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**A CLASH OF GENERATIONS?
YOUTH BULGES AND POLITICAL
VIOLENCE**


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VIOLENCE**

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PREFACE

The Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat organized an *Expert Group Meeting on Adolescents, Youth and Development* at the United Nations Headquarters in New York, on 21 and 22 July 2011. The meeting was convened in response to two main mandates: 1) The United Nations General Assembly resolution A/RES/64/134 proclaiming the year commencing on 12 August 2010 as the International Year of Youth; and 2) The United Nations Commission on Population and Development decision to designate “Adolescents and youth” as the theme of the forty-fifth session, to be held in April of 2012. The meeting brought together experts from different regions of the world to present and discuss research on two broad themes: demographic dynamics of youth and youth as agents of socio-economic development. A selection of the papers prepared by experts participating in the first part of the meeting is being issued under the Expert Paper Series published on the website of the Population Division (www.unpopulation.org).

The Population Division is grateful to Mr. Henrik Urdal, Research Fellow at the International Security Program, John F. Kennedy School of Government, United States of America, for having participated in the meeting and prepared this paper on the role of youth bulges vis-à-vis other factors in conditioning or even spurring political violence. The recent empirical evidence suggests that youth bulges are associated with increased risk of political violence, but that governments can mitigate this risk by providing better opportunities for young people, particularly in education and employment. Both are critical, as there is evidence that expanding higher education without corresponding job opportunities for the more highly educated youth, could foster rather than mitigate political instability. The risks of political violence should also decline in countries experiencing fertility declines as they reduce the population dependency ratios, but the risks could remain high in countries of the Middle East, Africa and parts of Asia with sustained high fertility.

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A CLASH OF GENERATIONS? YOUTH BULGES AND POLITICAL VIOLENCE

Henrik Urdal, Harvard Kennedy School and Peace Research Institute Oslo (PRIO)

A. INTRODUCTION

Youth often play a prominent role in political violence and the existence of a “youth bulge” has been associated with times of political crisis (Goldstone, 1991; 2001). Generally, it has been observed that young males are often the main protagonists of criminal as well as political violence.

But are countries and areas with youthful age structures or ‘youth bulges’¹, more likely to experience political violence? The issue has received increasing attention over the past decade following the more general debate over security implications of population pressure and resource scarcity. In *The Coming Anarchy*, Robert Kaplan argues that anarchy and the crumbling of nation states will be attributed to demographic and environmental factors in the future (Kaplan, 1994, p. 46). More recently, youth bulges have become a popular explanation for current political instability in the Arab world and for recruitment to international terrorist networks. In a background article surveying the root causes of the 11 September 2001 terrorist attacks on the United States of America, *Newsweek* editor, Fareed Zakaria, argues that youth bulges, combined with slow economic and social change, have provided a foundation for an Islamic resurgence in the Arab world (Zakaria, 2001, p. 24).

Samuel Huntington (2001), qualified the “Clash of Civilization” by adding the dimension of age structure: “I don’t think Islam is any more violent than any other religions [...]. But the key factor is the demographic factor. Generally speaking, the people who go out and kill other people are males between the ages of 16 and 30. During the 1960s, 1970s and 1980s there were high birth rates in the Muslim world, and this has given rise to a huge youth bulge. But the bulge will fade. Muslim birth rates are going down; in fact, they have dropped dramatically in some countries” (Huntington, 2001, p 1).

This paper presents and discusses the results of some recent empirical studies on youth bulges and political violence. While a general statistical relationship between age structure and political violence has been identified, there is also evidence suggesting that governments that invest in secondary education experience lower conflict risks. Furthermore, in many countries, large youth cohorts can be a vehicle for economic development, rather than conflict, as fertility and dependency ratios are declining, opening the potential for demographic dividends.

B. YOUTH BULGES: PROVIDING OPPORTUNITY AND MOTIVE FOR CONFLICT

The literature on youth bulges has focused in particular on spontaneous and low-intensity unrest like non-violent protest and rioting. However, youth bulges may also increase the risk of more organized forms of political violence like internal armed conflict. This paper draws on two dominant and competing, albeit not mutually exclusive, theoretical traditions in the study of civil war; one focusing on opportunities and the other on motives for conflict.

