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Youth Unemployment, Education and Political Instability: Evidence from Selected Developing Countries 1991-2009[1]

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HiCN Working Paper 200

October 2015

Abstract: This paper investigates the effects of youth unemployment on political instability in developing countries through three hypotheses. Firstly, youth unemployment has significant effects on risk of political instability. Secondly, we consider that the relationship between unemployment rate and political instability is conditional upon education levels. Finally, we examine whether youth unemployment can lead to anti-government demonstrations rather than global instability. Using a sample covering 40 developing countries over the period 1991-2009, we confirm the positive effect of youth unemployment on political violence. However the level of education lowers the magnitude of the effect. The effect of youth unemployment on coups d'état is significant but not robust. Finally, the results suggest that the relationship between youth unemployment and political instability is not robust. A possible explanation is that the main predictors of political instability are also determinants of unemployment. Therefore, youth unemployment can be a symptom rather than the illness and cannot alone explain political instability.

Keywords: Unemploymen, Political Instability, Coup d'état, Youth.

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

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[1] This is an updated version of our previous paper entitled: "Youth Unemployment and Political Instability in Selected Developing Countries" in 2013. The authors would like to thank all contributors for their useful comments and suggestions on the manuscript.

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I. Introduction

The job situation, including youth unemployment, is a major concern in most of developed and developing 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 labor markets and persistently high levels of poverty. 70% of the region's population is under the age of 30, and slightly more than 20% are young people between the ages of 15 to 24.[1] Research suggests that increasing youth unemployment and underemployment are threats to the social, economic and political stability of nations as they lead to frustration among young people (Urdal, 2006, 2012), especially among university graduates (Collier, 2000). The issue of youth unemployment in North Africa and in the Middle East was considered as a major catalyst behind the popular uprisings at the beginning of 2011.[2] 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 might 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 examines three hypotheses concerning youth unemployment and political stability in developing countries. Firstly, youth unemployment has significant effects on increased risk

[1] 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)

[2] Young people played a critical role during the 2011 *Arab Springs*. The North African region has the world's highest youth unemployment rates: one out of four young people is reported jobless.

[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.

of political instability. Most of the papers addressing the socioeconomic causes of political instability emphases mainly on poverty and income shocks as predictors. This paper takes advantage of the existing literature as it focuses on youth unemployment which is itself an income shock. We extend past studies by considering the effects of other variables, such as poverty levels, social inequalities and democratic governance, on political instability. It attempts to demonstrate that unemployment alone cannot explain political instability in a country.

Secondly, we consider the hypothesis that the relationship between unemployment rate and political instability is conditional upon the education levels of the youth. The lack of good jobs has the potential to be a source of further social disruption and conflict, particularly as the number of educated job seekers is to massively increase. Finally, since it can be admitted that youth unemployment per se would not lead to political instability on a large scale, we examine whether youth unemployment can lead to series of anti-government demonstrations rather than global instability.

Empirical investigations are carried out using a sample of 40 developing countries for which it is possible to mobilize both political instability and unemployment data. The period covered goes from 1991 to 2009. The identification approach resorts mainly on maximum likelihood method. Data are principally drawn from the seventh edition of the Key Indicators of the Labor Market (KILM) and the Center for Systemic Peace (CSP) databases.

The paper is structured as follows: section II reviews the theoretical framework and previous literature on the causes of political instability**,** section III describes dataset and measurements, section IV presents the empirical methodology and 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 countries (Aisen and Veiga, 2011: 3). All these studies suggest that political instability is deleterious to economic performance[4] in both developed and developing economies (Alesina et al., 1996; Fosu, 1992, 2001, 2003; Aisen and Veiga, 2006).

[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).

The study of the causes of political instability has not been as popular in social science papers as its consequences. 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 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 to 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 increase of young job-seekers, a large pool of unemployed youths will generate strong frustration. The socioeconomic problems associated

[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).

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 violence.[7] Since educated men have better income-earning opportunities than the uneducated, they would have more to lose and hence be less tempted 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 training 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 and measurement

This study uses a sample of 40 developing countries over the period 1991-2009 in order to assess the effect of youth unemployment on political instability. The choice of the period is mainly due to data availability, especially the lack of time series data on unemployment. The

[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).

countries are distributed unevenly among four regions: Africa, Latin America, the Middle East and Asia. See Appendix 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 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 seventh 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 are limited numbers of observations per country. Although the eighth edition of KILM is available, the previous edition contains more data reported by the national institutes at the country level. This set of data may be subject of less measurement bias compared to the ones that are estimated from household survey.

