

Budget Deficits and Reelection Prospects: Voters as Fiscal Conservatives in a New Democracy

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Abstract

State elections in Brazil are an excellent laboratory to test the fiscal preferences of voters in new democracies. Brazil is a developing economy with a history of large budget deficits at the federal and state level, with a established democracy since the late 1980's, mandatory vote and considerable social and economic diversity. In addition, in 1998 Brazil has undertaken substantial reforms increasing fiscal responsibility at the state level that substantially altered the incentives to run deficits. This paper uses the experience of state level elections in Brazil in the period from 1990 to 2002. We identify a change in politicians' behavior in the term before the 2002 elections and present evidence that this change is mostly due to a series of institutional reforms that hardened budget constraints. Our results show that, despite the prevalence deficits, the governors did not increase their reelection prospects by running larger deficits. Moreover, after the fiscal reforms, fiscal deficits turn almost immediately to surpluses while the probability of an incumbent being reelected increased. We conclude that voters in Brazil behave much like their counterparts in older democracies, showing evidence of fiscal conservatism. Brazilian voters needed neither more experience with democratic elections nor better information to reward fiscally conservative politicians.

Keywords: Budget Deficits; Elections; Political Cycles; Fiscal Conservatism.

JEL Classification: D72; E62; H72; H77

1. Introduction

At least since the work of Nordhaus (1975) on political business cycles, a powerful idea has taken root in the political economy of fiscal policy: government incumbents can manipulate the economy to seek re-election and they will do that by increasing budget deficits before the election and pay for them after the election. Nordhaus' model assumed myopic voters who were unable to anticipate future adjustment costs. Later models introduced two significant changes: they assumed rational voters, and limited the incumbents' ability to manipulate economic policy, including fiscal policy.¹

The above motivation for running a deficit is non-partisan or opportunistic, so that, irrespective of the preferences of policy-makers, the incentive to run a deficit remains the same.² However, when we come to testing whether deficits are larger in electoral periods, the results for developed countries are far from conclusive, as Alesina et al. (1997) and, more recently, Shi and Svensson (2002) have shown.³ Peltzman (1992) argues that voters actually penalize growth in federal and state spending. Alesina et al. (1998) have shown that the correction of fiscal deficits has no impact on re-election probabilities or even in popularity rankings, for OECD and European countries respectively so that there is no evidence of electoral incentives to run a deficit.⁴ In sum, studies for developed economies have generally failed to document the electoral benefit of running a pre-election deficit.

The evidence for developing countries is more favourable on the existence and benefits of electoral budget cycles. Ames (1987) studies seventeen Latin American countries from 1947 to 1982, and documents a sizable increase in expenditures the year before the election, followed by a concomitant decrease the year after. Block (2000) presents evidence of a political business cycle in fiscal policy in a cross-section of countries in Sub-Saharan Africa.

¹ See, among others, Rogoff and Sibert (1988).

² There are other reasons for running a deficit before an election, but they have a partisan character and depend on the preferences of policy-maker. For instance, an important reason stem from strategic motives, whereby the current policy-maker uses the deficit to constrain future policy-makers who might have different preferences. In this last case, the higher the probability of being substituted in office, the greater the incentive to run a deficit. In the case of "partisan deficits", both a disagreement over the composition of public spending or over the size of government can result in a strong incentive to run a deficit, as first explored in Alesina and Tabellini (1990), Tabellini and Alesina (1990) and Persson and Svensson (1989).

³ Other factors, such as the fragmentation of cabinets, have been shown to be important determinants of fiscal deficits. See Perotti and Kontopoulos (2002).

⁴ We will address this topic below.

In a recent paper, Brender and Drazen (2005a) find evidence in favor of a political budget cycle in a cross-section of countries by moving ahead in the explanation and suggesting that it is only data on new democracies that support the existence of electoral cycles reflected in higher reelection prospects. In other words, the Nordhaus story comes back to life in a more subtle form: true, pre-election deficits may imply some non-rationality on the part of voters and it is only natural that this lack of “voter sophistication” occurs in new democracies and disappears as democratic regimes mature.⁵ As the authors put it, the question of *whether* there is an electoral budget cycle becomes a question of *where* it exists. The model suggests that, as a country gains experience in electoral politics, the scope for a political fiscal cycle is diminished.⁶ The experience of new democracies, defined as the period between the first four democratic elections, could also be responsible for the correlation between incomes per capita, governmental and electoral systems and budget deficits. In the same line, Brender (2003) shows evidence that voters began to reward better fiscal performances in Israeli municipal elections when they were able to get enough information on fiscal behavior. In other words, as they become more sophisticated and informed, voters will reward conservative fiscal policies.

In this paper we carefully document the experience of state level elections in Brazil for the period 1990 to 2002 in order to test the degree of voters’ fiscal “conservativeness”. State elections in Brazil are an excellent laboratory to test the fiscal preferences of voters in new democracies. Brazil is a developing economy with a history of large budget deficits at the federal and state level, with an established democracy since the late 1980’s, mandatory vote and considerable social and economic diversity. Contrary to expected we do not find a positive impact of state deficits on reelection prospects, even after controlling for state and federal economic conditions and political context. Moreover, in 1998 Brazil has undertaken substantial reforms increasing fiscal responsibility at the state level that substantially altered the incentives to run deficits. We find that this institutional change led to a swift change from deficits to surpluses at the state level without harming incumbents reelection prospects, quite to the contrary.

⁵ Schuknecht (1996) suggests an alternative reason for conducting fiscal deficits in developing countries: in these countries fiscal policy is more discretionary in the sense that manipulations to favour specific groups, such as the distribution of subsidized goods and employment via public works, are easier to conduct. This is a “supply side” explanation, working through the “deficit to votes technology” available to policy-makers, whereas Brender and Drazen’s is a “demand side” explanation.

⁶ This is in line with evidence in Veiga and Pinho (2006), which study two periods in the recent economic history of Portugal, in which the country could be first considered a “new democracy” and then a “mature” democracy.

This paper is organized in three sections, in addition to the introduction. Section 2 presents the case for our choice of Brazilian state elections as an important case to analyse. In Section 3 we present and discuss the empirical evidence on fiscal cycles and re-election. The last section summarizes and concludes the paper.

