

Fiscal Policy in Good Times and Bad Times: Distributive motivations and pro-cyclical spending*

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Abstract

We explore how public spending responds to changes in the business cycle. We develop a political economy explanation of pro-cyclical spending where governments' incentives to deviate from a sustainable fiscal policy result from political conflict on the level of redistribution that results from a country's position in the international division of labor. This underlying distributive conflict forces governments who represent more vulnerable economic actors to engage in more, rather than less, pro-cyclical spending. We assess the plausibility of the argument using data on government spending in Argentina over one hundred years of history. Given the structure of the data we fit an error-correction model and estimate the short-term elasticity of government spending to the business cycle while controlling for the long-term relationship between both series. We supplement the ECM tests with instrumental variable estimations. The results from the ECM and IV models provide support to our political economy explanation: while democratic governments of all shades run pro-cyclical fiscal policies, the elasticity of public spending to the business cycle is greater under Peronist leaders. Alternative explanations based on ideology, institutions and external conditions seem to play a lesser role.

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1 Introduction

A profuse body of literature analyzes the link between openness, income volatility and the size of the public sector (Cameron 1978; Katzenstein 1985; Rodrik 1998). Policies adopted under political influence as motivated by distributive concerns usually deviate from the optimal path. Demands for government output vary across groups within the polity, and the strength of these demands are also likely to differ along the peaks and troughs of the fiscal cycle. In times of crises some governments are able and willing to adopt policy responses aimed at redressing the duress created by the sharp downturns in output, while other governments are either reluctant or unable to do so. Changes in public spending as a result of external shocks have been a central concern in the comparative literature explaining economic policy reform in the 1990s, and have become a source of heated policy debates these days.¹ The specific content of those responses depend on the expected distributional consequences of the changes in relative prices -which generate the demand for policy responses- and on contemporaneous political conditions -which determine whose preferences are more likely to be translated into policy.

In this paper we analyze an alternative link between redistributive conflict and economic policy-making. We develop a novel political economy explanation of pro-cyclical spending. We argue that political conflict arising from those distributive motivations prevents governments from enacting fiscal policies that would smooth the movements along the business cycle. Demands for redistribution from different socioeconomic agents affect governments' incentives to depart from the optimal fiscal path. We derive those distributive motivations from actors' position in the domestic and international division of labor. To assess the plausibility of this argument we provide an empirical application to the evolution of public spending in Argentina since the early 1900s.

Our explanation builds on prior research on the causes and consequences of govern-

¹On crises and policy reform see Cardoso & Helwege 1993; Drazen & Grilli 1993; Fernandez & Rodrik 1991; Martinelli & Tommasi 1997; Rodrik 1996; Tornell 1995.

ment spending: It is fairly uncontroversial that the ability of governments to tax and spend is affected by the business cycle. At the peak of the cycle, for instance, the fiscal coffers are more easily filled than when the economy turns south. Economic theory suggests that cyclical fiscal policy is sub-optimal: governments should lower spending when the economy is growing and raise spending during hard times, if at all. While some governments, mostly in developed countries, have followed these prescriptions in the past, pro-cyclical behavior is far from an exceptional event as reflected in the Southern European countries in the wake of the Global Recession of 2008, and has been quite prevalent among developing countries. Argentina stands out within this latter group.

The argument is built around the differential demands for government spending and the political constraints faced by governments, which affect their ability to respond to those demands. The incentives to engage in pro-cyclical spending –and hence deviate from the optimal policy course– depend on the severity of the redistributive conflict in the polity. When the incumbent government represents a coalition of actors employed in the less productive sector of the economy, for instance, she is likely to enact tariffs and taxes aimed at sheltering her constituents from competition and transferring resources to them. More productive actors, usually those employed in the comparative advantage sector of the economy, will fight against these attempts at redistributing resources away from them. Moreover, when the coalition representing more productive actors gains control of the government, it enacts their preferred policies of lower taxes and higher integration into the global economy which benefit them while hurting the real income of those actors in the comparative-disadvantage sector, leading to political mobilization on their side. An escalation of this redistributive conflict has the potential to affect the incumbent’s perception of her ability to retain office. As time the expectation of staying in office falls the incumbent government spends beyond what would be optimal.²

²Moreover, shorter time horizons also affect the government’s creditworthiness in financial markets, a conjecture that we do not explore in this paper.

These incentives are stronger for the incumbent coalition representing workers and firms operating in the less productive or declining sectors of the economy and would benefit the most from the adoption of counter-cyclical policies. Our emphasis on redistributive motivations allows us to extend and append the contributions from the extant literature on the pro-cyclical spending which tended to focus on institutional design.

We characterize different political parties according to their links with economic agents, which include workers and producers organized around unions, associations and groups in different sectors of the economy. In our model the incumbent's expectation of being voted out of office is endogenous to the policies' enacted, which in turn depend on the government's motivations to redistribute. Ultimately, the latter is determined by the position in the economy of the actors that form the support base of the incumbent party. In our model heterogeneity of preferences does matter, but only through its effects on politicians' expectation of staying in office. It is, thus, equivalent to endogenizing time horizons. We explore the plausibility of the argument using a within country time series design: We analyze the evolution of Argentina's public accounts from 1900 to 2004, a country whose exceptional trajectory defies traditional explanations of cyclicity. The pro-cyclical nature of government spending in Argentina becomes stronger towards the second-half of the twentieth century, an era characterized by stop-go cycles usually attributed to the problems that arise from the adoption of import substitution as a developmental strategy.³

In the Argentine case deviations from the optimal policy are indeed a function of political conflict derived from redistributive motivations that result from the country's position in the international division of labor as predicted by the model. Our contribution is to show that the pattern of pro-cyclical fiscal policy in the country is far from exceptional once we account for the incentive structure faced by Argentine politicians. We believe this is an important addition to traditional explanations based on the role

³Our analysis on booms and busts of the Argentine economy follows the pioneering work of Diaz Alejandro (1970), Dornbusch and Edwards (1991), and Rodrik (1995), among others.

of ideology, institutions and veto players (Velasco 2000; Kontopoulos and Perroti 1999; Tsebelis and Chang 2004).

Collecting data on business cycles in a country like Argentina and documenting the nature and depth of the shocks allows us to conduct empirical analyses on whether the pro-cyclical nature of Argentina's fiscal policy is indeed a function of political conditions. Given the structure of the data, we fit an error-correction model which allows us to estimate the short-term elasticity of government spending to the business cycle, controlling for the long-term relationship between both series which determines the rate of adjustment for short term deviations from the trend that binds the two series. Implementing these models is fraught with complications. Among them, the ability of the government to finance its spending, through taxation, loans or monetization of the deficit, depends on the performance of the economy. Hence it is important to estimate the effects of economic shocks on aggregate spending, or even on sectoral spending to the extent possible. We also need to account for political economy motivations of spending: while in times of crises most groups would prefer being bailed out, in normal times actors hold different preferences with respect to the optimal level of government intervention in the economy. In both instances, however, economic agents are far from indifferent on who bears the burden more heavily. This justifies the focus on a within country analysis and the emphasis on the cyclical nature of spending, rather than its levels.

Identifying off of the short and long-run relationship between spending and the business cycle allows us to assess how the nature of the ruling coalition is more important than the ideological stance of the incumbents in explaining changes in public spending, the dependent variable in our tests.⁴

⁴We establish the occurrence of thirteen economic shocks affecting the country from the early 1900s through the Global Financial Crisis of 2008. These instances of crisis include short medium term recessionary periods of the business cycle, lasting as long as 4 years. They are: 1913-1917; 1929-1932; 1951-1952; 1958-1959; 1961-1963; 1974-1976; 1977-1978; 1980-1982; 1984-1985; 1987-1990; 1994-1995; 1998-2002; and global recession of 2008. Data on the crises was obtained from CEPAL and FIEL. See Table B in the Appendix. While some of these shocks to economic output resulted from drops in demand, changing terms of trade, financial recessions and openness at the global level, elsewhere we

We present results from statistical analyses contrasting our argument of coalitional determinants of pro-cyclical spending with alternative explanations that emphasize the role of institutions, ideology and discourse, and external motivations and constraints. We find evidence suggesting that the political economy hypothesis of cyclical fiscal behavior is plausible: while governments of different shades run pro-cyclical fiscal policies at times, the elasticity of public spending to the business cycle is greater under the Peronist. The incentive to redistribute away from the comparative advantage sector is what sets the Peronist apart from other political coalitions. The catch-all nature of the party -binding together a slew of urban workers, industrialists and traditional sectors in the interior of the country- not the dynamics of coalition bargaining in the legislature is what shortens the leaders' time-horizons and reduces the government's ability to tap financial markets, thus resulting in more pro-cyclical spending. Our results are robust to instrumental variables estimation where the output gap of Argentina is instrumented with the output gap of the six other major economies in the region (Ilzetzki and Vegh 2008; Jaimovich and Panizza 2007; Gali and Perotti 2003). Alternative explanations based on ideology, openness and institutions seem to play a lesser role.

2 The politics of booms and busts

How do governments choose their fiscal policy in response to aggregate economic shocks? Governments can rely on different policy instruments to deal with output fluctuations along the business cycle. Fiscal policy is one of the tools that governments can deploy to smooth externalities generated by “bad” states of the economy. In the classic work of Musgrave (1959), *stabilization* is one of the three objectives or functions of fiscal policy in modern economic systems.⁵ By studying public spending decisions during different phases of the business cycle, scholars assess the extent to which fiscal

show that unsustainable fiscal policies, macroeconomic instability, currency and banking crisis at the local level played a major role (Pinto 2013).

⁵The other two being *efficiency* and *redistribution*.

