The Political Economy of Personnel Expenditures: Brazilian States, 1965-1994

A Política Econômica dos Gastos com Pessoal: Estados Brasileiros, 1964-1994

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RESUMO: O principal objetivo do trabalho é testar um modelo que explique a variação na razão de gastos com pessoal nos estados brasileiros de 1965 a 1994. As variáveis independentes incluem indicadores do ambiente político nos estados distintos, como número de veto jogadores e nível de competição política. Além disso, variáveis que modelam o ciclo eleitoral empresarial e mudanças institucionais durante o período também foram incluídas no modelo. Os dados orçamentários, eleitorais e legislativos foram coletados para 22 estados de 1965 a 1995. A regressão OLS com erros-padrão corrigidos em painel foi usada para testar as principais hipóteses. Os resultados indicam que o impacto das variáveis políticas parece estar condicionado pelo quadro institucional nacional mais amplo. Durante o período autoritário, os gastos com pessoal foram influenciados pelo ciclo de negócios eleitoral e pela presença de mais de um partido na legislatura estadual. No período democrático, a vulnerabilidade eleitoral dos legisladores estaduais e o ciclo eleitoral são os fatores políticos mais importantes que influenciam os gastos com pessoal.
PALAVRAS-CHAVE: Patronagem; política estadual; Brasil.

ABSTRACT: The main purpose of the paper is to test a model that explains variation in the ratio of expenditure with personnel in Brazilian states from 1965 to 1994. The independent variables include indicators of the political environment in the distinct states, such as number of veto players and level of political competition. Furthermore, variables that model the business electoral cycle and institutional changes during the period were also included in the model. The budgetary, electoral and legislative data were collected for 22 states from 1965 to 1995. OLS Regression with panel corrected standard errors was used

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to test the main hypotheses. Results indicate that the impact of political variables appears to be conditioned by the broader national institutional framework. During the authoritarian period expenditures with personnel were influenced by the electoral business cycle and by the presence of more than one party in the state legislature. In the democratic period, electoral vulnerability of state legislators and the electoral cycle are the most important political factors influencing expenditures with personnel.

I. INTRODUCTION

The literature on patronage and clientelism is vast and rich. However, these studies are mostly based either on single or a small number of cases about which the researchers have informed knowledge or are theoretical works in need of empirical qualification (See, for example, Kitschelt, 2000). With certain exceptions that primarily apply game theoretic models to the study of political patronage and clientelism (for example, Geddes, 1991 and 1994; Santos, 1995), no systematic empirical analysis of patronage has been conducted to date. Although qualitative studies immersed with scholars' experienced knowledge provide a wealth of information, this type of research method is weak in isolating causal relations, and causality tends to be overdetermined. Hence, systematic empirical analysis of political patronage is long overdue.

On the other hand, studies of macroeconomic policies tend to be highly quantitative. Yet, most of such studies focus on developed countries and primarily analyze deficits, growth, and inflation. The literature on veto players (Tsebelis, 1995) and on electoral cycles (Nordhaus, 1975; Alesina, et al., 1993) emphasizes that governmental success in passing legislation and affecting the economy is conditioned by the characteristics of the political environment. In addition to veto players' literature, the literature on divided government has also explored how the number of actors in the political setting affects the stability of public expenditures (Jones, True, and Baumgartner, 1997), the implementation of social policies (Browning, 1985), and the passing of important legislation (Mayhew, 1991; Binder, 1999; Coleman, 1999).

Our goal is to combine these two research trends in the analysis of how the political environment conditions a specific aspect of government spending: expenditures with personnel. In this way, we can contribute to both research trends by evaluating how characteristics of political environments influence a type of public expenditure that is closely related to the idea of patronage–payments to state employees–but has not been researched by neither of these perspectives. Using the political economy framework to study patronage in newly democratized developing countries like Brazil is especially interesting because of their political environments–political party systems, institutional rules, and the question of regime stability–that are distinct from those in developed countries.

In this paper, we seek to explain when and why politicians increase or decrease political patronage by analyzing the structural and institutional incentives and constraints affecting their choices. We argue that systematic differences in the levels of expenditures with personnel are attributed to electoral cycles, the number of collective and individual actors with whom political executives must deal in the operation of government, rules of recruitment and public spending, and the degree of economic development.

This paper is organized as follows. Section II presents a model of political patronage, highlighting the influence of electoral cycles, legislative fragmentation, electoral competition, democratization, constitutional change, and constituency demands for patronage. Section III presents research design, variables, and methodology. The fourth section discusses the results of the econometric analyses. This paper concludes with a brief discussion of implications and directions for future research.

