

GENOCIDE RESTRAINT:  
ECONOMIC INTEGRATION OF ETHNIC MINORITIES  
IN AFRICA

by

*Jason C. Courtoy*

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Thesis Committee:

Dr. Vanessa Lefler, Chair

Dr. David Carleton

Dr. Stephen Morris

*I want to dedicate this to my family who have always pushed me to fulfill my dreams.*

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## **ABSTRACT**

The genocide literature focuses on the conditions and casual mechanisms that make a situation “ripe” for genocide. However, the literature posits factors and mechanisms that are more common than the outcome of genocide. The reason is two-fold. First, genocide does not emerge in isolation from other conflictual events, but out of them. Second, escalation factors are only half of the process. The other half are restraint mechanisms. I propose an economic restraint theory of genocide that incorporates these multidimensional processes. Specifically, this economic restraint approach develops a theory of genocide costs, particularly the toll genocide takes on the state’s economy. This study theorizes that the economic location of the state’s revenue stream and the ethnic minority act as restraints on genocide and state violence more generally. This study finds that genocide is less likely to occur when minorities are integrated into the state’s preponderant economic sector, specifically the resource rents and services sector. Additionally, genocide is more likely when the minorities are not integrated into the state’s preponderant economic sector.

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## **LIST OF ACRONYMS**

**BTSCS** Binary Time-Series–Cross-Sectional.

**CIA** Central Intelligence Agency

**COW** Correlates of War.

**FDI** Foreign Direct Investment.

**GDP** Gross Domestic Product.

**MAR** Minorities At-Risk.

**MICE** Multiple Imputation by Chained Equations

**NB** Negative Binomial Regression

**NGO** Non-Governmental Organizations.

**PITF** Political Instability Task Force.

**TSCS** Time-Series–Cross-Sectional

**UN** United Nations.

## 1 Introduction

The genocide literature focuses on the conditions and casual mechanisms that make a situation “ripe” for genocide. However, the literature posits factors and mechanism that are more common than the outcome of genocide. In other words, the field over-predicts the prevalence of genocides. The reasons are two-fold. First, genocide arises not in isolation from other conflictual events, but directly out of them, such as state repression, civil war, or rebellion (Straus, 2012b). It is then common for genocide to occur out of civil war, as in the case of Rwanda in 1994, and therefore share similar explanations. However, not all conflictual events become genocides. This leads to a very real theoretical issue for the field: what explains the vast variation in outcomes?

Second, by focusing solely on genocides the field automatically narrows the possible number of outcomes from an event. In other words, the scope of the literature neglects a plethora of cases that have similar characteristics but genocide never occurred. All of this means that the literature has not been able to answer a fundamental question: What causes genocide, as opposed to other types of conflictual events?

A theory and research design that incorporate negative cases – at-risk countries that did not experience genocide – are the keys to answering these questions. Straus (2012b) argues that current theories only posit mechanisms for half of the process, as simply having escalation factors does not mean a state acts on them. If they did, then genocide would be more common. He states that what is missing are “theoretical invisible factors of restraint” (Straus, 2012b, 344). Instead, there are a number of factors at different levels that can restrain or create resistance for the escalation of violence. Each factor of resistance must then be overcome for violence to escalate. In short, violence is a push-pull process, not linear but multidimensional consisting of both periods of escalation and resistance (Straus, 2012b; Semelin, 2002). Genocide, therefore, is likely to occur when the escalation factors are strong and resistance to that escalation is weak.

I propose an economic restraint theory of genocide that incorporates these multidimensional processes, without discarding extant theories. Specifically, this economic restraint approach

develops a theory of genocide costs, particularly the toll genocide takes on the state's economy. Theoretically, if the cost (e.g., the disruption caused by genocide) outweighs the benefits gained, then the state should be more reluctant to entertain such action. I propose that if we look at the specific location of the state's revenue stream (where the state receives a preponderance of its income) and the location of the minority within the economy, then an interactive relationship exists to explain the state's willingness to accept the inherent costs associated with civilian targeting. This study also contributes to the broader literature of international relations by providing a conceptualization of costs besides military expenditures or casualties. In particular, I argue that economic restraint represents costs as future trade and investment, future production, and labor pools. This is an important contribution because it builds on and provides a conceptualization for an important yet under-theorized idea in international relations: the costs of fighting. Understanding this conceptualization will require a shift from the literature's current thinking of what makes genocide policies attractive to leaders (Midlarsky, 2005b; Valentino et al., 2004) towards what makes these policies too costly (Straus, 2012b).

The rest of the study is as follows. First, the current economic theories are explored to uncover some inherent costs of genocide. Second, the theory of ethnic economic integration as a restraint factor is discussed. Third, the data collection process and the coding schemes for the new variables are explained, in addition to the reporting of some descriptive statistics. The results of this study suggest that integration of the ethnic minority into the state's economic sector is a necessary condition for the absence of genocide onset, only if those sectors are the services and resource rents sectors. I conclude with a discussion of the implications of my research, the contribution it provides to the field and practitioners, and areas of future research.

## **2 Economic Mechanisms of Genocide**

The economic perspective of the literature has recently focused on why a leader would inherently view genocide as beneficial (Midlarsky, 2005a,b; Valentino, 2004; Valentino

et al., 2004). Valentino and Midlarsky, looking at two very different dependent variables, suggest that mass killing of civilians/genocide are the result of perceived future losses (or, for Midlarsky, the interaction of perceived future political power to an ‘other’ and *realpolitik*). Genocide, in this way, then is an attempt by the state to recoup its losses or prevent the perception of future losses. However, less explored, and a theoretical gap, in the literature is how costly genocide is to the state. It is assumed that genocide carries a high cost. Strategically a state should only pursue genocide when the cost is low, but a direct assessment of when and what the costs of such actions are has not been made. This is important, as returning to Valentino and Midlarsky, the state is making a comparative reference vis-a-vis a perceived future loss and the amount of cost to recoup it.

There are several ways to address the theoretical gap, but this paper will review the literature from the political-economic perspective. Straus’ theory of genocide (2012b) argues that what separates genocide from state repression-or simply war-is the intent by elites to eliminate an entire ethnic group from the population. In other words, without an incorporation of some kind of group targeting, results will not be able to explain the variation in cases. Therefore, this review will focus on four key economic mechanisms within and outside of the genocide literature to understand how genocide could be costly to the state: reputation, revenue, resource allocation, and class.

First is a reputation mechanism. Low levels of trade openness are found throughout the literature to be a predictor of genocide (Colaresi and Carey, 2008; Harff and Gurr, 1998; Harff, 2003; Krain, 1997). The argument is that reputation costs introduce external influences on states in the form of changes in international trade and investment. States that have good reputations get the goodies and states that have bad reputations get the stick. Findings outside of the field have found the same relationship between FDI (and the type of FDI used: short-term versus long-term) and a state’s willingness to use certain levels of repression (For examples see: Blanton and Blanton 2007, 2009; Davenport 2007; Harms and Ursprung 2002; Richards et al. 2001). In other words,

trade openness socializes a state into how its domestic behavior ought to be through punishments from the international community. The extent to which this is an economic restraint on genocide relies on how open the domestic economy is towards external economic actors.

