

TIGHTENING TENSIONS: FISCAL POLICY AND CIVIL UNREST IN SOUTH AMERICA, 1937–95

Joachim Voth
Universitat Pompeu Fabra

On 1 May 2010, the Greek Prime Minister George Papandreu announced a set of drastic austerity measures. May Day itself saw clashes between police and demonstrators. On 5 May, a general strike paralyzed the country; armed demonstrators fought street battles with police. A bank burned down, and numerous demonstrators and policemen were injured. By the standards of antigovernment protests, the May 2010 incidents in Athens were mild. Many countries have seen severe rioting and political violence following budget cuts. In this paper, I examine the extent to which social unrest is clearly associated with fiscal austerity. Do riots, antigovernment demonstrations, political assassinations, and attempts at revolutionary overthrow become more common if governments push through tax hikes and spending cuts?

I analyze this question for South America during the period 1937–95. The continent's notoriously volatile politics, combined with large swings in fiscal conditions, make it a particularly appealing laboratory for exploring the link between fiscal adjustment and social instability. From the popular protests that led to the fall of the de la Rúa administration in Argentina to the so-called Caracazo in Venezuela, austerity measures have played a prominent role in numerous cases of mass protest (Sonntag, Maingón, and Biarreau, 1992; Handelman and Sanders, 1981). Cuts in expenditure are particularly strongly correlated with violent forms of protest and attempts to overthrow the government, whereas fiscal adjustment through tax increases is less clearly associated with unrest than

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expenditure cuts. This suggests a reason why budget adjustments—even if associated with better macroeconomic performance (Alesina and others, 2002)—are not very common in practice.¹ The relationship between austerity and unrest is apparent in countries with both autocratic and democratic regimes: countries do not need a minimum level of political development to show a clear-cut correlation between unrest and fiscal contractions.

The relationship between fiscal adjustment and antigovernment violence has strengthened in recent decades. The link is weaker in the data before the mid-1970s and stronger thereafter. It seems likely that improving institutions, greater freedoms to associate and for the press, and a higher degree of democratic participation after the mid-1970s in a number of countries have resulted in mass protests becoming another form of bargaining with the government.

Related literature includes work on the nature and timing of fiscal adjustments, as well as the causes of social unrest. That immiseration is the driving force behind violent upheavals is a common theme in the political science literature since at least the days of Karl Marx. The Weimar Republic's demise in the 1930s is often cited as a warning. In a bid to gain competitiveness on world markets, the German government under Chancellor Heinrich Brüning cut public expenditure (including civil servant pay) and introduced major tax hikes (Bracher, 1978). Street fighting between communists and Nazi Party supporters, riots, and political murders followed, and these events arguably prepared the ground for Hitler's *Machtergreifung* in 1933.² More generally, several authors have examined the interplay of fiscal consolidation and social unrest in interwar Europe (Eichengreen, 1996; Feldman, 1997; Maier and Knapp, 1975; Wirsching, 2003). France in the 1930s, in particular, is a case of political violence increasing in times of fiscal austerity.

This paper also connects with research on the determinants and feasibility of fiscal adjustment. Research by Alesina and others (2002) suggests that fiscal contractions can be expansionary. Related work by Alesina, Perotti, and Tavares (1998) also argues that there is no penalty for the government—it neither loses popularity nor reduces its chances of reelection. Sharp adjustments may even be rewarded by the electorate. This is in line with the finding by Kraemer (1997)

1. See also the recent reassessment in by the IMF (2010).

2. The extent to which economic factors drove voters into the arms of the Nazi Party is controversial (Falter, 1991; King and others, 2008).

that fiscal expansions in Latin America prior to elections do not increase a government's chances of staying in power.

If these findings are taken at face value, they raise the question of why fiscal adjustments are ever delayed—without a penalty at the ballot box or in the national accounts, why aren't fiscal adjustment implemented instantly and vigorously? The findings in the papers by Alesina and different coauthors imply that the typical cost of adjustments may be low, measured in terms of growth or electoral success. At the same time, the expenditure cuts of the type favored by Alesina and others (2002) sharply raise the risk of major social upheaval—at least in South America during the period 1937–95. This is in line with the argument in a classic paper by Alesina and Drazen (1991), who argue that stabilizations are often delayed because social groups engage in a war of attrition. For the argument to work, adjustment has to be costly, and while it is postponed, parties fight over which group will bear its brunt. While Alesina and Drazen do not address unrest and its causes directly, it is straightforward to think of street protests and mass violence as part of the negotiation process that ultimately decides the shape and size of austerity measures. Part of the answer is suggested by studies that examine the relative strength of the ruling government. Stein, Talvi, and Grisanti (1999) argue that in Latin America, more fragmented political systems—as proxied by the size of electoral districts—are associated with greater levels of public spending.³ A government's parliamentary backing has a similar effect. Woo (2003) finds that instability and unrest are clearly associated with higher levels of public debt. This implies either that countries with more debt are less stable politically or that instability makes it harder to achieve budget discipline. Neto and Borsani (2004) find that government stability is associated with greater fiscal prudence, as are the level of parliamentary support and a conservative orientation of the ruling party.

The study closest in spirit to this paper is by Paldam (1993), who studies nine balance-of-payments crises in seven South American countries.⁴ Most of these were associated with attempts to lower inflation. Governments—sometimes with help from the International Monetary Fund (IMF)—pushed through spending cuts and saw a rise in protests in response. Paldam uses an event-study

3. There is also evidence that countries with presidential systems have smaller governments (Persson and Tabellini, 2005).

4. Paldam's study is discussed extensively in Haggard, Lafay, and Morrisson (1995).

methodology and compares the 26 weeks before the announcement of budget adjustments with the 55 weeks thereafter. His outcome variables include strikes, protest demonstrations, and changes in government composition (or regime change). Surprisingly, Paldam finds that protests decline after adjustment measures are introduced (before returning to pre-adjustment levels later). At the same time, government changes spike about ten weeks after new budget measures are implemented. Paldam also argues that democratic regimes experience more violent protests than autocracies. For Africa, Morrison, Lafay, and Dessus (1994) analyze IMF interventions and fiscal adjustments. They find that economic stabilization programs can be politically risky. Within six months of an adjustment program, strike activity escalates.⁵ The study finds that increases in relative prices—through new taxes, the end of food subsidies, devaluations, and public tariff changes—are likely to raise the level of political agitation. On the other hand, expenditure cuts, especially those for public investment, have no discernible effect. Another study by the Organization for Economic Cooperation and Development (OECD) examines the effects of aid and monetary adjustments on strikes and demonstrations (Haggard, Lafay, and Morrisson, 1995). It finds that increases in aid reduce unrest and that IMF interventions and monetary tightening increase it.

