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### Long Live Democracy: The Determinants of Political Instability in Latin America

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# Long Live Democracy: The Determinants of Political Instability in Latin America

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**ABSTRACT** *We investigate the underlying causes of political instability in a panel of 18 Latin American countries from 1971–2000. We test whether regime type, regime durability, factionalism, income inequality, ethnic diversity, ethnic discrimination, regional spillover effects, urban growth and macroeconomic variables matter for instability. We find several important results: (1) democracy has a significant negative effect on instability that is robust to several alternative specifications; (2) factionalised political systems experience higher instability; (3) income inequality, ethnic fractionalisation, and urban growth have important nonlinear effects on instability; and (4) of the macroeconomic variables we study, only openness to trade has a significant negative effect on instability.*

## I. Introduction

The link between political instability and economic development is well established. For example, the theoretical literature has long argued that instability reduces the incentive to accumulate physical capital. Investments in physical capital are often difficult to reverse, which means that investors will postpone new capital projects and wait until the policy environment clarifies, resort to purely speculative activities, or move their money abroad.<sup>1</sup> Subsequent empirical tests of this link have provided support for the hypothesis.

However, much less work has been done on determining the underlying causes of political instability. In this paper, we do exactly this in a panel of 18 Latin American countries from 1971–2000. We choose to focus on Latin America because the problem of instability seems especially relevant there.<sup>2</sup> For instance, during our sample, there were more than 450 political assassinations, 20 coups, more than 140 guerrilla wars and revolutions, and 113 crises that threatened to bring down sitting governments. The most politically unstable country of the group, Argentina, managed to rack up 45 assassinations, three revolutions, and 15 riots in a four year

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period (from 1973–1976). Focusing on Latin America will allow us to choose region specific determinants of instability and also to say something important about the ways in which policymakers could reduce instability in the future.<sup>3</sup>

To investigate the reasons behind Latin America's instability, we first construct a composite measure of instability that is the first principal component of nine different variables, including assassinations, coups, government crises, anti-government demonstrations, riots, strikes, purges, guerrilla activity and revolutions. Given the difficulty in representing instability with just one variable, we believe using the first principal component is the best way to find the single most important common element within the nine underlying variables.

We find three important results. First, regime type is a significant determinant of instability. Countries with higher democracy scores have lower average political instability, which indicates that recent moves to increased democracy in the region may bring about less instability in the future. We experiment with alternative measures of democracy and show that this result is robust. In addition, our estimates show that factionalised political parties experience higher average levels of political instability.

Second, we find that income inequality, urban growth, and ethnic fractionalisation all have significant nonlinear effects on instability. Specifically, we show that increases in income inequality raise instability up to a point, after which any further increases lower instability. Ethnic fractionalisation and urban growth have the opposite effect, whereby initial increases in either decreases instability up to a point, after which any further increases produce higher levels of instability. Not only are these results important in themselves but the fact that they have nonlinear relationships with instability may help to explain the lack of agreement in the literature over their role.

Third, most of the macroeconomic variables included in our estimation (including the standard deviation of inflation, investment share, and government budget deficit) are insignificantly related to instability. Only lagged values of trade openness have a significant and negative effect on instability.

Section II discusses why it is difficult to measure political instability and makes the argument that principal component analysis (PCA) is an efficient way to capture its multi-dimensionality. We go on to show that our measure of instability reflects real world instability in Argentina, Mexico, and Costa Rica. Section III investigates the determinants of instability, while section IV discusses the results of our estimation. Section V discusses the results of estimating our model with different measures of democracy, and section VI concludes with a discussion of the policy implications of our findings.

## **II. Measuring Political Instability**

There is little agreement in the empirical literature about how to best measure instability. Some papers narrow the definition of instability to mean simply turnover in the executive branch (or propensity of government change). For instance, Cukierman et al. (1992) estimate a probit model of instability where the dependent variable is the number of government changes (both regular and irregular). They test whether variables such as riots, repressions, executive adjustments, attempts to

change the government, and years from previous government change can help political turnover. Similarly, Alesina et al. (1996) estimate a binary model of government change for a larger sample of countries (113 countries from 1950–1982).<sup>4</sup>

Much other work on instability expands the definition of instability to include phenomena such as civil war, riots, assassinations, coups and anti-government demonstrations, all of which can negatively affect property rights and deter new investment. The problem with broadening the definition of instability is that it becomes difficult (and more subjective) to measure with a single variable.<sup>5</sup>

Hibbs (1973) used PCA decades ago to tackle the multidimensionality of political instability, a practice which was revived by Alesina and Perotti (1996) and Perotti (1996) who use the first principal component of assassinations, deaths, coups and dictatorships to construct an index of political instability. Most of the subsequent empirical literature on instability has followed their lead and utilised PCA (Annett, 2000; Campos and Nugent, 2003; Schatzman, 2005).<sup>6</sup>

Our dependent variable is the first principal component of nine different indicators of instability: assassinations, coups, government crises, anti-government demonstrations, riots, strikes, purges, guerrilla activity and revolutions (data obtained from Banks, 2005).<sup>7</sup> All of these variables are important, but imperfect, manifestations of political instability. That is, there is no one variable that clearly captures all dimensions of instability. For instance, choosing coups as one's measure would mean that Argentina would be considered relatively stable from 1973–1975 because of a lack of coups during this period. In reality (which we discuss in more detail below), those years were some of the most unstable in Argentina's history and included deadly guerrilla wars, revolutions and assassinations.