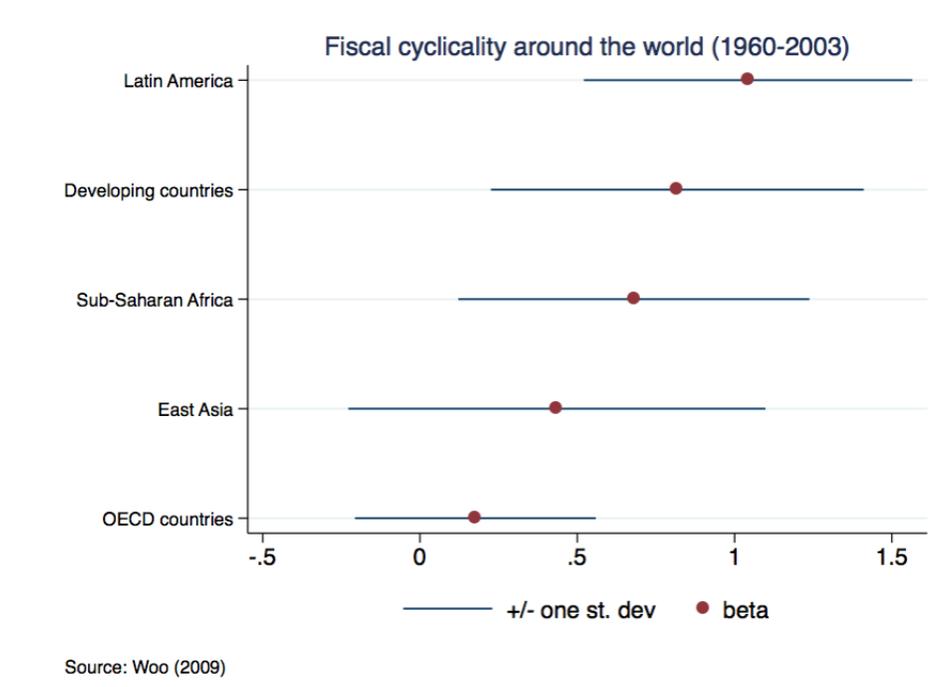
policy performs this task.

According to several important strands of economic theory, fiscal policy should be *counter-cyclical* (or at least *acyclical*) to perform its stabilization function: spending should be increased during recessions in order to stimulate aggregate demand and protect vulnerable groups, especially the poor.⁶ During expansions, the government should reduce spending in order to “cool off” the economy and contain inflationary pressures. While this “benevolent planner” prescription is followed to a great extent among OECD countries, fiscal policy is often *pro-cyclical* (Kaminsky et al. 2004; Alesina et al. 2008). That is, total government spending as a share of GDP goes up during booms and down in recessions, a policy pattern that adds to macroeconomic instability and hurts the poor the most since they lack the assets or access to financial markets that would allow them to smooth out adverse income shocks. Previous studies have shown that pro-cyclicality is a particularly acute problem in developing countries, especially those in Latin America (IDB 1997; Gavin and Perotti 1997). Using a regression based measure of fiscal cyclicality from Woo (2009), Figure 1 shows that Latin America has the highest levels of pro-cyclicality around the world. Yet this figure does not capture the substantial variation in cyclicality within each group of countries that has been documented in the literature. Given these stylized facts, the challenge is identifying which factors account for variation in the business cycle properties of public spending. Or put differently, why do countries differ in the way fiscal policy reacts to movements along the economic cycle, or even aggregate economic shocks?

The classical explanation of pro-cyclical behavior is grounded in the existence of credit constraints. In a seminal contribution to this literature Gavin and Perotti’s (1997) argue that developing countries find it hard to follow countercyclical policy because they lack access to international credit during recessions. The problem with this explanation is its inability to provide answers to the following: why are countries

⁶Both Keynesian macroeconomic policy and tax smoothing arguments (Barro 1979) prescribe countercyclical fiscal policy.

Figure 1: Government spending and GDP



not able to self-insure by accumulating reserves in good times? Moreover, what keeps lenders from providing funds to countries when access to borrowing helps them smooth out the cycle?

A similar problem is found in arguments linking pro-cyclical policy to the nature of the tax base in developing countries (Talvi and Végh 2005) or patterns of integration with the world economy (Wibbels 2006). Talvi and Végh first note that output (consumption) in developing countries is twice (three times) as volatile as in the industrial economies. Given that developing countries often base their tax systems on consumption taxes, their tax bases are considerably more volatile than those in the OECD. Developing countries find it harder to follow countercyclical fiscal policies since the problem associated with the volatility of their revenue streams is compounded by the many political pressures to spend in good times. Similarly, Wibbels (2006) argues that increasing trade exposure has exacerbated the volatility that complicates counter-

cyclical social spending in the developing world. Yet these explanations are far from satisfactory: in theory, output volatility and trade openness are neither necessary nor sufficient conditions for pro-cyclical spending. If anything, volatility and trade openness should point in the opposite direction: the more volatile and exposed to international trade an economy is, the higher the incentives for politicians to behave in a counter-cyclical way, by providing social insurance, creating instruments such as stabilization funds, or allocating higher shares of automatic stabilizers in the budget. After all, that is the lesson learned from the experience of small and open economies in the developed world (Cameron 1978; Katzenstein 1985; Rodrik 1998).

Given the limitations of purely economic explanations, scholars have turned to the study of the *political economy* determinants of pro-cyclicality. As Talvi and Végh eloquently put it: “The root of unstable policies may lie, not in policymakers inability to set the “correct” policies, but rather in the political economy of fiscal arrangements.” (Talvi and Végh 2005, p.159). A political economy perspective can provide insights to explaining why some countries and governments are more pro-cyclical than others, or even why there is over time variation in the extent of pro-cyclicality within a country, as is our interest in this paper. While several competing arguments have been proposed within this perspective, they all share a common focus: the study of the factors pertaining to the political arena (e.g. political institutions, elections, coalitions) that affect economic policymaking and fiscal outcomes in systematic ways (Drazen 2000).⁷ The rest of the section briefly surveys this emerging literature.

2.1 Political economy of pro-cyclical spending

Political economy explanations of fiscal outcomes build on the idea that fiscal decisions are the result of political processes that involve actors with varied interests. These

⁷The bulk of the political economy literature on the determinants of economic policy outcomes usually concentrates on the *levels* –such as the effect on electoral rules on the size of government– rather than the *cyclical properties* of public spending, which is the focus of our paper. Thus, we do not review this important strand of the literature here but refer to Persson and Tabellini (2003) and Eslava 2006 for extensive surveys.

interactions take place mainly between politicians and voters, or among politicians who represent diverse interests or constituencies. In this tradition, scholars have identified a number of political distortions that tend to generate a pro-cyclical bias in fiscal policy. These distortions can be grouped in two types of problems: “cooperation” and “agency” problems.

Cooperation problems. A classic example of failures in cooperation is the well-known common pool problem (Ostrom, 1990).

In fiscal policy, the common pool is the budget that political players draw upon (financed from a general tax fund) to generate concentrated benefits (such as targeted public policies). Tornell and Lane (1999) develop a model in which multiple political groups compete for a share of the common pool, leading to a “voracity effect”: a more than proportional increase in spending in response to shocks, such as a terms of trade windfall. Similarly, Talvi and Végh (2005) present a model in which abundant fiscal resources create pressures to increase public spending. In these models, the voracity effect is simply assumed, but not analytically derived. They provide little guidance to understanding the magnitude of the problem. What factors determine the intensity of the voracity effect, and hence, the level of *pro-cyclicality*?

First, the number of actors drawing from the common pool could be construed as a determinant of the voracity effect. The pressure to overspend during upturns increases as the number of groups drawing from the common pool increases. Braun (2001) and Lane (2003) find evidence consistent with this hypothesis for developing and OECD countries respectively: in both papers, as the number of political veto players increases, fiscal policy becomes more pro-cyclical.

In addition to fragmentation, political polarization has also been hypothesized as a key determinant of pro-cyclicality (Humphreys and Sandbu 2007; Ilzetzki 2009; Woo 2009). The intuition is that as the preferences over the desired distribution of public spending between political groups diverge (or more generally, the deeper the division

prevalent among the groups), the greater will be the incentive of policymakers to spend too much while in power, leading to pro-cyclical fiscal policies.

Principal-agent problems. In models based on problems of cooperation reviewed above, the role of political demand by voters and groups is theoretically underspecified. This omission is particularly problematic if one is concerned about the endogenous nature of political outcomes: expenditure decisions can affect the politician’s likelihood of remaining in power. If such consequences could be anticipated, politician’s are expected to modify their behavior accordingly. Moreover, these models seem to neglect a basic tenet of electoral competition: that politicians devote public resources to remain in office and incumbents may engage in fiscal manipulation (e.g. political budget cycles) to influence voters and retain power, a practice that is pervasive among developing countries (Ames 1987; Brender and Drazen 2004; Schuknecht 2000; Shi and Svensson 2006).

To explicitly account for the endogeneity of electoral outcomes, Alesina et al. (2008) develop a political agency model that brings voters back into the picture. The model is used to interpret their main empirical finding: a positive correlation between pro-cyclical policy and measures of corruption. Alesina and co-authors argue that pro-cyclicality is the response by rational voters who operate in an environment characterized by information asymmetries when facing corrupt governments.⁸ Under these conditions voters demand higher transfers to themselves (in the form of public goods) during good times to “starve the Leviathan” when economic activity drops. Faced with these pro-cyclical demands, governments do not accumulate reserves during booms; on the contrary, they incur in large debts which prevents them from being able to finance spending in bad times. What remains unclear from this model is why voters, given that they don’t trust the government, are more (rather than *less*) likely to demand public goods and accept a higher level of rent extraction by politicians.

Our argument builds on the insights from the “cooperation” tradition. Departures

⁸Voters observe the state of the economy, but cannot observe government borrowing.

from the optimal fiscal path are endogenous to political conflict that results from different redistributive motivations among different agents. We expect the voracity effect should be sharper under democratic competition because the incumbent needs to compensate a high number of potential veto players. Demands for government spending are higher when the government relies on the support of a coalition base of workers and businesses owners operating in less productive sectors of the economy (the protectionist coalition). The incentives to spend in good times are exacerbated when the probability of retaining office depend on the policy choices made by the ruling coalition. The corollary is that governments representing economic actors who would benefit the most from countercyclical spending are paradoxically more likely to behave pro-cyclically.

