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YOUTH UNEMPLOYMENT AND POLITICAL INSTABILITY IN SELECTED DEVELOPING COUNTRIES

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YOUTH UNEMPLOYMENT AND POLITICAL INSTABILITY IN SELECTED DEVELOPING COUNTRIES

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Abstract

It has been suggested that large rate of youth unemployment makes countries more unstable in general, and thus more prone to armed conflict. The goal of this paper is to empirically determine the effects of youth unemployment on political instability. Using fixed-effects regression with instrumental variables on a sample covering 24 developing countries over the period 1980-2010, we find that youth unemployment is significantly associated with an increase of the risk of political instability. We suggest that exceptionally large youth unemployment rate, associated with socioeconomic inequalities and corruption, make countries more susceptible to political instability and national insecurity.

JEL Codes: E24, F52, J64, O11, O43

Keywords: Unemployment; Political Instability; Internal Conflict, Youth; Violence.

List of Abbreviations and Acronyms

ACD	:	Armed Conflict Dataset
ADI	:	Africa Database Indicators
AfDB	:	African Development Bank
COW	:	Correlates of War
CPA	:	Certified Public Accountant
CPIA	:	Country Policy and Institutional Assessments
CSP	:	Center for Systemic Peace
DFID	:	Department for International Development
DYMID	:	Dyadic Militarized Interstate Disputes
FDI	:	Foreign Direct Investment
FSF	:	Fragile State Facility
GDP	:	Gross Domestic Product
ICRG	:	International Country Risk Guide
IDA	:	International Development Association
ILO	:	International Labour Organization
IMF	:	International Monetary Fund
IV	:	Instrumental Variables
LAC	:	Latin America and Caribbean
MDG	:	Millennium Development Goal
MENA	:	Middle-East and North Africa
MID	:	Militarized Interstate Disputes
NGO	:	Non-Governmental Organization
ODA	:	Official Development Assistance
PCCF	:	Post-Conflict Countries Facility
PITF	:	Political Instability Task Force
PRIO	:	Peace Research Institute Oslo
PRS	:	Political Risk Service
PRSP	:	Poverty Reduction Strategy Program
SIPRI	:	Stockholm International Peace Research Institute
SSA	:	Sub-Saharan Africa
TRC	:	Truth and Reconciliation Commission
UCDP	:	Uppsala Conflict Data Program
UN	:	United Nations
UNPF	:	United Nations Population Fund
WDI	:	World Development Indicators
WDR	:	World Development Report

I. Introduction

Across the globe, the recent financial and economic crisis has led to soaring youth unemployment. However, before the crisis, the job situation, including youth unemployment, was already a major concern in most of the countries. In Africa for instance, youth unemployment is exacerbated by the additional challenges of a youth population which is considerably higher than other regions, weak national labour markets and persistently high levels of poverty. 70 percent of the region's population is under the age of 30, and slightly more than 20 percent are young people between the ages of 15 to 24.[2] More recently, the North Africa region, which has the world's highest youth unemployment rates and where one in four young people is reported as jobless, experienced violent social uprisings in which young people played a critical role.

Numerous studies argue that youth unemployment and underemployment are threat to the social, economic and political stability of nations (Urdal, 2006, 2012). This statement follows the increasing body of literature on the causes of political instability and conflicts, such as Collier and Hoeffler (2002) or Miguel et al (2004) to name a few[3]. Cross country evidences suggest two main lines of theorizing. One set of theories stresses the role that political repression plays in driving conflict. In this view, ethnic groups that experience discrimination should be the most likely to organize armed insurrections against the state, and conflicts should be most likely to erupt in undemocratic states and those with pronounced social divisions (Miguel, 2007: 51). This is also likely to happen in less divided society, but where people feel marginalized because of lack of job or extreme poverty. A second set of theories focuses on economic conditions as paramount, rather than political factors. In other words, in this view, poverty and falling income are the key to sparking civil conflicts. This may either be because poverty breeds armed violence aimed at looting assets and natural resources or because poor states simply have limited institutional capacity to repress armed uprisings (Miguel, 2007: 51).

This paper takes advantage of this literature and investigates the effect of youth unemployment on the political instability in selected developing countries. Our main hypothesis is that in a given context, an exceptionally high youth unemployment rate makes countries more prone to political instability. The study is interesting for several reasons. First, most of the papers which address the socioeconomic causes of political instability focus mainly on poverty and income shocks as predictors. This paper

[2] ILO (2012) 'Africa: No real growth without jobs', World Economic Forum on Africa, Addis Ababa, Ethiopia. Available at: http://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_180516/lang--en/index.htm (Accessed 11 February 2012)
[3] See Miguel and Satyanath (2011) 'Reexamining Economic Shocks and Civil Conflict'. *American Economic Journal: Applied Economics*, 3(4): 228-232 for a more recent review.

complements these studies while putting an emphasis on youth unemployment. Second, using instrumental variable approach we were able to address the issue of reverse causality in a proper manner. In fact, the key methodological concern with this analysis is the possibility of reverse causation. For instance, political instability could lead to higher unemployment rate, rather than vice versa[4]. In fact, political instability originates in high uncertainty which may decrease labor demand and therefore increase unemployment (Colino, 2012). Or similarly, the same institutional factors that lead to political instability and violence can also be responsible for higher unemployment rate.

