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# Evidence from Lebanon

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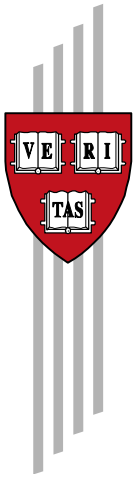


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# Do Political Connections Reduce Job Creation? Evidence from Lebanon

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Comments welcome

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**Abstract:** Using firm-level census data and the 2009 parliamentary elections episode, we show that sectors that include politically connected firms (PCFs) in Lebanon create less jobs compared to otherwise similar sectors with no connected firms. At the same time, we find that politically connected firms create more jobs than otherwise similar non-politically connected firms. We argue that these findings suggest that PCFs are used for clientelistic purposes in Lebanon, exchanging privileges for new jobs that benefit their patrons' supporters. We also show that the existence of PCFs in a sector reduces net job creation by reducing sharply the growth of non-PCFs. All these effects were larger during the 2009 election year. Based on several pieces of evidence, we argue that the most likely explanation of this phenomenon is that unfair competition by PCFs hurts their direct competitors and reduces their incentives to invest and innovate.

**Key words:** job creation; employment; politically-connected firms; clientelism; development; growth

**JEL codes:** D02; D47; J21; J38; L11; L53; O43; P16

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## 1. Introduction

This paper asks if job creation tends to be slower in environments with unfair competition by politically connected firms, and based on micro-level evidence from Lebanon, it answers the question with a resounding yes.

There is a recent global literature that identifies the mechanisms through which politicians bestow privileges to firms with political connections, and the economic impact of such capture (in particular, Faccio 2007, Fisman 2001, Hallward-Driemeier and Pritchett 2016, Johnson and Mitton 2003, Khwaja and Mian 2005). In this paper we study whether political connections also affect job creation at the firm level, and we assess the impact of imperfect competition at the aggregate level. In doing so, we argue that there are two opposing forces to consider. On the one hand, firms that get economic privileges may have an obligation to pay back the favor by providing employment for their constituencies. This would tend to advantage employment creation. But on the other hand, the provision of unfair privileges to particular firms can reduce the incentives of their competitors to innovate and grow, and this can as well reduce their own willingness to create new jobs.

The creation and distribution of regulatory rents is at the basis of political settlements in many parts of the world. Shleifer and Vishny (1994) show how politicians try to influence firms through various forms of subsidies, formal or informal, while firms pay back their dues and to politicians through various forms of political support. In this relation, connected firms are clients that obtain advantages that boost their profits, and they return the favor by supporting their patrons' political interests – on a net basis, the size of the benefit to the cronies depends of their bargaining power relative to their patrons (Rock and Bonnet, 2004). In this relation, politicians, who also care about economic performance, benefit from granting exclusionary benefits to some firms, either to generate and distribute rents in ways that bind the ruling coalition (by obtaining from their crony firms resources to finance elections and informal clientelistic transfers), or to exclude potential opposition from lucrative opportunities (Cox, North, Wengast 2013).

A related corporate finance literature has produced important results in the last decade in three broad areas: mechanisms to bestow economic privileges, effect on the politically connected firms' performance, and impact of cronyism on economic growth and on politics. First, connected firms tend to have better access to finance (and to exhibit higher default rates and receive more frequent bailouts); can enjoy tax advantages; better access to state subsidies; unchecked market power; and preferential access to government contracts. Evidence is available for China (Cull and

Lixin, 2005), Malaysia (Johnson and Mitton, 2003), Pakistan (Khwaja and Mian, 2005), Indonesia (Leuz and Oberholzer-Gee, 2006), and Brazil (Claessens et al., 2008). Second, researchers have found that politically-connected firms are sometimes managed for performance, as in General Park's Korea (Chan 1993, Khan 2000, 2001) and that they also sometimes perform worse than non-connected ones (Fisman 2001; Boubakri et al. 2008; Faccio (2007). Third, there has been much less work on the impact on economic and politics. Some of the rare papers include a study by Diwan et al (2016) on Egypt, which claims to show a negative causal effect of cronyism on growth, and a paper by Bertrand et al (2007) who show how firms managed by connected CEOs in France create more jobs in the politically more contested areas (and especially so around election years), and receive in exchange privileged access to subsidy programs.[2] More generally, Acemoglu and Robinson (2016) make the extent of economic inclusion/exclusion the central lens through which they explain why some nations fail to grow while others succeed over long term.

The negative relation between exclusion and growth is illustrated by the experience of Egypt in the last decade of Mubarak's rule. In their study on the effects of cronyism in Egypt, Diwan et al. (2015) showed that the presence politically-connected firms (PCFs) hurt economic growth in Egypt. They identified the growth effects of the entry of PCFs by comparing detailed 4-digit sectors where they entered, between 1996 and 2006, and sectors that remained unconnected. They found that PCFs' entry into new and previously unconnected sectors slowed down aggregate employment growth and skewed the distribution of employment towards less productive, smaller firms. They argued that the entry of PCFs into a sector slows the growth of unconnected firms in this sector by affecting the behavior of unconnected firms that remain in the sector, which might shrink due to fewer profitable investment opportunities, forcing unconnected firms to exit these sectors, and by discouraging new (potential) entrepreneurs from entering these sectors. As a result, employment in the connected sectors became concentrated in micro and small firms and in large and connected firms, with a "missing middle" of medium sized firms.

The case of Lebanon serves the purpose of this study for at least three reasons. First, the Lebanese political system is described as a limited competition between sectarian oligarchs whose power rests on the distribution of clientelistic rents to their constituencies. In the post war reconstruction phase of the 1990s, the necessity to consolidate security led to the constitution of a

[2] The paper shows that firms managed by connected CEOs create more jobs in the politically more contested areas, and that this is especially so around election years.

large political coalition, which brought political stability at the cost of an extensive system of spoils (Leenders, 2012). This system initially resulted in large fiscal deficits. When the fiscal space shrunk under mounting public sector debt, the financing of clientelistic networks had to rely increasingly on the creation of economic rents through exclusionary and distortionary regulatory economic mechanisms (Diwan and Chaitani, 2014). Thus, the Lebanese case, with its political competition, offers a useful comparison with that of Egypt, a firm autocracy.

Second, political clientelism in Lebanon is based on the provision of various types of services in exchange for votes, and politicians' ability to find employment for their constituents in both the public and private sectors is an important vote-buying mechanism. For example, three quarters of university students surveyed by the Lebanese Centre for Policy Studies thought that *political* connections were important to find jobs, and 20% said that they had used them (LCPS, 2013).

Third, the most recent World Bank Enterprise Surveys (2013) for Lebanon show that three-fifths of firms identify corruption as a major constraint for their growth. Similarly, the Gallup (2013) and Arab Barometer (2013) surveys show that the Lebanese public views corruption in the public and private sectors more negatively than in other countries of the Middle East.

To assess the effects of political connections on job creation, we analyze the micro foundations of employment growth in Lebanon using firm-level data to compare the performance of firms with and without political connections, and of sectors with and without political connections. We use a unique dataset which includes all registered (and thus formal) firms at the Lebanese Ministry of Finance that provides yearly information between 2005 and 2010 on firms' employment and output. We are able to identify among these firms a sub-group with political connections. We do this by first identifying firms from the Ministry of Finance data-base by comparing their characteristics with the firms identified in the Lebanese Commercial Register which (available at the Ministry of Justice). We then draw a list of all politicians and their main associates, and identify firms as politically-connected when one or more of their stakeholders (manager, board member, or shareholder) is on that list.

We start by establishing several puzzling stylized facts about job creation patterns in Lebanon. In particular, compared to other countries in the region, we find that employment is much more concentrated in larger firms in Lebanon. These larger firms tend to pay higher wages but do not exhibit better performance in terms of labor productivity than smaller firms. However, once we look at the large firms that are not politically connected, the more usual pattern of larger firms having larger labor

productivity prevails. This suggests the possibility that politically connected firms are pushed to over-hire among the clients of their political patron in exchange for the valuable economic privileges they receive (but which we do not observe). More formally, we use regression analysis to show that this result is robust and that politically connected firms create more jobs than otherwise similar non-connected firms in their sector of operation.

The tight correlation between connectedness and job creation does not prove causality. Other coherent explanations for this correlation are possible. In particular, it is possible that successful firms become connected in the sense that they join the country's political elite, but that they do not receive particular economic privileges. We argue, using various pieces of evidence -- including the 2009 Parliamentary election, and the fact that we capture political connectedness of firms at point of entry -- that in all likelihood, it is political connections that cause over-hiring, and not the other way around.

We also find that non-connected firms create less jobs in sectors where connected firms operate. This is to be expected, since they are likely to shrink when connected firms expand, but the interesting question is whether a connected sector ends up as a whole growing less, and creating less jobs, than an otherwise similar sector. To answer this question, we compare sector performance as a function of the presence of politically connected firms in a sector, and find that sectors that include more firms with political connections create less (net) jobs than sectors that do not include politically-connected firms. But while this firmly establishes a correlation between privileges and lack of job creation at the sector level, it is not sufficient to claim causality. There are several possible explanations for this correlation. The hypothesis we favor, given the evidence we find, is that it is largely unfair competition that reduces economic activity by reducing the incentives of both the industry leader and its distant followers to innovate – along the thesis of Aghion et al. (2001, 2009). But there are other possibilities. It could also be that connected firms receive privileges mostly in sector that are rent-filled and have low growth potential. It is also possible that since PCFs are likely to have more access to capital and thus to produce in more capital incentive ways, jobs get destroyed as the sector becomes more capital intensive when their market shares expand. Here too, we use various pieces of evidence, and most centrally, the circumstances observed during a highly competitive election in 2009, to argue that the competition hypothesis is most likely to be the best description of reality.

The remainder of this paper is as follows. We describe our firm-level dataset, identify politically-connected firms, and look at stylized facts about connected and unconnected firms in

section 2. We examine the impact of political-connections on job creation, wages, output, and productivity at the firm level in section 3, building up the argument that political connections cause jobs creation at the firm level in a competitive clientelistic political system such as that of Lebanon. In section 4, we focus on the sector implication of political connections, and argue that it is unfair competition that explains the lower growth of jobs in sectors that include PCFs. The concluding section summarizes our main findings and discusses their policy implications.

## 2. Data-set and corporate landscape

In this section, we describe the corporate data that we have, before identifying a set of politically connected firms, and then contrasting their characteristics with those of non-connected firms in the rest if the economy.

### 2.1. Firm-level data

We employ data on tax-paying firms, which we got from the Lebanese Ministry of Finance (MoF). The dataset includes all registered firms at the Directorate of Revenues, and provides yearly information between 2005 and 2010.[3] While our dataset does not contain all the existing information about each firm, it includes data about each firm's date of birth, 4-digit sector of business operation, number of employees, wages per year, sales, as well as initial paid-in capital.

