy is positive, but does not seem to matter much, as the variable is not statistically significant. It does however influence the Muslim dominant variable somewhat, as the model with control for years of autocracy is also the model with the lowest IRR for the Muslim dominant country variable. Neither homicide levels nor years of autocracy have significant results in the inflated model.

#### **4.4. Denmark table 1**

The Muslim dominant variable behaves quite similarly in the Danish data as in the Norwegian in the count models. The variable is significant on the 0,01 level, and is robust to all the controls in table 1. The IRRs variate little over the four models. In model 4, where all controls are present, the group from countries with a Muslim population over 80 percent has an expected violent crime rate 2,89 times higher than groups from countries with a Muslim population under 80 percent when all other variables are held constant. Contrary to the Norwegian data, the inflated model shows a highly positive result in the inflate model, which indicates that the data for this variable has high odds of having excessive zeroes. The opposite inflated result in the Danish data could indicate that Denmark has larger groups of immigrants from countries with a Muslim population over 80 percent, and that this group therefor has higher odds of zeroes in the data. However, the inflated models results are only significant on the 0,10 level. Relative high p-values combined with surprisingly high odds ratios could indicate that the results are not accurate.

In the Danish data, none of the other dominant religion variables are significant, except for Catholic dominant country in model 1 when only size of immigrant group is added as control variable. In this model, the Catholic variable is negative and significant on the 0,10 level. Both Christian and Catholic dominant country show unstable IRRs which fluctuate between positive and negative values when different controls are added. The variable have no significant results in the inflated model.

Table 1 Denmark

	VARIABLES	Model 1	Model 2	Model 3	Model 4
<b>Cound model</b>	Muslim dominant country	3.21*** (0.28)	2.77*** (0.25)	2.92*** (0.27)	2.89*** (0.30)
	Christian dominant country	0.98 (0.10)	1.01 (0.10)	1.01 (0.10)	0.94 (0.10)
	Catholic dominant country	0.75* (0.11)	0.97 (0.15)	1.00 (0.15)	1.13 (0.19)
	Size of immigrant group	2.67*** (0.09)	2.72*** (0.09)	2.67*** (0.09)	2.62*** (0.10)
	GDP per capita		0.79*** (0.02)	0.78*** (0.02)	0.77*** (0.03)
	Active civil war			0.64*** (0.07)	0.65*** (0.08)
	Peace years			0.99*** (0.00)	0.99*** (0.00)
	Political terror				0.98 (0.05)
	Constant	0.00*** (0.00)	0.02*** (0.01)	0.03*** (0.01)	0.04*** (0.02)
	<b>Inflated model</b>	Muslim dominant country	80.28* (193.40)	42.02* (90.20)	18.41* (29.16)
Christian dominant country		10.45 (20.27)	7.02 (10.43)	5.02 (5.89)	13.38 (24.16)
Catholic dominant country		0.55 (0.75)	3.67 (4.74)	1.26 (1.74)	7.08 (14.12)
Size of immigrant group		0.00** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
GDP per capita			0.41 (0.22)	0.48 (0.26)	0.36 (0.28)
Active civil war				0.81 (0.78)	0.55 (0.61)
Peace years				0.93*** (0.03)	0.94* (0.03)
Political terror					2.37 (1.76)
Constant		1.85e+51** (9.68e+52)	2.81e+38*** (7.89e+39)	4.35e+38*** (1.03e+40)	8.56e+42*** (2.87e+44)
Observations		1,745	1,688	1,526	1,218

Robust standard errors in parantheses

\*p&lt;0,10 \*\*p&lt;0,05 \*\*\*p&lt;0,01

The size of immigrant group again does not behave surprisingly. An increase of 1 percent in immigrant group size increases the expected violent crime group by a factor of between 2,62 in model 4 and 2,72 in model 2. The IRRs change very little over the models, and seem robust to all control variables in this table. The inflated model shows low odds ratio values, and these are also robust in all models.

This variable thus has lower likelihood of having excess zeroes. GDP per capita also behaves much like in the Norwegian analysis. The variable has stable IRRs over the three models it is in, and has very low p-values. A one percent increase in GDP per capita decreases the expected rate of violent crime by a factor of 0,77.

Interestingly, the control for active civil war behaves very differently in the Danish data than in the Norwegian. In model 4, the civil war variable is highly significant, and indicate that when all other variables are held constant, the expected rate of violent crime in immigrant groups from countries with active civil war is 0,65 times lower than for immigrants from countries no active civil war. The variable which measures number of peace year's influence on the dependent variable is significant in the Danish data, but contradict the results of the active civil war variable somewhat. The IRRs of the peace years variable indicate that one more year of peace decreases the expected rate of violent crime in an immigrant group by a factor of 0,99. The civil war variable has no significant results in the inflated model, but peace years has 0,93 lower odds of having excessive zeroes in model 3.

Political terror has a slightly negative IRR, but the results is not significant. The inflated model show that this variable has higher log odds of having excessive zeroes, but this result is not significant either.

#### **4.5. Table 2 Denmark**

In table 2, the second set of controls are added to test the effect on the religion variables.

The size of immigrant group and GDP per capita variables does not change much in table 2, and further underlines the robustness of these factors.

Like in table 1, the Muslim dominant country variable is robust to many of the controls. The variable is significant on the 0,01 level in model 1, 2 and 3. Catholic dominant country once again does not seem to have an effect on the dependent variable, as this variable once again have no statistically significant IRRs in the count model. In the inflated model, the odds ratios variate widely, and only gets a significant result on the 0,05 level in model 1. The model 1 inflated result indicate that the variable has much higher odds of having excessive zeroes, but as none of the other inflated results are significant, this result is not robust.

Like in the Norwegian data, we see a quite remarkable result of adding the control for North African and Middle Eastern countries.

Table 2 Denmark

	VARIABLES	Model 1	Model 2	Model 3	Model 4	
<b>Count model</b>	Muslim dominant country	2.94*** (0.30)	2.68*** (0.26)	2.55*** (0.25)	0.97 (0.10)	
	Christian dominant country	0.93 (0.10)	1.03 (0.10)	1.11 (0.11)	1.23** (0.10)	
	Catholic dominant country	1.06 (0.17)	0.83 (0.12)	0.96 (0.15)	0.99 (0.13)	
	Size of immigrant group	2.72*** (0.10)	2.62*** (0.09)	2.73*** (0.10)	2.66*** (0.08)	
	GDP per capita	0.79*** (0.02)	0.87*** (0.03)	0.80*** (0.02)	0.73*** (0.02)	
	Active civil war	0.67*** (0.07)	0.77*** (0.07)	0.80** (0.08)	0.88 (0.07)	
	Homicide levels	1.02** (0.01)				
	Good governance		0.76*** (0.03)			
	Years of autocracy			1.11*** (0.02)		
	North Africa Middle East dummy				4.36*** (0.45)	
	Constant	0.02*** (0.01)	0.02*** (0.01)	0.01*** (0.00)	0.03*** (0.01)	
	<b>Inflated model</b>	Muslim dominant country	1.31 (2.38)	2,368.13* (10,139.06)	19406532.62 (326914799.42)	10.43 (17.80)
		Christian dominant country	0.06* (0.09)	345.64* (1,058.27)	6,005,668.78 (86941840.42)	202.08** (452.96)
Catholic dominant country		44.82** (78.97)	2.58 (3.27)	1,520.80 (13,983.37)	2.58 (4.40)	
Size of immigrant group		0.00** (0.00)	0.00*** (0.00)	0.00 (0.00)	0.00*** (0.00)	
GDP per capita		0.22** (0.14)	0.13** (0.13)	0.01 (0.04)	0.17* (0.16)	
Active civil war		0.67 (0.77)	18.02** (24.77)		196.24*** (367.05)	
Homicide levels		1.09* (0.05)				
Good governance			5.36* (5.16)			
Years of autocracy				7.93 (12.89)		
Constant		1.84e+34*** (5.33e+35)	9.33e+58*** (4.22e+60)	1.40e+164 (4.66e+166)	4.00e+69*** (2.04e+71)	
Observations			1,282	1,233	1,436	1,526

Robust standard errors in parantheses

\*p&lt;0,10 \*\*p&lt;0,05 \*\*\*p&lt;0,01



This variable does not only have a big impact on the Muslim dominant country variable, but also influences the Christian dominant country variable somewhat. The regional dummy does however have the biggest impact on the Muslim variable. Like in the Norwegian model, the Muslim dominant variable is negative and not significant when the control is added in model 4. In the first three models, the IRRs indicate that immigrants from countries with a Muslim population over 80 percent has an expected violent crime rate around 2,5 times higher than people with a lower Muslim population, when all other variables are held constant. The IRR in model 5, however, show that people from Muslim dominant countries have an expected rate 0,97 times lower than others. The regional control for North African and Middle Eastern countries<sup>13</sup>, on the other hand, shows an IRR that indicate that immigrants from the countries from these regions have an expected violent crime 4,36 times higher than immigrants from other countries, when all other variables are held constant. This result is statistically significant on the 0,01 level. The inflated models show very varying results, and might indicate that the existence of excessive zeroes in this data is unclear.

