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Cronyism

CGR Working Paper 37

Pedro S. Martins

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Politicians can use the public sector to give jobs to cronies, at the expense of the efficiency of those organisations and general welfare. Motivated by a simple model of cronyism that predicts spikes in appointments to state-owned firms near elections, we regress 1980-2008 monthly hirings across all state-owned Portuguese firms on the country's political cycle. In most specifications, we also consider private-sector firms as a control group. Consistent with the model, we find that public-sector appointments increase significantly over the months just before a new government takes office. Hirings also increase considerably just after elections but only if the new government is of a different political colour than its predecessor. These results also hold when conducting the analysis separately at different industries and most job levels, including less skilled positions. We find our evidence to be consistent with cronyism and politically-induced misallocation of public resources.

Keywords: Corruption, matched employer-employee panel data, public-sector employment.

JEL Classification: J45, H11, J23

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1 Introduction

"No jobs for the boys", declared António Guterres, the newly-elected Portuguese prime-minister, shortly after his party had regained power in October 1995. The statement was made when his party had spent as many as ten years in opposition and his call sought to address the perception - in Portugal and in many other countries - that governments make use of their powers to appoint cronies and apparatchiks to public-sector positions. Many of these appointments are thought to be made regardless of the merits of the appointees or the needs of the organisations that hire them.

In fact, politicians in power are generally entitled to restructure and create and fill vacancies in the civil service as well as in state-owned firms. Given the considerable asymmetry of information they enjoy, politicians can hire cronies under the pretense of economy or efficiency gains, even if the purpose of such appointments is to serve strictly private or party-political goals. Such mismatch between private and public net benefits of crony appointments can easily explain why public-sector employment may swell above a social optimum. This will be particularly true when taking into account the soft budget constraints of many public-sector organisations and their reduced exposure to competition (Ades & Tella 1999).

For the reasons above, shedding light on public-sector jobs cronyism is of great importance. This is particularly true when taking into account the large size of the public sector, the severe detrimental effects of corruption (Shleifer & Vishny 1993), the evidence of a performance gap between public and private firms (Shleifer 1998), the potential for disruption of internal labour markets, and the fact that rigid employment protection observed in many countries (OECD 1994) will make it difficult for new governments to dismiss their antecessors' cronies. However, an empirical investigation on cronyism is particularly challenging. As in other types of corruption, the two sides in that process (politicians and their cronies) have a strong preference to hide their relationship from public scrutiny. In fact, we could not find any empirical analysis of jobs cronyism in the economics literature, despite the considerable anedoctal evidence available in some countries.

This paper fills this large gap by presenting indirect evidence of cronyism. Our methodology is motivated by a number of original approaches which uncover strong evidence of corruption (Duggan & Levitt 2002, Jacob & Levitt 2003, Hsieh & Moretti 2006, Wolfers 2006). In our case, we start by presenting a simple model of cronyism, where politicians sup-

ply appointments to state-sector firms that are demanded by cronies, in exchange for political or other favours. Given the greater supply and demand of appointments near general election periods, the model predicts spikes in hirings both before and after elections. The model also predicts that post-election spikes will be stronger if the new government is of a different political colour.

To test these predictions, we require data that are not only rich enough in terms of its coverage of the public sector and the appointments made there but also that are measured at a relatively high frequency (Akhmedov & Zhuravskaya 2004). This paper draws on particularly rich data that meet these two requirements: a longitudinal matched employer-employee panel data set covering the population of firms that operate in a country, Portugal. Besides a large set of variables, including the degree of public ownership of each firm in each year, the data also lists the hiring date of each worker in each firm and in each year. We use this information to construct a monthly time-series of hirings in the state-owned sector, which according to the law are only overseen but not directly managed by the government. We then regress this time-series on the political cycle of the country - namely indicators of the months just before and just after a new government takes office - to test our model of cronyism. We also generate a similar time-series of private-sector hirings and that we use as a possible counterfactual, for instance to control for business cycle or seasonal effects that may be correlated with the election calendar.

Our results indicate a systematic impact of the political cycle on the timings of state-owned firms in Portugal, as predicted by our model of cronyism. We find significant evidence of a large spike in hirings just after a new government takes office, particularly or only in the case when the new government is of a different political colour (left or right) than the previous incumbent. Perhaps more striking, we also find that hirings tend to increase just before a new government takes over, regardless of the future outcome of the general elections. Furthermore, the results hold under different specifications and different subsets of the data, including less-skilled workers and firms in most sectors. We also find that changes in the top management of private firms (which one could regard as a better equivalent of general elections, in the context of the private sector), do not result in significant evidence of hikes in hirings in those firms, either in the months before or after the new appointment.

These results appear consistent with evidence on the potential gains from privatisation

(Megginson & Netter 2001, Brown et al. 2006). For instance, Porta & Lopez-De-Silanes (1999) show that one third of the efficiency benefits from privatization in Mexico came from transfers from laid-off workers. Bertrand et al. (2007) find that publicly-traded firms managed by politically connected CEOs display higher rates of job creation (and show lower profits) compared to unconnected firms. Our findings, while emphasising the microeconomic importance of hirings on top of its macroeconomic implications (Pissarides 2009), may also lead to a partial reinterpretation of the results from the political business cycle literature (Rogoff 1990) that tend to regard higher levels of public employment during election years as evidence of opportunistic behaviour by incumbents to persuade voters of their competence. Most important, while there has been considerable anecdotal evidence of cronyism in many countries, this is the first paper that provides systematic empirical evidence about this phenomenom. This evidence may hopefully pave the way for measures that expose and erode cronyism in the future.

The next section presents the theory that motivates our analysis. Section 3 briefly describes the Portuguese political system and the state-owned economic sector. Section 4 presents the data used in the paper and some descriptive statistics, after which Section 5 describes the main results. Sections 6 and 7 study their robustness and present some extensions, respectively. Finally, Section 8 concludes.

2 Theory

This section offers a simple model to think about cronyism and its empirically testable manifestations. As mentioned above, in this paper we focus on the aspects of cronyism that arise when politicians appoint to public-sector positions friends and individuals that helped or can help those politicians, regardless of the cronies' qualifications or suitability for those positions. Cronyism therefore corresponds to expenditure of public resources to pay for (political or other) benefits enjoyed by politicians, even if it may promote mismanagement and further waste. This will also typically involve discrimination of people more suitable for those jobs.

There are two types of agents in our model of cronyism: politicians (either in power or in opposition) and cronies. Politicians care about obtaining or keeping power, and this process will typically be facilitated by favours made by cronies, although cronies can also be of assistance in other, non-political spheres. Such favours can take a very large number of

forms, including campaigning and grassroots activities, donations, media work (in favour of the politician or against her opponents), 'dirty tricks' and personal favours.

On the other hand, cronies care about appointments in the public sector (including state-owned firms), which typically involve rents. The size of the rents will depend on the specific job at stake but it will generally entail a combination of higher wages, job stability, lower effort, discretionary budgets, etc. The utility from such combination of job amenities would not be feasible in the cronies' next best alternative in a non-crony job. Of course, these crony appointments can be made only by politicians in power, implying that cronies helping politicians in opposition will see their efforts pay off only if the politicians that those cronies support are elected in the next elections.

The interaction between politicians and cronies creates an informal market for appointments in the public sector. These appointments can be measured in the model in terms not only of their number but also of their importance, for instance by the size of the rent involved. Furthermore, the market is segmented between current and prospective, after-election jobs. While the former type of jobs will be offered only by politicians in power, the latter can be offered both by politicians in power and by politicians in opposition - but only delivered by whoever wins the next election.

In each market, the supply of appointments by politicians responds (positively) to their price, which is measured in terms of the relevance of the favour made by the crony to the politician. The supply of appointments will also be affected by several other variables, which we group under the separate labels of 'political', 'economic' and 'private'. Political variables concern aspects such as opposition from public-sector officers, legal issues (e.g. the law may offer politicians different latitude in terms of discretionary appointments), competition within the cabinet and party, and reputation costs. Economic variables refer to the size of the public sector (countries or periods with bigger public sectors will generate more opportunities for placements) and budget constraints faced by each department. Finally, private aspects include the personal gains from the appointment - cronies may be relatives and politicians will also care about the welfare of their (extended) families. Moreover, placing cronies in the public sector can involve an insurance element from the point of view of the politician herself, as it may also open avenues for reciprocation in the future, in particular if the politician loses power. The placement of cronies in strategic positions may also facilitate more crony

appointments in the future.

The case of politicians in opposition and their market for prospective appointments is similar. The main difference is the uncertainy of the reward (the appointment), as that will depend on the election result. This is compounded by the non-binding nature of the arrangement between the opposition politicians and their cronies, given the time gap between the favour (before elections) and the appointment (after elections, assuming the candidate wins).[1]

Turning to the demand for appointments, it is expected to respond (negatively) to its price and also to be affected by a number of other variables, including the proximity to elections and the likely election result. Cronies of the same political colour of the incumbent understand that the time for safe, public-sector appointments will be running out, given the risk that their politicians and parties losing elections. This applies in particular to cronies appointed to political positions in a given government (advisers, assistants, etc), whose jobs will expire by default when that government comes to an end. Similarly, cronies of opposition politicians understand that the run-up to elections is an important time to deliver favours of interest for the possible future politicians in power. These two forces will increase the crony demand during periods close to elections.

From the above aspects, it follows that the proximity to elections will affect both the supply of and demand for appointments. First, the model predicts that the behaviour of both politicians in power and challengers will shift the supply curve of crony appointments to the right just before elections: for instance, the effects from the favours will increase in terms of enhancing the probability of (re-)election. Moreover, appointments just before elections could mean a shorter period for the public opinion to gain awareness of them. Finally, there will be little or no reputation cost if the politician loses the elections. These factors mean that the proximity to elections increases the supply of appointments for every price (favour) paid by cronies. Second, for the reasons discussed above, the demand for appointments will similarly increase near elections.