Empirical investigations are carried out using a sample of 24 developing countries for which it is possible to mobilize both political instability and unemployment data. The period covered goes from 1980 to 2010 with gaps. The identification strategy resorts mainly on IV/GMM estimator. Specifically, we make use of the two-step efficient generalized method of moments (GMM) estimator. The efficiency gains of this estimator relative to the traditional IV/2SLS estimator derive from the use of the optimal weighting matrix, the overidentifying restrictions of the model, and the relaxation of the i.i.d. assumption. Then two main instruments are used: the lagged unemployment variable and the first difference of unemployment variable. Nevertheless, we show that our results are robust to the use of alternative instruments, alternative sample and alternative specification.

The rest of the paper is organized as follows: section II reviews the theoretical framework and previous literature on the causes of political instability**,** section III describes the dataset and presents the empirical methodology, section IV discusses the empirical results, and section V concludes the paper.

II. Literature Review

One of the most discussed research question concerning political instability is the nature of its relationship with economic performance in a country (Aisen and Veiga, 2011: 3). All these studies suggest that political instability is deleterious to economic performance in both developed and developing economies (Alesina et al., 1996; Fosu, 1992, 2001, 2003; Aisen and Veiga, 2006).

The study of the causes of political instability has not been as popular in social science papers as its effects on economies. Urdal (2006) conducted a study on youth bulges and political violence. He found that the presence of youth bulges increases the risk of conflict outbreak significantly. 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 technical specifications. For each

[4] There are numerous papers on the consequences of political instability on economic outcomes such as GDP growth (Fosu, 2001; Aisen and Veiga, 2011) or inflation (Aisen and Veiga, 2006)

percentage point increase of youth share of adult population, the risk of conflict increases by more than four percent. When youth represents more than 35% of the adult population, which they do in many developing countries, the risk of armed conflict is 150% higher than in countries with an age structure similar to most developed countries. In 2000, 15–24 year-olds were representing 17% or less of the total adult population in almost all developed countries, the median being 15%. The same year, 44 developing countries experienced youth bulges of 35% or above.[5]

Thus, Urdal (2006) shows that large youth populations− youth bulge−are sometimes linked to outbreaks of violence.[6] According to him, demographic trends and pressures are creating tensions that lead to the outbreak of low-intensity conflict such as protests or riots, or more organized political upheaval and internal armed conflict. This means that the demographic transition is a big challenge for developing countries with large youth populations.

In a similar way, Collier (2000) has suggested that large youth cohorts may be a factor that reduces recruitment costs through the abundant supply of rebel labor with low opportunity cost and so increases the risk of armed conflict (Collier, 2000: 94). 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 (Urdal, 2012: 2). According to this point of view, rebellion is feasible only when the potential gain from joining is so high and the expected costs so low that rebel recruits will favor joining over alternative income-earning opportunities.

The role of the labor market in the explanation of civil violence outbreak has also been emphasized in the literature (Cincotta et al., 2003; Winckler, 2002; Lia, 2005; Colino, 2012). If the labor market cannot absorb a sudden surplus of young job-seekers, a large pool of unemployed youths will generate strong frustration. The socioeconomic problems associated with youth bulges may provide fertile ground for recruitment to terrorist organizations (Lia, 2005: 141).

Other authors emphasize on the role of the expansion of higher education as a strategy to reduce the risk of political violence. Higher levels of education among men may act to reduce the risk of political

[5] Reported in Urdal (2012: 7-8).

[6] The youth bulge is a common phenomenon in many developing countries, and in particular, in the least developed countries. It is often due to a stage of development where a country achieves success in reducing infant mortality but mothers still have a high fertility rate. The result is that a large share of the population is comprised of children and young adults, and today's children are tomorrow's young adults (Yifu Lin, 2012).

violence.[7] 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). Brett and Specht (2004) made a study based on interviews with young soldiers where they found that poverty, lack of schooling and low alternative income opportunities are important reasons for joining a rebel group.

This point of view is universally admitted by researchers. In 1974, Choucri argued that high unemployment among educated youth is one of the most destabilizing and potentially violent socio-political phenomena in any regime (Choucri, 1974: 73). In a similar way, a rapid increase in the number of educated youths has preceded historical episodes of political upheaval (Goldstone, 2001: 95). It has been argued that the expansion of higher education in many countries in the Middle East, producing large classes of educated youth that the labor market cannot absorb, has had a radicalizing effect and provided new recruits to militant organizations in the area (Lia, 2005: 145-146).

Obviously, the existence of serious grievances−either economic, demographic or social− is not sufficient for collective violent action to erupt. The likelihood that motives are redressed through political violence increases when opportunity arises from availability of financial means, low costs or a weak state[8]. In addition, 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: 224).

III. Data, measurement and model

Annual data on economic, political and institutional variables, from 1960 to 2010 were initially expected for 60 developing countries, but data on unemployment are only available from 1980 for most of our countries. Consequently, the time-period had to be reduced to 1980-2010. In addition, missing values for several variables−in particular data on unemployment− reduce the number of countries in the estimations to 24. The countries are distributed unevenly among four regions: Africa, Latin America, the Middle East and Southeast Asia. See Appendix A for a full list of countries.

A. Data on youth unemployment

Although it may appear obvious, it is important to begin by discussing briefly what we mean by youth and unemployment. According to the standard UN definition, youth comprises the age-group between

[7] Generally, it has been observed that young males are the main protagonists of criminal as well as political violence (Urdal, 2012: 1). In 1994, Kaplan argues that anarchy and the crumbling of nation states will be attributed to demographic and environmental factors in the future (Kaplan, 1994: 46).
[8] Kahl (1998) reported in Urdal (2012: 2).

fifteen and twenty-four inclusive.[9] Concerning the definition of unemployment, we use the ILO definition[10], which is now the most widely used definition. According to that definition, the unemployment rate is defined as the proportion of the labor force that has not worked more than one hour during the short reference period and is actively looking for and is available for work[11]. Thus, youths unemployed are those people aged between 15 and 24 who have not worked but who are available and actively seeking work. Youth unemployment is an important policy issue for many countries, regardless of the stage of development.