3 A political economy explanation of pro-cyclical fiscal policy

In this section we discuss the intuition from a political economy explanation of cyclical spending. We combine issues traditionally associated with the trade theoretic literature, such as the relationship between productivity differentials and the expansion or contraction of productive sectors, with elements of the rich literature on the political determinants of fiscal policy discussed in the previous section.⁹

In the model there are four actors: government, two types of firms, and workers interacting over two periods. Firms (A) and (C) receive an endowment of capital in period $t=0$, which they may choose to consume or invest in two different activities/sectors of the economy: a riskless activity X , or a risky activity M .¹⁰ In the first period the government may choose to tax the endowment of capital available in each sector, and distribute that revenue among any actor in the polity. The amount available for invest-

⁹See Alesina and Perotti 1995 and Eslava 2006 for reviews.

¹⁰This would be equivalent to assuming that the country has a comparative advantage in sector X (agricultural sector), or more broadly sector X is relatively more competitive than M (urban/manufacturing sector). We label the sectors to match the traditional pattern of comparative advantage observed in Argentina.

ment is the difference between the original endowment, minus consumption and taxes. We divide firms into two groups: a group of more productive firms who could operate in both sectors M and X and less productive firms who can only enter the riskier sector M . Firms in activity X do not require government support to be competitive, while in activity M only a fraction of more productive firms survive, while others would require government transfers, subsidies, and/or trade restrictions to stay in the market. Labor is primarily employed in activity M ; wages and employment levels are negotiated between the firms in sector M and a labor union prior to the realization of a random variable μ which determines the minimum level of productivity required to remain active in the sector.¹¹ Firms below that threshold are liquidated. If the firm is liquidated, then labor hired by the firm becomes unemployed, while investors can still recover part of the value of capital invested.

After being elected as a result of a probabilistic voting process, the government can choose among the following instruments: taxes and transfers which could vary across sectors, a transfer to labor, and unemployment benefits. The government faces a budget constraint: transfers and benefits must be less than or equal to taxes collected on firms' income and wages.¹²

Governments are partisan in the sense that they weigh more heavily the well-being of some actors in the polity. Partisan governments, thus, face different political pressures for additional spending. Specifically, there are two types of governments G_x , where $x = \{R, D\}$, representing socioeconomic groups in the more productive and the less productive sectors respectively. Workers are represented by a government of type G_D , who prefer a higher provision of transfers to labor, and capitalists are represented by a government of type G_R , who prefer a lower level of transfers to labor.

¹¹We make the simplifying assumption that labor is employed in sector M . Alternatively we could have assumed that labor is employed in sector X or that there are two types of labor: skilled workers, who are more intensively employed in sector X , and unskilled workers, who are more intensively employed in M .

¹²In an extension to the model the government may access to credit markets, which allows for public investment or consumption above and beyond what is collected from taxes.

The government in power in the first period collects taxes and determines the level of transfers targeted to the political groups. She will also choose the corresponding taxes and transfers in the second period if she remains in power. Otherwise, the incumbent is replaced by a rival party who decides on her preferred level of taxes and spending/transfers. The incumbent's probability of staying in office is endogenous and determined through probabilistic voting. The government, thus, faces a tradeoff between catering to her constituents, increasing her indirect utility, or catering to other groups in the polity which increases the probability of staying in office.

The level of current expenditures tends to increase as the expectation of being removed from office increases (or the probability of staying in office drops). A simple comparative statics exercise with respect to government type shows that the correlation between output shocks (through changes in the endowment or changes in productivity of the endowment) and government spending is not uniform for all types of governments: it depends on the government's motivation to redistribute, which is a function of its constituency base. The elasticity of spending to economic shocks is above unity positive for the type- G_D , but not for governments of type- G_R . To the extent that a type- G_L government requires increasingly larger transfers from other sectors to satisfy the demands of its constituencies, political tensions with actors in the comparative advantage sector eventually arise. In sum, incentives to extract from productive firms reduces the probability that a government of type D will remain in office. the threat of losing office makes government representing the actors who would benefit from counter-cyclical spending less willing to defer expenditures and reduce the demands on the productive sectors of the economy. Moreover, as the type D government's demands for redistribution increase, the reaction from the opposing camp becomes stronger, further lowering the expectation that the incumbent will remain in office.

3.1 Redistribution and credit constraints

The relationship between economic shocks and spending patterns may be exacerbated by credit market imperfections in ways that are not captured by the model. Such imperfections reinforce the pro-cyclicality generated by political distortions. With complete markets, the optimal fiscal policy consists in completely smoothing out government consumption. The demand for consumption smoothing will be particularly stronger for actors who have no ability to access financial markets, such as workers and less productive firms –i.e., those with a higher probability of failing. However, policymakers have typically faced a loss of confidence and thus intensified borrowing constraints during bad macroeconomic times; this problem is particularly pronounced in developing countries. The inability of accessing financial markets further constrains the government’s ability to run a counter-cyclical fiscal policy (Gavin and Perotti 1997). The problem is exacerbated under conditions of high levels of political conflict and shortened time horizons.

The fiscal policies implemented by different types of governments may lead to different degrees of public creditworthiness. Specifically, consider a capital market imperfection that generates a positive association between public debt and the risk premium (Aizenman, Gavin, Hausmann, 2000). If the risk premium is higher in bad times, then borrowing in bad times becomes more costly. Policymakers, as a result, would be induced to raise taxes and reduce government consumption, further fueling the pro-cyclicality of the fiscal policy. In good times, the opposite would take place: a lower risk premium would encourage more borrowing, more government spending, and lower taxes.

3.2 Testable Hypothesis

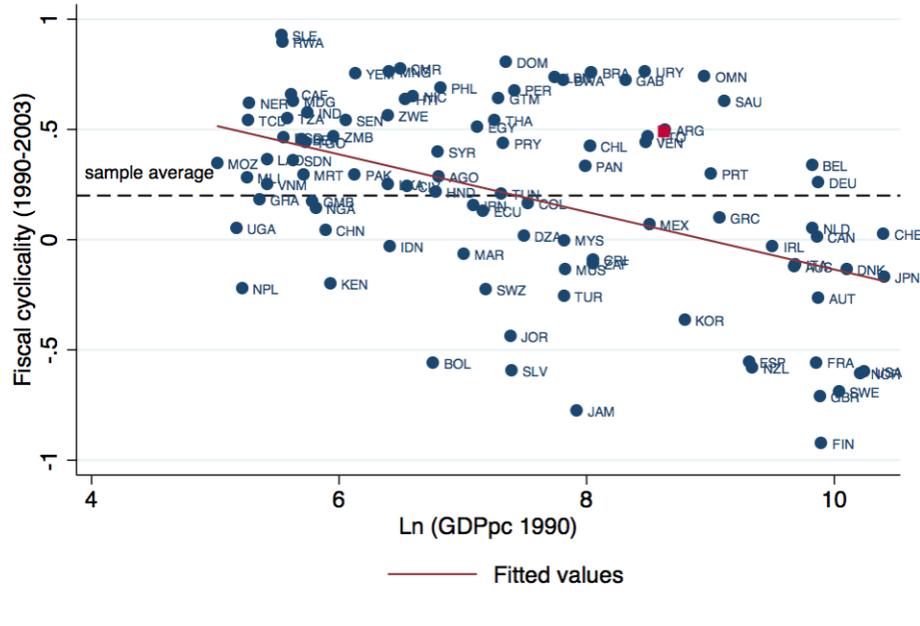
Combining these propositions we can derive the following testable hypothesis:

The correlation between spending and output will be greater when the incumbent represents workers and firms in the comparative disadvantage sector of the economy.

In the Argentine case we would expect the coalition of workers and industrialists in the urban areas built around the Peronist Party are more likely to run pro-cyclical fiscal policies, leading to a higher correlation between spending and output. There are several alternative reasons of why coalitions representing workers and industrialists, such as the Peronist party in Argentina, may face more difficulties in keeping government expenditures under control. First, these types of governments are subject to more fiscal pressure; second, members of the coalition disagree on the level of wages and labor benefits. In general, cooperation is more difficult to achieve when the number of players is large (Bawn and Rosenbluth 2006); yet the problem is compounded when the preferences of those players are not fully aligned. Second, individual coalition members have veto power, and can block a proposal of another coalition member. At the same time, each subgroup has little power to implement its own program by going alone. Finally, enforcement mechanisms among coalition members will be relatively weak when the members of the coalition expect a higher probability that the government representing them will be removed from office. A short tenure will limit the possibilities to play the repeated decision-making game among the political players. The members' incentives to cooperate are therefore further reduced.¹³ We need not assume that coalition governments necessarily have a shorter tenure than have one-party governments; this result is derived from the argument. Distributional motivations faced by the incumbent government, not the number of coalition members, drive the result. While workers prefer counter-cyclical policies, governments representing them place more demands on the competitive sectors of the economy, hence increasing the potential for conflict, which in turn makes spending more pro-cyclical.

¹³On the role of time horizons in fostering (or hindering) political cooperation, see Alesina (1988) and Dixit et al (2000). Spiller and Tommasi (2007) provide an application of this framework in the Argentine institutional context.