Both the opportunity and the motive perspectives are macro-level frameworks that attempt to explain individual-level decisions associated with joining a rebel or terrorist organization or not, by focusing on economic, political and social structural features. The opportunity literature, often coined the *greed perspective*, has its roots in micro-economic

theory and focuses on structural conditions that provide opportunities for a rebel group to wage war against a government (Collier, 2000; Collier and Hoeffler, 2004). These are conditions that provide the rebel group with the financial means to fight, or factors that reduce the cost of rebellion, such as unusually low recruitment costs for rebel soldiers. Paul Collier, former Director of the Research Development Department of the World Bank, has suggested that relatively large youth cohorts may be a factor that reduces recruitment costs through the abundant supply of rebel labour with low opportunity cost, increasing the risk of armed conflict (Collier, 2000, p. 94). According to the opportunity perspective, rebellion is feasible only when the potential gain from joining a rebel or terrorist organization is so high and the expected costs so low that certain individuals will favour joining over alternative income-earning opportunities.

The motive-oriented tradition, or *grievance perspective*, has its origins in relative deprivation theory and tends to see the eruption of political violence as a rational means to redress economic or political grievances (Gurr, 1970, p. 223). Motives for committing political violence can be economic, like poverty, economic recession or inequality, or political, like lack of democracy, absence of minority representation or self-governance. Most of the literature on youth bulges and political violence falls into this tradition. It focuses on how large youth cohorts crowding the labour market or the educational system, confronting lack of political openness, and agglomerated in urban centres may feel aggrieved, paving the way for political violence (e.g. Choucri, 1974; Braungart, 1984; Goldstone, 2001).

While useful as ideal models, the distinction between the motive and opportunity perspectives is sometimes overstated. First, in its simplest form, the motive perspective over-predicts political violence; the existence of serious grievances is not sufficient for collective violent action to erupt (Kahl, 1998). The likelihood that motives are redressed through political violence increases when opportunity arises from availability of financial means, low costs or a weak state. Second, while “opportunity” factors may better explain why civil wars break out, this does not necessarily mean that actors cannot also have strong motives (Sambanis, 2002, p. 224). Third, many factors may equally well be described as representing both opportunity and motive. A young impoverished person may both be considered a potential low-cost recruit, and at the same time an aggrieved individual motivated by economic and political exclusion. The most relevant contextual factors hypothesized to affect the relationship between large youth cohorts and conflict, are discussed next.

1. The cohort size effect

As anticipated above, the mere existence of an extraordinary large pool of youth may lower the cost of recruitment since the opportunity cost for a young person is generally low (Collier, 2000, p. 94). This is an assumption that hinges on the extent of alternative income-earning opportunities. If young people are left with no alternative but unemployment and poverty, they are more likely to join a rebellion as an alternative way of generating an income.

New research in economic demography even suggests that the opportunity cost of individuals belonging to larger youth cohorts are generally lower compared to members of smaller cohorts. According to the “cohort size” hypothesis, “other things being equal, the economic and social fortunes of a birth cohort tend to vary inversely with its relative size” (Macunovich, 2000, p. 236). So, not only do youth bulges provide an unusually high supply of individuals with low opportunity cost, but an individual belonging to a relatively large youth cohort generally also has a lower opportunity cost relative to a young person born into a smaller cohort.

The influence of the size of youth cohorts on unemployment is also emphasized in the motive-oriented literature on civil violence (Moller, 1968; Choucri, 1974; Goldstone, 1991;

Cincotta and others, 2003). If the labour market cannot absorb a sudden surplus of young job-seekers, a large pool of unemployed youths will generate strong frustration. In extreme cases, the challenge to employ large youth cohorts can appear overwhelming. Socio-economic problems associated with 'youth bulges' may arguably provide fertile ground for recruitment to terrorist organizations (Lia, 2005, p. 141).

2. *Economic growth*

The overall economic performance of a society is an important factor determining the income forgone by joining a rebel movement, and thus the opportunity for rebellion. Economic growth over a longer period may act as a proxy for new income opportunities (Collier and Hoeffler, 2004, p. 569). For large youth cohorts, the economic climate at the time they enter into the labour market is particularly crucial. To the degree that income opportunities are determined by general economic performance, large youth cohorts are likely to face lower income opportunities when economic conditions generally deteriorate, thus reducing the income they forego by signing up as a rebel. The motive-oriented literature also shares the concern over economic decline. Youth belonging to large cohorts will be especially vulnerable to unemployment if their entry into the labour force coincides with periods of serious economic decline. Such coincidences may generate despair among young people and make them more likely to resort to violence (Choucri, 1974, p. 73).