This dataset has several advantages for the purpose of this study. First, its complete coverage of all firms and sectors on annual basis allows us to compare performance within and across firms and sectors in a comprehensive manner. To answer the question, for example, of whether small firms create more jobs than large firms, it is crucial to examine all sectors of the economy, instead of just the manufacturing sector that most previous research has focused on. Second, the data covers all registered firms, with no size threshold, capturing the universe rather than a sample of firms in Lebanon. Over the sample period of 2005-2010 that we study, the database includes information 122,242 firms on average per year. This ensures that the analysis does not under-estimate the influence of small firms, which tend to be under-represented in surveys. Third, the dataset includes information on each firm's output and number of employees (and to a lesser extent on registered capital), which allows us to look not just at job creation, but

[3] This data includes all firms that are registered at the Commercial Registry (CR) and National Social Security Fund (NSSF) in Lebanon.

also, at output per employee at the firm level and across sectors. Fourth, we are able to observe when particular firms enter or exit the economy, and thus to track entry and exit of formal firms from various sectors.[4] The dataset does not include information about profitability but only about output, which may be under-reported for tax evasion purposes.

It is also important, however, to keep in mind the limitations of our dataset. The data only contains formal firms and formal labor in Lebanon. By definition it includes only firms that pay taxes and declared labor that pay social security contributions. However, the data covers a large share of formal jobs. For example, in 2010, firms in our database report employing a total of 775,540 workers while, according to International Labor Organization (2015), the total labor force employed in the formal sector in 2010 was 777,000 in Lebanon.[5] Also, some firms may have exited the market before 2005 due to presence of politically-connected firms or other reasons. Similarly, many firms may have not entered the market before or after 2005 due to presence of political connections. Available data does not allow us to capture these firms.

To correct for weaknesses related to reporting errors, we dropped false firms after conducting necessary data cleaning. We considered firms false if they exhibited high volatility in output per worker.[6] We also dropped firms with obvious reporting errors. For example, some firms were born in 2007 but are reported as paying taxes in earlier years. On average, we dropped a total of 4.6% of the firms originally reported in the dataset in each year, including 1.1% of false firms. After cleaning, the dataset includes 105,092; 111,223; 117,513; 124,877; 133,686; and 141,061 firms, respectively, in each of the six years between 2005 and 2010.

### 2.2 Stylized facts – all firms

The analysis of the relationship between firm size and employment in Lebanon has been hampered to date by data limitations. As a consequence, existing studies have not been able to relate precisely net job creation to the underlying firm dynamics. The dataset from the MoF allows us to characterize a set of surprising stylized facts on the distribution of jobs, old and new, among firms of different size and age.

[4] To check the accuracy with which the MoF data captures new firms, we compared the sector-capital-year-date-of-birth-data in the MoF dataset to the CR registry data. We found that the MoF data identified firm start dates accurately.
[5] ILO (2015) also report another 613,000 informal workers working mainly in micro enterprises in Lebanon.
[6] We defined "high" volatility as a change that is equivalent to more than 100 percent between t and t+1 followed by a change that takes the output per worker level to less than its initial (t) value at t+2.

A specificity of Lebanon is that a large share of labor works in relatively large firms, unlike the pattern typically observed in developing economies, where private sector jobs tend to be clustered around a vast abundance of small firms, and only a handful of substantially large ones.[7] Table 1 shows that over the period 2005-2010, large firms that employ 100 or more employees account for nearly half of total (formal) employment in Lebanon. This figure is relatively large by regional standards: small-scale activities provide the majority of jobs in the Middle East and North Africa region. In Turkey, Tunisia, and Jordan, for example, only 20 to 30% of labor works in large firms, while in Egypt, and the West Bank and Gaza, this figure is below 10%.[8] Similarly, while the share of employment in firms with less than five employees is 19.3% in Lebanon, it is much larger in Egypt and the West Bank (about 60%), Jordan (40%), Tunisia (37%), and even in Turkey (34%). This share is not explained by a lack of small firms - 87% of firms have fewer than 5 employees in Lebanon. The relatively small share of employment in small firms in Lebanon is intriguing. Moreover, there is a trend toward larger size: from 2005 to 2010, the share of jobs in micro-firms declined from 15.2% to 13% while it increased in large firms from 41.1% to 47.8% (Table 1).

Moreover, the large firms have also driven net job creation in the recent past. Figure 1 decomposes net job creation in each year by firms of different size categories. In any given year between 2006 and 2010, the bulk of net job creation was in larger firms. A closer look at the data in Table 2 shows that in most years, self-employed micro firms were actually responsible for the destruction of jobs, in net terms.[9] For example, in 2010, firms that employed at least 200 employees created 22,511 jobs while self-employed firms destructed 3,074 jobs - putting aside self-employed firms, these large firms accounted for 55 percent of net job creation. Indeed, net job creation is concentrated in larger firms. In contrast, more than 90% of the new jobs created in Tunisia and Egypt in the past decade came from small firms (World Bank 2014, page 24-27).[10]

It is noteworthy that when it comes to job creation, it is the formal firms in our dataset, as opposed to the informal sector, that has been the main creator of new jobs in recent years. According to the International Labor Organization (2015), about 56,000 workers enter the market

[7] For evidence, see Ayyagari et al. (2014) and Aga et al. (2015). And, for more discussion, see World Bank (2016).
[8] For details, see Figure 1.5, page 19 in World Bank (2014).
[9] This contradicts the report of World Bank (2014), which claims that most new jobs in Lebanon during the period were created by micro-firms. The World Bank report uses the same data as we do, but it turns out that it mistakenly coded employment in micro-firms in 2006 as new jobs.
[10] Haltiwanger et al. (2013) find similar trend for United States as well.

each year. Firms in our database create between 40,000 and 50,000 new (formal) jobs per year, which is between 70 and 90% of all jobs created. (Table 2 and Figure 2). Thus, large firms created most of the new jobs, even when the informal sector is considered.

These stylized facts offer a puzzle: why is Lebanon different from other countries of the region (i.e. Tunisia and Egypt) in terms of the role of large firms in job creation?

### 2.3 Identifying politically connected firms (PCFs)

We aim to assess whether the stylized facts described above are related to the role played in the Lebanese economy by politically connected firms. To do this, we start by determining which firms in our database are politically-connected, not an easy endeavor. It requires assembling lists of politicians and of businessmen closely connected to them, and then determining systematically over the universe of all firms when any of these individuals has a relation with any of the firms we have information on. To make the (manual) search easier we restricted our search to the 2000 firms of more than 50 employees. In this manner, we identified 497 PCFs in our MoF dataset by following a three-step procedure.

First, we developed a long list of political actors. We defined a person to be a political connected if s/he is (i) a member of parliament, minister, or president who has been in office between 1992 and 2010; (ii) all direct family member (i.e., father, mother, brother, sister, spouse, son, or daughter) of this group; or (iii) publicly-known friends of this group.[11] The inclusion of people that were in power in previous administrations allows us to capture more firms that may have benefited from political connections at later years, and is valid because the same oligarchy has been in power after the so called Taif agreements that ended the civil war in 1989 (Traboulsi, 2007). Thus, although our firm-level dataset spans the 2005-2010 period only, we think that a firm with a connection to a politician who held public office in earlier years has a high probability of enjoying non-competitive privileges.

Second, we used the Commercial Register at the Ministry of Justice to identify PCFs. The Commercial Register includes information on all "formal" firms registered in Lebanon. It includes for each firm several variables: the names of owners and founders of the firm, board members and managers, paid in capital, date of birth, and sector of operation. We searched throughout the

[11] Our method of identifying PCFs is closely related to Faccio (2007), Rijkers et al. (forthcoming), and not far from Diwan et al. (2015). In the latter study, the authors treated friends of politicians as politically-connected, too.

registry for all firms with at least 50 employees in at least one year between 2005-2010 that included at least one name – partial owner, founder, shareholder, or officer - that is also on our list of political actors.[12] We supplemented this list with a few well-known cases of firms dominated by political parties. This procedure allowed us to identify 497 PCFs (of which 228 connected solely through family members or friends of politicians – and the others connected directly through politicians themselves).

Third, we matched all the PCFs that we found in the Commercial Register with the MoF dataset. While our MoF dataset does not include names of firms, it includes each firm's date of birth and sector of activity. In all cases we looked at the date of birth and sector characteristic of a firm in our database matched uniquely with a firm in the Commercial Register, allowing us to deduce the name of the PCFs that we wanted to identify. This procedure, thus, puts us in a position to compare the corporate characteristics of connected and unconnected firms in the MoF dataset.

It is clear that we could not hope to capture all the PCFs in Lebanon with our procedure. However, it is also unlikely that any of the firms we call PCF is not.[13] Thus, our estimates of political corruption are likely to be underestimates of the true effect.[14]

We mention here a few examples from the TV sector to clarify our approach. Future TV is owned by the sons, wife, brother, sister, and other friends of Rafic Hariri. The latter was a prime minister in Lebanon several times between 1992 and 2005. His sister has been a member of Lebanese parliament since 1992. And, his son has been a member in parliament since 2005 and served as a prime minister too during the time span of our dataset. Thus, we coded Future TV as politically connected. Al-Manar TV is well known to be the mouthpiece of Hizbullah, a political party in Lebanon. Even though the Commercial Register does not include names of owners or shareholders of Al-Manar TV, we still coded Al-Manar TV as politically connected given it is

[12] Note that at this stage, we did not look into the issue of firms with connected interests owning other firms – we intend to enrich our dataset with such measures in the future. We would also consider including firms that got revealed in the Panama papers, which belong to Lebanese individuals that are politically connected. Some of these firms may also be shareholders of some Lebanese firms.

[13] The process of matching (Arabic) names creates possibilities of errors when different database use a different spelling, or when different individuals have the same name. We try to minimize this error by ignoring titles, allowing for common spelling variants, and matching first, middle, and last names before classifying a firm as politically connected.

[14] There is also a risk that our measure is correlated with attributes of the firm such as its number of owners, since having more owners may increase the chances of matching. However, ownership does not change in our database given that we only know firm ownership at the time of establishment.

publicly known to be dominated by a political party. We also coded the NBN TV channel as a PCF because several of its owners, who are listed on the Commercial Register, are on our list of political figures (i.e., Yassin Jaber and Nehme Tohme).[15] Where none of the owners or managers of a given firm is on our list of politically-connected individuals, nor clearly affiliated with a party, we did not code the firm as PC – for example, in the TV sector, we coded LBC TV and Al-Jadeed TV as non-connected firms. In other words, we do not consider political-preference of firm owners as a proxy of their political connectedness.[16]

### 2.4 Stylized facts – politically connected firms

The 497 PCFs that we have identified are mainly concentrated in the banking, media, energy (including oil and gas distribution), health (i.e. hospitals, drug import and distribution), real-estate construction, road paving, water extraction and sale, mining (including quarries), telecommunication, soft-drinks, and pharmaceutical production sectors. All together, they operate in only 29 of the 289 (4-digit) sectors that exist in Lebanon.[17] So although some PCFs may be monopolizing particular national or sub-national markets (i.e., import of pharmaceutical products, or quarries), their large number in other sectors may have increased competition among themselves, which should lower rents in these sectors.