The Christian dominant variable gets a positive result in the count model 4, and this result is significant on the 0,05 level. This is the only model of both table 1 and 2. The effect of Muslim dominant countries may have been exaggerated in the previous models, and thus taken away the effect of Christian dominant countries. When the regional control for North African and Middle Eastern countries is added in model 4, the IRR show that immigrant from Christian dominant countries have an expected violent crime rate 1,23 times higher than immigrants from countries with a share of Christians under 80 percent, when all other variables are held constant.

The regional dummy also has an interesting effect on the active civil war variable. As observed in table 1, active civil war has an unexpected negative effect on the dependent variable, an effect that is not observed in the Norwegian data. In table 2, civil war still has a negative effect, and the result is significant on the 0,01 level in model 1 and 2. Years of autocracy seem to lower the significance level somewhat, but the IRR does not change much in model 3 where this control is added. In the inflated model, the civil war variable show varying results. In model 5, the log odds is high and significant on the 0,01 level, which indicate that the variable has high odds of excessive zeroes in the model where the regional control is added.

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<sup>13</sup> The variable is excluded from the inflated model due to non-convergence in the model in the estimation process.

In table 2, all controls are statistically significant, although only the dummy variable for North African and Middle Eastern countries seem to affect the religion variables. High homicide levels in the country of origin of immigrants is positive and significant on the 0,05 level. The IRR indicate that an increase of 1 percent in homicide levels equals an increase of the expected violent crime rate by a factor of 1,02. The inflated model show that this variable have a log odds of 1,09, a very slight higher odds of having excessive zeroes. The result is however only significant on the 0,10 level.

Good governance, where corruption levels are used as proxy, has very low p-values and is negative. The IRR show that one step up on the good governance scale equals a decrease in expected violent crime levels by a factor of 0,76. The inflated model show higher odds of excessive zeroes in this variable, but the result is only barely significant. Years of autocracy is also significant on the 0,01 level, and this variable is positive. One more year of autocratic rule raises the expected violent crime rate by a factor 1,11. The inflated model for this variable is positive, but not statistically significant.



## 5. Analysis

### 5.1. Religion and violence

The results from the ZINB-models clearly reflect the problem of using religion as a factor for explaining violent behavior, a problem also evident in conflict research. The exact effect religion has on the individual is hard to track, as it can affect so many aspects of a person's life and environment. Basedau, Pfeiffer and Vüller's (2016) emphasis on the divide between religious practice and religious structures thus seem very relevant to the investigation of a link between religion and conflict, as the result of this analysis clearly show that an individual's religion does not explain violent behavior.

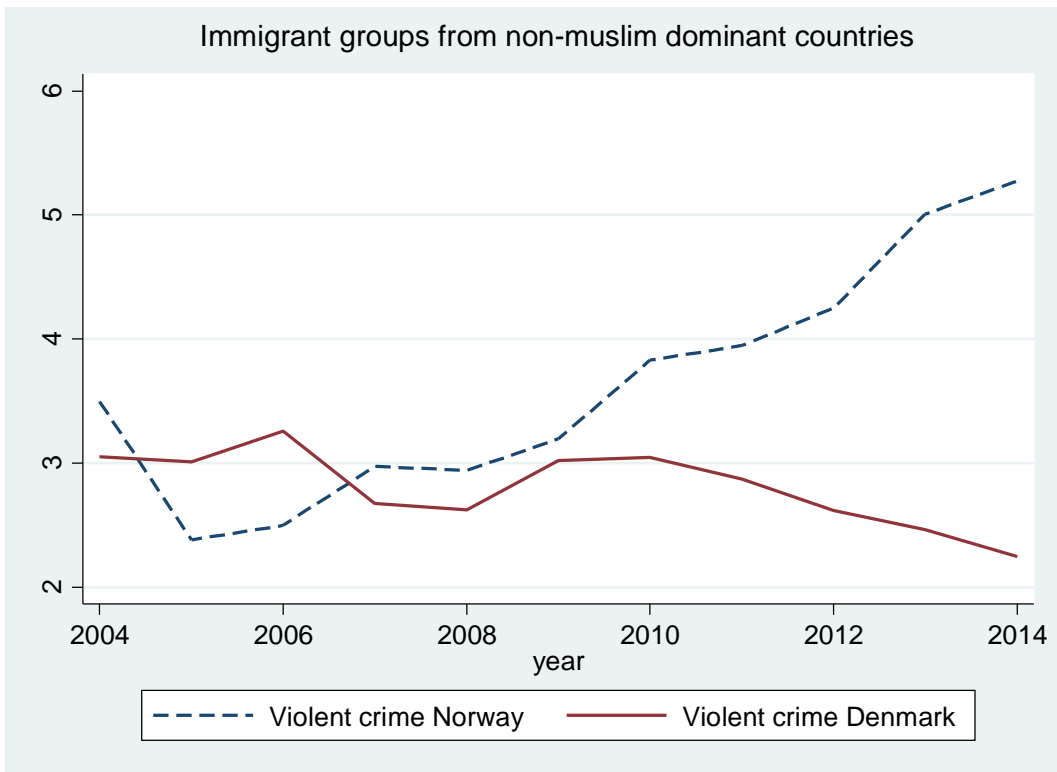
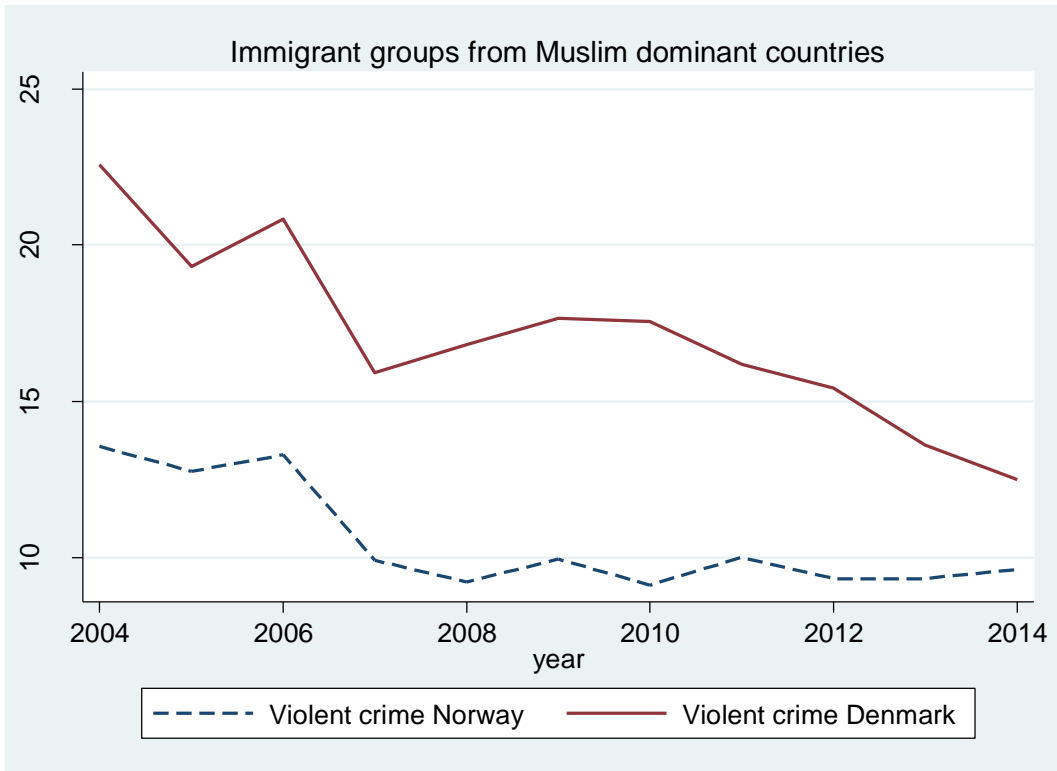
As far as the main hypothesis of this paper goes, H1: Muslim immigrants are more violent than non-Muslim immigrants, is discarded. However, the robustness of the Muslim dominant country variable to all controls except the regional control for North African and Middle Eastern countries is interesting, and sheds light on why the conflict research field is still debating the effect religion can have on political violence and intrastate conflict. Even though the ZINB models show that religion does not affect individual violence, there are a lot of unanswered questions about what does, and why immigrants from countries in North Africa and the Middle East seem to have higher violent crime rates than others.