II. A MODEL OF POLITICAL PATRONAGE

The scale of political patronage, whether conceived in terms of the number of jobs in public administration or the percentage share of expenditures on personnel in the total government budget, fluctuates spatially and longitudinally. Many congressional representatives in Brazil consider "being in power means above all making appointments in bureaucracy" (Mainwaring, 1999: 197), and presidents and governors respond to such demands by allocating appointive jobs and increasing budgets for personnel. Although politicians' interests in expanding patronage resources might appear overwhelming, finite public resources force political leaders to strategize on the use of patronage. That is, politicians must determine when and under what conditions patronage is better utilized to achieve their objectives (whatever their goals are). They also must consider how many public funds should be allocated for political patronage. This section discusses the potential causes of rises and declines in the use of public funds for political patronage.

Electoral Cycle: The first factor is electoral incentives.[1] An important body of literature in political economy has revealed that elections influence macroeconomic policies (Nordhaus, 1975; Lindbeck, 1976; Lewis-Beck, 1988; Alesina et al., 1993). This research tradition, primarily dealing with the United States and other OECD countries, argues that the government employs expansionary monetary and fiscal policies immediately before elections. A contractionary policy is expected to

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[1] Brazil's electoral system of open-list proportional representation (OPLR) has been singled out by a number of scholars as a factor that encourages politicians to distribute public resources to their specific constituencies in order to cultivate personal vote (Ames, 1995 and 2001; Mainwaring, 1999; or, more generally, Carey & Shugart 1995). However, in this study of Brazil's political patronage, electoral rules are a *constant*, not a variable, as all state legislatures adopt OPLR. As such, electoral rules *per se* cannot account for the variations in patronage activities at the state level.

follow the elections in order to adjust the macroeconomic imbalances created by pre-electoral policies (Nordhaus, 1975; Lindbeck, 1976; Alesina et al., 1993). This latter point–the post-electoral adjustment of economic policies–has been challenged in the Latin American context, however. Remmer (1993), for instance, found that in eight Latin American democracies, post-electoral austerity often did not follow pre-electoral expansionism in the 1980s. Moreover, by studying the determinants of public spending in Latin America, Ames (1987: 26-27) reported that government spending rose in the post-election years for non-incumbent governments.[2] Since Brazilian governors during the duration of this study were prohibited from taking a second term, the non-incumbent effect of increased patronage expenditures appears to be a more reasonable hypothesis than the postelectoral contraction hypothesis.

Post-electoral expansion of patronage expenditures is also likely for three additional reasons. First, elected politicians must reward their supporters for voting them in by, among others, granting jobs, promotion, and wage increases in order to maintain their support. Second, the new government must expeditiously build a governing coalition following an election. The distribution of appointive posts to political allies has been a strategy frequently used in Brazil for the purpose of coalition-building. Finally, incoming governments may inherit policy legacies of outgoing governments in the form of promises made by the latter in the last year in office but intended to take effect in the following year. Leaving debts to successor governments is a behavior that is frequently observed where there is no institutional mechanism to deter such conduct. A general salary increase for public employee promised or begun at the end of every term in the state of Rio de Janeiro until the mid-1990s is a good example of this practice.[3]

Thus, contrary to the post-electoral contraction hypothesis in the electoral cycle approach, we should expect to see a rise in patronage spending immediately after an election. Moreover, given the centrality of coalition building in multiparty systems like Brazil, the post-electoral patronage activities should increase more than the pre-electoral patronage expansion. Since elections are held in October in Brazil, we should expect that expenditures with personnel rise in election years and not necessarily in pre-election years. Hence,

H1: *The budget share of patronage spending rises in election and postelection years.*

Legislative Fragmentation: The second factor that motivates political leaders to increase patronage is the need to create and maintain a legislative coalition. We noted earlier that new governments are prone to increase patronage expenditures

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[2] However, in consistent with the research on OECD countries, Ames found that public spending decreases in the post-election year for incumbent governments.

[3] Interviews with bureaucrats in the Secretaria de Estado de Fazenda of Rio de Janeiro.

following elections in order to construct a governing coalition. These coalitions, once constructed, also must be maintained in order to facilitate the passage of governments' initiatives in the assemblies. A government's legislative capacity varies with the number of veto players in a given political system (Tsebelis, 1995 and 1999). Veto players are individual and collective actors whose consent is required for a movement from the status quo (Tsebelis, 1995 and 1999). In the veto players literature (see also Ames, 2001; Weaver & Rockman, 1993), holding all else constant, the greater the number of veto players, the more difficult it is to change the status quo. Hence, legislative fragmentation increases the costs of securing a governing coalition. The incumbent government uses resources such as ministerial appointment and public employment in order to obtain legislative support.

Following similar logic, we also test how the size of governors' legislative coalitions affects the use of expenditures with personnel. Theory argues that parties in government that have a comfortable majority should be less prone to rely on public funds to obtain legislative success.