The first principal component represents the element which explains the largest amount of variance in the data. In our case, the first principal component explains 32 per cent of the variance of instability, which is within the range that Alesina and Perotti (1996) report (between 30 and 40%). For ease of interpretation, we multiply this number by minus 1 so that higher values of the dependent variable indicate higher levels of instability.<sup>8</sup>

Table 1 shows the average values of our index for the individual countries in our sample (Table 2 defines the measures used). Based on our measure, the four most unstable countries are Argentina, Peru, Bolivia and Guatemala, whereas the four most stable are Costa Rica, Paraguay, Dominican Republic and Panama. The unstable group had 706 events of instability during the sample, while the stable group experienced only 182 events of instability. The differential was especially great in the case of assassinations and guerrilla warfare. The unstable group had a total of 183 assassinations during the sample period and 56 instances of guerrilla warfare, while the stable group experienced a sum of 10 assassinations and two instances of guerrilla warfare.

Before continuing to the empirical portion of our paper, we first want to check whether our measure of political instability accurately reflects what actually took place in these countries. Figures 1–3 show the evolution of our instability measure for Costa Rica, Mexico and Argentina. We selected Argentina and Costa Rica because they represent the two extremes of instability. Mexico is included to show an intermediate case, where most of the sample is relatively stable with only a few periods of marked instability.

**Table 1.** Political instability 1971–2000

	Political instability*	Instability ranking	Number of events**	PI events ranking
Argentina	1.232	1	218	1
Peru	0.94	2	157	4
Bolivia	0.763	3	136	7
Guatemala	0.618	4	195	2
Colombia	0.444	5	168	3
Chile	0.18	6	155	5
El Salvador	0.177	7	154	6
Nicaragua	−0.197	8	94	9
Ecuador	−0.215	9	86	10
Mexico	−0.233	10	119	8
Brazil	−0.732	11	81	11
Honduras	−0.764	12	72	13
Venezuela	−0.779	13	65	14
Uruguay	−0.863	14	58	16
Panama	−0.908	15	58	15
Dom. Rep.	−0.913	16	72	12
Paraguay	−1.299	17	36	17
Costa Rica	−1.63	18	16	18

*Notes:* \*Political instability refers to the average from 1971–2000 of the first principal component of assassinations, coups, government crises, anti-government demonstrations, riots, strikes, purges, guerrilla activity, and revolutions. The number is multiplied by minus one to make increases in the variable represent higher instability.

\*\*This is the total number of assassinations, coups, government crises, anti-government demonstrations, riots, strikes, purges, guerrilla activity and revolutions that occurred in each country from 1971–2000.

Figure 1 shows that our measure of political instability is nearly flat in the Costa Rican case. For Costa Rica, our instability measure becomes slightly positive in 1991, when there were a few strikes and demonstrations, but for the rest of the sample it remains negative. This is consistent with what we know of Costa Rica, which has no military (and, thus, no possibility of a military coup) and has long been Latin America's most stable country.

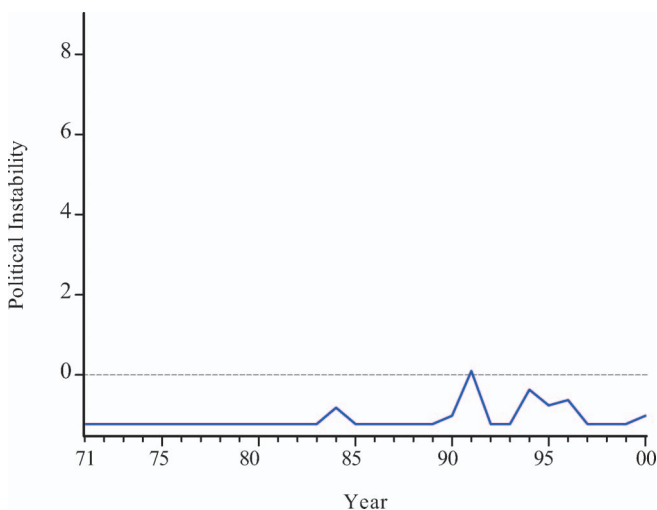
Figure 2 plots the evolution of Mexican instability, indicating that the country was relatively stable up until the 1994–1995 period, after which instability moves around but is consistently above zero. This was a difficult period, both economically and socially, for Mexico. The Zapatistas took centre stage in 1994 by staging an uprising in the southern state of Chiapas and the adoption of the North American Free Trade Agreement (NAFTA) and newly market oriented policies led to mass protests. The Peso crisis also occurred at the end of 1994, causing an economic crisis and subsequent recession. Our measure of instability does a good job of reflecting the increased instability during this period.

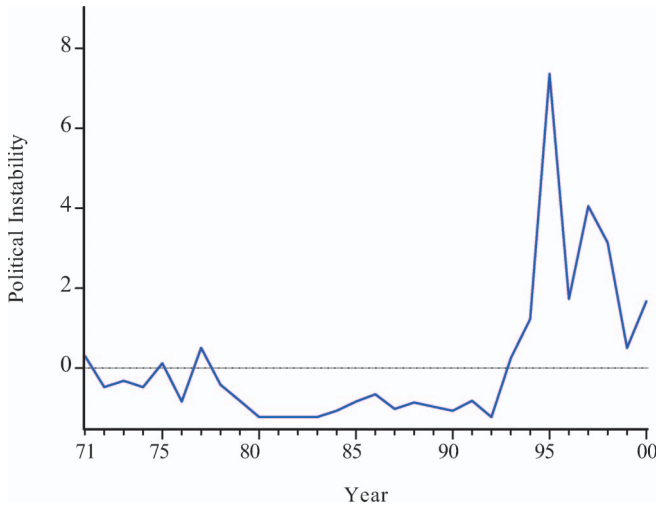
The Argentine case is considerably more volatile. Figure 3 shows five separate periods of high instability in Argentina, with the first two being the most severe. In fact, our instability measure reaches a maximum of 8.51 in 1974, which is also the sample maximum. The return of Juan Perón in 1973 to Argentina after an 18 year