Second is a revenue mechanism. Straus (2012b) argues that because genocide is a disruptive action committed across a large span of time and space it is likely to compromise certain economic sectors. Some sectors are resistant to such disruptions. For example enclave economies, such as oil and minerals, can be protected in wartime and require low skilled workers. Furthermore, elites in these enclave economies have few incentive to protect civilians. On the other hand, those economies not resistant to such disruptions are called violence-sensitive sectors. If the state's revenue, such as taxes or trade, come from a sector that is violence-sensitive then the leaders are less likely to commit genocide and disrupt that sector of the economy. In other words, the escalation of violence is likely to be tempered by their need for a steady flow of revenue.

Third is a resource allocation mechanism. The state repression literature takes the revenue mechanism a step further in arguing that repression requires the divergence of resources from the war front to political order (Davenport, 2007). In this sense, state repression involves costs in the sense that it moves/or removes individuals from the productive work force. In other words, resource allocation is an inherent cost to repressive action. Colaresi and Carey (2008) similarly find that state capacity matters whether a state targets civilians. The logic is that the effect of regime type, often seen in genocide as a straightforward mechanism, is conditioned by state capacity. In this view, mass killings require a divergence of resources from political order to mass slaughter. Therefore, an authoritarian government must have enough capacity to both maintain political order and perform a campaign of mass killing. The opposite is true for democracies where high levels of capacity reduce the likelihood of genocide. This suggests that a democratic regime might resort to mass killing more immediately when capacity is low as Colaresi and Carey find. In sum, violence against civilians

requires divergence of resources, information, and attention that might be too precious to waste during an armed conflict resulting in an attempt to hastily rid the state of dissent (Valentino et al., 2004).

Fourth is a class mechanism. Straus (2012b) takes his revenue mechanism further arguing that a “large middle class and/or a stratum of economic elites whose prosperity depends on a functioning economy, [would]... act as a restraint on the escalation of violence” (2012b, 350). This mechanism rests on two assumptions about the middle class: stability and influence. Since the middle class is more reliant than the upper or lower classes on the stability of the economy, they are more likely to seek moderation in escalation. Additionally, it is argued that the middle class will have more influence than the peasant or working class. In this regard, a middle class’ influence is likely to work in two ways. First, it is more likely that they will be heard and their opinion matter to the elite and ruling class. Second, a vibrant middle class also means that democratization or at least some similar institutional mechanisms are likely to exist, such as moderation or transparency. This mechanism acts as a reinforcement of the revenue mechanism, as an economy with a strong middle class is also likely to have a vibrant violence-sensitive sector. If this sector is threatened by an escalation in state violence then the influence of the middle class is likely to increase the restraint of the revenue mechanism.

However, a major issue with these mechanisms is that they are too general. The problem with these mechanism is that they should be straightforward, but instead there is a large amount of variation in the outcome. For instance, the repression literature finds a great deal of variation in the use of repressive action. Some states divert/or willfully remove more people from the labor force, according the Davenport’s mechanism, than others yet continue to use repression. Some states conform to the international pressures against repressive action, while others, such as most cases of genocide, seem to accept the pressure and pursue the riskier option. It is not a matter of whether these mechanisms explain political violence, as they do, but rather whether they explain why specifically a genocide occurred and not something else. An important theoretical piece is missing,

specifically an explanation for why a specific ethnic group could be targeted. While this might not be necessary for all of the political violence literature, it is central to the study of genocide. These four mechanisms go a long way towards explaining why groups are targeted, but not why a specific ethnic minority might be targeted by the state for elimination. In other words, a genocide focused investigation into restraint mechanisms should explain how these mechanisms would restrain a leader from choosing or following through on the targeting of an entire ethnic group.

### **3 Economic Integration of Ethnic Minorities**

Genocide, as a large-scale form of violence, causes population and revenue upheaval. Straus (2012b) argues that some sectors of the economy, such as oil and minerals, are resistant to these disruptions because they can be protected in wartime and require low skilled workers. Straus refers to these sectors of the economy as violence-resistant sectors. On the other hand, economies that are not resistant to such disruptions, such as agriculture (with long planting seasons), manufacturing (requiring high-skilled labor and freedom of distribution), and services (requiring high-skilled labor and freedom of transportation, especially for tourism), are called violence-sensitive sectors. In addition, if the state's revenue, such as taxes or trade, come from a sector that is violence-sensitive then the leaders are less likely to desire a disruption to the sector (as Straus' revenue mechanism suggests). In other words, the escalation of violence is likely to be tempered by elites need for a steady flow of revenue.

The implication is that the type of revenue stream affects the likelihood that elites will see violence as beneficial. However, this does not account for why a specific minority ethnic group is targeted. The theory suggests an inherent interaction between the state revenue interest and the minority's labor skills or location, i.e. the integration of the ethnic minority into the economy. Therefore, the theory suggests that if elites heavily rely on violence-sensitive sectors then they will be reluctant to escalate the level of violence. The location of the potential genocide targets in the economy similarly

matters for genocide onset and severity. This matters not only for onset, but for the severity of genocide as well. If the ethnic group is integrated into specific sectors where labor cannot be easily replaced, such as those requiring skilled labor, then elites reliant on these sectors will be more reluctant to escalate violence against them. However, the reverse of this argument should also be expressed. If the ethnic group(s) is integrated into specific sectors where labor can be easily replaced, such as an enclave economy or low skilled labor, then elites are more apt to escalate violence against the group(s).

The integration of the ethnic minority group into the preponderant economic sector is best represented by the interaction of two new variables: the state's preponderant economic sector and the ethnic minority group's location in the labor force. In other words, the restrictive nature of the factor varies based on the level. If too low then the measure is less restrictive allowing for greater risk of the likelihood of genocide onset. If the value is high then the measure is more restrictive reducing the risk of genocide onset. In order to better illustrate this point, the paper advances two hypotheses to highlight the permissive and restraining element of the theory.

### **3.1 High Restraint Level**

If a leader's political survival can be represented by the location of the state's dominant revenue stream, then the integration of an ethnic group into the dominant economic sector should serve as an effective restraint against genocide. Therefore, the first hypothesis is as follows:

**Hypothesis 1:** When an ethnic group is integrated into the state's dominant sector, genocide is less likely to occur.

The implication is that as an ethnic minority becomes integral to the dominant economic sector, it becomes less beneficial to the elites or the state leadership to target that group. Assuming that genocide is a rational action chosen by a state, often seen through the lens of cost/benefit to the state, then the greater the costs of the action the less likely a state is to take it. The integration of an ethnic group into the dominant economic sector

increases costs in two ways. First, costs increase through the loss of the targeted ethnic group to the economy. The idea is that if this sector is important to the economy and needs high-skilled labor, then the elimination of the workers will be too costly when the workers are not easily replaced. Second, the increased cost that genocide will have by disrupting that economic sector. Straus (2012b) explains that conflict, in and of itself, disrupts the economy. This is not a factor within less-developed states, where enclave economies exist. However, as states develop, conflict tends to disrupt the natural flow of the economy, especially economic sectors such as manufacturing and services.

### **3.2 Low Restraint Level**

Although hypothesis 1 indicates that integration is likely to increase the restraints that the state faces in undertaking a genocidal policy, the opposite may also be true. This is reflected in hypothesis 2 that the less integrated a group is into the dominant economic sector, the more likely that group is to be targeted by the state. Therefore, the second hypothesis is as follows:

**Hypothesis 2:** Ethnic groups that are not integrated into the dominant sector of a state's economy are more likely to be targeted by genocide.