Nonetheless, there is a caveat to the indiscriminate application of this logic to the Brazilian states. Studies that used variables such as counts of the number of political parties or seats controlled by parties focused on settings where party discipline and ideological cohesion were quite high. Several authors, however, have pointed out the low levels of party discipline in Brazil (Mainwaring and Liñan, 1997; Ames, 2001). Hence, current measures of legislative fragmentation might not be useful to explain variation in public expenditure in Brazil. In fact, due to the pressures created by the open-list proportional representation electoral system, which tends to foster personal reputations instead of partisan ones, it is probable that the larger the governor's coalition, the more patronage will be needed to maintain the coalition. Keeping in mind that the executive may need to negotiate individually with each deputy for important roll call votes (Ames, 2001; Pereira, 2000), we hypothesize:

H2: A greater size of the governor's coalition will most likely lead to an increase in the expenditure on personnel. Legislative fragmentation, measured by the number of effective parties, will probably have a limited impact on expenditures with personnel.

Electoral Competition: What, if any, is the impact of electoral competition on political patronage? Electoral competition is a variable whose implications for patronage are double-edged. On the one hand, higher electoral competition is likely to raise politicians' desires to use patronage to secure electoral support and minimize vulnerability in the bailiwick. On the other hand, greater competition may increase the attentiveness of the public to elections and government behavior. Literature focusing on the US has argued that the more competition in legislative elections, the more visible the elections, the higher the public attention, and consequently, the more accountable are representatives (Mayhew, 1974; Zaller, 1992). Hence, particularly where a large public perceives political patronage as a malig-

nant conduct, competitive elections elevate the incentives for state deputies (especially those in opposition) to monitor the use of public resources by the government, constraining the ability of the latter to engage in patronage.[4] Thus, two conflicting hypotheses can be derived about the effect of electoral competition on patronage.

>   H3: *Political patronage increases as electoral competition intensifies.*
>   H4: *Political patronage diminishes as electoral competition intensifies.*

Since both of these hypotheses are theoretically plausible, the actual impact of electoral competition in Brazil must be determined empirically.

***Institutional Factors*:**

a) National Regime Type: National political regime type may have influenced the overall spending behavior of state governments with implications for their disposition and ability to manipulate expenditures on personnel. The Brazilian military regime that ruled the country for two decades from 1964 to 1985 implemented a series of economic adjustment policies, especially at the beginning of the regime, in order to restore economic order that the junta deemed populist civilian governments had only exacerbated. The regime was an archetype of what O'Donnell (1973) called bureaucratic authoritarian regime, distinguished by the rule of the military in collaboration with a highly technocratic economic team that undertook pro-capital economic policies to the exclusion of the lower-income strata and the working class.

The bureaucratic authoritarian regime in Brazil maintained an "anti-politics" stance. The military hardliners that seized power through the 1964 coup defined the country's problems as technical and singled out politics as the cause of the social and economic chaos with which Brazil had been confronted. Consequently, the military government launched a campaign that purged a number of opposition and leftist politicians from the political arena. Corruption and patronage politics were also primary targets of the military government that had to be cleansed. The military hardliners believed that clientelistic practices and politics had hindered development in Brazil (Hagopian, 1996: 104-112). In order to eradicate "corrupt" politicians and practices, successive military governments filled cabinet and other administrative posts with technocratic elites.

The national regime type may affect the level of patronage at the state level through the following mechanisms. The first mechanism of influence is through the appointment of state governors, predominant during that period. Governors were not directly elected during the dictatorship. Since the military government placed high priorities on economic stabilization and modernization, and sought to

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[4] For example, much literature on US elections for the House of Representatives views electoral competition as increasing the responsiveness of politicians to their constituencies (Mayhew, 1974; Jacobson, 1997; Cain, Ferejohn & Fiorina, 1987).

eliminate what they considered a populist style of governing based on clientelism and patronage, governors appointed by the military likely shared the same preferences. If not, due to the centralization of the regime and the power of the Federal level executive power, the political and economical discretion of governors was constrained.[5]

A second, and related, mechanism of regime impact on the use of political patronage concerns policymaking processes. During the authoritarian period, state assemblies' roles in the policymaking processes were fairly limited and decision-making power was relatively centralized in the governors' offices. Moreover, there were only two officially sanctioned political parties during this period. Since the governors owed their positions to no one but the military government in Brasília, and since governors' need to construct bases of legislative support was not very urgent, they may have been less motivated to use public resources for political patronage. In contrast, ever since the transition to democracy, decision-making authority became dispersed, political parties flourished, and competition for office grew fierce. As a consequence, policymaking processes in the post-authoritarian era involve a greater number of actors, many of whom, lacking ideological or programmatic appeals, are dependent on political patronage for securing office. The presence of a great number of actors in the legislative process made it more difficult for the government to garner sufficient support. Hence, the attractiveness to use patronage resources has increased in the post-authoritarian period.