Other related literature includes work on the interaction between distributional outcomes, political change, and the potential for political violence. Acemoglu and Robinson (2000) argue that Western societies extended the franchise to heed off the threat of revolution. Boix (2003) builds a more general model in which inequality and asset specificity modifies the trade-off between opting for violence or accepting the status quo. In either case, if the threat of violent overthrow is credible, it seems plausible that various forms of violent mass protests can be used as a form of collective bargaining over distributional outcomes.

The social psychology literature generally emphasizes the importance of comparison effects and of low social distance between favored and unfavored groups (Berkowitz, 1972). Other papers analyze the importance of peer effects in overcoming participation thresholds (Cole, 1969). This suggests that the larger the network of potential protesters, the more probable it is that they participate in mass actions.

5. The estimated coefficients are small (around 0.15), and the authors do not test for significance.

I proceed as follows. Section 1 summarizes the data, and Section 2 presents the main results. Section 3 examines the robustness of these findings, and the final Section concludes.

1. DATA AND CONTEXT

Neither quantifying violent protests nor measuring fiscal adjustments is a simple task.⁶ In this paper, I use data collected by Banks (1994) on the number of political assassinations, general strikes, riots, and antigovernment demonstrations. While the data set was compiled from the 1960s onward as part of a large-scale data collection effort at the University of Binghamton, it covers earlier periods based on contemporary publications. It is based on information on political and economic conditions originally published in *The Statesman's Yearbook*. The yearbook was first published in 1863, following suggestions by prime ministers Robert Peel and William Gladstone, and was meant to contain “a statistical, genealogical, and historical account of the states and sovereigns of the civilized world.” Conflict data itself were gleaned from the *New York Times* and are available from 1919 onward. I also use data on economic variables from the Banks (1994) data set, which is based on data from the United Nation's *Statistical Yearbook* and *Pick's Currency Yearbook*. Finally, data on institutional quality come from the Polity IV data set (Marshall, Jaggers, and Gurr, 2010).

I use data for 11 South American countries—Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Suriname, Uruguay, and Venezuela. Not included are Guyana and French Guyana, the former because data on control variables were not available, the latter because it is an overseas territory of France and thus is not subject to the same political dynamics. The starting date in the 1930s is the earliest from which data on unrest and output per capita are available for a reasonable number of countries.

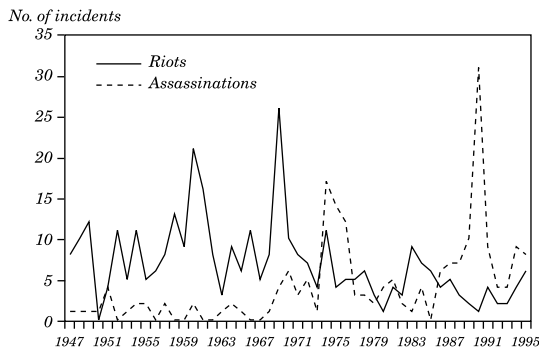
On average, for each country during a ten-year period, the data show 6.9 riots, 6.0 antigovernment demonstrations, 4.0 assassinations, and 3.4 attempts to overthrow the government in a violent fashion (that is, revolutions). The probability of unrest did not remain constant over time. I plot the patterns in figures 1 and 2. The most striking feature of each time series is its volatility—the

6. For methodological considerations, see IMF (2010).

number of riots or assassinations may be low for several years, before suddenly reaching a very high level in a single year. Riots were more common in South America in the 1950s and 1960s than in later years. While the average frequency in normal years has not changed much from the five to eight recorded in the immediate post-war era, there are fewer peaks. In the period from 1937 to 1970, there were nine years with more than ten riots in the sample; after 1970, there was only one.

Politically motivated assassinations show the opposite pattern. There were relatively few in the immediate post-war period. Typical years show zero or one murder of a politician, while bad years have two to three. This changed dramatically after the mid-1970s. Even quiet years now register three to five assassinations, and there are two peaks with murder frequency surging above ten per year.

Figure 1. Riots and Assassinations in South America, 1937–95^a

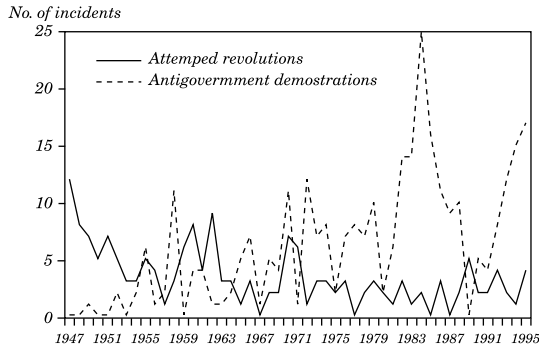


Source: Banks (1994).

a. The figure graphs the mean sample value by year.

The history of antigovernment demonstrations and of coups and revolutions—attempted or successful—is similarly volatile. Figure 2 gives an overview. Antigovernment demonstrations have been on an increasing trend since the 1930s. For most of the 1950s and 1960s, there were three to five of them per year, with values above five a rare occurrence. Since 1970, there have been more than ten years with more than ten antigovernment demonstrations, with an all-time peak of 25 in 1984.

Figure 2. Revolutions and Demonstrations in South America, 1937–2005^a



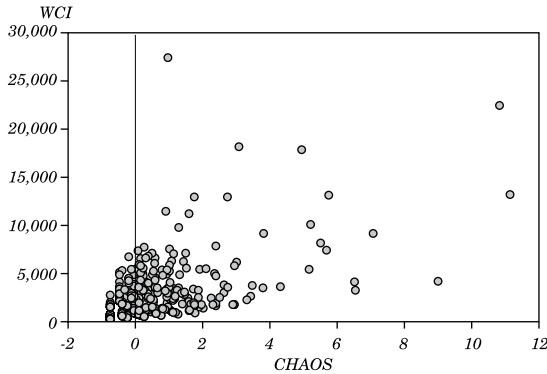
Source: Banks (1994).

a. The figure graphs the mean sample value by year.

Attempts at revolution have been declining. The immediate post-war era saw a high number, with 12 recorded attempts at overthrowing the existing government in 1948. The 1950s and 1960s also continued to be marked by violent attempts at overturning the established order, with revolutionary episodes in the early 1960s and early 1970s. Since the mid-70s, revolutions have become rare, with no years registering a frequency higher than five.

The Banks data set contains an aggregate measure of unrest—the weighted conflict index (henceforth, WCI). It combines the different series on unrest in the Banks data set by adding them up with different weights. Assassinations, for example, receive a weight of 24, while purges count almost four times as much (86). Antigovernment demonstrations receive the highest score (200). The weights were not chosen based on statistical analysis; they reflect the assessment of Banks and his team. Subsequent analysis uses this indicator.

