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Youth Bulges, Busts, and Doing Business in Violence-Prone Nations

Alfred A. Marcus, Mazhar Islam, and John Moloney

Abstract

To ascertain whether youth bulges are related to violent conflict and whether violent conflict falls off when youth bulges are followed by busts, we analyzed data from 1998-2005 covering 127 nations. Controlling for variables representing such factors as socio-development, macroeconomics, technology advancement, government capacity, and geo-politics, we find that youth bulges are related to violent conflict, but when youth bulges are followed by busts violent conflict grows rather than diminishes contrary to the prediction we make. From this analysis, we draw implications for further research and analysis with regard to doing business in violence-prone nations.

KEYWORDS: demography, youth bulges, youth busts, violence, armed conflict, international business

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INTRODUCTION

Identifying and adapting to cross-national differences continues to be among the most important challenges companies operating in the global economy face, with violent conflict being a liability that often prevents companies from doing business in foreign countries (Zaheer, 1995; Kostova and Zaheer, 1999).[1] This paper focuses on an element in the debate about the factors that lead to violent conflict, the controversial point that young people who are the "protagonists of protest, instability, reform, and revolution" and who provided "recruits to fascist movements in the 1920s" and "demonstrations and protests in the 1960s," are a determinant (Huntington, 1996; 117). We consider whether youth bulges influence violent conflict and whether violent conflict tends to fall off when bulges are followed by busts. Urdal (2006) has established a strong relationship between youth bulges and violent conflict. We conduct systematic empirical analysis to determine what happens when youth bulges come to an end and are followed by a bust. This question is particularly relevant and important as today population growth in many parts of the world is beginning to slow to historically low levels and in some cases to actually shrink (Longman, 2004).

The implications of this demographic shift have not been fully investigated. Indeed, Jackson and Strauss (2007) comment that the "collapse in fertility rates" which is occurring throughout the world is "stunning" (p. 1). They maintain that this story is the "biggest – and perhaps least reported" one "of the past few decades." They write that the "developed world is no stranger to falling fertility" since birth rates have been in continuous decline for more than 100 years with the exception of the postwar baby boom. However, Jackson and Strauss (2007) note that fertility also has been falling at an exceptionally fast rate in the developing world. They point out, for instance, that "Iran, a country that evokes images of religious conservatism and traditional family values, has undergone one of the fastest fertility declines on record." This "decline is global in scale," according to Jackson and Strauss (2007; p. 1), extending from Latin America, to parts of the Islamic world and Asia. Though this issue is of great significance, lack of serious scholarly attention has been paid to it. Therefore, we not only carefully and critically examine the older question of whether youth bulges are associated with greater violence, but more importantly examine whether youth busts when they follow bulges are correlated with less violence.

Like Urdal (2006) our findings support the notion that youth bulges are related to more violence everything else being equal. However, we also find that when a bust follows a bulge, violence tends to go up and not down. We attribute the rising violence that takes place when a bust follows a bulge to the relative

[1]See Henisz (http://www-management.wharton.upenn.edu/henisz/papers.htm) for discussion of the costs firms confront by elements of the global environment like violent conflict.

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freedom and lack of responsibility that the generation of the youth bulge enjoys. If it were to face a generation behind it that was like its own it would have stronger constraints on its actions. Unshackled by excessive obligations and pressure from the generation that follows it, the bulge generation is free to indulge in behavior that it could not engage in if it had to play a fuller role in the upbringing of those that come next. This pattern has an analogy in the upheavals of the developed countries in the late 1960s and early 1970s which were the product of a youth boom followed by a bust.

The violence that comes from a bust following a boom, however, is not inevitable; its form, duration, and intensity can vary depending on intervening factors from the material conditions of society to the capacity of governments (Kahl, 2002). Especially important is the rule of law. What the results from our study suggest is that generational succession and not simply booms and busts in isolation are the drivers of social instability that can lead to violence.

We apply a unique dataset to the examination of these questions, wherein the dependent variable, the measure for violent conflict, comes from the Heidelberg Institute for International Conflict Research (HIIK) in Germany. This dataset has not been tapped for a study of this nature before and has a number of advantages over prior attempts to operationalize violent conflict, as we shall show.

To treat the questions raised in this paper, we organize the discussion as follows. A brief section sets the stage with observations on the dangers for firms of doing business in violence prone nations. Then there is a section on youth bulges, busts, and violence where we develop our hypotheses. This is followed by a section of empirical analyses where we test the hypotheses and a final section that raises issues for further research and practice.

DOING BUSINESS IN VIOLENCE PRONE NATIONS

There is little doubt that violent conflict has serious effects on the global economy and on the strategies that multinationals pursue (Abadie and Gardeazabal, 2003; Berrebi and Klor, 2005; Blomberg, Hess, and Orphanides, 2004; Frey, Luechinger, and Stutzer, 2007; Campbell, 2002).[2] First, there is the human toll of violent conflict that decimates economically active populations and diminishes human and social capital. Second, there is the destruction of physical

[2] Violent conflict is treated in term of how it relates to such issues as foreign direct investment (Mariotti and Piscitello, 1995), political risk (Werner, Brouthers, and Brouthers, 1996), stakeholders (Mitchell and Agle, 1997), globalism (Ghemawat, 2003), anti-globalism (Ricart, Enright, Ghemawat, Hart, and Khanna, 2004), multiculturalism (Von Glinow, Shapiro, and Brett, 2004), financial crises (Weiner, 2005), and public management (Rynes and Shapiro, 2005; Kelman, 2005; and Pettigrew, 2005).

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infrastructure – roads, power and communication systems, transport links, public and private buildings, and other essential physical assets. Third, there is the cost of doing business. Firms must spend heavily to provide for the security to protect their personnel and physical property. Fourth, there is the damage to corporate reputations if firms are implicated.[3] Fifth, violent conflict tends to destabilize governments. Their capacity to fight corruption (Robertson and Watson, 2004; Rodriguez, Siegel, Hillman, and Eden, 2006) tends to decline. They are less able to guarantee contracts, may be prone to impose exorbitant taxes, and can be overthrown and replaced by regimes that threaten to renegotiate the terms under which the multinationals operate, if not actual expropriation. Though violent conflict adds to the dangers of doing business abroad and raises the likelihood that revenue streams will be curtailed or entirely eliminated (Berry, 2006), firms have not desisted from increasing their activities in such violent prone nations as Colombia, Sri Lanka, Algeria, Indonesia, Pakistan, and the Philippines (Berman, 2000; Campbell, 2002). For firms in extractive natural resource based industries, such as mining, oil and gas, hydro-electrical engineering, and forestry the benefits appear to outweigh the costs.[4] Firms, facing maturity in their domestic markets (Dunning, 1988, 1993), also are attracted to violence prone nations; this is because fewer firms invest in these nations and they have the chance to earn monopoly or near-monopoly rents.[5]

There are two main means that firms tend to use to mitigate the dangers of doing business in violent prone nations. First, they tend to rely on consultancies which offer services such as the ratings of countries based on the underlying structural conditions that may lead to violence.[6] A list of the underlying structural conditions generally includes variables representing human development (such as infant mortality rate and population size), social solidarity (such as religious and ethnic heterogeneity), economic development (such as GDP, GDP per capita, and

[3] Witness the examples of Shell in Nigeria and Coca Cola in Colombia.

[4]Crude petroleum production continued to increase every year from 1910-1921 when Mexico went through high levels of political instability and chaos, See Haber, Razo and Maurer (2003).

[5]According to the *Economist* (2000; 85-88:, "For brave business folk, there are rich pickings in grim places. But there are also immense obstacles and risks. Pipelines can be blown up by terrorists. Contracts can be torn up by crooked partners. Fragile economies can collapse. And in recent years, firms doing business in countries with unpleasant governments have been pilloried by non-governmental organizations (NGOs), endangering the most priceless of assets, their good name. To succeed in difficult countries, firms must learn how to overcome these obstacles and minimize the risk."

[6]The consultancies go by many names such as Political & Economic Link Consulting, Business Environment Risk Intelligence, Control Risks Group, Global Risk Assessments, Inc., and so on. (Campbell, 2002). Their work in recent years has been supplemented by the activities of multilateral organizations, governments, academic research institutes, and NGOs.

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GDP growth), and government capacity (such as the rule of law).[7] The consultancies also sometimes include demographic variables such as youth bulges (for example, the population age 15-24 as a percentage of the total population) and youth busts (the population age 0-14 as a percentage of the population age 15-24), though this tends to be less central to their endeavor and less common (Jensen and Young, 2006). In our analyses we focus on these demographic factors and control for other variables upon which the consultancies often rely.