Data related to youth unemployment are drawn from the 7th edition of the Key Indicators of the Labor Market (KILM)[12]. This database has been computed by the Department of Statistics, International Labor Office, Geneva (Switzerland). It combines data from various sources including household survey and labor force survey. However, in developing countries, especially in low income countries household surveys or labor force surveys are very scarce. Consequently, there is a limited number of observations per country.

B. Data on political instability

As for the measurement of political instability, we have many methods used in the literature. Changes in government have been used in several studies. For instance, Alesina et al (1996) assigned a numerical value for each country by averaging the probabilities of a change in government for that country over several years. They concluded that in countries and time periods with a high propensity of government change, growth is significantly lower than otherwise. In a similar way, De Haan et al (1996) used a dummy variable that takes the value 0 if the number of government transfers exceeds seven and 1 otherwise.

Aisen and Veiga (2011) evaluated political instability as *Cabinet Changes*, that is, the number of times in a year in which a new prime minister is appointed and/or 50 percent or more of the cabinet posts are occupied by new ministers. In another way, Zureiqat (2005) measured political instability by a country's Polity2 democratization score.

[9] Within the category of youth, Zuehlke (2009) recommends to make a distinction between teenagers and young adults, since the problems faced by these two groups are quite distinct. But for the purpose of this paper, we will not consider this recommendation.
[10] See ILO (2008) **Global Employment Trends for Youth 2008.** Geneva: International Labour Office.
[11] The main limitation of this definition is that it does not account for the quality of job and for the level of informal labor force. In fact, in countries where the informal sector is widespread, the unemployment rate seems to be very low as regard with the standards in developed countries. However, this definition makes easy the comparison between countries.
[12] Downloadable at: http://kilm.ilo.org/2011/Installation/Application/kilm7install.htm

Successful coups, that are involuntary changes in government, are also usually used as a measure of political instability (Alesina et al., 1996; Ghura and Mercereau, 2004). According to Fosu (2001), other potential forms of political instability−such as abortive coups and officially reported coup plots−may also exert destabilizing influences on the economy.

Another group of authors prefers the construction of their own measures for political instability. They consider that the use a binary variable to measure variations in political instability within a large panel of countries is insufficient. Campos and Nugent (2000) constructed two indices to measure political instability, one for mild and another for severe instability. Goldsmith (1987) used a similar methodology but also incorporated *changes* in stability between two time periods. He classified his sample into four groups of countries: *Consistently Stable* (countries that were stable in both time periods), *Chronically Unstable* (countries that were unstable in both time periods), *Stabilizing* (countries that became more stable in the later time period, compared to the earlier one), and *Destabilizing* (countries that became less stable in the later time period, compared to the earlier one). In 2002, Fosu used a composite index to capture political instability, including the frequencies of *successful coups*, which result in involuntary executive transfers of power, *abortive coups*, which are represented by potential changes in government, and *officially reported coup plots*.

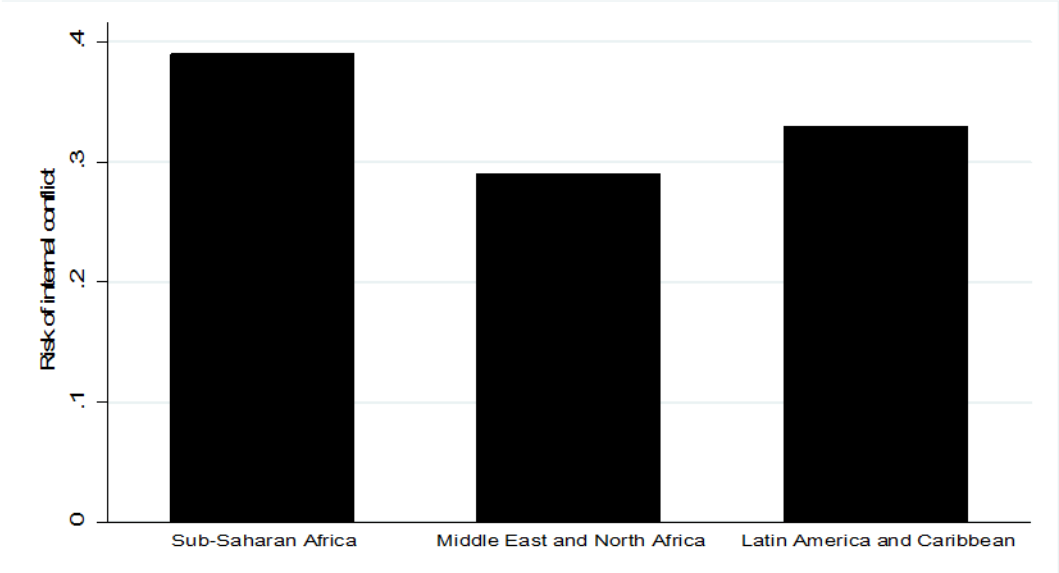
In our opinion, political instability is a multidimensional concept and thus should be measured with variables that capture its different forms. These include, as mentioned by Zureiqat (2005): executive changes (such as changes in government, changes in policies, coups…) and military instabilities (such as armed conflicts, civilian deaths from conflicts…). So in this paper, we use the Risk of *Internal Conflict* as a measure of political instability.[13]