2. Brazilian States and Budget Deficits.

Several reasons make Brazil a case worthy studying in depth as regards the electoral effects of fiscal policy. Brazil is a developing country with GDP per capita of about US\$ 9000 in 2006⁷, coded as a less developed country by Brender and Drazen (2005a and 2005b). After a long period of authoritarian rule, Brazil has democratized in 1985 and has since experienced four rounds of democratic elections up to 2003, at the presidential, state gubernatorial and local levels. This condition clearly qualifies Brazil as a new democracy according to the criteria of four democratic elections established by Brender and Drazen (2005a and 2005b). Actually, Brazil is the fourth largest democracy in the world, after the United States, India, and Indonesia.

First, the institutional setting is promising for research. Brazil is a Federative Republic, its 1988 Constitution defining as major administrative divisions 26 states and a federal district whose governors and legislative representatives are elected every four years in a legally binding calendar. In 1930, Brazil was the first Latin American country to adopt universal suffrage, and one of the first among all over the world.⁸ Moreover, following other countries in the region, voting is compulsory for all elections. This last aspect is a continuous source of debate about whether mandatory voting forces “less sophisticated” to the polls, thereby reducing the democratic accountability, or not. Though it is hard to give precise estimates for a non-event, some works have shown that both absent voters,⁹ or those who declared they would not vote in a voluntary voting system, share no specific social, political, or economic characteristic.¹⁰

Second, our paper studies the electoral impact of fiscal policy at the sub-national level, as in Brender (2003), which studies Israel’s local governments. One advantage of a sub-national analysis is that we can examine the choice of the deficit levels by state cabinets within the same

⁷ This value is measured in PPP. For comparison, according to the IMF Economic Outlook (2006), GDP per capita has value of about US\$ 44000 in the USA, US\$ 32000 in United Kingdom, Germany and Japan, US\$ 23996 in Korea, and US\$ 3490 in India.

⁸ Ahead of other developed countries such as France, Italy, and Japan, which adopted universal suffrage only after the WWII

⁹ Though legally compulsory, the consequences of voting abstention is limited to a monetary fine.

¹⁰ See, for instance, Lima Jr. (1990), Power and Roberts (1995), and Elkins (2000).

national institutional and economic context. It is important that studies to date show that the state governors' ability to manipulate fiscal policy instruments to influence voting is similar for all states.¹¹ Moreover, there is a great variation in socio-economic variables across states. In 2003 the GDP per capita of the two richest states, Sao Paulo and the Federal District, was around US\$ 5500, similar to a country like Chile or the Czech Republic, while the two poorest states, Maranhão and Piauí, displayed an income of US\$ 850, similar to the Cameroon or Guinea-Bissau.¹²

Third, as we will show later, even a cursory observation of election results in Brazilian states will show a high level of political competition at state level so that the institutional environment does not provide incumbent governors with a significant electoral advantage over their challengers.¹³

Last, but not least, since the democratization, Brazilian governmental institutions have been made great efforts to produce good quality data on states' public finance.

The fiscal performance of Brazilian states during the late 1980s and the 1990's was very erratic, with frequent deficits and excessive state borrowing followed by federal bailouts.¹⁴ These federal bailouts in effect "transformed" state fiscal deficits into national inflation, further fuelling the latter. In a high inflation environment, states were able to balance their budget deficits by indexing taxes, deferring outlays, and some other accounting practices that made use of inflation. After successive cycles of debt renegotiations in 1989 and 1993, the situation became unsustainable after 1994, when the Real Plan finally succeeded to control national inflation. The central bank intervened on several state banks, privatized quite a few and negotiated agreements to restructure state debts.¹⁵ At the end of 1997 a new agreement was reached,¹⁶ which involved a conditional bailout. In order to have their debt rescheduled, states were now prohibited from

¹¹ See Santos (2001) with several case studies. The general conclusion is that institutional constraints on budgeting are similar to all states, with a greater influence from the local executive in the budgeting process vis-à-vis the legislative.

¹² The country figures were extracted from the World Bank Developing Indicators (2005). Not surprisingly, Brazil shows also one of the highest levels of individual inequality, with a national Gini index around 0.6.

¹³ Electoral competition is also intense for the state assembly. In the last three elections - 1994, 1998, and 2002 - the number of candidates per mandate was 7.6, 10.1, and 11.3 respectively. See the LEEX/UCAM data at the following internet site: <http://www.ucam.edu.br/leex/Brasil/Compet/NUMECAVI.htm>.

¹⁴ Stein (1999) analyses the Brazilian case in the context of a group of Latin American countries.

¹⁵ The rise of the federal interest rate during 1995 was one of the reasons pointed out by Bevilacqua (2002) as the cause for the restructuring of state debt. Without the restructuring of debt, the increasing of interest rate in the market grows up difficult to the states to honor their commitment (the debt service).

¹⁶ Law number 9496/September.

issuing debt through their state banks and forced to commit a share of annual receipts to repay the “final” federal government bailout.¹⁷ To guarantee the fulfilment of the agreement, representatives of the National Treasury monitored state fiscal performance. Lest a state failed to accomplish its payment, the Federal government was entitled to hold transfers to this state in an exact same amount as the arrears. In sum, after 1997 there has been a radical change in state’s fiscal environment and a swift hardening of the states’ budget constraints that is extremely rare to observe in any country. Thus, in our period of study, we have a substantial change in institutional context after 1997.

In 2000, the federal government proclaimed the “law of fiscal accountability”, establishing public policy rules aimed at guaranteeing responsible fiscal management at the federal, state and municipal levels. Its scope reached beyond the executive to all sieges of power, including the Legislative and the Judiciary. More than punishing public administrators and politicians, the law of fiscal accountability aimed at correcting the course of public administration, limiting any outlays over revenues. These objectives should be accomplished through the adoption of planning, organization, inward and outward auditing and, last but not least, transparency of governments’ actions.

3. Voters as Fiscal Conservatives in a New Democracy

In this section, we use data on Brazilian state elections since 1990 to answer two questions. The first is whether there are electoral budget cycles, translated in higher budget deficits in election years relative to other years. The second question is whether budget deficits in election years translate in an electoral advantage for the incumbent governor, party or coalition.