An important difference between Lebanese, and Egyptian or Tunisian cronyism, two countries that have been studied in some detail, is that the sectors of activity of PCFs in Lebanon are narrower. In Egypt, Diwan et al. (2015) found that PCFs were operating in 174 4-digit sectors, out of a total 350 sectors of operation. In Tunisia too, the connected sectors were found to be widespread – present in 30 of the 32 2-digits sectors of the economy (Rijkers et al, 2015). In both countries, research has shown that rents were created by systematic policy changes that instituted systems of industrial subsidies (mainly cheap fuel), by closing off international competition through the imposition of non-tariff barriers, or by erecting barriers to foreign investors by closing off entire sectors to foreign firms (Rijkers et al 2015, Malik and Eibl 2016). These studies have also shown that policy change followed the entry of CFs in particular sectors. In Lebanon, weaker

[15] See http://cr.justice.gov.lb/search/result.aspx?id=1000008745 .
[16] By doing so, we built on the works of Diwan et al (2015), Fisman (2001), Ibrahim and Saoud (2015), and Rijkers et al. (forthcoming) when deciding when a firm is politically-connected.
[17] All the sectors identified by Leenders (2012) are captured by our methodology to identify PCFs. It is noteworthy that nearly all sectors belong to the non-tradable group.

governments could not make and implement such ambitious interventions. Instead, rents exist only in sectors of more traditional state influence, such as the application of zoning laws, the regulation of schools and hospitals, or the control over government procurement.[18]

Table 3 shows the distribution of PCFs firms in Lebanon and summarizes some of their key characteristics, comparing them to non politically-connected firms (NPCFs) in their sectors of activity. We focus on firms that had 50 employees at least once during the period, in order to compare firms of the same size category. Overall, PCFs form 42.7% of (relatively) large firms in Lebanon (of over 100 workers) and 72% of the large firms in the sectors in which they operate. More generally, PCFs tend to be larger than their non-connected direct sector competitors. On average, each PCF employs 225 workers, compared to an average of 90 employees in non-PCFs (in the connected 29 sectors - see Table 3). As a group, the PCFs employ over 123,000 employees, which is about 16% of the labor force in the formal sector.

One can also observe in Table 3 that on average, PCFs have lower productivity (as measured by the output per worker) than non-PCFs in 26 of the 29 sectors in which they operate (and especially so in the banking, gas distribution, pharmaceutical). The fact that larger firms have lower productivity stands in sharp contrast to the experience of fast growing economies, such as Turkey, where larger firms tend to have higher firm productivity (Atiyas and Bakis, 2015). But although workers in PCFs are less productive than their peers in smaller and younger firms, Table 3 also suggests that they receive higher wages.

These stylized facts allow us to refine the puzzle that we identified in section 1. Why is it that PCFs are the main creators of jobs, but also display lower output per workers, while also paying higher wages than NPCFs?

One possible explanation of these puzzling facts is that PCFs are pushed to hire more labor than their non-connected competitors among the supporters of their patron politician as a political pay-back for the privileges he provides, as in the French case discussed by Bertrand et al. (2007). In the next section, we will test the link between political connections and clientelism in more

[18] Political scientists have stressed how the political economy of Lebanon has militated for a weak state, as a defensive mechanism by the various religious groups to retain some autonomy (Salibi, 1990). In contrast, Egypt and Tunisia were dominated until 2011 by autocrats who remained in power for over 30 years, using a system of carrots and sticks. As a result, the political motive for developing crony relations in Lebanon was more focused on rent distribution that on political exclusion, while the exclusion motive seem to have predominated in Tunisia and Egypt.

formal ways, before turning our attention in the following section to the industry-wide repercussions of unfair competition.

## 3. Jobs for votes?

Our hypothesis is that PCFs create more jobs than non-PCFs as a way of returning politicians favors. In this section, we first describe our identification strategy, and then present our tests and results.

### 3.1 Hypotheses and identification strategy

We have observed that on average, PCFs grow more and produce more jobs than the NPCFs within their sector of activity, but that they also end up with lower productivity. There are only two possible stories we can think of that are coherent with these observations. The first (call it H1) is that PCFs are pushed to over-hire by politicians as a repayment for the favor they bestow on them. But it is also possible that the explanation is elsewhere: that the PCFs are simply better firms that grow because of the superior skills of their managers/owners, and they get connected once they grow – successful businessmen becoming politicians, or close to them because of their national importance, but these firms do not receive special privileges (call this H2).

We have no way to check H1 directly – this would have to involve some structured fieldwork directed at the employees of these companies and their non-connected competitors. Our identification strategy will instead take advantage of the data we have to construct an indirect proof that argues that: (i) H1 is a reasonable statement in the context of the political economy of Lebanon; (ii) the data supports its implications of H1 regarding the PCFs and the NPCFs corporate strategies; and (iii) at the same time, the data contradicts some of H2's implication on corporate behavior.

We start by noting that H1 is coherent with the popular narrative of the type of political clientelism that characterizes the Lebanese political economy. First, we know from journalistic investigations (Ibrahim and Saoud, 2015), and the anthropological work of Leenders (2012), that there are politically favored firms that received particular advantages, such as in the import of drugs for public hospitals, the import of fuel, the allocation of construction contracts through government procurement, and the non-application of environmental rules for stone quarries and cement production by cronies allied with powerful political families. There are many recent

journalistic reports on possible cases of cronyism, such as the controversial attribution of coastal land in Beirut to two political families.

Second, it is well known in Lebanon, and somewhat documented, that the provision of jobs is a major part of the clientelistic system. LCPS (2013) found that those who have resorted to *political* connections to find a job are not as well off as those that use personal and family connections, but they have larger families and their fathers are more politically active – suggesting that those who benefit from political connections to get jobs tend to be capitalizing on their family's electoral weight.

Coming back to our data, H1 and H2 have different implications for corporate behavior, and thus, we can examine more carefully our data to check which of the hypotheses it supports. Under H2, all firms – PCFs and NPCFs - maximize profits, and hire labor as long as their marginal cost of labor is equal to their marginal benefit of expanding. Under H1, however, we expect that the privileges PCFs receive allow them to reduce their operating costs, giving them an advantage over their competitors. As a result, they will end up at their optimum with larger market shares than their non-connected competitors, and with larger profits. At the same time, because politicians in our model bestow privileges on conditions that they hire some of their clients, we would expect PCFs decisions to depart from the their first best optimum, and that they would spend part of their profit on hiring more workers than implied by pure profit maximization - how much would depend on the relative bargaining powers of PCFs and their political patrons. Thus, under H1, we would expect to find that PCFs hire more workers than otherwise similar firms in their sectors that are not connected, and to end up with lower levels of labor productivity.

By the same token, we would expect that the presence of more PCFs in a sector could increase competition among the PCFs, reducing their profits, and thus restricting their ability to serve political interests. Thus, under H1, we would expect that the PCF bias would be smaller in sectors with more PCFs.

A first series of tests suggested by the discussion above is to examine the effects of political connectedness on firms – how much jobs they create, the level of their sales, the wages they pay, and their productivity (output per employee) - more formally than by simply looking at group averages (as we had done above). We will do this by conducting OLS regression analysis, controlling for firm size and age as well as characteristics of the sector in which the firm operates (including the number of politically connected firms), measuring all effects separately for

connected and non-connected firms. Under H2, PCFs should have higher labor productivity than NPCFs. Under H1 on the other hand, productivity should be lower, as argued above.

A second way to discriminate between H1 and H2 is by looking at the type of labor/firm relations. If (some of) the workers employed by PCFs (but not of NPCFs) are well connected politically, they should be able to exert pressures on firms to get larger wages. In the H2 story, however, there would be no reason to expect good businessmen to offer higher wages than in less successful firms, especially if his workers are less productive. Thus, we expect PCFs to offer higher wages than their non-connected competitors, but not under H2.

A third way to discriminate between the two competing hypotheses is by looking at the effect of competition among PCFs. Under H1, more competition reduces their ability to create extra jobs.[19] More competition should thus lead PCFs to expand production less and pay lower wages, and paradoxically, to end up with smaller productivity differential with non-PCFs (compared to sectors with less competition among the PCFs). Under H2 however, competition among PCFs and non-PCFs should have the same effect.

When comparing connected and unconnected firms, one should keep in mind that the PCFs are likely to have a broader access to the capital market than NPCFs. This introduces a bias in their hiring decisions. However, being more capital intensive should bias their labor productivity up. This bias thus helps support H1, if we found that PCFs to be less productive, as this would be taking place *in spite* of their (presumed) capital market advantage.

The tests suggested above could be sufficient to convincingly choose H1 over H2, if the results of the statistical tests all go towards supporting H1. As an extra check, we will also examine the Parliamentary elections of 2009 as an informative event study. Under H2, elections should affect all firms in the same manner - negatively if they generate uncertainty, or positively if they usher a more attractive future. Under H1, elections should generate more pressures for job creation among PCFs as a way to secure votes.

The parliamentary elections of 2009 were extremely competitive.[20] They took place under an electoral law that was free from the usual Syrian gerrymandering of the post-civil war period.[21]

[19] Perhaps as a result, their privileges will diminish also over time, since they do not yield politicians a good return.
[20] These elections pitted the two broad political coalitions of March 14 and March 8 movements against each other for the second time after the 2005 elections.
[21] The law was adopted following violent armed clashes that took place in Beirut in early May 2008, and which deepened political divisions. In the following peace talks, which were held in the Doha peace negotiations, the

The new electoral law favored competition, and, it used small electoral units and a majoritarian first pass the post system.[22] Smaller districts privilege local patrons who historically played and still play a decisive role in Lebanon's political, social and economic dispensations. Majoritarian voting and the first-past-the-post principle exacerbate competition and provide incentives for vote buying, because the risk of losing the whole investment of the electoral campaign is high. The 2009 election was held at midyear, and the agreement on the electoral law was reached one year earlier, giving time to electoral machines to be put in place, including those based on trading jobs for votes, and trading privileges for job-openings in client firms. One would thus expect a peak in job creations by PCFs, but not by non-PCFs, just before elections.

At the face of it, an election effect seems apparent at the macro-level. Figure 2 shows that in 2009, the overall hiring by PCFs jumped from an average of 8,000 new jobs per year over the 5-year period, to 14,500, at a time when the non-connected firms in the same 29 sectors reduced their hiring (from an average of 6,000 a year, to about 4,000).[23] But a more precise test will be to check if all PCFs, but not NPCFs, have increase hiring in 2009 more than in non-election years.