This hypothesis implies two things. First, simply that an ethnic group that is less integrated into the state's economy has an increased probability of being a target for genocide, especially if it is a minority in the state. Second, that simply integrating into the state economy is not enough to reduce a group's chance of being a target. The integration must be into the state's dominant economic sector. The idea is that if the ethnic minority integrates into the agricultural sector, but that state receives majority of its total trade and GDP from manufacturing, then the targeting of that ethnic group would disrupt the economy. In other words, parity of the ethnic group's location in the economy and the state's sector of interest matter for the restraint of genocide.

## 4 Coding Schemes

In order to test these two hypothesis, I construct two new variables that represent the integration of an minority group into the state's predominant economic sector. For the sake of clarity, economic sector refers to the primary coding of the World Bank's (2012) indicators of Resource Rents, Agriculture, Manufacturing, and Services as a percentage of GDP. The minority group's occupation, *MAR location*, is defined as the primary occupation of an ethnic minority group based on the economic sectors. The state's economic interest, or *state interest*, is defined as the state's preponderant economic sector. This conceptualization allows for the best measure for this specific resistance mechanism to find the relationship between the parity of the state's interest and the minority group's occupation. The advantage of this approach is that it captures the average change over time within countries.

### 4.1 State Interest

*State interest* is coded as the state's preponderant economic sector – resources, agriculture, manufacturing, or services – based on World Bank (2012) data. The variable is coded 1 if the largest portion of the state's GDP came from resource rents, 2 for agriculture, 3 for manufacturing, and 4 for services. The variable is split into four dichotomous variables of 0 (No) and 1 (Yes) if the state's preponderant sector was *resource rents*, *agriculture*, *manufacturing*, or *services*. Separating state interest into a dichotomous rather than an categorical measure allows this study to control for two factors. First, it captures the individual effects of each sector on genocide onset. Second, there is no theoretical reason that integration into services is different from integration into manufacturing, which an ordinal measure would be capturing. The theory of this study is arguing that integration into the dominant sector is enough for restraint, but not that certain sectors are more resistant than others apart from enclave sectors.

## 4.2 MAR location

A variable was constructed to represent the economic location of the major minority group at-risk within each state (*MAR location*). A minority (defined as an ethnopolitical group) is considered “at-risk” when it meets these criteria according the Minorities At-Risk Project:

1. “collectively suffers, or benefits from, systematic discriminatory treatment via-a-vis other groups in a society; and/or
2. collectively mobilizes in defense or promotion of its self-defined interests.” (2009)

The major minority group was used because of salience. These groups are more likely than the smaller groups to be recognizable by the general public and the elites in the country as an enemy. The Minorities at Risk Project (2009) dataset was used to construct a list of all groups for the states within Africa. The list was then used, based on the MAR dataset’s *group population* variable, to ascertain the size of each minority group. The largest groups were selected to represent the dominant minority group within the state and used to construct the *MAR location* variable. Based on an extensive search of various sources such as Library of Congress country reports, the MAR databases qualitative analysis, CIA Factbook reports, books, and other articles, the variable was coded as 1 (Resource Rents), 2 (Agriculture), 3 (Manufacturing), or 4 (Services) for their primary mode of economic production.

However, not all groups fit neatly into these categories. For example, the Merina ethnic minority in Madagascar could be coded as either as manufacturing (3) or as services (4). Therefore, two measures were created. First, a measure that was more conservative that coded to the higher level of restraint. For the example, the Merina ethnic group would be coded as a 4 with services as a more violence-sensitive sector than manufacturing. Second, a less conservative measure codes the lower level of restraint. For the example, the Merina ethnic group according to this more sensitive measure would be coded as a manufacturing (3).

Some states do not have a minority in the MAR Project dataset. These data points are not missing, but rather a group simply does not exist for the MAR Project. Therefore, these states were coded as being 0 rather than having listwise deletion of cases due to the absence of a MAR in the dataset.

A second measure was taken utilizing the smallest minority group in the MAR dataset (*Minor MAR*), if more than one group existed in the dataset. This measure was used as a weak-link test for the dependent variable, and to test whether the a state is more likely to target the smaller minority group over the largest.

The *Major MAR* and *Minor MAR* variables are then split in four dichotomous variables: Resource Rents, Agriculture, Manufacturing, and Services. For example, the Ndebele people in Zimbabwe are coded as a 2 (Agriculture) for the *Major MAR* variable. Therefore, they will be coded as a 1 (Yes) for Agriculture and 0 (No) for Resource Rents, Manufacturing, and Services. The reason for coding these as dichotomous rather than categorical is the same as state interest, as it captures the individual effects and theoretically should not be considered as an ordinal measure.

### **4.3 Limitations of Coding Schemes**

There are three limitations that these coding schemes could create for the new variables. First, the MAR dataset has been criticized for creating a selection bias. The dataset codes groups as being at-risk only once violence has occurred against the group. This leaves clusters of minority groups, who possibly are at-risk of violence, out of the analysis because they have not experienced armed violence. While an All-MAR dataset has been created, which attempts to eliminate this problem, the data were only coded for 1999-2003. Therefore, the MAR dataset's restriction is a known issue that simply has to be accepted as a limitation.

Second, it could be that this measure does not capture or understand cases, such as Germany where the state and the minority had a high level of restraints on them but genocide still occurred. For example, under this coding scheme the Jews would have

been coded as services sector and Germany's state interest in the manufacturing sector. Theoretically this would create resentment against those more economically well off. In other words, there is a point at which the a higher level of restraint that a minority might have begins to make the probability of genocide more likely than less. However, this is a different mechanisms from the restraint mechanism of this study. It is important to investigate, but is not the purpose of this study.

Third, it is possible that a minority group is not integrated into the economy due to state-led discrimination. If the group is purposefully being discriminated against, it reduces the restraint level against violence as the theory suggests that the less integrated the minority the greater at-risk they are to violence. This limitation is taken into account with a control variable developed by Goldstone (2010) and Goldsmith (2013) called state-led discrimination. The variable controls for whether the state had wide-spread economic or political discrimination against an at-risk minority group. The variable construction will be discussed in the next section.

## **5 Data Collection**

Data were collected on genocide onset, economic sectors, and minority groups within 53 countries in Africa. The data were collected from the World Bank (2012) databank, the Minorities at Risk Project (2009) dataset, and the Political Instability Task Force (PITF) (Goldstone et al., 2010) dataset. Table 1 and 2 below provide the descriptive statistics of both the conservative and liberal measures of the new minorities at-risk variables.

Looking at the frequency of existence and non-existence of factors for Table 1, there are 1001 cases that are a No for the major MAR agricultural dummy and 920 cases of Yes. The percentage of No and Yes is 52% and 48%. Major and minor MAR coding of manufacturing and resource rents is 1921 cases of No or 100%. Major MAR services has a frequency of 1553 No and 368 Yes or a percentage of 80% and 19%. For the minor MAR frequency of agriculture, the frequency of non existence and existence is

1077 and 844 or 56% and 43%. The frequency for the minor MAR services dummy is 1799 No's and 122 Yes's or 94% and 6%.

