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**TIGHTENING TENSIONS: FISCAL POLICY AND
CIVIL UNREST IN ELEVEN SOUTH AMERICAN
COUNTRIES, 1937 - 1995**

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TIGHTENING TENSIONS: FISCAL POLICY AND CIVIL UNREST IN ELEVEN SOUTH AMERICAN COUNTRIES, 1937 - 1995

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Abstract

Efforts at fiscal consolidation are often limited because of concerns over potential social unrest. From German austerity measures during the 1930s to the violent demonstrations in Greece in 2010, hard times have tended to go hand in hand with antigovernment violence. In this paper, I assemble cross-country evidence from eleven South American countries for the period 1937 to 1995 about the extent to which societies become unstable after budget cuts. The results show a clear positive correlation between austerity and instability. I examine the extent to which this relationship simply captures the fact that fiscal retrenchment and economic slumps are correlated, and conclude that this is not what is driving the effect. Finally, I test for interactions with various economic and political variables. While autocracies and democracies show a broadly similar response to budget cuts, countries with a history of stable institutions are less likely to see unrest as a result of austerity measures.

Resumen

Los esfuerzos de consolidación fiscal son comúnmente desalentados ante un potencial estallido social. Desde la política de austeridad fiscal en Alemania en los años treinta a las violentas protestas en Grecia en el 2010, los tiempos difíciles han ido de la mano con la violencia antigubernamental. Este artículo recolecta evidencia de once países sudamericanos entre 1937 y 1995 sobre inestabilidad social ocurrida después de recortes presupuestarios. Los resultados muestran una clara correlación positiva entre austeridad fiscal e inestabilidad. Este artículo examina cuánto de esta correlación está determinada por la relación entre ajustes fiscales y recesiones económicas, concluyendo que esta relación no es relevante. Finalmente, este artículo comprueba la interacción entre diversas variables políticas y económicas. Mientras autocracias y democracias muestran una respuesta similar a los ajustes fiscales, hay una menor probabilidad de que ocurra un estallido social en países con una historia de instituciones estables como resultado de políticas de austeridad fiscal.

1. INTRODUCTION

On May 1, 2010, the Greek Prime Minister George Papandreu announced a set of drastic austerity measures. May Day itself saw clashes between police and demonstrators. On May 5, a general strike paralysed the country; armed demonstrators fought street battles with police. A bank burned down, and numerous demonstrators and policemen were injured. By the standards of anti-government 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, anti-government demonstrations, political assassinations, and attempts at revolutionary overthrow become more common if governments push through tax hikes and spending cuts?

I analyse this question for South America during the period 1937-1995. 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 'Caracazo' in Venezuela, austerity measures have played a prominent role in numerous cases of mass protest (Sonntag, Maingón, and Biardeau, 1992; Handelman and Sanders, 1981). Cuts in expenditure are particularly strongly correlated with violent forms of protest and attempts to overthrow the government. Fiscal adjustment through tax increases is less clearly associated with unrest than 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.

There is also evidence that the relationship between fiscal adjustment and antigovernment violence has strengthened in recent decades. Until the mid-1970s, the link is weaker in the data than after this date. 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 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

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

followed, and 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 are its chances of re-election reduced. Sharp adjustments may even be rewarded by the electorate. This is in line with the finding by Kraemer (1997) that fiscal expansions in Latin America prior to elections do not increase a government's chances of staying in power.

If we take these findings at face value, they raise the question 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 others 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). They 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. Also, Woo (2003) found that instability and unrest are clearly associated with higher levels of public debt. This implies that countries with more debt are either 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 ours is Paldam (1995). He studies 9 balance of payments crises in 7 South American countries. Most of these were associated with attempts to lower inflation. Governments (sometimes with IMF help) pushed through spending cuts, and saw a rise in protests in response. Paldam uses an

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

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

event-study 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, there is a spike in government changes some 10 weeks after new budget measures are brought in. Paldam also argues that democratic regimes experience more violent protests than autocracies. For Africa, Morrison, Lafay, and Dessus (1994) analyse IMF interventions and fiscal adjustments. They find that economic stabilization programmes can be politically risky. Within six months of an adjustment programme, strike activity increases.⁴ 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 OECD examined 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 and monetary tightening increase it.

Other related literature also includes work on the interaction between distributional outcomes, political change, and the potential for political violence. Acemoglu and Robinson (2000) argue that the ‘West’ extended the franchise to head 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.

In the social psychology literature, the importance of comparison effects and of low social distance between favoured and unfavoured groups has generally been emphasized (Berkowitz, 1972). Other papers analyse 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.

I proceed as follows. Section 2 summarizes our data, and section 3 presents the main results. The following section examines the robustness of these findings, and section 5 concludes.

⁴ It should be noted that the estimated coefficients are small (around 0.15, and the authors do not test for significance).