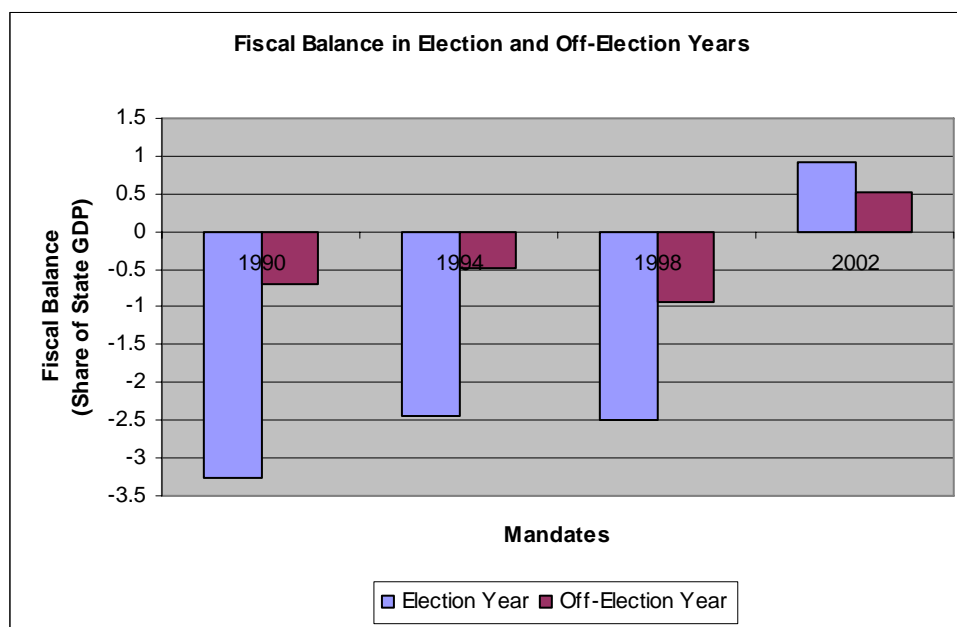
Evidence of Political Budget Cycles

Elections in Brazilian states are held every four years and, as mentioned above, state governors had significant scope for deficit spending in the first three elections in our sample. State banks were used as channels of indirect monetary creation, financing state administrations

¹⁷ In general, after the consolidation of state debts by the federation (where state debt was swapped for federal debt on financial markets), subnational governments committed to pay 12 percent of current net revenues as debt service. If total interest exceeded this amount, the excess would be capitalized and deferred until the repayment of the principal. In order to assist states, the federal government negotiated a debt extension. Moreover, the Senate issued a resolution whereby sub-national governments with an indebtedness threshold of more than two times their current net revenues should adjust their indebtedness down to that level through a fifteen-year period. The adjustment should be made in a specific manner: 1/15 of the total maladjustment per year. In case states default on debt service, the federal government had legal ground to confiscate transfers to guarantee the payment.

through the issuing of notes that were later redeemed by the central bank through national money issue. In the run-up to the 1998 election, the restructuring of states' debt became law, radically curtailing the autonomy of state banks and imposing explicit deficit limits on state administrations. In Figure 1 it is evident that state finances display an electoral budget cycle up to the 1998 election: the deficit in election years is sizable and significantly larger than the deficit in off-election years. Election-year deficits are, on average, between 1.5 and 3 percentage points higher than the off-election fiscal deficits. In 2002, after a period of major institutional reforms with fiscal incidence, state administrations change their ways and present budget surpluses in all years.¹⁸

Figure 1
Electoral Budget Cycles
Fiscal Policy in Election and Off-Election Years



In Table 1 below we estimate the impact on state fiscal balances of a series of economic and political variables at the state and national levels. The “Election Year” variable is an indicator variable taking the value one in years where elections for state governors were held and zero otherwise. The size and significance of the coefficient associated with “Election Year” tests for the presence of an electoral budget cycle. We have added controls for per capita GDP at state level, the growth of per capita GDP, the weight of federal grants in the state budget – both its

¹⁸ Actually, election year surpluses are even larger than off-election year surpluses, though the difference is not substantial.

discretionary and constitutionally determined components –, the national fiscal surplus, national per capita GDP growth and the inflation rate at the national level. We also use political variables as controls, such as the fragmentation of the electoral coalition and the ideology of state governors, state governing coalitions and state legislatures.¹⁹ Other variables control for the ideological alignment between governors, or governing coalition, and the state legislature.

Table 1 about here

Our results are clear-cut: during election years, state governors run larger deficits. This effect is substantive and statistically significant throughout: after other controls have been taken into account, election-year deficits are estimated to be 1.3 to 1.5 higher than their off-election years. From the broad set of controls, two variables stand out as statistically significant. A fiscal surplus at the federal level is associated with a fiscal surplus at state level, though the quantitative impact is small. In addition, governors that are left-leaning or that are politically aligned with the state legislature tend to run surpluses, the former effect being quantitatively significant. In sum, we uncover strong evidence in favor of electoral budget cycles in Brazilian state elections in a period for which Brazil could be considered a “new democracy”.

Budget Deficits and Reelections across Brazilian States

As discussed in the introduction, the literature that tests the link between reelection in sub-national governments and fiscal performance presents evidence that voters are fiscal conservatives.²⁰ Two aspects are important here: the existence of budgetary institutions that define limits on either deficits or debt finance, and the level of information that voters have on the fiscal performance of the governments.²¹

In a well-known analysis of U.S. state elections between 1950 and 1988, Peltzman (1992) showed that voters in U.S. states are fiscal conservatives, as they reward parties that produce lower deficits. More recently, in a study on Israeli municipal elections, Brender (2003) shows evidence that voters became fiscal conservative after two elections (1989 and 1993). The assumption is that, up to 1993, voters did not have the necessary information on the responsibility