The second mechanism multinationals use to mitigate the dangers of doing business in violent prone nations is to rely on hedging methods. Based on the consultancies' ratings and their own assessments (many firms have their own assessment capabilities), they may decide to invest in a guarded or step-by-step fashion (Berman, 2000), diversify (Cosset and Suret, 1995), find partners (Iankova and Katz, 2003), or impose high hurdle rates often expressed in financial terms as discount rates used to calculate projects' net present value or payback periods (Kobrin, 1979).[8] Projects in less violent prone countries have higher net present values compared to similar projects pursued in more violent prone nations and therefore are likely to be preferred (Clark, 1997 and Clark and Tunaru, 2003). Multinational companies also frequently buy insurance to hedge the dangers. These mechanisms reduce the "systematic" element of doing business in violent prone nations (Li, 2006) by taking advantage of available information to forecast conflict severity and impact. But a "stochastic" component element still exists that cannot be predicted with great precision; an element of surprise nearly always comes to light ex post (Li, 2006). The capacity of multinationals to do business in violent prone nations goes up to the extent that they increase their ex ante capacity for prediction and reduce the ex post surprise. Since youth bulges and busts are underlying conditions that get short shrift in existing analyses (Jensen and Young, 2006), more thorough investigation of their contribution to violent conflict is needed. Ultimately we do not argue for multinationals abandoning their investments in youthful and violence prone nations. Rather in the paper's conclusion we argue that they should invest in projects that increase the education and skills young populations. While there is no guarantee that these investments will reduce the violence, they have a moral obligation to pursue them.

[7]To the underlying structural conditions, they may add so called "accelerators" that increase the underlying conditions' importance and/or "triggers," catalysts that ignite a crisis or conflict, such as assassinations (Campbell, 2002). The ratings of the consultancies tend to be subjective and are more an art than a science.

[8]Firms take into account such factors as their size, familiarity with the local environment, status of their partners, influence of stakeholders, and their experience levels in order to tailor strategies to their individual profiles. See, Kobrin (1991), Henisz (2000), Chang and Rosenzweig (2001), Henisz and Zelner (2002), Henisz and Macher (2004), and Witt and Lewin (2007).

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HYPOTHESES

From history we know that violent conflict is nothing new (Walzer, 1968; Berman, 2003). The 20th century witnessed far too many examples – estimates, for instance, have been made that there were 38 million direct deaths worldwide as a result of the wars and revolutions of the 20th century and that if civilian casualties are included 169 million people perished in the century's first fifty years (Rummel, 1997). The alleged connection between youth bulges and violent conflict also is an old one that has been investigated in Feuer's (1969) monumental study of generational conflict and Choucri's (1974) careful dissections of the role of population dynamics in such conflicts as Algeria, Biafra, and El Salvador (see Goldstone, 2001, and Kahl, 2006).[9] The reign of terror during the French Revolution (Mayer, 2002) as well has been attributed to young persons, a pattern that such analysts as Feuer (1969), Choucri (1974) and (1984) and Huntington (1998) argue has been repeated again and again. An over-abundance of young people is claimed not only to be the main culprit in international violence, but also in criminal activity where they play a disproportionate role (Wilson and Hernstein, 1998). If the religious, class, ethnic, and civilizational conflicts of our times can be reduced to an issue of youth rebellion, then some of the sting can be taken out of global controversies.

The reasons young people participate in violence, however, are complex. Well known is the fact that people in this age bracket seek glory and the chance to show heroism and that the typical inhibitions that block extreme behavior among other age brackets are not as well developed (Hudson, 1999). Another reason for high levels of violence is proposed by Hart, Atkins, and Youniss (2005) who maintain it is more prevalent when the social contexts that block this type of behavior are less powerful. When the population above the age of 24 is insufficient to discipline, control, and socialize those below this age, violence will grow, a contention that Hart, Atkins, and Youniss (2005) support with empirical analyses at the local level in the U.S. as well as cross country analyses which compare the U.S. and other countries. Another possibility, however, is that rather than being held in check by their elders that the elders goad on the young; they manipulate their vulnerabilities and provide the justification, training, logistics, and financial support for violence (Hudson, 1999). The young are susceptible to

[9] Particularly prone to committing violent acts are anxious and uprooted young men, for whom the allure of violence is especially great (Hudson, 1999).Young men, it has been found, are much more likely to commit violent crimes than women (eight times more so, see Hudson, 1999). The male murder rate is ten times greater than that of females. More than women men engage in other types of anti-social behavior, such as fraud, robbery, possessing a weapon, and drunkenness. Male violence apparently peaks in late adolescence; this is not to say that young women are not increasingly involved in the commission of violent acts (Hudson, 1999), but that the bulk of this activity historically and currently is a product of young men.

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strong leaders who cynically take advantage of their need for meaning and sense of belonging and try to instill in them the belief that their lives can be made infinitely better if they devote themselves to an all-encompassing cause (Hudson, 1999).

Kahl (2006) maintains that the reasons young people participate in violence are not clear; the "causal mechanisms" linking demography to violence are "still poorly understood" and the "underlying dynamics and processes involved in this relationship" are in need of further investigation (p. 4). What he refers to as the "neo-Malthusian perspective" looks to extreme and severe pressures that population bulges bring to bear on the economy and the environment. The net addition of so many people from a cohort at a single of point time and the struggle among members of this cohort for existence lead to violence. Among the factors Kahl (2006) cites as leading to violence are scarcity and deprivation, young people migrating from place to place, and governments being incapable of dealing with the phenomena. However, Kahl (2006) also notes that there has been considerable criticism of this perspective, the essence of the argument against it being that growing abundance as opposed to outright and extreme misery produces heightened expectations, which result in violence. According to the "honey pot hypothesis," plentiful supplies of extremely valuable resources mobilize young people to commit acts of violence. Still another possibility is that shifts in resources from one sector of society to another cause the violence. That different material conditions can be at the root of violence argues against a theory of simple economic determinism. Indeed, between youth bulges and violence Kahl (2006) finds a bewildering array of potential intervening variables including cleavages in a society, lack of trust, weak civil institutions, immaturity of markets, and absence of property rights. For young people to become sufficiently organized and motivated to risk losing their lives for a cause, Kahl (2006) also maintains that there has to be a sense of injustice and that ideological leaders have to cultivate such an impression and mobilize young people to redress the situation. Kahl (2006) also points out that if states and other institutions are able to adequately contain the situation, then the level of violence can be diminished, but that states themselves often instigate the violence and direct it against groups they wish to oppress. His conclusion is that demographic and environmental stress working through such factors as state failure and exploitation shape the incentives for social groups to engage in violence and influence its level and intensity.

Whatever the causal mechanism, the high degree of participation by the young in violent behavior is not contested.[10] Neither today nor in the past have the young been evenly distributed in the world. For instance, in Europe the ratio of

[10]Cinncotta et. al (2003), for example, point out that the most conflict prone European states of the 19th and early 20th centuries had unusually large proportions of young people.

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young to older men currently is low, but in the late 19th century and early 20th century this pattern was quite different. Europe had large numbers of alienated young men ready to sacrifice themselves for the political movements of that time. Many (for example, see Feuer, 1969) have argued that the roots of the Second World War lie in disturbances after the First World War. They maintain that post-World War One disturbances were the breeding ground for Nazism, which preyed on disappointed youth who felt they had fought in vain and had no place in the post-War economy (Feuer, 1969). The final passages in *All Quiet on the Western Front* graphically and poignantly captured the desperation of these young men (Kenan, 1951).

In societies beset by instability, where the opportunities for a normal life are diminished, a rational weighing of the alternatives may lead young people to the conclusion that a violent path is logical. When the rule of law breaks down and strong ideologies support this decision, little may stand in the way. In fact, a wealth of historical studies show that cycles of violence have coincided with periods when young people comprised unusually large proportions of the population (Cinncotta, Engelman, & Anastasion, 2003). Recent examples include:

- Turkey's Kurdish population, which instigated an aggressive insurgency movement against the Turkish government, emerged from a 1995 youth bulge (Rand Institute, 2001).
- The Sri Lankan Sinhalese national insurgency and the Tamil rebellion reached their peak levels when more than 20 percent of the population was 15-24 years old. The Sri Lankan government eventually moved 14,000 rebellious youth into "rehabilitation centers" to help alleviate the problem (Rand Institute, 2001).
- Terror and civil strife in Algeria also coincided with a youth bulge. Extreme conflict diminished in that nation only after female fertility went down (Longman, 2004).
- By the mid 1970's, half of Iran's population was under the age of 16 and two-thirds was under the age of 30; this youth bulge contributed to the street politics of 1977-79, the fall of the Shah, the rise of a government hostile to the U.S., and the bloody Iran-Iraq war (Hakmian, 2006).
- Youth-laden populations in such conflict torn regions as the Balkans, Central, and Southeastern Asia also have been prone to commit acts of violence. Violent street protests, for instance, continue to be a regular occurrence in Bangladesh, a country that from 1997-2005 had one of the highest youth bulges in the world. [11]

[11] It was about 29 percent above the world average during 1997-2005.