2. DATA AND CONTEXT

Neither quantifying violent protests nor the measurement of fiscal adjustments are simple tasks.⁵ In this paper, I use data collected by Banks (1994) on the number of political assassinations, general strikes, riots, and anti-government demonstrations. While the dataset was compiled from the 1960s onwards 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 Civilised World'. Conflict data itself was gleaned from the *New York Times*, and is available from 1919 onwards. I also use data on economic variables from the Banks (Cross National Time Series) dataset, based on data from the UN Statistical Yearbook, and Pick's Currency Yearbook. Finally, data on institutional quality comes from the Polity IV dataset (Marshall, Jaggers, and Gurr, 2010).

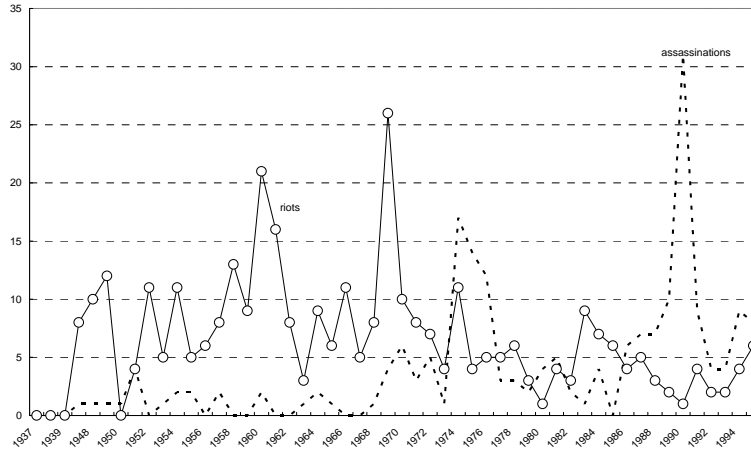
I use data for 11 South American countries – Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Suriname, Uruguay, and Venezuela. Not included are Guyana and French Guyana, the former because data on control variables was not available, the latter because it is an overseas territory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

On average, for each country during a 10 year period, there were 6.9 riots, 6 anti-government demonstrations, 4 assassinations, and 3.4 attempts to overthrow the government in violent fashion ("revolutions") in our data. 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 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 5-8 recorded in the immediate post-war era, there are fewer peaks. In the period 1937-1970, there were 9 years with more than 10 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, and bad years, two to three. After the mid-1970s, this changed dramatically. Even 'quiet' years now register 3-5 assassinations, and there are two peaks with murder frequency surging above 10 p.a.

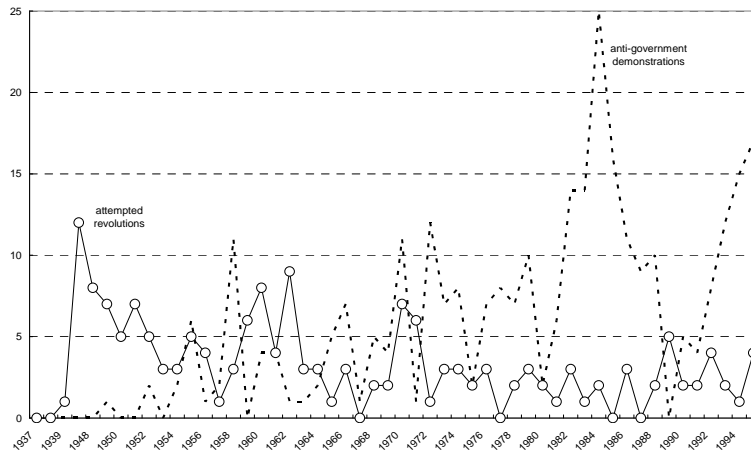
⁵ For methodological considerations, cf. IMF (2010).

Figure 1. Riots and Assassinations in South America, 1937-1995.



The history of anti-government demonstrations and of coups and revolutions – attempted or successful – is similarly volatile. Figure 2 gives an overview. Anti-government demonstrations have been on an increasing trend since the 1930s. For most of the 1950s and 1960s, there were 3-5 of them per year, with values above 5 a rare occurrence. Since 1970, there have been more than 10 years with more than ten anti-government demonstrations, with an all-time peak of 25 in 1984.

Figure 2. Revolutions and Demonstrations, Mean Sample Value by Year, in South America, 1937-2005.



Attempts at revolution have been on a declining trend. 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 5.

The Banks dataset contains an aggregate measure of unrest – the “weighted conflict index” (henceforth, *wci*). It combines the different series on unrest in the

Banks dataset by adding them up with different weights. Assassinations, for example, receive a weight of 24, while purges count almost four times as much (86). Anti-government demonstrations receive the highest score (200). The weights were not chosen based on statistical analysis; they reflect the assessment of Banks and his team. In subsequent analysis, this indicator is used.