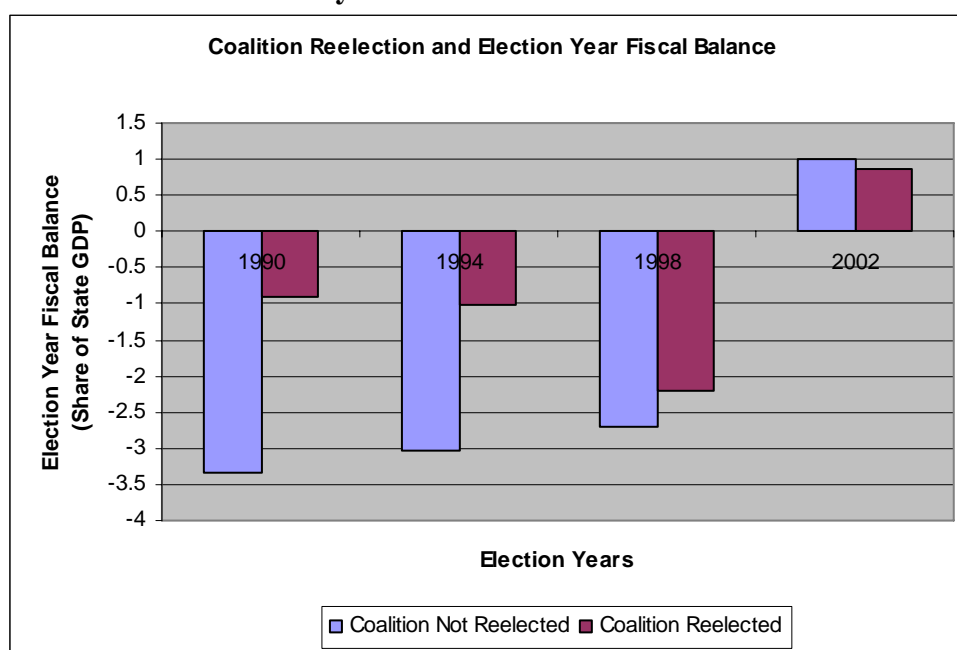
¹⁹ Unfortunately, we do not have data on the fragmentation of the state governing coalition.

²⁰ The rationale for fiscally conservative voters may stem from the costs of the increased future taxes: consumption-smoothing voters prefer to avoid large current deficits and are likely to “punish” leaders that generate them.

²¹ The question of budget constraints - soft or hard - has been emphasized in recent papers such as Qian and Roland (1998) and Brender (2003).

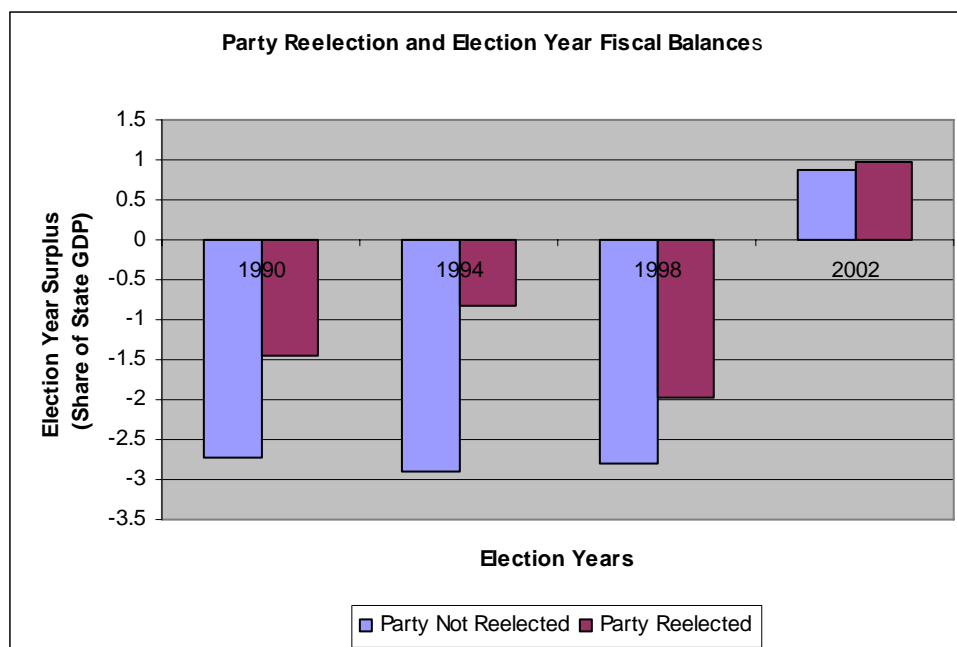
of the local government and would not punish or reward them.²² Until the end of a row of successive “bailouts” that ended around the 1998 election, scarce information on local fiscal results and the small intensity of media coverage, voters did not appear to closely evaluate local government performance.²³ It was the rise in information levels, associated with the publication of yearly financial accounts and audit reports in the local newspapers, allowed voters to reward leaders with better fiscal results.

Figure 2
Voters as Fiscal Conservatives
Fiscal Policy in Election Years and Reelection



²² Brender (2003) argued that the lack of transparency due to weakness of accounting practices originated from the lack of reliable data. This situation left the public “in the dark with respect to who really is responsible for the crises.” (Brender 2003, p. 2191).

²³ According to Brender (2003, 2192) “as pointed out by State Controller, 1994, most of local authorities did not submit audited financial reports at all, and the reports that were submitted were delayed by several years.”



In the Brazilian case, as showed in Figure 2 above, reelected parties and coalitions deliver lower average budget deficits than their non-reelected counterparts, and this is true in the 1990, 1994 and 1998 state elections, before the reforms. All governors took advantage of the soft budget constraint and ran deficits in an environment of high inflation at the national level and indirect monetization of state deficits through state banks. But those states that were fiscally responsible, in the sense of running lower deficits, were favored by voters. The situation changed dramatically in the 2002 election: states transformed an average deficit of around 2.5% of state GDP into an average surplus around 1 percent of state GDP. The differences between the fiscal behavior of reelected and non-reelected governors and coalitions become less evident both ran surpluses on average.

Figure 3 below compares the two “extreme” elections of 1990 and 2002. In 1990, states presented generalized deficits, either in the election year or during the whole term. Again, fiscal behavior changed completely in 2002, following the reforms that hardened budget state constraints, and from 1999 to 2002 states moved into surplus. In addition, an observation of reelection rates, measured either as the rate of reelection of the governors’ party or the government coalition, increased in 2002 relative to 1990. These increases were sizable: the governors’ party reelection rates increased from 26 percent in 1990 to 44 percent in 2002 and the government coalition reelection rates increased from 39 to 56 percent. In sum, the new

institutional context of hard budget constraints did not harm reelection probabilities in general, quite the contrary.