We can therefore say that, in terms of predictions, first of all, we would expect that,

[1]While this moral hazard can be an important disadvantage faced by challengers, one would still expect that cronies would generally be rewarded with the promised appointment after the election if their politician wins. For instance, the crony may threaten to let the public know about the pre-elections arrangements if the newly-election politician renegues on her promise. Less cynical 'gift-exchange' views may also apply (Akerlof 1982), not to mention the 'private' reasons mentioned above (e.g. the gains from appointing relatives).

under a null hypothesis of no cronyism, the electoral cycle would not influence public-sector hirings. In particular in the case of state-sector firms studied in this paper, hiring decisions will be independent from election dates. This may contrast with the case of explicitly political appointments in government positions (ministers, advisors, spokespersons, etc), which are expected to increase soon after elections, with or without cronyism. However, if cronyism applies, then periods both just before and just after elections will be times of above-average crony appointments, as their demand and supply curves will both shift to the right. This positive relationship between election proximity (both before and after) and hirings by state-owned firms is the key prediction that we take to our data.

Another prediction we test is that the post-election hirings spike will be greater when there is a government of a different political colour than its antecessor. This follows from the fact that the deferred appointments, conditional on the victory of the challenger, will only apply in that case. In contrast, if the incumbent wins, their appointments will be split between the pre- and after-elections months, with a greater share expected to be made in the pre-election months. It should also be mentioned that our model is unable to infer the actual magnitude of cronyism, in particular in terms of appointment levels. However, we argue we can detect cronyism from differences over time in hirings levels, in particular in the months close to electoral periods, provided the data are comprehensive enough.

Next we present some background on the country under study in this paper, Portugal, and its data, which covers appointments in all state-sector firms over a period of nearly 350 months and 11 general elections.

3 Portugal - some background

3.1 Political system

After a complex period that followed the 1974 revolution, the Portuguese government system became reasonably stable since the early 1980s. Notwithstanding that, there have been 13 governments since 1980 and only four of them led to a full four-year term of office - see Table 1.[2] The table also lists the parties that led the governments that took office following each

[2]The four main governing components in Portugal are the president of the republic, the parliament, the government, and the courts. The president is elected to a five year term and has a supervising non-executive role. The Parliament is a chamber of 230 representatives elected in four-year terms. The government is headed by the prime minister, the leader of the most voted party, who chooses the ministers and their deputies.

one of those general elections. This table highlights the stability in the party structure: PS ('Partido Socialista', left wing) and PSD ('Partido Social Democrata', centre/right wing) have been, by far, the most important parties. These two parties have typically alternated in power every election or every other election, except in 1983-1985, a period of balance-of-payments crisis, when the two parties formed government together.

Table 1 also highlights the fact that, despite the relatively large number of governments, most of them enjoyed a full majority in parliament (at least 50% + 1 of the representatives), which can facilitate considerably the approval of new laws and policies. In some cases, coalitions were formed, typically between PSD and CDS (a smaller, right-wing party). Another point of information is that the political colour of the government changed six times over the 30-year period covered, even if one party enjoyed a 10-year uninterrupted spell in power (PSD, from the mid-80s to the mid-90s). That spell only came to an end when Mr Guterres won the 1995 general election, prompting the memorable announcement mentioned in Section 1. When the same party (PS or PSD) won the general elections for a second time, the new government was always led by the same prime-minister and many of the same cabinet ministers. The exception was the early 1980s, in one case because of the death of the prime-minister in a plane crash.

As to election dates, these are tentatively scheduled for September, unless a government comes to an end before the end of its mandate. In any case, (state-owned or private) firms have no influence on election dates, which makes us believe that it is reasonable to regard these dates as exogenous with respect to firms' hirings.[3]

3.2 State-sector firms

While the model presented in Section 2 can be applied to all public-sector appointments, our empirical analysis will focus on state-sector firms only. This is not only because of data constraints but also because government-related appointments could be expected to respond to the electoral cycle even in an environment without cronyism. On the other hand, according to the law, state-owned firms in Portugal are supposed to be managed so to pursue economic

Ministers are responsible for overseeing state-owned firms. Some governments (7, 8 and 16) did not follow from elections but from the resignation or death of the prime-minister.

[3]See also Coelho et al. (2006) and Veiga & Veiga (2007) who report evidence on political business cycles in Portuguese municipalities, using annual data. They interpret the increase in employment levels of municipalities in the year of elections as corresponding to efforts by mayors to enhance voters' perceptions of the mayors' abilities.

(and social) goals, in which case the political cycle would not affect appointments apart from a small number of top positions (e.g. CEO's) and then only after elections.

The number and importance of state-owned firms is still considerable today, after a wave of nationalisations following the 1974 *coup d'etat*. Although there have been more than 230 privatisation events from 1987 to 2005, involving revenues of nearly 25 billion euros in nominal prices (Ministry of Finance 2006), the state-owned enterprise sector still accounted for about 4.7% of GDP and about 2.4% of employment in 2005 (Ministry of Finance 2006). In fact, state-owned firms can be found in a large number of sectors, including utilities, transport, infrastructures (air, rail, ports, roads, wholesale markets), finance, health, urban renewal, media and culture.

The state also holds equity in a number of private firms, most of them having been privatised in the recent past (energy and water firms, for instance). Some of these firms are still potentially subject to considerable state intervention via the so-called 'golden share' mechanism, which allows the state to have veto powers in a number of decisions taken by those firms, even if the actual percentage of ownership rights in those firms is only residual (a form of minority ownership).[4]

Overall, it would be difficult to argue that many of the firms currently owned by the Portuguese state meet most of the economic conditions for public ownership to be able to improve upon private ownership - for instance, opportunities for cost reductions that lead to non-contractible reduction in quality, weak potential for innovation, weak competition and consumer choice, and weak reputation mechanisms (Shleifer 1998). Moreover, state-owned firms as a group have always made losses: for instance, state transfers in 2005 amounted to 7.4 billion euros (Ministry of Finance 2006), even if this figure does not include loans taken by those state-owned firms that are indirectly subscribed by the state (but not accounted for in the state budget).

One could argue that the large number of firms that remain in the public sector would follow from the cronyism opportunities that arise from the control by politicians in power of a large number of firms in the state-owned sector. However, while government ministers

[4] As this mechanism is disregarded in this paper (i.e. we ignore golden shares and define a firm as state-owned based on whether the state owns 50% or more of the firm), our results can be seen as lower-bound estimates of any cronyism effects documented later. There are also a smaller number of private firms that become state-owned because they went bankrupt when the state was the main creditor. These firms are managed by the state until they are liquidated or auctioned to private investors. See Ministry of Finance (1998) and Ministry of Finance (2006) for more detail.

and deputy ministers are responsible for overseeing the management of each state-owned firm, including the appointment of their CEO's and administration members, they are not supposed to influence the day-to-day management of those firms, including recruitment issues. On the other hand, the recruitment of employees by state-owned firms does not need to meet the supposedly more stringent procedures required in the case of the appointment of public servants, even if the two types of workers are protected by rigid employment laws (Martins 2009). The possibly easier appointment process in the case of state-owned firms could be a particularly interesting avenue for politicians to return the favours made by their cronies.

Finally, we conducted an analysis of the wage practices of state-owned firms compared to private firms (Martins 2010) using the same comprehensive matched employer-employee panel data set that we describe next. We found always significant wage premiums in state-owned firms, even in models controlling for a large range of heterogeneity sources (workers or spell fixed effects). These results are consistent with the premise in our model that jobs in state-owned firms are likely to involve rents.

4 Data

The data used in this paper are derived from 'Quadros de Pessoal' (Personnel Records), a particularly rich annual census of all firms that operate in Portugal and that employ at least one worker, collected by the Ministry of Employment. According to employment laws and the census regulations, each firm is legally required to provide extensive information about itself and also about each one of its workers that are employed during the census reference month (March, up to 1993, and October, from 1994). Given the extensive coverage of the data, the only types of workers excluded are the self-employed (including employers that do not earn wages) and public servants. Moreover, the period covered by the data is relatively long, as the census has been ongoing since 1982, allowing us to track the political cycle over nearly 30 years, up to 2008.

The long list of variables available in the 'Quadros de Pessoal' data set includes unique, time-invariant identifiers for each firm, for each establishment and for each employee. Other firm-level variables are the economic sector/industry (five-digit code), detailed region codes, number of employees (constructed from the worker-level data), firm age, sales in the previous year, and equity. Crucially for the purpose of this paper, there is also information, for each

firm and each year, on the ownership structure of the firm, measured by the percentage of voting rights controlled by each of these three types of investors: private/domestic, foreign, or public (Portuguese state).

At the worker-level, the data make available information about schooling, age (month and year when the worker was born), gender, occupation (five-digit code), job level (a two-digit variable, comparable across firms and over time) and promotions (month and year when the worker was last promoted in the firm). There are several wage variables, all of them expressed in monthly values (the most common frequency of pay in Portugal), including base wages, tenure-related payments, overtime pay, 'subsidies' and 'other payments' (such as bonuses and profit- or performance-related pay), and information about normal and overtime hours.

Importantly, the data also include information about the month and the year when each employee was hired by the firm. We use these two variables to construct a time-series that counts the number of workers hired in each month by type of firm (state- or private-owned).[5] For instance, we measure the number of state-sector hirings in, say, June 2005, from the number of workers hired in that month according to the lists of personnel of all state-sector firms as reported in the October 2005 census. This variable will inevitably miss short employment spells, namely those that start at a different month than the census month of the year (March or October). For instance, a worker hired in June 2005 that leaves the firm before October 2005 will not be counted.[6] Moreover, as 1990 and 2001 worker-level data were not released by the Ministry for research purposes (due to financial restrictions), we rely on longer-lasting employment spells in those periods.[7] Finally, in order to extend the period covered slightly, we also considered appointments made since April 1980 that last until March 1982, the first census available. Later in the paper, we explain how we take these data issues into account when estimating our results and check the robustness of the results to different measurement approaches.