In sum, national political regime type is likely to have had important effects on the practice of political patronage at the state level. On one hand, there is less constraint on the discretionary use of state budgets under the democratic regime than under the authoritarian regime; on the other hand, the need and the incentive to use patronage likely increased after democratization. Hence:

H5: Patronage expenditures are lower during the authoritarian period than the democratic period.

b) The 1988 Constitution: Another significant institutional change that occurred

in Brazil was the promulgation of a new Constitution in 1988. Amongst various changes introduced by the new constitution, two are directly relevant for the discussion of patronage. First, the revenue sharing system and the tributary attributes of states and federal government were altered in favor of descentralizing revenue sources and centralizing tax collection, hence increasing state budgets. Second, a merit-based system of competitive recruitment into public administration, *concursos públicos,* was implemented. Note that the impacts created by these

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[5] For example, Hagopian (1996: 114-121) shows that in Minas Gerais between 1966 and 1979 during the height of authoritarianism, there was a dramatic increase of the technocrats and corresponding decrease in the political elites in the state's cabinets. However, from 1979, the trend was reversed and political elites returned to hold cabinet positions.

changes are in contradiction with each other. That is, the change in tributary powers of the states increased state budgets, whereas *concursos públicos* hindered governors' capacity to nominate allies.

Therefore, the impact of the 1988 institutional reforms on expenditures with personnel needs to be tested empirically. We do not have data about how many offices in state bureaucracies were filled by *concursos públicos*, so the impact of this change might be shadowed by the higher discretion of governors over larger budgets after 1988.

> *H6a: Personnel expenditures increased with the introduction of the 1988 Constitution.*
> *H6b: Personnel expenditures decreased with the introduction of the 1988 Constitution.*

Constituency Demands and the Efficacy of Political Patronage: A final important element we must factor in that affects politicians' incentives to use political patronage is the effectiveness of such practice, which depends on both the characteristics of constituencies they target and the level of development in the region in which they campaign.

In general, the efficacy of political patronage is greater in areas that are less developed and relatively poor than in advanced, affluent regions. That is, governments are likely to be one of the largest employers in less developed areas where alternative employment opportunities are limited. By contrast, in large urban cities, for example, social mobility based on patronage may appear increasingly unattractive for more affluent and educated people compared to other avenues of advancement and reward available in society (Kitschelt, 2000: 857). Moreover, since the number of distributable public sector jobs is limited, in highly populated regions politicians and parties must use programmatic appeals in order to do well in elections in addition to, or rather than, relying on patronage. Since most of the poorest, underdeveloped states are concentrated in the North and Northeast regions in Brazil, the impact of the efficacy of patronage–perceived or real–can be tested by the hypothesis below.[6]

> *H7: Patronage expenditures are higher in the North and Northeast regions compared to the rest of Brazil.*

The next section discusses research design, data, and methodology to test the arguments developed in this section.

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[6] Ideally, this hypothesis should be tested using states' economic output data. The use of regional dummies, which face a risk of representing more than the levels of economic development, is one of the best approximations of the efficacy of patronage in light of lack of such annual economic data at the state level for the entire 1965-95 period.

III. RESEARCH DESIGN, DATA, AND METHODOLOGY

The main arguments of this paper will be tested using pooled cross-sectional time-series data that cover twenty-three Brazilian states for the period 1965-94. Appendix lists data sources. The 1965 cutoff point was chosen on the basis of the availability of reliable data.

The dependent variable of the data analysis is political patronage measured by the share of expenditures on personnel in the total state expenditure. Thus,

Political Patronage = Expenditure on Personnel / Total Expenditure

where personnel expenditures and total expenditures are annual estimates for each state government. In addition to the ratio of the expenditures on personnel, the data analysis examines the change in the personnel expenditure shares, which is the difference between the current share and the share in the previous year. The share of personnel spending in the total state budget reflects two patterns of dispensing political patronage, one by creating new posts for political supporters, and the other by increasing wage and other benefits for those who already hold public jobs. Other sources of variance in personnel expenditures include, but are not limited to, programmatic changes in the bureaucracies and technical adjustment (see Baviskar et al., 2000). For example, a government may decide to build more schools or strengthen foreign language education in the state. These changes will generate public employment, but the purpose of the program is not necessarily political; the new program may simply be a consequence of a change in educational policy. The present model is intended to capture the variations in personnel expenditures driven by political patronage.

The literature on patronage and clientelism has exhaustively argued that a central form politicians reward supporters is through the distribution of federal largess, which includes monies and jobs (Grindle, 1977; Fox, 1997; Banck, 1999). Patronage, according to Banck (1999), refers basically to the allocation of jobs. Studies focusing mostly on the Colombian case have relied on aggregate level datasets to verify how the allocation of jobs and the number of jobs available has varied according to distinct administrations (Duarte-Agudelo, 1995). Hence, there is a tradition in the studies of clientelism on focusing on job allocation. We build upon this tradition and hereby propose yet another form of measuring clientelism based on public expenditures with personnel. An advantage of our proposition is that we include politicians concerns both with jobs as well as with the quantity of Federal monies allocated through jobs. We see patronage as a calculus of how much to spend on providing jobs for allies.