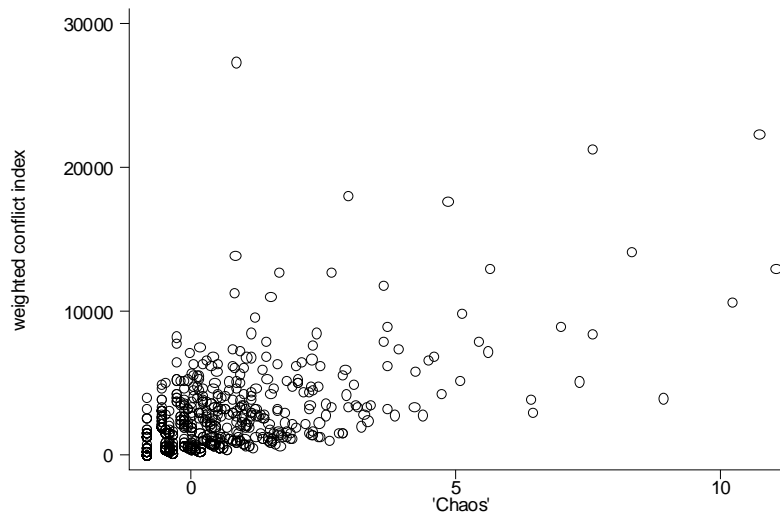
In addition, I construct an aggregate measure based on principal components analysis, using a subset of the time series collected by Banks. Arguably, of the eight indicators compiled in the Banks database, only five are closely related to the issue that we are interested in – social unrest that can reflect opposition to or protests against government spending cuts. These variables are anti-government demonstrations, general strikes, riots, assassinations, and revolutions. In contrast, purges are attempts by the authorities to silence the opposition. Government crises may have many origins, and rarely reflect public unrest as a result of fiscal adjustments.⁶ 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 into levels of popular support, at least at annual frequency. In addition, it is unlikely that fiscal adjustments in a single year can 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 – anti-government demonstrations, general strikes, riots, assassinations, and revolutions. The first principal component explains 38% of the total variance. All factors enter with a positive loading. Riots, assassinations, and general strikes have relative high scoring coefficients. The first principal component (henceforth, *chaos*) and the weighted conflict score from the Banks dataset (*wci*) are highly but not perfectly correlated – 0.6, significant at the 1% level.

Figure 3 compares the two aggregate measures of unrest – *wci* and *chaos*. While they are positively correlated, it is clear that they do not capture exactly the same variation in the data. For example, Brazil 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.

⁶ There are clearly exceptions to this, such as Argentina in 2001.

Figure 3. Comparison of indicators – *wci* vs *chaos*.



Case Studies: Brazil, Chile, and Peru

Brazil

During our sample period, 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. Following an attempted Communist uprising in 1935, the dictatorship became more autocratic. After Allied victory in 1945, Brazil returned to democracy after a military coup. 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 (Levine, 2003).

The conflict series for Brazil is dominated by riots, which occurred with some frequency in the 1950 and 1960s. The years of military dictatorship show relatively fewer incidents overall, and in particular, no attempts at revolutionary overthrow. General strikes are also conspicuously rare during the years 1964-75. Increasing austerity measures after 1975 are known to have been one factor behind the rise in militancy (Frieden, 1992). The strikes of the late 1970s have been widely noted for their strength and effectiveness, and 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 – and in particular, government spending? Historians of labor unrest in Brazil have sometimes disputed the role of economic factors (Sandoval, 1993). Undoubtedly, each incident in the dataset has highly specific causes – accidents of timing, of the political constellation, etc. play a role. And yet, I find a negative correlation between expenditure changes and the aggregate measure of unrest constructed before (*chaos*). For the sample as a whole, the 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.

Figure 4. Unrest in Brazil, 1947-95.

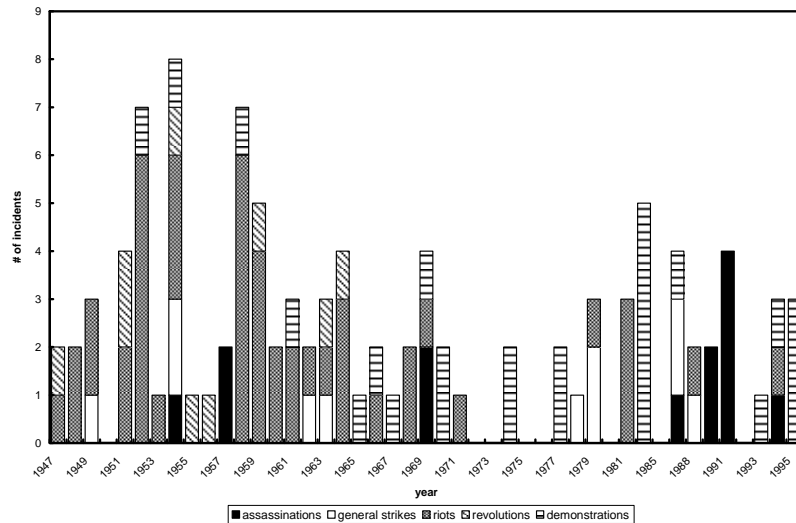
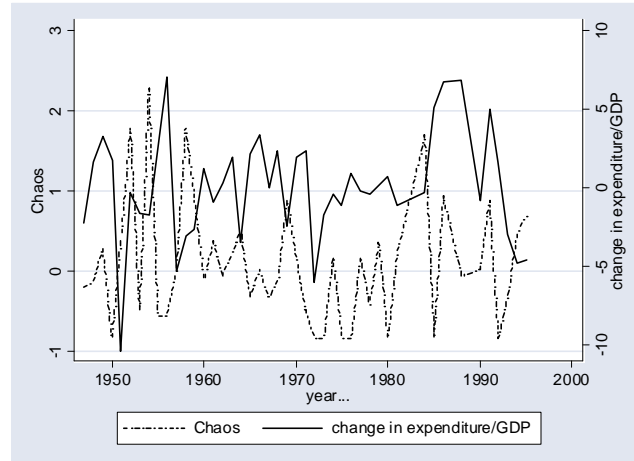