Figure 2: GDP per capita and pro-cyclical government spending



4 Empirical strategy: Analysis of fiscal policy in Argentina

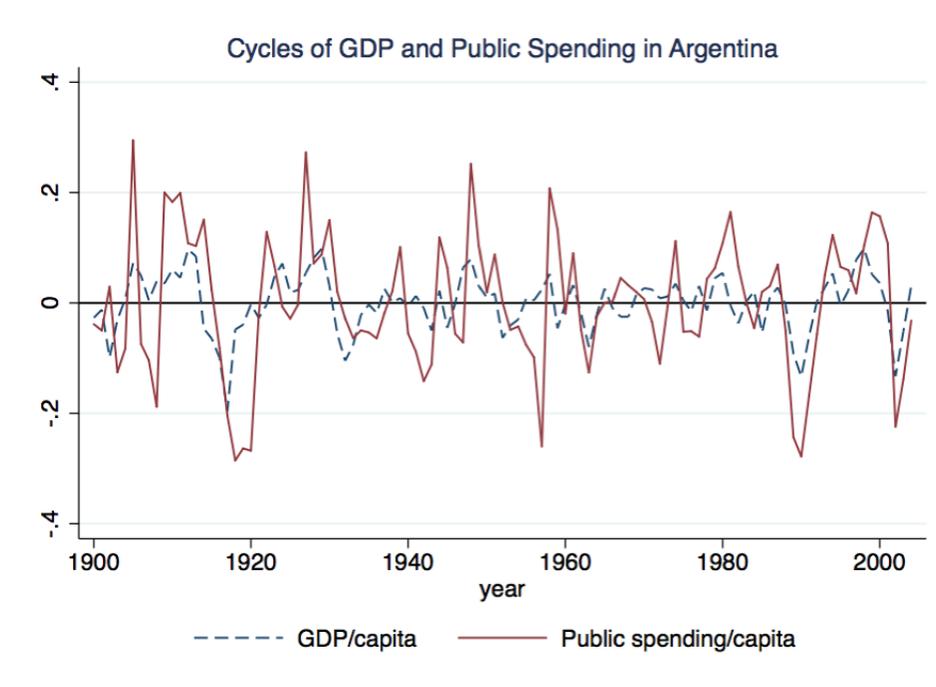
As discussed in section 2 pro-cyclicality is an acute problem, especially among developing countries. Figure 2 presents the well-known correlation between economic development and fiscal outcomes in a sample of 100 countries.¹⁴ An interesting point that emerges from figure 2 is that Argentina is: first, much more pro-cyclical than would be expected for its level of economic development; and secondly, that is well above the average level of pro-cyclicality.

Figure 3, which is based on a standard methodology to calculate fiscal pro-cyclicality, presents a long run view of the cyclical behavior of public spending.¹⁵ In countries like Argentina we observe the co-movement of both lines: fiscal behavior seems to follow the economic cycle. Yet this figure ignores the short-run variance around the trend,

¹⁴The data on pro-cyclicality used in figure 2 is from Kaminsky et al (2004).

¹⁵This measure is the correlation of the cyclical components of government spending and output that are first filtered by the Hodrick-Prescott (HP) method.

Figure 3: Government Spending and Economic Output in Argentina

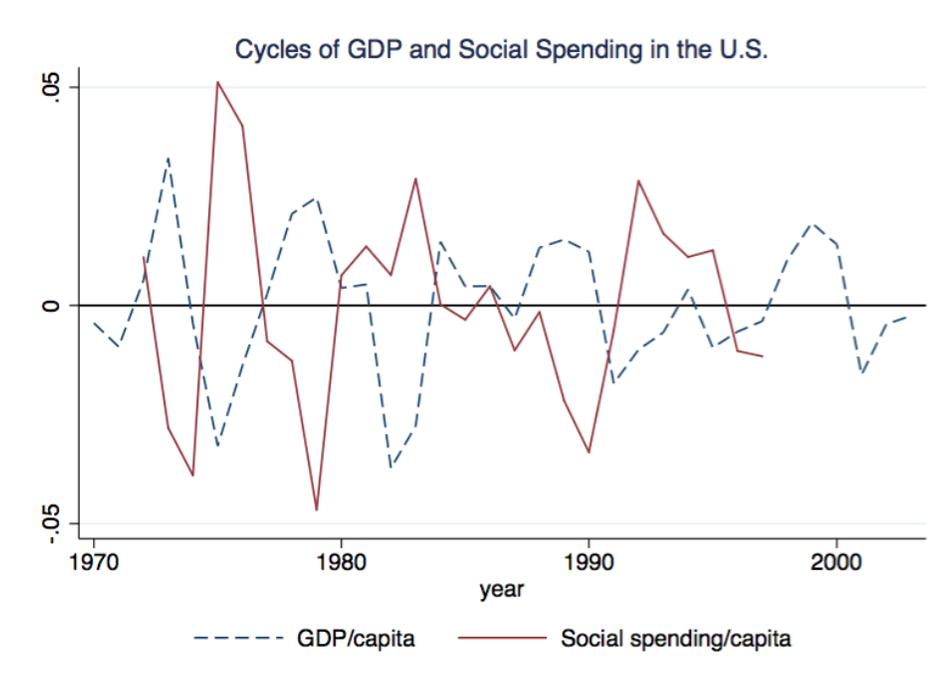


which for the Argentine case is reproduced in Figure 3. It can be seen that the cyclical components of output and spending tightly covary; we can also see that in most years the proportional change in spending is greater than the proportional change in output.

Figure 4 graphs the deviations around the trend in US output and public spending, reflecting the countercyclical spending pattern that is common among developed countries (Lane 2003). The US behavior stands out in stark contrast to the pattern of pro-cyclical spending in Argentina presented in Figure 3. The equivalent graph on the pro-cyclical behavior of social spending in Argentina since 1980 is reproduced in Figure 5. The graph not only suggests that social spending has been cyclical, but also that changes in spending seem to be magnified at each stage of the business cycle.

Argentina stands out as one of the countries with most pro-cyclical behavior in the world. Argentina's pro-cyclical fiscal behavior has been documented in numerous studies including Sturzenegger and Moya (2003) and is traditionally attributed to the

Figure 4: Social Spending and Economic Output in the US



adoption of unsustainable policies as a consequence of an economic strategy of selective protectionism aimed at development of the manufacturing sectors; the outcome is an ever increasing growth of the government sector (see Figure 6).¹⁶

The strategy would allegedly transcend institutional settings and partisan allegiances pushing the economy on a downward spiral path. Prior research suggests that the first failed efforts to reform and liberalize the economy can be tracked back to the military regime of 1976; economic reform ultimately succeeded under the leadership of Carlos Menem and the Peronist party in the 1990s (Sturzenegger and Moya 2007). Yet figure 7 and Table 1 show that federal government spending became more rather than less pro-cyclical in the 1990s. Moreover, Figure 6 also shows that government spending and revenue seem to covary more tightly together since the mid-1970s. We can see in Figures 3 and 5 that output and spending seem to covary in the short-term even in the

¹⁶The higher ratio of the public sector to output is also consistent with Wagner's Law of increasing state activity. There is a vast body of empirical work that unveils this relationship.

Figure 5: Social Spending and Economic Output in Argentina (1970-2004)