In order to draw on a common support of firms and minimise measurement error, we drop

[5]See Martins et al. (2010) for another analysis of new hires, in that case about their real wage cyclicality, also using the 'Quadros de Pessoal' data set.

[6]Workers that join the firm after the census date (when firms report their data late) or without information on their date of entry into the firm are dropped from our analysis. These cases account for a very small number of observations.

[7]Specifically, we consider people that were hired in each month: 1) from April 1989 (the first month after the previous available census month, March 1989, given the lack of 1990 data) until March 1991 (the following census date); or 2) from November 2000 (the first month after the previous available census month, October 2000, given the lack of 2001 data) until October 2002 (the following census date).

firms that do not appear in at least five years in the 'Quadros' data set over the 1982-2008 period and that do not employ at least 20 workers in at least one year. Firms are defined as state-owned in a year if at least 50% of the voting rights in that year are held by the Portuguese state.[8] Given the large size of the private sector, when compared to the public sector, and the fact that we have population data, we consider a 10% sample of private sector firms (and all the years and workers of these sampled firms).[9]

4.1 Descriptive Statistics

Table 2 presents descriptive statistics of the months considered in our analysis, from April 1980 to October 2008. The mean monthly hirings in state-owned firms over that period is 584 (standard deviation 241). The mean schooling levels of those newly-hired workers across all months is 10.4 years of schooling and their mean age is 28.9. Their mean job level is 5.2, in a scale that ranges from one (top managers) to eight (apprentices). The mean real hourly earnings (2008 prices) are 7.05 euros. In terms of the private-sector firms, we find that the number of mean hirings is greater (2,668). Mean schooling, job level and earnings are lower (7.6, 5.9 and 4.8, respectively), while age is higher (30).[10]

Applying equally to the two groups, the mean difference between the census month and the month of entry across all cells is 7 months (standard deviation 5.2). 45% of the observations refer to the pre-1994 period (when the census month was in March). Virtually 10% of the observations concern a month in the three-month period just after a government takes office, while nearly 5% of all months concern a month in the three-month period just after a government of a different political colour than its antecessor takes office.

Table 3 lists the number of new hires in each year of the 'Quadros' data set, separately for state- and private-owned firms. In the case of state-owned firms, the number of new hires in each year ranges from nearly 24,000 in 1982 to little more than 5,000 in 1993. This dispersion reflects the differing number of state-owned firms over the years, the business cycle and the different coverage of different years. As explained above, we use the 1982, 1991 and

[8] In the case of privatisations, as we do not know the month when the type of ownership changed, we assume this occurred just after the last census month when the firm was state-owned.

[9] We conduct the sampling at the firm level, not at the firm-observation level, i.e. we sample from a list of all firms in our data that meet the restrictions described above. This ensures that we can follow longitudinally the sampled firms for as many years as possible.

[10] These statistics refer to the characteristics of the workers as measured during the census month, some of which will differ somewhat from the month when they were hired (e.g. wages).

2002 'Quadros' year files to cover 24-month periods, while we use the 1994 data to cover a 19-month period; all other year files cover a 12-month period only. The total number of newly-hired workers over the 1980-2008 period is 205,719. More than 70% of these workers are hired by firms that appear in our data as state-owned at least since 1982.

Table 3 also presents the average tenure of the newly-hired workers, measured in months at the census month (March or October). For state-owned firms, this statistic varies between 4.7 (1987) and 11.5 (1982), where the censuses used to compute 24-month hirings series naturally resulting in higher mean tenure values. As to the age of these workers hired in each year, the range is between 26.5 (1999) and 32.2 (2003). The last three columns of Table 3 report the same statistics as above but for the comparison group of private firms. Consistent with the results in Table 2, the number of workers hired in every period is much higher, ranging from about 17,000 (1984) to nearly 62,000 (1991). Average tenure per year is lower, suggesting a greater percentage of shorter spells, i.e. people hired early in the period covered by each census are less likely to stay until the census month, or a different distribution of appointment months, or some combination of the two factors. Finally, there is some indication of an increasing trend in the age of the new hires, unlike in the case of state-owned firms, even if the range is similar (between 27.3 and 33.0).[11]

Our monthly hirings series of state-owned firms (as defined above) are presented in Figure 1. The figure also highlights the three-month periods immediately after a new government takes office (and the cases when the new government is of a different political colour than its predecessor in dark grey), in accordance with Table 1. There are clear examples of an overlap between a spike in hirings and such three-month periods, namely in late 1985/early 1986, mid 2002 and mid 2005, all of them coinciding with governments of a different political colour. In fact, there are fewer examples of overlap between new governments of the same political colour as their predecessors and spikes in hirings (e.g. 1981, late 1999/early 2000) and those magnitudes are smaller. Figure 2 complements the information above by depicting the monthly hirings of both state-owned and private firms. One finds some overlap between spikes in hirings of the two groups of firms and the periods after elections - e.g in late 1985/early

[11]The number of workers employed by state-owned firms ranges from a peak of more than 280,000 in 1986 to 79,000 in 2007 and 2008, following the privatisations described in Section 3.2, while the number of state-owned firms ranges from 110 in 1992 to 244 in 2005. The increasing trend over the last decade reflects the breaking up of older firms into smaller ones and also the emergence of new, smaller sized public-owned firms. See (Martins 2010) for more details.

1986. On the other hand, we observe the opposite, i.e. a negative spike in private hirings during the period just after the general election in late 1995.

Overall, we interpret the eyeball evidence above as encouraging as to the scope for the political cycle to drive hirings of state-owned firms, either when taken in isolation or when considering the contrast between state-owned and private firms. Section 5 will subject these suggestive findings to more precise statistical tests.

5 Results

5.1 State-sector only

Following the theoretical discussion, our empirical analysis is based on the examination of the relationship between hirings and the electoral cycle. Specifically, we start by estimating the following equation, based on monthly data for the state-owned sector only, in the spirit of an event study:

$$Hirings_t = \beta_1 NewGovt_t + \beta_2 NewColour_t + X_t^{|}\beta_3 + e_t \quad (1)$$

The dependent variable, $Hirings_t$, corresponds to the logarithm of state-owned firms' hirings in month t. $NewGovt_t$ is a dummy variable equal to one in the first three months after a new government takes office (and zero otherwise), while $NewParty_t$ is a dummy variable equal to one in the first three months after a new government of a different political colour than its predecessor takes office (and zero otherwise), as indicated in Table 1. We pick a time range of three months as it strikes us as a reasonable period of time when the post-elections spike may arise (later we examine the robustness of our findings to this choice).

The X_t vector of variables includes several time controls: a dummy for each month (January, February, ..., December) to pick up seasonal effects, a dummy for each month in the period up to March 1993 (when the pattern of seasonality may be different because of the different census month), a variable ('Distance') capturing the number of months between the census month and t (ranging from zero to 23), and a quadratic trend. These variables serve to control for systematic differences in the number of hirings across months and years (because of business cycle or seasonal effects) that may be correlated with the political cycle.

β_1 and β_2 are the parameters of interest: the former indicates the average percentage difference in state-sector hirings during the three-month periods after a new government takes

office; the latter parameter indicates any additional effect (on top of β_1) on hirings of state-sector firms if the new government that took office is of a different colour than its predecessor (i.e. typically a switch from PS to PSD or vice-versa). According to our model, cronyism would be consistent with significantly positive coefficients for either variables or, at least, a significantly positive β_2.

Table 4 presents the results, based on different versions of equation 1. When considering only the $NewGovt_t$ dummy variable (column 1), its coefficient is .150, and is significant at the 1% level. When considering instead only the $NewColour_t$ dummy variable (column 2), again its coefficient is significant at the 1% level, and its value is larger, .173. When considering both dummy variables, as in equation 1, the first coefficient is .123 (significant at the 5% level), while the second is .057 (not significant at the 10% level).

These results indicate a statistically and economically significant increase in hirings, of more than 10% and potentially as large as 20%, in the three months after a new government takes office. The evidence also suggests that the post-elections hike in hirings is more pronounced when the new government is of a different political colour than its predecessor, even if the difference is not significant. All results are consistent with our theoretical discussion above about the effects of cronyism in terms of state-sector hirings.

We now turn our attention to the effects of the electoral cycle on hirings before elections. In particular we rewrite equation 1 and use instead a dummy variable equal to one in the three months before elections (or, more generally, a new government). For symmetry and as a further test of the model, we also consider a dummy variable equal to one in the three months before elections if there is a change in the political colour of the government in those forthcoming elections.[12]

Besides testing directly the prediction of the model regarding pre-elections appointments, this analysis also addresses an alternative interpretation of the findings on the post-elections hirings bump: Hirings may be put on hold in the run up to an election because of the unpredictability of the election outcome and the future strategic direction of the firm. If this is the case, then, once the new government takes office, such held-up appointments could finally take place, generating a post-elections increase in hirings, as documented in our results based

[12]Opinion polls typically predicted well which party would win and form government, at least since the mid-1980s. Any spike in hirings in the pre-elections period could be higher when the incumbent was predicted to lose.

on equation 1. This view would not be consistent with cronyism. Even if the Portuguese law did not require this freeze in pre-elections hirings, it could be that firms adopt this approach in case they predict the new government to introduce different personnel practices, including a different profiles of new hires.

Column 4 of Table 4 reports the results when only the first dummy is considered (the one equal to one in the three months before elections, regardless of the colour of the government after elections). Its coefficient is .121 and significant at the 1% level. Column 5 instead considers only the dummy variable highlighting the same three months before elections but only if the next government is of a different political colour. Again the coefficient is positive (.119), although this time significant only at the 10% level. When considering both coefficients, the first one clearly dominates (.117, significant at the 5% level), as we find no evidence of a marginal effect on hirings from the next government after the elections being of a different political colour.