Figure 5. Social Unrest and Changes in Expenditure in Brazil, 1947-95.



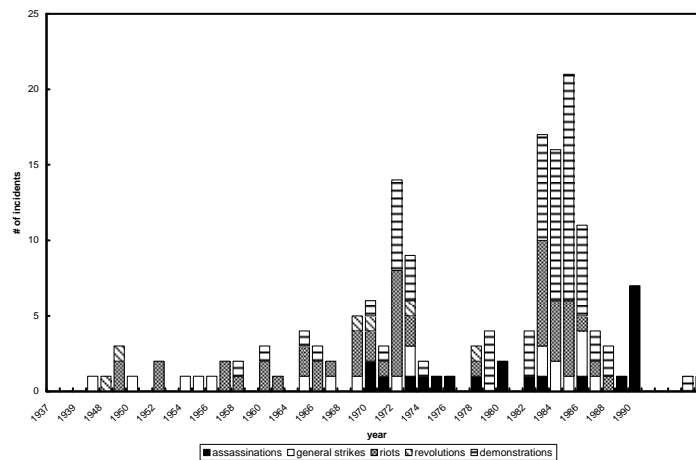
Chile

Chile's political history was generally less volatile than that of many other Latin American countries. This changed in the 1920s, when Marxist groups gained in influence. A military coup in 1925 ushered in a period of rapid turnover in governments, which lasted until constitutional rule was restored in 1932. The following twenty 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 onwards, a left-leaning government under Eduardo Frei pursued a series of reforms. These included generous social programs, plans for agricultural reform, and large-scale housing projects.

Our data shows only a handful of strikes and riots in Chile in the 1950s and early 1960s. Under the Frei government, unrest increased, with left-wing militants strengthened their position. After the 1970 election, Salvador Allende became President. As well as embarking on a major program of social reform, the state's role in the economy grew. The banking system was nationalized. The Allende years show a rise in the frequency of riots, attempted overthrows of the government, and anti-government 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 Pinochet to power.

Military dictatorship went hand-in-hand with relatively few incidents in the Banks dataseries (murders of dissidents and activists are not counted). The next wave of unrest arrived between the referenda of 1980 and 1988 that 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 against the Pinochet regime (Ensalaco, 2000). During the period, riots and demonstrations were commonplace, with 15 anti-government demonstrations in 1985 alone. The years after the return to democracy in 1991 then 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 confidante of General Pinochet, by the MRPF).

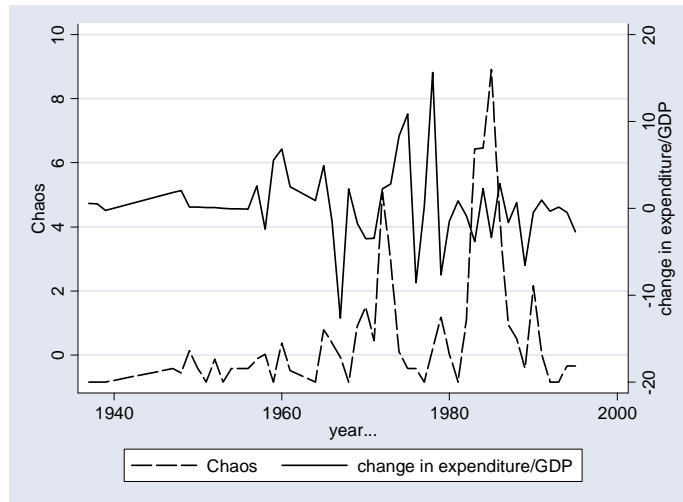
Figure 6. Unrest in Chile, 1937-1995.



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 has stressed the extent to which worker militancy was fuelled by economic concerns, there is no clear evidence in favour of a direct, strong link between budget cuts and unrest (the correlation coefficient is negative – 0.07 – but insignificant).⁷

⁷ Salazar (2006).