In addition, I construct an aggregate measure based on principal component analysis, using a subset of the time series collected by Banks. Of the eight indicators compiled in the Banks database, only five are closely related to the issue of interest here—social unrest that can reflect opposition to or protests against government spending cuts. These variables are antigovernment demonstrations, general strikes, riots, assassinations, and revolutions. In contrast, purges are attempts by the authorities to silence the opposition. Government

Figure 3. Comparison of Indicators: WCI versus CHAOS

Source: Author's elaboration based on Banks (1994) dataset.

crises may have many origins and rarely reflect public unrest as a result of fiscal adjustments.⁷ Finally, acts of guerrilla warfare often reflect long-running military conflict between different ethnic groups or attempts by foreign powers to undermine the government. While some degree of popular support is clearly necessary for the guerrilleros to succeed, it is not clear that the frequency of guerrilla warfare maps closely onto levels of popular support, at least at an annual frequency. Moreover, fiscal adjustments in a single year are unlikely to lead to sufficient disillusionment for such a radical course of action.

I use principal component analysis to extract a common factor to the unrest captured by the five variables of interest—antigovernment demonstrations, general strikes, riots, assassinations, and revolutions. The first principal component explains 38 percent of the total variance. All factors enter with a positive loading. Riots, assassinations, and general strikes have relatively high scoring coefficients. The first principal component (henceforth, CHAOS) and the weighted conflict score from the Banks data set (WCI) are highly but not perfectly correlated (0.6, significant at the 1 percent level).

Figure 3 compares the two aggregate measures of unrest—WCI and CHAOS. While they are positively correlated, they clearly do not capture exactly the same variation in the data. For example, Brazil

7. There are clearly exceptions to this, such as Argentina in 2001.

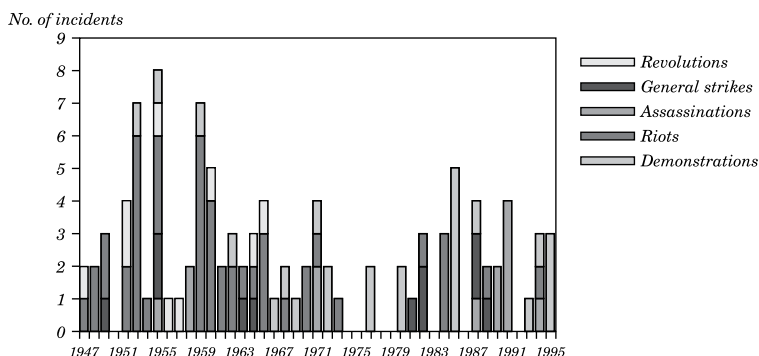
in 1969 registers a WCI score of over 27,000, while only showing a CHAOS indicator of 0.875. This is because a wave of guerrilla attacks and purges swept the country in 1969—Banks registers 14 guerrilla actions and 34 purges.

1.1 Brazil

Since independence, Brazil experienced numerous acts of politically inspired violence. The 1920s saw several attempts by junior officers to usurp power. In 1930, Getúlio Vargas seized power and established a dictatorship, which became increasingly autocratic after an attempted communist uprising in 1935. After the Allied victory in 1945, a military coup deposed Vargas and returned Brazil to democracy. A sequence of populist governments held power until the 1960s, when another military coup ushered in a 21-year-long military dictatorship. Civilians have governed since 1985, and all change of office has been peaceful since then (Levine, 2003).

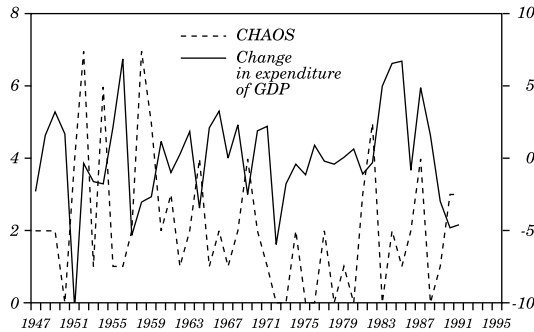
The conflict series for Brazil is dominated by riots, which occurred with some frequency in the 1950s and 1960s (figure 4). The years of military dictatorship show relatively fewer incidents overall, with no attempts at revolutionary overthrow. General strikes are also conspicuously rare in 1964–75. Austerity measures increased after 1975 and were one of the factors behind the rise in militancy (Frieden, 1992). The late 1970s were also marked by strong and

Figure 4. Unrest in Brazil, 1947–95



Source: Banks (1994).

Figure 5. Social Unrest and Changes in Expenditure in Brazil, 1947–95



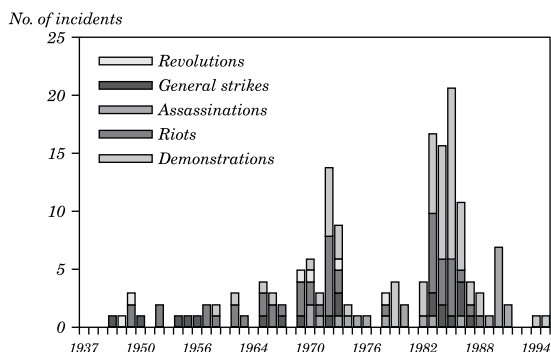
Source: Author's elaboration based on Banks (1994) dataset and UN Statistical Dataset.

effective strikes, which were instrumental in bringing military rule to an end (Antunes and Wilson, 1994; Payne, 1991). The return to democracy saw a rise in protests, including several assassinations in the early 1990s.

To what extent can the ebb and flow of political violence and social unrest in Brazil be explained by economic conditions—in particular, government spending? Historians of labor unrest in Brazil have sometimes disputed the role of economic factors (Sandoval, 1993). While each incident in the data set undoubtedly has highly specific causes, I find a negative correlation between expenditure changes and the aggregate measure of unrest (CHAOS). Figure 5 shows both time-series. For the sample as a whole, the correlation coefficient is -0.17 ; for the period before 1965, it is -0.35 . Based on the evidence presented so far, there is some reason to suggest that changes in national expenditure have had predictive power for the level of unrest documented for Brazil.

1.2 Chile

Chile's early political history was generally less volatile than that of many other Latin American countries. This changed in the 1920s, when Marxist groups gained influence. A military coup in 1925 ushered in a period of rapid government turnover, which lasted until constitutional rule was restored in 1932. The following twenty

Figure 6. Unrest in Chile, 1937–95

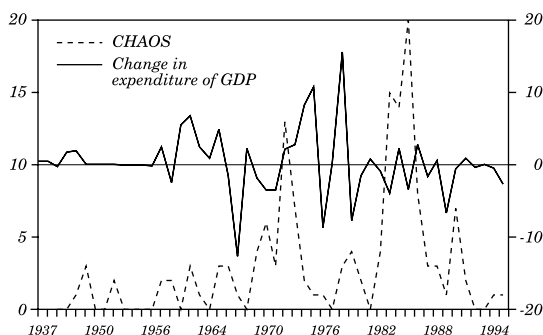
Source: Banks (1994).

years saw a variety of coalition governments, many dominated by the radical party (Collier and Sater, 2004). Under Jorge Alessandri, elected in 1958, the conservatives gained power once more. From 1964 onward, a left-leaning government under Eduardo Frei Montalva pursued a series of reforms. These included generous social programs, plans for agricultural reform, and large-scale housing projects.