3. *Education*

A policy that countries can use in order to respond to youth bulges is the expansion of higher education. Can this serve as a strategy to reduce the risk of political violence? Higher levels of education among men may act to reduce the risk of political violence. Since educated men have better income-earning opportunities than the uneducated, they would have more to lose and hence be less likely to join a rebellion (Collier, 2000). A recent study based on interviews with young soldiers presents strong micro-level support for the expectation that poverty, lack of schooling and low alternative income opportunities are important reasons for joining a rebel group (Brett and Specht, 2004).

Rebel recruitment is thus more costly and rebellion less likely the higher the level of education in a society (Collier and Hoeffler, 2004). This is not inconsistent with the motive-oriented literature. However, it has been suggested that when countries respond to large youth cohorts by expanding opportunities for higher education, this may produce a much larger group of highly educated youths than can be accommodated in the economy. Unless the government is able and willing to absorb a surplus of university graduates into the public sector, prevailing unemployment among highly educated segments of youth may cause frustration and grievances that could motivate political violence (Winckler, 2002). It has been argued that high unemployment among educated youths is one of the most destabilizing and potentially violent socio-political phenomena in any regime (Choucri, 1974, p. 73), and that a rapid increase in the number of educated youths has preceded historical episodes of political upheaval (Goldstone, 2001, p. 95). It has been argued that the expansion of higher education in many countries in the Middle East, producing large groups of educated youth that the labour market cannot absorb, has had a radicalizing effect and provided new recruits to militant organizations in the area (Lia, 2005, pp. 145-146).

4. *Lack of democracy*

In assessing the role of democracy, the opportunity and motive perspectives yield opposite predictions. The opportunity literature suggests that the possibilities for political violence to emerge are greater the less autocratic a state is, while the motive-oriented literature argues that the greater the political oppression and the lack of political rights, the greater the motive for political violence. Several empirical studies of regime type and civil

conflict have found a curvilinear “inverted U” relationship between democracy and conflict, suggesting that starkly autocratic regimes and highly democratic societies are the most peaceful (Hegre and others, 2001). This relationship is assumed to arise as a result of both opportunity and motive, as semi-democratic regimes may have greater openings for conflict compared to autocratic states. At the same time, lack of political rights may also constitute a motive for conflict. It has been suggested by proponents of the motive perspective that when large youth groups aspiring to political positions are excluded from political participation, they may engage in violent conflict behaviour in an attempt to force democratic reform (Goldstone, 2001). The potential for radical mobilization for terrorist organizations is considered to be greater when large educated youth cohorts are barred from social mobility by autocratic and patriarchal forms of governance (Lia, 2005, p. 147).

5. *Urbanization*

While institutional crowding has received greater attention, spatial crowding has also been considered to generate motives for political violence (Brennan-Galvin, 2002). Since terrorism is essentially an urban phenomenon, states undergoing rapid urbanization may be particularly likely to experience increased risks of terrorism (Lia, 2005, p. 141). If youth are abundant in a relatively small geographical area, this may increase the likelihood that grievances caused by crowding in the labour market or educational institutions arise. Historically, the coincidence of youth bulges with rapid urbanization, especially in the context of unemployment and poverty, has been an important contributor to political violence (Goldstone, 2001). Youth often constitute a disproportionately large part of rural-to-urban migrants, hence, in the face of large youth cohorts, strong urbanization may be expected to lead to an extraordinary crowding of youth in urban centres, potentially increasing the risk of political violence.