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)

[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

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.

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 frequency 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*.

Following the aforementioned literature, we use two main measures of political instability in this paper. The first one is the total summed magnitude of all societal major episodes of political violence. This variable is a combination of civil violence, civil warfare, ethnic violence and ethnic warfare. The magnitude scores for multiple episodes of violence go from 1 (lowest) to 10 (highest), the value zero denoting no episode. Our second measure of political instability is the number of coup d'état events that occurred in the year of the record. A coup

d'état is defined as a forceful seizure of executive authority and office by a dissident/opposition faction within the country's ruling or political elites that results in a substantial change in the executive leadership and the policies of the prior regime (although not necessarily in the nature of regime authority or mode of governance). We use two types of coups events: successful coups and attempted (failed coups). The two other types of coups events (coup plots and alleged coup plots) are more likely to be subject of measurement error. In fact, these are mostly reported by government authorities. The data used come from the Major Episodes of Political Violence (MEPV) and Conflict Regions 1946-2012 database[13] and the Coup d'état Events 1946-2013 database[14]. Both databases are computed by the Center for Systemic Peace.

Table 2 in appendix presents the descriptive statistics.

IV. Empirical Model and Results

A. Graphical evidences

We begin the analysis by showing visible graphical evidence of the relationship between youth unemployment and political instability. Figure 1 portrays the distribution of political instability variables across developing regions over the period under study. The first chart displays the magnitude of episodes of political violence. It suggests that political violence is more prevalent in South and Central Asia (SCA) followed by the Middle East and North Africa. The region which seems to be less affected by the political violence is Latin America and Caribbean. The right panel of figure 1 reports the average number of successful coup d'état across selected developing regions.[15] The data shows that on average, the highest number of successful coups d'état is observed in the South and Central Asia, followed by the Sub-Saharan Africa region. Finally, the third chart presents the distribution of the average number of attempted coups d'état across regions. According to this chart, the Middle East and North Africa region witnessed the highest number of attempted (failed) coups followed by Sub-Saharan Africa.

[Insert Figure 1 here]

[13] Marshall M.G. (2013) *Major Episodes of Political Violence (MEPV) and Conflict Regions, 1946-2012*. Center for Systemic Peace. <www.systemicpeace.org>

[14] Marshall M.G. and Marshall D.R. (2014) *Coup d'Etat Events, 1946-2013*. Center for Systemic Peace. <www.systemicpeace.org>

[15] MENA is excluded due to the lack of data

Figure 2 shows the average number of youth unemployed in percentage of the total unemployed across selected developing regions. The figure suggests that youth unemployment is much higher in Asia and in Latin America and Caribbean, compared to the other remaining regions. One possible explanation is the high level of poverty and the widespread of informality. In this context, people cannot afford to remain jobless.

[Insert Figure 2 here]

B. Regression based empirical analysis

This section builds on the papers of Miguel et al (2004) and Colino (2012). Based on these studies, we examine the relationship between youth unemployment and political instability with the following estimating equation:

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

Where $polstab_{it}$ is the measure of political instability for country i at time t, yur_{it} is the share of youth unemployed in percentage of total unemployed for country i at time t, X is the vector of control variable including the GDP per capita (World Bank, 2012), inequality as measured by the GINI index (World Income inequality database, 2008; Milanovic, 2005).

[Insert Table 2 here]

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 estimator. Specifically, we resort to the recursive model where the relationship between youth unemployment and political stability is modeled as a system of equations. This choice stems from the fact that some of the key determinants of political instability are also determinants of unemployment. Then it is obvious that including such controls alongside with unemployment

in a single equation will totally remove the potential explanatory power of unemployment. The relation between the two variables and the observable counterparts is such that:

$$y_{1i}^{*} = X_{1i}\beta_1 + \mu_{1i} \quad (2)$$

$$Y_{2i}^{*} = X_{2i}\beta_2 + \mu_{2i} \quad (3)$$

X is the set of control variables presented in equation (1). We use the population largest cities as exclusion restriction. If the two outcomes are partially correlated, the models' errors are correlated such that $\text{cov}(\mu_{1i}, \mu_{2i}) \neq 0$.