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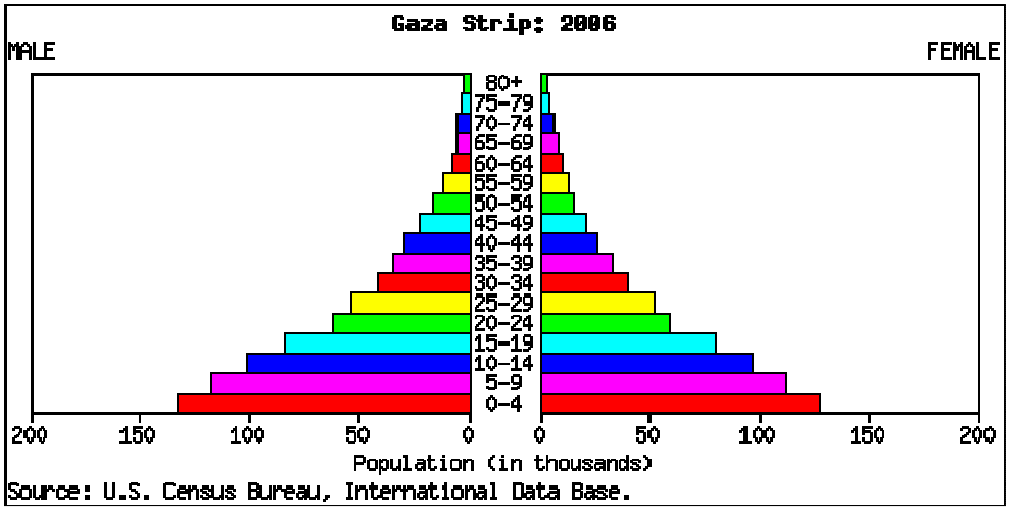
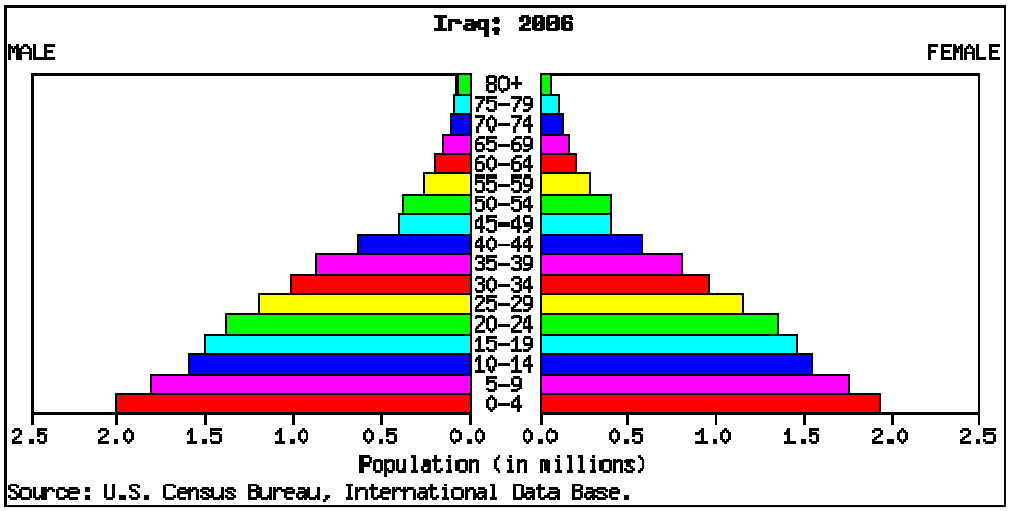
- The populations of the Gaza Strip and Iraq both have had youth-laden populations in contrast to the more age-balanced populations of their main foes, Israel and the United States (See Figure 1).

Figure 1:
Population Distributions in Gaza Strip, Iraq, Israel and the United States





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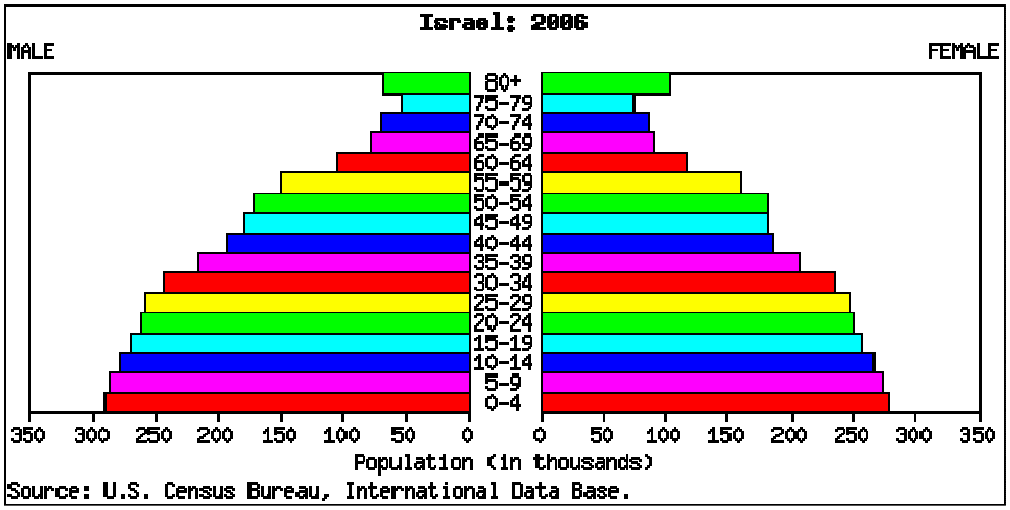

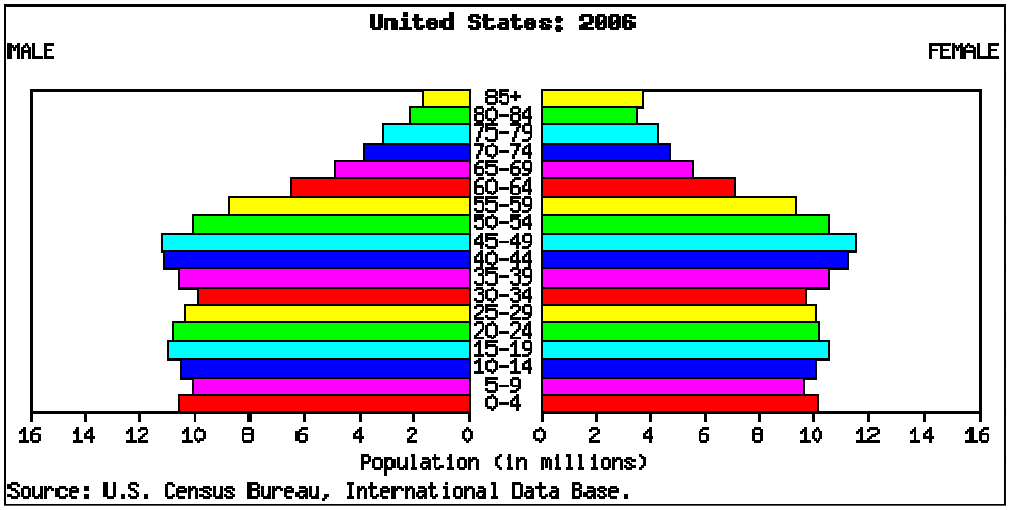

That the incentives for violence are greater than the patient pursuit of a narrow range of opportunities otherwise available (Kapstein, 2002) in no way excuses this behavior. The attraction of violence for young people has been well established, but not every young person decides to pursue this path (Walzer, 2002; Sorel, 1950).Nonetheless, empirical work suggests that a strong connection exists between youth bulges and violence. According to a CSIS study (2004), countries in the 1990s in which young adults composed 40 percent or more of the population were more than twice as likely to experience an outbreak of conflict as those that were below this level. And in a scrupulously carried empirical study

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Urdal (2006) also found that youth bulges were casually linked to violent conflict.[12] Building on this growing literature we hypothesize that:

> Hypothesis 1: *In nations with large youth bulges everything else being equal the likelihood of violent conflict will be higher.*

What happens, however, when youth bulges diminish, when these surges quiet and are followed by busts? For more than 200 years, Malthus, whose views centered on the dangers of overpopulation, inspired most thinking about population.[13] However today population growth is neither exponential nor arithmetic, but the opposite; it is slowing down to historically low levels and in some cases shrinking (Longman, 2004). [14] This is a part of a larger pattern of demographic transition (see Figure 2) where population has moved from high fertility and mortality in traditional societies to low fertility and mortality in advanced societies. This shift has occurred over a long period of time and in an unbalanced way. As economies grow and health conditions improve mortality rates decline but only substantially later do fertility rates follow (Lutz, Sanderson, and Scherbov, 2005). Demographic transition takes place in stages (see Figure 2), with a pre-transition stage (stage 1) characterized by a high birth rate, high infant and maternal mortality rates, and very short life spans (Cinncotta, Engelman, & Anastasion, 2003). Population growth in this phase is stagnant. An early transition stage (stage 2) starts when infant mortality starts to fall off because of advances in GDP. With GPD growth, developments such as increased variety in the food supply, better housing, improved sanitation, and progress in preventative and curative medicine occur (Lutz, Sanderson, and Scherbov, 2005). As a consequence, the death rate falls and youth populations surge creating bulges. The key driver in stage 2 is the delay between the declines in fertility and mortality.

Demographic transition theory suggests that population growth is not unlimited, however. The next phase (stage 3 in the figure) has a declining birth rate; population still grows, but mainly because the death rate continues to fall. The average age of the population starts to increase in stage 3. Late transition (stage 4) is characterized by a birth rate at or below the replacement level. It is substantially lower than at the start of the transition. This stage is marked by continuous advances in medicine and life-extending activities, which prolong life

[12]His work covers the years 1950-2000.

[13]Malthus argued that the "power of population" was "indefinitely greater than the power in the earth to produce subsistence" and when unchecked, population "increases in a geometrical ratio,…(while) subsistence increases only in an arithmetical ratio" (Thomas Malthus, *Essay on the Principle of Population,* 1803*).*

[14]Acceleration and subsequent deceleration of population growth has not occurred simultaneously in all parts of the world. In fact, different regions have followed distinctive paths that are typically correlated with different levels of GDP (Lutz, Sanderson, and Scherbov, 2005).