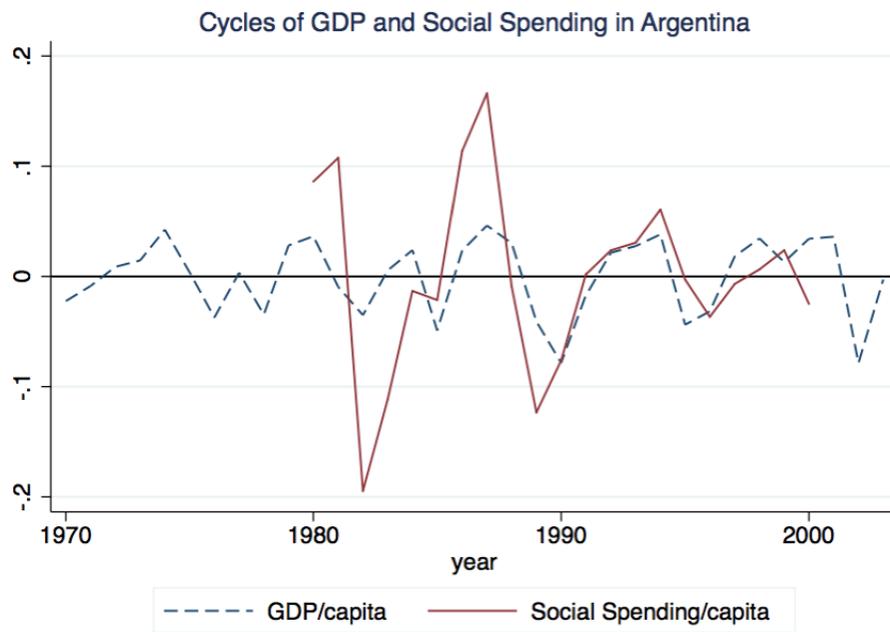


Figure 6: Government Spending and Revenue

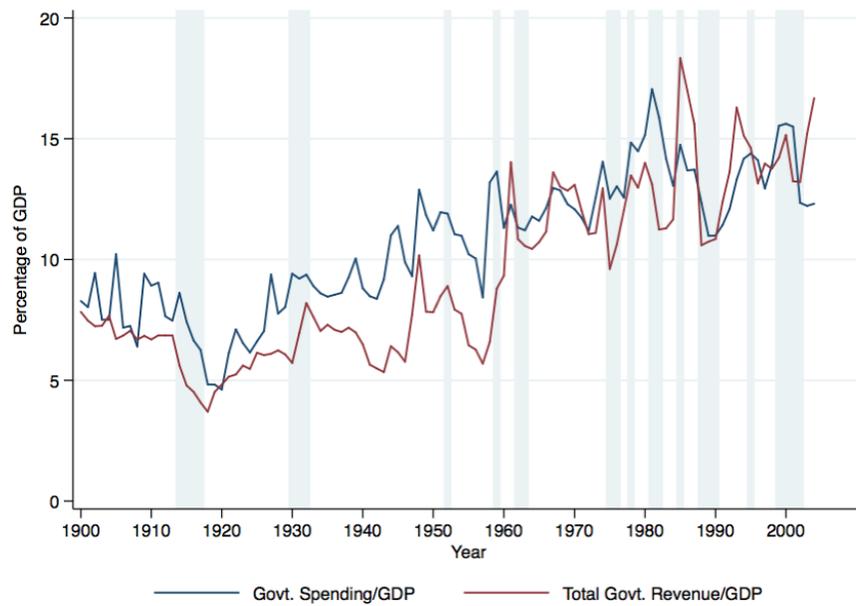
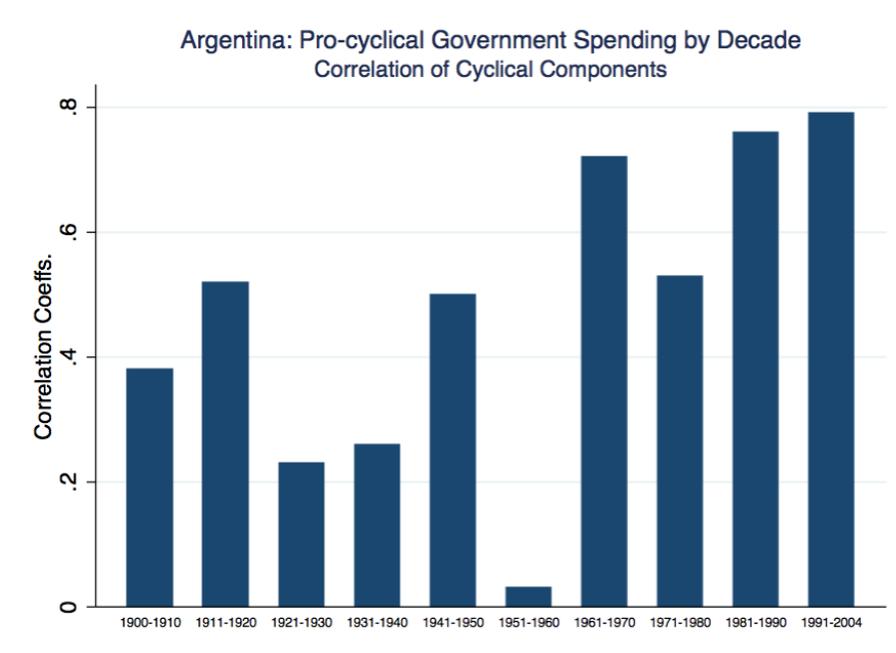


Figure 7: GDP and Spending: Correlation by Decade



1990s, the era of structural adjustment and reform. Cyclical spending in the Argentine case does not seem to be a legacy of ISI.

In Table A in the Appendix we schematically present the main characteristics of each Presidency in Argentina since 1900. Our expectation is that the Peronists, who have traditionally represented urban workers and industrialists in the less competitive or comparative disadvantage sector of the economy, are more likely to spend in the upswing of the cycle.¹⁷ The Peronists' redistributive motivations that result from their strong attachment with their political base and the rift with the coalition of agents in the comparative advantage/agricultural sector makes Peronist governments less creditworthy in the eyes for lenders and hence they find a tougher time financing

¹⁷ The Peronist is a party representing an urban coalition of workers and businessmen in manufacturing and traditional sectors in the Center, North and Northwest of the country (on the support base of Peronism, see Smith 1972; Mora y Araujo and Llorente 1980; Calvo and Murillo 2004). The military, on the other hand, who ruled the country intermittently since the 1930s have been the political successors of the Conservatives. The so-called *Military Party* tended to represent the interests of land owners in the Pampas and the temperate agricultural producers of grain and beef producers.

government spending in the down cycle. Thus, we expect the Peronist to engage in more pro-cyclical spending than governments of different orientation and constituency bases.¹⁸ In the ensuing sections we will test our hypothesis using time series data from Argentina. Our empirical strategy below aims at explaining the correlation between the covariance of the cyclical components of both series as a function of the characteristics of the ruling party. We move now to assess the empirical content of our main hypothesis.

4.1 Statistical models and results

As discussed in earlier sections Argentina stands out as being a country with a history of pro-cyclical fiscal policy. We are interested explaining the variance of the pro-cyclical behavior of spending at the federal level over time. In particular we would like to estimate whether and how political conditions -namely the nature, orientation and characteristics of the governing party- affect the cyclicity of government spending to economic output. A positive correlation would suggest that spending is pro-cyclical, a negative relationship would suggest that spending is anti-cyclical, while no statistical relationship between the series would be evidence of acyclical behavior.¹⁹ Note that even after the log transformation value added and government spending, like many economic variables, are not stationary.²⁰ Both series seem to be integrated of the

¹⁸The other main traditional party in Argentina is the UCR. The Radicals are usually associated with the middle class. From Yrigoyen to Alfonsín the Radicals were in permanent confrontation with agricultural interests (de Alvear and de la Rúa less so), and were never able to gain the full trust of workers, unions and industrialists. Despite its confrontational attitude towards agricultural producers, we do not expect the Radicals to face the same incentives as the Peronist. There were two instances when Radical leaders attempted to engage the base traditionally represented by the Peronist; in both instances they ultimately failed. Arturo Frondizi's ascent to power in 1958 was the result of a secret pact with Peron, who was in the exile at the time; his party was proscribed by the military that ousted Peron and could not field candidates in the election. Frondizi's developmental policies were a clear attempt at gaining the hearts of workers; yet his relationship with unions remained hostile throughout. After failing in his attempts to weaken the Peronist stronghold of trade unions, in 1984 Raul Alfonsín appointed a unionist, Hugo Barrionuevo, to the Ministry of Labor and Social Security with mixed results: the overture gave Alfonsín the opportunity to successfully launch the Plan Austral in 1985. Yet the union leaders in his cabinet were never able at curbing organized labor's belligerence.

¹⁹For ease of interpretation we take the natural log of both variables (see below for a derivation of the estimating equation).

²⁰We chose to normalize spending and GDP by population. Using the series in their original dollar value yields identical results.

first degree -i.e. I(1)- and hence stationary after first-differencing.²¹ Fitting an Error Correction Model allows us to estimate a co-integration parameter that accounts for the long-term/equilibrium relationship between both series. We are also able to estimate an adjustment parameter that determines how fast spending needs to adjust when either variable moves out of equilibrium. The error correction model assumes that spending and output are in a steady state equilibrium which can be represented as:

$$\Delta G_t = \mu + \beta \Delta Y_t + \gamma (G_{t-1} - \delta Y_{t-1}) + \epsilon_t \quad (1)$$

The second term in (1), $\beta \Delta Y_t$, can be interpreted as the short term effect of output (Y_t) on government spending (G_t). The third term, $\gamma (G_{t-1} - \delta Y_{t-1})$, captures the long-run relationship between spending and output. If the series are cointegrated the absolute value of the γ parameter will be negative and statistically different from zero. This γ parameter captures the error correction term: if for whatever reason the series are not in equilibrium because either spending or output deviate from their trends, γ is the rate at which spending will adjust each period to bring the series back to equilibrium. The coefficient δ is the cointegration parameter, i.e., the long-run elasticity of government spending with respect to output.²² If the series are cointegrated of the same order, as they seem to be, δ can be estimated by regressing G_t on Y_t using OLS; this estimate of $\hat{\delta}$ is superconsistent. The residuals of this first stage regression enter as the second term in equation (1).²³ The first model in Table 2 reproduces the results of the second stage regression. These results corroborate that government spending in Argentina is indeed pro-cyclical: at .82 the coefficient on change in output (the elasticity of

²¹The augmented Dickey Fuller test statistic for the logarithmic transformation of the government spending series is: $Z(t) = -1.327$; we cannot reject the null of the series having a unit root (the McKinnon approximate p-value is .6169). First-differencing the series yields a test statistic of: $Z(t) = -10.705$, which suggests that the series in differences is stationary (with an approximate $p < .0001$). The natural log of the GDP/capita series is also I(1), with a $Z(t) = -1.316$ (approx. $p = .6219$); the series in first-differences returns a $Z(t) = -9.123$ (approximate $p < .0001$).

²²See Engle and Granger 1987; Beck 1991; Akitoby et al. 2002 discuss an application to public spending.

²³As customary in the empirical literature we estimate the first-stage regression with a constant term; hence the $Residuals_{t-1} = G_{t-1} - \theta - \hat{\delta}Y_{t-1}$. Using a one-stage model yields identical results.

government spending to GDP) is substantively large, and statistically significant. The coefficient on the residuals from the first stage suggest that the error correction process is relatively fast, with 43% of the adjustment occurring each period.²⁴ In order to test our hypothesis of differential partisan motivations and constraints on government behavior leading to pro-cyclical government spending we augment equation (1) to allow for the correlation to vary:

$$\Delta G_t = \mu_0 + \mu_\lambda \lambda + \lambda \beta_\lambda \Delta Y_t + \beta_1 \Delta Y_t + \gamma (G_{t-1} - \delta Y_{t-1}) + \epsilon_t \quad (2)$$

The parameter λ in equation (2) is an indicator variable that takes the value of 1 if the incumbent government is Peronist.²⁵ Our expectation is that $\beta_\lambda > \beta_1$. Our expectations seem to be borne out in the results reproduced in models (2)-(4) on Table 2: there is a strong evidence that Peronist governments run more pro-cyclical fiscal policies. Ideology, proxied for by a dummy variable for the periods under which the prevailing developmental strategy was import substitution (1930-1976), does not seem to play a role on the pro-cyclicity of spending.²⁶ Spending seems to be less pro-cyclical or even a-cyclical under Military rule which is consistent with our expectations given their constituency base: agricultural producers in the competitive/comparative advantage sector.²⁷ Table (3) reproduces results from model (2) in Table 2, now excluding the Peronist administrations and adding interactions between change in output and each of the non-Peronist administration. These results show that the short-term elasticity of spending to output is at its lowest levels under Military rulers.²⁸

²⁴In additional models we find that the short-term elasticity and the error correction parameter become larger in the second half of the twentieth century, which is consistent with the evidence presented earlier. We also find a strong and significant correlation between spending and revenue, esp. in the 1970s. All these results are available from the authors upon request.