With the CMP Stata command the model can be estimated by maximum likelihood method.

C. Empirical results and discussions

Results from the baseline specification

Table 3 reports the results of the maximum likelihood estimate of the effect of youth unemployment on political violence, using data covering the period from 1991 to 2009 for 40 developing countries. According to this table, the effect of youth unemployment is positive and statistically significant. However, the magnitude of the effect is too small. Looking at the first step equation, the exclusion restriction is significant. Moreover, the correlation of the errors terms is significant, suggesting that the issue of endogeneity has been properly taken into account.

The control variables suggest that the GDP per capita has a negative and weakly significant effect upon the level of political instability in developing countries. Countries with higher economic growth experience higher degree of political stability or less internal armed conflict. However, inflation has a highly statistically significant positive effect on instability. In addition, the amount of urban population affects the country's level of political instability, but with a lower degree. Finally, the years of schooling are statistically insignificant, when considered in the regression as control variable; as well as when we combine them to the youth unemployment rate. Thus, in these models, education is generally unimportant as an explanatory variable of political instability.

Table 3 confirms that the vast majority of our variables have a statistically effect in our instability model with the expected signs. This indicates that socio-economic conditions have an effect upon political instability in developing countries.

[Insert Table 3 here]

Results from alternative specifications

Table 4 presents the estimates of the effect of youth unemployment, using alternative specifications. Three variables are added to the baseline specification: a measure of inequality, democracy and an interaction term between unemployment and education. The results confirm a positive effect of youth unemployment on political violence while this effect is lower for countries with high educated people. This is a confirmation of the assumption that countries with high educated people are less prone to political violence. The opportunity cost for an unemployed young person with higher levels of education to be involved in a rebellion or a riot is too high; while this opportunity cost would be lower if the person is unemployed with low levels of education skills.

Besides, the effects of the control variables also vary across the models but are in general in line with the theoretical expectation. The results presented in Table 4 show that GDP per capita has a more clear effect upon the level of political instability in specification (1) and (2). It is insignificant in (3) and (4); and a lower effect in (5) and (6). This suggests that in general, countries with good economic outcomes have a lower risk of armed conflict outbreak. Furthermore, there is a positive effect of inequality on political violence. Thus, inequalities, by creating tensions amount the youth, can lead to the outbreak of conflict. However, this effect is negative as regard with democracy, indicating that democracy does not imply necessary stability in a country.

[Insert Table 4 here]

The role of youth unemployment on coup d'état

The estimates of the impact of youth unemployment on the number of attempted (failed) coups d'état are presented in Table 5[16]. According to this table, the effect of youth unemployment on coups d'état is significant but not robust across specifications.

[16] It is worth mentioning that we also run regressions using as dependent variable the number of successful coups. However none of them provided significant results. Results are available upon request.

Interestingly, our main interaction term of youth employment and the level of studies has no effect in the coup d'état. This may be due to the fact that if high rates of youth unemployment can make countries unstable, this instability does not aim to change the political regime by a coup d'état. Youth unemployment can lead to series of anti-government demonstrations but not to a national form of instability.

Considering the control variables in the different specification gives interesting outcomes. The impact of national income on coup d'état is negative and significant. A prosperous country lowers the risks on political destabilisation. Besides, higher inflation rate destabilizes the political system. Education shows a statistically significant stabilising effect within the different specifications. Another important control variable is the Gini index, measuring socioeconomic inequalities. Our results suggest that increasing inequalities increases risks of coup d'état in developing countries, as the Gini index has a negative and statistically significant effect in all the specifications.

[Insert Table 5 here]

Results from the kernel-weighted polynomial regression

In order to visualize the relationship between youth unemployment and political instability, we have performed a kernel-weighted polynomial regression. This is a non-parametric technique that allows remaining agnostic about the functional form of the relationship between the variables. The results are presented in Figure 3. The left panel of Figure 3 presents the effect of youth unemployment on the episodes of political violence. On this panel, we observe that the relationship between the two variables is not stable and the adjustment quality is to some extend poor. However, the relationship seems to be positive at some part of the unemployment distribution. The right panel displays the relationship between youth unemployment and the number of successful coup d'état. It shows that the latter is not affected by the former. The same result is observed as regard with the number of unsuccessful coups.