**Table 2.** Description of the components of instability

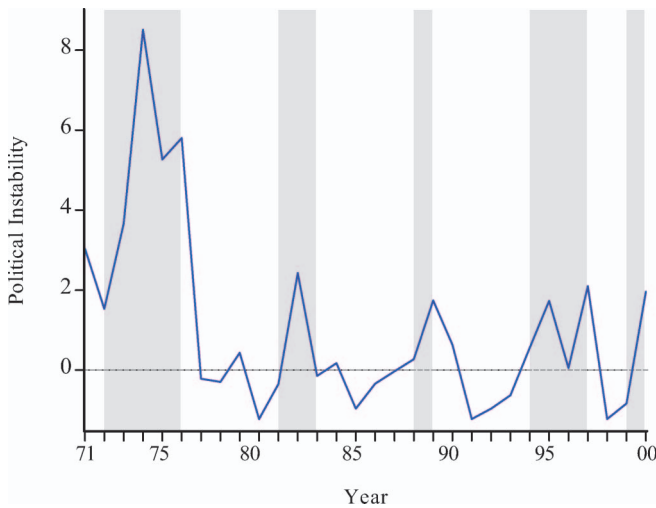
Variable	Defined by the Cross-National Time-Series Data Archive as
Coup d'etat	'The number of extra-constitutional or forced changes in the top government elite and/or its effective control of the nation's power structure in a given year. The term "coup" includes, but is not exhausted by, the term "successful revolution". Unsuccessful coups are not counted.'
Government crisis	'Any rapidly developing situation that threatens to bring the downfall of the present regime – excluding situations of revolt aimed at such overthrow.'
Revolution	'Any illegal or forced change in the top governmental elite, any attempt at such a change, or any successful or unsuccessful armed rebellion whose aim is independence from the central government.'
Anti-government demonstration	'Any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature.'
Riot	'Any violent demonstration or clash of more than 100 citizens involving the use of physical force.'
General strike	'Any strike of 1,000 or more industrial or service workers that involves more than one employer and that is aimed at national government policies or authority.'
Guerrilla warfare	'Any armed activity, sabotage, or bombings carried on by independent bands of citizens or irregular forces and aimed at the overthrow of the present regime.'
Purge	'Any systematic elimination by jailing or execution of political opposition within the ranks of the regime or the opposition.'
Assassination	'Any politically motivated murder or attempted murder of a high government official or politician.'

Source: Cross National Time Series Data (Banks, 2005).

**Figure 1.** The evolution of political instability in Costa Rica



**Figure 2.** The evolution of political instability in Mexico



**Figure 3.** The evolution of political instability in Argentina

exile, exacerbated the divisions in the Peronist Party and sparked a four year period of escalating instability. At his arrival at the international airport in Buenos Aires (Ezeiza), the right-wing group, knowing that most of Peron’s airport supporters were from the leftist side, opened fire on the crowd. The Ezeiza massacre began a period of increasing guerrilla warfare between the two factions and frequent executive turnover (the country had four different presidents in the four year period). This period is represented in Figure 3 by the first shaded area.<sup>9</sup>

Argentina was under military rule from 1976–1983 but, by the time 1981 came around, the generals were rapidly losing support.<sup>10</sup> There were large scale strikes in

1981 and 1982 and three separate crises which threatened to bring down the government. The large losses and embarrassing defeat in the Falkland Islands destroyed any remaining credibility. Our measure of instability seems consistent with this story, showing a large spike of instability around 1982 (the year of the Falkland Island invasion) and a decrease in instability as the transition to civilian rule takes place in 1983.<sup>11</sup>

### III. An Empirical Model of Political Instability

In the paragraphs below, we discuss the independent variables we use to understand instability in the region. Table 3 provides a more detailed description of all the variables used in the estimation and their sources, while Table 4 provides summary statistics. All of the data is averaged into five year periods, allowing us to capture information from both average cross country differences and fluctuations over time.<sup>12</sup>

#### *Democracy, Factionalism, and Regime Duration*

Many studies highlight the importance of regime type to political stability. Ellingsen (2000) and Parsa (2003) argue that democratic regimes tend to experience less political instability than undemocratic regimes because they allow citizens to participate in the political process. By allowing political participation, violence will be less likely to arise in democratic regimes because conflict can be solved through voting and consensus (Rummel, 1995). Auvinen (1997) and Przeworski and Limongi (1997) also point out that democracies divert resources from investment to consumption, which allows democratic regimes to provide more economic and political goods, thus alleviating deprivation and discontent.

Feng (1997), in a sample of 96 countries from 1960–1980, presents evidence of a positive relationship between democracy and stability. Schatzman (2005), on the other hand, finds mixed results in a sample of Latin American countries, depending on the measure of stability. Specifically, she finds that countries with more democratic regimes are less likely to experience collective protests, but more likely to experience rebellions. Goldstone et al. (2004) find that democracy is one of the most important factors behind political stability around the world but, go on to show that weak and factionalised democracies are some of the most unstable regime types.

Factionalism has been associated with higher levels of instability because in a factionalised regime there is conflict inside the political parties.<sup>13</sup> According to Benton (2007: 58), factions inside a political party can be based on ‘personal, cultural, socio-economic, regional, or ideological cleavages.’ In Latin America, factionalised regimes have tended to promote the development of clientelist networks and patronage politics.<sup>14</sup> Benton (2007) argues that political parties in Bolivia, Brazil, Colombia, Ecuador, Peru, Argentina, Costa Rica, Honduras and Venezuela have suffered significant internal divisions that have led to conflict and party dissolution.