The independent variables are electoral cycles, legislative fragmentation, electoral competition, national regime type, constitutional change, and the political efficacy of patronage. With respect to electoral cycles, our primary interest is in the elections for state assembly seats since governors did not compete in elections to achieve office during the authoritarian period and they were prohibited from running for reelection once gubernatorial elections were reinstalled. Therefore, the regression model estimates the impact of assembly elections in the pre-election year,

election year, and post-election year. Political patronage is expected to increase in all of these three years. Of these three years, moreover, the theory predicts that the expansion of patronage is the highest in the electoral and post-election year.

Legislative fragmentation is measured by the effective number of parties in the legislature. The data analysis investigates whether an increase in the effective number of parties is associated with a higher level of the personnel expenditure share. This variable was calculated based on election results. The *change* in the effective number of parties is, for each state, the difference between the effective number of parties in one legislature and a previous legislature.

The size of a governor's coalition is measured as a percentage of seats controlled by political parties that potentially support the governor in legislative activities. Since the exact data on legislative coalitions for each state for each year are not available, the criterion we used to construct this variable was to do the obvious. If a governor is from a right wing party, we considered all members of right-wing parties as potential allies. This method clearly involves a certain degree of stretching, since a lot of variations exist among different states in the patterns of coalition making. For example, the PFL and the PTB are both right-wing parties, but in certain states, they might not be allies. Yet, this variable indicates the bargaining boundaries where governors can maneuver. It is an indication of the potential allies. We also measured the change in the size of the electoral coalition from one legislature to the next.

Electoral competition is operationalized as a mean ratio of electoral candidates per seat in the state assembly. Each state was coded based on the level of political competition in each electoral period. Therefore, this measure of electoral competition also distinguishes between legislatures elected every four years. The change in electoral competition was calculated comparing the differences between two legislatures.

A democracy dummy will estimate the impact of national regime type on political patronage. Although the exact timing of democratization in Brazil may be contested due to the country's prolonged process of democratization, we coded Brazil's national regime as democratic beginning in 1985, when the first civilian government since the 1964 coup inaugurated. This treatment of national regime type is consistent with most literature. The period of the new constitution uses a dummy variable coded 1 for all years from 1988.

Regional dummy variables are measures of constituency demands for, and political efficacy of, patronage. As discussed in the previous section, the absence of alternative sources of employment and social mobility is expected to generate greater societal demands for jobs in public administration. These demands are likely to be stronger in underdeveloped and less industrialized regions of the North and Northeast. The dummy variable for the North region includes states of Acre, Amazonas, Pará, and Rondônia. The dummy variable for the Northeast region consists of Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, and Bahia.

The regression equation has two sets of control variables. The national an-

nual rate of inflation is included to control for the effect of wage increases due to inflation and the change in total tax revenue controls for the availability of resources for patronage. The second set of control variables represent administrative and other changes that may have occurred as a result of regime change. During the first few years after the military's take over of the Brazilian government, the military government tried out a number of political and economic reforms; it abolished the multiparty system and created a two-party system, closed down Congress on a few occasions, propagated a new constitution in 1967, initiated a program of fiscal centralization, and changed revenue-sharing schemes between the federal and state governments. Particularly, the inauguration of General Costa e Silva and the instauration of the *Ato Institucional 5*, which intensified political purges at the state as well as national levels, marked an end to any hope for an immediate return to democracy. Thus, the regression model includes dummy variables for the years of initial and important changes in the military regime, 1967[7] to 1969, which is the period of transition to the prolonged military rule.[8]

We use panel corrected standard error (PCSE) OLS regression for the data analysis. PCSE regression makes it possible to correctly estimate the sampling variability of the OLS estimates even when panel heteroskedasticity and contemporaneously correlated errors are present (Beck, 2001: 12). When analyzing the ratio of personnel expenditures as the dependent variable, we include a lagged dependent variable (t-1) in the right side of a regression equation to model the dynamic aspect of time (Beck, 2001).[9]

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[7] The 1967 dummy was included because we interpolated the data for that year in order to minimize the missing data problem, so it is a control for our data imputation.

[8] Although the data set includes periods beginning in 1965, the statistical model does not include 1965 and 1966 dummies because of missing values.

[9] The analysis for the entire period, in table 1, includes a dummy variable distinguishing the two main data sources for the dependent variable. Given that the dummy is not statistically significant or theoretically interesting, we chose to exclude it from the table. The subsequent regression analyses do not include state dummies as controls for fixed effects. The examination of summary statistics revealed that legislative fragmentation is relatively state-specific. In other words, legislative fragmentation is highly correlated with state effects. Since legislative fragmentation is the more theoretically important variable than state dummies, and because fixed effects hardly tell us anything but that states differ, we have decided not to use fixed effects models in order to avoid imprecise estimates of the impact of legislative fragmentation. We have also done a Hausman specification test to check for systematic differences in coefficients in the fixed-effects and random-effects models. In all the three distinct periods analyzed some of the coefficients for the two specifications are systematically different and overall the test rejects the null hypothesis that differences are not systematic. The main differences in the fixed-effects model in comparison to the random-effects model for the entire period are: election t-1 is no longer statistically significant, electoral competition becomes significant, change in size of governor coalition is not significant in the fixed-effects model and size of the governor's coalition is positive in the fixed-effects model. The random-effects model and the model estimated using panel-corrected standard errors are identical. We present the model with panel-corrected standard errors, but the differences above between such model and one with fixed-effects should be kept in mind.