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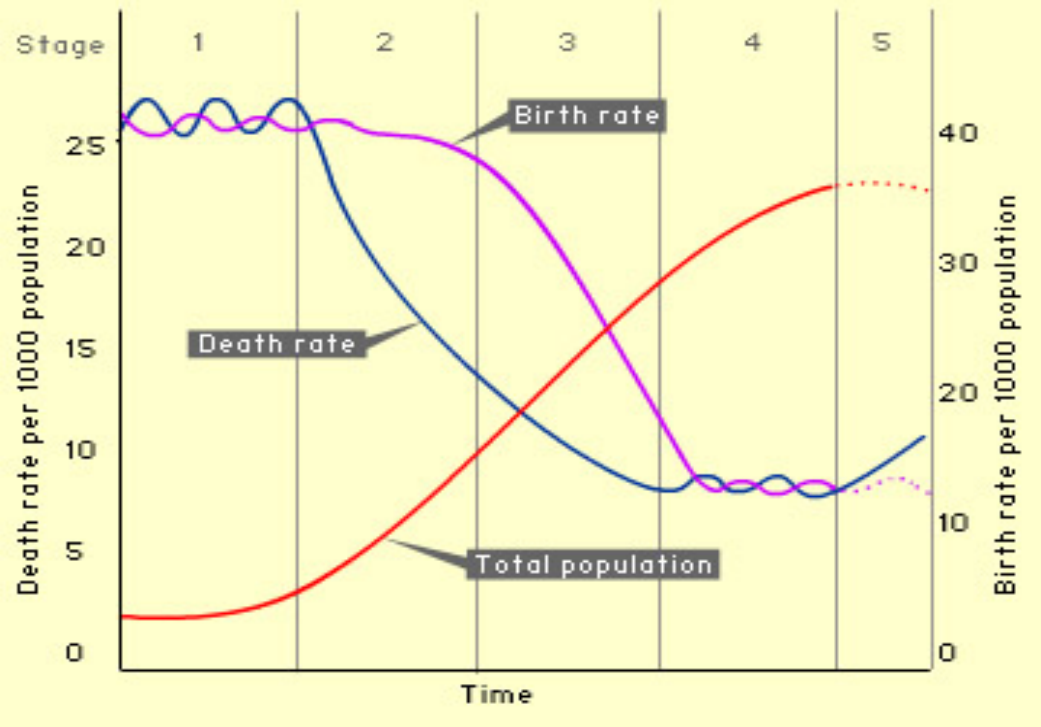
and lead to large increases in the number of elderly, a phenomenon now common in many advanced industrial countries. In stage 5, the birth rate is stable, but the death rate grows mainly because of aging, and thus the numbers in the population start to fall. Indeed, demographers once predicted more than 10 billion people in the world by 2050, but now they are estimating that the world's population will not exceed 9 billion in the middle of the 21st century (McCarthy, 1999).

Figure 2:
Demographic Transition Theory



It is typical then for busts to follow bulges. What meaning will they have for violent conflict? In the Middle East fertility rates have dropped more than 48 percent overall (see Table 1).[15] The abundant 15-24 year old cohort sits atop of sparse 0-14 year old cohort as in Iran (See Figure 3). Algeria, Jordan, and Lebanon have similar profiles. All these countries have seen declines of more

[15]Yasser Arafat, in the late 1980s proclaimed that, "the womb of the Arab woman is my best weapon" (Longman, 2004). When he made this comment, the fertility rates in the Middle East were among the highest in the world. In the roughly twenty years since, the demographic landscape, however, has changed dramatically.

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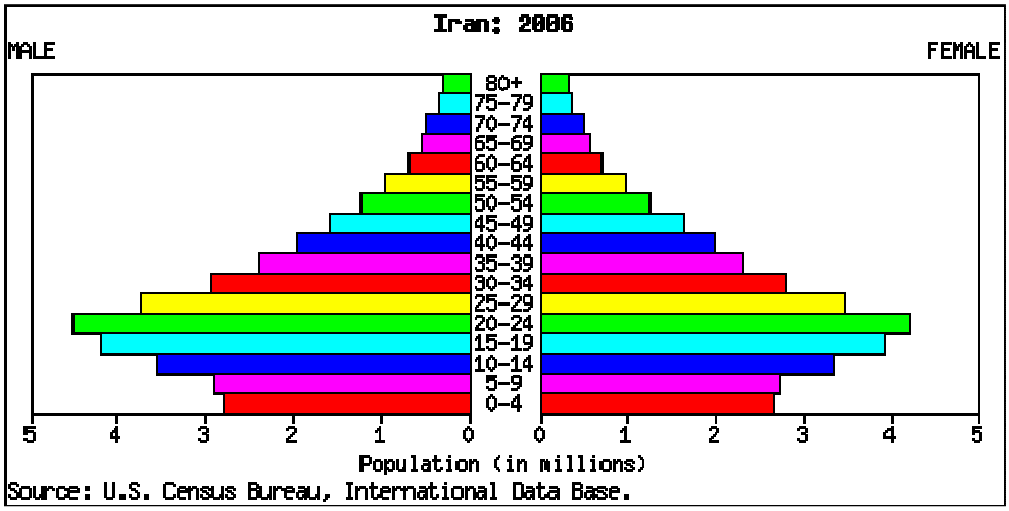
than 65 percent in their birth rates, a fall off that is unprecedented in history outside of war, famine, and other unnatural disasters. However, fertility rates in the Middle East were so high in 1970 (on average 5.84) that even with a greater than 48 percent decline; the rates in the region continue to be nearly 35 percent above the replacement level. And in some Middle East nations (Muraweic and Adamson, 2000) population growth rates and fertility rates have not fallen. Several countries in the Middle East, notably Iraq, Yemen, Sudan, West Bank/Gaza, and Saudi Arabia have fertility rates more than 100 percent above the replacement level, while other countries are well below it.

Figure 3:
Population Distribution in Iran



The demographic shift which is taking place is widely known among professional demographers and political economists (Laipson, 2002), but its implications have not been fully explored. The Iranian story, for instance, is an especially interesting one which is detailed in a fascinating descriptive and empirical analysis carried out by Hakmian (2006). Iran had a massive post-"revolutionary" surge in population that continued into the 1980s. This surge was followed by an even more sudden and extreme fall in fertility in the 1990s. The 1980s surge in population corresponded with the war against Iraq during which time the regime sent a seemingly endless supply of young men to the battlefield, with estimates of total Iranian casualties as high as 780,000 (Laipson, 2002). The baby boom of the war years was accompanied by strong pro-natalist policies reinforced by Islamisation which involved closing family planning clinics,

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encouraging early marriage, and attempting to prevent birth control. A speedy reversal of these policies, however, took place in the late 1980s, as concerns grew about whether Iran could support such a rapid population explosion. At this point in time, the Ministry of Health and Medical Education took an active role in promoting contraception, especially in rural areas, and the government cut benefits to households with more than three children (Hakmian, 2006).

Table 1: Declining Fertility Rates in Mid East Nations

Country	Total Fertility Rate in 1970	Total Fertility Rate in 2006	Percentage Decrease	Percentage Below Replacement Level
Algeria	7.38	1.89	-74.39%	-10.00%
Bahrain	6.97	2.60	-62.70%	23.81%
Egypt	6.56	2.83	-56.86%	34.76%
Iran	6.8	1.80	-73.53%	-14.29%
Iraq	7.18	4.18	-41.78%	99.05%
Israel	3.79	2.41	-36.41%	14.76%
Jordan	8.00	2.63	-67.13%	25.24%
Kuwait	7.41	2.91	-60.73%	38.57%
Lebanon	6.05	1.90	-68.60%	-9.52%
Libya	7.48	3.28	-56.15%	56.19%
Saudi Arabia	7.26	4.00	-44.90%	90.48%
Sudan	6.67	4.72	-29.24%	124.76%
Syria	7.60	3.40	-55.26%	61.90%
UAR	6.77	2.88	-57.46%	37.14%
West Bank/Gaza*		4.28		
Yemen	8.3	6.58	-20.72%	213.33%
Totals	5.84	2.82	-48.42%	34.35%

* Historical Fertility Numbers were not available.
Reference: 1970 numbers are from Globalis International Website at http://www.globalis.com/ and 2006 numbers are from the CIA Website at https://www.cia.gov/library/publications/theworld-factbook/index.html.

While government policies play a role in Iran in other countries, lack of economic and other opportunities, especially housing and employment, are considered to be equally important in influencing young people to delay marriage and not to have children. These developments have stirred expectations of a demographic dividend. With less demographic pressure there should be less bloodshed. The model for the demographic dividend has been East Asia. It experienced a "demographic gift" (Laipson, 2002) in the 1970s when its baby

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boom generation came to the job market at the same time that fewer young dependents were coming behind it. East Asian economic success was based on policies that encouraged private market growth and involved stable or growing government spending on education (Laipson, 2002). Among nations with Islamic majorities, Tunisia was seen as following a similar path, with countries such as Egypt, Jordan, and Morocco having comparable aspirations. According to Urdal (2006), as the number of dependents decreases, countries where demographic transition is underway should have a window of opportunity for economic development and peace.