To measure democracy, we construct five year averages of democracy with the DEMOC variable from the Polity IV Project (Marshall and Jaggers, 2003).

**Table 3.** Description of the independent variables

Variable	Description
Average Gini coefficient	Average Gini coefficient from 1971–2000 (average constructed with the available observations for each country). Source: University of Texas Inequality Project (Galbraith and Kum, 2004).
Democracy	Combined polity score (DEMOC) computed by subtracting the autocracy score from the democracy score. Source: Polity IV Project (Marshall and Jaggers, 2003).
Economic discrimination	Number of years in the five year period that a country has had state-led economic discrimination against at least one group, measured as a four on the economic discrimination index. Source: Minority at Risk Dataset (Wilkenfeld, 2004).
Ethnic fractionalisation	Ethnic fractionalisation index. Source: Alesina et al. (2003).
Factionalism	Political competition score (POLCOMP) that combines the regulation and competitiveness of participation scores. Source: Polity IV Project (Marshall and Jaggers, 2003).
Government budget deficit as a share of GDP	The percentage of government budget in nominal prices (government expenditure minus government revenue). Source: Oxford Latin American History Database (2005).
Inflation	The level and standard deviation of inflation in the five year period. Inflation calculated using the GDP deflator. Source: World Development Indicators (World Bank, 2005).
Investment share of GDP	The percentage of GDP that comes from investment. Source: Penn World Tables 6.2 (Heston et al., 2002).
Neighbourhood conflict	Number of neighbour countries that experienced either an ethnic conflict or a revolutionary war. Source: Political Instability Task Force Dataset (Goldstone et al., 2005).
Regime durability	Number of years a country has had a particular regime (durable). Source: Polity IV Dataset (Marshall and Jaggers, 2003).
Trade openness	Openness is equal to exports plus imports divided by real GDP (Laspeyres method). Source: Penn World Tables 6.2 (Heston et al., 2002).
Urban population growth	Growth of the percentage of the total population that live in urban areas. Source: Oxford Latin American History Database (2005).
Democracy (alternative measure)	Democracy score (DEMOC2) measures the general openness of political institutions. Source: Polity IV Project (Marshall and Jaggers, 2003).
High democracy dummy	High democracy is equal to 1 if the five year average of DEMOC is greater than 0.

DEMOC is equal to a country’s democracy score less its autocracy score. Since the two component scores range from 0 to 10, DEMOC has a range of –10 and 10, where higher values represent stronger democracy.

Two other regime measures are also included. The first is a dummy variable that accounts for the presence of factionalism, where factionalism is defined by the Polity IV dataset as ‘polities with parochial or ethnic-based political factions that regularly compete for political influence in order to promote particularist agendas and favour group members to the detriment of common, secular, or cross-cutting agendas’

**Table 4.** Summary statistics

	Mean	Median	Std. dev.
Average Gini coefficient	44.846	45.031	2.488
Democracy (DEMOC)	2.806	5.800	6.087
Democracy (DEMOC2)	4.955	6.000	3.537
Economic discrimination	1.509	0.000	2.177
Ethnic discrimination	0.427	0.491	0.187
Factionalism	0.204	0.000	0.360
Government deficit share	-0.299	-0.014	2.838
High democracy dummy	0.64	1.00	0.48
Investment share	14.911	14.556	5.407
Low democracy dummy	0.36	0.00	0.48
Neighbourhood conflict	0.667	1.000	0.749
Openness	48.005	39.282	35.707
Political instability index	-0.232	-0.662	1.336
Regime durability	12.685	6.500	16.133
Standard deviation of inflation	195.825	8.593	808.505
Urbanisation growth	5.013	4.124	3.243

*Note:* All variables have 108 observations.

(Marshall and Jaggers, 2002: 26).<sup>15</sup> We take the average factional score for each five year period as a measure of particularist politics.

The second is a measure of regime durability and it is measured the year before each five year period. To control for the possibility that the duration of different regime types may have different effects on political instability, we include an interaction term of the duration of a regime and a dummy equal to 1 for democratic countries. Regime durability is defined as the number of years that a country has not undergone a significant regime change, defined by the Polity IV as a three point move in a country's democracy score. We also interact this variable with a democracy dummy which is equal to 1 when DEMOC is greater than 0.

### *Neighbourhood Instability*

Political instability can be contagious since revolutionary groups and ideologies can cross borders. Countries in 'bad neighbourhoods' might suffer from neighbouring instability, especially if that instability causes a flood of refugees into the country or if guerrilla armies use a country as a base from which to attack their home country. Goldstone et al. (2004) find that countries with four or more politically unstable neighbours are more likely to experience political instability, while Schatzman (2005) finds that political instability in neighbouring countries increases the probability of a country experiencing collective protests.<sup>16</sup> A variable that is equal to the number of neighbour countries that experienced political instability during each five year period is created. We follow Goldstone et al. (2004) and consider a country as politically unstable if there was either an ethnic conflict or a revolutionary war during the year, since these are the types of instability that are most likely to affect neighbouring countries. In our sample period, there are two main blocs of 'bad neighbourhoods': the first

includes Guatemala, El Salvador and Nicaragua; the second includes Colombia and Peru.