Even though I conclude that Muslims are not more violent than people with other religious beliefs, this analysis cannot with certainty prove that religion and culture is irrelevant. Gleditsch and Rudolfsen (2016) acknowledge that there are several factors besides religion that could explain the occurrence of civil war. However, they underline that religion cannot be dismissed as a factor, as religion can affect many different factors in unknown ways (Gleditsch and Rudolfsen 2016). When the regional dummy has such a big effect on the religious variables in this study, Gleditsch and Rudolfsen's (2016) assumption that religion might have unknown effects on aspects such as culture might be an explanation. Even though religion does not seem to have an effect on individual violent behavior, it is highly unclear why immigrants from North African and Middle Eastern countries seem to have a higher expected rate of violent crime. Many of the countries in this region has a big Muslim population, and it cannot be ruled out that Islam might have an impact on citizens in these countries. This is an interesting topic of further research.

Fish, Jensenius and Mickels (2010) point to certain concepts exclusive to Islam, like Jihad, that can have violent connotations. If concepts like Jihad does indeed influence violence and conflict, it does make sense that these concepts could influence conflict on an intrastate level, but not influence individual behavior. It might be that Islam's influence on politics and society in different countries can have an effect on individual citizen's norms and values, and therefore behavior. This would be in line with Basedau, Pfeiffer and Vüller's (2016) assumption that there are significant differences between Islamic practice on an individual level, and Islamic societal structures. Fox (2003) finds that while domestic conflict is more frequent in the Muslim world, the conflicts are not more intense. This finding could further support the notion that while Islam might affect the frequency of conflict, Muslims per se are not more violent.

The results of this study could also lend support to the conflict researchers who argue that religion is not a good predictor of conflict, but is better explain by a range of different factors (De Soysa and Nordås 2007; Karakaya 2015). The effect of the regional dummy on the dependent variable in this study might indicate that the countries included in the North African and Middle Eastern country dummy have some risk factors that are not connected to or influenced by religion. De Soysa and Nordås (2007) and Karakaya (2015) both find support in their studies for other country-specific factors than religion being more salient in explaining the occurrence of intrastate conflict and political terror. These factors could be oil dependency, artificially drawn borders, a history of colonialization and the existence of a large youth bulge. The effect the regional dummy has in the analysis of violent crime could indicate that factors like these could indeed be more important for explaining the occurrence of violent crime as well as political terror and intrastate conflict. What the country specific factors not connected to religion might be is however not clear, and should be investigated further. The effect could be attributed to a wide range of factors, and it is not clear if these are primarily country specific, or can be connected to different conditions for immigrant group in host countries. In explaining individual violent behavior, Karakaya's (2015) argument of large youth bulges in many Islamic countries might be the most probable, as we see an effect in the ZINB models of larger immigrant groups increasing the rate of violent crime incidents, and we know that most immigrants are young men. Skardhammer, Thorsen and Henriksen (2011) point out that men are highly overrepresented in crime statistics, and so there might be a connection between a large youth bulge, immigration and violent crime.

The effect of both Muslim dominant country and the regional dummy in this study should be interesting for both to academics and policy makers.



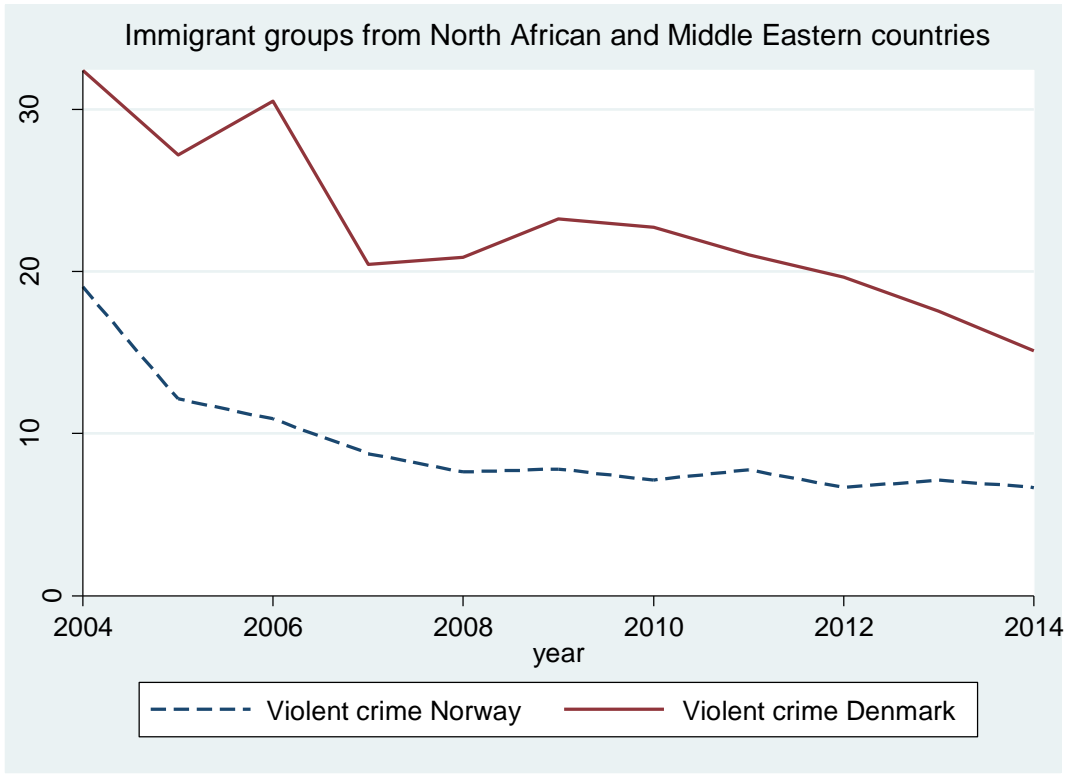
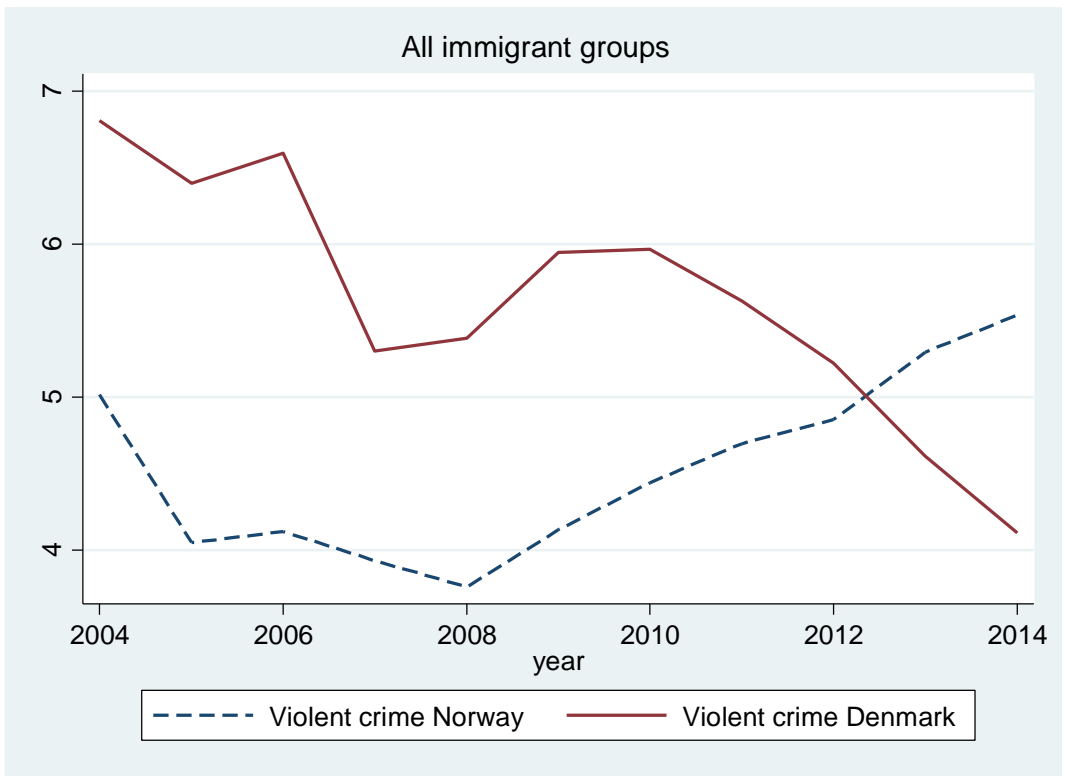
Islamophobia connected to heightened immigration is irrational, as made even clearer if we look at the statistics of mean violent crime in groups from Muslim dominant countries and groups from non-Muslim dominant countries. As evident from the graphs, violent crime in immigrant groups from Muslim dominant countries has been going down in Denmark from 2010, and has generally been low and quite steady in Norway from 2007. For immigrants from countries with a Muslim population under 80 percent, however, violent crime has gone up in Norway since 2006, but down in Denmark. It is worth noting that many of the countries counted as non-Muslim dominant has a big Muslim population. Given the results of this study, setting the benchmark for Muslim dominant country at 80 percent does not seem to cause reliability problems for the study<sup>14</sup>. We can still see that religion by itself cannot explain violent behavior.