Population pressures, in fact, are beginning to ease. They are starting to let up, and as these pressures begin to unwind, such analysts as Heinsohn (2003), Longman (2004), and Urdal (2006) expect that the stresses and tensions that make the lives of 15-24 olds bitter will start to be relieved, and to the extent that they are lessened the 15-24 year olds will be less prone to violence. Their anger and hostility and willingness to act out will subside. Their need and desire to be violent will diminish as a sense of freedom and security grows. Therefore, we hypothesize that

> Hypothesis 2: *In nations where youth busts follow youth bulges, everything else being equal there will be less violent conflict.*

With less pressure from below, the amount of violence should go down. In the next section we show how we tested for these hypotheses.

DATA AND ANALYSIS

In doing our analyses, a question we faced was how to find a good measure of violent conflict. We tried terror statistics but with regard to them the labeling of the bulk of violent Iraqi acts as terror inflated the Middle East/Persian Gulf results, while many civil wars and disruption in Africa were under-reported.[16] We decided instead to use the *Conflict Barometer*, which is an annual report on global conflicts published by the *Heidelberg Institute for International Conflict Research (HIIK),* because the HIIK data are capable of accounting for different kinds of youth violence and are subtle in incorporating the gradations and levels of this violence. HIIK is a non-profit organization that is a part of the political science department at the University of Heidelberg. It is dedicated to research, evaluation,

[16]Commonly used statistics on terror come from the National Memorial Institute for the Prevention of Terror that derives its data from The Rand Corporation. Rand obtains information mainly from public sources such as newspapers. See http://www.tkb.org/Home.jsp. Sandbrook and Romano (2004) and Enders and Sandler (2006) have done interesting analyses using terror statistics.

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and documentation on intra- and interstate political conflicts. Since 1992, it has published the *Conflict Barometer* that describes all conflicts in the world in the previous year. In this report are found recent trends in global conflict developments, escalations, de-escalations, settlements, coups d'états, attempted coups d'états, and terrorist attacks. The *Conflict Barometer* subdivides the world into five regions and presents the conflicts in detailed charts and short descriptions. As of 2008, HIIK had information on more than 500 conflicts in over 2,500 phases.

HIIK defines conflict as the clashing of interests and values of some duration and magnitude between at least two parties whether they be organized groups, states, groups of states, or other organizations. Under its definition, conflicts can exist even if there is no official or formal state of war among the contending entities. HIIK provides extensive information on the structure of non-state actors as well as state actors as it recognizes the importance of non-state actors and that their role in global conflicts has increased over time (Kahl, 2006). Over the past years, it notes that this type of conflict has gained ground while traditional conflicts involving nation states have receded. In this way the HIIK data base differs from other data bases that have been created to analyze the correlates of war. Prior data mainly focus on official and formal wars involving "the family of nations" (Mansfield, 1994 p. 37). Youth violence is more spontaneous than the violence perpetrated by national governments and it does not always escalate to this level. Youth bulges and busts are likely to be associated with violence more generally conceived than with military actions involving national governments. The elements of conflict that HIIK considers are territory, secession, autonomy, ideology/ system, national power, international power, and resources. These elements are further subdivided into finer categories; for example, under resources HIIK records which resources (oil, diamonds, water etc) are under dispute. The data involve a scale of conflict intensities, with the medium state capturing single or occasional outbursts like riots, coups d'états or terrorist attacks. HIIK's intensity levels provide a view of the transition of conflicts from non-violent to violent conditions. According to HIIK, a conflict is considered *latent* if demands are articulated by one of the parties and perceived by the other as such. It is considered *manifest* if there are acts preliminary to violent force such as verbal pressure, threats of violence, or the imposition of economic sanctions. It is considered a *crisis* when there is a tense situation in which at least one of the parties uses violence in sporadic incidents. The crisis is severe, according to HIIK, when force has been used repeatedly in an organized way. It becomes a *war* when force is used continuously in an organized and systematic way and the extent of destruction is massive and of long duration. Intensity of conflict is the highest level of intensity reached in the prior year.

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Urdal's prominent piece on youth bulges (2006), the most compelling and comprehensive research published on the topic up to this point, relies mainly on the Uppsala PRIO (International Peace Research Institute, Oslo) data base which is more in line with traditional correlates of war studies (also see Gleditsch et al., 2002). The PRIO definition, unlike that of HIIK, requires both government involvement and battle field deaths.[17] Urdal's (2006) studies a longer period (1950-2000) than we do using a different dataset, he does not specifically look at youth busts, and he does not link demography to business risk. However, Urdal (2006) does do a second analysis in his paper that relies on a database that counts incidents of terrorism, riots and violent demonstrations.[18] These data, generated by automated text searches from the headlines of Reuters' news wire reports, cover the period 1984 to 1995. The problem with these data is that unlike HIIK data they include both pre and post-Cold War events. That is, they do not separate out the special international circumstances that have prevailed in the post-Cold War period, that of a single hegemonic power (the U.S.) and not a bi-polar division of power between the U.S. and Soviet Union. Using HIIK data, we just examine post-Cold War results with a data base that combines both types of violent events – wars *and* incidents of terrorism, riots and violent demonstrations -- that Urdal (2006) treats separately.

The HIIK data were used to develop a composite index – the conflict index (*cflt_index*) – which is based on the number and corresponding intensities of conflicts for 127 countries over a nine year period (1997 – 2005). Specifically, we calculated a weighted average conflict level on an annual basis for these countries. We followed the following steps in developing this index, which became the dependent variable of our study. We looked at each individual conflict that HIIK identified in their annual *Conflict Barometer* report. We then identified countries that were involved in a particular conflict and the intensity of it as assessed by the HIIK researchers. For example, HIIK researchers classified the 2004 Ethiopia and Eritrea war as a territorial conflict. According to their assessment, the intensity of the conflict was 2. Accordingly, we counted a 2 towards our *conflict index* for both countries for 2004. However, in the same year, Ethiopia was involved with a different conflict with Somalia. The intensity of this second conflict was 2 as well. In addition to the two cross-border conflicts with Eritrea and Somalia, Ethiopia had three internal conflicts during that time. HIIK assessed the severe internal conflict between the Anyuak and Nuer ethnic groups

[17]According to PRIO (2004), "an armed conflict is a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths."

[18] The data were collected as part of a U.S State Failure Task Force (SFTF) project, which came from the Protocol for the Assessment of Nonviolent Direct Action (PANDA) at Harvard University (See King and Zeng, 2001).

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as a 4. On the other hand, two other minor conflicts between the government and two political groups the Ogaden National Liberation Front (ONLF) and Oromo Liberation Front (OLF) were assessed as a 1 each. Therefore, with the two cross-border conflicts and three internal conflicts we coded Ethiopia's conflict index for 2004 as a 10 (2+2+4+1+1). We used a similar coding scheme for all the conflicts in the world identified by HIIK in the Conflict Barometer reports for 1997-2005.

Once, we had this dependent variable, we employed a number of empirical strategies to test our hypotheses. Our primary objective was to tease out confounding effects that might influence the dependent variables. The underlying model for the econometric analyses therefore incorporated two key independent variables, *youth bulge* and *bust*, and controlled for variables that represented such factors as socio-development, macroeconomics, technology advancement, government capacity, and geo-politics. We also conducted a series of robustness checks of the baseline model to determine if the results remain consistent.

The underlying model was as follows:

$$E(Conflict_Index) = \beta_0 + \beta_1 Youth_Bulge + \beta_2 Bust + \beta_3 Total_Population + \beta_4 Number_of_Ethnic_Groups + \beta_5 GDP + \beta_6 GDP_per_capita + \beta_7 GDP_Growth + \beta_8 Inflation + \beta_9 Number_of_Telephones + \beta_{10} Rule_of_Law + \beta_{11} Area + \beta_{12} Land_Boundaries + \beta_{13} Nos_Neighboring_Countries + \beta_{14} Lag_Conflict$$

To test the hypotheses empirically, we developed panel data for nine years from 1997 to 2005 for 127 countries. We dropped countries with population less than 250,000 in 2001 for two reasons. First, data for some of these countries is difficult to get. Second, some of these countries are small island nations such as the British Virgin Islands, Tuvalu and Solomon Islands that may not have the demographic characteristics of typical nation states. Since we used a lag dependent variable (*Lag_Conflict*) in our model, the final panel had eight years of data from 1998 to 2005 for 127 countries. A detailed discussion of the variables follows (See Appendix A for a description of the variables, summary statistics, and a correlation matrix).