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



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 links to the drugs trade. From its founding in the 1930s, the Alianza Popular Revolucionaria Americana (APRA) militated in favour 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 onwards, 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 guerrilla followed. The administration of Alberto Fujimori elected in 1990, brought inflation under control. It also dissolved Congress against the constitutional rules, and pushed through major reforms. A crackdown on the Shining Path insurgency was largely successful, but resulted in several massacres.

During its post-war history, Peru experienced two major waves of social unrest according to our measure. Figure 8 plots developments over time. The mid-to-late seventies, as the rule of the military was coming to an end, saw a surge in riots and demonstrations; the late 1980s witnessed numerous political murders. Even at its peak, the overall level of unrest was low compared to, 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).⁸ Paldam (1995) also classifies 1982 and 1990 as years of economic crisis, with inflation high and terrorism widespread. In 1989, several thousand

⁸ 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.

Peruvians crossed the border into Chile to buy bread, which had become largely unavailable in Peru.

Figure 8. Unrest in Peru, 1937-1995.

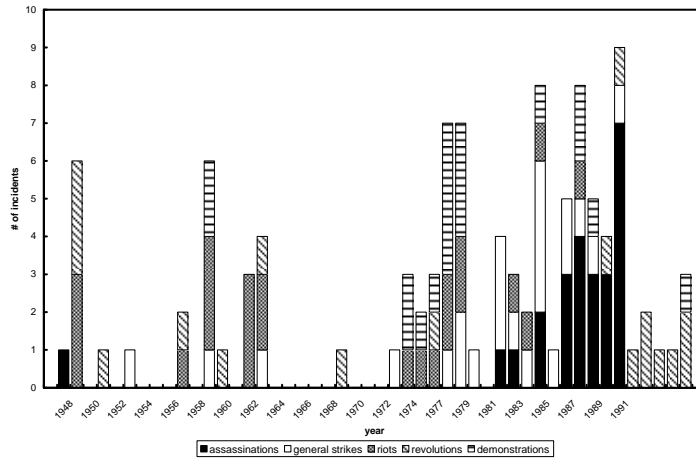
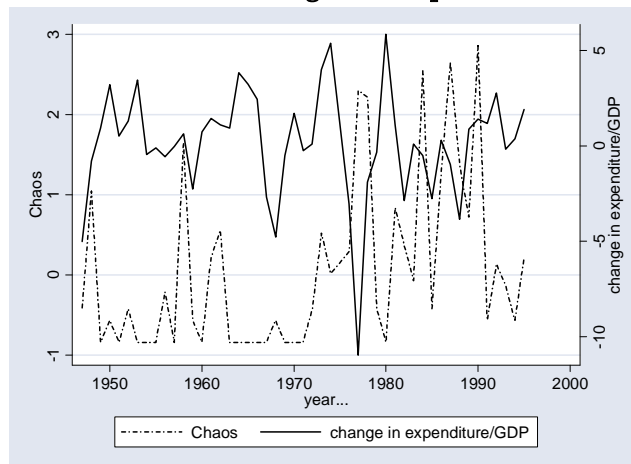


Figure 9 plots changes in expenditure and our preferred measure of unrest side-by-side. There is also some evidence for an inverse movement of the two series in the late 1960s. In the main, there is little inverse movement for small changes in expenditure. Large fiscal adjustments, on the other hand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

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



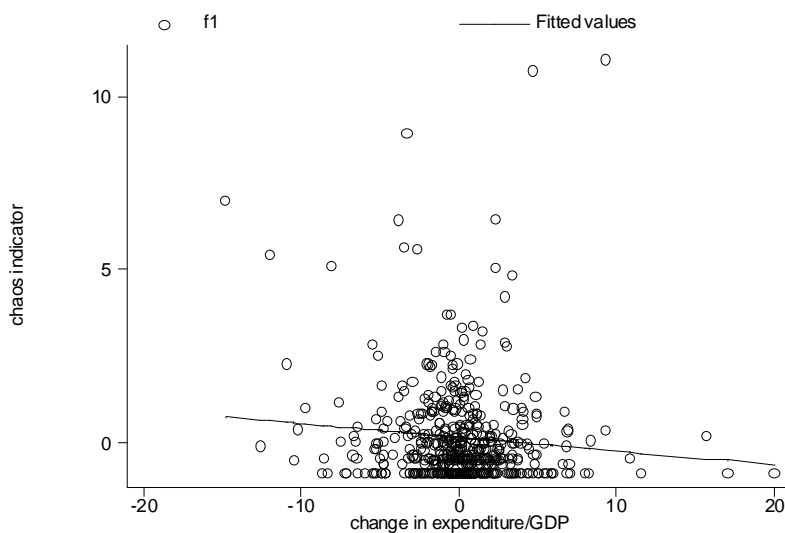
3. MAIN RESULTS

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. On the other hand, for general strikes, the patterns I find are weaker. There is also reason to believe that the fiscal adjustments most likely to lead to social unrest are the ones not driven by poor growth – changes in policy stance, not bad times, are most likely to create instability and chaos.