Even though the non-Muslim dominant country statistic presented here will most certainly contain immigrants from countries with large Muslim populations, the trend certainly underlines the fact that Islam is not a good indicator for higher violent crime rates. The graph could also explain why the Christian dominant variable gets a positive result when the regional control variable is added. Considering these graphs, growing fear of Islamic immigration is misguided.

Furthermore, when we look at violent crime in all immigrant groups and violent crime in immigrant groups from the countries included in the regional North Africa and Middle East variable, another noteworthy trend appears.

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<sup>14</sup> The ZINB models were tested with a variable that included all countries with a Muslim population larger than 60 percent. The results were not significantly different from the models presented in this paper.



As evident from these graphs, violent crime in immigrant groups from the countries that get the remarkable result in the ZINB models for both Norway and Denmark is steadily going down. This is interesting to note, when the regional variable influences the Muslim dominant country variable the most, and the graph for violent crime in Muslim dominant countries also show a steady decrease. When



it comes to national security measured in violent crime, the results of this study show that there is no rational reason to spread fear of Muslim immigrants.

The trends shown in the graphs above does however present many interesting topics for further research. A comparative study of violent crime rates in Denmark and Norway could be interesting for testing the implication of different immigration and integration policies. Furthermore, a more thorough investigation of violent crime in immigrant groups from North African and Middle Eastern countries could shed light on which country specific factors, related to religion or not, that could explain higher rates of violent crime in these groups.

## **5.2. Religion, culture and regime type**

The connection between religion and regime type is widely discussed in both conflict research and literature on democracy and integration. These discussions might help shed light on how religion could affect individual violent behavior. As the results of the ZINB regressions show, number of years of autocracy in a country does have an impact on the rate of violent crime in immigrant groups. As the positive and significant results show, I find support for Lin's (2007) and Karsted's (2006) findings of violent crime being more frequent in autocracies. Immigrants from countries that has had more years of autocratic rule, do seem to have higher representation in violent crime statistics. However, the effect does not impede on the effect the Muslim dominant country has. Thus, hypothesis H2: Regime type influences interpersonal violent behavior more than religion does, is discarded.

This finding is quite interesting, as it underscores that this analysis might miss some important cultural factors, made clear by the effect of the regional control variable. As Norris and Inglehart (2002; 2012) find in their survey data based studies, there are no individual level reasons for why many Muslim dominant countries have a hard time democratizing. This finding once again supports this analysis finding that religion does not affect individual behavior. It could however indicate that some aspects of Islam's influence on politics and society can have an indirect effect on individual citizens. Norris and Inglehart (2002) point out that even though they do not find a gap between Muslim and Western respondents regarding democratic values, culture does matter for factors that could conflict with core democratic values. Both Norris and Inglehart (2002) and Fish (2002) mention the factor of gender inequality and traditional gender norms as a possible problem for democracy in the Muslim world.

The violent crime data from Norway and Denmark does include domestic violence, and if values and norms connected to gender equality could result in more domestic violence, then this might explain why the Muslim dominant country gets high and significant IRRs in the ZINB models not controlled for region. This could point in the direction that more research is needed not just on violent crime in immigrant groups, but also on who the victims of the crimes are. As of today, the violent crime statistics do not provide information on the specific crime a person was indicted for. It is possible that certain types of violent crime are driving the result of the Muslim dominant country variable and the regional dummy variable in the ZINB models. If this is the case, more knowledge about this may also help explain which factors could be connected to country specific factors, culture, and religion.

Donno and Russet (2004) find a higher impact of Arabic countries in their replication of Fish's (2002) study, a result similar to how North African and Middle Eastern countries affect my analysis of violent crime. Again, previous research and my study show that the relationship between religion, culture and regime type is unclear, even though my analysis show that autocracy cannot explain away the effect of Islam, like the regional variable can. How religion may influence culture differently in different countries and thus affect regime type might be an interesting topic for further research.