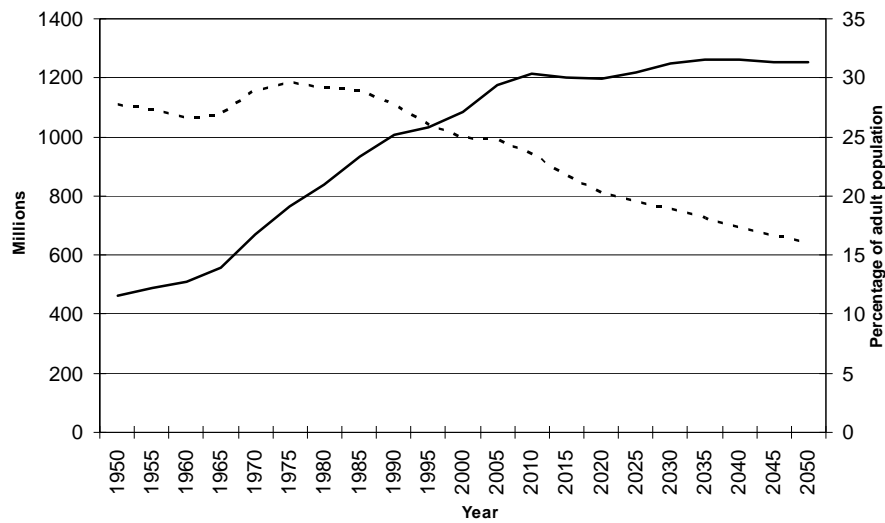
C. EMPIRICAL STUDIES OF YOUTH BULGES AND VIOLENCE

1. *Measuring youth bulges*

Acknowledging that the definition of youth varies widely between societies, for this paper, youth refers to those persons aged 15 to 24 years, which is also the definition employed by the United Nations. While there is significant regional as well as local variation, the total number of youth in the world is now growing at a much lower rate than in the previous five decades, and is expected to remain relatively constant between 2010 and 2050 (see the solid line in figure 1).

The solid line on figure 1 shows the absolute size of the youth population of the world, while the dotted line shows the youth population as a percentage of the total population 15 years or over. Two recent authoritative studies of civil war that failed to find an effect of youth bulges on the risk of conflict used a different measure of youth bulges, dividing the number of 15 to 24 year olds by the total population, which includes those under the age of 15 years (Fearon and Laitin, 2003; Collier and Hoeffler, 2004).ⁱⁱ Such a definition is highly questionable both from a theoretical and a practical perspective. Most theories about youth revolt assume that violence arises from competition between younger and older cohorts, or because youth cohorts experience institutional “bottlenecks” due to their larger size compared to previous cohorts. When using the total population in the denominator, youth bulges in countries with continued high fertility will be underestimated because the large number of children deflates this youth bulge indicator. At the same time, countries with declining fertility and relatively smaller populations under the age of 15 years—potentially experiencing a demographic dividend from large youth cohorts (see below)—are “weighted” upwards under this definition of bulge.

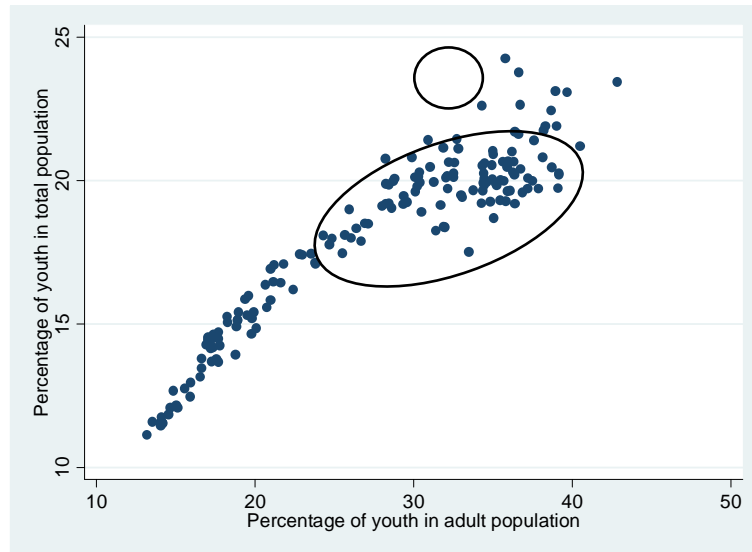
**Figure 1. World youth population, 1950-2050
(Population aged 15-24)**



Source: United Nations (2011).

The implications of measuring youth bulges in different ways are illustrated in the scatterplot in figure 2. Here, all countries are plotted according to two youth bulge measures in the year 2000. The horizontal axis shows the value on our preferred measure, the population aged 15 to 24 years relative to the total adult population (YBAP), while the vertical axis represents the number of youth relative to the total population (YBTP). The deviations from the trend line increase as the relative size of youth cohorts grows. The observations marked by the lower ellipsis are countries that have large youth cohorts, but also very large populations under the age of 15 years. Many countries in sub-Saharan Africa belong to this category, as do countries like Guatemala, Nicaragua, Afghanistan, Lao People’s Democratic Republic, Iraq, Yemen, Maldives and Papua New Guinea. In statistical models that assess the impact of youth bulges on conflict, this latter group of countries will have considerably less impact on the results when using the YBTP measure rather than the YBAP measure (Urdal, 2006). The two outliers in the upper circle are Libya and Iran (the Islamic Republic of), both of which experienced very steep declines in fertility in the 1990s and are now starting to see an opportunity for a “demographic dividend”.