[Insert Figure 3 here]

Finally, the results suggest that the relationship between youth unemployment and political instability is not robust. A possible explanation of this finding is that the main predictors of political instability (GDP growth, inequality and inflation) are also determinants of

unemployment. Unemployment alone cannot explain the occurrence of violence and conflict in a country.

V. Conclusions and recommendations

Using data from 1990 to 2009 from 40 developing countries in different continents, this paper analyzes the effects of youth unemployment on political instability. We assess the role of youth unemployment *per se*, the possible role of youth education level and we consider various forms of political instability.

Our theoretical prediction is supported by the data. In particular, youth unemployment is associated with political violence and armed conflict in developing countries. However the level of education lowers the magnitude of the effect. The role of education as explanatory variable of political instability is mitigated. The results confirm a positive effect of youth unemployment on political violence while this effect is lower for countries with high educated people. This is a confirmation of the assumption that countries with high educated people are less prone to political violence. The opportunity cost for an unemployed young person with higher levels of education to be involved in a rebellion or a riot is too high; while this opportunity cost would be lower if the person is unemployed with low levels of education skills.

Our main results hold when we control for the effects of economic growth, inflation, education, population and quality of democratic institutions. Furthermore, there is a positive effect of inequality on political violence. Thus, inequalities, by creating tensions amount the youth, can lead to the outbreak of conflict. This suggests that in general, countries with good economic outcomes have a lower risk of armed conflict outbreak. The effect of democratic institutions is weak, indicating that democracy does not imply necessary stability in a country.

The role of youth unemployment on the occurrence of coups d'état is clear but weak. In addition, our interaction term of youth employment and the level of studies has no effect in the coup d'état. This may be due to the fact that if high rates of youth unemployment can make countries unstable, this instability does not aim to change the political regime by a coup d'état. Youth unemployment can lead to series of anti-government demonstrations but not to a national form of instability.

Finally, the results suggest that the relationship between youth unemployment and political instability is not robust. A possible explanation of this finding is that the main predictors of

political instability (GDP growth, inequality and inflation) are also determinants of unemployment. Unemployment alone cannot explain the occurrence of political violence and armed conflicts in a country. Therefore youth unemployment seems to be the symptom rather than the illness.

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.

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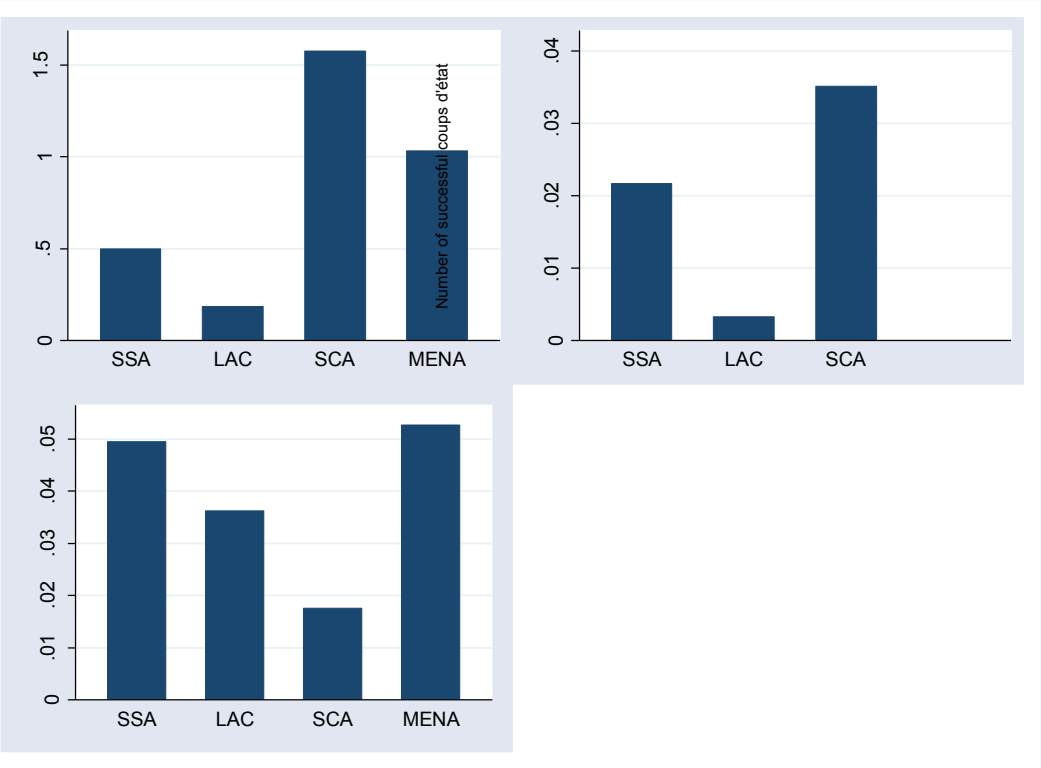
Appendix