The data show only a handful of strikes and riots in Chile in the 1950s and early 1960s. Unrest increased under the Frei government, with left-wing militants strengthening their position. In 1970, Salvador Allende was elected president. In addition to embarking on a major program of social reform, Allende expanded the state's role in the economy and nationalized the banking system. The Allende years show a rise in the frequency of riots, attempted overthrows of the government, and antigovernment demonstrations. At the same time, government spending increased massively, with particular emphasis on social programs (Collier and Sater, 2004). Unrest peaked in the years prior to the military putsch that overthrew the Allende government and brought General Augusto Pinochet to power.

The military dictatorship coincides with relatively few incidents in the Banks data series, as is apparent in figure 6 (murders of dissidents and activists are not counted). The next wave of unrest arrived between the referendum of 1980, which consolidated Pinochet's power, and the referendum of 1988, which ushered in the end of the Pinochet regime. The year 1983 saw the founding of the Manuel Rodríguez Patriotic Front (MRPF), which attempted to organize armed resistance

Figure 7. Social Unrest and Changes in Expenditure in Chile, 1937–95



Source: Author's elaboration based on Banks (1994) dataset and UN Statistical Dataset.

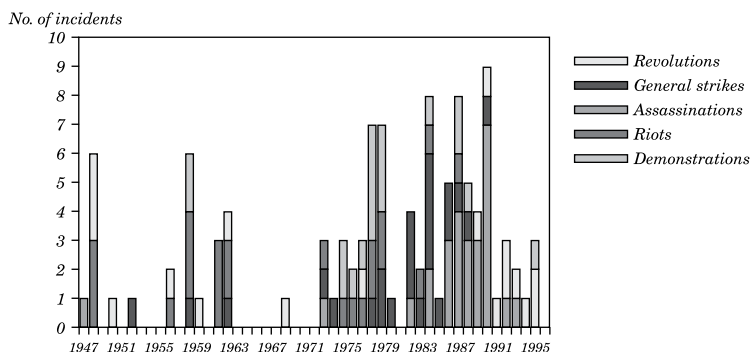
against the Pinochet regime (Ensalaco, 2000). During the period, riots and demonstrations were commonplace, with 15 antigovernment demonstrations in 1985 alone. The years after the return to democracy in 1991 saw a low level of violence, only interrupted by a spike in political assassinations in 1991 itself (including the murder of Senator Jaime Guzmán, a former confidant of General Pinochet, by the MRPF).

The link between fiscal austerity and instability is not readily apparent in the case of Chile (see figure 7). Sharp declines in central government spending did not coincide with the peaks in unrest; periods of normal increases in expenditure coincide with major upheaval. While much of the historical literature on Chile stresses the extent to which worker militancy was fuelled by economic concerns, there is no clear evidence in favor of a direct, strong link between budget cuts and unrest: the correlation coefficient is negative (0.07) but insignificant.⁸

1.3 Peru

Peru's history since the 1930s is marked by frequent alterations between civilian and military rule. Levels of violence were heightened by the presence of guerrilla movements, some of them with strong

8. Salazar (2006).

Figure 8. Unrest in Peru, 1937–95

Source: Banks (1994).

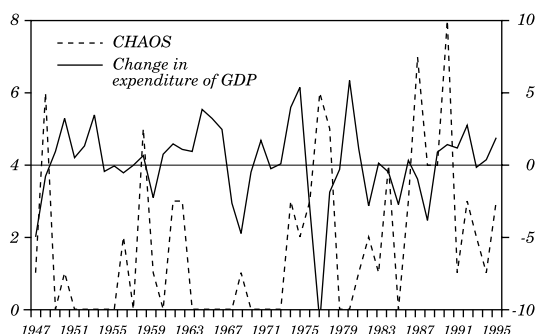
links to the drug trade. From its founding in the 1930s, the *Alianza Popular Revolucionaria Americana* (APRA) militated in favor of social reform and an internationalist agenda (Thorp and Bertram, 1978). One of its main competitors was the Communist Party of Peru. APRA candidates after World War II won elections, but military intervention stopped them from taking office. From the 1960s onward, communist guerrilla movements caused increasing levels of violence. The years 1968–80 saw another period of military government. APRA returned to power when Alan García became president in 1985. A period of hyperinflation and increasing civil war against the Shining Path guerrillas followed. The administration of Alberto Fujimori, elected in 1990, brought inflation under control. It also dissolved Congress against constitutional rules and pushed through major reforms. A crackdown on the Shining Path insurgency was largely successful, but it resulted in several massacres.

During its post-war history, Peru experienced two major waves of social unrest according to the measure used in this paper. Figure 8 plots the developments over time. There was a surge in riots and demonstrations in the mid- to late 1970s, as the military rule was coming to an end; the late 1980s witnessed numerous political murders. Even at its peak, the overall level of unrest was low compared with, say, Chile. Upheavals in the late 1970s were associated with a debt crisis and a need to refinance external borrowing. IMF support came in exchange for austerity measures.

The 1977 agreement on debt refinancing resulted in large price increases for food and gasoline, which promptly provoked large-scale demonstrations (Handelman and Sanders, 1981).⁹ Paldam (1993) also classifies 1982 and 1990 as years of economic crisis, with high inflation and widespread terrorism. In 1989, several thousand Peruvians crossed the border into Chile to buy bread, which had become largely unavailable in Peru.

Figure 9 plots changes in expenditure and my preferred measure of unrest side by side. The figure provides some evidence of an inverse movement of the two series in the late 1960s. In the main, there is little inverse movement for small changes in expenditure, but large fiscal adjustments, such as in the late 1970s, coincided with major increases in unrest. After the overthrow of General Juan Velasco, many of his economic policies were reversed, and the fishing industry, newspaper, and other firms were denationalized. The subsequent government under General Francisco Morales also returned government to civilian control and introduced budget measures to reduce borrowing (Alexander and Parker, 2007). Overall, the correlation coefficient of -0.3 (significant at the 4 percent level) suggests that budget cuts increased labor unrest and antigovernment protests.

Figure 9. Social Unrest and Changes in Expenditure in Peru, 1937–95



Source: Author's elaboration based on Banks (1994) dataset and UN Statistical Dataset.

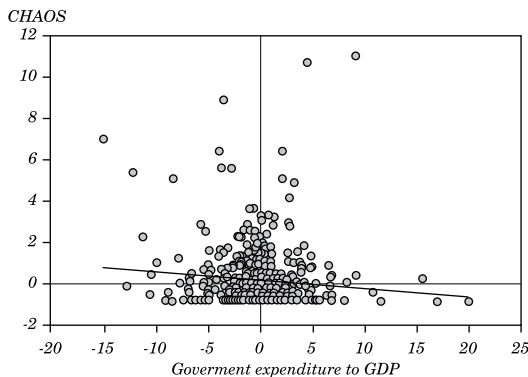
9. There is some evidence that the unrest of the summer of 1977 led directly to the transition to democracy, as President Morales decided to stave off the prospect of further unrest by announcing a timetable for restoring constitutional rule.