Table 1: Descriptive Statistics for Minorities At-Risk Variables–Conservative Measure

	N	Mean	SD	Min	Max
Major MAR	1921	1.724	1.417	0	4
Minor MAR	1921	1.133	1.221	0	4
Major MAR Resource Rents	1921	0	0	0	0
Major MAR Agriculture	1921	0.479	0.500	0	1
Major MAR Manufacture	1921	0	0	0	0
Major MAR Services	1921	0.192	0.394	0	1
Minor MAR Resource Rents	1921	0	0	0	0
Minor MAR Agriculture	1921	0.439	0.496	0	1
Minor MAR Manufacture	1921	0	0	0	0
Minor MAR Services	1921	0.064	0.244	0	1

Table 2: Descriptive Statistics for Minorities At-Risk Variables–Liberal Measure

	N	Mean	SD	Min	Max
Major MAR	1921	1.378	1.168	0	4
Minor MAR	1921	0.938	1.106	0	4
Major MAR Resource Rents	1921	0.134	0.341	0	1
Major MAR Agriculture	1921	0.430	0.495	0	1
Major MAR Manufacture	1921	0.043	0.202	0	1
Major MAR Services	1921	0.064	0.245	0	1
Minor MAR Resource Rents	1921	0.174	0.379	0	1
Minor MAR Agriculture	1921	0.265	0.442	0	1
Minor MAR Manufacture	1921	0.021	0.145	0	1
Minor MAR Services	1921	0.042	0.201	0	1

The more liberal measure provides a great variation in existence or non-existence in the coded measurements. The frequency for Major MAR resource rents is 1664 No's and 257 Yes's or 87% and 13%. For Major MAR agriculture the frequency is 1095

No's and 826 Yes's or 57% and 43%. Major MAR manufacturing's frequency is 1839 No's and 82 Yes's or 96% and 4%. Whereas, major MAR services is 1798 No's and 123 Yes's or 94% and 6%.

The more liberal measure of the minor MAR is also has greater variation than the conservative measure. The frequency of minor MAR resource rents is 1587 No's and 334 Yes's or 83% and 17%. For minor MAR agriculture, the frequency is 1411 No's and 510 Yes's or 73.5% and 27%. For manufacturing, the frequency is 1880 No's and 41 Yes's or 98% and 2%. Lastly, services frequency is 1840 No's and 81 Yes's or 96% and 4%.

Table 3 below provides the descriptive statistics of state interest and the four dichotomous variables split from it before imputation. The frequencies will be discussed for only the dichotomous variables.

Table 3: Descriptive Statistics for State Interest Variables

	N	Mean	SD	Min	Max
State Interest	1586	3.173	1.096	1	4
State Interest-Resource Rents	1586	0.078	0.268	0	1
State Interest-Agriculture	1586	0.296	0.457	0	1
State Interest-Manufacture	1586	0.003	0.050	0	1
State Interest-Services	1586	0.624	0.484	0	1

The frequency for state interest in the resource rents sector is 1463 No's and 123 Yes's or 92.2% and 8%. For state interest located in the agricultural sector, the frequency is 1117 No's and 469 Yes's or 70.4% and 30%. State interest's location in the manufacturing sector is 1582 No's and 4 Yes's or 99.7% and 0.25%. Lastly, state interest's location in the services sector is 596 No's and 990 Yes's or 38% and 62.4%.

## 6 Research Design

### 6.1 Temporal and Spatial Domain

I restrict my observations to Africa for a variety of practical and theoretical reasons. First, the amount of economic data is more extensive for the African region than that of other regions where genocide has occurred. Second, the number of observations of genocide and negative cases in Africa is more mixed than that of other regions. The theoretical necessity of negative cases in determining restraint factors of genocide onset cannot be stressed enough, as it is these cases that this study is attempting to understand (Straus, 2012a,b; Verdeja, 2012). Third, by restricting my analysis to the African region I am able to control for factors that might vary from one region to another. This distinction is important because the onset of genocide in Africa might be different from that of Europe or Asia. It has often been argued that genocide follows after decolonization or democratization (Straus, 2012b). Therefore, in this way I am able to control for certain cultural and historical factors that African states have in common that other regions do not. Data availability limits the temporal domain to 1960-2000 by the World Bank data on the lower bound and Gleditsch's *trade openness* on the upper bound.

### 6.2 Dependent Variable

***Genocide Onset*** I rely on the Political Instability Task Force (PITF) dataset measure of genocide/politicide (Goldstone et al., 2010), which defines genocide as:

the promotion, execution, and/or implied consent of sustained policies by governing elites or their agents—or, in the case of civil war, either of the contending authorities—that are intended to destroy, in whole or part, a communal, political, or politicized ethnic group (Harff, 2003, 58).

This variable includes non-state actors, but only in the context of challenging state authority. The reason is that genocide requires a great deal of forces, intelligence,

resources, and, some scholars suggest, ability to persuade others. These are requirements that Harff concluded are only accessible to the state or those who act as the state.

Genocide onset is a dichotomous variable of 0 (No) and 1 (Yes) for if genocide began in that year (Colaresi and Carey, 2008; Harff, 2003; Krain, 1997; Straus, 2012b). My data are composed of 1895 observations with 53 countries from 1960 to 2000. The reduction from 2120 possible cases is a result of state independence in Africa, as not all states became independent at the same time. The temporal domain follows the Polity (Marshall et al., 2012) dataset, which codes from the start of independence. In order to compare genocide onset with cases that did not experience genocide, the unit of analysis is the state-year. There are 17 cases of genocide onset during this temporal domain, which means 1880 cases did not have genocide. Table 4 lists the cases of genocide onset and their duration.

Table 4: Genocides and Politicides from 1960-2000 by Country-Year

Algeria	1962	Congo-K	1977-1979
Rwanda	1963-1964	Uganda	1980-1986
Congo-K	1964-1965	Sudan	1983-
Burundi	1965-1973	Somalia	1988-1991
Nigeria	1967-	Burundi	1988
Eq-Guinea	1969-	Burundi	1993-1994
Uganda	1972-1979	Rwanda	1994
Angola	1975-	Angola	1998
Ethiopia	1976-1979		

Source: Goldstone et al. 2010

### 6.3 Control Variables

**Trade Openness** Many researchers have found that trade openness decreases the likelihood of genocide in two ways (Colaresi and Carey, 2008; Harff, 2003; Straus, 2012a,b). First, trade openness socializes a state into how to behave within the international economy. Second, interconnectedness via the world economy creates reputation costs

for disruptions in trade (i.e., violence). A state is less likely to engage in violent mass atrocities and will instead use coercion to limit the disruption and costs associated with it. In order to control for these factors, as economic restraints are the interest of this paper, I use Gleditsch's expanded trade (2002) dataset that operationalizes a state's total trade as the sum of a state's imports and exports (Colaresi and Carey, 2008). This is the same operationalization used by Harff (2003) for trade openness.

***Ethnic Fractionalization*** Ethnic fractionalization or cleavages are frequently linked to genocide onset (Colaresi and Carey, 2008; Harff, 2003; Krain, 1997; Rummel, 1994). Harff (2003) finds it to be one of six key variables that have been 74% accurate in post-diction of genocide onset. Ethnic fractionalization increases the likelihood that genocidal policies will be accepted by the masses, and ethnic minorities often are used as scapegoats (Krain, 1997; Straus, 2012a). This measure represents the relative fractionalization (or ethnic diversity) of a population. The theory is that the greater the diversity the greater likelihood of ethnic cleavages. This variable is taken from Fearon and Laitin's (2003) dataset.

***State-Led Discrimination*** State-led discrimination is a control variable included to account for if a MAR group is not integrated into the economy as a result of economic/political discrimination. Goldstone et al. (2010) also find it to be a predictor of state-led campaigns against specific ethnic groups. The dummy variable is coded following Goldstone et al. (2010) and Goldsmith et al. (2013) construction. It is a combination of the Minorities At-Risk Project (2009) dataset's political and economic discrimination variables. These variables are ordinal scales resulting from 1 to 6 of the level of discrimination. The dummy is coded a 1 if either variable is a 6 and 0 for all others.