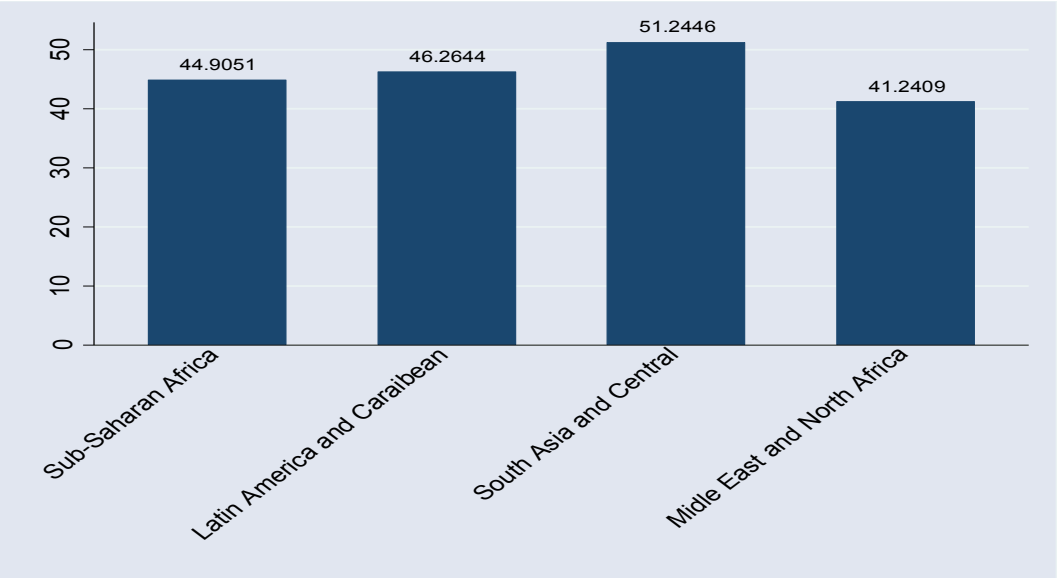
Appendix A: Figures

Figure 1: Political instability in developing countries, 1990-2009



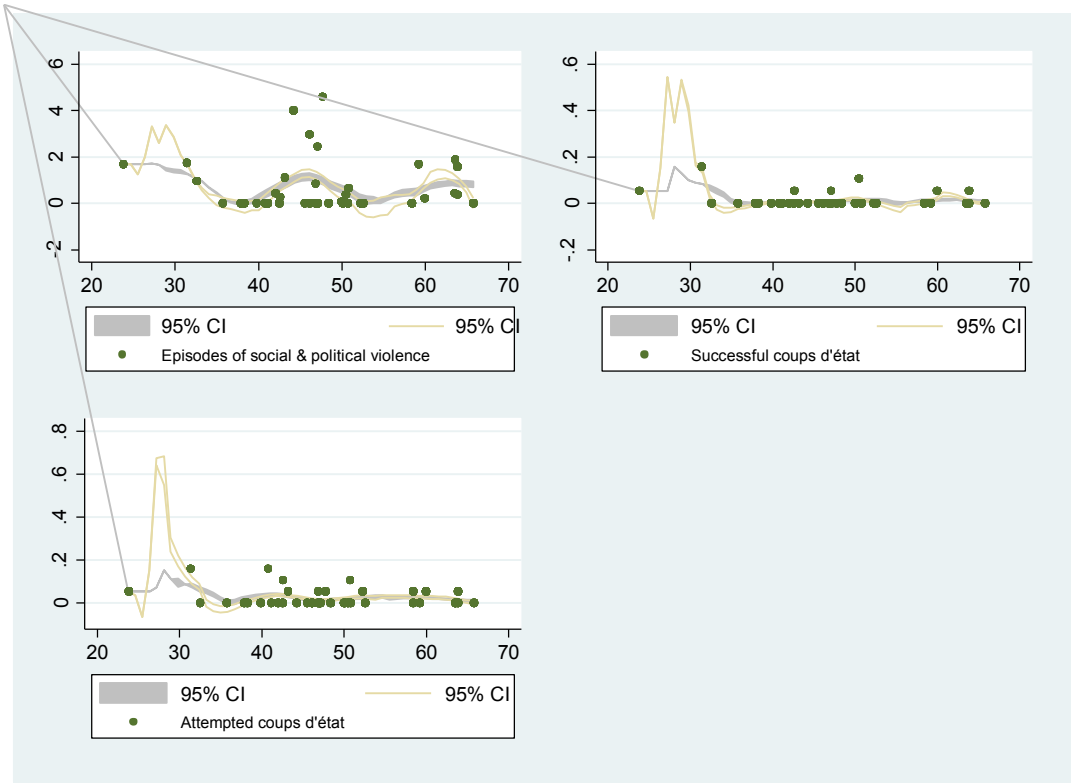
Source : Authors' calculation

Figure 2: Youth unemployment in developing countries, 1990-2009



Source: Authors' calculation

Figure 3: Impact of youth unemployment on political instability, non-parametric estimates



Source: Authors' calculations

Appendix B: Tables

Table 1 : List of countries in the sample

	Country	Observations
1.	Algeria	5
2.	Argentina	18
3.	Bangladesh	4
4.	Bolivia	8
5.	Botswana	6
6.	Chile	19
7.	Colombia	17
8.	Costa Rica	18
9.	Cuba	14
10.	Dominican Republic	15
11.	Ecuador	17
12.	Egypt	11
13.	Gabon	1
14.	Ghana	3
15.	Guatemala	2
16.	Haiti	1
17.	Honduras	14
18.	Indonesia	14
19.	Iran. Islamic Rep.	6
20.	Jamaica	19
21.	Liberia	1
22.	Mexico	19
23.	Morocco	17
24.	Niger	1
25.	Pakistan	18
26.	Panama	18
27.	Paraguay	14
28.	Peru	18
29.	Philippines	19
30.	Senegal	1
31.	Sierra Leone	1
32.	South Africa	12
33.	Tanzania	3
34.	Thailand	19
35.	Uganda	4
36.	Uruguay	15
37.	Venezuela	13
38.	Vietnam	9
39.	Zambia	2
40.	Zimbabwe	5

Table 2 : Descriptive statistics

Variables	Obs	Mean Std.	Dev.	Min	Max