2. MAIN RESULTS

To what extent do budget cuts go hand-in-hand with surging social unrest? This Section tests the relationship rigorously. I find strong evidence that fiscal austerity is associated with periods of violent protest—the larger the fiscal adjustment, the greater the risk of riots, demonstrations, assassinations, and revolutions. The patterns are weaker, however, for general strikes. The fiscal adjustments most likely to lead to social unrest are not driven by poor growth: changes in policy stance, not bad ties, are most likely to create instability and chaos.

Figure 10 plots the basic relationship. On the y axis is the first principal component of antigovernment demonstrations, general strikes, riots, assassinations, and revolutions (CHAOS); the x axis represents the change in government expenditure relative to GDP. The regression does not control for fixed effects or other factors, such as GDP growth. While social unrest varies hugely across time and space, figure 10 demonstrates that there is a higher chance of major unrest if expenditure cuts are severe. Periods of spending increases, on the other hand, are typically associated with fewer antigovernment demonstrations, strikes, assassinations, riots, and revolutions. The message from the simple analysis in figure 10, then, is that social peace can be bought—government spending is a useful tool in restraining

Figure 10. The CHAOS Variable and Changes in Government Expenditure



Source: Author's elaboration based on Banks (1994) dataset.

the militancy of the opposition and the extent to which opposition forces can garner mass backing for violent action.

2.1 Aggregate Results

Next, I examine the relationship between adjustments and unrest econometrically. In particular, I estimate fixed-effect panel regressions of the type

$$\ln(U_{it}) = \alpha_i + \beta \Delta(EXP/Y)_{it} + \gamma \mathbf{X}_{it} + \varepsilon_{it}, \quad (1)$$

where U is one of the measures of instability in the data set, $\Delta(EXP/Y)$ is the change in central government expenditure relative to GDP, and $\mathbf{X}$ is a vector of control variables. The fixed-effect coefficients, α_i , are designed to capture the combined effect of two factors. First, the Banks data set relies on newspaper reporting of unrest. The level of news coverage may well have a country-specific component, with the same disturbance being more likely to be reported in a larger country than in a small one. Second, countries may differ in the level of unrest that should be expected in an average year, reflecting factors such as ethnic heterogeneity, the level of legitimate political participation, and the acceptability of violence more generally.

As a first pass, the dependent variables used are the two composite measures of unrest—CHAOS and WCI. Table 1 gives the results for CHAOS. Column (1) demonstrates that there is a statistically significant effect of expenditure changes (relative to GDP) on the level of unrest. An expenditure cut of 3.65 percent of GDP—equivalent to a one-standard-deviation change—would increase unrest by 0.2, or roughly 15 percent of a standard deviation of CHAOS. The effect is large—expenditure cuts by one standard deviation will raise expected levels of unrest (CHAOS) from the average in Brazil (2.1) to the average for Bolivia (2.3). Economic growth also cuts the level of unrest, and the effect is significant at the 95 percent level. When growth declines by a full standard deviation, unrest rises by 0.12 points, or half the distance between Brazil and Bolivia.

Revenue increases have a similar effect to expenditure changes. At first glance, it may appear paradoxical that there is no evidence that higher taxes lead to more unrest. Since much spending is redistributive—and arguably was so in South America for much of its postwar history—the negative coefficient on $\Delta(REVENUE/Y)$

Table 1. Unrest and its Determinants: CHAOS^a

<i>Explanatory variable</i>	<i>Sample</i>			
	<i>All</i> (1)	<i>All</i> (2)	<i>All</i> (3)	<i>Polity IV</i> < -5 (4) <i>Polity IV</i> ≥ -5 (5)
$\Delta(EXPIY)$	-0.057 ^{***} (-3.21)			-0.091 ^{**} (-2.30) -0.059 ^{***} (-3.09)
$\Delta(\log Y)$	-0.012 ^{**} (-2.22)	-0.012 ^{**} (-2.13)	-0.009 [*] (-1.76)	-0.040 ^{***} (-3.50) 0.005 (0.87)
$\Delta(REVENUE/Y)$		-0.036 [*] (-1.92)		
$\Delta(BUDGET\ BAL/Y)$			0.052 ^{**} (2.01)	
Constant	0.231 ^{***} (3.36)	0.233 ^{***} (3.36)	0.218 ^{***} (3.15)	0.655 ^{***} (3.89) 0.068 (0.96)
<i>Summary statistic</i>				
No. observations	473	473	473	123 323
R^2	0.029	0.015	0.016	0.115 0.033

Source: Author's elaboration.
* Statistically significant at the 10 percent level. ** Statistically significant at the 5 percent level. *** Statistically significant at the 1 percent level.
a. The dependent variable is CHAOS. All regressions were run with fixed country effects; *t* statistics are in parentheses.

may simply pick up episodes of simultaneous tax and spending increases, with the latter reducing the level of unrest.¹⁰ Increasing budget deficits are also a good way to prevent violent protests. The coefficient on the change in the budget balance, $\Delta(BUDGET\ BAL/Y)$, is positive, indicating a decline in unrest when the budget sinks more into the red. While regressions (1) and (3) are somewhat successful in identifying a link between unrest and austerity, the low R^2 clearly cautions against overinterpreting the results. Many other factors unrelated to budget measures are clearly involved in creating civil unrest and violent conflict in a society.

Some authors have found that unrest is less common in autocracies (Paldam, 1993). To explore this possibility, I subdivide the sample based on a country's Polity IV score; the results are reported in columns (4) and (5) of table 1. Roughly a quarter of the country-year observations have scores below -5 , indicating a highly authoritarian regime. In both subsamples, expenditure cuts are associated with more unrest. The coefficient is somewhat smaller in the group of countries with more open institutions, but both coefficients are significant at conventional levels. Also, one cannot reject the null hypothesis that the size of the coefficients is the same.

I find broadly similar results when using the WCI as the dependent variable (see table 2). Column (1) suggests a clear negative impact of changes in expenditure relative to GDP, measured as $\Delta(EXP/Y)$. WCI varies from 0 to 27,312, with a standard deviation of 2,504. The standard deviation of expenditure changes relative to GDP is 3.65. The estimated coefficient then implies that a one-standard-deviation cut in expenditure increases unrest by 226, or about 10 percent of a standard deviation of the dependent variable. The coefficient is significant at the 10 percent level. GDP growth also cuts unrest, but the effect is not significant. Here, a one-standard-deviation change induces a change of 295 units in the WCI, slightly larger than the effect of expenditure cuts. The overall R^2 shows that neither expenditure changes nor economic growth can explain a high share of the total variation in unrest in the sample.