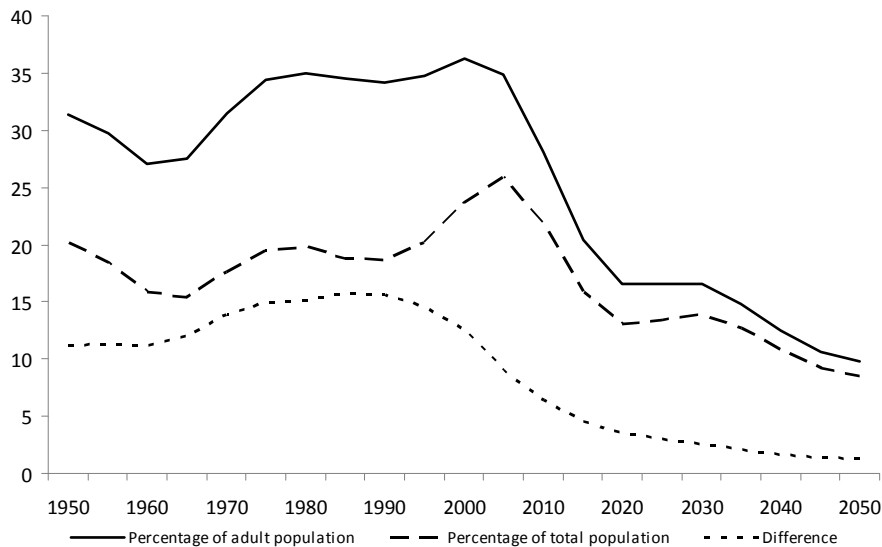
Figure 2. Youth (persons aged 15-24) as a percentage of adult and total population, 2000



Source: United Nations (2011).

The difference between the measures is further illustrated in figure 3, showing the transition in the age structure of Iran (the Islamic Republic of). The difference between the two measures is greatest in the initial phase of the increases of the youth bulge until they peak, and decline thereafter. Using one measure or the other, therefore, makes a significant difference in the cross-sectional and in the longitudinal analyses.

Figure 3. Youth (persons aged 15-24 years) as a percentage of adult and total population, Iran: 1950-2050



Source: United Nations (2011).

2 *Cross-national study of youth bulges and violence*

In a recent cross-national time-series study of the period 1950-2000, it was found that the presence of youth bulges increases the risk of conflict outbreak significantly.ⁱⁱⁱ The statistical relationship holds even when controlling for a number of other factors such as level of development, democracy, and conflict history, and are also robust to a variety of specifications (for detailed results see Urdal, 2006). For every percentage point increase in the youth population (relative to the adult population), the risk of conflict increases by more than 4 per cent. When youth make up more than 35 per cent of the adult population, which they do in many developing countries, the risk of armed conflict would be 150 per cent higher than in countries with an age structure similar to most developed countries. In 2000, 15 to 24 year-olds made up 17 per cent or less of the total adult population in almost all developed countries, the median being 15 per cent. In the same year, 44 developing countries experienced youth bulges of 35 per cent or above.^{iv}

The claim that youth bulges are particularly volatile when they pass a certain threshold does not seem to be valid, as the time trend appears to be rather linear (Huntington, 1996). Further, youth bulges seem to be associated with a higher risk of conflict in countries with high total dependency ratios, while countries that are well underway in their demographic transitions are likely to experience a “peace dividend”.

If youth bulges increase the likelihood of armed conflict, how and why do they matter? While the risk of conflict does not seem to increase when youth bulges coincide with long-term per capita economic decline, high dependency ratios, expansions in higher education or strong urban growth, the results suggest that the effect of youth bulges appears to be greater in the most autocratic regimes as well as in the most democratic states (Urdal, 2006). It could indicate that youth bulges provide greater motives (exclusion from political participation) in autocracies and greater opportunities (less repression) in democracies.

3. *Education study*

To investigate whether education may serve as a strategy to reduce the risk of political violence in the context of large youth bulges, a cross-national study (1970-2000) was conducted on a new education dataset (Barakat and Urdal, 2009). The dataset was constructed using demographic back-projection techniques and covers educational attainment for 120 countries (Lutz and others, 2007).