One of the main limitations of ICRG database is that it does not record the latest uprising observed in North Africa and Middle East. Then, to some extent, it could be an underestimation of the global level of political instability across developing countries. However, this is a kind of out of sample bias because within the sample it is less likely to occur. Moreover, while not taking into account these

[13] The existing literature on political instability has built on different sources of database. Without being exhaustive, one may quote the correlates of war (COW) database, the armed conflict (referred as PRIO/Uppsala) database and the international country risk guide (ICRG) database on political and economic risk. The COW database suffers for a lack of transparency and inconsistencies (Sambanis, 2002). Furthermore, the arbitrary 1,000-death threshold the COW database (and virtually every other database) uses to identify a civil war has the danger of excluding conflicts that may be major for smaller countries, including many African countries (Miguel et al, 2004). For these reasons, the armed conflict database developed by the International Peace Research of the University of Oslo and the University of Uppsala has been used since. However, this database is not suitable for the purpose of this study. In fact, as far as youth unemployed is concerned, we focus mainly on political risks such as risk of internal conflict, political violence or civil disorder. In this vein, the most appropriate database is that of the international country risk guide.

recent uprisings, one can be sure that the observed effect of unemployment is not driven by this particular and may be less predictable event. Figure 1 depicts the distribution of the risk of internal conflict across developing regions. According to this figure, sub-Saharan Africa records the lowest rating of internal conflict risk. In other words, the risk of political instability is much higher in sub-Saharan African countries. In the opposite way, Middle East and North Africa exhibit the highest rating of internal conflict risk and therefore a lower risk of political instability.

Figure 1: Distribution of the risk of internal conflict across developing regions



C. Empirical model and source of data

Our study is inspired by the papers of Miguel et al (2004) and Colino (2012). We examine the relationship between youth unemployment and political instability with the following estimating equation:

$$polstab_{it} = c + \alpha_1 yur_{it} + X'_{it}\beta + u_i + e_{it} \qquad (1)$$

Where $polstab_{it}$ is the measure of political instability for country i at time t, yur_{it} is the youth unemployment rate for country i at time t, X is the vector of control variable including economic risk index, a measure of the involvement of military in politics, corruption, democracy accountability, ethnic tensions and religious tensions[14], share of urban population on the total population database (World Bank, 2011), inequality captured by the Gini index (Milanovic, 2005). Descriptive statistics are

[14] All these variables are from the ICRG database. The lowest rating is given to a country with low risk or high performance. These variables are described in section III.

presented in table 1. We have to mention that in order to obtain the variables used in the specification; we reverse all the original indicators using the following formula:

$$icrg_i = \frac{icrg_i - \min(-icrg_i)}{\max(-icrg_i) - \min(-icrg_i)} \quad (2)$$

Where $\min(-icrg_i)$ and $\max(-icrg_i)$ are respectively the minimum and maximum of each indicator. This transformation ensures that each ICRG variable will range between 0 and 1. This standardization makes the variables easily comparable. On this basis, $icrg_i$ increases with the risk rating associated with each variable. For instance a value 0 represents a low risk while the value 1 represents a higher risk[15].

Table 1: Descriptive statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Internal conflict	85	0.2588235	0.1620254	0	0.75
Youth unemployment rate	85	18.06588	9.174156	4	44.2
Economic risk index	85	0.2921969	0.0709089	0.1360544	0.4693878
Inequality, Gini index	85	49.28588	6.980895	29.9	61.8
Military in politics	85	0.377451	0.246272	0	0.9166667
Democracy accountability	85	0.3029412	0.1940483	0	1
Ethnic tensions	85	0.2133987	0.1910711	0	0.7222221
Corruption	85	0.1509804	0.1807054	0	0.8333333
Religious tensions	85	0.5902941	0.1472513	0.25	0.85
Urban population in % of total	85	62.74376	17.14758	16.26	91.6

As a linear model, the equation (1) can be estimated using ordinary least square (OLS).The main drawback behind OLS is that OLS results are biased if youth unemployment is correlated with the unobserved component of political instability. For instance, political instability could lead to higher unemployment rate, rather than vice versa. In fact, political instability originates in high uncertainty which may decrease labor demand and therefore increase unemployment (Colino, 2012). In this case the effect of youth unemployment could be misleading. OLS results could be therefore biased toward zero and they can underestimate the 'true' impact. To deal with the endogeneity bias, we resort to an IV/GMM estimator. Specifically, we make use of the two-step efficient generalized method of moments (GMM) estimator. The efficiency gains of this estimator relative to the traditional IV/2SLS estimator derive from the use of the optimal weighting matrix, the overidentifying restrictions of the

[15] For more details, see PRS Group (2012) *International Country Risk Guide Annual*. Available at: http://www.prsgroup.com/ICRG_Methodology.aspx

model, and the relaxation of the i.i.d. assumption. The coefficient that will draw our attention is α_1 which should be significantly positive.

The variables to be used in the paper are listed below.

Internal conflict

As noticed above, we use internal conflict as indicator of political instability. The ICRG *Internal Conflict* measure is an assessment of political violence in the country and its actual or potential impact on governance. The highest rating is given to those countries where there is no armed or civil opposition to the government and the government does not indulge in arbitrary violence, direct or indirect, against its own people. The lowest rating is given to a country embroiled in an on-going civil war. The risk rating assigned is the sum of three subcomponents (civil war/coup threat, civil disorder, terrorist/political violence), each with a maximum score of four points and a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk. These data cover the period 1984-2009. Source: International Country Risk Guide Annual.[16]

Youth unemployment

As noted in the previous section, we compute data on youth unemployment from the 7th edition of the Key Indicators of the Labor Market (KILM)[17].