²⁵Table A in the Appendix summarizes the tenure, party affiliation and ideological orientation of Argentine Presidents since 1898.

²⁶We tried with different start and end-dates to capture the ISI-era with similar results.

²⁷Time horizons fared prominently in the motto of the Junta in charge the autocratic regime of 1976-1983, the so-called *Proceso de Reorganización Nacional* (Process of National Reorganization): “the [Proceso] does not have deadlines, but objectives.”

²⁸The exception are the members of the Grupo de Generales Unidos (GOU) of which colonel Peron was a prominent figure. This group engineered the coup of 1943 that led to the ascent of then Peron

In Tables (4)-(6) we present alternative specifications of the ECM models. In Table (4) we add dummies for all democratic presidents and for the regime that paved the ascension of Peron to power (the Group of United Officers, or GOU in its Spanish acronym), which had a similar support base. These results underscore the stark differences between the leaders representing the urban coalition and those of different orientation, autocratic or democratic alike. While under the Peronist and GOU tenures the short-term elasticity of spending to output is substantively (above unity) and statistically significant, the behavior of public spending under autocratic leaders and non-Peronist democratic leaders appears to be a-cyclical. The results are robust to the inclusion of controls for changes in the terms of trade, import quantities, the US short-term interest rates, developmental strategies, and even time (decade) dummies.

Among the controls, it is apparent that independent of the short term changes in output, changes in government spending were higher in the ISI and Reform eras (see Table 5). Short-term interest rates in the US have a negative and significant effect on spending, which suggests that access to credit markets may affect the ability of governments to finance public spending. Changes in the terms of trade and trade openness, on the other hand, do not seem to be related to government spending. It is also worth noting that Table 6 returns a positive albeit small pro-cyclical behavior under Conservative leaders; this is unsurprising given that in the absence of direct taxes the main source of revenue at the time were specific tariffs on imports. There is no reliable data for this period, but accounts in the secondary literature suggest that most public spending at the time took the form of investment, not consumption, particularly in the form of infrastructure.

In sum, we find evidence that government spending is pro-cyclical under the Peronist, a party that represents organized labor and import competing manufacturing interests in urban sectors of the economy. While not a definitive test of our argument

to power. A short period of time in General J.C. Onganía's tenure also seems to depart from the traditional characterization of the military as pro-agriculture. His administration courted the support of the *neo-Peronist* faction led by the steelworkers' union Augusto Vandor.

these findings suggest that our political economy explanation is plausible.

4.1.1 Robustness check: instrumental variable estimation

So far, we have assumed implicitly that the causality goes from the business cycle to fiscal policy. However, endogeneity issues (e.g. output reacts to fiscal policy) could in principle be driving our results. Thus, in this section we turn to instrumental variables as a way of dealing with this problem. Following recent contributions on the subject (Ilzetzki and Vegh 2008; Jaimovich and Panizza 2007; Gali and Perotti 2003), we instrument the output gap of Argentina with the output gap of the six other major Latin American and Caribbean economies during the period of analysis: Brazil, Chile, Colombia, Peru, Mexico, and Venezuela (LAC6).²⁹ As shown by Figure 8, there is a strong relationship between external and domestic income shocks.³⁰

Table 7 reproduces results from estimating the following equation by instrumental variables (2SLS):

$$G_t^c = \alpha_1 + \alpha_2 Y_t^c + \alpha_3(Y_t^c \times \lambda_t) + \alpha_4 \lambda_t + \alpha_5 X_t + \epsilon_t \quad (3)$$

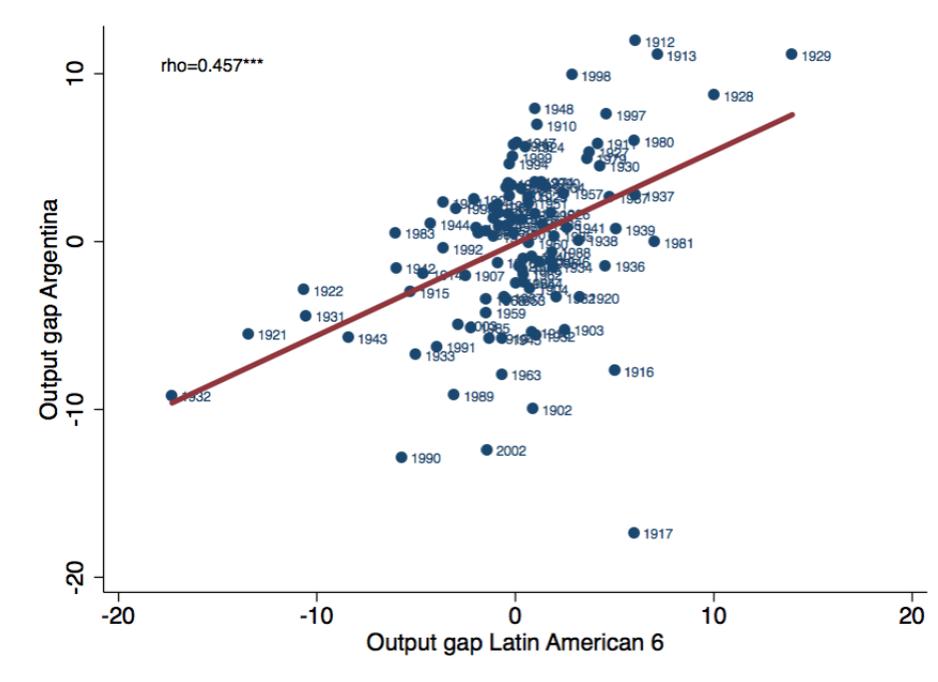
where G_t^c is the cyclical component of real government spending at the federal level;³¹ Y_t^c is the output gap (deviation of observed GDP from potential GDP in percentage terms as defined in footnote 30); λ_t is an indicator variable that takes the value of one when the incumbent is Peronist, and X_t is a vector of other controls, such as the percentage change in the terms of trade (ΔToT). Our main result continues to hold: Peronist incumbents increase the degree of fiscal procyclicality.

²⁹ Along with Argentina, these economies represent around 90 percent of the total GDP of the Latin American and Caribbean region.

³⁰ The definition of output gap is standard: the percentage deviation of actual from potential GDP, using the HP filter technique (setting the smoothing parameter, λ , at 100).

³¹ We use federal government spending rather than total government spending because the former reflects the level at which we measure the right hand-side variables, particularly political orientation of the incumbent coalition around which our argument is built.

Figure 8: Output Gap Correlation: Argentina and Latin American Six



5 Conclusion

In this paper we argue that fiscal responses to responses to the upward and downward swing of the economic cycle depend on the nature and orientation of the ruling coalitions. While some of the responses are aimed at redressing the duress created by the sharp downturns in output, incumbents' ability to respond to economic crises is also likely to reflect the underlying distributive cleavages in the polity. Our argument on the incentives to engage on pro-cyclical spending emphasizes the role of time horizons which, in turn, are affected by the nature of the underlying coalition and its incentives to redistribute. Endogenizing fiscal policy to politics allows us to extend and append the contributions from the extant theoretical and empirical literature on pro-cyclical spending. Using time-series data on the evolution of government spending in Argentina, a country classified as highly pro-cyclical, we find preliminary support to our main hypothesis.

The argument and findings have strong implications for our understanding how the incentive structure faced by governments has the potential to affect governments' ability to follow an optimal policy path. Moreover, we find that this incentive structure dominates even when that beneficiaries from enacting the optimal policy are the core constituents of the incumbent. While counter-cyclical spending would have benefitted workers and other economic agents who do not have access to financial markets to smoothen their consumption, when in power the Peronist party has engaged in pro-cyclical behavior. Consistent with our argument the Peronist, who represent a coalition of industrialists and workers in the comparative disadvantage sector of the economy, have systematically used spending as a political tool when the economy expanded and where forced to retrench spending at times of economic crises.

Last, our model brings to the fore a traditional puzzle in the literature on the political economy of redistribution: we can identify a virtuous equilibrium where winners and losers from economic integration are able to credibly commit to a compensatory scheme that reduces the incentives to fight and extends the shadow of the future. Under these conditions the constraints faced by incumbents in enacting optimal fiscal policies are reduced. The political conditions under which these compromises attain are usually attributed to differences in institutions, broadly defined (Katzenstein 1985, 1987; North 1990). Yet institutions are endogenous to the political process. Why forward looking actors are unable to establish those institutions that make these compromises more likely to attain remains a puzzle that we cannot explore with the data at hand.