Revenue changes have no clear impact on unrest in column (2). The estimated coefficient is negative, but not significant at conventional levels. In column (3), changes in the government budget

10. If I estimate with expenditure and revenue jointly, there is a small, insignificant, and positive coefficient for revenue.

Table 2. Unrest and Its Determinants: WCI^a

<i>Explanatory variable</i>	<i>Sample</i>				
	<i>All</i> (1)	<i>All</i> (2)	<i>All</i> (3)	<i>Polity IV < -5</i> (4)	<i>Polity IV ≥ -5</i> (5)
$\Delta(EXPIY)$	-63.74* (-1.76)			-42.60 (-0.48)	-83.48** (-2.52)
$\Delta(\log Y)$	-14.33 (-1.29)	-14.49 (-1.30)	-11.78 (-1.07)	-8.54 (-0.33)	-20.08* (-1.91)
$\Delta(REVENUE/Y)$		-52.94 (-1.37)			
$\Delta(BUDGET\ BAL/Y)$			36.20 (0.69)		
Constant	1,986.7*** (14.11)	1,991.5*** (14.11)	1,974.7*** (13.98)	2,229.2*** (5.84)	1,792.2*** (14.38)
<i>Summary statistic</i>					
No. observations	473	473	473	123	323
R ²	0.01	0.007	0.004	0.002	0.030

Source: Author's elaboration.

* Statistically significant at the 10 percent level. ** Statistically significant at the 5 percent level. *** Statistically significant at the 1 percent level.
a. The dependent variable is WCI. All regressions were run with fixed country effects; *t* statistics are in parentheses.

balance are positively associated with unrest, but the effect is not tightly estimated. Finally, columns (4) and (5) estimate the effect of budget cuts for two groups of countries—those with high Polity IV scores and those with relatively low ones. For the part of the sample with low scores, there is some evidence that expenditure cuts lead to unrest, but the effect is not significant and the coefficient smaller than in column (1). Countries with higher scores for the level of openness and democracy, on the other hand, show a much clearer association of expenditure cuts with violent protests.

2.2 Different Forms of Instability

Next, I examine the individual components of the composite conflict indicators summarized above. For four of the five variables in the data set (used for constructing CHAOS), there are negative and significant coefficients on the expenditure variable, indicating that increases in government spending are associated with lower levels of unrest (see table 3). The coefficients for assassinations and demonstrations are significant at the 99 percent and 95 percent levels, respectively; those on riots and revolutions are significant at the 90 percent level. General strikes, on the other hand, show a positive (if insignificant) coefficient. Growth cuts unrest for all variables except general strikes, but the coefficient is only well estimated for riots, revolutions, and demonstrations.

2.3 Inflation and Deflation

In this section, I explore the effect of inflation and deflation to ascertain whether the patterns described above are independent of the monetary environment. In column (1) of table 4, I use all observations in the sample, but add a control for the rate of exchange rate decline (where positive values indicate depreciation of a country's currency). The dependent variable is CHAOS, as before. Controlling for inflationary developments in this way does not change the results. Both the coefficient size and its statistical significance are not affected in a major way. When the sample is restricted to the 61 country-year observations with high inflation, expenditure has a strong and highly significant effect on social instability. The coefficient is more than three times larger than in the sample as a whole, and it is more statistically significant.

Table 3. Different Measures of Instability and Expenditure Cuts^a

<i>Explanatory variable</i>	<i>Assassinations</i> (1)	<i>General strikes</i> (2)	<i>Riots</i> (3)	<i>Revolutions</i> (4)	<i>Demonstrations</i> (5)
$\Delta(EXPY)$	-0.0575*** (-3.30)	0.0095 (0.69)	-0.0309* (-1.66)	-0.0146* (-1.67)	-0.0413** (-2.29)
$\Delta(\log Y)$	-0.0006 (-0.12)	0.0011 (0.27)	-0.0169*** (-2.96)	-0.0052* (-1.93)	-0.0095* (-1.72)
Constant	0.388*** (5.71)	0.461*** (8.61)	0.782*** (10.77)	0.357*** (10.48)	0.671*** (9.55)
<i>Summary statistic</i>					
No. observations	473	473	473	473	473
R^2	0.023	0.001	0.022	0.013	0.016

Source: Author's elaboration.

* Statistically significant at the 10 percent level. ** Statistically significant at the 5 percent level. *** Statistically significant at the 1 percent level.

a. All regressions were run with fixed country effects; *t* statistics are in parentheses.

Table 4. Expenditure Cuts and Unrest: Inflationary and Deflationary Periods^a

Explanatory variable	Sample			
	All	Inflationary period ^b	Deflationary period ^c	Neither inflationary nor deflationary
	(1)	(2)	(3)	(4)
$\Delta(EXPY)$	-0.0516 ^{***} (-2.85)	-0.1850 ^{***} (-3.42)	0.0934 (0.89) [0.584]	-0.0295 (-1.50)
$\Delta(\log Y)$	-0.0142 ^{**} (-2.53)	-0.0028 (-0.24)	-0.0007 (-0.66) [-0.356]	-0.0220 ^{***} (-3.31)
$\Delta EXCHANGE RATE$	0.0677 (1.38)			
Constant	0.259 ^{***} (3.66)	0.330 [*] (1.77)	0.136 (0.43) [0.41] [0.41]	0.251 ^{***} (3.18)
Summary statistic				
No. observations	456	61	26	386
R ²	0.037	0.207	0.063	0.033

Source: Author's elaboration.

^a Statistically significant at the 10 percent level. ^{**} Statistically significant at the 5 percent level. ^{***} Statistically significant at the 1 percent level.

a. All regressions were run with fixed country effects; *t* statistics are in parentheses and bootstrapped standard errors in square brackets.

b. An inflationary period is defined as a period in which the exchange rate decline vis-à-vis the U.S. dollar is in the top 5 percent of the sample, that is, above 66 percent per year.

c. An inflationary period is defined as a period in which there is an absolute increase in the exchange rate vis-à-vis the dollar.

A large literature stresses that inflationary periods are often driven by weak governments trying to satisfy the competing claims of different groups in society; using the printing press in such an environment is easier than hiking taxes (Feldman, 1997). Stabilizing after periods of high inflation often requires massive increases in the primary surplus (Fischer, Sahay, and Végh, 2002). If distributional struggles are particularly severe during inflationary periods, it makes sense that expenditure cuts are fiercely resisted, as reflected by the steep increase in social unrest. For the sample of inflationary episodes, a large share of the total variation in unrest can be explained by expenditure and output changes—the R^2 rises to over 0.2, versus 0.02 to 0.03 in other specifications.

In contrast, deflationary periods show no direct effect on the relationship between expenditure changes and politically motivated violence. The coefficient in column (3) is positive and not statistically different from zero. Since the number of observations for deflationary episodes is small, I also bootstrap the standard errors in column (3). While not all the standard errors are of similar size, the conclusion is not materially affected: there is no clear link between expenditure cuts and unrest during periods of deflation.