Figure 3
Voters as Fiscal Conservatives
Fiscal Policy and Reelection: Comparing the 1990 and 2002 Elections

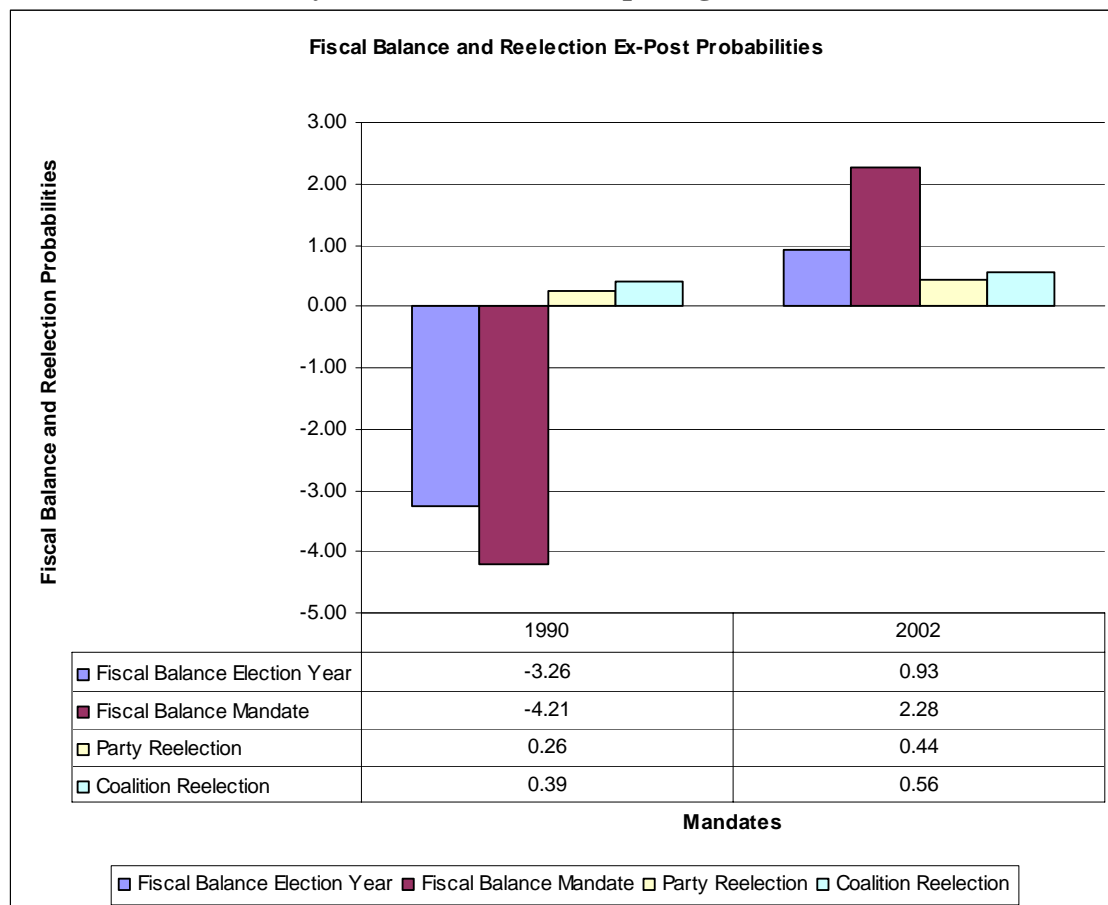
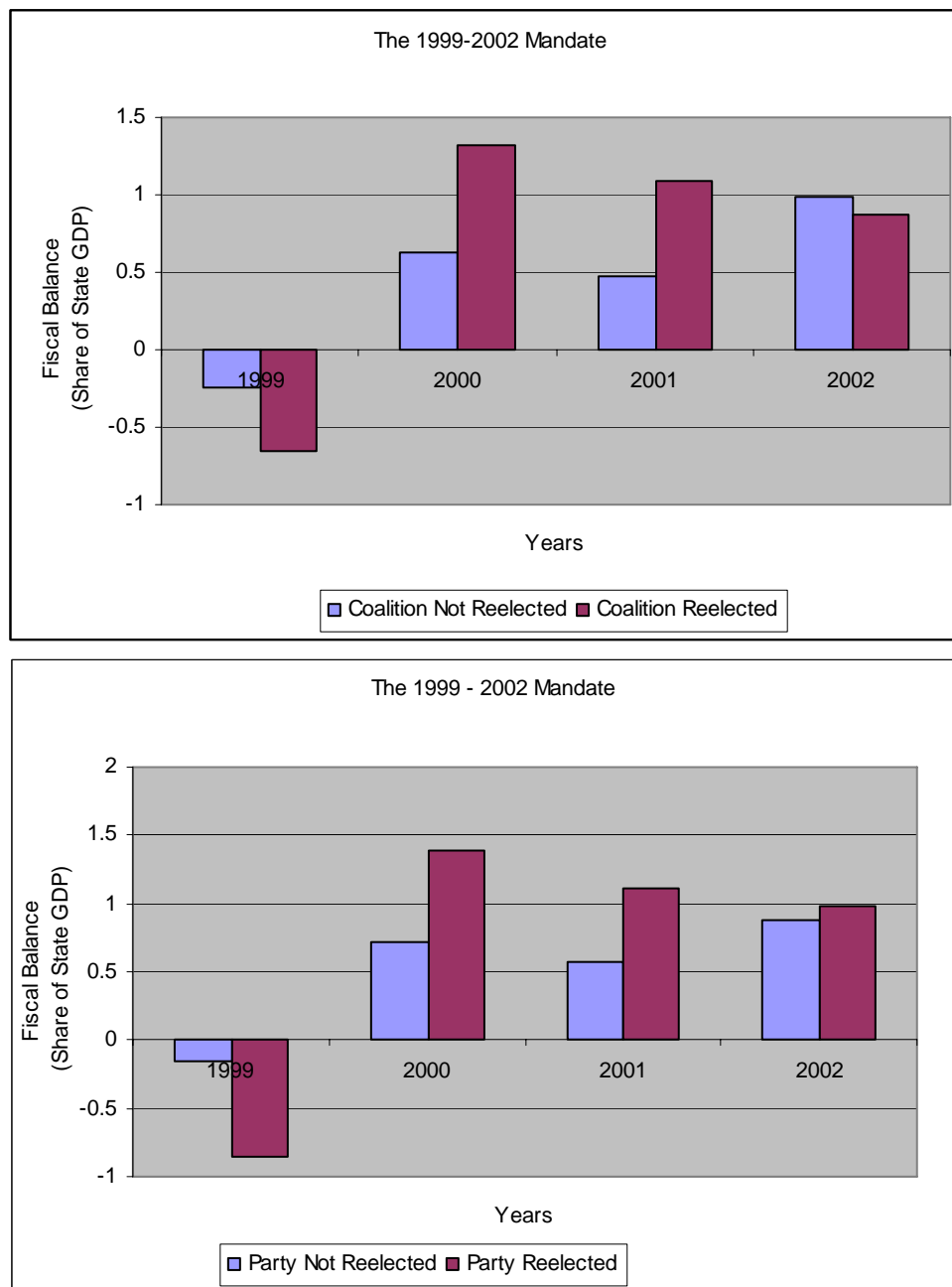