Political violence	421	.7125891	1.594801	0	9
Successful coups	421	.0071259	.0842138	0	1
Attempted coups	421	.0166271	.1280217	0	1
Youth unemployment as share of total	421	47.35083	9.30894	17.9	82.8
GDP per capita	400	3022.332	2044.756	195.4262	8382.314
Inflation	356	14.07834	29.72966	-1.710337	409.5302
Years of schooling	421	6.885368	1.725048	1.38	9.67
Gini index	143	45.45409	3.796019	34.7035	64.2473

Table 3: Effect of youth unemployment on political violence, baseline specification

	(1)	(2)
First step equation		
Dependent variable: youth unemployment		
Log(GDP per capita)	-3.364***	-3.369***
	(0.677)	(0.688)
Inflation	0.0278*	0.0286*
	(0.0146)	(0.0148)
Year of schooling	-0.00700	0.0665
	(0.361)	(0.376)
Population in the largest cities	1.670***	1.547***
	(0.498)	(0.526)
Trend	-0.399***	-0.396***
	(0.0912)	(0.0929)
Intercept	52.93***	54.27***
	(8.739)	(9.087)
Main equation		
Dependent variable: political violence		
Youth unemployment as share of total	**0.0608*** **	**0.0601*** **
	(0.0138)	**(0.0138)**
Youth unemployment*year of schooling		**-0.00147**
		(0.00112)
Intercept	-2.165***	-1.663**
	(0.658)	(0.757)
Arthro	-0.375***	-0.329***
	(0.0867)	(0.0947)
Observations	421	421
Log Likelihood	-1980	-1979