***Polity*** The Polity score or level of democracy is included for three reasons. First, many researchers have concluded that whether a state is democratic or authoritarian either increases or decreases the likelihood of the onset of genocide (Colaresi and Carey,

2008; Harff, 2003; Goldsmith et al., 2013; Straus, 2012a,b). Second, Mann (2005) suggests that genocides are more likely within transitions to democracy suggesting that semi-democracies have a higher likelihood of the onset of genocide. Therefore, I control for the parabolic shape of the relationship in the same manner as Goldsmith et al. (2013), Goldstone et al. (2010), and Harff (2003) by creating dummy variables for *full authoritarian*, *partial authoritarian*, and *partial democracy*. By creating dummy variables, I am able to capture the parabolic relationship between genocide and regime type, but at the same time control for the two least likely genocide cases (Colaresi and Carey, 2008; Goldsmith et al., 2013; Goldstone et al., 2010; Harff, 2003). If a state has a polity score that was less than or equal to -7, then it was coded as a *full authoritarian*. If the state has a polity score between -6 and 1, then it was coded as a *partial authoritarian*. If the state has a polity score between 2 and 6, then it was coded as a *partial democracy*. The data were collected from the Polity dataset (Marshall et al., 2012).

***Prior Genocide*** Prior genocide is found by Harff (2003) to be significant in predicting genocide. The logic of this variable is that elites might be habitual offenders (Fein, 1993; Harff, 2003). The idea is that once committed, the barrier (or restraint) of the use of genocide becomes the common practice for handling opposition or minority groups. A variable was operationalized following the methods of Goldsmith et al. (2013) denoted as a running count of the previous genocides. The data came from the PITF Genocide/Politicide dataset Goldstone et al. (2010).

***State Failure*** State failure permits a higher risk of genocide (Colaresi and Carey, 2008; Harff, 2003). Harff (2003) finds that no genocide erupts outside of state failure. However, how genocide emerges “is likely to follow a deterministic, potentially nonlinear, trend as a state failure unfolds” (Colaresi and Carey, 2008, 49). This means, as Colaresi and Carey suggest, that genocide onset is at greatest risk during the early stage of state failure onset, but the likelihood decays as state failure continues. Data for this variable was collected from the PITF’s state failure dataset (Goldstone et al., 2010). The variable

was coded as a running count of the years since state failure onset using the BTSCS tool (Beck et al., 1998; Tucker, 1999).

## **6.4 Model Specification**

Using the variable above, I ran four separate negative binomial (NB) models: two for the major and minor MAR conservative measurements and two for the major and minor MAR liberal measurements. The dependent variable is a discrete binary event-count variable suggesting the use of logistic/probit regression over OLS regression to account for a number of assumptions in event data that OLS cannot accurately model. However, the dependent variable only has 17 cases of genocide onset leaving a total of 1880 cases that did not experience genocide onset. This creates issues for a logistic/probit model of rare event-counts because it assumes a non-negative inflated event-count.

Not all event-count models are the same. The dispersion of the data, as well as the independence of the events, generally assumes to models: Poisson or negative binomial. The over-inflation of negative cases and over-dispersion inherent in domestic and international conflict suggests that a NB model will more accurately model by relaxing the independence assumption about the dispersion of onset.

The dataset is in a binary time-series–cross-sectional (BTSCS) format, which according to Beck et al. (1998) requires an accounting for the temporal dependencies. Therefore, the cubic splines are included in the analysis. However, King suggests that to account properly for the cross-sectional dependency of the dataset the model should be clustered around the country id (Beck and Katz, 1997). The results of the models incorporate both approaches into the models.

### **6.4.1 Imputation**

Due to the nature of political contentious events, missing data is inevitable. Therefore, handling missing data is important. King (2001) and Honaker (2010) have suggested that complete data analysis (i.e., listwise deletion of observations) is an ineffective

method of handling missing data as it provides false and biased estimates, especially for time-series–cross-sectional (TSCS) data. This study uses multiple imputation by chained equations (MICE) for handling missing data for five variables: *total natural resource rents*, *agriculture*, *manufacturing*, *services*, and *ethnic fractionalization*. The MICE method is explained in greater detail by Azur et al. (2011), but simplistically it creates multiple imputed datasets using chained equations. The models are then combined to create the estimates based on the original dataset.

Multiple imputation is necessitated for this model for the above reason, but also because the missingness is located within a theoretically important independent variable of state interest. Ignoring the missingness in these cases would not only bias the estimators and significantly reduce the number of observations, but also create false implications/conclusions about relationships with the dependent variable.

## **7 Results of the Negative Binomial Models**

The results of the negative binomial models of genocide onset are reported below in Table 5. All of the models represent the full model. Models 1 and 2 represent the results of the conservative coding scheme that took the higher-level value if the minority group's location in the economy was between two categories. Whereas, Models 3 and 4 represent the results of the more liberal coding scheme that took the lower-level value if the minority group was between two categories. Models 1 and 3 include the major MAR groups. Whereas, Models 2 and 4 include the minor MAR groups. Each model includes the same control variables. State-led discrimination had to be dropped from the models as it caused the models to not converge. This is unfortunate, but a possible implication will be discussed in the discussion section.

Model 1 demonstrates that ethnic fractionalization, total trade, previous genocides, time since state failure, and the state interest manufacturing dummy have no statistically significant effect on the onset of genocide, all things being held constant. A negative

Table 5: Negative Binomial Event-Count Models:  
Genocide/Politicide Onset, 1960 to 2000

Genocide Onset Variable	Conservative Models		Liberal Models	
	Model 1	Model 2	Model 3	Model 4
Major MAR Agriculture	2.310* (2.24)		0.436 (0.85)	
Major MAR Manufacture			-15.34*** (-12.23)	
Major MAR Services	-15.07*** (-13.90)		-15.45*** (-13.37)	
Minor MAR Agriculture		1.610* (2.27)		0.634 (1.15)
Minor MAR Manufacture				-14.32*** (-7.90)
Minor MAR Services		-15.64*** (-14.76)		-16.09*** (-12.68)
State Interest-Agriculture	16.60*** (12.98)	16.55*** (39.23)	12.65 (1.51)	12.53 (1.59)
State Interest-Manufacture	-1.683 (-1.42)	-1.991 (.)	-4.245 (-0.52)	-4.820 (-0.65)
State Interest-Services	15.98*** (12.69)	15.92*** (12.91)	12.27 (1.46)	12.07 (1.53)
FullAuthoritarian	16.19*** (32.61)	15.82*** (23.90)	15.81*** (15.88)	15.60*** (19.81)
PartialAuthoritarian	16.55*** (34.71)	16.19*** (24.58)	16.06*** (14.30)	15.82*** (18.35)
PartialDemocracy	15.61*** (13.28)	16.04*** (12.64)	15.39*** (11.84)	15.62*** (11.83)
Ethnic Fractionalization	-0.558 (-0.55)	-0.501 (-0.57)	-0.675 (-0.65)	-0.229 (-0.21)
Total Trade	-0.0000764 (-1.08)	-0.0000883 (-1.07)	-0.0000576 (-0.81)	-0.0000620 (-0.82)
Previous Genocides	-0.214 (-0.86)	-0.0685 (-0.30)	0.131 (0.48)	0.166 (0.66)
Time Since State Failure	-0.0298 (-0.50)	-0.0553 (-1.02)	-0.0407 (-0.75)	-0.0558 (-1.05)
Spline 1	0.00274 (1.89)	0.00239 (1.69)	0.00251 (1.73)	0.00233 (1.63)
Spline 2	-0.00494* (-2.14)	-0.00469* (-2.03)	-0.00462* (-2.02)	-0.00445* (-1.97)
Spline 3	0.00389* (2.17)	0.00385* (2.16)	0.00369* (2.11)	0.00361* (2.11)
Constant	-37.57*** (-25.18)	-36.64*** (-18.48)	-31.85*** (-3.46)	-31.82*** (-3.87)
ln(alpha)				
Constant	-33.07	-33.07	-33.07	-33.07
N	1921	1921	1921	1921
P-value	0.00	.	0.00	.