### 3.2 Model specification

Our specifications will focus on the impacts of political-connectedness on the corporate strategies of firms. We estimate:

$$Y_{it} = \beta_0 + \beta_1 PCF_i + \beta_2 2009 + \beta_3 2009 * PCF_i + \beta_4 Size_{it} + \beta_5 Age_{it} + \beta_6 PCF_{it} * Size_{jt} + \beta_7 PCF_{it} * Age_{jt} + \beta_8 PCFs_{jt} + \beta_9 PCF_i * PCFs_{jt} + \beta_{10} Size\_S_{jt} + \beta_{11} Age\_S_{jt} + \beta_{12} HHI_{jt} + \beta_{13} Entry_{jt} + \beta_{14} Employment_{jt} + \beta_{15} Capital_{jt} + \gamma_j + \epsilon_{it} \quad (1)$$

where the dependent variable, $Y_{it}$, will represent in different estimations net job creation, average wage per employee, output, and productivity per employee at the firm-year level, for firm i, at time t. PCF is a dummy variable equal to 1 if the firm is politically-connected, and zero otherwise. 2009 is a dummy variable equal to 1 in year 2009, and zero otherwise. $Size_{it}$ and $Age_{it}$ refer to firm size (in terms of number of employees) and age. $PCFs_{jt}$ represents the number of politically-

Lebanese politicians designed a new electoral law, which was used to hold the 7 June 2009 elections (Doha Agreement 2008).

[22] Based on 26 districts, like the electoral law of 1960, but unlike all elections held after 1989.

[23] Interestingly, public sector recruitment also rose from 3300 in 2008 to 5941 in 2009 but then dropped to762 in 2010 (see Table 2.1 in Abou Jaoude 2015).

connected firms at the sector-year level. $\gamma_j$ denotes 2-digit sector fixed effects (we also include a year dummy, not shown in results). To capture possible omitted variable bias we also include in one regressions estimations with sector characteristics – Size_S, Age_S, and Capital refer to the average firm employment size, age, and capital (in LBP 10 million), respectively, at the 4 digits sector-year level. Employment refers to the number of employees (in '000) at the sector-year level. Entry rate is the firm entry rate (number of entrants/total number of firms) on a scale from 0-100 at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level.[24]

We restrict the analysis to all sectors with a sufficient number of firms with at least 50 employees in at least one year between 2005 and 2010. Large firms adjust by adjusting size, and by hiring and firing. Very small firms are more likely to adjust by exiting or entering a sector.. Since we are focusing on the former type of adjustment, we should ensure that the sectors we look at include a sufficient number of large firms. In the base estimations, we only keep firms in sectors when at least 10% of the firms have more than 50 employees.

### 3.3 Results

Table 4a to 4d report the results of estimating model 1. As we will see below, the results all go in the direction of supporting H1.

First, the results confirm that PCFs create more jobs, produce larger output, and pay higher wages to their employees than comparable non-PCFs - i.e in their same sector of activity, and of similar age and size. But they exhibit lower labor productivity (output per worker). More precisely, we find in Column 3 of Table 4a that PCFs create 20.32 percent [100*(EXP(0.185)-1)] more jobs each year on average than non-connected firms that operate within their same sector, controlling for PCFs size and age, and the number of PCFs in the sector. Columns 3 in Tables 4b-d show that PCFs pay 16.29 percent [100*(EXP(0.151)-1)] higher wage per employee, enjoy 26.87 percent [100*(EXP(0.211)-1)] more output per firm, although output per employee is 20.38 percent [100*(EXP(-0.228)-1)] lower. All these are large magnitudes. Moreover, the differential effects of

[24] HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100.

age and size are also informative: older and large firms are associated with more net job creation, and more so if they are PCFs. However, older and larger PCFs are associated with even lower labor productivity, suggesting that overstaffing increases over time.

Second, the increased presence of PCFs in a sector affects the behavior of PCFs and non-PCFs differently. More competition by other PCFs (i.e, larger PCF*PCFs coefficient) reduces PCF's net job creation, wage, and output premiums as well as increases their labor productivity -- their hiring falls, ceteris paribus, by 5.44 percent [100*(EXP(0.053)-1)] more for each additional PCF in the sector of activity (Column 3, Table 4a). The increased presence of PCFs also affects hiring by non-PCFs. The hiring by non-PCFs falls by 4.1 percent for each PCF in their sector of activity (Column 3, Table 4a), but their productivity is not affected. These finding suggests that more competitive pressures by PCFs reduce their profits and ability to over-expand – their privileges become less valuable, and as a result, their pay-back to politicians becomes less. Non-PCFs also suffer from more competition - in other words, competition among PCFs does not move the sector to full competition, and the advantages of PCFs over NPCFs remain.

Third, all these effects become larger in 2009, the year of Lebanese parliamentary elections (see the coefficients on PCF*2009). This applies to hiring by PCFs, which rises by an extra 25.4 100*[(0.047/0.185)] percent, but output does not rise by an extra amount in 2009, and as a result, we observe a large additional deterioration in productivity of about 23.3 [100*(0.052/0/223)] percent. These election-year specific effects strongly back H1, and contradict H2.

It can be also checked directly that sector concentration matters. It has long been asserted in Lebanon that in spite of what appears as unbridled competition, markets are in reality heavily concentrated, and that a relatively small elite controls most of the wealth and monopolizes large parts of the economy (Credit Suisse, 2015), and that this may explain low levels of growth in these sectors. Indeed, Column 4 in Table 4a shows that higher output concentration level within a sector is associated with lower net job creation at the firm level in that sector.

The explanatory power of the variables in our estimations is relatively high, as evidenced by the R-squared measures. Each of the coefficients of interest is statistically significant at conventional levels.

Comparing firms in connected sectors has thus allowed us to get a set of results that constitute a solid basis for claiming causality between connectedness, and job creation, as per H1. The results also enrich our priors. Political connections confer advantages to PCFs, and these rents

are partially dissipated by more hiring and higher wages. Increased competition by PCFs reduces these rents and the extent of payback in clientelistic favors. On the other hand, non-PCFs shrink as PCFs expand. But so far, we have not be in a measure to measured the net effect of political connections on a sector – on a net basis, do they result in more jobs (because of their effect on PCFs), or less jobs (because of the reaction by non-PCFs)? To be in a position to measure the net effect of connections on jobs, we need now to move towards to comparing sectors in terms of how many PCFs they contain.

## 4. Do connected sectors grow and hire less?

We are now ready to address the second hypothesis that asserts that the presence of connected firms in a sector cause sector performance to lower in Lebanon. The hypothesis is that while PCFs have contribute directly to employment growth, their dominance in their sector of operation had negative impact on job creation by their competitors, and this effect was so large as to dominate at the sector-level.

### 4.1 Identification strategy

We cannot observe a counterfactual of firm dynamics in absence of PCFs in particular sectors, since our time series is not long enough to observe the entre of PCFs in previously unconnected sectors. So, we will have to resort to comparing sector dynamics in sectors that are *similar*, as a function of the variation in the intensity of their political connections. Assuming that we find that political connections are firmly associated with reduced sector growth and job creation, the problem of identifying the underlying cause of this under-performance remains a complicated task. There are three hypotheses that can explain this result in a coherent way.

First, our preferred interpretation is along the Aghion et al (2001) competition argument (call this H3). In industries that exhibit monopolistic competition, competing firms have incentives to pursue productivity growth only when they have comparable cost structures. Each firm is pushed to invest in the adoption of new technologies to reduce its costs and escape competition, at least temporarily, and thus generate productivity gains that boost aggregate economic growth. Aghion et al. (2001) showed that while perfect competition can reduce the incentives for innovation by reducing the discounted present value of rents from innovations (*rent-dissipation effect*), too little competition has the same effect. When leading firms in their sector have large (and exogenous)

cost advantages that cannot be overcome by trailing firms, the market leaders have little incentive to invest in innovation, since they do not face competitive pressures to reduce their costs. At the same time, the laggard firms are too far away from the frontier to bridge the cost gap, and instead, they use vintage production technologies, focusing on local market niches to survive.[25] Thus, too little competition can also hurt growth.

Second, an all-together different hypothesis, which is coherent with the facts found above, is that there is an endogenous selection of PCFs into sectors with specific characteristics, and in particular, into rent-filled sectors, which may also have low growth opportunities. In this case, PCFs would not cause low growth in the sector s they enter – they simply prefer to enter into low growth sectors.[26] Let us call this hypothesis H4.

A third possibility is that because PCFs are likely to be capital intensive, when they expand, sector output expands, but jobs can disappear at the sector-level because machines substitute for jobs. Let us call this hypothesis H5.

Since we cannot see other coherent explanations, we thus need to test whether sector dynamics are consistent with H3 but contradict H4 and H5. In considering H4, we will have to be careful at controlling for sector characteristics sufficiently, to compare sectors with and without PCFs that would otherwise tend to show similar characteristics. To test H5, we can compare sector output and employment with and without the presence of PCFs: if output is higher but employment lower, this would be evidence to support H5. If however connected sectors are smaller both in terms of jobs and output, then this would lead to a rejection of H5. The election event provides an additional test. If sectors with PCFs deteriorate more during election years, the H4 would be disproved, since the sectors with CFs cannot become less growth friendly only around elections.

### 4.2 Model specification

Comparing sectors is a much less precise endeavor than comparing firms, since the number of sectors with political connections is small. We can compare all 289 sectors according to whether they are connected or not (both at the 4-digit sector-level). To control for exogenous sector characteristics, we included as many controls as we can find. Precisely, to focus on the question

[25] Also, Aghion, et al. (2009) reported empirical tests of predictions of the model with respect to the effects of product market competition and entry deregulation on growth.

[26] A related argument is that that rent-filled sectors may be naturally less competitive, for example because of high entry costs, and thus have lower entry and exit rates.

of whether PCFs are associated with less employment growth in their sector of operation, we estimate:

$$Y_{jt} = \beta_0 + \beta_1 PCFs_{jt} + \beta_2 2009 + \beta_3 2009 * PCFs_{jt} + \beta_4 Size\_P_{jt} + \beta_5 Age\_P_{jt} + \beta_6 Size\_N_{jt} + \beta_7 Age\_N_{jt} + \beta_8 HHI_{jt} + \beta_9 Entry_{jt} + \beta_{10} Employment_{jt} + \epsilon_{it} \quad (2)$$

where $Y_{it}$, in different estimations represent net job creation, average wage per employee, output, and output per employee at the sector-year level. $PCFs_{jt}$ is the number of politically-connected firms at the sector-year level. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size_P and Age_P represent average size (employment) and age of PCFs in the sector-year, and size_N and Age_N represent average (employment) size and age of non-PCFs in the sector-year. Entry rate represents the firm entry rate (number of entrants/total number of firms) on a scale from 0-100 at the sector-year level. $\gamma_j$ denote 2-digit sector fixed effects. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. Employment refers to the number of employees (in '000) in the sector-year. we restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010.

**4.3 Results**

The results are in Tables 5a to 5d. The main findings are that connected sectors grow less, create less jobs, have lower labor productive firms on average, and pay higher wages than non connected sectors. Moreover, all these characteristics get worsened if the number of connected firms in the sector rises. We also find that all sectors grew less during the 2009 election year, but that connected sectors grew even less during 2009 than non-connected sectors.