The Independent and Control Variables

We used two independent variables to test the hypotheses -- *youth bulge* and *bust*. We measured *Youth Bulge* following Urdal (2006) by calculating ratio of the population between the ages of 15-24 to the adult population (15 years above). Urdal (2006) argues that this is the appropriate measure for the variable, as it

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captures the phenomenon of young people in proportion to an older population that can socialize and discipline these young persons. We measured *Bust* by calculating the ratio of the population ages 0 to 14 to the youth population (15-24), as it captures the phenomenon of children in proportion to youth. Scholars have used this measure in the economics, demography and geography literatures and often termed it as the "child dependency ratio." We relied on the *International Data Base of the U.S. Census Bureau* to calculate the bulge and bust variables.[19]

In our analyses, we controlled for variables representing socio-development, macroeconomics, technology advancement, government capacity, and geo-politics. Since our conflict measure was not scaled for country size, we controlled for the *total population* of a country, obtaining the data from the *International Data Base of the U.S. Census Bureau*. We hand picked data from *the US Central Intelligence Agency's – The World Fact Book* to control for the *number of major ethnic groups* in a country. Data for *gross domestic product* (GDP), *gross domestic product per capita* (GDP per capita), and annual *inflation rate* (Inflation) came from *the World Bank - World Development Indicators*. We relied on the *Euromonitor International's* database for the annual *growth in gross domestic product* (GDP growth) variable. To control for level of technological advancement, we used the *number of telephone lines*, with the data for this variable coming from *World Bank - World Development Indicators*. The control for government capacity was *Rule of Law* (NIC, 2000), a measure also taken from the *World Bank*.[20] Controls also were introduced for geographic characteristics, particularly a country's *total area* so that along with the total population we were able to capture variables representing population density.[21] *Land boundaries* and *number of neighboring* countries were controlled for since such measures can be related to cross-border conflicts. The data for the geographic variables came from the *US Central Intelligence Agency's – The World Fact Book.* [22] Prior years' conflicts were controlled for in all our models with a *lag conflict index.*[23]

[19]In our robustness checks, we also use different definitions of our two independent variables and found consistent results.

[20]The World Bank defines rule of law as a system that protects citizens from the arbitrary and abusive use of power, This variable comes from a survey done by World Bank researchers on the status of world governance systems (Kaufmann et al., 2008). It is a ranking of various countries in the world on a scale of -2.5 to 2.5, where -2.5 is the most lawless and 2.5 is the least.

[21] With greater density there might be greater conflict for resources.

[22]We thank one of the reviewers of the paper for suggesting to us that we use these control variables.

[23]With this control, we lost one year's data (1997) from our panel. The final panel consisted of data for eight years period between 1998 and 2005.

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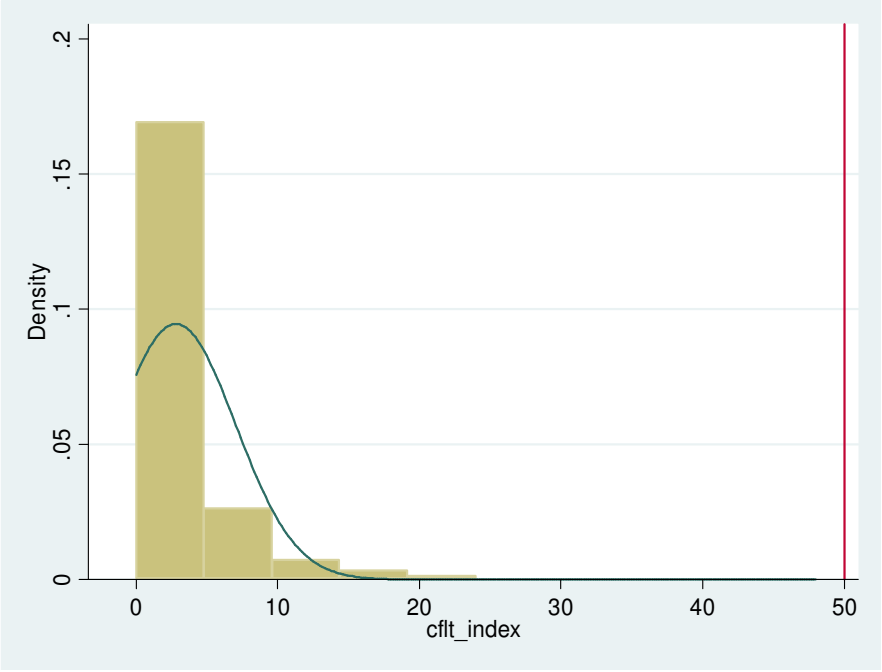
The Empirical Test

The empirical test used a random effects TOBIT model for four reasons. First, our dependent variable, the conflict index, was an inherently censored variable, as we did not observe values lower than zero. Econometrically, our dependent variable was a latent variable that we only observed above a cut off point (in this case zero). Second, above the cut off point the dependent variable resembled a normal distribution. The cumulative distribution of the conflict index was left censored at zero (see Figure 4). Third, although ideally we would have preferred to use a fixed effects model for our data, a sufficient statistic allowing for fixed effects using a maximum likelihood method was not available with the statistical package (STATA). Finally, since many of our control variables were time invariant, a random effect model was preferred over a fixed effects model. However, in one of our robustness checks we ran a fixed effect model by manually coding categorical (dummy) variables in the regression and we found statistically significant results similar to our baseline model although we had fewer control variables in this analysis.

Figure 4
Distribution of Conflict Index



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The Results

In the first column (1) in Table 2, we present the results of our baseline model where we use *Youth Bulge* and *Bust* as independent variables and *Conflict Index* as the dependent variable. In this regression, Youth Bulge is defined as the ratio of population between age 15 to 24 to the adult population (15 years and above). This variable is statistically significant and positively related to conflict as predicted in our theory (hypothesis #1). This finding is also consistent with Urdal (2006), although he used a different measure of conflict in his study and our dataset is for a shorter and different time period. On the other hand, the *Bust* variable, defined as the ratio of the population age 0 to 14 to the youth population (15-24), is statistically significant and negatively related to the conflict index. This result contradicts the relationship we predicted in hypothesis 2. It suggests that when a bust follows a bulge there is likely to be higher levels of conflict as measured by our conflict index variable rather than lower. Thus we find support for only one of our hypotheses in the econometric analysis.

Five of our control variables are statistically significant and related to a higher incidence of conflict. This indicates that it is not just the presence of youth bulges and the size of the cohort that follows it (busts) that predict violent conflict but that other factors are related to violence as well. For instance, the result shows that the higher the *Population,* the higher the likelihood of conflicts in a country. Similarly, countries with a high level of *Rule of Law* and a high level of technology development (*Number of Telephone Lines*) are likely to have lower level of conflicts. Finally, previous years of conflict are strongly related to current conflicts.

The Robustness Tests

What is surprising in our analyses is the sign of the bust variable, as our supposition was that as the bust takes hold the level of violent conflict would recede. However, we found the opposite. To be certain that our finding is correct we conducted a series of robustness tests. First, to ensure that outliers do not drive the results, we dropped the five most populous and five least populous countries from our database each year. We present the results of this regression in column 2 of Table 2. In this analysis, the two key independent variables *Youth Bulge* and *Bust* remain statistically significant with signs similar to those found in the initial analyses. In the second of the robustness tests, we ranked the countries each year based on their conflict indices.

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Table 2: Youth Bulges and Violent Conflict Regressions

Dep. Variable: Conflict Index	(1)	(2)	(3)	(4)
Youth Bulge	4.696*	6.225*	6.951**	4.828
	(2.052)	(2.926)	(2.376)	(2.819)
Bust	-0.870**	-0.986*	-1.082**	-0.888*
	(0.314)	(0.443)	(0.354)	(0.434)
Total Population	0.005***	0.022**	0.012*	0.006***
	(0.001)	(0.007)	(0.005)	(0.001)
Number of Ethnic Groups	0.055	0.102	0.098*	0.040
	(0.034)	(0.055)	(0.046)	(0.056)
GDP	0.417**	-0.367	-0.08	0.362*
	(0.137)	(0.643)	(0.331)	(0.174)
GDP per capita	0.026	0.094*	0.100***	0.040
	(0.025)	(0.038)	(0.029)	(0.033)
GDP Growth	-0.022	-0.019	-0.024	-0.027
	(0.020)	(0.021)	(0.016)	(0.023)
Inflation	-0.002	-0.004	-0.005**	-0.003
	(0.002)	(0.003)	(0.002)	(0.003)
Number of Telephone Lines	-0.025***	0.013	-0.008	-0.021**
	(0.007)	(0.040)	(0.021)	(0.008)
Rule of Law	-0.552**	1.238***	1.217***	-0.736*
	(0.030)	(0.316)	(0.25)	(0.297)
Total Area	0.029	0.019	0.007	0.017
	(0.063)	(0.106)	(0.093)	(0.090)
Boundary	-0.02	-0.014	-0.041	-0.008
	(0.053)	(0.086)	(0.073)	(0.070)
Number of Neighboring Countries	-0.015	-0.034	0.025	0.002
	(0.047)	(0.077)	(0.063)	(0.066)
Lag of Conflict Index	1.037***	0.804***	0.703***	0.983***
	(0.026)	(0.049)	(0.04)	(0.044)
Constant	-0.795	-1.703	-1.424	-0.826
	(0.631)	(-0.998)	(0.818)	(0.895)
Observations	1006	950	937	903
Countries	127	120	123	124
χ^2	2996.48	764.22	820.55	1506.05
Prob.> χ^2	0.000	0.000	0.000	0.000

Model 1: Random Effect TOBIT model, *Model 2*: RE TOBIT after dropping 5 most populous and 5 least populous countries for each year. *Model 3*: RE TOBIT after dropping 10 most conflict-prone countries for each year and *Model 4*: After dropping the 5 countries with the highest youth bulge and busts rates and the 5 countries with the lowest youth bulges and lowest busts. Numbers in parentheses () are standard errors. * $p<0.05$ ** $p<0.01$ *** $p<0.001$

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We then dropped the top ten countries that had the highest conflict index in a particular year. We did this to ensure that extreme values of the dependent variable did not drive the results. We present the findings from these tests in column 3 of Table 2. They too are consistent with the baseline model. That is, both the *Youth Bulge* and *Bust* variables are statistically significant and related to the conflict level of a country with signs similar to those found in our baseline regression. Finally, we dropped the five largest and five smallest values of *Youth Bulge* and *Bust* from the dataset. We present the findings from these tests in column 4 of Table 2. The coefficient of *Youth Bulge* is now significant at a 10% level whereas the coefficient of *Bust* variable remains significant at 5% level.