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

Table 4: Youth unemployment and political violence, alternative specifications

	(1)	(2)	(3)	(4)	(5)	(6)
First step equation						
Dependent variable: youth unemployment						
Log(GDP per capita)	-9.517**	-9.069**	-5.557	-3.436	-15.32***	-12.99***
	(3.937)	(4.014)	(8.422)	(8.609)	(5.617)	(4.774)
Inflation	0.00793	0.00697	0.0179	0.0195*	0.00333	0.00523
	(0.0107)	(0.0109)	(0.0112)	(0.0113)	(0.00826)	(0.00699)
Year of schooling	-1.507*	-1.544*	-4.624***	-4.641***	-2.226*	-2.764***
	(0.848)	(0.866)	(1.523)	(1.544)	(1.155)	(0.963)
Gini index			-0.280*	-0.292*	-0.402**	-0.415**
			(0.165)	(0.167)	(0.186)	(0.179)
Country dummy	Yes	Yes	No	No	No	No
Intercept	134.3***	-0.604	-0.472	129.5**	184.5***	170.6***
	(21.41)	(0.748)	(0.464)	(50.80)	(34.45)	(29.81)
Main equation						
Dependent variable: political violence						
Youth unemployment as share of total	**0.0438*** **	**0.0424*** **	**0.0250*** **	**0.0306*** **	**0.170*** **	**0.150*** **
	(0.0135)	**(0.0135)**	**(0.00966)**	**(0.00993)**	**(0.0290)**	**(0.0296)**
Youth unemployment*year of schooling		**-0.00216***		**-0.00255** **		**0.0116*** **
		(0.00111)		**(0.00106)**		**(0.00386)**
Gini index					0.102**	0.124**
					(0.0506)	(0.0570)
Democracy-polity4					-0.0147	-0.0817**
					(0.0297)	(0.0356)
Intercept	-1.359**	132.5***	142.0***	0.0839	-11.77***	-15.07***
	(0.644)	(21.77)	(49.71)	(0.518)	(2.922)	(3.422)
Arthro	-0.378***	-0.265*	-0.483**	-0.328	-1.659***	-1.855***
	(0.135)	(0.152)	(0.230)	(0.255)	(0.179)	(0.157)
Observations	421	421	421	421	143	143
Log Likelihood	-1817	-1815	-1121	-1118	-603.0	-597.7

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

Table 5: Effect of youth unemployment on attempted coups d'état

	(1)	(2)	(3)	(4)	(5)	(6)
First step equation						
Dependent variable: youth unemployment						
Log(GDP per capita)	-2.832***	-2.813***	-3.617***	-3.414***	-3.597***	-3.601***
	(0.735)	(0.737)	(1.278)	(1.272)	(1.273)	(1.276)
Inflation	0.0418***	0.0413***	0.0322*	0.0330*	0.0320*	0.0319*
	(0.0155)	(0.0155)	(0.0193)	(0.0190)	(0.0192)	(0.0192)
Year of schooling	-0.679*	-0.683*	-1.503**	-1.499**	-1.566***	-1.547**
	(0.369)	(0.371)	(0.606)	(0.604)	(0.604)	(0.610)
Gini index			-0.460**	-0.450**	-0.452**	-0.454**
			(0.197)	(0.195)	(0.196)	(0.197)
Country dummy	Yes	Yes	No	No	No	No
Intercept	74.00***	73.89***	107.4***	105.3***	107.2***	107.3***
	(4.492)	(4.497)	(14.11)	(14.08)	(14.04)	(14.08)
Main equation						
Dependent variable: Attempted coups						
Youth unemployment as share of total	0.00111	0.00107	0.00240***	0.00610**	0.00258***	0.00265***
	(0.00111)	(0.00111)	(0.000864)	(0.00247)	(0.000875)	(0.000910)
Youth unemployment*year of schooling		-5.55e-05		-0.000544		-2.43e-05
		(9.01e-05)		(0.000355)		(9.06e-05)
Year of schooling				0.0264		
				(0.0166)		
Gini index						
Democracy-polity4					0.00103	0.00113
					(0.00111)	(0.00118)
Intercept	-0.0361	-0.0164	-0.0970**	-0.280**	-0.111**	-0.106**
	(0.0528)	(0.0617)	(0.0414)	(0.122)	(0.0434)	(0.0462)
Arthro	-0.0371	-0.0140	-0.459***	-0.503***	-0.469***	-0.459***
	(0.0876)	(0.0953)	(0.151)	(0.150)	(0.146)	(0.151)
Observations	421	421	421	421	421	421
Log Likelihood	-933.3	-933.3	-157.3	-156.0	-156.8	-156.8

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