Figure 3 plots the basic relationship. On the y-axis is the first principal component of anti-government demonstrations, general strikes, riots, assassinations, and revolutions (*chaos*); on the x-axis, the change in government expenditure relative to GDP. The regression does not control for fixed effects or other factors, such as GDP growth.

Social unrest varies hugely across time and space. As figure 3 demonstrates, 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 anti-government demonstrations, strikes, assassinations, riots, and revolutions. The message from the simple analysis in figure 3, then, is that ‘social peace can be bought’ – government spending is a useful tool in restraining the militancy of the opposition and the extent to which opposition forces can receive mass backing for violent action.

Figure 10. *chaos* and Changes in Government Expenditure.



Aggregate results

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

$$\ln(U_{it}) = \beta_i + \beta_1 \Delta(\text{Exp}/Y)_{it} + \gamma X_{it} + \varepsilon_{it}, \quad (1)$$

where U is one of the measures of instability in our dataset, $\Delta(\text{Exp}/Y)$ is the change in central government expenditure relative to GDP, and X is a vector of control variables. The fixed effect coefficients β_i are designed to capture the combined effect of two factors. First, the Banks dataset relies on newspaper reporting of unrest. The level of news coverage may well have a country-specific component, with the same disturbance in a larger country being more likely to be reported. 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% 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% level. When growth declines by a full standard deviation, unrest rises by 0.12 points, or half the distance between Brazil and Bolivia.

Increases of revenue have an effect that is similar to expenditure changes. At first glance, this may appear paradoxical – there is no evidence that higher taxes (such as in the case of Greece) 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 $\Delta(\text{Revenue}/Y)$ may simply pick up episodes of simultaneous tax and spending increases reducing the level of unrest.⁹ Increasing budget deficits are also a good way to prevent violent protests – the coefficient on the change in the budget balance is positive ($\Delta(\text{Budget}B/Y)$), indicating a decline in unrest when the budget sinks more into the red. While regressions (1) and (3) can claim some success 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.

In columns (4) and (5), I subdivide the sample based on a country’s Polity-IV score. This is because some authors have found that unrest is less common in autocracies (Paldam, 1995). Roughly a quarter of the country-year observations have scores below -5 , indicating a highly authoritarian regime. In both sub-samples, expenditure cuts are associated with more unrest. The coefficient is somewhat smaller in the group of countries with more open institutions, but both coefficients

⁹ If I estimate with expenditure and revenue jointly, there is a small, insignificant, and positive coefficient for revenue.

are significant at conventional levels. Also, one cannot reject the null that the size of the coefficients is the same.

Table 1. Unrest and its Determinants (dependent variable: *chaos*) (+).

Sample	(1) All	(2) All	(3) All	(4) Polity2 < -5	(5) Polity2 ≥ -5
$\Delta(Exp/Y)$	-0.057*** (-3.21)			-0.091** (-2.30)	-0.059*** (-3.09)
$\Delta(logY)$	-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)			
$\Delta(BudgetB/Y)$			0.052** (2.01)		
<i>Constant</i>	0.231*** (3.36)	0.233*** (3.36)	0.218*** (3.15)	0.655*** (3.89)	0.068 (0.96)
No. Observ.	473	473	473	123	323
R²	0.029	0.015	0.016	0.115	0.033

(+) All regressions were run with fixed country effects. *t* statistics in parentheses. (*) $p < 0.10$, (**) $p < 0.05$, (***) $p < 0.01$.

I find broadly similar results when using *wci*, the weighted conflict index, as the dependent variable (see Table 2). Column (1) suggests a clear negative impact of changes in expenditure relative to GDP ($\Delta(Exp/Y)$). *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% of a standard deviation of the dependent variable. The coefficient is significant at the 10% 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 R² shows that neither expenditure changes nor economic growth can explain a high share of the total variation in unrest in our 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 balance are positively associated with unrest, but the effect is not tightly estimated.

Table 2. Unrest and its Determinants (dependent variable: *wca*) (+).

	(1)	(2)	(3)	(4)	(5)
Sample	All	All	All	Polity4 < -5	Polity4 ≥ -5
$\Delta(\text{Exp}/Y)$	-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)
$\Delta(\text{Revenue}/Y)$		-52.94 (-1.37)			
$\Delta(\text{Budget}B/Y)$			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)
No. Observ.	473	473	473	123	323
R ²	0.01	0.007	0.004	0.002	0.030

(+) All regressions were run with fixed country effects. *t* statistics in parentheses. (*) $p < 0.10$, (**) $p < 0.05$, (***) $p < 0.01$.

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, also show a much clearer association of expenditure cuts with violent protests.

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 dataset (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. The coefficients for assassinations and demonstrations are significant at the 99% and 95% levels, respectively; those on riots and revolutions at the 90% 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.

Table 3. Different Measures of Instability and Expenditure Cuts (+).