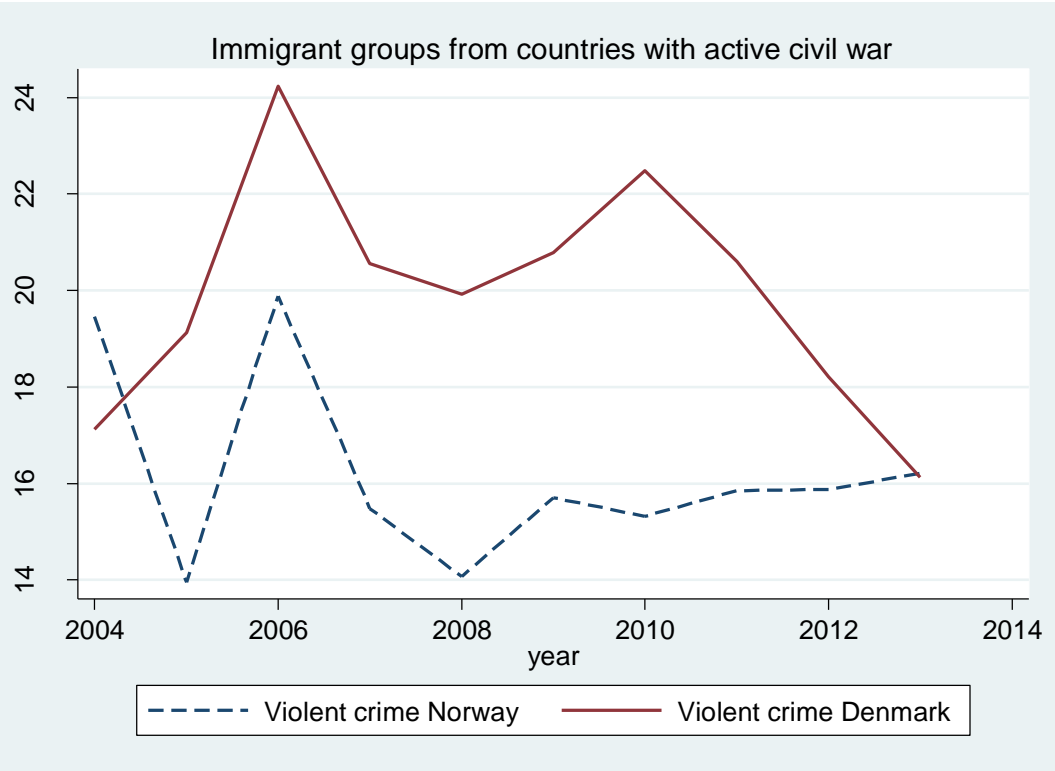
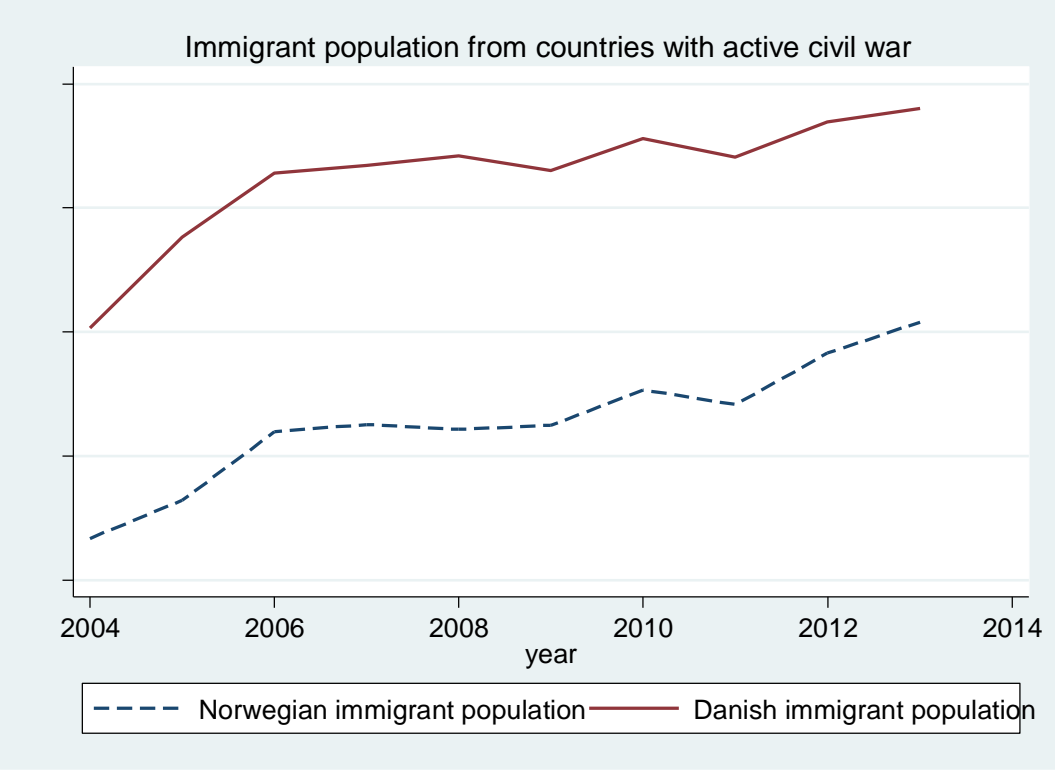
How regime type in a country of origin of immigrants can affect individual behavior in a host country, is also not clear from my analysis. However, previous research has found links between autocratic regimes and higher violence levels (Neumayer 2003; Karstedt 2006). The effect we see from autocratic years in the ZINB models may thus be related to other factors more often found in autocracies. These factors will be more thoroughly discussed in the next chapter. The research done on both regime type and civil war, and regime type and violence levels, indicate autocracy indeed can influence a wide set of factors that could possibly influence citizen's behavior (Hegre 0000; Neumayer 2003). If and how religion could affect regime type is however less clear, and still debated (Fish 2002; Donno and Russet 2004). Further research on this connection could possibly lead to more insight into why certain immigrant groups seem to have higher violent crime rates, and if this in any way could be attributed to religion.

### 5.3. Culture of violence

As we can see from the result of the ZINB regression models, country level factors in the country of origin of immigrants does seem to have an effect on violent crime rates. As mentioned, how these are connected to religion is unclear, and many of the control variable in this analysis does not have much effect on the Muslim dominant country variable when the regional dummy is left out.

The positive effect of years of autocracy, and the connection made by researchers such as Lin (2007), Karstedt (2006) and Neumayer (2003) between higher violent crime rates and autocratic regimes, may indicate that a culture of violence could affect individual's behavior. However, considering the effect the years of autocracy variable has on the active civil war dummy, and the peace years variable, autocracy does not necessarily explain higher rates of violent crime in immigrant groups. Furthermore, this analysis reflect previous research on the culture of violence theory, as the results vary in Norway and Denmark, and the variation is quite puzzling. As seen in the ZINB models of the two countries, the civil war effect on the dependent variable is the opposite in the Norwegian data from the Danish data. In the research where active civil war is tested on football players, the results were not this different, but the significance of the effect varied. The research on a connection between active civil war in the country of origin and violent behavior on the football field in Europe, Miguel, Saiegh and Satyanath (2008) found a positive connection between the two. Cuesta and Bohórques (2011) on the other hand, did not find a significant link between the two factors in their study of violence in the Latin American football league. This could reflect the fragility of the active civil war variable, but not why the variable get statistically significant results in both Norwegian and Danish violent crime data with different directions of the IRR.

The reason could be due to a variety of factors. There could be differences in immigration policy that make the demographic of each country's immigration population differ in a way that alter the significance active civil war has on the dependent variable. If we look at the graphs of the immigrant population in Denmark and Norway from countries with active civil war, we can see that this explanation is unlikely.



Considering that the trends in immigration from countries with active civil war in the two countries are roughly the same, the graph for the violent crime rates in the same group is interesting.

Even though the immigrant population from countries with active civil war has increased steadily in both countries from 2011, Denmark has a steep drop in violent crime incidents in these groups from 2010. Norway has a more expected result, with a very slight increase in violent crime in the immigrant groups from countries with civil war that matches the increase in immigrant population from the same countries. As evident from the graph, the number of incidents are not high, so this variable may be fragile to coincidents. A drop from 24 violent crime incidents in 2006 to 16 in 2013 is not necessarily due to changes in immigrant population, laws or policy changes. The steep drop could however explain why the variable is negative in the danish data, but positive in the Norwegian. This may also account for why the peace years variable is negative and significant only in the danish data.

The positive IRR in the Norwegian models, and the positive IRR of the peace years variable in the Danish models, can support Steenkamps (2005) theory that a higher degree of violence in a society over a time period can lead to more violence even when a conflict is resolved. The result can also be explained by the findings of Voors et al. (2012), who find that shocks to society, like civil war, can change people's behavior.

Additionally, the research done on homicide rates, policy and regime type can further back the assumption that a culture of violence may indeed influence individual violent behavior. Neumayer (2003) finds support for his assumption that states can "set a bad example" for citizens by use of the death penalty, as his analysis show a connection between homicide rates and use of the death penalty. In this analysis, high homicide rates is positively connected to violent crime in both Norway and Denmark. This is a nice addition to the civil war and peace years variable for measuring a possible effect of a culture of violence and how it can affect individual behavior. The result of the homicide rate variable is significant and positive in all the models it is included in. It is worth noting that the homicide variable does affect the p-values of the civil war variable in the Norwegian data, indicating that homicide levels could be a better measure of culture of violence than civil war alone. This could be due to the limited N of immigrants from countries with active civil wars, a problem made clear by the graph of crimes committed by immigrants from countries with active civil war in Norway and Denmark. The small amount of crimes committed, and the relative short time this analysis uses to investigate the relationship, might cause this variable to be fragile. The positive and significant result of

the political terror scale variable in the analysis of both Norwegian and Danish violent crime data also underline the fact that country specific levels of violence might have explanatory power when it comes to violence on an individual level.