Economic Risk Index

The overall aim of the Economic Risk Rating is to provide a means of assessing a country's current economic strengths and weaknesses. In general terms where its strengths outweigh its weaknesses it will present a low economic risk and where its weaknesses outweigh its strengths it will present a high economic risk. These strengths and weaknesses are assessed by assigning risk points to a pre-set group of factors, termed economic risk components. In every case the lower the risk point total, the higher the risk, and the higher the risk point total the lower the risk.[18] The economic risk components are: GDP per Head, Real GDP Growth, Annual Inflation Rate, Budget Balance as a Percentage of GDP, and

[16] See the full methodology in PRS Group (2012) *International Country Risk Guide Annual*. Available at: http://www.prsgroup.com/ICRG_Methodology.aspx

[17] Downloadable at: http://kilm.ilo.org/2011/Installation/Application/kilm7install.htm

[18] Overall, an economic risk rating of 0.0% to 24.5% indicates a Very High Risk; 25.0% to 29.9% High Risk; 30.0% to 34.9% Moderate Risk; 35.0% to 39.9% Low Risk; and 40.0% or more Very Low Risk. Once again, however, a poor economic risk rating can be compensated for by a better political and/or financial risk rating.

Current Account as a Percentage of GDP. One expects that a high economic risk may be associated with a high political instability. This is in line with the findings of Miguel et al (2005). Source: International Country Risk Guide Annual.

Military in Politics

The military involvement in politics, even at a peripheral level, is a diminution of democratic accountability. A military takeover or threat of a takeover may also represent a high risk if it is an indication that the government is unable to function effectively and that the country therefore has an uneasy environment for foreign businesses. A full-scale military regime poses the greatest risk, even if in the short term a military regime may provide a new stability and thus reduce business risks. In some cases, military participation in government may be a symptom rather than a cause of underlying difficulties. Overall, lower risk ratings indicate a greater degree of military participation in politics and a higher level of political risk. Source: International Country Risk Guide Annual.

Religious Tensions

Religious tensions may stem from the domination of society and/or governance by a single religious group that seeks to replace civil law by religious law and to exclude other religions from the political and/or social process; the desire of a single religious group to dominate governance; the suppression of religious freedom; the desire of a religious group to express its own identity, separate from the country as a whole. The risk involved in these situations range from inexperienced people imposing inappropriate policies through civil dissent to civil war. Source: International Country Risk Guide Annual.

Ethnic Tensions

This component is an assessment of the degree of tension within a country attributable to racial, nationality, or language divisions. Lower ratings are given to countries where racial and nationality tensions are high because opposing groups are intolerant and unwilling to compromise. Higher ratings are given to countries where tensions are minimal, even though such differences may still exist. Source: International Country Risk Guide Annual.

Democratic Accountability

This is a measure of how responsive government is to its people, on the basis that the less responsive it is, the more likely it is that the government will fall, peacefully in a democratic society, but possibly violently in a non-democratic one. The points in this component are awarded on the basis of the type of governance enjoyed by the country in question. In general, the highest number of risk points (lowest risk) is assigned to Alternating Democracies, while the lowest number of risk points (highest risk) is assigned to autarchies. Source: International Country Risk Guide Annual.

Corruption

This is an assessment of corruption within the political system. Such corruption is a threat to foreign investment for several reasons: it distorts the economic and financial environment; it reduces the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability; and, last but not least, introduces an inherent instability into the political process. Source: International Country Risk Guide Annual.

Inequalities

We use the data of the Gini coefficient on household income's distribution which can also be a measure of inequality of well-being in a country. Source: Milanovic (2005).

Urban population

We use the share of urban population on the total population database from the World Development Indicator (World Bank 2011).

IV. Empirical results

A. Graphical evidences

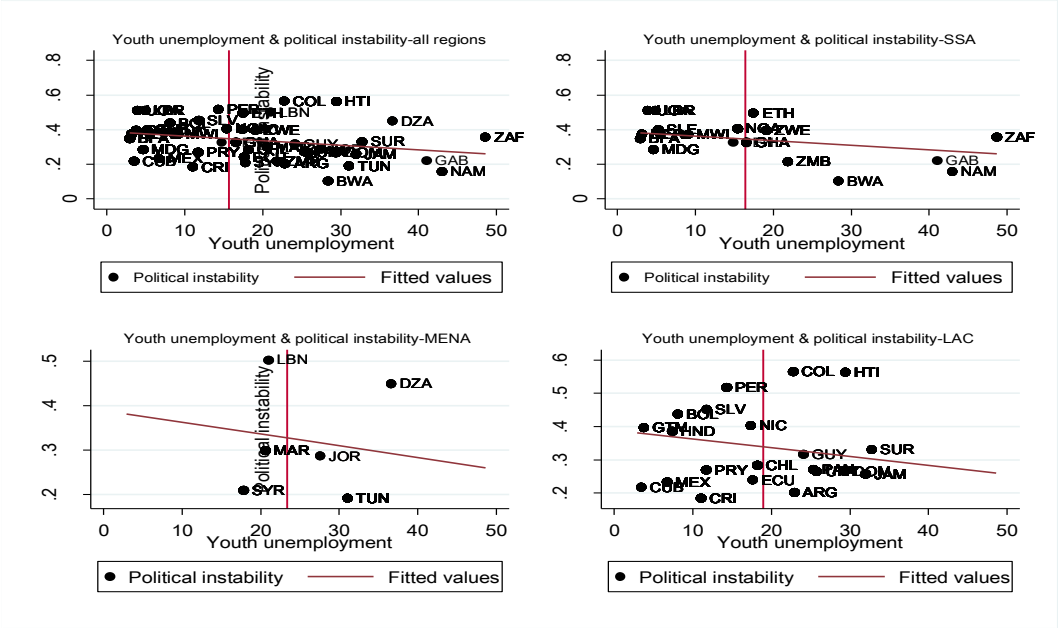
We start the analysis by showing visible graphical evidence of the relationship between youth unemployment and political instability as measured in terms of the risk of internal conflict. Figure 2 is a combined graph that provides an evidence of the heterogeneity of the relationship between youth unemployment and political instability across countries and regions in the developing world. The first part of the figure depicts this relationship on the whole sample of developing countries over the period 1984-2010.