IV. FINDINGS

Table 1 presents results of a PCSE regression of personnel expenditures as ratios of total state government expenditures from 1965 to 1994. In addition to the results presented in Model 1, which examines the level of personnel expenditure shares as the dependent variable, we also ran a regression with changes in expenditure with personnel as dependent variable. The results are identical, so we choose to present only the former.

Table 1: Panel Corrected Standard Error OLS Regression of the Share of Personnel Expenditures in the Total State Government Expenditure, 1965-1994

	Model 1 (N= 546) S hare of Personnel Expenditures
Share of Personnel Expenditures, t-1	.764**** (.032)
State Assembly Election, t-1	.01* (.006)
State Assembly Election, t	.022*** (.007)
State Assembly Election, t+1	.029**** (.006)
Legislative Fragmentation	-.002 (.002)
Change in Legislativa Fragmentation	-.002 (.003)
Size of Governor's Coalition	-.014 (.017)
Change in Size of Coalition	.044* (.028)
Electoral Competition	-.001 (.001)
Change in Electoral Competition	.005*** (.001 7)
1 988 Constitution	.020** (.01)
Democracy	-.004 (.007)
North	.019**** (.006)
Northeast	.011*** (.004)
Inflation	7.16e-07 (5.38e-06)

Change Tax Revenue	6.16e-11 (3.80e-10)
1967	-.015 (.012)
1968	.004 (.012)
1969	.004 (.012)
Constant	.061**** (.014)
R^2	.711
Wald Chi-Square	1104.61****

Unstandardized coefficients; Figures in parentheses are standard errors; ****$p \leq .001$; ***$p \leq .01$; **$p \leq .05$; *$p \leq .1$ (two-tailed test, pairwise method).

Regression results by and large support the principal arguments of this paper.[10] All assembly election variables are significant at least at the $p = .1$ level in the predicted, positive directions. Namely, on average, state politicians increase personnel expenditures in proportion to total expenditures in election years by 2.2% and in post-election years by 2.9%. Note also that, of the three electoral periods, the increase in the budget share of personnel expenditures is the greatest in post-election years and weakest in the pre-election year. This finding provides support for the theory that political patronage is particularly important in years immediately following elections because of three types of burdens new governments face, i.e., the need to reward political supporters, the exigency to construct bases of legislative support, and the obligation to pay the unpaid bills of their predecessor governments.

The variables that assess changes in the characteristics of the political system fare better in explaining variation in the allocation of budgetary funds than the absolute values of such variables. More specifically, changes in the levels of political competition and in the size of governors' coalitions have statistically significant and positive impacts on expenditures with personnel. An increase in competition faced by state deputies increases the temptation of relying on public funds to decrease electoral vulnerability. Furthermore, when governors have larger pools of legislative allies, there is an increase in the reliance on the allocation of public funds in order to reward individual legislators. This is not surprising since the incentives created by

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[10] We also ran regressions using a series of dummy variables representing governors' political parties to examine whether there are notable patterns in governments' behavior with respect to personnel expenditures that are attributed to specific political parties. Regression results indicated that there is no such statistically significant pattern.

the electoral system stimulate personal vote and bargaining between the executive and legislative power seems to be done on an individual, and not partisan, basis.

The negative effects of the absolute value of legislative fragmentation and electoral competition, even though not statistically significant when entered simultaneously in the equation, suggest that state governments face certain difficulty in relying solely on expenditures with personnel to satisfy the members of its legislative coalition.[11]There may not be sufficient appointive jobs to be distributed to governors' legislative allies. Under such a scenario, governments may increase other social and public spending such as health, education, and public works in addition to personnel expenditures as a means for legislative allies to reward their constituencies.

The different impacts of change in the political variables in comparison to their absolute values also indicate that the dynamics of dealing with a same political setting over time is different from that of adjusting to a new setting. That is, during a governor's tenure resources coming solely from budgets for personnel are not sufficient to satisfy the demands of the legislative allies. Other forms of coalition maintenance must be employed. On the other hand, the positive impact of changes in electoral competition and in percentages of seats controlled by potential allies in expenditures with personnel is evidence that in the beginning of a new legislature, exactly when the changes occur, the use of public resources in the form of expenditures with personnel is quite strongly affected.

In regards to the demands of local constituencies, both regional variables where such demands would be higher –North and Northeast–are positively significant. On average, northern and northeastern states' personnel expenditure shares in state budgets are greater than those of the rest of the country by 1.9% and 1%, respectively. This statistical evidence is consistent with the claims that constituency demands for political patronage are stronger in less developed regions where other opportunities for employment and social mobility are scant.