In the final robustness analysis, we ran our data using three different econometric methods (see Appendix B). We did these tests to ensure that our results were not driven by the econometric method that we used in our baseline regression. First, we ran a random effects LOGIT model. To run a random effects LOGIT model, we needed a dichotomous dependent variable. Hence, we created a categorical variable that took the value of 1 if a country's conflict index was more than one and 0 when conflict index was 0. We chose 1as a threshold to distinguish countries with no conflict from the ones with at least some level of conflict. We present the result of the random effects LOGIT in column 1 in Table B (see Appendix B). We find this result too is consistent with our baseline model with signs similar to those found in the initial analyses. Second, we used the same categorical dependent variable to run a random effects PROBIT model. We present the results of this regression in column 2 in Table B. In this case, we find consistent results with signs similar to those found in the initial analyses. Finally, we used the original dependent variable (*Conflict Index*) and ran a feasible generalized least square (FLGS) model and find consistent results. Therefore we believe that our model and results are very robust.

IMPLICATIONS FOR RESEARCH AND PRACTICE

This paper extended models typically found in the literature that assess the level of violent conflict in a country. Putting more emphasis on the demographic factors than is usually the case, we found empirical support for the hypothesis that violent conflict goes up when there is an increase in youth bulges in a sample of 127 nations from 1998-2005. We did not find, however, that it went down when busts followed the bulges. We also found that the violence in our sample did not grow in a vacuum, that it required other variables as a context to yield its deadly outcomes. In particular, we found that the *rule of law* was especially important (see Table 2); with a breakdown in the rule of law, the chances that violent conflict will break out are particularly high (Abadie, 2006). The unique HIIK

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database used to test for our results, we believe, is an improvement over prior studies.

Surprising Findings

Our surprising finding concerns the bust that follows the bulge. According to our results, when a small 0-14 year old cohort follows a large 14-25 year old cohort, the chances of violent conflict grow. This finding requires additional research. To the extent that we can speculate about its causes, we suggest the following. The reason that the bust following the bulge does not yield less violence may be the burden and responsibility that the 0-14 year olds place on the 15-24 year olds. With a surging generation following the current one, the current 15-24 year olds are forced to engage in more constructive and socially acceptable behavior. They must not only look out for themselves but they must play a role in caring for the generation that comes next. With another large group behind it, the current 15-24 year olds are likely to have lower expectations. Tied down by the generation that is coming next they cannot afford to engage in violent activity. Violence is a luxury in which only a more isolated generation with a smaller cohort behind it can indulge. Unconstrained by the generation behind it, the generation of the youth bulge can act with impunity and may unfortunately see violent conflict as part of a process of positive change.

Limitations

Though we have inserted various controls in our analyses, the controls that we have inserted may not be sufficient. Other factors might cause violent conflicts, youth bulges, and youth busts. Examples of such factors are religious beliefs in cultures that influence fertility levels as well as the tendency for violent conflict. Thus, a limitation of our findings is that endogenous determination of variables cannot be entirely excluded. Expected economic conditions, for example, can spark conflicts, affect fertility, and in turn determine economic conditions. Similarly, the causality we infer may be reversed if a long enough period of time is considered. For instance, family decisions might be influenced by expectations of violent conflict that lower survival probabilities and families therefore may respond with more births. On the other hand, family decisions might be influenced by the expectation of peace and they will respond with fewer births. Solving these problems would necessitate identifying proper counterfactuals, having some type of natural experiment, or having a convincing instrumental variable, methods not readily available. Thus, we must emphasize that our findings are somewhat preliminary and that we welcome additional research.

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We also must caution against interpreting our findings in sequential terms, as the bust we observe among children who are 0-14 years old is contemporaneous with the bulge we observe among young people who are 15-24 years old. Accordingly, we are not making any assertions that conditions among the population of 0-14 year olds will continue as these children age. In the current period we surmise that the violence goes down if the constraints imposed by the 0-14 year olds on those who are 15-24 years old do not weaken. However, these constraints may be so severe that by the time the 0-14 year olds age, the bulge among this age group becomes a bust.

An Extension

If we were to extend our findings, we would engage in the following exercise by partitioning elements of the population into three groups– the very young (0-14 year olds), youth (15-24 year olds), and those that are "mature" (25 and older). As a short hand, call the former "babies," those in the middle "youth," and those in the mature group "seniors." Depending on whether there are bulges and busts among these groups (and these bulges and busts are not likely to be even), the following might take place given that everything was equal (See Table 3):

- The most violence would take place when there is a baby bust, youth bulge, and senior bust. The 15-24 year olds then have neither a generation ahead of them to socialize and control them nor a generation behind them to pressure them and keep them in line.
- The least violence would occur if there is a baby boom, youth bust, and senior boom. The 15-24 year olds then are hemmed in from both sides, their tendency toward violence contained from above by seniors and below by the generation that comes next.
- A number of in-between states might exist:
    - Less violence would occur if there is a baby boom, youth bust, and senior bust (traditional society) or baby bust, youth bust, and senior boom (advanced society). Then the 15-24 year olds (in the pre-industrial society) are held in check by the generation that comes after them, and the 15-24 year olds (in the post-industrial society) are reined in by the generation that comes before them.
    - More violence would occur under two conditions: (i) if there is a baby boom, youth bulge, and senior bust and (ii) if there is a baby bust, youth bulge, and senior boom. The levels of violence might be similar depending on whose influence is greater the 0-14 year olds or those 25 and older. If the 0-14 year olds are more confining, then the situation in which there is a baby boom, youth bulge, and senior bust is less violent. However, if the opposite is true, if the next generation is more

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restrictive than the prior one, than baby bust, youth bulge, and senior boom is less violent.

Table 3: Levels of Violence and Generational Succession

Level of Violence	Babies (0-14 year olds)	Youth (15-24 year olds)	Seniors (25 years and older)	Overall Profile
Highest	**BUST**	**BOOM**	**BUST**	*Most violent society* (e.g. Iran)
Lowest	boom	bust	boom	*Least violent society*
Low	boom	bust	**BUST**	*Traditional societies*
Low	**BUST**	bust	boom	*Advanced industrial societies*
High	boom	**BOOM**	**BUST**	*Transitional society* (e.g. Iraq)
High	**BUST**	**BOOM**	boom	*Transitional society*

Capitals and bold signify conditions that lead to high levels of violence.

The changes in booms and busts about which we speculate would tend to be dynamic. Thus, given the various interactions among the generations that are possible and other conditions many outcomes are possible. Nevertheless, it is likely that violence will be influenced by these patterns of generational succession.

The sad fact of these speculations is that under most conditions (in all but one scenario), the violence in some form will persist. If a society wants to move from most violent to least violent with the help of fertility-rate policies it cannot do so for more than one or two generations since inducing a baby boom will reduce violence now but eventually there will be a bulge when people age and violence grows. To work against this outcome requires that serious attention be paid to important variables such as rule of law, which, according to our findings, can along with generational pressure reign in the violence.

Raising the Issue

The purpose of this paper is not to resolve these issues once and for all but to raise them in the research realm and induce greater thinking about them. The costs of doing business when excessive violence exists are great (Globerman & Shapiro, 2003). The more these costs can be understood, the more likely serious efforts can be taken to contain the violence that can take place. As we have said, for multinationals, the negative impacts of a rise in violent conflict are many. Besides the horrific human costs, global supply chains and operations may have to be

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shifted (Sheffi, 2001), alliances and partnerships ended, entry delayed or deferred, trade not entered into, marketing and new product development cut back (Day & Schoemaker, 2000), and the sourcing of raw materials and labor jeopardized. If a high incidence of violence persists, these activities and others like them become difficult to carry out. Because of these threats, the global strategies that multinationals pursue will not remain the same. Investments will not be made or they will not be made in a timely fashion and therefore will show up as lost opportunities.

Firms require peace, order, and stability for their success. If the costs of violent conflict inhibit investment and retard global economic growth and development, all of us will be worse off. Understanding the roots of violent conflict and its likely persistence therefore is important (Mitroff, Pauchant & Shrivastava, 2006). Obviously, this paper is only a beginning step in the investigation of this important topic, so central to current events. The questions, which might be pursued in further research, are many. For instance, a question worth pondering is if the same youth bulges and busts that lead to violent conflict are also connected to economic growth. That is, dynamic and vital youthful societies are in disequilibrium, which is manifest both in rapid economic change, a plus for global business, and violence, a minus. This paradoxical character of youth bulges and busts may provide insight into the relatively slow growth of Europe, which is aging, the relatively rapid growth of much of the rest of the world, which is youthful, and the middle levels of economic growth found the U.S., which is somewhere in-between. Clearly, FDI flows in the world have disproportionately gone to the U.S. (Grosse & Trevino, 1996). Is this a result of the strength of the middle position -- levels of violence that are relatively low in the U.S. and economic growth rates that are not as constrained by aging as they are in most of Europe?