The explanatory power of the variables in our estimations are here too relatively high, as evidenced by the R-squared measures, and all the coefficients of interest are statistically significant at conventional levels.

All these results support H3. Not only connected sector grow less than non-connected sectors, but growth gets smaller the more connected firms are in the sector. For every additional

political connection in a sector, 6.8 percent less jobs are created each year on average – and this impact increases to 9.4 in year 2009, the year of elections (column 3, Table 5a).

Sector growth gets smaller also the older and larger PCFs are in the sector – which are characteristics that should reduce competition. But the opposite hold with respect to the average size and age of non-connected firms, characteristics that are likely to increase competition in the sector.

The evidence also contradicts elements the other possible hypotheses. In particular, H3 is rejected, because PCFs deteriorate even more during election years. H5 is also disproved since we find that connected sectors shrink both in terms of output and jobs.

The process of eliminating of all other reasonable hypotheses thus leads one to accept that H3 describes reality best. Even though PCFs over-hire, the negative incentives to innovate and invest created by unfair competition in the sector in which they are leads to less job creation compared to non-connected sectors.

The magnitude of the result can be compared to the case of Egypt. Diwan et al (2016) estimate that the entry of a PCF into a previously unconnected sector reduces employment growth in this sector by 15-25%. If there was more than 3 PCFs per sector (as implied by Table 3), it would appear that the negative sector effect of cronyism on jobs is larger in Lebanon than on Egypt. However, as stated above, a larger share of sectors of activity are connected in Egypt, and thus, the macroeconomic cost of cronyism is likely to be larger than in Lebanon.

## 6. Conclusions

Using a unique dataset, we reach two important conclusions about the effect of cronyism on employment in Lebanon. First, PCFs are larger and create more jobs, but are also less productive and pay higher wages than non-PCFs in their sectors. Second, PCFs reduce net job creation at the sector level by affecting growth of non-PCFs: for every additional PCF in a sector, 6.8 percent less jobs are created each year on average.

These results tend to confirm the prevalent popular perceptions about the negative economic impact of political "corruption" in Lebanon, contributing to formalizing the notion that PCFs are used for clientelistic purposes, exchanging privileges for jobs that benefit their patrons' supporters. We have found strong evidence that while Lebanon is characterized by a "deals rather than rules" environment that advantages job creation at the firm level, these arrangements at the same time stifle growth and job creation at the sector-wide level.

Future research could examine the mechanisms used to benefit PCFs. While we do not have much to say about the topic, because of lack of data, the evidence we presented suggests that such mechanisms are to be found in the traditional tools at the disposal of ministries: procurement contracts, allocation of licenses to schools, universities and hospitals, import licenses for oil and gas products, licenses to operate for quarries and beach resorts, as well as market protection for telecommunication companies.

It is hard to draw simple policy implications from these results. At one level, it would seem that competition policies, and a better enforcement of rules in ways that levels the playing field would lead to more growth and job creation over time, compared to second best policies such as those that support SME growth with subsidized credit for example. At a deeper level however, a more competitive economic structure would not support the current oligarchic political equilibrium, and would possibly lead to political chaos, unless a different political system was in place. Nevertheless, a better understanding of the relations between power and money can only put informed citizen groups in a better position to influence changes that can improve the overall economic and political environment.

## References


Acemoglu, D., Hassan, T., and Tahoun, A., (2014). "The Power of the Street: Evidence from Egypt's Arab Spring." *NBER* Working Paper No. 20665.

Acemoglu, D., and Robinson, J., (2016). "Paths to Inclusive Political Institutions?" M.I.T., Mimeograph.

Aga, G., Francis, D., Rodriguez Meza, J., (2015). "SMEs, age, and jobs: A review of the literature, metrics, and evidence." World Bank Policy Research Working Paper 7493.

Aghion, P., Harris, C., Howitt, P., and Vickers, J., (2001). "Competition, Imitation and Growth with Step-by-Step Innovation." *The Review of Economic Studies*, 68(3): 467-492.

Aghion, P., Blundell, R., Griffith, R., Howitt, P., and Prantl, S. (2009). "The effects of entry on incumbent innovation and productivity." *The Review of Economics and Statistics*, 91(1): 20-32.

Aigner, D., (1973). "Regression with a binary independent variable subject to errors of observation." *Journal of Econometrics*, 1(1): 49-59.

Atiyas, I. and Bakis, O., (2015). "Structural Change and Industrial Policy in Turkey." *Emerging Markets Finance and Trade*, 51(6): 1209-1229.

Ayyagari, M., Demirgüç-Kunt, A., and Maksimovic, V., (2014). "Who creates jobs in developing countries?" *Small Business Economics*, 43(1): 75-99.

Bertrand, M., Kramarz, F., Schoar, A., and Thesmar, D. (2007). "Politicians, firms and the political business cycle: evidence from France." Unpublished working paper, University of Chicago.

Bigsten, A. and Gebreeyesus, M., (2007). "The Small, the Young, and the Productive: Determinants of

Manufacturing Firm Growth in Ethiopia." *Economic Development and Cultural Change* 55: 813-840.

Boubakri, N., Cosset, J.C., and Saffar, W. (2008). "Political Connections of Newly Privatized Firms." *Journal of Corporate Finance*, 14(5): 654-673.

Cammett, M., (2007). "Globalization and Business Politics in Arab North Africa: A Comparative Perspective." *Cambridge University Press*.

Chan, Steve. *East Asian dynamism: Growth, order, and security in the Pacific Region*. Westview Press, 1993.

Chekir, H., and Diwan, I., (2015). "Crony Capitalism in Egypt." *Journal of Globalization and Development*, 5(2): 177-211.

Chekir, H., and Menard, C., (2012). "Barriers to Private Firm Dynamism in Tunisia: a Qualitative Approach." World Bank mimeo, 2012.

Claessens, S., Feijen, E., and Laeven, L., (2008). "Political connections and preferential access to finance: The role of campaign contributions." Journal of Financial Economics, 88(3): 554-580.

Cox, G., North, D., and Weingast, B., (2015). "The Violence Trap: A Political-Economic Approach to the Problems of Development." Working Paper, Hoover Institution, Stanford University, February 2015.

Credit Suisse, 2015. *Global Wealth Databook*.

Cull, R., and Lixin C., (2005). "Institutions, ownership, and finance: the determinants of profit reinvestment among Chinese firms." *Journal of Financial Economics*, 77(1): 117-146.

Davis, S., and Haltiwanger, J., (1992). "Gross Job Creation, Gross Job Destruction, and Employment Reallocation." *The Quarterly Journal of Economics* 107(3): 819-63.

Diwan, I., Keefer, P., and Schiffbauer, M., (2015). "Pyramid Capitalism: Political Connections, Regulation, and Firm Productivity in Egypt." World Bank Policy Research Working Paper 7354.

Diwan, I. and Chaitani, Y., (2014). "Lebanon in the Syrian Quagmire: Fault-Lines, Resilience and Possible Futures," Harvard Kennedy School, Mimeograph.

Evans, D., (1987). "The Relationship between Firm Growth, Size, and Age: Estimates for 100 Manufacturing Industries." *Journal of Industrial Economics* 35: 567-581.

Faccio, M., Masulis, R., and McConnell, J., (2006). "Political connections and corporate bailouts." *Journal of Finance*, 61(6): 2597-2635.

Faccio, M., (2007). "Politically-Connected Firms." *American Economic Review*, 96(1), 369-386.

Ferguson, T. and Voth, J., (2008). "Betting on Hitler – The Value of Political Connections in Nazi Germany." *Quarterly Journal of Economics*, 123(1): 101-137.

Fisman, R., (2001). "Estimating the Value of Political Connections." *American Economic Review* 91(4), 1095-1102.

Haber, S., and Maurer, N., (2007). "Related Lending and Economic Performance: Evidence from Mexico." *Journal of Economic History*, 67(3): 551-581.

Hallward-Driemeier, M., and Pritchett, L., (2016). "How business is done in the developing world: Deals versus Rules." *Journal of Economic Perspectives 29(3), 121-140*

Heydemann, S., (2004). "Networks of Privilege in the Middle East: The Politics of Economic Reform Revisited." New York: Palgrave Macmillan.

Haltiwanger, J. and Jarmin, R., and Miranda, J., (2013). "Who Creates Jobs? Small versus Large versus Young," *The Review of Economics and Statistics*, 95(2): 347-361.

Haltiwanger, J., Scarpetta, S., and Schweiger, H., (2014). "Cross Country Differences in Job Reallocation: The Role of Industry, Firm Size and Regulations." *Labour Economics* 26(1): 11-25.

Hopenhayn, H., (1992). "Entry, Exit, and Firm Dynamics in Long Run Equilibrium," *Econometrica* 60: 1127-1150.

Hsieh, C., and Klenow, P., (2009). "Misallocation and Manufacturing TFP in China and India," *The Quarterly Journal of Economics* 124(4): 1403-1448.

International Labor Organization .Towards Decent Work in Lebanon: Issues and Challenges in Light of the Syrian Refugee Crisis. 2015.

Ibrahim, R., and Saoud, G., (2015). "The Ruler by Money's Order – *Al-Hakem bi Amr Al-Mal*". *Al-Akhbar*.

Abou Jaoude, H., (2015). "Labour market and employment policy in Lebanon." ETF Working Paper.

Johnson, S. and Mitton, T., (2003). "Cronyism and capital controls: evidence from Malaysia." *Journal of Financial Economics* 67: 351-382.

Khwaja, A. and Mian, A., (2005). "Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market." *The Quarterly Journal of Economics* 120, 1371-1411.

Klapper, L. and Richmond, C., (2011). "Patterns of Business Creation, Survival and Growth: Evidence from Africa," *Labour Economics*, 18(S1): S32-S44

Khan, Mushtaq H. "Rents, efficiency and growth." *Rents, rent-seeking and economic development: Theory and evidence in Asia* (2000): 21-69.

Khan, M., (2001). "The New Political Economy of Corruption." In: Fine, B. and Lapavitsas, C. and Pincus, J., (eds.), *Development policy in the 21st century: beyond the post-Washington consensus*. London: Routledge, pp. 112-135.

Lebanese Center for Policy Studies, (2013). Finding a Job in Lebanon: The Hidden Cost of Using Personal Connections.

Leenders, R., (2012). *Spoils of Truce: Corruption and State-building in Postwar Lebanon*. Ithaca: Cornell University Press.

Leuz, C. and Oberholzer-Gee, F. (2006). "Political relationships, global financing, and corporate transparency: evidence from Indonesia." *Journal of Financial Economics* 81: 411-439.

Neumark, D., Wall, B., and Zhang, J., (2011). "Do Small Businesses Create More Jobs? New Evidence for the United States from the National Establishment Time Series." *The Review of Economics and Statistics* 93(1): 16-29.

Pritchett, L., and Werker, E., (2015). "Developing the Guts of a GUT (Grand Unified Theory): Elite Commitment and Inclusive Growth." *Effective States and Inclusive Development Research Centre (ESID) Working Paper No. 16/12*.