### *Inequality*

Eckstein and Wickham-Crowley (2003) and Oxhorn (2003) provide evidence that the increase in democracy in Latin America has come without an improvement in the distribution of income, and that income disparity may be threatening stability in the region. Acemoglu and Robinson (2006) develop a theoretical model of democracy and income inequality and argue that high income inequality in Latin America is one of the main causes of weak democracy in the region. Elites will be against democracy in highly unequal societies because a democratic system will impose more redistributive policies.<sup>17</sup> Empirically, Alesina and Perotti (1996), Perotti (1996) and Odedokun and Round (2001) show that countries with high income inequality are more likely to be politically unstable.<sup>18</sup>

To determine whether income inequality has a nonlinear effect on political instability, we include in our estimation a country's average Gini coefficient (from 1971–2000) and its square. The most unequal countries in the region are Guatemala, Peru, the Dominican Republic and Bolivia, while the least unequal are Paraguay, Costa Rica, Uruguay and Nicaragua. Except for the Dominican Republic, all of the highly unequal countries are also highly unstable. Likewise, two of the most politically stable countries have the least amount of income inequality (Costa Rica and Paraguay).

### *Other Socio-Demographic Conditions*

Other variables, such as ethnic fractionalisation, economic discrimination of ethnic minorities, and urban growth are relevant determinants of political instability.<sup>19</sup> Ellingsen (2000), Auvinen and Nafziger (2002), and Goldstone et al. (2005) claim that economic discrimination of ethnic minorities can lead to political instability if discriminated groups rebel against the system. Empirically, Annett (2000), Ellingsen (2000) and Collier and Hoeffler (2004) show that ethnic fractionalisation has a positive and significant effect on instability levels.<sup>20</sup>

While urban growth has also been considered as an explanatory factor, there is no consensus on how urbanisation affects political instability. Collier and Hoeffler (2004) argue that the rate of urbanisation is low during periods of instability, and that this negative relationship is due to the fact that a government has better military capability in a highly urbanised country. A highly dispersed population makes it difficult for the government to contain instability. On the other hand, Auvinen (1997) and Annett (2000) argue that urban tends to promote more political instability. High urban growth promotes more instability because it is difficult for the government to provide basic services in highly populated cities, which creates popular discontent.

To investigate the effect of these socioeconomic factors on instability, we include the number of years of the five year period in which there is at least one group that experiences economic discrimination and the ethnic fractionalisation index (and its square). Since the literature on urbanisation and stability is still unsettled, we test

whether it is possible that urbanisation growth has a nonlinear effect on instability. Perhaps initial urbanisation is good for stability, while high levels create citizen discontent and thus more instability. To study this, we include in our estimation a country's average urbanisation growth rate and its square for each five year period.

### *Macroeconomic Factors*

Poor economic performance has been considered as a major cause of political instability for two reasons. First, when income is low (or falling), the opportunity cost for an individual to rise up, protest or revolt is low (Collier and Hoeffler, 2004). Under this situation, individuals have an incentive to quit their participation in productive activities and take part in protests and insurrections (Grossman, 1991). Second, poor economic conditions increase deprivation, which will fuel political instability as citizens perceive their government to be incompetent (Posner, 1997; Auvinen and Nafziger, 1999; Ellingsen, 2000).<sup>21</sup> Empirically, Cuzan et al. (1988), Booth (1991), Annett (2000) and Blomberg and Hess (2002) show that low income growth has a positive effect on instability.<sup>22</sup>

Many papers study the effect of political instability on inflation rates but few have investigated the possibility that high (or volatile) inflation may destabilise polities. Cukierman et al. (1992) find, in a sample of 79 countries, that politically weak governments are more likely to resort to seignorage (basically, printing money and thus contributing to inflation). Paldam (1987) focuses on eight Latin American countries from 1946–1983 and shows that the causality between inflation and instability works both ways. He goes on to demonstrate that almost no regime in the region has survived a bout of hyperinflation, a trend that still holds in the region. Of the countries with the highest and most volatile inflation, almost all were forced out of power.

Besides inflation itself, government spending may be a stabilising or destabilising factor, depending on how the spending is financed. Annett (2000) finds that an increase in government spending is associated with lower levels of political instability, while Cuzan et al. (1988) find that an increase in government spending increases political instability in Latin American countries.

Lastly, Donovan et al. (2005) and Goldstone et al. (2005) discuss the possibility that trade openness might have an effect on political instability. Goldstone et al. note that 'countries with lower trade openness (at the 25th percentile in the global distribution) had roughly two to three times higher odds of near term instability than countries with higher openness to trade (those at the 75th percentile)' (Goldstone et al., 2005: 26). Donovan et al. (2005) argue that trade openness may be negatively associated with instability if openness brings about more economic growth.

To investigate the effects of macroeconomic variables on instability in the region, we include the share of investment as a percentage of GDP, the standard deviation of inflation (as a measure of inflation volatility), the share of the government budget deficit as a percentage of GDP, and openness to trade. All of these variables are constructed in five year averages. However, since there may be a reverse causality issue between them and political instability, we use the first lag in each case.

#### IV. Results

In this section we estimate a model of political instability using our composite measure of instability and the independent variables discussed above. Unless otherwise noted, all of the data is averaged over five year periods, which gives us six observations per country and a total of 108 observations. All regressions are estimated with ordinary least squares (OLS) with White robust standard errors.

Column 1 of Table 5 presents our results and shows that the model explains 48 per cent of the variation in the instability index. One of the most interesting results from column 1 is that regime type significantly affects instability levels in the region. The coefficient on our measure of democracy, DEMOC, is negative and significant at the 1 per cent level, meaning that countries with higher levels of democracy in the five year period have lower levels of instability, on average. The quantitative effect of democracy, however, is not large: a one standard deviation increase in DEMOC (equal to 6.09 points in the index) is associated with a 0.43 point decrease in the political instability index (which is equal to about one third of a standard deviation of political instability).