	(1)	(2)	(3)	(4)	(5)
	Assassinations	General Strikes	Riots	Revolutions	Demonstrations
$\Delta(Exp/Y)$	-0.0575*** (-3.30)	0.0095 (0.69)	-0.0309* (-1.66)	-0.0146* (-1.67)	-0.0413** (-2.29)
$\Delta(logY)$	-0.0006 (-0.12)	0.0011 (0.27)	-0.0169*** (-2.96)	-0.0052* (-1.93)	-0.0095* (-1.72)
<i>Constant</i>	0.388*** (5.71)	0.461*** (8.61)	0.782*** (10.77)	0.357*** (10.48)	0.671*** (9.55)
No. Observ.	473	473	473	473	473
R²	0.023	0.001	0.022	0.013	0.016

(+) All regressions were run with fixed country effects. *t* statistics in parentheses. (*) $p < 0.10$, (**) $p < 0.05$, (***) $p < 0.01$.

Inflation and deflation

Next, I examine the effect of inflation and deflation. It will be useful to know if the patterns ascertained are stable independent of the monetary environment. In column (1) of Table 3, 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 our 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 when inflation was high, there is a strong and highly significant effect of expenditure on social instability. The coefficient is more than three times larger than in the sample as a whole, and it is more statistically significant.

A large literature has stressed 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 Vegh 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 R² rises to over 0.2, instead of the 0.02-0.03 in other specifications.

In contrast, deflationary periods show no direct effect show no inverse relationship between expenditure changes and politically-motivated violence. The coefficient in column (3) is positive, and is 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.

Table 4. Expenditure Cuts and Unrest – Inflationary and Deflationary Periods (+).

	(1)	(2)	(3)	(4)
Sample	All	Inflationary Period ^a	Deflationary Period ^b	Neither inflationary nor deflationary
$\Delta(Exp/Y)$	-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)
$\Delta ExchangeR$	0.0677 (1.38)			
Constant	0.259*** (3.66)	0.330* (1.77)	0.136 (0.43) [0.41]	0.251*** (3.18)
No. Observ.	456	61	26	386
R ²	0.037	0.207	0.063	0.033

(+) All regressions were run with fixed country effects. *t* statistics in parentheses; bootstrapped standard errors in square brackets. (*) $p < 0.10$, (**) $p < 0.05$, (***) $p < 0.01$. (a) defined as a rate of exchange rate decline *vis-à-vis* the dollar in the top 5% of the sample, i.e. above 66% p.a. (b) defined as an absolute increase in the exchange rate *vis-à-vis* the dollar.

When excluding both inflationary and deflationary periods (eq. 4), I find a negative but insignificant coefficient. One cannot reject that the coefficient is the same as in the sample as a whole; 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.¹⁰

4. ROBUSTNESS AND EXTENSIONS

In this section, I examine the robustness of the main finding so far – 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.

Omitted variable bias

The main concern with the equations estimated so far 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, an upsurge of violent protests may be less inspired by changes in government spending itself. Instead, they may reflect rising

¹⁰ Gelman and Stern (2006).

immiseration of the population due to an economic crisis at large. This is of particular concern since fiscal policy is widely believed to be highly pro-cyclical in emerging markets.¹¹

In the absence of a compelling instrument, one cannot test 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 non-linearities also does not change the result – both *wci* and *chaos* remain highly significant and negative, and the size of the coefficient is unaffected.

Stability over time

The assumptions underlying regressions of the type estimated in this paper are heroic. We have to believe that anti-government demonstrations in Argentina under Peron have the same meaning as those against President Alfonsin; a political murder of a government official in Chile carries the same information about social unrest as in Brazil.

In Table 5, I subdivide the sample in the year 1975 to examine the robustness of our 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 now also negatively associated with fiscal expenditures, in contrast to the pattern observed in the earlier period. The coefficients for most variables are substantially larger, and highly significant. The only exception is revolutions, which after 1974 become *less responsive* to economic conditions. 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.

¹¹ Talvi and Vegh (2005); Ilzetzki and Vegh (2008). For a sceptical view, cf. Jaimovich and Panizza (2006).

Table 5. Observations Before and After 1975 (+).

Panel A	(1)	(2)	(3)	(4)	(5)	(6)
Before 1975	<i>chaos</i>	Assassinations	General Strikes	Riots	Revolutions	Demonstrations
$\Delta(\text{Exp}/Y)$	-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)
<i>Constant</i>	0.103 (1.03)	0.123*** (2.95)	0.343*** (3.81)	1.170*** (8.23)	0.483*** (7.55)	0.401*** (5.37)
No. Observ.	262	262	262	262	262	262
R²	0.013	0.007	0.015	0.028	0.032	0.005

Panel B	(7)	(8)	(9)	(10)	(11)	(12)
After 1974	<i>chaos</i>	Assassinations	General Strikes	Riots	Revolutions	Demonstrations
$\Delta(\text{Exp}/Y)$	-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)
<i>Constant</i>	0.485*** (4.63)	0.724*** (5.63)	0.646*** (9.27)	0.472*** (6.68)	0.230*** (6.57)	1.022*** (8.07)
No. Observ.	211	211	211	211	211	211
R²	0.081	0.047	0.011	0.051	0.022	0.034

(+) All regressions were run with fixed country effects. *t* statistics in parentheses. (*) $p < 0.10$, (**) $p < 0.05$, (***) $p < 0.01$.