The empirical analysis does indeed suggest that large young male bulges are more likely to increase the risk of conflict in societies where male secondary education is low. This suggests that the availability of large cohorts of poorly educated youth can support armed conflict. The effect on conflict risk by low education and large youth populations is particularly strong in low- and middle-income countries, although it seems to be contingent on structural economic factors. In particular, education does not seem to have a pacifying effect on large youth cohorts in predominantly agrarian societies. While quantitative studies generally find a strong relationship between indicators of development and conflict risk (Sambanis, 2002), the results suggest that poor countries do have some leverage over reducing conflict potential through the increase of educational opportunities for young people.

The Barakat and Urdal (2009) study further supports broad policy interventions in education. In particular, raising female education is likely to have an added mitigating effect on conflict even though females with low education are not typically a group directly engaging in violence. Also, the study found no evidence that rapid expansion in secondary or tertiary education increases conflict potential by producing an excess supply of educated youth.

4. *Two disaggregated studies*

Can age structure also explain variation in violence below the state level? Two recent studies take slightly different approaches to disaggregating the study of youth bulges and conflict. The first is a time-series study of political violence in 27 Indian states during 1956-2002 (Urdal, 2008). India is a very diverse country with respect to demography, where the Southern regions have experienced considerable fertility decline while the Northern regions still have high fertility and very young age structures. A test was conducted to ascertain whether youth bulges are associated with three different and independently collected measures for political violence: armed conflict, violent political events, and Hindu-Muslim riots.^v The results are quite clear for all three measures. Youth bulges increase the risk of armed conflict, particularly in states with large population male to female ratios. Youth bulges are furthermore associated with increased risks of violent political events, but neither male surpluses nor urbanization appear to be contributing factors. Finally, youth bulges are associated with higher levels of rioting in states where urban inequality is high.

A second study addresses specifically how young age structures in urban centres affect levels of social disorder and violence (Urdal and Hoelscher, 2009). Among the many concerns over rapid urbanization is that large youth bulges in urban centers may be a source of political instability and violence. Youth, and especially male youth, have historically made up a disproportionately large share of rural to urban migrants and the total urban population. It has been argued that in the context of high levels of exclusion from economic, social and political spheres, youth bulges in urban centres may become a source of instability and political violence. The study assessed this claim empirically from an entirely new angle by using data on city-level urban social disorder, ranging from non-violent actions such as demonstrations and strikes, to violent political actions like riots, terrorism and armed conflict. The dataset covered 55 major cities in Asia and sub-Saharan Africa and spanned the period 1960-2006. The importance of age structure is further considered in relation to conditional factors that potentially affect youth exclusion, in particular the level of informal employment, economic growth, education, and gender imbalances. It was found that large male youth bulges aged 15-24 years are generally not associated with increased risks of either violent or non-violent social disturbance.

5. *A geriatric peace?*

By 2050, the world will have undergone a dramatic shift in the age structure of the adult population compared to 1950. During 1950-1990, young people between the ages of 15 and 24 years made up more than 25 per cent of the adult population in Asia, Africa and Latin America and the Caribbean. By 2050, however, the United Nations (2011) predicts that only sub-Saharan Africa still has young adult shares above 25 per cent, while all other world regions are around or below 15 per cent. The main reason for this shift is the global decline in fertility that began in the 1960s and has gained increasing momentum over the last decades. Will this ageing world also become a more peaceful world?

Recent studies in economic demography suggest that the relationship between large youth cohorts and political violence may be muted if youth bulges precede significantly smaller cohorts. Economists and demographers have long discussed the allegedly negative impact of population growth rates on economic growth. Recently, this debate has been advanced by disaggregating the focus to look at the impact of growth among different age segments. While high growth rates in the non-working, or dependent, age groups are associated with lower economic growth, increases in the working-age population are positively associated with economic growth (Bloom and others, 2007; Pool, 2007; Bloom and Canning, 2008). Thus, in areas where the demographic transition is well underway with sharply declining fertility rates, countries may experience a window of opportunity for

economic development, often coined a “demographic dividend”, largely flowing from increased savings as the relative number of dependents decreases.