It appears that the association between youth unemployment and political instability is very heterogeneous. But, one may notice that countries which exhibit a high rate of youth unemployment (above the average rate of 15.67% of the labor force) and a high risk of political instability are mainly those of Africa and Latin America and Caribbean. This is the case for South Africa, Algeria, Colombia and Haiti. In order to go deeper into the analysis, we plot the same relationship in different panels. The first one is made up of sub-Saharan African countries (right hand side). Looking at this graph, one notices that most of countries record a youth unemployment rate that is below the average (16.43%) and also a high risk of political instability. At the same time, only South Africa exhibits both high risk of political instability and high level of youth unemployment. Besides, there are some countries such as Botswana, Namibia and Gabon which record a high level of unemployment rate and a low risk of political instability. This could find an explanation on the nature of institutions that are expected to nurture democracy and instill a sense of stability. However, the issue is more complex and may owe to interplay of internal and external factors such as geopolitical and economic interests.

When we consider Middle East and North Africa, countries such as Jordan and Tunisia exhibit a low risk of political instability while they face a high level of youth unemployment[19]. In the same vein, Algeria appears as the unique country with high unemployment and high risk of political instability. Finally, looking at the sample of Latin America and Caribbean, one observes that at the sole exception of Haiti and Colombia, most of countries exhibit a level of youth unemployment which is below the average and face different situations as regard to political instability. Another striking fact depicted by the above graphs is the apparent negative correlation between political instability and youth unemployment. This is mainly explained by the reverse causality going from political instability to unemployment. In fact one plausible explanation is that countries who exhibit high risk of political instability also exhibit a higher unemployment rate. This is corroborated by the simple OLS fixed effect regression.

[19] We have to mention that data on political instability cover the period 1980-2010. Then the 2011 Arab spring is not taken into account.

Figure 2: Youth unemployment rate and Political instability in developing countries, 1984-2010



B. Regression based results

Equation (1) is firstly estimated using a simple OLS fixed effect estimator. The results are presented in Table 2 and suggest no significant effect of youth unemployment on political instability. Notwithstanding, one may observe that whatever the specification, the effect of youth unemployment is negative. This fact confirms the results suggested by the graphical evidence. In fact, it could happen that country with a high level of political instability also experiences a high level of unemployment. In this vein, OLS estimates are biased since unemployment rate may be correlated with some unobservable. In order to deal with the endogenous bias, we resort to instrumental variable approach. Specifically, we make use of the two-step efficient generalized method of moments (GMM) estimator. The efficiency gains of this estimator relative to the traditional IV/2SLS estimator derive from the use of the optimal weighting matrix, the overidentifying restrictions of the model, and the relaxation of the i.i.d (identically and independently distributed). assumption. Then two main instruments are used: the lagged unemployment variable and the first difference of unemployment variable. The main justification for this choice is based on the idea of hysteresis in unemployment (Blanchard and Summers, 1986). This concept embodies the idea that the equilibrium unemployment rate depends on the history of the actual unemployment rate. In other words the unemployment rate at the period t may be highly dependent on the unemployment rate at t-1. One of the main explanations is the destruction of human capital which in some cases is associated with the discouragement of job seekers. We check whether the instruments chosen are weak or not. Indeed, if the instruments are weak, the coefficient of

youth unemployment will be weakly identified and the estimates biased (Staiger and Stock, 1997; Doko and Dufour, 2008). We first run the simple Fisher test on the excluded instruments in the first stage regression (see Table 4). Here we have two exclusion restrictions, namely the lagged unemployment variable and the first difference of unemployment. The results presented in Table 3 show a F-statistic ranging between 76.3 and 92.6. According to the rule of thumb suggested by Staiger and Stock (1997), these values are sufficiently high at the level of 1% so that we cannot reject the alternative hypothesis that the instruments are not weak. Moreover, we run the weak instrument test proposed by Stock and Yogo (2005). This test also confirms the no rejection of the alternative hypothesis as far as the Cragg-Donald Wald test F statistic is always above the critical values (see Table 5 in appendix).