Finally, column 7 reports the results for an equation considering the four dummy variables. They indicate that there is a hike in hirings both before and after a new government takes office (.118 and .126, respectively, both significant at the 5% level). The point estimate of the new colour government is larger after the elections than before the elections (.079 and .014, respectively), but both estimates are imprecise enough not to be significant even at the 10% level.

As to the coefficients of the time control variables, they are very similar across specifications: the pre-1994 dummy is always insignificant; the distance variable (the number of months between the census date and the specific month of the hirings data) is negative as expected; and the trend variable indicates a decreasing number of hirings over the 1980-2008 period, but falling at a declining rate. Moreover, the coefficients of the month dummies (not reported) indicate considerable seasonality, as predicted from Figure 1.

We take these results to indicate that the hike in hirings after elections is not driven by any systematic decline in appointments before elections. More important, the results are consistent with our model of cronyism as they indicate that hirings also increase in the months before elections, and by a similar magnitude. According to our theory, this follows from the increased demand of and supply for crony appointments in the months before general elections, generating the observed increase in state-sector hirings both before and after a new

government takes office.

5.2 State vs. private sector

As potentially suggested by Figure 2, some months of high state-sector hirings may also correspond to months of high private-sector hirings. In fact, parliamentary elections in many instances took place in September and governments took office in October, which may also be months when firms make many of their new appointments, after the Summer slowdown. In this case, our spikes in hirings may not necessarily be taken as evidence of cronyism. Moreover, governments may tend to call early elections for periods of economic expansion, when hirings increase across the board, In this case, our crony effects would be overestimated. Alternatively, oppositions may tend to bring down minority governments in periods of downturn, in which case our estimates would underestimate the crony effect. Similarly, October or any other months after a new government takes office may be periods of lower-than-average appointments, unlike what we hypothesised above, in which case our estimates would again underestimate the crony effect.

We investigate the empirical merits of these alternative explanations by estimating a difference-in-differences version of the previous hirings equation, taking the private sector as a control group. Our identification assumption is that private-sector hirings will not be subject to cronyism but they will respond similarly to business-cycle or seasonality effects. We therefore draw on monthly data for both state- and private-sector firms, where the state-sector hirings series is the same as the one used in Subsection 5.1 while the private-sector series is as described in Subsection 4.1. The first version of our new equation is as follows:

$$Hirings_{it} = \beta_1 NewGovt_t \times StateOwned_i + \beta_2 NewColour_t \times StateOwned_i + \beta_3 StateOwned_i + \gamma_t + e_{it}, \quad (2)$$

where $StateOwned_i$ is a dummy variable equal to one if the observation pertains to the state-owned sector and zero if the observation pertains to the private sector. Furthermore, we also consider month fixed effects, γ_t (i.e. one dummy variable for each one of the 342 months in our data). These fixed effects allow us to control as thoroughly as possible for differences across months that may be correlated with election dates so we can investigate if there are systematic differences in hirings by state-owned firms with respect to their counterparts in

the private sector near election times. Again, β_1 and β_1 are the key parameters.

Table 5 presents the results, following a similar format to Table 4. Column 1 reports an estimate of .294 for the interaction of the new government and the state-owned variables, significant at the 1% level (and almost twice as big as its counterpart in Table 4). However, when turning to column 2, which considers the new political colour effect only, that coefficient triples to .514 with respect to its Table 4 counterpart, and is again significant at the 1% level. Finally, when considering both variables at the same time, as in equation 2, the new colour effect dominates, at .426 (significant at the 5% level), while the new government coefficient is only .094 and insignificant at the 10% level.

These results indicate that, similarly to the state-sector-only analysis, hirings in the state-sector respond to the electoral cycle, as predicted by our model of cronyism, even when controlling very stringently for seasonality and business cycle effects. The new results are even stronger in terms of the fit with theory, as they argue that it is primarily when the colour of the government switches that the post-electoral spike in hirings occurs. In fact, if the same party stays in power for a consecutive second (or third) time, then it is likely that largely the same political agents will again have control of the appointment process and therefore no new appointments will have to be made, at least not immediately after the elections, unlike in the case of a new political colour.

Finally, as in the previous subsection, we turn to a version of the main equation where we consider the effects of the new government (and/or different political colour) in the hirings just before elections. Again we find systematic evidence of spikes in hires, of an order of magnitude two to three times larger than in Section 5.1. For instance, when considering only the new government effect in the three months before (column 4 of Table 5), the coefficient is .372 (significant at the 1% level); when considering only the new colour effect (again in the three months before), the coefficient is .338 (also significant at the 1% level). When considering the two variables at the same time (column 6), the new government effect dominates, with a coefficient of .383 (significant at the 1% level), while the new colour coefficient is not significant, even at the 10% level.

When pooling the four dummy variables (column 7), we find that the coefficients of the new political colour (three months after) and the new government (three months before) dummies are significant, at the 5% and 1% levels, respectively, and their magnitudes are

above .4. The two main differences between the two tables (4 and 5) are therefore that the magnitude of the significant effects increases by a factor of at least three; and while in the state-sector-only analysis there are no statistical differences between same-colour or new-colour new governments, in the state- vs. private-sector analysis only the new-colour coefficient is significant.

Overall, we conclude that we find considerable evidence that state-sector hirings respond significantly to the parliamentary political cycle, not only after a new government takes office (and, in particular, if such new government is of a different political colour than its predecessor), but also before elections, in this case regardless if the future new government is of the same or different political colour. Moreover, these effects are not only significant in a statistical sense - they are also particularly important in economic terms, as the hirings spikes are at least of 10% and potentially as large as 50%, according to the estimates based on a comparison over time in the public sector or, in our preferred approach, on the contrast with the private sector, respectively.

6 Robustness

6.1 Month-by-month analysis

Here we conduct an analysis of the monthly hirings in specific reference to the month when elections take place (see also Akhmedov & Zhuravskaya (2004)). This is a more disaggregate approach than in our benchmark results above and allows us to gain a more detailed understanding of the systematic differences in hirings over the months before and after elections. In particular, we consider both the 12 months before elections and the 12 months after elections. Our first specification draws on state-sector (log) hirings only, following equation 1, as in Section 5.1, and is as follows:

$$Hirings_t = \sum_{j=-12}^{12} \beta_j^A Elections_j + \sum_{j=-12}^{12} \beta_j^B ElectionsNewColour_j + X_t^{|}\alpha + e_t. \qquad (3)$$

$Elections_j$ is a dummy variable equal to one if a new government takes office in that relative month j (and zero, otherwise), in comparison with month t; $ElectionsNewColour_j$ is a dummy variable equal to one if a new government of a different colour than the previous

incumbent takes office in that month (zero otherwise). The 25 β_j^A parameters thus indicate the average percentage difference in hirings of those months (from 12 months before to 12 months after elections) with respect to the comparison group of months outside this range. Moreover, the 25 β_j^B parameters indicate any additional difference in hirings when the new government that follows from the elections is of a different political colour.

Tables 6 and 7 present the results - column 1 the first set of 25 coefficients (the estimates of the β_j^A parameters) and column 2 the second set (the estimates of the β_j^B parameters), each set split between the two tables. Consistent with the previous findings, the new government estimates are significantly positive from 5 months before the elections (months -12, -9 and -8 also indicate significant positive coefficients). The first month after elections also returns a significant estimate, as well as several months from the 6th to the 11th after the elections. None of the coefficients is negative. When considering the incremental effect from a new-colour government, we find a few significantly negative coefficients over the 12-month period before elections and several negative coefficients from the 6th to the 11th months after elections. These results again indicate clear evidence of spikes in hirings before elections; they also suggest spikes in hirings after elections. In addition, we find that the three-month aggregation may be too crude, in the sense that the effect arises immediately after the new government takes office (first and second month). However, the effect of a new government of a different colour does not seem to hold, as least from the sixth month after elections, when their negative effects broadly cancel out the positive effects from the new government coefficients, which would be consistent with the results of equation 1.

We now turn to the more detailed specification, that controls for any correlation between the electoral calendar and firms' hiring practices, by considering private firms too. Our specification in this case follows from equation 2, namely by including time dummies for all months and identifying the effects of interest from the interaction between relative month dummies (from month -12 to month +12) and the state-owned dummy variable:

$$Hirings_{it} = \sum_{j=-12}^{12} \beta_j^A E_j \times SO_i + \sum_{j=-12}^{12} \beta_j^B ENC_j \times SO_i + \phi SO_i + \theta_t + e_{it}, \qquad (4)$$

where E_j (ENC_j) is short for $Elections_j$ ($ElectionsNewColour_j$) and SO_i is a dummy variable standing for State-Owned, equal to one if the series refers to that sector. θ_t are

month dummies, covering each month of the 28-year period examined.

Tables 6 and 7, columns 3 and 4, present these results. We find, again, clear evidence of spikes in hirings in the run-up to elections, regardless of the future change in the colour of the government, namely from month -9 to month -2. These coefficients typically range from .4 to .5 and are significant at least at the 10% level and in some cases also at the 5% and 1% levels. On the other hand, the coefficients on the new-colour government are almost always insignificant before the elections, while they are very significant and large just after the new government takes office. The latter coefficients are .705 and .649, in the first and second months after elections, respectively, and both significant at the 5% levels. The after-election effect is also significant for the new government variable (not necessarily of a different colour) in the 6th, 7th and 8th months.

These results, in particular those of our preferred difference-in-differences specification, fit the predictions of our model of cronyism particularly well. For instance, the considerable increase in hirings in the run up to elections (from month -9) is fully consistent with the model. Moreover, the huge spike in hirings, of more than 70%, just after one month after a new government of a different colour takes office is particularly striking.