However a culture of violence might be related to variance in violent crime rates in different immigrant groups, none of the three variables used to measure this has a significant effect on the Muslim dominant country variable. The hypothesis H3: A culture of violence can explain violent behavior better than religion can, is discarded. In light of the effect the regional dummy variable has on my analysis, the culture of violence should however not be dismissed, and investigating this theory in the countries which did influence the Muslim dominant variable may lead to valuable insight in how country specific factors connected to violence levels can influence individuals.

#### **5.4. Religion and discrimination**

The work of Adida, Laitin and Valfort (2010; 2013; 2014; 2016) show that there is reason to believe that discrimination is a serious problem for integration in European countries. Their study is performed in France, and recruitment experiments with similar results are performed in the Netherlands and Sweden (Carlsson and Rooth 2007). Thus, we can assume that discrimination might be a hinder to integration in Denmark and Norway as well. This study is not experimental in design, and cannot like Adida, Valfort and Laitin (2010; 2013; 2014; 2016) find clear evidence of the existence of discrimination in the labor market, nor sort out a religious effect on this type of discrimination. It is however interesting to keep in mind that there has been detected specific discrimination aimed at Muslims in France, when anti-immigration and islamophobic movements are growing in Denmark and Norway, as well as in other European countries.

Dancygier and Laitin (2014) find that immigrants underperform economically in European countries, and that this trend can continue over generations. The analysis of violent crime in Denmark and Norway is limited to a 10-year period, and thus a continuing trend of economic underperformance is hard to catch. Furthermore, the only variable that could possibly measure a lower level of economic performance is the education variable, only available for Norway. The variable that measures share of the immigrant population with no education is not statistically significant in this study, and does not affect the Muslim dominant country variable notably. My hypothesis H4: Low education influences violent crime more than religion does is then discarded.

The variable, as mentioned, measures those who has not completed the lowest degree of education, and could then include people with varying degrees of education. Even so, the variable should still identify those with the lowest education level. In measuring the share of very low educated immigrants in Denmark and Norway, it is likely that the measurement cannot detect second-generation education performance. Further research on economic performance in immigrant groups may consider adding measurements for other levels of education, and possibly dropout rates after mandatory education is completed.

It is also interesting to note the effect of the regional dummy for North African and Middle Eastern countries in this context. Carlsson and Rooth (2007) found a significantly lower response rate in the labor market for job applicants with Arabic-sounding name. It might be fruitful to test if there is a special effect of education level on the countries included in the regional dummy, to see if the effect could be partly due to lower education levels in these particular immigrant groups.

Considering Thomson and Crul's (2004) argument that discrimination can lead to a vicious circle of assimilating immigrants "downwards" and creating a new lower classes of immigrants, this phenomenon could be important to investigate further. Hoff and Pandey (2004) also find that long periods of systematic discrimination of a group can lead to persistent underperformance and less social mobility. Milanovic (2017) also echoes the fear of immigrant's economical underperformance in welfare states like Denmark and Norway. With populist and right wing parties on the rise in both countries, research on the actual mechanisms between education and integration is important for good immigration and integration policy in the future.

## 6. Conclusion

Populist parties and anti-immigration actors in Denmark and Norway argue that immigrants, particularly from Muslim countries, are problematic for the state. As mentioned, even the head of PST fears more immigration from Muslim countries will lead to heightened levels of conflict and violence in Norway (Dagbladet 2012).

The results of this analysis of violent crime in Denmark and Norway clearly show that there is no reason for a growing fear of immigration from Muslim countries. While many academics in the conflict research field has found a link between Muslim countries and conflict, the effect of Islam on violence is not detectable on an individual level. There is no rational reason to fear that violence levels will increase with the growing number of Muslim immigrants in Denmark and Norway.

It is interesting that the data on crime in immigrant groups is scarce and only available for the two countries presented in this study, probably due to fear of finding unpleasant results that could fuel populist anti-immigration and islamophobic parties and movements in Europe. My study finds that refraining from making this type of data available might have the opposite effect, as parties like this might spread fear of immigrants and Muslims unchecked by science. Refraining from seeking to uncover what does in fact influence violent behavior in immigrant groups is not doing immigrants, natives or policy makers any favors. Shedding light on the risk factors for violent behavior might lead to both better immigration and integration policy. Academia has an important role in investigating what drives violent crime, and decrease anti-immigration parties' opportunity to spread unfounded fear of specific immigrant groups.

The effect the ZINB models with the North African and Middle Eastern country variable show that while there might be cultural differences and country level factors that influence immigrant's violent behavior, religion does not seem to be one of them. It is also worth noting that while the effect of the countries included in the regional variable has a strong effect on the dependent variable in both the Danish and Norwegian data, violent crime in these immigrant groups is in fact on average going down in both countries. The same trend appears in violent crime in immigrant groups from countries with a Muslim population over 80 percent.

Which country specific factors that could be driving the result of the regional variable is an interesting topic for further research. In this regard, the effect of religion cannot be ruled out completely, even though I have found that personal religion is not a good predictor of violent



behavior. The analysis shows a positive effect of autocratic years in a country of origin, and the debate on how religion may influence regime type is not settled. If Islam does in fact increase the propensity of autocratic rule, then Islam might have an indirect effect on individual behavior, as the result of this analysis show significant positive effects of higher murder rates and political terror in countries of origin.

Furthermore, if religion does have an effect on the frequency of civil war, then this might be another way religion can indirectly influence individual behavior. Whichever way religion is related to conflict, my analysis show that an ongoing civil war in the country of origin of immigrants increases the expected rates of violent crime. The variable is somewhat unstable, as the results vary in the Norwegian and Danish data. The significant and positive results from the peace years variable in the Danish data, however, indicate that civil war can influence individuals in a negative way. Further investigation of culture of violence and how different violence and conflict related factors in a sending country can increase violent crime rates in immigrant groups in a host country is needed to understand the connection better. This could be interesting for policy makers as well, as higher violent crime rates in immigrant groups from countries with active civil war may indicate that sufficient health care or integration help is not provided.

Further research on integration, education and economic performance in different immigrant groups might also further develop insight into the causes of violent crime. As seen in this analysis, data on education is scarce and not available for different immigrant generations, which is important for understanding effects of integration policy, economic performance and possibly levels of discrimination in the labor market. The research done on discrimination by Adida, Laitin and Valfort (2010; 2013; 2014; 2016) show that an experimental design might be best suited for this topic, as there might be ethical limitations to data collection on education levels and economic performance over immigrant generations.

The key finding in this study is that personal religious affiliations does not affect rates of violent crime in Denmark and Norway. This result is valuable on its own, but also underline the importance of further research on several topics related to religion, country level factors and immigration. The results also point to the fact that information on crime in immigrant groups should not be restricted, as it might be a valuable source of information for better immigration and integration policy, as well as a possible tool for combating rising anti-immigration notions and growing islamophobia.