The coefficient on the factional dummy is positive and significant at the 1 per cent level, supporting the Goldstone et al. (2005) finding that, on average, factionalised political regimes are also more unstable. The quantitative effect of factionalism on instability is larger than the effect of the DEMOC variable, but it is still small. A one standard deviation increase in factionalism (equal to 0.36) is associated with a 0.53 point increase in the political instability index. The coefficients on durability and the

**Table 5.** A model of political instability

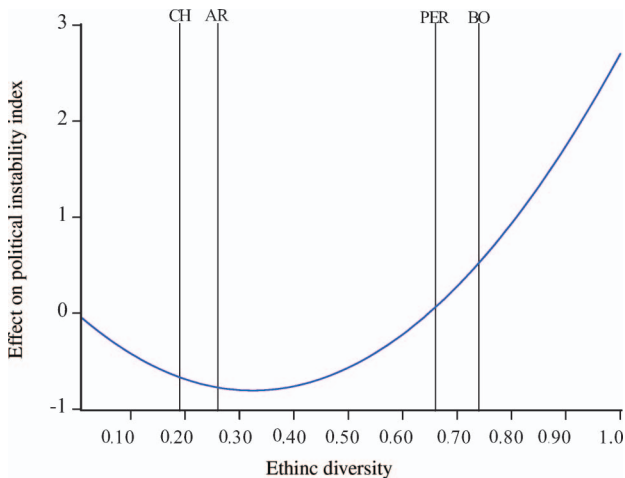
	1	2
Constant	-123.3 (3.5)	-94.9 (2.6)
DEMOC	-0.07*** (5.9)	-0.05*** (12.3)
Factionalism	1.48*** (2.8)	1.41*** (3.5)
Regime durability	0.002 (0.2)	—
Regime durability * democracy dummy	0.008 (1.0)	—
Neighbourhood conflict	0.04 (0.2)	—
Average inequality	5.57*** (3.6)	4.27*** (2.9)
Average inequality <sup>2</sup>	-0.06*** (4.0)	-0.05*** (2.9)
Economic discrimination	0.03 (1.3)	—
Ethnic fractionalisation	-9.26** (2.6)	-9.72*** (3.7)
Ethnic fractionalisation <sup>2</sup>	13.59*** (4.1)	13.47*** (5.4)
Urbanisation	-0.31*** (4.1)	-0.29*** (3.4)
Urbanisation <sup>2</sup>	0.012** (2.4)	0.011* (1.9)
Standard deviation of inflation <sub>t-1</sub>	-0.0001 (1.2)	—
Investment share <sub>t-1</sub>	-0.03 (0.8)	—
Government deficit share <sub>t-1</sub>	0.03 (1.4)	—
Trade openness <sub>t-1</sub>	-0.01** (2.4)	-0.01** (2.4)
R-squared	0.477	0.438
Observations	108	108

*Notes:* t-statistics in parentheses use White's robust standard errors. \*\*\*, \*\*, and \* represent statistical significance at the 1, 5, and 10 per cent level, respectively.

interaction between durability and democracy are both insignificantly different from zero, implying that whether a country was a stable democracy or a stable autocracy in the previous five years has no significant effect on contemporary levels of instability.

We also find no evidence of regional contagion; the coefficient on neighbourhoods is insignificantly different from zero. The coefficient on the variable representing economic discrimination of minorities is likewise insignificant. We do find, however, that overall ethnic diversity matters for instability. The ethnic fractionalisation index has a significant negative effect on instability at the 5 per cent level, while the square of this index has a significant positive effect on political instability at the 1 per cent level. Figure 4 graphs the nonlinear relationship between ethnic diversity and instability that we find. Increases in diversity lower instability until the fractionalisation index reaches 0.33, at which point any further ethnic diversity increases average instability levels: Chile and Argentina are illustrated in the declining portion, and Peru and Bolivia in the increasing portion. Ethnic diversity in our sample ranges from 0.17 (Paraguay) to 0.74 (Bolivia) but the majority of the countries have diversity levels greater than the turning point (this high diversity group includes Bolivia, Brazil, Colombia, the Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru and Venezuela).

Income inequality also has an important nonlinear effect on instability in the region. The coefficient on the inequality variable is positive and significant at the 1 per cent level, while the square of the variable is negative and significant at the 1 per cent level. These results indicate that inequality raises instability until the Gini coefficient reaches 0.45, at which point any further increases will be negatively associated with instability. This finding supports Acemoglu and Robinson (2006) who claim that the effect of income inequality on political instability is a nonlinear function of the Gini coefficient.<sup>23</sup>



**Figure 4.** The effect of ethnic diversity on political instability

Lastly, on the socio-demographic factors, the results in column 1 show that urban growth has a nonlinear effect on instability. The coefficient on the urban growth is negative and significant at the 1 per cent level while its square is positive and significant at the 5 per cent level. The finding of a nonlinear relationship between the two is especially interesting since there are two contrasting views in the literature on urbanisation and instability. Increased urban growth increases average stability until the rate reaches 13.6 per cent, at which point any further increases in urban growth will bring about more instability. All of our countries have rates to the left of this rate, except for Nicaragua over 1996–2000 when the rate of urbanisation grew by 18 per cent.<sup>24</sup> Our finding provides support for the argument that urbanisation can help to promote political stability (Collier and Hoeffler, 2004). Specifically, we find that one standard deviation increase in the urbanisation growth rate (equal to 3.243) is associated with a drop in the political instability index of 0.45 points.

Of the different macroeconomic variables discussed in the previous section, only trade openness is consistently significant. Neither the level nor the standard deviation of inflation are statistically significant (we report only the results of using the standard deviation for reasons of space), nor is government deficit share or investment as a percentage of GDP. Trade openness is negative and significant at the 1 per cent level, indicating that an increase in openness by one standard deviation in the previous five year period is associated with a 0.35 point decrease in the instability index. This result mirrors Goldstone et al. (2005) who find a negative relationship between openness and instability for sub-Saharan Africa.