6.2 Industry analysis

Another important aspect for robustness analysis concerns the extent to which the results can be replicated in a sector-by-sector comparison. This is relevant not only in terms of assessing any dispersion in the results or evaluating the existence of outliers; it is also of interest in terms of ensuring that our comparisons between state-sector and private hirings are drawn from a common support of comparable firms, at least in terms of their industry affiliation.

Here we focus on what we considered to be the ten most important industries that meet this requirement, i.e. the largest industries which feature both private and state-sector firms. Those industries are, in ascending order of their SIC code: food and beverages (15); other transport equipment (35); electricity and gas (40); hotels and restaurants (55); air transport (62); posts and telecoms (64); finance, except insurance (65); other business activities (74); health and social work (85); and recreation and culture (92).[13] Over the 1980-2008 period considered, these ten sectors correspond to 441,575 hirings, out of a total of 1,119,338 hirings

[13] As the industry code changes twice over the 27-year period covered in our data, we focus on the 1995-2006 version of that code (equivalent to the ISIC revision 3.1).

across all 56 two-digit sectors in the main data set (see Table 3). The total number of hirings per sector over the years in the private and state sectors, rounded to thousands, are, respectively: sector 15 (41 thousands in private sector/6 thousands in state sector), 35 (8/5), 40 (2/10), 55 (50/7), 62 (3/15), 64 (24/36), 65 (26/24), 74 (139/5), 85 (21/5), and 92 (11/6).

Table 8 presents the results of our sector-by-sector analysis, based on the extended versions of equation 2, the most inclusive specification, as in column 7 of Table 5. We find across virtually all industries very similar results to those obtained in the pooled analysis. In particular, the new colour (three months after) coefficients and the new government (three months before) coefficients are almost always both significant at the 5% or 1% levels and exhibit point estimates that tend to range from .4 to .5. The two other coefficients are always insignificant. For instance, in Food and beverages, the new colour (three months after) coefficient is .392 (significant at the 5% level) and the new government (three months before) coefficient is .518 (significant at the 1% level), while the other two political-electoral coefficients are insignificant. The only exceptions to the pattern above arise in the air transport industry, where the new colour coefficient is almost .6 (.597) and the new government (three months before) coefficient is insignificant; and the health and social work industry, where both coefficients are insignificant, even if they are relatively large (.329 and .231).[14]

Overall, we regard these results as important evidence in favour of the robustness of our findings. They hold even when comparing hirings of state-owned and private firms within two-digit sectors.

6.3 Data subsets

Another question we address is if there are differences in the effects of the proximity of elections across different job levels. In particular, are cronies mostly placed at top positions in state-sector firms? We examine this question by conducting an analysis separately for each one of the eight job levels available in the data set, drawing on the variable that sets a uniform ranking of jobs across all firms and years.

[14]While the considerable post-elections 'appetite' for the air transport industry (where the systematically-loss-making flag carrier figures prominently) is consistent with anecdotal evidence, we do not have a good explanation for the lack of significant effects on the new government (three months before) variable, except for random factors. On the other hand, the insignificant results for the health and social work industry may be driven by the smaller number of months when hirings of private and state-sector firms can be observed (539) compared with a maximum of 686 and the possibly less interesting job amenities in that industry from the cronies' point of view.

Table 9 presents the results, based on the most inclusive variation of equation 2. We find significant effects in the same two elections variables as before in job levels 4 (highly-skilled professionals), 5 (skilled professionals) and 6 (semi-skilled professionals). These are also three of the most important job levels in terms of the percentage of workers they account for across all new hires: 5.2%, 30.7% and 16.6%, for job levels 4, 5 and 6, respectively. However, in job levels 1 (top executives) and 7 (non-skilled professionals) only one of the two election variables are significant (and only at the 10% level). Finally, in the remaining job levels - 2 (middle managers), 3 (supervisors) and 8 (apprentices) - the results are not significant. Except for job levels 7 and 8 (which account for 22.6% and 16.5% of all new hires, respectively), these job levels are smaller in terms of their sizes (3.9%, 2.8% and 1.7%, for job levels 1, 2 and 3, respectively). This may explain why our estimates are less significant in those occupation types.[15]

In any case, these results point strongly in the direction of effects across the firms' hierarchy, rather than just a (small) subset of high-level positions and just after elections, as antecipated from the wording of the Portuguese law. This result is also not consistent with politically-motivated appointments, where an outgoing government may want to establish its legacy or an incoming government may want to politicise a state-owned firm with people sympathetic to their politics. In that case, one would expect most appointments to occur at higher job levels, unlike what we find here. We also find very similar results when conducting case studies of the largest state-owned and private firms or when considering only the subset of firms that were privatised.

Another robustness check we conduct concerns the time span in our hirings data, in particular regarding months that are relatively distant from the census months. As mentioned above, this can make those observations less accurate, as short spells will be ignored. Even if we do not know of a clear reason for a systematic correlation between such loss of accuracy and the electoral cycle, we approached this issue by rerunning our main results (from equation 2) on the subset of hirings that involve a given maximum distance from the census month: six or, alternatively, twelve months only. For instance, in the case of a six-month distance, we consider only appointments from November of year $t-1$ to March of year t, when year t

[15]When focusing on hirings of workers placed at medium- to high-job levels (skilled professionals, higher-skilled professionals, supervisors, middle managers and top executives) only, we find results very similar to those obtained with the full set of hirings (Table 5) - see Martins (2010).

is from 1982 to 1993 (except 1990) and appointments from May to October of year t, when year t is from 1994 to 2008 (except 2001). In results not reported but available upon request, we found very similar qualitative and quantitive findings.

We then checked if our main results hold under different sub-periods within our wide 1980-2008 coverage. In particular, we considered four subsets of that period: 1985-2008, 1990-2008, 1995-2008 and 1982-2000. We also considered the periods when the elections did not take place in September (hirings up to 1989 and from 2001 to 2007). In all cases we found the same qualitative results (and very similar quantitative results) than in the benchmark analysis.

We also tested if there are systematic differences between the left- and right-wing main parties (PS and PSD) in terms of the pre- and post-elections spikes in hirings. We considered the extended version of the specification in equation 2 (as in column 7 of Table 5) and split each one of the four dummy variables there into left- and right-wing versions. The results (available upon request) indicated again similar estimates than before and no significant differences between the two parties.

Furthermore, in the spirit of a falsification test, we checked if the municipalities' electoral cycle affected hirings. All coefficients proved to be insignificant, as expected. The same result was obtained when we lagged the (general) elections dates by six months or one year. We also examined different specifications of our benchmark results, in particular considering levels of hirings, rather than their logarithms, and a (seasonally) differenced dependent variable. The results (available upon request) are again qualitatively similar to our main findings.

Finally, we considered the effects of the hirings prompted by the election period on the total employment of the firms affected. Unfortunately, our data does not provide information on those variables at the same frequency as the hirings information (Akhmedov & Zhuravskaya 2004). However, we were able to find some evidence, even if not completely robust, that employment levels increase in election years.

7 Extensions

7.1 Human capital and wages

In this extension, we examine the profiles of the workers hired over the period covered in our data in state-owned and private firms. Our goal is to investigate if there are systematic differences in the characteristics of the workers hired by state-owned firms in the months just before and/or just after elections compared to workers hired by private firms. Even if our model does not make any specific prediction about this issue, we find it interesting to know if cronies fit a particular profile or, alternatively, if they are statistically indistinguishable from the typical newly hired worker, even in the months just before or after elections, when we find pronounced spikes in hirings.

We conduct this analysis by computing the mean value of each worker characteristic in each month in both private and state-sector firms. Specifically, we consider several of the worker characteristics available from the 'Quadros' data set, namely mean schooling years, mean (Mincer) experience, mean age, mean real hourly wage, mean wage bill, mean job level, and the female ratio. We then estimate a specification similar to the extended version of equation 2, except that the dependent variable is the level or the log of each of the worker characteristics described above, rather than the count of newly hired workers.

In results not reported but available upon request, we find that all worker characteristic effects tend to be insignificant. Some estimates suggest higher mean wages and lower schooling, but these results are not robust. The only exception to the lack of significance was the results based on the mean wage bill, which increases substantially, at a similar rate as the hirings levels, indicating a quantity effect (which was abundantly described in our main results), but no price effect (consistent with the lack of significant coefficients when the dependent variable was the real hourly wage).

We conclude from this extension that cronyism is widespread across the pool of new hires and not specific to a given group of workers, at least as one could define them with the variables available here (schooling, gender, age, experience, job level, and hourly pay). These findings are also consistent with our analysis reported in Section 6.3, where we found that the main hirings effects arise in terms of medium-job-level positions.

7.2 Managers

In Section 3.2 we explained that public sector firms in Portugal are not directly controlled by government ministers, even if the government is responsible for appointing the senior managers in those firms and providing strategic guidance. One may therefore tentatively argue that the best equivalent of general elections in the context of private-sector firms would be when private firms undergo a change in their top management. In this case, a good understanding of the effects of elections (and new governments taking office) upon hirings in state-owned firms would require a comparison with private-sector firms that similarly undergo a change in their top management.

Here we assess to what extent private firms that undergo a change in their CEO also exhibit systematic increases in their hirings levels just before and/or just after those events, as we have shown for the case of public-sector firms near election periods. In particular, we draw on our sample of private firms and identify those which exhibited turnover in their top management position. We then use the date (month and year) when the new top manager in the firm was promoted (or hired from the external market) to that top-management position to create a dummy variable specific to each firm that will be one in the three months immediately after the appointment (promotion or external hire) of the new top management and zero in the remaining months. This is intended to follow closely our analysis for state-owned firms only. Using the same time series of appointments that we explored for our main results and a similar specification as that of equation 1, we estimate the partial correlation of pre- and post-CEO-reshufle in terms of the hirings of private firms.

Table 10 presents the results. The top panel includes all private firms, while the bottom panel considers only the subset of private firms that exhibit turnover in their top management. We also consider different types of dummy variables, highlighting the three (or six) months after the new top management or the three months before, and a combination of the three variables (unfortunately, there are no obvious equivalents to a change in political colours in the context of private firms). All other controls used before are also considered but not reported. In both panels, each observation corresponds to a firm-month.