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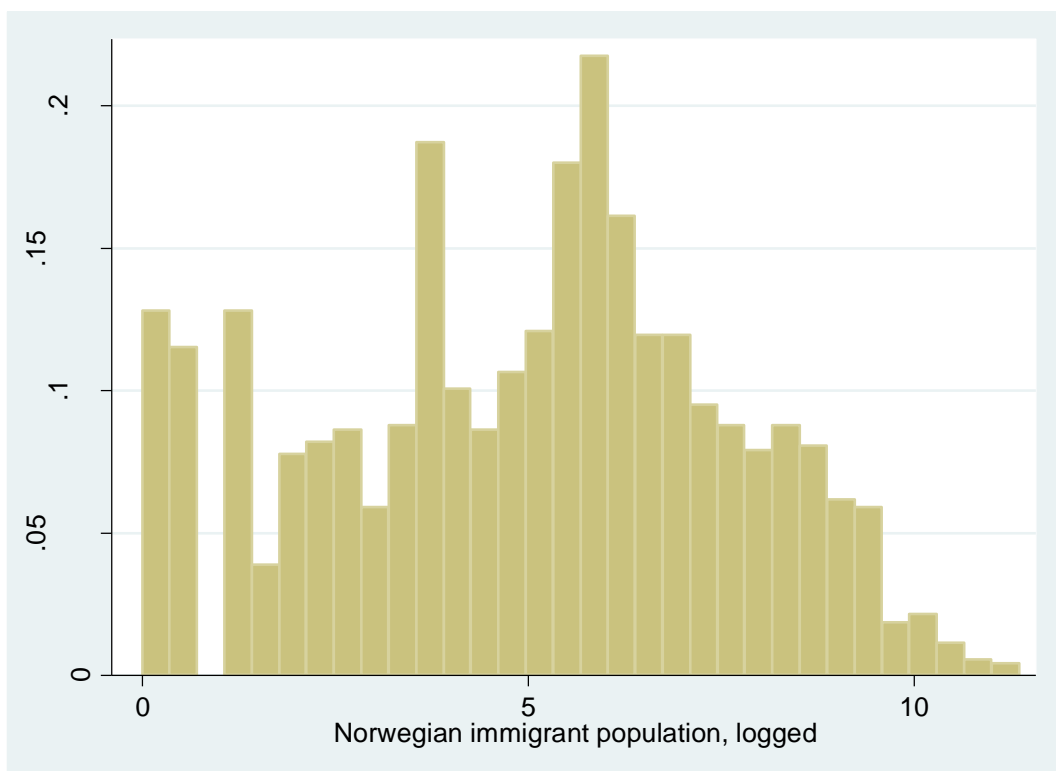
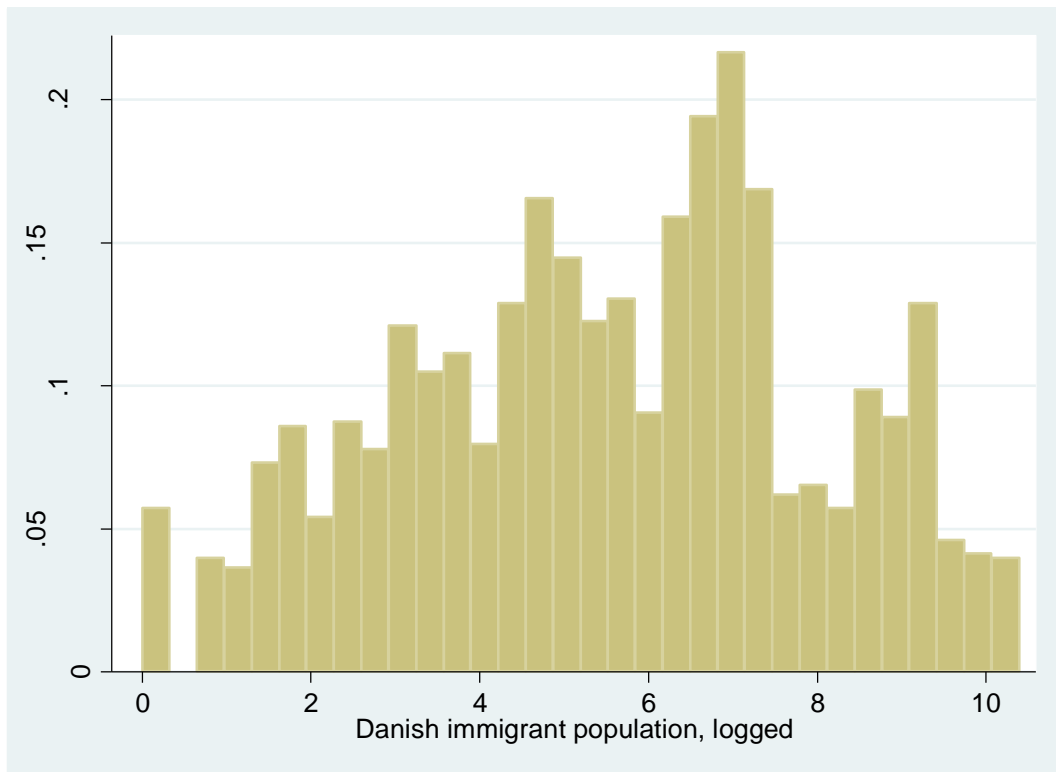
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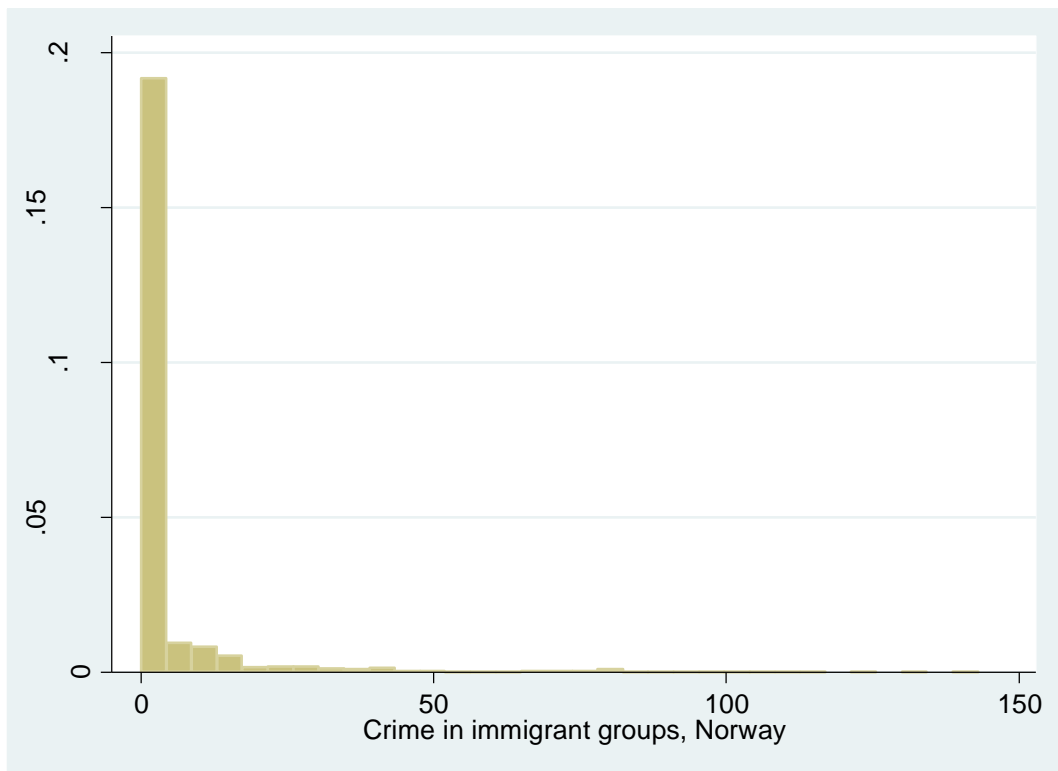
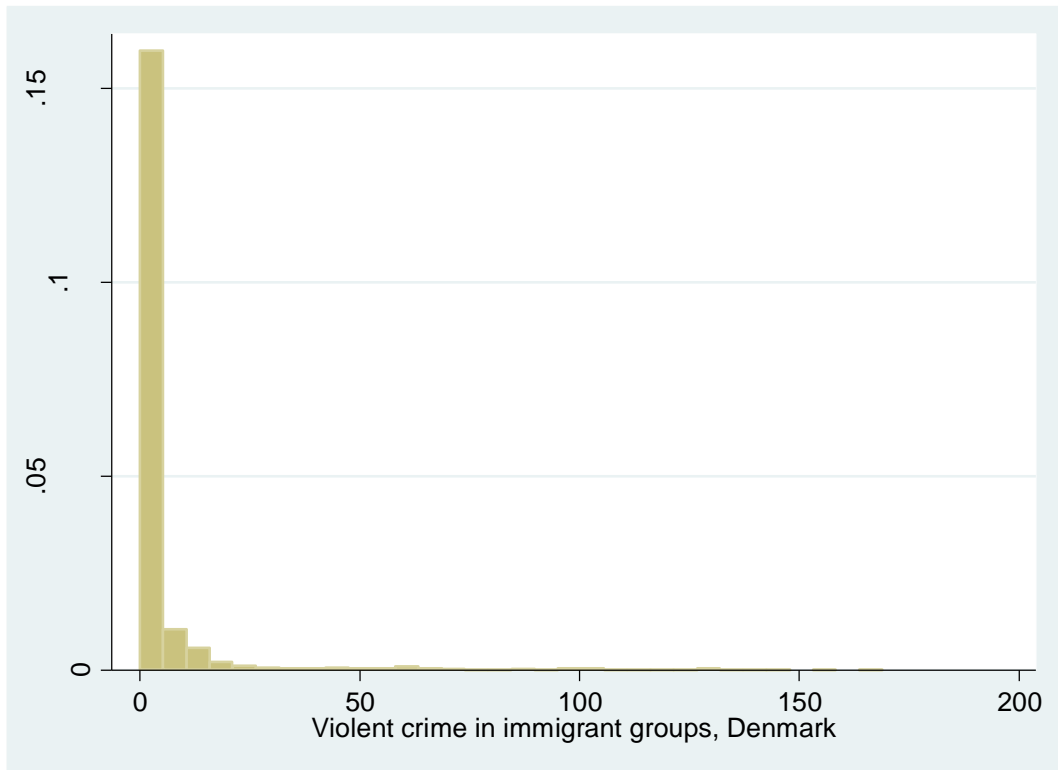
## Appendix 1