Notes: *t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

binomial coefficient can be interpreted as a one unit change in the independent variable, the log of the dependent variable is expected to change by the value of the regression coefficient. Major MAR agriculture is positive and statistically significant with a  $p$ -value at the 0.05 level. All things being equal, for every unit change in major MAR agriculture dummy, the log of genocide onset is expected to increase by 2.310. This suggests that the location of the minority group into the agriculture sector actually increases the likelihood of genocide onset. Major MAR services is also significant with a  $p$ -value at the 0.001 level, but it is negative. A one unit change in major MAR services decreases the log of genocide onset by 15.07. This suggests that when the minority group is located within the services sector the likelihood of genocide onset decreases. When state interest is within the agriculture or services sector, the results are found to be significant with a  $p$ -value at the 0.001 level. The coefficients are positive. For the state's interest in agriculture, a one unit change increases the log of genocide onset by 16.60. For the state's interest in services, a one unit change increases the log of genocide onset by 15.98.

All three measures of regime type are found to be positive and statistically significant with a  $p$ -value at the 0.001 level. The coefficients for full authoritarian can be stated as a one unit change in full authoritarian increases the log of genocide onset by 16.19. For partial authoritarian, the coefficient is a slightly larger at 16.55. Whereas, a one unit change in partial democracy increases the log of genocide onset by 15.61. These results are consistent with previous results that suggest full and partial authoritarian and partial democratic regimes increase the likelihood of genocide onset compared to full democracies holding all things constant.

Model 2 demonstrates that ethnic fractionalization, total trade, previous genocides, time since state failure, and the state interest manufacturing dummy have no statistically significant effect on the onset of genocide with all things being held constant. The results also show that state interest in agriculture and services remains statistically significant with a  $p$ -value at the 0.001 level, but their coefficients are slightly reduced

from 16.60 to 16.55 for agriculture and 15.98 to 15.92. The results for the smaller minority group are also only slightly changed from Model 1. When the smallest MAR group is employed in the agriculture sector, it is statistically significant with a  $p$ -value at the 0.05 level. The coefficient is slightly reduced from 2.310 to 1.610. The results are similar for when the smallest MAR group is employed in the services sector. They are found to be statistically significant with a  $p$ -value at the 0.001 level. The coefficient only changed slightly from 015.07 to -15.64 compared to the major minority groups. This suggests that difference between the major and minor MAR group do not statistically differ.

Regime type also remains statistically significant across all three measures with a  $p$ -value at the 0.001 level. The coefficients slightly change from Model 1 with full authoritarian reduced from 16.19 to 15.82, partial authoritarian reduced from 16.55 to 16.19, and partial democracy increased from 15.61 to 16.04. This change is consistent with the literature in the field that transitions, reflected by partial authoritarian and democracy, increase the risk of genocide onset, but additionally that the minor groups might be more at-risk than the more salient groups in these regimes.

Model 3 and 4 demonstrates that when using the more liberal coding scheme that ethnic fractionalization, total trade, previous genocides, time since state failure, major and minor MAR agriculture, and the state interest variables are not statistically significant. This could be a result of having more variation in the major and minor MAR variables, as the major and minor MAR manufacturing sector dummy is now included in the models. Additionally, the dropping of significance of agriculture is likely the result of the more liberal measure creating greater variation in the independent variable. In Model 3, major MAR manufacturing is found to be statistically significant with a  $p$ -value at the 0.001 level and a negative coefficient of 15.34. This suggests that for every one unit change in major MAR manufacturing the log of genocide onset decreases by 15.34. The results from Model 1 and Model 3 for major MAR services is only

slightly increased from -15.07 to -15.45, but remains statistically significant with a  $p$ -value at the 0.001 level.

Regime type is found to be statistically significant with all dummy variables for both Model 3 and 4 having  $p$ -values at the 0.001 level. The coefficients only slightly change from Model 1 to Model 3. Full authoritarian is found to be positive with a coefficient of 15.81, partial authoritarian is positive with a coefficient of 16.06, and partial democracy is also positive with a coefficient of 15.39.

Model 4 finds that minor MAR manufacturing and services are both statistically significant with a  $p$ -value at the 0.001 level. Minor MAR manufacturing has a negative coefficient of 14.32. The results for minor MAR services is only slightly different from Model 2 as the coefficient is now -16.09. Full authoritarian is positive with a coefficient of 15.60, partial authoritarian is positive with a coefficient of 15.82, and partial democracy is positive with a coefficient of 15.62.

To summarize the results, the negative binomial model suggests that both the liberal and conservative measures of the minority's location in the economy, state interest, and regime type are significant predictors of genocide onset. The most consistent of these predictors is regime type. This is not surprising as the literature is clear about the relationship between genocide onset and regime type (Colaresi and Carey, 2008; Harff, 2003; Goldsmith et al., 2013; Straus, 2012a,b; Goldstone et al., 2010; Mann, 2005; Krain, 1997). Specifically, that genocide is less likely to occur within full democracies. The results also suggests that there might be a parabolic relationship between onset and regime type, but only slightly. The most consistent finding for the minority's location in the economy was the negative effect that the services sector had on genocide onset. The most surprising results are those of the control variables. The non-significant results of ethnic fractionalization is not uncommon within the literature (Colaresi and Carey, 2008; Krain, 1997; Goldsmith et al., 2013). However, trade openness is a surprising result as it has been consistently used and found to be statistically significant (Goldsmith et al., 2013; Harff, 2003; Rummel, 1994). A possible explanation for trade

openness not being significant is the independent variables, which could be modeling similar phenomena. Those states that have a high percentage of their GDP in the violence-sensitive sectors are likely to also be open to international trade, especially the services sector which relies on tourism resulting in a reduced explanatory power for trade openness.

## 8 Discussion

The results have provided an interesting look at the individual effects of the main explanatory variables: state interest and the minority's location in the economy. The most surprising result has been the positive effect of the agricultural sector for both state interest and the minority's location on genocide onset. This suggests that the agricultural sector increases the likelihood of genocide onset, which is counter to Straus' argument that agriculture is a violence-sensitive industry (2012b). It is possible that the finding is a result of the coding scheme. A limitation is that the coding scheme for the minority group, as it is unable to account for the difference between market agriculture (agriculture for production) and subsistence agriculture. However, the civil war literature does have an explanation for this finding, which has to do with the planting seasons. In civil war, the onset of civil war is connected to the planting seasons. The literature suggests that civil war is statistically non-existent during the planting months, but re-surfaces during the off-seasons. This suggests that agriculture is not a violence-sensitive industry as theorized, but rather only places restraint on violent action during certain periods of the year.