When excluding both inflationary and deflationary periods (equation 4), I find a negative but insignificant coefficient. One cannot reject the hypothesis that the coefficient is the same as in the full sample. Lack of identifying variance probably limits the extent to which one can document a connection between austerity measures and budget cuts, but it would be a mistake to claim that the difference between the insignificant coefficient in column (4) and the significant one in column (1) is itself significant.¹¹

3. ROBUSTNESS AND EXTENSIONS

This Section examines the robustness of the main finding so far of a strong, significant link between budget cuts and civil unrest. A potentially important issue is omitted-variable bias. While the issue cannot be resolved definitively in the absence of a convincing instrument, it seems likely that this is not a major obstacle. Another obvious concern relates to the stability of the link over time. Finally, I test for nonlinearities in the data and examine the robustness of the main finding using extreme bounds analysis.

11. Gelman and Stern (2006).

3.1 Omitted-Variable Bias

The main concern with the equations estimated above is not reverse causality—few governments would implement budget cuts as a consequence of social unrest. What is of greater concern is potential omitted-variable bias. If, for example, economic hard times produce a large increase in unemployment, a fall in government revenue, and budget cuts, then an upsurge of violent protests may be less inspired by changes in government spending itself than by the rising immiseration of the population resulting from the economic crisis. This is of particular concern since fiscal policy is widely believed to be highly procyclical in emerging markets.¹²

In the absence of a compelling instrument, one cannot isolate the exact factor driving the rise in instability. The fact that budget cuts remain highly significant even when controlling for economic growth suggests that the omitted-variable problem cannot be too severe. Adding the square of GDP growth to control for nonlinearities does not change the result—both WCI and CHAOS remain highly significant and negative, and the size of the coefficient is unaffected.

3.2 Stability over Time

The assumptions underlying regressions of the type estimated in this paper are heroic. Antigovernment demonstrations in Argentina under Peron would have the same meaning as those against President Alfonsín; a political murder of a government official in Chile would carry the same information about social unrest as in Brazil.

In table 5, I subdivide the sample at 1975 to examine the robustness of these findings. There is no significant association between expenditure changes and unrest in the aggregate. While revolutions are clearly associated with budget cuts, general strikes follow the opposite pattern, in a highly significant manner. Most other variables, while showing a negative coefficient, are not statistically significant.

The period after 1975 shows a much clearer association between budget cuts and unrest. General strikes are now also negatively associated with fiscal expenditures, in contrast to the pattern observed in the earlier period. The coefficients for most variables are substantially

12. Talvi and Végh (2005); Ilzetzki and Végh (2008). For a skeptical view, see Jaimovich and Panizza (2006).

Table 5. Observations before and after 1975^a

<i>Period and explanatory variable</i>	<i>CHAOS</i>	<i>Assassinations</i>	<i>General strikes</i>	<i>Riots</i>	<i>Revolutions</i>	<i>Demonstrations</i>
<i>A. Before 1975</i>	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta(EXP/Y)$	-0.0088 (-0.40)	-0.0065 (-0.72)	0.0374* (1.92)	-0.0153 (-0.50)	-0.0348** (-2.52)	-0.0131 (-0.81)
$\Delta(\log Y)$	-0.0211* (-1.79)	0.0054 (1.09)	-0.0043 (-0.40)	-0.0438*** (-2.62)	-0.0104 (-1.38)	-0.0066 (-0.75)
Constant	0.103 (1.03)	0.123*** (2.95)	0.343*** (3.81)	1.170*** (8.23)	0.483*** (7.55)	0.401*** (5.37)
<i>Summary statistic</i>						
No. observations	262	262	262	262	262	262
R^2	0.013	0.007	0.015	0.028	0.032	0.005
<i>B. After 1974</i>	(7)	(8)	(9)	(10)	(11)	(12)
$\Delta(EXP/Y)$	-0.104*** (-3.76)	-0.104*** (-3.08)	-0.025 (-1.33)	-0.043** (-2.30)	0.007 (0.73)	-0.071** (-2.11)
$\Delta(\log Y)$	-0.016** (-2.41)	-0.008 (-1.02)	0.002 (0.40)	-0.012*** (-2.70)	-0.003* (-1.83)	-0.015* (-1.92)
Constant	0.485*** (4.63)	0.724*** (5.63)	0.646*** (9.27)	0.472*** (6.68)	0.230*** (6.57)	1.022*** (8.07)
<i>Summary statistic</i>						
No. observations	211	211	211	211	211	211
R^2	0.081	0.047	0.011	0.051	0.022	0.034

Source: Author's elaboration.

* Statistically significant at the 10 percent level. ** Statistically significant at the 5 percent level. *** Statistically significant at the 1 percent level.

a. All regressions were run with fixed country effects; *t* statistics are in parentheses.

larger and highly significant. The only exception is revolutions, which become less responsive to economic conditions after 1974. This may suggest that discontent before 1975 was more likely to spill over into rebellions, possibly in the form of communist-backed insurgencies. With the decline of Soviet and Cuban influence, combined with rising democratization in many South American countries, discontented groups in society found other ways of expressing themselves.

3.3 Regime Durability

Tables 1 and 2 offered some support for the idea that the effect of fiscal adjustments on unrest does not depend on the level of political development. The evidence suggested that countries with high or low Polity IV scores showed very similar coefficients for expenditure changes. Polity IV scores, which range from -10 to 10 , are calculated as the difference between a country's democracy and autocracy scores. These scores aggregate a number of variables, including the competitiveness and openness of executive recruitment, constraints on the executive, the regulation of participation, and the competitiveness of participation (Marshall, Jaggers, and Gurr, 2010).

Another variable that is popular in the political economy literature is constraints on the executive (Acemoglu, 2005). This is one of the factors in the Polity scoring system, and it is arguably of great importance for economic political transitions, since it captures the extent to which might makes right. Regimes with low constraints on the executive may require mass protests and the like to influence policy. Regime durability is a separate dimension of a country's political setup. It counts the number of years since a three-point change on the Polity IV scale. Countries with a high value show substantial stability of the political system.

Table 6 gives the results for subdividing the sample at the median of the distribution for both constraints on the executive and durability. For both high and low values, there are significant effects of budget adjustments. For relatively unconstrained countries, the effect is larger, and growth matters; for countries with strong checks and balances, there is a clear effect of budget adjustments, but none of economic growth.

Durability shows a different pattern. Where durability is low (specifically, less than six years have passed since the last major regime change) the effect of fiscal adjustment is strong. When a

Table 6. Fiscal Adjustment and Unrest: Constraints on the Executive and Durability^a

<i>Explanatory variable</i>	<i>Constraints on the Executive</i>		<i>Durability</i>	
	<i>Low (<3)</i> (1)	<i>High (≥3)</i> (2)	<i>Low (<6)</i> (3)	<i>High (≥6)</i> (4)
$\Delta(\text{EXP}/Y)$	-0.0932** (-2.52)	-0.0605*** (-3.21)	-0.0639*** (-2.64)	-0.0225 (-0.87)
$\Delta(\log Y)$	-0.0384*** (-3.46)	0.0009 (0.15)	-0.0093 (-1.03)	-0.0126* (-1.87)
Constant	0.528*** (3.58)	0.123* (1.71)	0.216** (2.14)	0.241** (2.59)
<i>Summary statistic</i>				
No. observations	157	316	230	243
R^2	0.089	0.033	0.033	0.017

Source: Author's elaboration.