Table 2: Youth unemployment and political instability, OLS Fixed Effects

Dependent Variable: Internal conflict	(1)	(2)	(3)
Youth unemployment rate	**-0.000656**	**-0.00171**	**-0.000884**
	(0.00194)	**(0.00186)**	**(0.00207)**
Economic risk index	0.202	0.223	0.211
	(0.193)	(0.161)	(0.177)
Inequality, Gini index	0.0131***	0.0124***	0.0133***
	(0.00395)	(0.00301)	(0.00352)
Military in politics	0.288**	0.236**	0.253**
	(0.119)	(0.111)	(0.120)
Democracy accountability	0.226***	0.219***	0.230***
	(0.0806)	(0.0736)	(0.0817)
Ethnic tensions		0.173***	0.195***
		(0.0566)	(0.0561)
Corruption		0.235	
		(0.176)	
Religious tensions	0.146		0.118
	(0.111)		(0.118)
Urban population in % of total	0.00342	0.00206	0.00397
	(0.00503)	(0.00519)	(0.00533)
Constant	-0.832*	-0.834*	-0.902*
	(0.450)	(0.447)	(0.463)
Observations	130	130	130
R-squared	0.298	0.340	0.322
Number of countries	33	33	33

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Youth unemployment and political instability, IV Fixed Effects

Dependent Variable: Internal conflict	(1)	(2)	(3)
Youth unemployment rate	0.0141***	0.0106**	0.0124***
	(0.00427)	(0.00421)	(0.00363)
Economic risk index	-0.300	-0.120	-0.248
	(0.221)	(0.236)	(0.197)
Inequality, Gini index	0.00630	0.0115***	0.00841*
	(0.00455)	(0.00393)	(0.00461)
Military in politics	0.293**	0.304**	0.253*
	(0.112)	(0.129)	(0.126)
Democracy accountability	0.0355	0.0600	0.0953
	(0.128)	(0.168)	(0.162)
Ethnic tensions		0.293*	0.201
		(0.143)	(0.188)
Corruption		-0.129	
		(0.149)	
Religious tensions	0.448***		0.411***
	(0.119)		(0.138)
Urban population in % of total	-0.00846	-0.000125	-0.00592
	(0.00714)	(0.00898)	(0.00867)
Observations	80	80	80
R-squared	0.262	0.291	0.304
F-Test of excluded instruments	80.9	92.6	76.13
Hansen OID test	0.11	0.15	0.12
Number of countries	19	19	19

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3 shows the results of the instrumental variable estimates of the effect of youth unemployment rate on political instability. The results suggest that youth unemployment rate is positively and significantly associated with the measure of political instability. Specifically, doubling the unemployment rate induces an increase of the risk of political instability with a magnitude ranging between 1.06% and 1.4% according to the specification.[20]

To sum up the estimations suggest that a high rate of unemployment could be a good predictor of political instability in developing countries.

[20] Let recall that the higher is the value, the highest is the risk of political instability.

V. Robustness checks

We check the robustness of our results with the use of several alternative measures methods and indicators. First, we examine test for other instruments. Second, we change the original structure of our sample. Finally, we consider other indicators of political instability.

A. Alternative instruments

The instrumental variable approach confers the researcher a certain degree of freedom in choosing an instrument providing that the orthogonality condition is met. We test the robustness of the results using alternative instruments. Specifically, we use the two years and three years lagged youth unemployment as instruments. Table 6 shows that the estimated effect of youth unemployment is robust to using an alternative lag structure. The Fisher test for excluded instruments and the Hansen's test for over identifying restrictions pass in all the specifications.

Table 6: Robustness check: using lag 2 and 3 of unemployment as alternative instruments

Dependent Variable: Internal conflict	(1)	(2)	(3)
Youth unemployment rate	0.0200*	0.0171*	0.0179*
	(0.00965)	(0.00852)	(0.00885)
Economic risk index	-0.627	-0.516	-0.565
	(0.486)	(0.378)	(0.408)
Inequality, Gini index	0.00835	0.0107**	0.0102*
	(0.00575)	(0.00416)	(0.00566)
Military in politics	0.406**	0.387***	0.348**
	(0.150)	(0.127)	(0.134)
Democracy accountability	0.0283	0.00104	0.0474
	(0.178)	(0.159)	(0.174)
Ethnic tensions		0.216	0.229
		(0.137)	(0.161)
Corruption		0.0692	
		(0.243)	
Religious tensions	0.343*		0.352*
	(0.178)		(0.196)
Urban population in % of total	-0.00963	-0.00721	-0.00816
	(0.00949)	(0.00825)	(0.00948)
Observations	71	71	71
R-squared	0.002	0.100	0.091
F-Test of excluded instruments	21.36	22.61	22.27
Hansen OID test	0.46	0.41	0.3792
Number of countries	18	18	18

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B. Dynamic specification on an alternative sample

The analysis presented above omits years for which the measure of political instability is not reported. We treat these non-reports as zeros and we use a dynamic specification. Table 7 shows that the effect of youth unemployment remains similar to what obtained on the original sample.

Table 7: Robustness check using two step GMM on an expanded sample

Dependent Variable: Internal conflict	(1)	(2)	(3)
Internal conflict, t-1	0.753***	0.735**	0.763**
	(0.266)	(0.288)	(0.303)
Youth unemployment rate	0.0281**	0.0169*	0.0186*
	(0.0133)	(0.00955)	(0.00967)
Economic risk index	0.0305	0.443	0.357
	(0.770)	(0.429)	(0.445)
Inequality, Gini index	-7.83e-05	9.57e-05	5.75e-05
	(0.00106)	(0.000854)	(0.00106)
Military in politics	0.254	0.101	0.160
	(0.230)	(0.137)	(0.127)
Democracy accountability	-0.198	-0.102	-0.185
	(0.151)	(0.180)	(0.202)
Ethnic tensions		-0.105	-0.0490
		(0.151)	(0.192)
Corruption		0.0449	
		(0.300)	
Religious tensions	-0.253		-0.154
	(0.282)		(0.253)
Urban population in % of total	-0.00693*	-0.00402	-0.00488
	(0.00395)	(0.00261)	(0.00347)
Constant	0.00724	-0.122	-0.0250
	(0.330)	(0.311)	(0.218)
Arellano-Bond test for AR(1) in first differences:	0.71	0.62	0.66
Arellano-Bond test for AR(2) in first differences	0.51	0.53	0.64
Hansen OID test	0.29	0.23	0.27
Observations	143	143	143
Number of id	34	34	34

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

C. Alternative measure of political instability

As an alternative measure of political instability, we use the Political Stability and Absence of Violence from the World Governance Indicators (World Bank, 2011). This variable measures perceptions of the

likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism[21]. As this variable measures political stability, we do expect a negative and significant coefficient of the variable of youth unemployment. Table 8 shows that the evidence provided with internal conflict as a measure of political instability still holds.