Ramalho, R., (2007). "The Persistence of Corruption: Evidence from the 1992 Presidential Impeachment in Brazil." World Bank Policy Research Working Paper 45250.

Rijkers, B., Arouri, H., Freund, and Nucifora, A., (2014). "Which Firms Create the Most Jobs in Developing Countries? Evidence from Tunisia." *Labour Economics*, 31: 84-102.

Rijkers, B., Baghdadi, L., and Raballand, G., (forthcoming). “Political Connections and Tariff Evasion: Evidence from Tunisia.” *World Bank Economic Review*.

Rijkers, B., Freund, C., and Nucifora, A., (forthcoming). “All in the Family: State Capture in Tunisia.” *Journal of Development Economics*.

Rock, M., and Bonnett, H., (2004). “The comparative politics of corruption: Accounting for the east Asian paradox in empirical studies of corruption, growth and investment.” World Development 32: 999-1107

Salibi, K., (1990). “A House of Many Mansions: The History of Lebanon Reconsidered.” University of California Press.

Sleuwaegen, L. and Goedhuys. M., (2002). “Growth of Firms in Developing Countries: Evidence from Côte D’Ivoire.” *Journal of Development Economics* 68: 117-135.

Shleifer, A., and Vishny, R., (1994). “Politicians and Firms.” *The Quarterly Journal of Economics* 109(4): 995-1025.

Traboulsi, Fawwaz. "A Modern History of Lebanon." *Ann Arbor, MI: Pluto Press* (2007).

Van Biesebroeck, J., (2005). “Firm Size Matters: Growth and Productivity Growth in African Manufacturing.” *Economic Development and Cultural Change* 53(3): 545-83.

World Bank (2014). *Jobs or Privileges: Unleashing the employment potential of the Middle East and North Africa*. Washington, DC: World Bank.

World Bank (2016). *What’s Holding Back the Private Sector in MENA? Lessons from the Enterprise Survey*. Washington, DC: World Bank.

**Table 1: Firm size and employment distributions over time**

| Number of employees | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Share of firms | | | | | | Share of jobs | | | | | |
| 1* | 76.1 | 76.1 | 76.3 | 76.4 | 76.5 | 76.7 | 15.2 | 14.6 | 13.9 | 13.4 | 13.2 | 13.0 |
| 2 | 5.1 | 4.8 | 4.6 | 4.5 | 4.4 | 4.5 | 2.0 | 1.9 | 1.7 | 1.6 | 1.5 | 1.5 |
| 3 | 3.8 | 3.7 | 3.5 | 3.5 | 3.4 | 3.4 | 2.3 | 2.1 | 1.9 | 1.8 | 1.8 | 1.7 |
| 4 | 2.8 | 2.8 | 2.7 | 2.7 | 2.6 | 2.6 | 2.2 | 2.2 | 2.0 | 1.9 | 1.8 | 1.8 |
| 5 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.9 | 1.8 | 1.7 | 1.7 | 1.6 | 1.6 |
| 6-9 | 4.0 | 4.0 | 4.1 | 4.1 | 4.1 | 4.1 | 5.8 | 5.6 | 5.4 | 5.2 | 5.1 | 5.0 |
| 10-19 | 3.0 | 3.1 | 3.2 | 3.3 | 3.3 | 3.2 | 8.1 | 8.0 | 7.8 | 7.7 | 7.5 | 7.3 |
| 20-49 | 1.9 | 2.0 | 2.1 | 2.1 | 2.2 | 2.1 | 11.5 | 11.5 | 11.4 | 11.4 | 11.2 | 11.0 |
| 50-99 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 9.8 | 9.7 | 9.5 | 9.4 | 9.5 | 9.2 |
| 100-199 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 9.7 | 9.5 | 10. | 9.7 | 9.5 | 9.4 |
| 200-999 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 21.3 | 22.0 | 22.4 | 22.1 | 22.5 | 22.6 |
| >=1000 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 10.1 | 11.2 | 12.2 | 14.2 | 14.7 | 15.8 |

Note: * represent self-employed firms. The average number of firms and jobs per year between 2005 and 2010 is 122237 and 677812, respectively.

**Table 2: Net job creation by firm size (2006-2010)**

| Number of employees | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Net number of firms that Create jobs | | | | | Net jobs created | | | | |
| 1* | -2917 | -3524 | -2513 | -3010 | -6830 | -459 | -870 | 1610 | 1455 | -3074 |
| 2 | 592 | 457 | 434 | 473 | 272 | 1612 | 798 | 886 | 1058 | 478 |
| 3 | 590 | 552 | 533 | 533 | 293 | 1021 | 1235 | 1016 | 953 | 594 |
| 4 | 461 | 518 | 495 | 467 | 244 | 1042 | 926 | 802 | 932 | 449 |
| 5 | 391 | 442 | 434 | 451 | 202 | 928 | 899 | 753 | 852 | 403 |
| 6-9 | 1254 | 1248 | 1283 | 1187 | 623 | 2804 | 2784 | 2708 | 2594 | 1478 |
| 10-19 | 1342 | 1386 | 1498 | 1451 | 829 | 4165 | 4098 | 4431 | 4531 | 2259 |
| 20-49 | 1211 | 1273 | 1385 | 1384 | 952 | 6077 | 6803 | 6872 | 7014 | 4212 |
| 50-99 | 505 | 561 | 616 | 621 | 484 | 4958 | 5764 | 6244 | 5280 | 3779 |
| 100-199 | 277 | 317 | 342 | 327 | 312 | 5299 | 5594 | 6466 | 4852 | 4643 |
| 200-999 | 233 | 264 | 282 | 313 | 290 | 10543 | 12396 | 13935 | 13535 | 11902 |
| >=1000 | 25 | 30 | 35 | 43 | 49 | 5838 | 8956 | 7639 | 7302 | 10609 |
| **Total** | **3964** | **3524** | **4824** | **4240** | **-2280** | **43828** | **49383** | **53362** | **50358** | **37732** |

Note: *represent self-employed firms

**Table 3: Characteristics of politically-connected firms in Lebanon**

| Sector | Politically connected firms, PCFs | | | | | | Non politically connected firms, NPCFs | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of firms | # workers per firm | Output per worker | Wage per worker | Age | Initial Paid in Capital | Number of firms | # workers per firm | Output per worker | Wage per worker | Age | Initial Paid in Capital |
| Real estate development | 103 | 247 | 155 | 15 | 10 | 352 | 51 | 48 | 181 | 12 | 13 | 320 |
| Private-contractors of public works | 54 | 79 | 53 | 15 | 11 | 81 | 18 | 55 | 73 | 9 | 15 | 76 |
| Hotels | 34 | 80 | 100 | 14 | 8 | 298 | 22 | 52 | 82 | 9 | 9 | 210 |
| Commercial banks | 31 | 793 | 312 | 40 | 28 | 721 | 28 | 421 | 380 | 24 | 26 | 590 |
| Private schools | 28 | 619 | 39 | 14 | 18 | 50 | 118 | 111 | 42 | 10 | 23 | 45 |
| Security companies | 23 | 711 | 16 | 13 | 6 | 96 | 5 | 86 | 19 | 9 | 9 | 73 |
| Building cleaning services | 22 | 145 | 22 | 10 | 8 | 11 | 12 | 62 | 33 | 9 | 11 | 14 |
| Waterfront resorts | 21 | 229 | 17 | 10 | 8 | 2300 | 17 | 48 | 27 | 8 | 10 | 1610 |
| Business and management consulting | 17 | 72 | 23 | 12 | 8 | 25 | 23 | 51 | 28 | 9 | 11 | 17 |
| Shipping lines | 17 | 53 | 93 | 12 | 11 | 30 | 4 | 65 | 69 | 9 | 8 | 26 |
| Financial intermediaries | 15 | 39 | 162 | 16 | 11 | 161 | 10 | 56 | 171 | 12 | 13 | 138 |
| Quarries | 14 | 74 | 57 | 10 | 10 | 24 | 42 | 46 | 65 | 8 | 15 | 31 |
| Telecommunications companies | 14 | 65 | 68 | 11 | 12 | 18 | 16 | 48 | 74 | 9 | 14 | 13 |
| Insurance companies | 13 | 130 | 43 | 28 | 11 | 42 | 19 | 80 | 51 | 15 | 16 | 34 |
| Garbage collection companies | 11 | 315 | 21 | 10 | 9 | 380 | 8 | 91 | 28 | 9 | 10 | 140 |
| Print houses | 9 | 47 | 141 | 15 | 10 | 100 | 39 | 82 | 73 | 8 | 10 | 73 |
| Domestic transportation companies | 9 | 144 | 18 | 11 | 10 | 95 | 43 | 45 | 28 | 8 | 16 | 32 |
| Hospitals | 8 | 321 | 28 | 36 | 19 | 250 | 100 | 123 | 39 | 23 | 25 | 161 |
| Mineral water production | 7 | 167 | 47 | 12 | 10 | 370 | 8 | 63 | 61 | 8 | 12 | 224 |
| Private universities | 7 | 619 | 56 | 32 | 8 | 750 | 21 | 212 | 82 | 20 | 9 | 410 |
| Sport centers | 6 | 93 | 59 | 13 | 5 | 150 | 3 | 41 | 79 | 8 | 6 | 112 |
| Gas distributors | 4 | 146 | 347 | 12 | 11 | 1200 | 3 | 52 | 378 | 9 | 13 | 910 |
| Soft-drinks production | 4 | 302 | 155 | 15 | 19 | 240 | 2 | 87 | 173 | 9 | 15 | 210 |
| Dairy products manufacturing | 4 | 157 | 200 | 9 | 13 | 97 | 8 | 61 | 229 | 6 | 16 | 68 |
| Electrical equipment manufacturing | 3 | 52 | 45 | 9 | 11 | 81 | 2 | 69 | 51 | 7 | 14 | 78 |
| Importers and producers of pharma | 2 | 180 | 322 | 15 | 12 | 250 | 6 | 59 | 361 | 9 | 9 | 280 |
| Newspaper and magazine production | 4 | 166 | 62 | 15 | 30 | 95 | 3 | 80 | 84 | 9 | 18 | 84 |
| Radio and TV production | 11 | 363 | 71 | 18 | 13 | 340 | 5 | 231 | 85 | 9 | 10 | 224 |
| Advertising companies | 2 | 103 | 92 | 19 | 10 | 120 | 3 | 73 | 101 | 10 | 12 | 87 |
| Totals | 497 | | | | | | 639 | | | | | |

Note: Output per worker, wage per worker, and capital are in LBP millions. Figures represent annual averages at the firm-level. This table includes only firms with at least 50 employees in any year between 2005 and 2010 in politically-connected sectors (PCSs). None of the remaining (2237) firms in PCSs had 50 employees in any year between 2005 and 2010.