On the other hand, empirical evidence does not support the hypothesis that the propensity to use patronage became greater after the democratic transition in 1985.[12]What we noticed is that regime change in 1985, constitutional change in 1988, and inflation levels are all strongly correlated.[13] Hence we decided to run regressions with each of these variables separately. When entered one by one,

[11] These two variables are quite strongly correlated, Pearson's r of .78. In order to check if the collinearity between these variables affected their statistical significance and coefficient signs, we ran regressions with the full model excluding alternatively each of these. On all scenarios, their signs and that of the other variables were not altered, but the statistical significance of these two particular variables was. When they were entered separately, they both became statistically significant at the .05 level.

[12] We also tested the impact of regime type using 1982 (the year of first gubernatorial elections since 1964) as a return to democracy. The regression analysis for the distinct periods produced almost identical results.

[13] The correlation coefficients were over .70. Regression results from subsequent analysis available upon request by e-mail.

inflation becomes statistically significant, indicating that it does have a positive impact on expenditures with personnel. It maintains this effect when entered along with regime change in 1985, but such impact vanishes in the presence of the constitutional change of 1988. This simply indicates that the period after 1988 is also picking up the influence of the high inflation levels that occurred during the late 1980s and early 1990s. Unquestionably, after 1988 several different factors affected public expenditures and their overall impact is positive and statistically significant in expenditures with personnel, no matter how the model is specified.

Finally, it is interesting to note that none of the changes during the years from 1967 to 1969 affected the levels of expenditure with personnel. The changes proposed by the military regime in its early years, exactly those where centralization was increased and political persecution enforced, did not have an immediate impact on states' expenditures with personnel.

Table 2: Panel Corrected Standard Error OLS Regression of the Share
of Personnel Expenditures in the Total State Government Expenditure, 1965-1984

	Model 2 (N= 318) S hare of Personnel Expenditures
Share of Personnel Expenditures, t-1	.768**** (.049)
State Assembly Election, t-1	.000 (.008)
State Assembly Election, t	.013* (.007)
State Assembly Election, t+1	.026*** (.008)
Legislative Fragmentation	.012 (.014)
Change in Legislative Fragmentation	-.032* (.018)
Size of Governors Coalition	-.021 (.029)
Change in Size of Coalition	-.011 (.05)
Electoral Competition	.000 (.003)
Change in Electoral Competition	.009 (.008)
North	.017* (.008)
Northeast	.014** (.006)
Inflation	-.000 (.000)

Change Tax Revenue	-8.84e-08
	(1 ,24e-07)
1967	-.016
	(.012)
1968	.002
	(.011)
1969	.008
	(.010)
Constant	.050
	(.038)
R^2	.722
Wald Chi-Square	572.51****

Unstandardized coefficients; Figures in parentheses are standard errors; ****$p \leq .001$; ***$p \leq .01$; **$p \leq .05$; *$p \leq .1$ (two-tailed test, pairwise method).

In addition to analyzing the entire 1965-1994 periods as a whole, we created sub-sets of the data set to assess the impact of our predictor variables in the two distinctive periods–democracy and authoritarianism. Even though the regime change variable does not have a direct impact on expenditures with personnel, there probably is an interaction between institutional framework and the other variables, especially the political ones, in affecting patronage. We expect that the political variables should have distinct impacts on the way governments' personnel expenditures in the two different institutional environments.

Table 2 summarizes the results for the authoritarian period from 1965 to 1984.

During the authoritarian period, personnel expenditure shares rose by about 3% in post-election years and by 2% in election years. However, personnel expenditure shares did not increase in pre-election years. The only other political variable that influences expenditures during the military dictatorship is change in legislative fragmentation. During the dictatorship this change meant that instead of only one party controlling the different state assemblies, there was space for an opposition party. The negative impact indicates that the presence of the opposition party, MDB, reduced expenditures with personnel. The opposition party increased the accountability of the state's administration and forced a retraction in their expenditures with personnel.

There are two conclusions that can be taken from this. First, elections influenced in governments' budgets even when these elections were highly controlled and participation was extremely limited. Second, during the authoritarian period, governors had a lot of discretion to define how public expenditures should be carried out and their budgetary authority was quite impermeable to the demands of the legislative power, except when the opposition party played a significant role in legislative business. Governors were shielded from the pressures of legislators by the excluding and centralizing nature of the military regime.