* Statistically significant at the 10 percent level. ** Statistically significant at the 5 percent level. *** Statistically significant at the 1 percent level.
a. The *t* statistics are in parentheses.

country's political order has seen few changes for an extended period, the effect is weaker and not tightly estimated.¹³ Growth seems to matter more for cutting violence in more durable regimes, but the two coefficients are not different from each other.

3.4 Censored Data

The data on instability are derived from counting events, such as the number of strikes and demonstrations. This means that the main indicators, as well as WCI, are truncated at zero. It is not clear that the panel versions of the linear probability model used so far capture the data adequately. To address the issue, I estimated panel Poisson regressions that take the censoring implicit in the use of nonnegative count data directly into account.

Table 7 presents the results. The significance of the main results is not affected. WCI, the aggregate measure proposed by Banks, shows a strongly negative and significant effect under Poisson, as does every other variable, with the exception of general strikes. This last measure of unrest was also not significant under panel ordinary least squares (OLS) (table 3). Overall, there is no evidence that violations of the normality assumption might have been driving the significance of results.

3.5 Asymmetry between Budget Cuts and Increases

So far, the regression analysis implicitly assumed that the effect of changes in expenditure on unrest does not depend on the sign of the change. That is, cutting expenditure will increase unrest as much as a rise in spending will cut it. This is not an obvious assumption. It is a well-known finding in behavioral economics that humans tend to react more strongly to losses than to gains (Kahnemann and Tversky, 1991). To examine this issue further, I ran separate regressions for the part of the distribution of expenditure changes that is greater or smaller than zero.

Table 8 gives the results. The coefficient on expenditure changes is negative for both the positive and negative part of the distribution, but the effect is much more pronounced for expenditure cuts. For the aggregate indicator of instability from the Banks data set, the

13. The standard error in equation (4) is so large that the coefficient on $\Delta(\text{EXP}/Y)$ is not significantly different from the one in equation (3).

Table 7. Panel Poisson Regressions: Count Variables^a

<i>Explanatory variable</i>	<i>WCI</i> (1)	<i>Assassinations</i> (2)	<i>General strikes</i> (3)	<i>Riots</i> (4)	<i>Revolutions</i> (5)	<i>Demonstrations</i> (6)
$\Delta (EXPIY)$	-0.034*** (-109.30)	-0.139*** (-7.30)	0.019 (0.99)	-0.042*** (-2.76)	-0.048** (-1.97)	-0.006*** (-3.80)
$\Delta (\log Y)$	-0.0077*** (-81.82)	-0.0018 (-0.27)	0.0022 (0.39)	-0.0230*** (-5.07)	-0.0152** (-2.23)	-0.0141*** (-2.96)
No. observations	473	463	473	463	425	463

Source: Author's elaboration.

* Statistically significant at the 10 percent level. ** Statistically significant at the 5 percent level. *** Statistically significant at the 1 percent level.

a. The *t* statistics are in parentheses.

coefficient for cuts is approximately twelve times larger than for expenditure increases. For CHAOS, it is six times larger. Also, the negative coefficient for expenditure increases is not significant, while the coefficient for cuts is in both cases (strongly so for CHAOS). While this finding is not direct confirmation of gain-loss asymmetry, it is compatible with such an interpretation.

Table 8. Responses of Instability to Budget Cuts and Increases^a

<i>Explanatory variable</i>	<i>WCI</i>		<i>CHAOS</i>	
	(1)	(2)	(3)	(4)
$\Delta(EXP/Y)$	-12.03 (-0.20)		-0.05 (-1.02)	
$\Delta(\log Y)$	-15.21 (-1.30)	-15.56 (-1.02)	-0.05*** (-2.86)	-0.02 (-0.92)
$\Delta(/Y) \leq 0$		-148.8* (-1.89)		-0.31** (-2.46)
Constant	1,869.4*** (9.58)	1,798.7*** (7.67)	2.11*** (9.16)	1.65*** (4.68)
No. observations	231	242	231	242

Source: Author's elaboration.

* Statistically significant at the 10 percent level. ** Statistically significant at the 5 percent level. *** Statistically significant at the 1 percent level.

a. The *t* statistics are in parentheses.

3.6 Interpretation: The Timing of Protest

Paldam (1993), using weekly data, finds that protests peak while budget measures are discussed and decline after budget adjustments are implemented. The data in this study are yearly and thus cannot speak to the precise timing of protests. Assuming that Paldam's finding holds more generally, this would suggest the following interpretation of the main results of this study. Budget cuts are still closely related with social unrest, but instability would not be a consequence of popular outrage after the effects of adjustments make themselves felt. Rather, riots, strikes, and the like are a form of bargaining between different social parties

over the cost of adjustment. Once the decisions are taken and implemented, unrest declines.

4. CONCLUSIONS

Social unrest can be powerful in undermining government credibility. Street protests and violent demonstrations can force political leaders from office, as happened in the case of the de la Rúa government in Argentina in 2001. Riots, antigovernment demonstrations, general strikes, and political assassinations are driven by a multitude of factors, many of them specific to the country in question. Nevertheless, casual empiricism suggests that a significant amount of social unrest can be explained by economic factors.

In this paper, I examined the effect of budget cuts on social unrest in Latin America for the period 1937–95, using a variety of indicators. There is clear evidence that reductions in spending clearly and strongly increase the risk of unrest. While the share of strikes, assassinations, riots, and demonstrations that can be explained by budget cuts is not very high, the relationship is robust for countries with both democratic and autocratic structures. All indicators of unrest except general strikes are significantly and negatively associated with government expenditure. There is some evidence that the effect of budget cuts in times of inflation is particularly pronounced and that normal times without rapid price increases only see a mild association between austerity and anarchy. Constraints on the executive do not matter for the strength of the link, but a regime's durability—the length of time since the last significant change in its political fabric—does: countries with a longer history of stability show a much weaker link between budget cuts and chaos. There is also clear evidence for a discontinuous increase in the effect of budget cuts. Extreme movements in measures of unrest are more readily explained by austerity measures than relatively mild upticks in upheaval.

These results provide a rationale for why governments often find it hard to cut expenditures. While unrest is a relatively low probability event—even in this sample of South American countries over the last 70 years—there is a nonzero probability that austerity will fan the flames of discontent, leading to violent antigovernment protests. They may also offer a perspective on why public indebtedness differs so much around the globe and even among countries with relatively similar levels of economic development (Alesina and Perotti, 1995).

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