We find no evidence of systematic spikes in hirings either before or after the private firms appoint new top managers. If anything, there is evidence that private-sector firms undergo a period of fewer appointments, approximately 1% less, both just after and just before new

management (column 4 of the top panel). When focusing on the subset of firms that change ownership, the effects even double to -2.2% (over the period after the new top management appointment).

This result may be explained by the need to understand better the firm before any new strategy is implemented by the new CEO. This would suggest that top management would find it better to slow down new appointments until she has settled down in her new job. Similarly, it may be foolish for the previous CEO to increase hirings just before the new CEO takes over, in case the latter decides to take the firm in a different direction, which may not fit with the profile of those hirings. In any case, and more important, the clear contrast between our results for public-sector firms (considerable increases in hirings just before and just after a new government takes office) and these results for private firms undergoing a change in their top management (if anything, hirings slow down) makes the cronyism interpretation of the public-sector hirings spikes even more likely.

8 Conclusions

State-owned firms can carry out a number of tasks that may be less efficiently produced by the private sector. However, it has been shown abundantly that assuming the benevolence and public-spiritedness of the politicians overseeing or managing those firms is not always appropriate. For instance, politicians can use those firms to give jobs to cronies, at the expense of public- sector efficiency, equity, and general welfare.

We examine this question first by presenting a simple model of cronyism. This model predicts spikes in appointments to state-owned firms near elections, both before and after them, and in particular if a government of a different political colour takes over. These results follow from the greater usefulness of the cronies' favours from the politicians' points of view near elections and the simultaneous increase in the demand for appointments during those periods. We then take this model to our data, a monthly time series of hirings across all state-owned firms (and across a control group of private firms) in Portugal, from 1980 to 2008.

Consistent with the model, we find that appointments to state-owned firms increase significantly over the months just before and just after a new government takes office. The post-elections hirings spike is particularly strong if the new government is of a different po-

litical colour than its predecessor, again as predicted by the model. All findings hold when taking the private sector as a control group and in many different subsets of the main data, including specific industries, time periods, and job levels. The latter results point towards the pervasiveness of cronyism within public-sector firms, not only in a small number of high-level positions after elections.

Our evidence of cronyism suggests a considerable scope for politically-induced misallocation of public resources. These results also help explain not only the performance gap between private and public-sector firms - and the consequent gains from privatisation (Porta & Lopez-De-Silanes 1999, Megginson & Netter 2001, Brown et al. 2006) - but also the reluctance against privatisation still observed in many countries (including the one studied in this paper). While there is considerable anecdotal evidence about cronyism in appointments to public-sector firms, this is the first paper that provides systematic empirical evidence about this phenomenom. Our findings also help devising policy approaches that could minimise the size of the market for crony appointments. These could include restrictions on hirings near elections and greater transparency (Ferraz & Finan 2008) on the profiles and timings of public-sector appointments.

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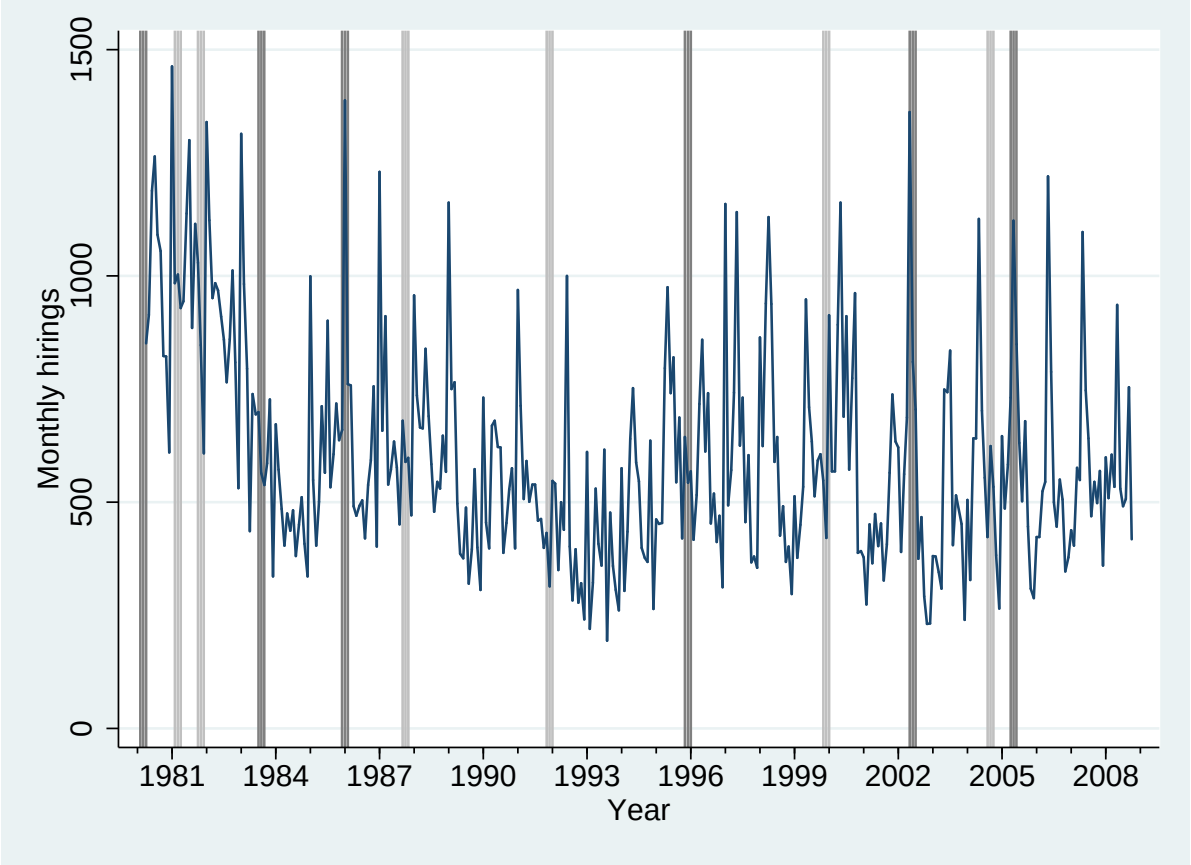
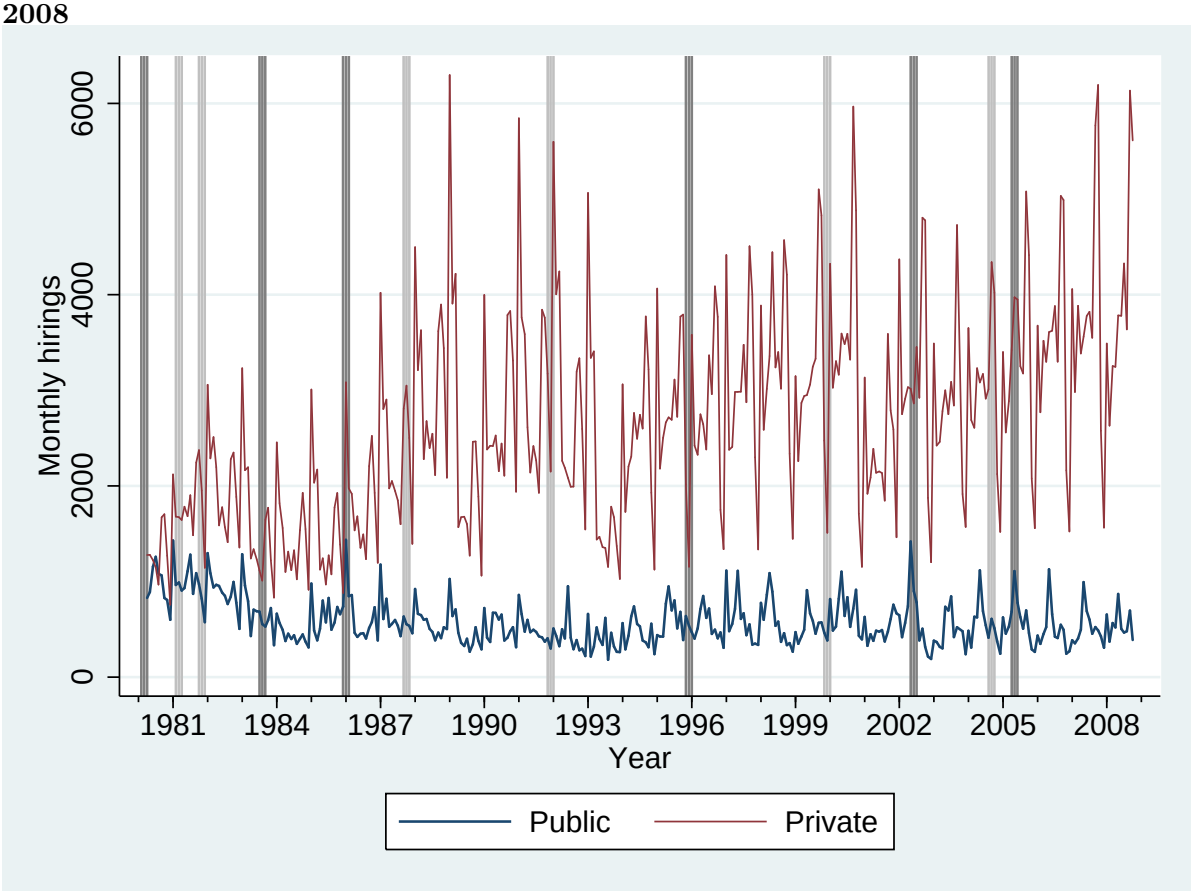
Figures

Figure 1: **Monthly hirings by state-owned firms, 1980:4-2008:10**



Notes: Vertical bars indicate the three months after a new government takes office. Bars are darker if the new government is of a different political colour than its antecessor; bars are lighter if the new government is of the same political colour than its antecessor. State-owned firms are those owned in 50% or more by the Portuguese state. Source: own calculations based on 'Quadros de Pessoal' data set, 1982-2008.