Yet despite these results, the negative binomial model cannot provide evidence for the acceptance or rejection of Hypotheses 1 and 2. The reason is that the model only applies the individual effect of each variable, and not the interaction of the minority group and state interest. The interaction was attempted in the models, but proved to be computationally too complex to create convergence for the model. An alternative method will be employed instead to test whether integration is necessary or sufficient

for genocide onset. Before proceeding, a restatement of Hypotheses 1 and 2 would be helpful.

**Hypothesis 1:** When an ethnic group is integrated into the state's dominant sector, genocide is less likely to occur.

**Hypothesis 2:** Ethnic groups that are not integrated into the dominant sector of a state's economy are more likely to be targeted by genocide.

## 8.1 Necessity and Sufficiency of Integration for Genocide Onset

The literature on necessity and sufficiency in international relations is often employed in qualitative case selection (Dion, 1998). However, this method is also sufficient to provide evidence of hypotheses that are conditioned on the occurrence or non-occurrence of a dependent variable (Dion, 1998). A necessary condition is one in which for  $Y$  to occur,  $X$  must occur. A sufficient condition is one in which for  $X$  implies the occurrence of  $Y$ .

The results for necessary and sufficient conditions will be illustrated by cross-tabulations of integration and genocide onset shown in Tables 6-14. The cases come from the imputed dataset. Some economic sector integrations have been left out as a result of having no cases of integration. Due to the number of tables, the results will be discussed briefly.

### 8.1.1 Major and Minor MAR Conservative Measure

Table 6 shows the integration into the agricultural sector. It shows that integration is neither necessary nor sufficient for genocide onset. As for the sufficiency of non-integration, the integrated/genocide onset quadrant should be zero. At the same time, integration is not necessary for the same reason. The interpretation is that integration into agriculture does not insulate minority groups from genocide onset nor does non-integration serve as an instigator of genocide onset. This is not that surprising given the results from the negative binomial model suggesting that agriculture actually increases the likelihood

of onset rather than decreasing it, but it also shows why in Models 3 and 4 agriculture drops out (only 22 cases where integration occurs and genocide onset, and only 44 where integration does not occur and genocide onset does not).

Table 6: Major MAR Integration in Agricultural Sector

Genocide	22	41
No Genocide	825	4825
	Integration	Not Integrated

Table 7 shows the integration into the services sector. It shows that the absence of integration is sufficient, but not necessary for genocide onset to occur. As, there are no cases of genocide onset where integration also occurred. It also shows that integration is necessary, but not sufficient for the absence of genocide onset. This is suggested by the fact that non-integration of the minority into the state's preponderant sector is the only occurrence of genocide onset, which provides the reasoning for why integration is also necessary for the absence of genocide. As a result, it is safe to say that integration into the services sector does act as an insulating factor of minorities from genocide onset, but non-integration also is a sufficient cause for onset to occur.

Table 7: Major MAR Integration in Services Sector

Genocide	0	63
No Genocide	702	4825
	Integration	Not Integrated

Tables 8 and 9 show similar results for the minor MAR groups with integration into the agricultural sector being neither necessary or sufficient for genocide onset. Whereas, integration into the services sector is necessary, but not sufficient for the absence of

genocide onset. It is also safe to say that the absence of integration is sufficient, but not necessary for genocide onset.

Table 8: Minor MAR Integration in Agriculture Sector

Genocide	14	49
No Genocide	702	4838
	Integration	Not Integrated

Table 9: Minor MAR Integration in Services Sector

Genocide	0	63
No Genocide	165	4838
	Integration	Not Integrated

The interpretation of the conservative cross-tabulations of integration with genocide onset provide some interesting results for Hypotheses 1 and 2. First, it shows that when focusing on the agricultural sector integration and the absence of integration provide no real difference in terms of potential probabilistic outcome of genocide onset. This suggests more evidence, as stated earlier, that the agricultural sector suffers from either: 1) the inability to separate subsistence farming from market production or 2) that it is not a violence-sensitive sector as theorized by Straus (2012b). Second, the interpretation for the services sector suggests that integration does serve as an insulating factor for minorities from genocide onset. However, it would be wrong to conclude that integration was the only factor that prevented genocide. In other words, it is one among many, but this serves as evidence that factors of prevention are possible.

### 8.1.2 Major and Minor MAR Liberal Measure

Table 10 and 11 show similar results to the more conservative measure, but agricultural integration is sufficient for genocide onset with only 10 out of 41 cases falls into

the integrated category. However, based on the interpretation agriculture is still not necessary or sufficient for genocide onset. The same result is true for Table 13 with only 8 out of 33 cases with integration. Therefore, it is safe to say that integration into the agricultural sector has no effect on whether or not genocide occurs.

Table 10: Major MAR Integration in Agriculture Sector

Genocide	10	62
No Genocide	787	5488
	Integration	Not Integrated

Table 11: Major MAR Integration in Services Sector

Genocide	0	72
No Genocide	195	5784
	Integration	Not Integrated

The services sector in Table 11 shows that the absence of integration is sufficient but not necessary for genocide onset. Whereas, the presence of integration is a necessary condition but not sufficient condition for the absence of genocide onset. This provides more evidence that integration into the service sector has an insulating effect on the targeting of minority groups for genocide.

Table 12: Minor MAR Integration in Resource Rents Sector

Genocide	0	72
No Genocide	16	5963
	Integration	Not Integrated

Table 13: Minor MAR Integration in Agriculture Sector

Genocide	8	64
No Genocide	500	5479
	Integration	Not Integrated

Table 14: Minor MAR Integration in Services Sector

Genocide	0	72
No Genocide	79	5900
	Integration	Not Integrated

The results for the minor MAR groups find similar results to those found earlier with integration into the agriculture sector being neither sufficient nor necessary for genocide onset. The presence of integration into the services sector is necessary but not sufficient for the absence of genocide onset, and the absence of integration into the services sector is sufficient but not necessary for genocide onset. The finding for resource rents is interesting, as it is counter to the restraint theory. It shows that integration into the resource rents sector is necessary and sufficient for the absence of genocide onset, and that the absence of integration is a sufficient but not necessary condition for the presence of genocide onset.

The implication of these findings, across both the liberal and conservative coding schemes, is that when the state's preponderant economic sector is the agricultural sector then integration or the absence of integration has no effect on the probability of genocide onset. This means that for this sector Hypotheses 1 and 2 must be rejected and the null hypotheses must be accepted. When the preponderant sector is within the services and, surprisingly, the resource rents sector Hypotheses 1 and 2 must be accepted and the null hypotheses must be rejected. However, there is a more substantive implication of these findings. As stated earlier, it is safe to say that the integration of the minority into the state's preponderant sector, when those are resource rents and services, appear to be an insulating factor for the minority groups from genocide onset. It also suggests

that the absence of integration also provides a potential hazard for the minorities groups potential selection as targets for genocide onset, as the absence is only observed where (primarily) the ethnic minority is not integrated into the state's preponderant economic sector.

## **9 Conclusion**

Thus far, this study has argued that the economic costs of genocide have been under-theorized by the broader literature. In an attempt to correct this, a theory was developed that the integration of the minority group into the state's preponderant economic sector would restrain the onset of genocide. The results and discussion about the necessity and sufficiency of integration for genocide onset or its absence provide evidence to suggest that the theory is potentially correct, at least when the integration is within the services and resource rents sectors.

The contribution of this study to the broader literature can be seen in three parts. First, this study provides a start to filling a theoretical gap in the international relations literature: the cost of fighting. Inherent to the study of conflict is that it carries high costs, sometimes expressed as opportunity costs. However, the literature has often only assumed the presence of cost factor. Focusing more attention, correctly, on the causes of conflict. This study provides a first step at not only uncovering these hidden yet inherent costs but also provides the first conceptualization of said costs.