In a cross-national study of 175 states using updated demographic and conflict data covering the period 1950-2007, the effect of youth bulges under different phases of the demographic transition was specifically looked at, distinguishing between groups of countries that experience very high and very low growth rates in the children aged 0-14 years (Urdal and Malmberg, 2008). The differences are striking. In countries where growth in the number of children is high, large youth bulges are strongly associated with the onset of armed conflict. But where fertility has been rapidly declining, producing low or even negative growth in the number of children, youth bulges are negatively associated with armed conflict onset, albeit not statistically significant. One possible interpretation of the latter finding is that this category contains both countries that succeed and fail to take advantage of their ‘demographic window of opportunity’, and that large youth bulges in this group of countries have a more mixed influence on conflict propensity.

In the aforementioned cross-national study a description was given on how future conflict risk is likely to develop up to 2050 for different world regions, based on United Nations population projections of age structure, total population and infant mortality. Looking ahead, it can be noted that the three world regions with the highest current risks of conflict—sub-Saharan Africa, Asia and the Middle East and North Africa (MENA) region—can expect relatively rapid declines in the demographic risk factors after 2010. The most rapid decline will, according to the model, take place in sub-Saharan Africa where the risk level can be reduced by 40 per cent, considering the United Nations projection medium. The model also predicts a dramatic reduction in the MENA region, where risk levels could become almost as low as in Europe.

D. CONCLUSION

Recent empirical studies suggest that youth bulges are associated with an increased risk of political violence. However, governments are to some extent able to reduce this risk through the provision of better opportunities for young people, primarily by providing education. The level of secondary education appears to have a clearly pacifying effect on large youth bulges in low and middle income countries, although the effect appears to be contingent on structural economic factors.

Furthermore, the importance of youth bulges in causing political violence is expected to fade in most parts of the world over the next decades because of declining fertility. The general relationship between age structure and conflict is weakened as countries experience declining fertility rates and become positioned to take advantage of their young age structures and ensuing demographic dividends. Many countries are currently moving in this direction. However, for countries that will continue to experience high fertility levels and large youth shares for years to come, especially countries in the Middle East, Africa and parts of Asia, the potential for conflict will continue to be a cause of concern.

In order to avoid instability and violence in particular, the focus should be on improving economic opportunities for young people, particularly by providing employment or educational opportunities for youth in periods of economic decline. While expanding opportunities for education generally pacify youth cohorts, some evidence suggest that as opportunities for higher education are expanded, the lack of corresponding employment opportunities for highly educated youth may contribute to future instability.

Emigration may work as an escape valve in countries with large youth cohorts. In one survey, almost half of all Arab youth expressed a desire to emigrate because of concerns over

job opportunities and education (UNDP, 2003). If migration opportunities are increasingly restricted without domestic initiatives in place to provide opportunities for youth, developing countries that previously relied on exporting surplus youth may experience increased pressures from youth bulges accompanied by a higher risk of political violence.

Some topics stand out as particularly relevant for further study of youth bulges and political violence. More disaggregated, sub-national studies can provide better tests of some of the relationships concerning youth opportunities and violence. While the results for the city-level analysis reported here do not generally find support for a relationship between young urban age structures and violence, the lack of good city-level indicators of economic and social exclusion hinders a thorough assessment of possible contextual factors. Disaggregated studies could also address the claim that differential age structures between identity groups contribute to explain interethnic conflict dynamics. However, structural models are limited in the sense that they purportedly explain individual-level behavior while in reality there is very limited micro-level evidence explaining what motivates youth who engage in political violence. Hence, a promising next step in the study of youth and violence would be to undertake surveys of youth in both conflict and non-conflict settings aimed at explaining variations in perceptions and perpetration of violence.

NOTES

ⁱ 'Youth bulges' are measured as the proportion of youth aged 15-24 years of the total adult population (aged 15 years and above).

ⁱⁱ Another project, however, did find statistically significant effects. The State Failure Task Force Group found some effect of youth bulges on ethnic conflict, see Esty and others (1998). Yet another analysis that finds a positive relationship between youth bulges and conflict is Cincotta and others (2003).

ⁱⁱⁱ For conflict data, see the PRIO/Uppsala dataset: Gleditsch and others (2002). Conflicts are defined according to a set of specific criteria, including the occurrence of at least 25 battle deaths per year.

^{iv} The results were corroborated by similar effects of youth bulges on measures of terrorism and riots/demonstrations.

^v The three measures are collected independently, and cover slightly different time periods; however they are not mutually exclusive. The first measure is a dummy-coded measure for armed conflict (at least 25 battle related deaths per year), while the latter two are event count measures. The "Political violence events" dataset captures several different forms of political violence, including events that are covered by the other two measures.

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