Figure 2: **Monthly hirings by state-owned firms and sample of private firms, 1980-2008**



Notes: Vertical bars indicate the three months after a new government takes office. Bars are darker if the new government is of a different political colour than its antecessor; bars are lighter if the new government is of the same political colour than its antecessor. Source: own calculations based on 'Quadros de Pessoal' data set.

Tables

Table 1: **Governments of Portugal, 1980-2008**

Gov't no.	Party/Coalition	Start	End	New colour	Elections	Full majority
6	PSD+CDS+PPM	Jan-80	Jan-81	x	x	x
7	PSD+CDS+PPM	Jan-81	Sep-81			x
8	PSD+CDS+PPM	Sep-81	Jun-83			x
9	PS+PSD	Jun-83	Nov-85	x	x	x
10	PSD	Nov-85	Aug-87	x	x	
11	PSD	Aug-87	Oct-91		x	x
12	PSD	Oct-91	Oct-95		x	x
13	PS	Oct-95	Oct-99	x	x	
14	PS	Oct-99	Apr-02		x	a)
15	PSD+CDS	Apr-02	Jul-04	x	x	x
16	PSD+CDS	Jul-04	Dec-04			x
17	PS	Mar-05	Oct-09	x	x	x
18	PS	Oct-09			x	

Notes: a) tie (50% of MP's, when budget approval required 50%+1). 'Gov't no.' lists the government number, in the period covered by our data. PS ('Partido Socialista', left wing) and PSD ('Partido Social Democrata', centre/right-wing) are the two largest parties. CDS (or CDS/PP, 'Centro Democrático Social/Partido Popular') is a smaller, right-wing party. PPM ('Partido Popular Monárquico') is a very small party, in favour of the reintroduction of monarchy. 'Start' and 'End' are the start and end dates of each government. 'New colour' refers to governments of a different political colour (left or right) than their immediate predecessors. 'Elections' indicates when the government resulted from general elections (x) or the resignation/death of the prime minister and appointment of replacement. 'Full majority' refers to governments that held an absolute majority in the parliament (50% + 1 of the members of parliament, 'deputados').

Table 2: **Descriptive statistics, monthly hirings**

Variable	Mean	Std. Dev.	Min.	Max.	N
State-owned firms					
Hirings	584.096	241.487	182	1436	342
Log hirings	6.291	0.398	5.204	7.270	342
Mean schooling years	10.382	1.522	6.631	13.435	342
Mean age	28.881	1.762	25.196	40.854	342
Mean job level	5.206	0.456	4.164	6.717	342
Mean real hourly earnings	7.054	1.531	3.813	12.045	342
Private firms					
Hirings	2667.778	1113.072	758	6297	342
Log hirings	7.799	0.434	6.631	8.747	342
Mean schooling years	7.633	1.223	5.581	10.099	342
Mean age	29.994	1.919	26.603	35.891	342
Mean job level	5.94	0.284	5.043	6.592	342
Mean real hourly earnings	4.835	1.175	2.686	7.587	342
Both state-owned and private firms					
Distance	6.974	5.159	0	23	342
Before 1994	0.453	0.499	0	1	342
New gov't (3 months after)	0.099	0.3	0	1	342
New colour (3 months after)	0.047	0.211	0	1	342

Notes: Hirings denote the number of individuals hired in a given month, from April 1980 to October 2008. Schooling years are derived from the highest diploma obtained by each new hire (e.g. high school correspond to 12 years of schooling). Job level ranges from 1 (top management) to 8 (apprentice). Real hourly earnings are measured in 2008 euros. 'Distance' is a dummy variable equal to one in the period when the census month was March. 'New gov't (3 months after)' is a dummy variable equal to one in each of the three months after a new government takes office. 'New colour (3 months after)' is a dummy variable equal to one in each of the three months after a new government takes office if it is of a different political colour than the previous government.

Table 3: **Descriptive statistics, new hires by census year**

	State-owned firms			Private firms		
Years	Count	Tenure	Age	Count	Tenure	Age
1982	23,942	11.5	28.8	40,673	10.0	28.3
1983	10,636	5.5	28.5	23,945	5.2	27.3
1984	7,000	5.6	29.1	17,217	5.0	27.9
1985	5,528	5.1	29.9	18,896	4.7	28.6
1986	9,444	4.9	30.8	18,235	4.7	27.9
1987	7,192	4.7	29.8	24,698	4.6	27.9
1988	7,151	5.2	28.9	30,425	4.7	28.4
1989	7,008	5.1	29.6	39,315	4.7	28.4
1991	11,975	10.5	29.2	61,767	9.6	29.2
1992	5,396	5.9	27.9	37,965	4.7	29.0
1993	5,053	6.2	30.5	32,893	4.8	29.3
1994	8,296	8.8	28.9	39,403	7.3	29.7
1995	6,896	5.1	27.6	33,263	4.9	29.3
1996	6,841	5.6	27.0	33,423	4.8	29.8
1997	7,416	5.7	27.5	36,043	4.8	30.0
1998	7,309	5.7	28.0	39,243	4.9	30.2
1999	6,267	4.9	26.5	37,372	4.6	30.0
2000	8,343	5.0	26.9	42,533	4.8	30.7
2002	13,757	10.5	28.7	65,868	9.9	32.0
2003	8,076	3.1	32.2	34,751	4.7	31.9
2004	6,713	5.1	29.8	36,146	4.9	32.0
2005	7,153	5.1	29.5	39,698	4.7	32.7
2006	6,031	5.0	28.9	41,278	4.7	32.1
2007	5,984	4.8	29.9	44,595	4.6	32.9
2008	6,312	5.3	30.1	43,974	4.5	33.0
Total	205,719			913,619		

Notes: The table lists the number of new hires retrieved from each census year and some of their characteristics (as measured in that census year and in the census month - March up to 1993 and October from 1994). Information for the census years of 1990 and 2001 is not available. The data for these years (and 1981) was obtained from the year immediately after.

Table 4: **Hirings by state-owned firms and the political cycle**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
New gov't (3 months after)	.150 (.040)***		.123 (.050)**				.118 (.052)**
New colour (3 months after)		.173 (.058)***	.057 (.074)				.079 (.076)
New gov't (3 months before)				.121 (.043)***		.117 (.050)**	.126 (.052)**
New colour (3 months before)					.119 (.068)*	.008 (.081)	.014 (.082)
Before 1994	.071 (.125)	.068 (.123)	.072 (.125)	.071 (.124)	.066 (.124)	.071 (.124)	.087 (.125)
Distance	-.015 (.004)***	-.015 (.004)***	-.015 (.004)***	-.015 (.004)***	-.015 (.004)***	-.015 (.004)***	-.014 (.004)***
Trend	-.007 (.0007)***	-.007 (.0007)***	-.007 (.0007)***	-.007 (.0007)***	-.007 (.0007)***	-.007 (.0007)***	-.007 (.0007)***
$Trend^2$	.001 (.0002)***	.001 (.0002)***	.001 (.0002)***	.001 (.0001)***	.001 (.0002)***	.001 (.0001)***	.001 (.0002)***
Obs.	342	342	342	342	342	342	342
R^2	.579	.575	.579	.574	.57	.574	.589

Notes: Dependent variable: log hirings per month. 'New gov't (3 months later)' is a dummy variable equal to one in each of the three months after a new government takes office. 'New colour (3 months after)' is a dummy variable equal to one in each of the three months after a new government takes office if it is of a different political colour than the previous government. 'New gov't (3 months affore)' is a dummy variable equal to one in each of the three months *before* a new government takes office. 'New colour (3 months before)' is a dummy variable equal to one in each of the three months *before* a new government takes office if the new government is of a different political colour than the incumbent. Other control variables (included, but not reported - available upon request): 'Before 1994' (equal to one for all months up to March 1993, after which the census month moves to October), 'Distance' (the number of months between the census date and the month of the data), 'Trend' and '$Trend^2$' (a quadratic trend), dummies for each month (January, February, ..., December), and dummies for each month (January, February, ..., December) if before 1994. Robust standard errors. Significance levels: *: 0.10; **: 0.05; ***: 0.01.

Table 5: **Hirings by state-owned and private firms and the political cycle**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
New gov't (3m after)	.294		.094				.090
$\times StateOwned$	(.105)***		(.143)				(.143)
New colour (3m after)		.514	.426				.470
$\times StateOwned$		(.126)***	(.186)**				(.187)**
New gov't (3m before)				.372		.383	.412
$\times StateOwned$				(.098)***		(.137)***	(.136)***
New colour (3m before)					.338	-.024	-.025
$\times StateOwned$					(.131)***	(.185)	(.186)
StateOwned	-1.538	-1.533	-1.538	-1.545	-1.523	-1.545	-1.578
	(.030)***	(.029)***	(.030)***	(.030)***	(.030)***	(.030)***	(.031)***
Obs.	684	684	684	684	684	684	684
R^2	.906	.907	.908	.908	.905	.908	.912

Notes: Dependent variable: log hirings per month. 'StateOwned' is a dummy variable equal to one if the hires concern a public (state-owned) firm. See notes to Table 4 for the description of the remaining variables. Robust standard errors. Significance levels: *: 0.10; **: 0.05; ***: 0.01.