Second, this study also furthers a research agenda started by Scott Straus (2012a; 2012b) by providing the first conceptualization of his "theoretical invisible factors of restraint" (2012b, 344). This study's results also provide evidence that his theory about restraint is likely true, which is important for the prevention of genocide. It suggests that the process of conflict, specifically genocide, is much more complex than the models the literature has used to predict their occurrence.

Third, this study provides practitioners a prescription for what to do before genocide occurs. The models used in the genocide literature are focused on predicting the next

occurrence, but often not discussed is what the international community can actually do as a result. The UN has provided some legal grounds for dissolving sovereignty in the face of genocide with military intervention, but so far the Responsibility to Protect has not been exercised (Gomes, 2010). Part of this is due to the implications that it will bring, but military intervention, as expressed in the literature, only leads to greater levels of violence (Krain, 2005; Collier et al., 2004; Regan, 2002). This study provides a prescription for practitioners that will reduce the level of violence employed before genocide onset outside of the military option, but also a mechanism that they can strengthen. Thought of in this way, strengthening economic integration (or reducing economic discrimination) is likely to reduce the likelihood of future genocide by preventing the marginalization of ethnic minorities.

This research design does have some limitation. Specifically, relying on the Minorities At-Risk (MAR) Project includes some selection bias because of how they code a group as being “at-risk.” While this study does not provide an alternative or an answer for the impact, the results still provide compelling evidence that integration into the state’s preponderant economic sector is a necessary condition for the insulation of a minority group from genocide. It is also likely that minority integration is only attributable to genocide and will not be observable outside of it. Additionally, it is likely that these findings are only attributable to state in Africa where the spatial domain was limited. This could potentially reduce the generalizability of this restraint mechanisms.

For future research, this study could be extended in a variety of ways. First, investigating the role of market agriculture and subsistence agriculture would provide an important understanding for the positive results found in this study that are counter to the theory. However, there are two additional avenues that agriculture’s affect on genocide could take: 1) agriculture is not a violence-sensitive sector or 2) agriculture only restrains violence during the planting months rather than the entire period. Regardless of the investigative path, the affect of agriculture on genocide needs to be further pursued before any generalizations can be made.

Second, the conceptualization of restraint in this study could be extended in two ways: 1) to other regions and 2) to other types of conflictual events. These mechanisms explain genocide onset in Africa, but does it explain genocide in Asia or Europe? As stated earlier, this study can only generalize about genocide onset in Africa. For example, it could be the case that integration, which for Africa has an affect, does not have an affect on genocide onset in Asia. Extending the study to other regions is a necessary component to understanding the generalizability of the measure across regions. This mechanism could also be extended outside of genocide to other conflictual events that involve competing ethnic groups, such as civil war. However, this measure is likely to be of importance to not only the conflict literature, but also the political economy, ethnic minority and forced migration literature.

Lastly, it is also likely that integration is not the only economic cost or cost mechanism to genocide onset. This study has only uncovered one such mechanism. Uncovering more restraint mechanism would only strengthen the argument that the literature has only been theorizing about half of the process for genocide onset. For example, Straus (2012b) argues that domestic, regional and international organizations will have an influence on the process of genocide onset, especially at the beginning stages of pre-onset. It could be argued that the degree of integration of these organizations into the state, or the salience of the organizations for that state's minorities and ruling elite would place costs on the state. Not only in the form of reputation costs but also possibly economic costs in terms of investment. Foreign direct investment (FDI) is another economic restraint factor that could result in the reluctance of the state toward increasing levels of violence. However, the argument would need to be specific towards what type of FDI is being investigated, as it is likely that only long-term investment will have a influence on a state's willingness to accept the costs.

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**APPENDIX A**

Table 15: Coding of Independent Variables: Major/Minor Minorities At-Risk

State	Major	Minor	Major MAR	Minor MAR	Rents	Agriculture	Manufacturing	Services
Algeria	Berbers		2	0	0	1	0	0
Angola	Ovimbundu	Cabinda	2	2	0	1	0	0
Benin			0	0	0	0	0	0
Botswana	Sans Bushmen		1/2	0	1	0	0	0
Burkina Faso			0	0	0	0	0	0
Burundi	Hutu	Tutsi	2	2	0	1	0	0
Cameroon	Bamileke	Westerners	3/4	2	0	0	1	0
Cape Verde			0	0	0	0	0	0
Central African Republic			0	0	0	0	0	0
Chad	Northerners	Southerners	2	2	0	1	0	0
Comoros			0	0	0	0	0	0
Congo	Lari	M'Boshi	2	1/2	0	1	0	0
Congo-K	Lingal	Ngbandi	1/2	1/2	1	0	0	0
Djibouti			0	0	0	0	0	0
Egypt	Copts		4	0	0	0	0	1
Eritrea	Afars		2	0	0	1	0	0
Ethiopia	Oromo	Nilo-Saharan	2	2	0	1	0	0
Equatorial Guinea			0	0	0	0	0	0
Gabon			0	0	0	0	0	0
Gambia			0	0	0	0	0	0
Ghana	Ashanti	Ewe	2/4	4	0	1	0	0
Guinea	Susu	Fulani	2	1/2	0	1	0	0
Guinea-Bissau			0	0	0	0	0	0
Ivory Coast	Lebanese		4	0	0	0	0	1
Kenya	Kikuyu	Rendille	2	1/2	0	1	0	0
Lesotho			0	0	0	0	0	0
Liberia	Americo-Liberian		2/4	0	0	1	0	0

Table 15: Continued...

State	Major	Minor	Major MAR	Minor MAR	Rents	Agriculture	Manufacturing	Services
Libya			0	0	0	0	0	0
Madagascar	Merina		3/4	0	0	0	1	0
Malawi			0	0	0	0	0	0
Mali	Mande	Tuareg	2	2	0	1	0	0
Mauritania	Black Moors	Kewri	1/4	2	1	0	0	0
Mauritius			0	0	0	0	0	0
Morocco	Berbers	Saharawis	2	2	0	1	0	0
Mozambique			0	0	0	0	0	0
Namibia	Eastern Caprivians	Basters	1/2	1/2	1	0	0	0
Niger	Hausa	Tuareg	2	2	0	1	0	0
Nigeria	Hasa-Fulani	Ogani	1/2	1/2	1	0	0	0
Rwanda	Hutu	Tutsi	2	2	0	1	0	0
Sao Tome and Principe			0	0	0	0	0	0
Senegal	Diolas		2	0	0	1	0	0
Seychelles			0	0	0	0	0	0
Sierra Leone	Mende	Creoles	2	4	0	1	0	0
Somalia	Issaq		1/2	0	1	0	0	0
South Africa	Black Africans	Asians	1/2	3/4	1	0	0	0
Sudan	Southerners	Nuba	1/2	1/2	1	0	0	0
Swaziland			0	0	0	0	0	0
Tanzania	Zanzibaris		2/4	0	0	1	0	0
Togo	Ewe	Kabre	4	1/2	0	0	0	1
Tunisia			0	0	0	0	0	0
Uganda	Baganda	Karamjong	2	1/2	0	1	0	0
Zambia	Tonga	Lozi	2	2	0	1	0	0
Zanzibar			0	0	0	0	0	0
Zimbabwe	Ndebele		2	0	0	1	0	0