**Table 4a: The effect of political connections on net job creation at the firm level**

| | NJC | | | |
|---|---|---|---|---|
| PCF | 0.191* | 0.186* | 0.185** | 0.180** |
| | (0.053) | (0.051) | (0.048) | (0.049) |
| 2009 | 0.049 | 0.046 | 0.051 | 0.058 |
| | (0.124) | (0.122) | (0.124) | (0.134) |
| PCF*2009 | 0.034* | 0.038* | 0.047** | 0.051** |
| | (0.067) | (0.058) | (0.028) | (0.027) |
| Size | | 0.024** | 0.020** | 0.026** |
| | | (0.023) | (0.011) | (0.031) |
| Age | | 0.012* | 0.009* | 0.012* |
| | | (0.067) | (0.063) | (0.057) |
| PCF*Size | | 0.018** | 0.023** | 0.025** |
| | | (0.049) | (0.041) | (0.036) |
| PCF*Age | | 0.011* | 0.015* | 0.016* |
| | | (0.073) | (0.069) | (0.063) |
| PCFs | | | -0.041** | -0.044** |
| | | | (0.022) | (0.013) |
| PCF*PCFs | | | -0.053** | -0.058** |
| | | | (0.044) | (0.052) |
| HHI | | | | -0.008* |
| | | | | (0.061) |
| Entry rate | | | | 0.024* |
| | | | | (0.091) |
| Employment | | | | 0.011 |
| | | | | (0.138) |
| Size_S | | | | 0.016** |
| | | | | (0.033) |
| Age_S | | | | 0.019* |
| | | | | (0.055) |
| Capital_S | | | | 0.021* |
| | | | | (0.067) |
| 2-digit Sector fixed effects | Yes | Yes | Yes | Yes |
| Number of observations | 12130 | 12130 | 12130 | 12130 |
| R-squared | 0.514 | 0.593 | 0.602 | 0.711 |

Note: The above estimations restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010. NJC refers to the (log of) number of net jobs created at the firm-year level. PCF is a dummy variable equal to 1 if the firm is politically-connected, and zero otherwise. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size and age refer to firm size (in terms of number of employees) and age, respectively, at the year level. PCFs represent the number of politically-connected firms at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100. Entry rate represents the firm entry rate (number of entrants / total number of firms) on a scale from 0-100 at the sector-year level. Entry refers to the first time the firm entered the market. Employment refers to the number of employees (in '000) at the sector-year level. Size_S, Age_S, and Capital_S refer to the average firm employment size, age, and initial capital (in LBP 10 million), respectively, at the sector-year level. P-values are in brackets. ***, **, and * refer to statistical significance at the 1, 5, and 10 percent level. Standard errors are clustered at the sector level.

**Table 4b: The effect of political connections on wages at the firm level**

| | Wage | | | |
|---|---|---|---|---|
| PCF | 0.163** | 0.155** | 0.151** | 0.141** |
| | (0.012) | (0.016) | (0.022) | (0.013) |
| 2009 | 0.064 | 0.082 | 0.071 | 0.068 |
| | (0.217) | (0.144) | (0.156) | (0.126) |
| PCF*2009 | 0.034 | 0.117 | 0.113 | 0.079 |
| | (0.115) | (0.124) | (0.126) | (0.141) |
| Size | | 0.015* | 0.019* | 0.016* |
| | | (0.062) | (0.059) | (0.055) |
| Age | | 0.010* | 0.009* | 0.010* |
| | | (0.053) | (0.048) | (0.050) |
| PCF*Size | | 0.028* | 0.037* | 0.032* |
| | | (0.081) | (0.061) | (0.054) |
| PCF*Age | | 0.020* | 0.028* | 0.021* |
| | | (0.063) | (0.064) | (0.051) |
| PCFs | | | 0.017 | 0.016 |
| | | | (0.523) | (0.597) |
| PCF*PCFs | | | -0.020** | -0.019* |
| | | | (0.047) | (0.052) |
| HHI | | | | 0.021 |
| | | | | (0.113) |
| Entry rate | | | | 0.018 |
| | | | | (0.314) |
| Employment | | | | 0.018 |
| | | | | (0.128) |
| Size_S | | | | 0.010* |
| | | | | (0.051) |
| Age_S | | | | 0.017 |
| | | | | (0.163) |
| Capital_S | | | | 0.031* |
| | | | | (0.052) |
| 2-digit Sector fixed effects | Yes | Yes | Yes | Yes |
| Number of observations | 12130 | 12130 | 12130 | 12130 |
| R-squared | 0.412 | 0.455 | 0.622 | 0.673 |

Note: The above estimations restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010. Wage represent (log of) average wage per employee (in LBP million) at the firm-year level. PCF is a dummy variable equal to 1 if the firm is politically-connected, and zero otherwise. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size and age refer to firm size (in terms of number of employees) and age, respectively, at the year level. PCFs represent the number of politically-connected firms at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100. Employment refers to the number of employees (in '000) at the sector-year level. Size_S, Age_S, and Capital_S refer to the average firm employment size, age, and initial capital (in LBP 10 million), respectively, at the sector-year level. Entry rate represents the firm entry rate (number of entrants / total number of firms) on a scale from 0-100 at the sector-year level. Entry refers to the first time the firm entered the market. P-values are in brackets. ***, **, and * refer to statistical significance at the 1, 5, and 10 percent level. Standard errors are clustered at the sector level.

**Table 4c: The effect of political connections on output at the firm level**

| | Output per firm | | | |
|---|---|---|---|---|
| PCF | 0.249** | 0.242** | 0.238** | 0.217** |
| | (0.027) | (0.022) | (0.019) | (0.024) |
| 2009 | 0.036 | 0.028 | 0.031 | 0.039 |
| | (0.291) | (0.264) | (0.286) | (0.317) |
| PCF*2009 | 0.014 | 0.013 | 0.017 | 0.024 |
| | (0.115) | (0.184) | (0.145) | (0.135) |
| Size | | 0.022* | 0.017* | 0.021* |
| | | (0.061) | (0.055) | (0.057) |
| Age | | 0.019* | 0.013 | 0.019 |
| | | (0.085) | (0.101) | (0.144) |
| PCF*Size | | 0.021* | 0.033** | 0.017** |
| | | (0.054) | (0.048) | (0.043) |
| PCF*Age | | 0.011* | 0.016* | 0.023* |
| | | (0.072) | (0.062) | (0.062) |
| PCFs | | | -0.068* | -0.071* |
| | | | (0.055) | (0.053) |
| PCF*PCFs | | | -0.024** | -0.048** |
| | | | (0.046) | (0.037) |
| HHI | | | | -0.009* |
| | | | | (0.081) |
| Entry rate | | | | 0.028 |
| | | | | (0.117) |
| Employment | | | | 0.014 |
| | | | | (0.128) |
| Size_S | | | | 0.022* |
| | | | | (0.059) |
| Age_S | | | | 0.014* |
| | | | | (0.087) |
| Capital_S | | | | 0.013** |
| | | | | (0.025) |
| 2-digit Sector fixed effects | Yes | Yes | Yes | Yes |
| Number of observations | 12130 | 12130 | 12130 | 12130 |
| R-squared | 0.605 | 0.629 | 0.648 | 0.708 |

Note: The above estimations restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010. Output per firm represent (log of) output per firm (in LBP million) at the year level. HHI refers to (output). PCF is a dummy variable equal to 1 if the firm is politically-connected, and zero otherwise. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size and age refer to firm size (in terms of number of employees) and age, respectively, at the year level. PCFs represent the number of politically-connected firms at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100. Employment refers to the number of employees (in '000) at the sector-year level. Size_S, Age_S, and Capital_S refer to the average firm employment size, age, and initial capital (in LBP 10 million), respectively, at the sector-year level. Entry rate represents the firm entry rate (number of entrants / total number of firms) on a scale from 0-100 at the sector-year level. Entry refers to the first time the firm entered the market. P-values are in brackets. ***, **, and * refer to statistical significance at the 1, 5, and 10 percent level. Standard errors are clustered at the sector level.

**Table 4d: The effect of political connections on output per worker at the firm level**

| | Output per worker | | | |
|---|---|---|---|---|
| PCF | -0.251*** | -0.332*** | -0.228*** | -0.223** |
| | (0.008) | (0.005) | (0.000) | (0.011) |
| 2009 | 0.023 | 0.024 | 0.031 | 0.029 |
| | (0.317) | (0.159) | (0.198) | (0.215) |
| PCF*2009 | -0.036* | -0.040** | -0.051** | -0.052** |
| | (0.073) | (0.031) | (0.0281) | (0.029) |
| Size | | 0.009 | 0.013 | 0.014 |
| | | (0.136) | (0.129) | (0.116) |
| Age | | 0.011 | 0.021 | 0.019 |
| | | (0.134) | (0.134) | (0.142) |
| PCF*Size | | -0.010* | -0.019** | -0.013* |
| | | (0.051) | (0.014) | (0.054) |
| PCF*Age | | -0.016* | -0.026* | -0.018* |
| | | (0.073) | (0.019) | (0.066) |
| PCFs | | | 0.012 | 0.016 |
| | | | (0.175) | (0.148) |
| PCF*PCFs | | | 0.010** | 0.013* |
| | | | (0.024) | (0.052) |
| HHI | | | | -0.028* |
| | | | | (0.054) |
| Entry rate | | | | 0.051* |
| | | | | (0.092) |
| Employment | | | | 0.010 |
| | | | | (0.141) |
| Size_S | | | | 0.021 |
| | | | | (0.132) |
| Age_S | | | | 0.016 |
| | | | | (0.108) |
| Capital_S | | | | 0.053 |
| | | | | (0.162) |
| 2-digit Sector fixed effects | Yes | Yes | Yes | Yes |
| Number of observations | 12130 | 12130 | 12130 | 12130 |
| R-squared | 0.614 | 0.629 | 0.672 | 0.695 |

Note: The above estimations restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010. Output per worker represent (log of) average output per worker (in LBP million) at the firm-year level. PCF is a dummy variable equal to 1 if the firm is politically-connected, and zero otherwise. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size and age refer to firm size (in terms of number of employees) and age, respectively, at the year level. PCFs represent the number of politically-connected firms at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100. Employment refers to the number of employees (in '000) at the sector-year level. Size_S, Age_S, and Capital_S refer to the average firm employment size, age, and initial capital (in LBP 10 million), respectively, at the sector-year level. Entry rate represents the firm entry rate (number of entrants / total number of firms) on a scale from 0-100 at the sector-year level. Entry refers to the first time the firm entered the market. P-values are in brackets. ***, **, and * refer to statistical significance at the 1, 5, and 10 percent level. Standard errors are clustered at the sector level.