In column 2 of Table 5 we re-estimate the model and exclude the variables that are not significant at least at the 5 per cent level (regime durability, neighbourhood conflict, economic discrimination, the standard deviation of inflation, investment, and the government deficit share).<sup>25</sup> The signs and statistical significance of the remaining variables are very similar to that of column 1. The only exceptions are that the coefficient on ethnic fractionalisation is now significant at the 1 per cent level and the coefficient on the square of urbanisation growth falls to the 10 per cent level.

## **V. Alternative Measures of Democracy**

For robustness purposes, we re-estimate our restricted model using two different measures of democracy. First, we re-define democracy as the five year average of the democracy score (called DEMOC2) provided by the Polity IV data set. The variable ranges from 0 to 10 and it measures the degree of openness of political institutions. Like the DEMOC variable, higher values of this score are associated with higher levels of democracy. Column 1 of Table 6 shows the estimates when using this new measure of democracy. The coefficient on the democracy score indicates that an increase in democracy of one standard deviation (equal to 3.54) is associated with a decrease in the political instability index of 0.32 point, which is somewhat less than the estimate when we use the polity score (DEMOC) as a measure of democracy. The sign and significance of the other variables in the estimation remain the same.

We also test for the possibility that the relationship between democracy and instability is not linear (and should not be entered as a cardinal value). For example,

**Table 6.** A model of political instability with different measures of democracy

	1	2
Constant	-91.4 (2.9)	-93.7 (2.8)
DEMOC2	-0.09*** (9.9)	-
High democracy dummy	-	-0.76*** (3.4)
Factionalism	1.33*** (3.3)	1.55*** (5.0)
Average inequality	4.14*** (2.95)	4.23*** (2.8)
Average inequality <sup>2</sup>	-0.045*** (2.97)	-0.05*** (2.7)
Ethnic fractionalisation	-9.94*** (3.6)	-10.2*** (3.0)
Ethnic fractionalisation <sup>2</sup>	13.77*** (5.3)	14.2*** (3.5)
Urbanisation	-0.29*** (3.3)	-0.32** (3.1)
Urbanisation <sup>2</sup>	0.011* (1.9)	0.011* (1.7)
Trade openness <sub>t-1</sub>	-0.01** (2.5)	-0.007** (2.6)
R-squared	0.442	0.443
Observations	108	108

*Notes:* t-statistics in parentheses use White's robust standard errors. \*\*\*, \*\*, and \* represent statistical significance at the 1, 5, and 10 per cent level, respectively.

moving from a negative 1 to 0 on the DEMOC index may have much greater implications for instability than moving from 9 to a 10. To investigate this possibility, we create a dummy variable for high democracy that is equal to 1 if a country's five year DEMOC average is greater than 0. Column 2 of Table 6 presents the results of including the high democracy dummy in the estimation. The coefficient on the dummy is negative and significant at the 1 per cent level, indicating that countries with high levels of democracy have lower average instability. The signs and significance levels of the other independent variables remain the same. In sum, democracy is a significant indicator of instability in our sample and is robust to several alternative specifications.

## VI. Discussion

Latin America has a long history of political instability. Any attempt to change this path requires policymakers to have a good understanding of the reasons behind this persistent instability. Using a broad composite measure of instability, we test whether variables such as regime type, regime durability, factionalism, income inequality, ethnic diversity, ethnic discrimination, regional spillover effects, urbanisation growth, and a host of macroeconomic variables matter for instability in Latin America.

We find several interesting results. First, we show that democracy is strongly associated with political stability. Countries with strong democratic regimes suffer less political instability on average, a finding which is robust to several different measures of democracy. In addition, we find that factionalised political regimes tend to experience higher average levels of instability. These findings highlight the need to establish institutions and policies which promote strong democracies in the region. More broad-based political parties, ones which are not so divided on cultural, ethnic or regional lines, would also help to alleviate instability.

Second, we find that income inequality, ethnic fractionalisation, and urban growth all have important nonlinear effects on instability. This finding is relevant since Latin America is one of the most unequal and ethnically diverse regions of the world. It has also had very high rates of urbanisation in the post WWII era. Our results indicate that reducing income inequality can pay off in terms of less instability. While the promotion of a more egalitarian society through taxation may not be politically feasible, policymakers could reduce inequality (and reduce the problems that may arise from high diversity) through educational reforms. While high rates of urban growth have caused many problems for administrators, including increasing pressure on infrastructure and city services, our results show that most urban growth in the sample reduced political instability. Only one country in the sample experienced a rate of urban growth that was high enough to bring about more instability. While researchers have posited the relevance of macroeconomic factors as determinants of instability, we find that the majority of the macroeconomic variables we studied were insignificant. The only macroeconomic factor that explains stability in Latin America significantly, is openness to trade. We show that openness to trade is negatively and significantly associated with political instability. Although Latin American countries have already considerably decreased their barriers to international trade, these results suggest that further trade liberalisation will promote stability in the region.

In conclusion, our analysis shows that regime type and socio-demographic conditions, not macroeconomic factors, matter most for regional stability. This finding is relevant not only because many have blamed instability on the poor economic performance of Latin American countries in the last decades but also because it gives policymakers positive options, such as the strengthening of democracy and the reduction of inequality, to promote future stability.