Table 8: Robustness check using an alternative measure of political stability

Dependent variable: Political stability-WGI	(1)	(2)	(3)
Political Stability, t-1	0.965**	0.998***	1.009***
	(0.426)	(0.323)	(0.374)
Youth unemployment rate	-0.0530***	-0.0442***	-0.0485***
	(0.0188)	(0.0126)	(0.0143)
Economic risk index	2.720*	2.788***	2.763**
	(1.451)	(1.028)	(1.329)
Inequality, Gini index	0.00261	0.00108	0.00180
	(0.00334)	(0.00362)	(0.00287)
Military in politics	-0.935	-0.799*	-0.902**
	(0.575)	(0.471)	(0.454)
Democracy accountability	0.253	0.0836	0.226
	(0.365)	(0.491)	(0.331)
Ethnic tensions		0.385	0.522
		(0.356)	(0.429)
Corruption		0.630	
		(0.721)	
Religious tensions	0.416		0.320
	(0.791)		(0.616)
Urban population in % of total	0.0166***	0.0155***	0.0178***
	(0.00371)	(0.00392)	(0.00432)
Constant	-0.702	-1.166**	-0.965**
	(0.563)	(0.453)	(0.478)
Arellano-Bond test for AR(1) in first differences:	0.16	0.14	0.13
Arellano-Bond test for AR(2) in first differences	0.73	0.45	0.52
Hansen OID test	0.80	0.77	0.82
Observations	143	143	143
Number of id	34	34	34

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

[21] It's worth mentioning that this variable has not been used as the main measure of political instability because it does not provide enough observations so that we can run a regression. Indeed the observations are available only from 1996 and could not match with unemployment data.

VI. Conclusion

Using data from 1980 to 2010 from 24 developing countries in five different regions, this paper analyzes the effects of youth unemployment on political instability. The potential endogeneity of the unemployment is addressed using an instrumental variable approach. We provide significant evidence supporting the hypothesis that youth employment causes political instability. This paper also examined how other social and economic factors can impact on political instability.

Our results suggest that political instability occurs particularly in countries where youth unemployment, as well as social inequalities and corruption are high. Our results are conclusive and add to the literature that asserts that economic conditions are the most critical determinants triggering political instability in developing countries.

This paper has a clear policy implication. In order to avoid instability and violence, focus should be on monitoring economic opportunities for young people, and particularly on providing employment or educational opportunities for youth in periods of economic decline. Creating viable jobs for young people is a precondition for sustainable development and peace in all countries; and particularly in countries which have already experienced violent conflict. However, we do recognize that political instability is a more complex phenomenon which may owe also to geo-political factors which have not been taken into account in this paper. Then future research should address the interpenetration of economic and geopolitical interests in explaining political instability in developing countries.

Appendix

Appendix A: List of Countries in the Sample

Country	Observations
Argentina	4
Bolivia	1
Chile	6
Colombia	6
Costa Rica	9
Dominican Republic	2
Ecuador	3
El Salvador	2
Honduras	2
Indonesia	2
Jamaica	5
Mexico	8
Morocco	1
Pakistan	1
Panama	7
Paraguay	3
Peru	5
Philippines	6
South Africa	1
Sri Lanka	1
Thailand	3
Uruguay	2
Bolivarian Republic of	2
Vietnam	3

Appendix B: Tables

Table 4: First step equation

Dependent Variable: Youth Unemployment rate	(1)	(2)	(3)
Lagged unemployment	**0.905*** **	**0.814*** **	**0.919*** **
	(0.0928)	**(0.0759)**	**(0.0948)**
First difference unemployment	**0.287** **	**0.200***	**0.298** **
	(0.113)	**(0.110)**	**(0.113)**
Economic risk index	16.55**	15.52**	16.96**
	(6.882)	(5.825)	(6.667)
Inequality, Gini index	0.189**	0.128	0.173*
	(0.0876)	(0.0958)	(0.0880)
Military in politics	0.806	0.776	1.389
	(1.915)	(1.335)	(1.760)
Democracy accountability	3.265	2.613	2.654
	(2.970)	(2.647)	(3.047)
Ethnic tensions		-2.976	-1.778
		(4.007)	(4.260)
Corruption		8.188***	
		(2.726)	
Religious tensions	-0.0337	-0.109	-0.0523
	(0.183)	(0.162)	(0.191)
Urban population in % of total	4.865*		5.182**
	(2.417)		(2.428)
Constant	-11.85	-5.429	-9.963
	(10.66)	(9.382)	(11.61)
Observations	85	85	85
R-squared	0.685	0.717	0.686
Number of countries	24	24	24

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Stock and Yogo test of weak instruments

Instruments: **lagged unemployment first difference of unemployment**	**Cragg-Donald F statistic**	**IV size**	**Stock-Yogo weak ID test critical values**
First specification (column2)	80.92	10%	19.93
Second specification (column 3)	92.65	15%	11.59
Third specification (column 4)	76.13	20%	8.75
		25%	7.25

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