The Challenges for Business

The issues of youth bulges, busts, and violence pose unusual challenges for business. On the one hand, multinationals need to alter their existing thinking so that they consider these demographic factors more explicitly in the calculations they make about how to expand. They cannot narrowly focus on financial and political factors (Jensen &Young, 2006). On the other hand, multinationals may be able to make a difference in this realm by motivating and guiding youth to productive activities. In some ways, then, they can be proactive and thereby prevent the violence that otherwise would occur (Campbell, 2002). A question, of course, is whether multinationals have the required capabilities and experience to take on this activity (Kapstein, 2001). Many examples exist, however, of

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multinationals that have tried to engage in it. For instance, in 2000, Nokia and the International Youth Foundation (IYF) launched a global youth development initiative to strengthen the life skills of young people and prepare them for the future. To date, Nokia has invested $26 million in 24 countries and directly benefited more than 330,000 young people.[24]

Supporting education and skill development is a way multinationals can work to help young populations and move them from violence. Multinationals can achieve at least three advantages from this approach:

- Engaging youth in education and skill development distances multinationals from violent prone ideological/political forces and lowers the chances of youth getting involved in conflict.
- The youth population then has skills and knowledge that will benefit society as a whole, with multinationals obtaining such spillover advantages as a better prepared and well educated work force.
- Another benefit to multinationals is that these activities increase their image for corporate social responsibility, which may be useful for many reasons, but especially if they have a significant problem or incident in the countries in which they are doing business.

In some countries, large multinationals have advantages over governments and non-profits in providing educational assistance to young people.[25] For instance, Intel employees have provided science education to elementary and high school students in such nations as the Philippines. They also donated computers, which gave students the opportunity to attain jobs and higher education that they could not otherwise obtain. Corporate support, in general, has evolved from philanthropy that was in the form of relatively passive, cash donations to community involvement which is being more systematically planned and evaluated to achieve corporate goals such as violence reduction in nations where corporations operate. To assess the results corporations have started to provide information on these activities in reports that are audited by major accounting firms. In times of crisis, these activities sometimes have paid off (Hess, Rogovsky, and Dunfee, 2002), for example, during riots and other forms of violent civil unrest. By establishing such programs, firms have found less resistance to their activities from community organizers and environmental and

[24]The rural children early education project "Hand In Hand," financed by Nokia (China) is a long term project with investment that is the largest donation from the non-governmental sector for rural early care and preschool education.. The project aims to provide care and education for rural children under the age of six in order to create opportunities for the children's future success. See http://www.chinacsr.com/en/2008/08/08/2760-nokia-china-focuses-on-rural-childrens-education/

[25] Hess, Rogovsky, and Dunfee (2002) indeed have reported that many firms are devoting more of their resources to support community involvement projects ranging from support for training and educating youths and adults, to helping welfare recipients get jobs, to globally efforts to give aid in developing countries. Many of these projects have involved direct training of the young.

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human rights organizations. Of course, corporate social initiatives cannot be successfully implemented without a full understanding of the costs and benefits of these programs. Budgetary constraints dictate the necessity to invest only in programs that are most beneficial to the community and the firm. However, firms also have a moral responsibility to be involved which overrides these financial constraints.

An element of caution, though, must be introduced. While lack of opportunity is a factor in youth violence, the focus should be more than on it alone as evidence shows that education and skills by themselves do not always diminish violence (Krueger, 2007). Therefore, businesses' involvement must not be only in the economic realm; it must extend to the symbolic and cultural arena (Greenberg, Porteus, Simon, Pyszczynski, & Solomon, 1995). Businesses must help spread a message of confidence and hope rather than despair and pessimism (Fort, & Schipani, 2004). The combined message of skills, opportunity and hope is well-displayed in the "bottom of the pyramid" advocacy of such writers as Prahalad (2006) and Hart (2007). More experiments of this nature must be tried and more research is needed on the conditions under which such endeavors succeed and whether they actually prevent violence. The question of the degree to which violent conflict will surge, why it will take place, and what can be done to prevent is as significant to humanity as to business. The effects of youth bulges and busts are important fields of inquiry which need further development.

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Appendix A: Descriptive Statistics

Table A1: Variables and Sources of Data

Variable Description	Data Source
Conflict Index (Dependent Variable) – a composite index coded from the HIIK Reports	Heidelberg Institute for International Conflict (HIIK)Research, Germany
Youth Bulge =Population 15-24 /Population 15+	U.S. Census Bureau, International Data Base
Bust = Population 0-14 /Population 15-24	U.S. Census Bureau, International Data Base
Total Population	U.S. Census Bureau, International Data Base
Number of Ethnic Groups	CIA – The World Fact Book
GDP (current US$)	World Bank - World Development Indicators
GDP per Capita, PPP (current international $)	World Bank - World Development Indicators
GDP Growth	Euromonitor International
Inflation	World Bank - World Development Indicators
Number of Telephone Lines	World Bank - World Development Indicators
Rule of Law	World Bank's Governance Study
Total Area	CIA – The World Fact Book
Boundary	CIA – The World Fact Book
Number of Neighboring Countries	CIA – The World Fact Book

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Table A2: Summary Statistics

Variable	Mean	Standard Deviation	Min	Max
Conflict Index	2.731	3.998	0	48
Youth Bulge (ratio)	0.280	0.081	0.012	0.419
Bust (ratio)	1.723	0.406	0.892	2.654
Total Population(million)	36.117	128.936	0.235	1,310
Number of Ethnic Groups	5.022	2.422	2	20
GDP (current US$) (billion)	209.177	925.361	0.199	12,500.000
GDP per Capita, PPP (current international $)	9,318.239	10,407.04	457	74,573
GDP Growth (%)	4.232	5.133	-33.900	78.300
Inflation (%)	10.102	30.815	-9.890	550.010
Number of Telephone Lines	6,225.364	23,796.78	5.580	350,433
Rule of Law	-0.115	1.012	-2.370	2.27
Total Area (square kilometers)	772,574	2,015,476	300	17,075,200
Boundary (kilometers)	2,915.59	3,437.354	0	22,117
Number of Bordering Countries	3.566	2.564	0	14

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Table A3: Correlation Matrix

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Conflict Index	1.00													
2	Youth Bulge	0.06	1.00												
3	Bust	0.01	0.76	1.00											
4	Total Population	0.55	-0.07	-0.06	1.00										
5	Number of Ethnic Groups	0.20	0.15	0.18	0.16	1.00									
6	GDP	0.17	-0.27	-0.14	0.28	-0.02	1.00								
7	GDP per capita	-0.11	-0.76	-0.51	-0.02	-0.22	0.44	1.00							
8	GDP Growth	0.10	-0.01	-0.04	0.09	0.07	-0.05	-0.07	1.00						
9	Inflation	0.05	0.15	0.10	-0.03	0.01	-0.05	-0.15	-0.19	1.00					
10	Number of Telephone Lines	0.34	-0.25	-0.18	0.70	0.12	0.74	0.28	0.04	-0.05	1.00				
11	Rule of Law	-0.19	-0.69	-0.46	0.00	-0.21	0.31	0.88	-0.07	-0.26	0.20	1.00			
12	Total Area	0.30	-0.15	-0.12	0.46	0.08	0.40	0.16	0.03	0.03	0.56	0.05	1.00		
13	Boundary	0.38	0.06	0.05	0.62	0.20	0.25	-0.13	0.06	0.11	0.53	-0.21	0.78	1.00	
14	Number of Bordering Countries	0.23	0.08	0.05	0.36	0.21	-0.03	-0.21	0.07	0.12	0.26	-0.28	0.43	0.70	1.00

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Appendix B: Robustness Checks

Different Econometric Methods	**LOGIT**	**PROBIT**	**FGLS**
Youth Bulge	6.830* (3.37)	4.815* (2.153)	1.778*** (0.486)
Busts	-1.061* (0.537)	-0.755* (0.339)	-0.290*** (0.078)
Total Population	-0.009 (0.010)	-0.004 (0.006)	0.005*** (0.001)
Number of Ethnic Groups	0.088 (0.066)	0.067 (0.043)	0.017 (0.011)
GDP	1.106 (1.232)	0.73 (0.679)	0.188* (0.080)
GDP per capita	0.019 (0.035)	0.015 (0.024)	0.008 (0.005)
GDP Growth	-0.067* (0.030)	-0.045* (0.018)	-0.001 (0.002)
Inflation	-0.011 -0.008	-0.006 -0.003	0.000 (0.001)
Number of Telephone Lines	-0.026 (0.062)	-0.022 (0.035)	-0.014** (0.005)
Rule of Law	-0.384 (0.291)	-0.241 (0.205)	-0.078* (0.033)
Total Area	0.07 (0.144)	0.042 (0.080)	0.007 (0.016)
Boundary	0.076 (0.087)	0.041 (0.054)	-0.013 (0.016)
Number of Neighboring Countries	0.018 (0.077)	0.011 (0.050)	0.004 (0.011)
Lag of Conflict Index	2.817*** (0.212)	1.352*** (0.114)	0.949*** (0.016)
Constant	-1.978 (1.010)	-1.126 (0.659)	0.069 (0.176)
Observations	1006	1006	1006
Countries	127	127	127
χ^2	199.16	200.03	6307.08
Numbers in parentheses () are standard errors. * $p<0.05$ ** $p<0.01$ ***$p<0.001$			

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