Figure 4 shows that institutional reforms in 1997 to 1999 had a sizable, permanent and almost immediate effect on the fiscal policy of Brazilian states. Immediately after 1999, average deficits turn to average surpluses. Parties and coalitions that won reelection were those that made the most radical change from large deficits in 1999 to large surpluses in 2000 and beyond, to achieve overall balance as mandated by the new budget laws.

Figure 4
Institutional Reform, Fiscal Policy and Reelection
The 1999- 2002 Mandate



In Table 2 below we examine whether there is any evidence that voters favor governing coalitions that run deficits during their term in office or before the elections. Our dependent variable is either the reelection of the governing party or the governing coalition. We used two variables for states' fiscal performance: the fiscal surplus in the election year and the

accumulated fiscal surplus in the term. We also have two sets of control variables; at first, we included only state specific controls, related to the economy and the political context. These include state GDP per capita, GDP per capita growth, share of federal transfers in state revenues, a dummy for the reform period, after 1998 (the effectiveness of law in terms of fiscal result started in 1998) , the fragmentation of the electoral coalition, the level of inequality – measured by the GINI index, and the illiteracy rate.²⁴ In a second model, we add country level economic indicators such as the national fiscal surplus, GDP per capita growth, and the inflation rate.

State income is an important control. Brender (2003) suggested that mayors believe that fiscal performance depends on the income of residents. Therefore, it is more difficult to satisfy voters in poorer localities as residents expect the same quality level of service as the richest localities but the community lacks the current resources to satisfy that level of quality. We use the share of transfers from the federal government – constitutionally determined or discretionary - on state revenues, to control for a “flypaper effect” on the determination of expenditures. Income inequality is included since, the more unequal is state income distribution, the more dependent on state resources voters may be – a “median voter” type of effect as in Meltzer and Richard (1981, 1983) - and also the higher is the share of misinformed voters in the electorate. Following Brender’s (2003) argument about information, different voters may have a different ability to interpret government fiscal behavior. Brazil is a country with a high illiteracy rate and, as voting is compulsory, this means that a large number of illiterate voters cast their ballot. If the “sophistication hypothesis” holds, we expect that, the higher the percentage of illiteracy in a state, the higher the re-election chances of a coalition that runs a deficit.²⁵

Table 2 about here

We examine the impact of fiscal performance on reelection using a Probit estimation. In Table 2 we show the results according to the two indicators of reelection: the governing coalition and the governing party, defined by the governor’s party. The coefficient for the fiscal surplus is always positive, denoting that a surplus tends to increase the probability of reelection. The coefficient on the election year surplus tends to be not significant when more controls are added, but the term accumulated surplus is always significantly positive, in most cases with a 5 percent

²⁴ Unfortunately, the Brazilian Central Bank has published data on state debt only after the 1994. As argued by Brender (2003, p. 2194), “higher debt accumulation is expected to lead to voter dissatisfaction with the mayor’s performance.” as it represents a future burden to taxpayers.

²⁵ Definitions and sources for all variables are presented in Appendix A.

confidence level. This is true irrespective of the use of governing party or governing coalition as the criteria for reelection. Even in a situation wherein budget deficits and bailouts were not restricted, voters *rewarded* politicians who showed a better fiscal performance. That is, the evidence points to voters as fiscal conservatives, a surprising result in times of soft budget constraints and federal bailouts. This seems to contradict the findings from Brender and Drazen(2005). According to these last authors, Brazil would be classified as a new democracy, implying a low level of institutional development and voter sophistication, wherein voters have limited access to information, and lack of political experience, to assess the consequences of fiscal deficits.

As for the control variables, as discussed earlier, there is evidence that debt restructuring increased chances of reelection of either the governing coalition or the governing party. Though not significant in all models, the effects of the coefficient for the fractionalization of the governing coalition deserves further research. It shows a negative sign, implying that more fragmented coalitions have smaller chances of reelection, even when we control for the size of fiscal deficits.²⁶ As this variable represents the electoral coalition, not the governing one, the result suggests that the more divided is the electoral coalition, the harder it is to coordinate the electoral campaign for reelection.

4. Conclusion

In this paper we test the claim that voters in new democracies are less sophisticated in the sense that they reward deficits before elections whereas voters in developed democracies do not. We conduct the test by examining all elections for state governor in Brazil since it became a democracy in the late 1980's. Brazil is an important case to analyze given the diverse socio-economic structure across states and the fact that vote is mandatory in a country with high and varied levels of inequality and illiteracy. In addition, Brazil has experienced a fiscal reform in the 1990's that radically curtailed the freedom of politicians at all levels to conduct deficits.