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Table 1: Government Spending and Output Gap by Decades

| | Output gap | ToT gap | Govt. Spend. $_{t-1}$ | Constant | N | R^2 |
|-----------|---------------------|----------------------|-----------------------|---------------------|----|-------|
| 1900-1910 | 1.486 (1.725) | 0.0215** (0.0078) | -0.381 (0.231) | 5.474 (3.288) | 10 | 0.628 |
| 1911-1920 | 0.944 (0.912) | 0.00267 (0.0057) | -0.0629 (0.127) | 0.862 (1.840) | 10 | 0.205 |
| 1921-1930 | -0.657 (1.552) | -0.0126* (0.0057) | 0.0235 (0.159) | -0.205 (2.346) | 10 | 0.626 |
| 1931-1940 | 1.233 (1.009) | 0.00124 (0.0030) | -0.180 (0.212) | 2.803 (3.261) | 10 | 0.389 |
| 1941-1950 | 3.336* (1.688) | -0.00324 (0.0042) | -0.197 (0.172) | 3.169 (2.718) | 10 | 0.461 |
| 1951-1960 | 3.117 (2.538) | -0.00493 (0.0103) | -0.178 (0.455) | 2.929 (7.385) | 10 | 0.403 |
| 1961-1970 | 0.758 (0.678) | 0.00990* (0.0043) | 0.118 (0.149) | -1.906 (2.477) | 10 | 0.614 |
| 1971-1980 | -0.779 (1.669) | 0.00507 (0.0034) | 0.117 (0.259) | -1.958 (4.437) | 10 | 0.306 |
| 1981-1990 | 0.161 (0.880) | 0.00137 (0.0046) | -0.0305 (0.279) | 0.484 (4.815) | 10 | 0.019 |
| 1991-2004 | 2.129*** (0.405) | -0.0014 (0.0054) | -0.294*** (0.073) | 5.158*** (1.272) | 14 | 0.840 |

Standard errors in parentheses; Significance levels: * 1%, ** 5%, *** 1%

Output gap: natural log deviation of GDP/capita from its Hodrick-Prescott (HP) trend

ToT gap (gap in terms of trade): natural log deviation from HP filtered series

Table 2: Error Correction Models: Baseline

| Models | (1) | (2) | (3) | (4) |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| Constant | 0.006 (0.011) | 0.008 (0.012) | -0.024 (0.028) | -0.024 (0.028) |
| $\Delta \text{Ln GDP/capita}$ | 0.817 *** (0.241) | 0.583 ** (0.284) | 0.597 ** (0.275) | 0.576 (0.481) |
| γ (Residual_{t-1}) | -0.430 *** (0.090) | -0.414 *** (0.091) | -0.463 *** (0.097) | -0.461 *** (0.098) |
| Peronist | | -0.013 (0.022) | -0.024 (0.022) | -0.023 (0.023) |
| Peronist x $\Delta \text{Ln GDP/cap.}$ | | 0.895 ** (0.446) | 0.87 ** (0.421) | 0.992 ** (0.484) |
| ISI | | | 0.061 * (0.035) | 0.058 * (0.034) |
| ISI x $\Delta \text{Ln GDP/cap.}$ | | | | 0.145 (0.567) |
| Reform | | | 0.028 (0.032) | 0.027 (0.032) |
| Reform x $\Delta \text{Ln GDP/cap.}$ | | | | -0.183 (0.600) |
| N | 104 | 104 | 104 | 104 |
| R ² | 0.338 | 0.363 | 0.395 | 0.397 |
| F | 14.62 | 12.89 | 10.23 | 7.65 |
| Durbin-Watson d-stat | 1.947 | 1.939 | 1.934 | 1.912 |

Significance levels: * 10%, ** 5%, *** 1%

DV: $\Delta \text{Ln Govt. Spend./capita}$; Huber-White robust std. err. in parenthesis

γ : coeff. on Residual_{t-1} , where $\text{Residuals}_{t-1} = G_{t-1} - \theta - \hat{\delta}Y_{t-1}$

ISI: Import Substitution Industrialization; Reform: economic and trade liberalization.

Table 3: ECM by administration

| Variable | Coefficient | (Std. Err.) |
|--|-------------|-------------|
| Constant | -0.020 | (0.019) |
| $\Delta \text{Ln GDP/cap.}$ | 1.434*** | (0.320) |
| γ (Residual_{t-1}) | -0.520*** | (0.106) |
| Part. Conserv. | 0.045 | (0.047) |
| Part. Conserv. x $\Delta \text{Ln GDP/cap.}$ | -0.488 | (0.735) |
| UCR | -0.030 | (0.029) |
| UCR x $\Delta \text{Ln GDP/cap.}$ | -0.973* | (0.562) |
| Military | 0.020 | (0.028) |
| Military x $\Delta \text{Ln GDP/cap.}$ | -1.203* | (0.646) |
| Nat. Coal. | 0.006 | (0.048) |
| Nat. Coal x $\Delta \text{Ln GDP/cap.}$ | -0.398 | (2.208) |
| Nat. Dem. | 0.059** | (0.024) |
| Nat. Dem x $\Delta \text{Ln GDP/cap.}$ | -0.903** | (0.388) |
| UCRI | 0.077 | (0.067) |
| UCRI x $\Delta \text{Ln GDP/cap.}$ | -0.218 | (0.951) |
| Alianza | 0.054** | (0.023) |
| Alianza x $\Delta \text{Ln GDP/cap.}$ | -0.574 | (0.544) |
| ISI | 0.036 | (0.025) |
| N | | 104 |
| R ² | | 0.436 |
| F _(17,86) | | 4.446 |
| DW d-statistic _(18,104) | | 1.929 |

Significance levels: * 10%, ** 5%, *** 1%

DV: $\Delta \text{Ln Govt. Spend./capita}$; Huber-White robust std. err. in parenthesis

γ : coefficient on Residual_{t-1} , where $\text{Residual}_{t-1} = G_{t-1} - \theta - \delta Y_{t-1}$

Part. Conserv.: 1900-1915; UCR: 1916-1990; 1963-1965; 1983-1989

Nat. Dem: 1932-1937; Nat. Coal: 1938-1942; UCRI: 1958-1962; Alliance: 1999-2001

Military: 1930-1931; 1943-1945 (GOU); 1955-1957; 1966-1972; 1976-1982

Peronist (omitted category): 1946-1955; 1973-1975; 1989-1999; 2002-2004

Table 4: ECM models: Peronist, Other Democratic and GOU

| Variable | Coefficient | (Std. Err.) |
|--|-------------|-------------|
| Constant | 0.004 | (0.015) |
| $\Delta \text{Ln GDP/cap.}$ | -0.037 | (0.329) |
| γ (Residual $_{t-1}$) | -0.454*** | (0.093) |
| Peronist | -0.008 | (0.025) |
| Peronist x $\Delta \text{Ln GDP/cap.}$ | 1.491*** | (0.478) |
| GOU | 0.110*** | (0.024) |
| GOU x $\Delta \text{Ln GDP/cap.}$ | 1.875*** | (0.384) |
| Radical | -0.017 | (0.025) |
| Radical x $\Delta \text{Ln GDP/cap.}$ | 0.544 | (0.537) |
| Conservative (All) | 0.016 | (0.030) |
| Conservative x $\Delta \text{Ln GDP/cap.}$ | 0.891 | (0.618) |
| N | | 104 |
| R ² | | 0.414 |
| F _(10,93) | | 59.39 |
| DW d-statistic _(11,104) | | 1.970 |

DV: $\Delta \text{Ln Govt. Spend./capita}$; Huber-White robust std. err. in parenthesis

Significance levels: * 10%, ** 5%, *** 1%

Omitted category: Military government

Table 5: ECM Models: Alternative hypotheses

| Variable | Coefficient | (Std. Err.) |
|--|-------------|-------------|
| Constant | -0.118** | (0.053) |
| $\Delta \text{Ln GDP/cap.}$ | -0.130 | (0.758) |
| γ (Residual_{t-1}) | -0.622*** | (0.119) |
| Peronist | -0.006 | (0.029) |
| Peronist x $\Delta \text{Ln GDP/cap.}$ | 1.511** | (0.631) |
| GOU | 0.054 | (0.047) |
| GOU x $\Delta \text{Ln GDP/cap.}$ | 1.713** | (0.654) |
| Radical | 0.053 | (0.035) |
| Radical x $\Delta \text{Ln GDP/cap.}$ | 0.827 | (0.554) |
| Conservative | 0.142** | (0.069) |
| Conservative x $\Delta \text{Ln GDP/cap.}$ | 1.386 | (0.945) |
| Nat. Coal. | -0.067* | (0.038) |
| Nat. Coal. x $\Delta \text{Ln GDP/cap.}$ | 2.082 | (1.710) |
| Nat. Dem. | 0.038 | (0.036) |
| Nat. Dem. x $\Delta \text{Ln GDP/cap.}$ | 0.714 | (0.614) |
| $\Delta \text{ Ln ToT}$ | 0.132 | (0.097) |
| $\Delta \text{ Ln US int. rate}$ | -0.042* | (0.024) |
| $\Delta \text{ Ln Imports}$ | -0.091 | (0.079) |
| ISI (1930-1975) | 0.126** | (0.053) |
| ISI x $\Delta \text{Ln GDP/cap.}$ | 0.280 | (0.645) |
| Reform (1976-2004) | 0.113** | (0.047) |
| Reform x $\Delta \text{Ln GDP/cap.}$ | 0.419 | (0.633) |
| N | | 104 |
| R ² | | 0.498 |
| F (21,82) | | 11.087 |
| DW d-statistic _(22,104) | | 1.805 |

Significance levels: * 10%, ** 5%, *** 1%

DV: $\Delta \text{Ln Govt. Spend./capita}$; Huber-White robust std. err. in parenthesis

γ : coefficient on Residual_{t-1} , where $\text{Residuals} = G - \theta - X\delta'$

X is the vector of covariates included in the second stage.