Histograms of logged immigrant population for Denmark and Norway



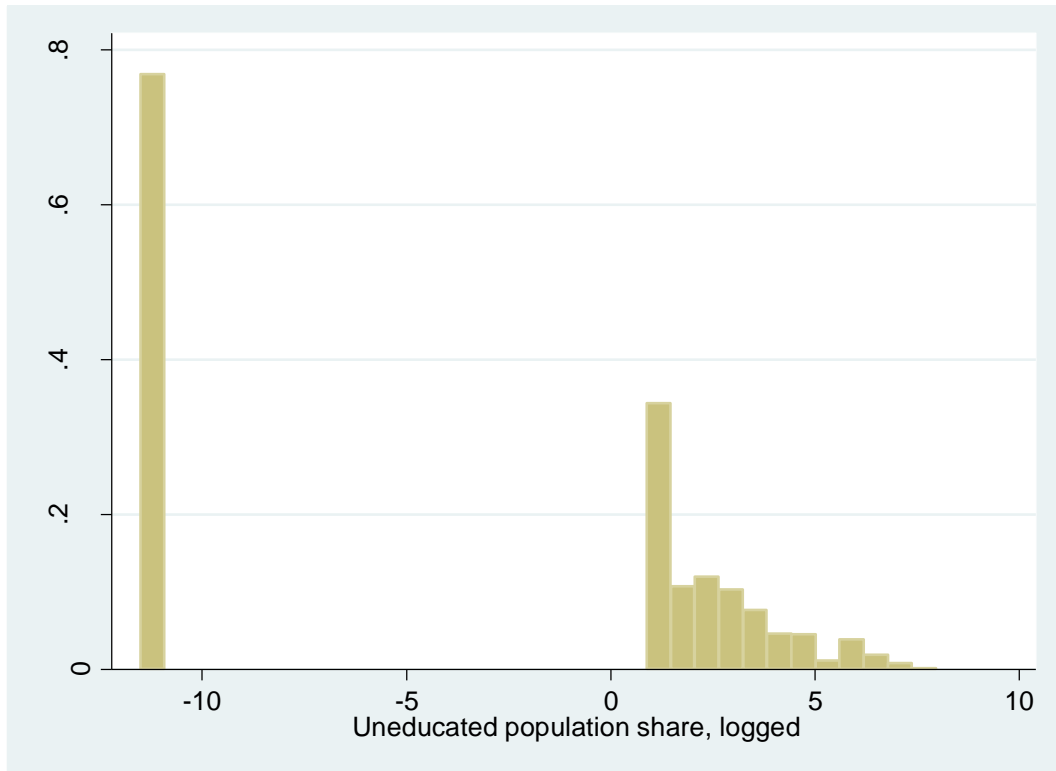
## Appendix 2

Histograms of violent crime in Denmark and Norway. Note the large number of zero-values.



## Appendix 3

Histogram of the logged variable for uneducated population share in immigrant groups in Norway.





## Appendix 4

Correlation matrix of all variables in the Norwegian tables.

Correlation matrix Norway														
	Crime N.	Imm. size	GDP PC log	Mus. Dom.	Christ. Dom.	Cath. Dom.	Uneduc. log	Civil war	Peace years	Regional D.	Good gov.	Pol. Terror	Homicide I.	Autoc. Years
Crime N.	1.00	0.49	0.09	0.17	-0.08	-0.01	0.35	0.28	-0.06	0.11	0.03	0.12	-0.04	-0.06
Imm. size		1.00	0.13	-0.03	-0.12	-0.02	0.69	0.29	-0.01	-0.03	0.27	0.09	-0.23	-0.17
GDP PC log			1.00	-0.20	0.10	0.13	-0.00	-0.20	0.54	0.07	0.66	-0.48	-0.12	-0.31
Mus. Dom.				1.00	-0.38	-0.17	0.05	0.17	-0.27	0.52	-0.20	0.24	-0.14	0.24
Christ. Dom.					1.00	0.49	-0.17	-0.12	0.08	-0.29	0.00	-0.11	0.26	-0.25
Cath. Dom.						1.00	-0.06	-0.01	0.11	-0.13	0.06	-0.07	0.04	-0.16
Uneduc. log							1.00	0.29	-0.14	0.11	0.06	0.13	-0.17	-0.08
Civil war								1.00	-0.46	0.17	-0.21	0.53	0.00	0.11
Peace years									1.00	-0.09	0.53	-0.49	-0.08	-0.22
Regional D.										1.00	-0.15	0.21	-0.12	0.23
Good gov.											1.00	-0.53	-0.27	-0.33
Pol. Terror												1.00	0.20	0.29
Homicide I.													1.00	-0.09
Autoc. Years														1.00

## Appendix 5

Correlation matrix of all variables in the Danish tables.

<b>Correlation matrix Denmark</b>													
	Crime Dan.	Imm. Size	GDP PC log	Mus.dom	Christ.dom	Cath.dom	Civil war	Peace years	Regional D.	Good gov.	Pol. Terror	Homicide I	Autoc. Years
Crime Dan.	1.00	0.45	0.02	0.29	-0.16	-0.05	0.29	-0.19	0.33	-0.15	0.21	-0.03	0.01
Imm. Size		1.00	0.19	0.04	-0.13	0.00	0.24	0.03	0.11	0.27	0.07	-0.21	-0.17
GDP PC log			1.00	-0.20	0.10	0.13	-0.20	0.54	0.07	0.66	-0.48	-0.12	-0.31
Mus.dom				1.00	-0.38	-0.17	0.17	-0.27	0.52	-0.20	0.24	-0.14	0.24
Christ.dom					1.00	0.49	-0.12	0.08	-0.29	0.00	-0.11	0.26	-0.25
Cath.dom						1.00	-0.01	0.11	-0.13	0.06	-0.07	0.04	-0.16
Civil war							1.00	-0.46	0.17	-0.21	0.53	0.00	0.11
Peace years								1.00	-0.09	0.53	-0.49	-0.08	-0.22
Regional D.									1.00	-0.15	0.21	-0.12	0.23
Good gov.										1.00	-0.53	-0.27	-0.33
Pol. Terror											1.00	0.20	0.29
Homicide I												1.00	-0.09
Autoc. Years													1.00