The data for Brazilian state elections shows that, despite a clear political budget cycle that increased the deficit during election years, voters respond by rewarding the state governing coalitions that display lower deficits or even surpluses. In addition, after state governors lost the

²⁶ For a recent analysis of the relationship between government fragmentation and fiscal policy see Perotti and Kantopoulos (2002).

ability to run large deficits, the average fiscal position switched very fast from an average deficit of 2.5 percent of state GDP to a surplus of 1 percent of state GDP. This radical change was accompanied by an increase in the unconditional probability of reelection. Moreover, governing coalitions that were successful at being reelected in the 2002 election were those that displayed higher deficits in the early term and conducted a larger switch to surplus by the end of the term. In a nutshell, all the available evidence points to voters as fiscal conservative in the young democracy of Brazil. In an adverse and changing institutional environment, Brazilian voters do not seem to need more experience with the political system nor better information to reward fiscally conservative politicians.

Moreover, as mentioned above, we identified a change in politicians' behavior during the term before the 2002 elections and present evidence that this change is due to a series of institutional reforms that hardened the budget constraint at state level. Rather than time, which was supposed to enable voters to get experienced and informed, what seems to matter for aggregate fiscal behavior is an appropriate institutional framework that decreases the incentives for deficit spending.

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Appendix A. The Data

A.1. Reelection variables

Governing Party – a binary variable receiving the value 1 if an incumbent leader (the governor) transfers votes to another candidate from the same party and he/she is elected (zero otherwise). As the law was modified in 1997 and the leader could run to reelection, the leader can be the candidate on the 1998 and 2002 election.

Governing Coalition – a binary variable receiving the value 1 if the party of incumbent leader (the governor) is on the same electoral coalition which elected the new governor (zero otherwise)

The data are retrieved from Tribunal Superior Eleitoral (TSE – www.tse.gov.br) and Instituto Universitário de Pesquisas do Rio de Janeiro (IUPERJ DATABASE – www.jaironicolau.iuperj.br/database/deb/port/)

The Amapá, Distrito Federal, Roraima and Tocantins were not states until 1988. The Goiás state was divided on two states after 1988: Goiás and Tocantins. The Tocantins state was considered a new state from fiscal point.

A.2. Fiscal policy variables

Fiscal Surplus is the difference between the Primary Revenue and the Primary Expenditure (excluding both finance revenue and finance expenditure - services) for each state. The data from revenue and expenditure are taken from the National Treasury (STN - Secretaria do Tesouro Nacional – www.fazenda.tesouro.gov.br). This variable is presented as a percentage of state GDP which is also taken from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br). The National Treasury published the independent data from Amapá, Distrito Federal and Roraima since 1986. These states already were territory. The National Treasury published the data from Tocantins (division of the state Goiás) only after 1990.

Fiscal Surplus Election Year is the Fiscal Surplus variable in the election year (1990, 1994, 1998 and 2002)

Fiscal Surplus Term is the accumulated of the Fiscal result on the term in the office (four years including the election year).

Fiscal Surplus National is the difference between the Primary Revenue and the Primary Expenditure (excluding both finance revenue and finance expenditure - services) from the federal (central) government. This variable is presented as a percentage of national GDP. The data from revenue, expenditure and GDP are taken from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

Federal Grants Discretionary are transfers to define by either lobbying or negotiation from federal government to the states in terms on the current revenue on each state. The data is taken from STN (Secretaria do Tesouro Nacional – www.fazenda.tesouro.gov.br).

Federal Grants Constitutional are transfers to define by law (the distribution of resources is defined by Constitution). This variable is in terms on the current revenue for each state. The data is taken from STN (Secretaria do Tesouro Nacional – www.fazenda.tesouro.gov.br).

A.3. Economic Variables

State GDPpc is the real (base 2000 =100) per capita GDP for each state which is taken from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

State GDPpc growth is the rate of growth of **State GDPpc** variable.

Illiteracy: percentage of state population above of 15 years that is illiterate. The data comes from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

Illiteracy Term: is the average of percentage of state population above of 15 years that is illiterate. The data comes from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

GINI Index: the degree of inequality on states. The data comes from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

GINI Index Term: is the average on term of degree of inequality on states. The data comes from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

GDPpc growth National is the rate of growth of real per capita GDP for country. The data is taken from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

Inflation Rate National is based on INPC (The National Consumer Price Index - IBGE) from IPEA (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

Study Years is number of years studied from people above 25 years old (Instituto de Pesquisas Economicas Aplicadas – www.ipeadata.gov.br).

Debt Restructuring is a dummy to institutional changes (the debt restructuring law), that takes the value of one after 1997 and zero otherwise.

A.4. Political Variables

Election Year is a dummy variable that takes the value of one for an election year and zero otherwise.

Fractionalization State Electoral Coalition: fragmentation of electoral coalition in the previous election year. The data of fragmentation was calculated looking the last election. Unhappy, there is not the annual information to this data. The ideology is a dummy variable. The source is the IUPERJ (www.jairicolau.iuperj.br/database/deb/port/)

Table: Descriptive Statistics to full sample (1987-2003)

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
<i>Governing Party</i>	454	0.325991	0.469261	0	1
<i>Governing Coalition</i>	454	0.400881	0.490618	0	1
<i>Fiscal Surplus</i>	482	-0.00744	0.029747	-0.32241	0.093616
<i>Election Year</i>	486	0.277778	0.448365	0	1
<i>State GDP pc</i>	483	4.769378	2.603419	1.320272	14.59899
<i>State GDP pc growth</i>	482	0.012872	0.079159	-0.23272	0.420937
<i>Federal Grants Discretionary</i>	477	0.137955	0.134116	0.005162	0.83934
<i>Federal Grants Constitutional</i>	483	0.405721	0.237589	0.004	0.998
<i>Fiscal Surplus National</i>	486	0.818889	1.397894	-1.51	3.2
<i>GDP pc growth National</i>	486	0.005628	0.026048	-0.06043	0.052621
<i>Inflation Rate National</i>	486	5.569227	7.518851	0.024873	24.89111
<i>Study Years</i>	400	5.004594	1.265953	2.18727	8.707885
<i>Fractionalization State Electoral Coalition</i>	446	0.852314	0.082299	0.587	0.951
<i>State Governor Right</i>	452	0.278761	0.448887	0	1
<i>State Governor Left</i>	452	0.066372	0.249207	0	1
<i>State Governing Coalition Right</i>	454	0.220264	0.414882	0	1
<i>State Governing Coalition Left</i>	454	0.23348	0.423512	0	1
<i>State Legislature Right</i>	454	0.251101	0.434125	0	1
<i>State Legislature Left</i>	454	0.07489	0.263504	0	1
<i>Coalition and Legislature Alignment</i>	452	0.561947	0.496698	0	1
<i>Governor and Legislature Alignment</i>	270	0.140741	0.3484	0	1
<i>Debt Restructuring</i>	486	0.333333	0.47189	0	1
<i>Illiteracy</i>	427	18.67433	10.98103	4.152	49.447
<i>Gini In</i>	427	0.577032	0.041258	0.425567	0.666481