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### **Notes**

1. There is a large literature on the effects of instability on economic development. See, for example, Hibbs (1973), Stewart and Venieris (1985), Alesina and Perotti (1996), Alesina et al. (1996), Benhabib and Rustichini (1996), Edwards (1996), and Gyimah-Brempong and Traynor (1996). See Cukierman (1980) and Bernanke (1983) for more on the irreversibility of investment.
2. Goldstone et al. (2005) ranks Latin America as the third most unstable region in the world in the post-war era. Table 1 lists the countries in our sample.
3. While most of the work on understanding political instability does so with a wide sample of countries, it may not be appropriate to pool data from such dissimilar countries. Grier and Tullock (1989) and Block (2001) illustrate the importance of testing the validity of pooling data from large samples of countries together in a single equation. They both show that the coefficients in a growth equation are significantly different across different sub-samples and cannot be appropriately pooled.
4. See also Chen and Feng (1996), Feng (1997), Svensson (1998).
5. Some early papers chose to measure instability along a single dimension with variables like the number of *coups d'état* or revolutions (Londregan and Poole, 1990; Barro, 1991). Others, such as Auvinen

(1997), Posner (1997), Ellingsen (2000), and Bloomberg and Hess (2002), recognise instability's multidimensionality by estimating models sequentially with separate measures. Nel (2003) constructs an aggregate index that sums the number of coups, civil war, riots, and revolutions for each country, while Goldstone et al. (2005) consider a country unstable if it experiences either an adverse regime change, ethnic conflict, revolutionary war, or genocide during the period studied.

6. See Kim and Mueller (1982) for a good overview of PCA.
7. Broadly speaking, these nine variables can be classified into three different types of events: those that pose a major threat to the political and economic system (coups, revolutions, and government crises), those that reveal citizen discontent with the political system (strikes, riots, and anti-government demonstrations), and those characterised by extreme violence either by opposition elements or by the government (guerrilla warfare, assassinations and purges). Table 2 provides a detailed definition of these components.
8. The factor weightings indicate that all of the component variables contribute to our index, with the highest weights on revolutions, guerrilla activity and assassinations.
9. Sturzenegger (1991) argues that that the persistent upheaval and violence made people lose confidence in the democratic system and helped legitimise the military coup that took place in 1976.
10. The economic situation was dire, with inflation reaching more than 450 per cent, and labour unions began to assert themselves again (Andersen, 1984: 157). Munck (1992: 205) notes that while the military was trying to engage the opposition in dialogue, by 1982 it was clear that they had lost control of the process.
11. The other three periods of Argentine instability occur under democratic regimes and consist more of demonstrations and strikes instead of guerrilla wars, military coups and revolutions. There were large social protests at the end of President Raul Alfonsín's tenure in 1989, forcing him to step down six months early. Our measure shows a spike in instability in 1988 and 1989, which is consistent with this. Likewise, there were strikes and protests in the mid 1990s and, again, in 2000 against increasing economic problems which is reflected in Figure 3.
12. See Grier and Tullock (1989) for a justification of using five year intervals instead of averaging over long periods.
13. Benton (2007) develops a theoretical model of why Latin American regimes are factionalised. She argues that there are subgroups inside political parties that fight for power and resources. Her paper presents a good overview on how factionalism matters for overall instability.
14. Factions are 'coalitions used by politicians to bolster careers' (Benton, 2007: 62). See Benton (2007: 56) for concrete examples of political party factionalism in Latin America.
15. According to the Polity IV, factional regimes must also have the following electoral participation characteristics: 'There are relatively stable and enduring political groups which compete for political influence at the national level—parties, regional groups, or ethnic groups, not necessarily elected – but there are few, recognized overlapping (common) interests' (Marshall and Jaggers, 2002: 25).
16. On the other hand, she finds that regional instability decreases the probability of rebellions in the domestic country.
17. In addition, Perotti (1996) and Auvinen and Nafziger (2002) argue that an unequal distribution of income can produce social discontent if individuals perceive that income is unfairly distributed and rebel against the system. Eckstein and Wickham-Crawley (2003), Oxhorn (2003) and Parsa (2003) also argue that high income inequality in Latin America promotes political instability in the region.
18. However, in a sample restricted to sub-Saharan countries, Nel (2003) finds that income inequality has a significant effect on investors' perceptions about the political environment but not a significant effect on political instability.
19. Alesina and Perotti (1996) also use primary school enrolment rates as an explanatory variable of political instability and find that education has a significant negative effect on political instability. Collier and Hoeffler (2004) use the male secondary enrolment rate as an explanatory variable, arguing that the variable reflects the opportunity cost of rebellion. We do not include education in our specification because we found no significant relationship between it and political instability in any of our estimations.
20. Easterly and Levine (1997) use ethnic fractionalisation as an explanatory variable of political instability but find that it is not significant. Auvinen and Nafziger (2002), however, caution that ethnic fractionalisation is not a sufficient condition for political instability since ethnic antagonism does not necessarily exist in highly factionalised societies.

21. Goldstone et al. (2005) use infant mortality as a measure of the standard of living and find that this variable is one of the best overall predictors of political instability around the world.
22. We do not report the results of including infant mortality or income levels in our model because we found that they have no significant effect in any of our estimations.
23. Caution should be used when interpreting these results, however, because the countries in the sample have very similar levels of inequality. For instance, the least unequal country in the sample (Paraguay) has a Gini coefficient of 0.41 while the most unequal countries (Peru and Guatemala) have a coefficient of 0.48. If a country were to move from being the most unequal to the least unequal, the effect on instability would be very small and actually negative (a decrease in the instability index of about 0.008).
24. Some countries had urbanisation growth rates that were close to the turning point, including the Dominican Republic from 1971–1975 (13.3%) and Honduras from 1991–1995 (12.6%).
25. We perform an F test and find that we cannot reject at the five per cent level the hypothesis that these variables as a group do not significantly explain political instability.

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