Regime durability

Table 1 and Table 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 range from -10 to 10, and are calculated as the difference between the democracy and the autocracy scores of a country. These aggregate numerous variables, including the competitiveness and openness of executive recruitment, constraints on the executive, the regulation of participation, as well as 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). While a factor in the Polity scoring system, it is arguably of great importance for economic political transitions – 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 sub-dividing our sample at the median of the

distribution for both constraints on the executive and for 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.

Table 6. Fiscal Adjustment and Unrest - Low and High Constraints on the Executive/Long-Short Durability (+).

	(1) Constraints on the executive <3	(2) ≥3	(3) Durability <6	(4) ≥6
$\Delta(Exp/Y)$	-0.0932** (-2.52)	-0.0605*** (-3.21)	-0.0639*** (-2.64)	-0.0225 (-0.87)
$\Delta(logY)$	-0.0384*** (-3.46)	0.0009 (0.15)	-0.0093 (-1.03)	-0.0126* (-1.87)
<i>Constant</i>	0.528*** (3.58)	0.123* (1.71)	0.216** (2.14)	0.241** (2.59)
No. Observ.	157	316	230	243
R²	0.089	0.033	0.033	0.017

(+) *t* statistics in parentheses. (*) $p < 0.10$, (**) $p < 0.05$, (***) $p < 0.01$.

Durability shows a different pattern. Where durability is low – less than six years have passed since the last major regime change – the effect of fiscal adjustment is strong. Where a country’s political order has seen few changes for an extended period, the effect is weaker and not tightly estimated.¹² Growth seems to matter more for cutting violence in more ‘durable’ regimes, but the two coefficients are not different from each other.

Censored data

The data on instability is derived from counting events – the number of strikes, demonstrations, etc. This means that the main indicators, as well as wci , is truncated at zero. It is not clear that the panel versions of the linear probability model used so far capture the data adequately. To deal with the issue, I estimate panel poisson regressions that take the censoring implicit in the use of non-negative count data directly into account.

¹² It should be noted that the standard error in equation (4) is so large that the coefficient on $\Delta(Exp/Y)$ is not significantly different from the one in equation (3).

Table 7. Panel Poisson Regressions – Count Variables (+).

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>wci</i>	Assassinations	General Strikes	Riots	Revolutions	Demonstrations
$\Delta(Exp/Y)$	-0.034*** (-109.30)	-0.139*** (-7.30)	0.019 (0.99)	-0.042*** (-2.76)	-0.048** (-1.97)	-0.006*** (-3.80)
$\Delta(logY)$	-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. Observ.	473	463	473	463	425	463

(+) *t* statistics in parentheses. (*) $p < 0.10$, (**) $p < 0.05$, (***) $p < 0.01$.

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 OLS (Table 3). Overall, there is no evidence that violations of the normality assumption might have been driving the significance of results.

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 – 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 run 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 dataset, the coefficient for cuts is approximately 12 times larger than for expenditure increases. For *chaos*, it is 6 times bigger. 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 (+).

	(1)	(2)	(3)	(4)
	<i>wci</i>	<i>wci</i>	<i>chaos</i>	<i>chaos</i>
$\Delta(Exp/Y) > 0$	-12.03 (-0.20)		-0.0495 (-1.02)	
$\Delta(logY)$	-15.21 (-1.30)	-15.56 (-1.02)	-0.0463*** (-2.86)	-0.0201 (-0.92)
$\Delta(Exp/Y) \leq 0$		-148.8* (-1.89)		-0.311** (-2.46)
<i>Constant</i>	1,869.4*** (9.58)	1,798.7*** (7.67)	2.108*** (9.16)	1.645*** (4.68)
No. Observ.	231	242	231	242

(+) *t* statistics in parentheses. (*) $p < 0.10$, (**) $p < 0.05$, (***) $p < 0.01$.

Interpretation – the timing of protest

Paldam (1995), using weekly data, finds that protests peak while budget measures are discussed, and decline *after* budget adjustments are implemented. The data in this study is yearly, and 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. However, 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 then declines.

5. CONCLUSIONS

Social unrest can be powerful in undermining the credibility of governments. 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. And yet, casual empiricism suggests that a significant amount of social unrest can be explained by economic factors.

In this paper, I examine 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 changes 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.

Our results provide a rationale why governments often find it hard to cut expenditure. While unrest is a relatively low-probability event – even in our sample of South American countries over the last 70 years – there is a non-zero probability that austerity will fan the flames of discontent, leading to violent anti-government protests. It may also offer a perspective on why public indebtedness differs so much around the globe, and even amongst countries with relatively similar levels of economic development (Alesina and Perotti, 1995).

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