Table 3: Panel Corrected S tandard Error OLS Regression of the Share
of Personnel Expenditures in the Total State Government Expenditure, 1985-94

	Model 3 (N= 228) S hare of Personnel Expenditures
Share of Personnel Expenditures, t-1	.742**** (.077)
State Assembly Election, t-1	.014 (.009)
State Assembly Election t	.027*** (.010)
State Assembly Election t+1	.022** (.008)
Legislative Fragmentation	-.002 (.002)
Change in Legislative Fragmentation	-.002 (.003)
Size of Governor's Coalition	.004 (.021)
Change in Size of Coalition	.044 (.029)
Electoral Competition	-.001 (.001)
Change in Electoral Competition	.004** (.002)
1988 Constitution	.024** (.01)
North	.023* (.010)
Northeast	.013* (.005)
Inflation	-3.21e-06 (6.19e-06)
Change Tax Revenue	7.88e-11 (4.47e-10)
Constant	.055* (.022)
R^2	.707
Wald Chi-Square	1228.6

Unstandardized coefficients; Figures in parentheses are standard errors; ****$p \leq .001$; ***$p \leq .01$; **$p \leq .05$; *$p \leq .1$ (two-tailed test, pairwise method).

The results for the period after 1985 are a bit different. Table 3 presents the coefficients of the regression analyses for the period 1985-94. The main differences in relation to the authoritarian period are that legislative fragmentation is no longer significant, but change in electoral competition is. Competition in state as-

sembly elections leads to higher the levels of personnel expenditure. The number of parties competing in the elections no longer matters, what matters is the risk each individual state deputy faces during elections. The period after the 1988 constitution also saw a rise in patronage.

This indicates that the changes in institutional framework after 1985 did affect the form in which politics was carried out in Brazil. During the military dictatorship, pressures from the legislative power were hardly felt in government's policy decisions. With the rise of civilians to power, and, more specifically, with the installation of the 1988 constitution, expenditures with personnel became affected not just by elections, but also by the functioning of the legislative branch and by levels of electoral competition.

Finally, the fact that regional dummies are significant and the levels of inflation and change in tax revenues are not indicates that after controlling for regional effects, the influence of the size of the states' economy on expenditures with personnel is attenuated. The northern and northeastern regions have higher levels of personnel spending in terms of budget shares. This finding alludes to the idea that cultural or other structural characteristics of the northern and northeastern regions of Brazil might also be affecting patronage. Thus, further studies, using other indicators of economic development and political culture, will be necessary to explore the implications of this finding.

VII. CONCLUSION

Our study measured patronage in terms of the ratio of expenditures on personnel to the total annual state expenditures. We tested a model that included structural, political, and economic characteristics of the Brazilian states. Political explanations prevail over economic ones. Expenditures with personnel rise with the changes in electoral competition and electoral business cycles. Structural characteristics denoted by geographical location are also central explanations for variation in expenditures with personnel.

Furthermore, the impact of political variables appears to be conditioned by the national institutional framework. During the authoritarian period expenditures with personnel were influenced by the electoral business cycle and by the presence of more than one party in the state legislature. On the other hand, during the democratic period, electoral vulnerability of state legislators is the most important political factor influencing budgetary allocations in addition to the electoral cycle variables.

Future studies should focus on collecting more data that further explores some issues hereby raised, especially in regards to the impact of structural and cultural variables in public spending. We found that regional dummy variables have distinct impacts on expenditures with personnel, even when controlling for the size of state economies. This is an indication that this form of patronage is affected by structural and/or cultural factors that are not directly associated with economic size.

Future research should also undertake an analysis of expenditure trade-offs between expenditures on personnel and expenditures on other state activities in order to examine how state budgets are constrained by patronage. Comparing expenditures in different categories would not only allow for an additional evaluation of the pervasiveness of patronage spending in different states but also provide an insight into the ways in which patronage affects the availability of resources for other governmental projects.

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APPENDIX

Data were collected from the following sources.

Personnel Expenditures and Total State Government Expenditures: Collected from *Anuário Estatístico do Brasil* published by the Brazilian Institute of Geography and Statistics for the period 19651979; Data from 1980 to 1994 were obtained from *Execução Orçamentária da União*.

State Assembly Elections and Shares of Assembly Seats by Parties: Obtained from the Dados Eleitorais from Tribunal Superior Eleitoral and Nicolau (1998).

Electoral Competition and Effective Number of Parties: Obtained from the Laboratório de Estudos Experimentais (LEEX) data set in the Instituto Universitário de Pesquisa do Rio de Janeiro website, www.iuperj.br.

Annual Inflation Rate: Obtained from the International Monetary Fund's *International Financial Statistics*, various issues.

Economic Development (PIB): Obtained from *Instituto de Pesquisa Econômica Aplicada.*

1988 Constitution: A dummy variable representing the introduction of a new, competition-based recruitment system under the new Constitution. 1965-87 = 0; 1988-1994 = 1.

Democracy: Democracy dummy. 1965-84 = 0, 1985-94 = 1. The first presidential election was held in January 1985 and Jose Sarney was inaugurated in March 1985.

North: Dummy for North region. 1 = Acre, Amazonas, Pará, and Rondônia; 0 = all other states.

Northeast: Dummy for Northeast region. 1 = Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, and Bahia. 0 = all other states.