Ln US int. rate: Ln US short term interest rate;

Ln ToT: Ln terms of trade; Ln Imports: Ln import quantities

Omitted category: Military government

Table 6: ECM Models: decade dummies

| Variable | Coefficient | (Std. Err.) |
|---|-------------|-------------|
| Constant | 0.002 | (0.037) |
| $\Delta \text{Ln GDP/cap.}$ | 0.225 | (0.719) |
| γ (Residual $_{t-1}$) | -0.646*** | (0.133) |
| Peronist | -0.016 | (0.035) |
| Peronist x $\Delta \text{Ln GDP/cap.}$ | 1.582** | (0.678) |
| GOU | 0.055 | (0.087) |
| GOU x $\Delta \text{Ln GDP/cap.}$ | 1.621** | (0.808) |
| Radical | 0.044 | (0.034) |
| Radical x $\Delta \text{Ln GDP/cap.}$ | 0.567 | (0.701) |
| Conservative | 0.176*** | (0.063) |
| Conservative x $\Delta \text{Ln GDP/cap.}$ | 0.702 | (0.946) |
| Nat. Coal. | -0.074 | (0.068) |
| Nat. Coal. x $\Delta \text{Ln GDP/cap.}$ | 2.052 | (1.728) |
| National Dem. | 0.024 | (0.068) |
| National Dem. x $\Delta \text{Ln GDP/cap.}$ | 0.617 | (0.780) |
| $\Delta \text{ Ln ToT}$ | 0.111 | (0.100) |
| $\Delta \text{ Ln US int. rate}$ | -0.040 | (0.031) |
| $\Delta \text{ Ln Imports}$ | -0.089 | (0.084) |
| N | | 104 |
| R ² | | 0.557 |
| F _(26,77) | | 10.682 |
| DW d-statistic _(27,104) | | 1.942 |

DV: $\Delta \text{Ln Govt. Spend./capita}$; Huber-White robust std. err. in parenthesis

Includes decade dummies; excluded cat.: 1990-2004

See table 3 for references

Significance levels: * 10%, ** 5%, *** 1%

Omitted category: Military government

Table 7: Instrumental Variable Regression (2SLS)

| | (1) | (2) | (3) |
|--|--------------------|--------------------|--------------------|
| Output Gap | 0.005 (0.004) | 0.004 (0.005) | 0.004 (0.005) |
| Output Gap x Peronist | 0.014** (0.006) | 0.016** (0.007) | 0.016** (0.007) |
| Peronist | -0.012 (0.020) | -0.010 (0.021) | -0.016 (0.022) |
| US interest rate | | 0.003 (0.003) | 0.001 (0.003) |
| Δ ToT | | 0.0003 (0.0009) | 0.0003 (0.0009) |
| ISI (1930-1975) | | | 0.001 (0.031) |
| Reform (1976-2004) | | | 0.014 (0.032) |
| Constant | 0.004 (0.012) | -0.007 (0.019) | -0.006 (0.031) |
| N | 105 | 104 | 104 |
| R ² | 0.268 | 0.259 | 0.262 |
| <i>F</i> -statistic (first stage) | 16.64 | 9.84 | 9.41 |
| <i>DW</i> d-statistic (<i>p</i> -value) | 0.358 | 0.323 | 0.339 |

Standard errors in parentheses

Significance levels: * 1%, ** 5%, *** 1%

DV: Govt. spend./capita deviation from Hodrick-Prescott (HP) trend

Output gap: GDP/capita deviation from Hodrick-Prescott (HP) trend

Appendix I

Table A: Argentina: Government orientation

| Presidents | Tenure | Party | Regime | Ideology | Support base |
|--------------------|-----------|--------------------|------------------|---------------|------------------------------|
| J.A. Roca | 1898-1904 | PAN | Dem | open/agro-exp | Agr.producers |
| M.Quintana | 1904-1906 | PAN | Dem | open/agro-exp | Agr.producers |
| J.Figueroa Alcorta | 1906-1910 | PAN | Dem | open/agro-exp | Agr.producers |
| R.Saenz Peña | 1910-1914 | Union Nacional | Dem | open/agro-exp | Agr.producers |
| V. De la Plaza | 1914-1916 | PC | Dem | open/agro-exp | Agr.producers |
| H. Yrigoyen | 1916-1922 | UCR | Dem* | open/agro-exp | Middle classes |
| M.T. de Alvear | 1922-1928 | UCR | Dem | open/agro-exp | Middle classes |
| H. Yrigoyen | 1928-1930 | UCR | Dem | open/agro-exp | Middle classes |
| J.F. Uriburu | 1930-1932 | MILITARY | Aut | open/agro-exp | Agr.producers |
| A.P. Justo | 1932-1938 | National Dem | Dem [†] | open/agro-exp | Agr.producers/industrialists |
| R.M Ortiz | 1938-1942 | National Coalition | Dem | open/agro-exp | Agr.producers/industrialists |
| R.S Castillo | 1942-1943 | National Coalition | Dem | open/agro-exp | Agr.producers/industrialists |
| A.Rawson | 1943 | MILITARY | Aut | closed/ISI | Urban workers-industrialists |
| P. Ramirez | 1943-1944 | MILITARY | Aut | closed/ISI | Urban workers-industrialists |
| E.J. Farrell | 1944-1946 | MILITARY | Aut | closed/ISI | Urban workers-industrialists |
| J.D. Peron | 1946-1955 | PJ | Dem** | closed/ISI | Urban workers-industrialists |
| E. Lonardi | 1955 | MILITARY | Aut | closed/ISI | Agr. Producers |
| P. Aramburu | 1955-1958 | MILITARY | Aut | closed/ISI | Agr. Producers |
| A. Frondizi | 1958-1962 | UCRI | Dem‡ | closed/ISI | Middle classes |
| J.M. Guido | 1962-1963 | UCRI | Aut | closed/ISI | Middle classes |
| A. Illia | 1963-1966 | UCRP | Dem‡ | closed/ISI | Middle classes |
| J.C. Onganía | 1966-1970 | MILITARY | Aut | closed/ISI | Agr.producers |
| R. Levingston | 1970-1971 | MILITARY | Aut | closed/ISI | Agr.producers |
| A. Lanuse | 1971-1973 | MILITARY | Aut | closed/ISI | Agr.producers |
| H. Campora | 1973 | PJ | Dem | closed/ISI | Urban workers-industrialists |
| R.Lastiri | 1973 | PJ | Dem | closed/ISI | Urban workers-industrialists |
| J.D. Peron | 1973-1974 | PJ | Dem | closed/ISI | Urban workers-industrialists |
| I. de Peron | 1974-1976 | PJ | Dem | closed/ISI | Urban workers-industrialists |
| J. Videla | 1976-1981 | MILITARY | Aut | open/reform | Agr.producers/contractors |
| R. Viola | 1981 | MILITARY | Aut | open/reform | Agr.producers/contractors |
| L.Galtieri | 1981-1982 | MILITARY | Aut | open/reform | Agr.producers/contractors |
| R. Bignone | 1982-1983 | MILITARY | Aut | open/reform | Agr.producers/contractors |
| R. Alfonsín | 1983-1988 | UCR | Dem | partial open | Middle classes |
| C. Menem | 1989-1999 | PJ | Dem | open/reform | Urban workers-industrialists |
| A.De la Rúa | 1999-2001 | UCR-Alliance | Dem | open/reform | Middle classes |
| E.Duhalde | 2002 | PJ | Dem | open/reform | Urban workers-industrialists |
| N.Kirchner | 2003-2007 | PJ | Dem | partial open | Urban workers-industrialists |
| C. Kirchner | 2007– | PJ | Dem | partial open | Urban workers-industrialists |

Source Mollinelli et al 1999; authors

References: Military: follows a coup; PAN/PC=Conservative Party PJ=Peronists UCR=Radicals

UCRI=UCR Intransigente UCRP= UCR del Pueblo

[†] The UCR was proscribed and banned from the 1931 election; pervasive electoral fraud through 1942.

* First presidential election under universal, mandatory and secret ballot (Ley Saenz Peña of 1912

** Female suffrage instituted in 1947. The first Presidential election with female suffrage was 1952.

‡ The Peronist party was proscribed and banned from the 1958 and 1963 elections

Table B: Argentina: Economic Recessions 1903-2004

| Highest year | Economic cycle | Length (years) | Drop in GDP (start to end) | Drop in industry (start to end) | Drop in construction (start to end) | Annual inflation |
|--------------|----------------|----------------|-----------------------------|---------------------------------|-------------------------------------|-----------------------------|
| 1913 | 1913-1917 | 4 | -0.200 | -0.167 | -0.824 | 0.079 |
| 1929 | 1929-1932 | 3 | -0.151 | -0.176 | -0.594 | -0.079 |
| 1951 | 1951-1952 | 1 | -0.060 | -0.093 | -0.101 | 0.386 |
| 1958 | 1958-1959 | 1 | -0.061 | -0.129 | -0.159 | 1.137 |
| 1961 | 1961-1963 | 2 | -0.037 | -0.094 | -0.156 | 0.589 |
| 1974 | 1974-1976 | 2 | -0.011 | -0.055 | 0.202 | 14.385 |
| 1977 | 1977-1978 | 1 | -0.036 | -0.105 | -0.048 | 1.755 |
| 1980 | 1980-1982 | 2 | -0.075 | -0.143 | -0.207 | 1.327 |
| 1984 | 1984-1985 | 1 | -0.069 | -0.149 | -0.149 | 6.722 |
| 1987 | 1987-1990 | 3 | -0.108 | -0.150 | -0.498 | 14.037 |
| 1994 | 1994-1995 | 1 | -0.036 | -0.072 | -0.122 | 0.034 |
| 1998 | 1998-2002 | 4 | -0.184 | -0.270 | -0.508 | 0.219 |
| Highest year | Economic cycle | Length (years) | Initial shock Export prices | Initial shock Export volumes | Drop in imports (start to end) | Real devaluation (implicit) |
| 1913 | 1913-1917 | 4 | 0.011 | -0.262 | -0.558 | |
| 1929 | 1929-1932 | 3 | -0.110 | -0.317 | -0.527 | 0.661 |
| 1952 | 1951-1952 | 1 | -0.166 | -0.295 | -0.403 | 0.170 |
| 1959 | 1958-1959 | 1 | 0.046 | -0.038 | -0.153 | 0.243 |
| 1961 | 1961-1963 | 2 | -0.169 | -0.082 | -0.322 | 0.106 |
| 1974 | 1974-1976 | 2 | 0.249 | -0.166 | -0.175 | 1.200 |
| 1977 | 1977-1978 | 1 | 0.064 | 0.096 | -0.129 | -0.255 |
| 1980 | 1980-1982 | 2 | 0.180 | 0.110 | -0.525 | 3.229 |
| 1984 | 1984-1985 | 1 | 0.086 | 0.208 | -0.171 | 0.160 |
| 1987 | 1987-1990 | 3 | -0.177 | -0.099 | -0.378 | 0.750 |
| 1994 | 1994-1995 | 1 | 0.029 | 0.249 | -0.116 | 0.000 |
| 1998 | 1998-2002 | 4 | -0.104 | -0.008 | -0.676 | 1.400 |

Source: CEPAL Buenos Aires, FIEL and authors