**Table 5a: The effect of political connections on net job creation at the sector level**

| | NJC | | |
|---|---|---|---|
| PCFs | -0.081*** | -0.076*** | -0.068*** |
| | (0.000) | (0.000) | (0.004) |
| 2009 | -0.090* | -0.091* | -0.078* |
| | (0.056) | (0.061) | (0.052) |
| PCFs*2009 | -0.041** | -0.039** | -0.026** |
| | (0.023) | (0.034) | (0.017) |
| Size_P | | -0.043*** | -0.024** |
| | | (0.009) | (0.032) |
| Age_P | | -0.038** | -0.019* |
| | | (0.046) | (0.072) |
| Size_N | | 0.028*** | 0.019** |
| | | (0.002) | (0.021) |
| Age_N | | 0.021** | 0.014** |
| | | (0.011) | (0.033) |
| HHI | | | -0.011 |
| | | | (0.138) |
| Entry rate | | | 0.0183 |
| | | | (0.265) |
| Capital | | | 0.014* |
| | | | (0.066) |
| 2-digit Sector fixed effects | Yes | Yes | Yes |
| Number of observations | 910 | 910 | 910 |
| R-squared | 0.531 | 0.604 | 0.611 |

Note: The above estimations restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010. NJC refers to the (log of) number of net jobs created at the sector-year level. PCFs represent the number of politically-connected firms at the sector-year level. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size_P represent average (employment) size of PCFs at the sector-year level. Age_P represent average age of PCFs at the sector-year level. Size_N represent average (employment) size of non-PCFs at the sector-year level. Age_N represent average age of non-PCFs at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100. Entry rate represents the firm entry rate (number of entrants / total number of firms) on a scale from 0-100 at the sector-year level. Entry refers to the first time the firm entered the market. Capital refers to the average initial firm capital (in LBP 10 million) at the sector-year level. P-values are in brackets. ***, **, and * refer to statistical significance at the 1, 5, and 10 percent level. Standard errors are clustered at the sector level.

**Table 5b: The effect of political connections on wages at the sector level**

| | Wage | | |
|---|---|---|---|
| PCFs | 0.058** | 0.055** | 0.046** |
| | (0.017) | (0.019) | (0.013) |
| 2009 | 0.126 | 0.129 | 0.122 |
| | (0.208) | (0.135) | (0.301) |
| PCFs*2009 | 0.029* | 0.022* | 0.011** |
| | (0.062) | (0.051) | (0.043) |
| Size_P | | 0.021* | 0.016** |
| | | (0.072) | (0.027) |
| Age_P | | 0.028 | 0.019 |
| | | (0.125) | (0.215) |
| Size_N | | 0.023 | 0.016 |
| | | (0.178) | (0.140) |
| Age_N | | 0.007 | 0.013 |
| | | (0.413) | (0.122) |
| HHI | | | 0.027 |
| | | | (0.188) |
| Entry rate | | | 0.011 |
| | | | (0.273) |
| Capital | | | 0.018* |
| | | | (0.064) |
| 2-digit Sector fixed effects | Yes | Yes | Yes |
| Number of observations | 910 | 910 | 910 |
| R-squared | 0.582 | 0.553 | 0.602 |

Note: The above estimations restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010. Wage represent (log of) average wage per employee (in LBP million) at the sector-year level. PCFs represent the number of politically-connected firms at the sector-year level. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size_P represent average (employment) size of PCFs at the sector-year level. Age_P represent average age of PCFs at the sector-year level. Size_N represent average (employment) size of non-PCFs at the sector-year level. Age_N represent average age of non-PCFs at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100. Entry rate represents the firm entry rate (number of entrants / total number of firms) on a scale from 0-100 at the sector-year level. Entry refers to the first time the firm entered the market. Capital refers to the average initial firm capital (in LBP 10 million) at the sector-year level. P-values are in brackets. ***, **, and * refer to statistical significance at the 1, 5, and 10 percent level. Standard errors are clustered at the sector level.

**Table 5c: The effect of political connections on output per firm at the sector level**

| | Output per firm | | |
|---|---|---|---|
| PCFs | -0.041*** | -0.038** | -0.033** |
| | (0.000) | (0.011) | (0.010) |
| 2009 | 0.013 | 0.017 | 0.041 |
| | (0.129) | (0.133) | (0.281) |
| PCFs*2009 | -0.019* | -0.020* | -0.017** |
| | (0.052) | (0.075) | (0.036) |
| Size_P | | -0.026** | -0.032*** |
| | | (0.015) | (0.008) |
| Age_P | | -0.045** | -0.029** |
| | | (0.026) | (0.015) |
| Size_N | | 0.041** | 0.033* |
| | | (0.039) | (0.061) |
| Age_N | | 0.022* | 0.024* |
| | | (0.081) | (0.053) |
| HHI | | | -0.038 |
| | | | (0.168) |
| Entry rate | | | 0.019 |
| | | | (0.117) |
| Capital | | | 0.012** |
| | | | (0.024) |
| 2-digit Sector fixed effects | Yes | Yes | Yes |
| Number of observations | 910 | 910 | 910 |
| R-squared | 0.531 | 0.604 | 0.611 |

Note: The above estimations restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010. Output per firm represent (log of) average output per firm (in LBP million) at the sector-year level. PCFs represent the number of politically-connected firms at the sector-year level. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size_P represent average (employment) size of PCFs at the sector-year level. Age_P represent average age of PCFs at the sector-year level. Size_N represent average (employment) size of non-PCFs at the sector-year level. Age_N represent average age of non-PCFs at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100. Entry rate represents the firm entry rate (number of entrants / total number of firms) on a scale from 0-100 at the sector-year level. Entry refers to the first time the firm entered the market. Capital refers to the average initial firm capital (in LBP 10 million) at the sector-year level. P-values are in brackets. ***, **, and * refer to statistical significance at the 1, 5, and 10 percent level. Standard errors are clustered at the sector level.

**Table 5d: The effect of political connections on productivity at the sector level**

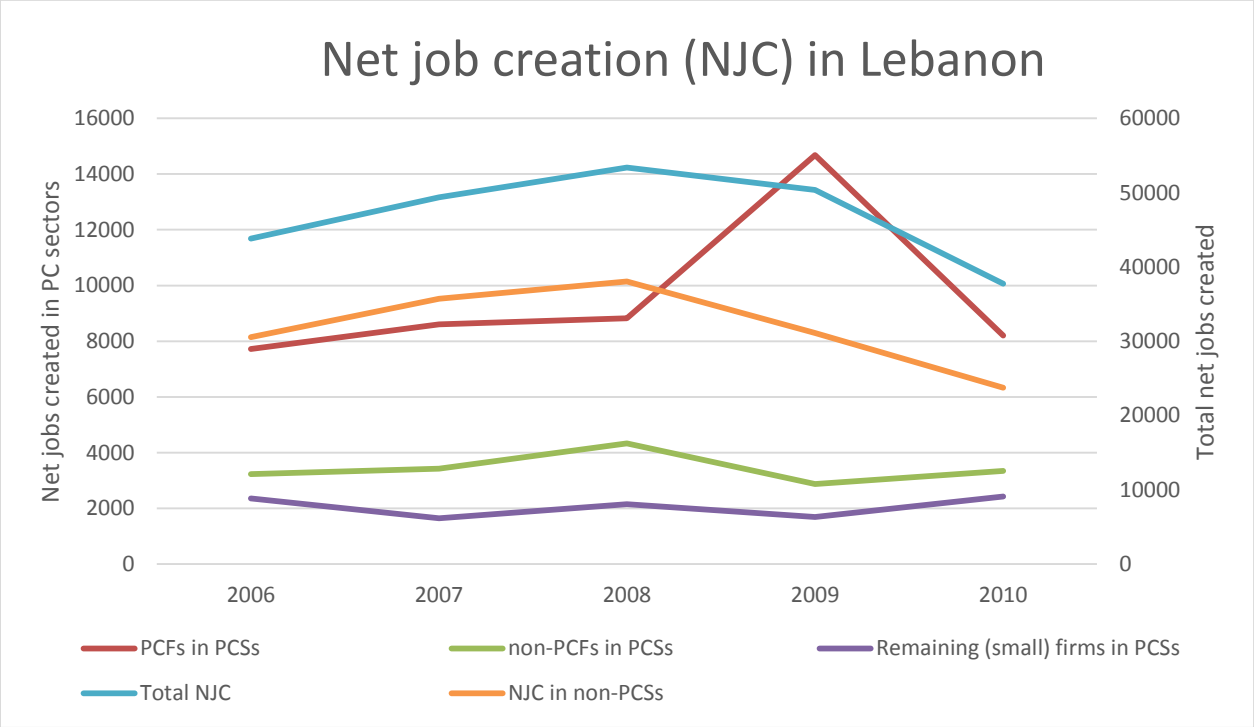
| | Output per worker | | |
|---|---|---|---|
| PCFs | -0.048** | -0.042** | -0.036*** |
| | (0.013) | (0.022) | (0.005) |
| 2009 | 0.068 | 0.060 | 0.044 |
| | (0.155) | (0.125) | (0.253) |
| PCFs*2009 | -0.017** | -0.012** | -0.016* |
| | (0.042) | (0.027) | (0.045) |
| Size_P | | -0.039** | -0.036** |
| | | (0.031) | (0.011) |
| Age_P | | -0.028** | -0.017* |
| | | (0.010) | (0.053) |
| Size_N | | 0.019* | 0.024** |
| | | (0.061) | (0.018) |
| Age_N | | 0.025** | 0.014** |
| | | (0.042) | (0.037) |
| HHI | | | -0.024* |
| | | | (0.056) |
| Entry rate | | | 0.022** |
| | | | (0.028) |
| Capital | | | 0.078 |
| | | | (0.141) |
| 2-digit Sector fixed effects | Yes | Yes | Yes |
| Number of observations | 910 | 910 | 910 |
| R-squared | 0.582 | 0.551 | 0.651 |

Note: The above estimations restrict the analysis to all 4-digit sectors with at least 10 percent of the firms having at least 50 employees in at least one year between 2005 and 2010. Output per worker represent (log of) average output per worker (in LBP million) at the firm-year level. PCFs represent the number of politically-connected firms at the sector-year level. 2009 is a dummy variable equal to 1 in year 2009 (year of parliamentary elections), and zero otherwise. Size_P represent average (employment) size of PCFs at the sector-year level. Age_P represent average age of PCFs at the sector-year level. Size_N represent average (employment) size of non-PCFs at the sector-year level. Age_N represent average age of non-PCFs at the sector-year level. HHI refers to (output) Herfindahl-Hirschman Index at the sector-year level. HHI is defined as the sum of the squares of the market output shares of the firms within the sector, where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1, moving from a large number of very small firms to a single monopolistic firm. To facilitate empirical interpretation, we multiplied HHI figures by 100; so, in the above estimations HHI figures range from 0 to 100. Entry rate represents the firm entry rate (number of entrants / total number of firms) on a scale from 0-100 at the sector-year level. Entry refers to the first time the firm entered the market. Capital refers to the average initial firm capital (in LBP 10 million) at the sector-year level. P-values are in brackets. ***, **, and * refer to statistical significance at the 1, 5, and 10 percent level. Standard errors are clustered at the sector level.

**Figure 1: Net job creation by firm size in Lebanon (2006-2010)**


Source: Authors' calculations using MoF datase.

**Figure 2: Aggregate net job creation in Lebanon**




Source: Authors' calculations using MoF datase.