Table 6: **Effects by month, in relation to month of new government**

	Before-after specification		DID specification	
	Different government	Different colour	Different government	Different colour
Month: -12	.163	-.385	-.027	.102
	(.094)*	(.135)***	(.219)	(.304)
Month: -11	.048	-.109	-.125	.576
	(.068)	(.163)	(.175)	(.266)**
Month: -10	.074	-.145	.082	.416
	(.072)	(.105)	(.168)	(.223)*
Month: -9	.205	-.302	.511	-.324
	(.106)*	(.129)**	(.281)*	(.336)
Month: -8	.173	-.237	.536	-.273
	(.088)**	(.161)	(.209)**	(.266)
Month: -7	.073	-.153	.399	-.142
	(.111)	(.117)	(.259)	(.380)
Month: -6	.181	.020	.495	.022
	(.118)	(.133)	(.271)*	(.380)
Month: -5	.255	-.096	.612	.003
	(.150)*	(.190)	(.270)**	(.365)
Month: -4	.234	.045	.531	.201
	(.083)***	(.157)	(.157)***	(.290)
Month: -3	.158	-.086	.425	-.046
	(.061)***	(.105)	(.219)*	(.321)
Month: -2	.215	-.269	.490	-.277
	(.057)***	(.121)**	(.197)**	(.280)
Month: -1	.134	-.014	.255	.115
	(.051)***	(.078)	(.257)	(.365)
Month: 0	.088	-.125	.109	.217
	(.089)	(.116)	(.222)	(.412)
Month: +1	.145	.130	.184	.705
	(.079)*	(.141)	(.202)	(.350)**
Month: +2	.082	.196	.185	.649
	(.069)	(.107)*	(.223)	(.268)**
Month: +3	.033	.014	.065	.351
	(.136)	(.148)	(.275)	(.342)
Month: +4	.038	-.050	.157	.235
	(.120)	(.132)	(.255)	(.332)
Month: +5	.019	.039	.156	.334
	(.109)	(.125)	(.300)	(.414)
Month: +6	.278	-.301	.417	-.090
	(.061)***	(.148)**	(.154)***	(.354)

Notes: Dependent variable: log hirings per month. 'Month: -12' is a dummy variable equal to one if a new government takes office 12 months after that month, ..., 'Month: 0' is a dummy variable equal to one if there is a new government takes office that month, ..., and 'Month: +12' is a dummy variable equal to one if a new government took office 12 months before that month. Robust standard errors. Significance levels: *: 0.10; **: 0.05; ***: 0.01.

Table 7: **Effects by month, in relation to month of new government (cont.)**

	Before-after specification		DID specification	
	Different government	Different colour	Different government	Different colour
Month: +7	.219 (.062)***	-.373 (.155)**	.403 (.216)*	-.027 (.342)
Month: +8	.353 (.117)***	-.509 (.132)***	.590 (.243)**	-.213 (.291)
Month: +9	.223 (.111)**	-.381 (.146)***	.310 (.221)	.011 (.294)
Month: +10	.100 (.087)	-.252 (.120)**	.195 (.179)	.037 (.265)
Month: +11	.218 (.078)***	-.350 (.110)***	.150 (.233)	-.005 (.317)
Month: +12	.160 (.177)	-.354 (.223)	.105 (.226)	.005 (.329)
Obs.		342		684
R^2		.615		.916

Notes: See Table 6.

Table 8: **Hirings by state-owned and private firms, by sector**

	(1) Food and beverages	(2) Transport equipment	(3) Electricity, gas, etc	(4) Hotels and restaurants	(5) Air transport
New gov't (3m after)	.171	.115	.092	.068	-.156
$\times StateOwned$	(.140)	(.157)	(.125)	(.133)	(.116)
New colour (3m after)	.392	.419	.367	.473	.597
$\times StateOwned$	(.190)**	(.196)**	(.193)*	(.177)***	(.199)***
New gov't (3m before)	.518	.412	.542	.415	.197
$\times StateOwned$	(.141)***	(.162)**	(.161)***	(.142)***	(.125)
New colour (3m before)	-.075	.049	-.281	-.031	.160
$\times StateOwned$	(.192)	(.210)	(.200)	(.189)	(.196)
StateOwned	-1.603	-1.642	-1.581	-1.649	-1.808
	(.036)***	(.034)***	(.037)***	(.031)***	(.031)***
Obs.	627	660	599	686	583
R^2	.926	.916	.934	.916	.96

	(6) Post and telecoms	(7) Finance	(8) Other business activities	(9) Health and social work	(10) Recreation, culture
New gov't (3m after)	.095	.060	.066	.195	.069
$\times StateOwned$	(.133)	(.134)	(.134)	(.244)	(.134)
New colour (3m after)	.400	.472	.473	.329	.474
$\times StateOwned$	(.191)**	(.177)***	(.177)***	(.279)	(.177)***
New gov't (3m before)	.435	.407	.413	.231	.416
$\times StateOwned$	(.145)***	(.143)***	(.142)***	(.275)	(.143)***
New colour (3m before)	-.173	-.031	-.031	.102	-.031
$\times StateOwned$	(.195)	(.190)	(.189)	(.342)	(.190)
StateOwned	-1.670	-1.639	-1.646	-1.641	-1.650
	(.033)***	(.032)***	(.031)***	(.055)***	(.032)***
Obs.	660	682	685	539	681
R^2	.921	.917	.917	.919	.916

Notes: Dependent variable: log hirings per month. Each one of the 10 blocks corresponds to a separate regression considering data for only of the top 10 sectors, in terms of public presence. The sectors are: 15 - Manufacture of food products and beverages; 35 - Manufacture of other transport equipment; 40 - Electricity, gas, steam and hot water supply; 55 - Hotels and restaurants; 62 - Air transport; 64 - Post and telecommunications; 65 - Financial intermediation, except insurance and pension funding; 74 - Other business activities; 85 - Health and social work; and 92 - Recreational, cultural and sporting activities. 'StateOwned' is a dummy variable equal to one if the hires concern a public (state-owned) firm. See notes to Table 5 for the description of the remaining variables. Robust standard errors. Significance levels: *: 0.10; **: 0.05; ***: 0.01.

Table 9: **Hirings by state-owned and private firms: different job levels**

	(1) Top executives	(2) Middle managers	(3) Supervisors, team leaders	(4) Highly-skilled professionals
New gov't (after)	-.022	.151	.209	-.259
$\times StateOwned$	(.172)	(.123)	(.289)	(.126)**
New colour (after)	.453	.273	.440	.938
$\times StateOwned$	(.254)*	(.258)	(.383)	(.173)***
New gov't (before)	.157	.031	.239	.309
$\times StateOwned$	(.149)	(.126)	(.248)	(.104)***
New colour (before)	.142	.221	.344	-.072
$\times StateOwned$	(.260)	(.270)	(.348)	(.179)
StateOwned	-.733	-1.198	-2.568	-.511
	(.035)***	(.050)***	(.072)***	(.043)***
Obs.	686	686	648	686
R^2	.838	.799	.867	.83

	(5) Skilled professionals	(6) Semi-skilled professionals	(7) Non-skilled professionals	(8) Apprentices, trainees
New gov't (3m after)	.229	.022	.388	.420
$\times StateOwned$	(.159)	(.176)	(.278)	(.241)*
New colour (3m after)	.137	.757	.129	.066
$\times StateOwned$	(.250)	(.241)***	(.441)	(.319)
New gov't (3m before)	.594	.443	.562	.185
$\times StateOwned$	(.183)***	(.146)***	(.304)*	(.308)
New colour (3m before)	-.374	.105	-.058	.205
$\times StateOwned$	(.252)	(.215)	(.429)	(.410)
StateOwned	-1.706	-1.374	-2.550	-3.102
	(.039)***	(.043)***	(.067)***	(.059)***
Obs.	686	686	686	685
R^2	.88	.837	.849	.919

Notes: Dependent variable: log hirings per month. The definitions of the eight job levels (as defined in 'Decreto Lei' 121/78)are: 'Top executives' - definition of the firm policies, strategic planning, creating and adapting processes; 'Middle managers' - organising and adapting the guidelines established by the top executives; 'Supervisors' - guiding teams, as directed by middle managers; 'Highly-skilled professionals' - tasks requiring high technical competence and defined in general terms by supervisors; 'Skilled professionals' - complex tasks, usually not repetitive; 'Semi-skilled professionals' - well defined tasks, mainly manual or mechanical, usually routine; and 'Non-skilled professionals' - simple tasks, completely specified. 'StateOwned' is a dummy variable equal to one if the hires concern a public (state-owned) firm. See notes to Table 4 for the description of the remaining variables. Robust standard errors. Significance levels: *: 0.10; **: 0.05; ***: 0.01.

Table 10: **Hirings by private firms, before and after new top management**

	(1)	(2)	(3)	(4)
All private firms				
New top manager (3 months after)	-.006 (.004)			-.007 (.005)
New top manager (6 months after)		-.010 (.004)**		-.011 (.005)**
New top manager (3 months before)			-.010 (.004)**	-.011 (.004)**
Obs.	243094	243094	243094	243094
R^2	.011	.374	.374	.374
Only firms with change in ownership				
New top manager (3 months after)	-.002 (.008)			-.005 (.008)
New top manager (6 months after)		-.022 (.008)***		-.022 (.008)***
New top manager (3 months before)			-.006 (.008)	-.006 (.008)
Obs.	69539	69539	69539	69539
R^2	.015	.371	.371	.371

Notes: Dependent variable: log hirings per month in each firm. 'New top manager (3 months later)' is a dummy variable equal to one in each of the three months after a new top manager heads the firm. 'New top manager (6 months later)' is a dummy variable equal to one in the period from the fourth to the six month after a new top manager heads the firm. 'New top manager (3 months before)' is a dummy variable equal to one in each of the three months *before* a new top manager becomes head of the firm. Other control variables (included, but not reported - available upon request): 'Before 1994' (equal to one for all months up to March 1993, after which the census month moves to October), 'Distance' (the number of months between the census date and the month of the data), 'Trend' and '$Trend^2$' (a quadratic trend), dummies for each month (January, February, ..., December), and dummies for each month (January, February, ..., December) if before 1994. Robust standard errors. Significance levels: *: 0.10; **: 0.05; ***: 0.01.