Table 1
POLITICAL BUDGET CYCLES IN BRAZIL – 1987 TO 2002 (Dependent Variable: FISCAL SURPLUS)

	(1)	(2)	(3)	(4)	(5)	(6)
Election Year	-0.0144 ** (-3.77)	-0.0147 ** (-3.73)	-0.0150 ** (-3.87)	-0.0137 ** (-4.45)	-0.0135 ** (-4.30)	-0.0135 ** (-4.27)
State GDPpc	-	0.000701 (1.45)	0.0005816 (1.25)	0.0000873 (0.18)	0.0000889 (0.18)	0.0000399 (0.08)
State GDPpc growth	-	0.00283 (0.17)	-0.00902 (-0.58)	-0.00832 (-0.51)	-0.00557 (-0.33)	-0.00519 (-0.31)
Federal Grants Discretionary	-	-0.00784 (-0.57)	-0.00709 (-0.50)	-0.0302 (-1.46)	-0.0248 (-1.17)	-0.0245 (-1.13)
Federal Grants Constitutional	-	-0.0022414 (-0.33)	-0.00149 (-0.21)	0.00182 (0.31)	0.00472 (0.78)	0.00461 (0.73)
Fiscal Surplus National	-	-	0.00264 ** (2.75)	0.000997 (0.99)	0.00168 * (1.72)	0.00179 * (1.78)
GDPpc growth National	-	-	0.0164 (0.20)	-0.0234 (-0.43)	-0.0413 (-0.76)	-0.0394 (-0.72)
Inflation Rate National	-	-	-0.000192 (-1.11)	-0.0000712 (-0.42)	-0.000065 (-0.37)	-0.000116 (-0.69)
Fractionalization State Electoral Coalition	-	-	-	0.0111 (0.70)	0.00546 (0.34)	0.010974 (0.62)
R2	0.05	0.05	0.08	0.11	0.08	0.08
Number of Observations	482	477	477	441	441	441

Note: Estimation by OLS; standard errors are White-corrected for heteroskedasticity.

TABLE 2 REELECTION AND FISCAL POLICY IN BRAZIL

Independent Variables	Governing Coalition						Governing Party					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Fiscal Surplus Election Year	3.40**	2.96*	2.49				2.69*	2.20	1.96			
	(2.22)	(1.76)	(1.51)				(2.17)	(1.45)	(1.29)			
Fiscal Surplus Term				2.02**	1.86**	1.71**				1.61**	1.60**	1.48**
				(2.84)	(2.32)	(2.17)				(2.40)	(2.09)	(2.01)
State GDPpc		0.017	0.015		0.017	0.013		0.01	0.011		0.008	0.008
		(0.55)	(0.47)		(0.56)	(0.39)		(0.32)	(0.36)		(0.27)	(0.27)
State GDPpc growth		-0.07	-0.09		0.04	-0.65		0.32	-0.5		0.44	0.21
		(-0.11)	(-0.92)		(0.60)	(-0.65)		(0.50)	(-0.6)		(0.66)	(0.24)
Federal Grants Discretionary		0.037	-0.08		-0.03	-0.16		-0.28	-0.38		-0.34	-0.44
		(0.07)	(-0.15)		(-0.08)	(-0.30)		(-0.51)	(-0.65)		(-0.61)	(-0.73)
Federal Grants Constitutional		-0.11	-0.051		-0.12	-0.06		-0.01	0.04		-0.03	0.021
		(-0.49)	(-0.21)		(-0.51)	(-0.25)		(-0.08)	(0.18)		(-0.16)	(0.09)
Debt Restructuring		0.23*	1.00		0.24**	1.00		0.27**	1.00		0.28**	1.00
		(1.89)	(1.02)		(2.03)	(0.69)		(2.38)	(1.04)		(2.50)	(0.72)
Fractionalization State Electoral Coalition		-1.31	-1.14		-1.40*	-1.09		-1.60**	-1.66*		-1.69**	-1.63*
		(-1.59)	(-1.27)		(-1.68)	(-1.22)		(-2.10)	(-1.90)		(-2.18)	(-1.85)
Illiteracy		0.014*	0.01		0.012	0.007		0.007	0.004		0.004	0.001
		(1.69)	(1.09)		(1.37)	(0.72)		(0.92)	(0.56)		(0.56)	(0.18)
Gini index		-0.45	2.26		-0.03	2.89		-0.041	1.67		0.42	2.20
		(-0.42)	(1.00)		(-0.03)	(1.23)		(-0.04)	(0.81)		(0.41)	(1.07)
Fiscal Surplus National Term			0.06			0.07			0.042			0.04
			(1.47)			(1.46)			(1.01)			(1.00)
GDPpc growth National Term			0.43			0.48			-0.018			0.005
			(0.88)			(0.96)			(-0.04)			(0.01)
Inflation Rate National Term			0.12			0.08			0.12			0.086
			(0.99)			(0.65)			(1.00)			(0.68)
Observations	104	103	103	104	103	103	104	103	103	104	103	103
Log L	-67.78	-62.57	-61.02	-66.58	-61.69	-60.15	-63.82	-58.87	-58.26	-62.87	-57.83	-57.40
Predicted P	0.40	0.40	0.39	0.40	0.40	0.39	0.32	0.30	0.30	0.31	0.30	0.30

Note: For each independent variable we report (dF/dx), i.e., the marginal change in the probability of success for the average values of the independent variables. In the parentheses we report the t-statistics based on robust, heteroskedastic-consistent standard errors (Huber/White/Sandwich).

* Significant at the 10% level; ** Significant at the 5% level.