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Crony Capitalism in Egypt

Abstract: The paper studies the nature and extent of Egyptian "crony" capitalism by comparing the corporate performance and the stock market valuation of politically connected and unconnected firms, before and after the 2011 popular uprising that led to the end of President Mubarak rule. First, we identify politically connected firms and compare the corporate behavior of connected and unconnected large firms before 2011 in terms of their levels of debts, market share, and tax payment. Second, we conduct an event study around the events of 2011 and estimate the market valuation of political connections. Third, we attempt to decompose the extra value that the market attributes to political connections between a current profitability advantage, and future advantages that include higher growth opportunities and (implicit) bail-out guarantees.

Keywords: corruption; cronyism; Egypt; event study; value of political connections.

1 Introduction

Discontent associated with the perceived "corruption" of the political and business elites in Egypt and Tunisia has been a key driving force of the popular uprisings that displaced presidents Mubarak and Ben-Ali in 2010 and 2011 (Cammett and Diwan 2013; Malik and Awadallah 2013). Popular perceptions of business elites had deteriorated in many Middle Eastern countries over the past decade, including in Egypt. For example, the Pew survey reveals that in 2010, corruption was the top concern of Egyptians with 46% listing it as their main concern, ahead of lack of democracy and poor economic conditions (Pew 2011). This is confirmed by the Transparency International ratings – Egypt moved from a rank

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of 70/158 in 2005 to 115/180 in 2008. We now know that this was not just about perceptions. The ongoing trials of leading businessmen and politicians are starting to shed light on the ways in which power and money interacted in the past. Ongoing court cases cover issues related to land appropriation at unfair prices, financial fraud, unfair competition, unfair borrowing from state banks, unfair access to subsidized energy, unfair access to state procurement, conflict of interest and receipt of bribes, illegal funding of political campaigns, and the manipulation of the financial markets for the benefits of insiders.

What makes the issue of corruption such a hot issue in Egypt and the Middle East is the popular frustration over relatively modest economic growth and job creation in the face of a large demographic youth bulge. A central question is whether the Arab region economic under-performance can be related to the type of state-business relations that have developed during the period of liberal reforms which started in most countries in the 1980s. Some authors have argued that the reforms have not gone far enough (Noland and Pack 2007). But most of the regional literature has focused on the rise of "networks of privilege" and "crony capitalists" as the central reason for low economic growth (Sadowski 1991; Heydemann 2004; Owen 2002; Henry and Springborg 2010).

The political science literature on the region has gone further, making "cronyism" the central mechanism that resolved the *contradictions* created by the gradual liberalization of the region's economies in environments where political power remained highly autocratic. For these authors, an imperfect economic liberalization that started in the 1980s allowed weakening regimes, coming out of the crisis of state-led and import-substitution-led growth, to redefine the contours of the prevailing political settlement by building alliances with the business elite in ways to dominate the business sector and use it as a source of patronage. This was achieved by erecting barriers to entry that excluded opponents and provided privileges to a small coterie of loyal capitalists.

While the Middle East literature on Arab capitalism is rich in its analysis of how the opening up of the economy has facilitated the exercise of power by autocrats, it has remained largely impressionistic when describing the linkages between politics and economic matters. Some work analyzed state-business relations in Egypt (Kienle 2001; Sfakianakis 2004; Roll 2010), Morocco (Henry 1996; Cammett 2007; Catusse 2008), Tunisia (Bellin 2002; Hibou 2006; Chekir and Menard 2012), Syria (Haddad 2012), Yemen (Alley 2010), Algeria (Tlemcani 1999; Dillman 2000), and the Gulf (Moore 2004; Hertog 2010; Hanieh 2011), as well as the region as a whole (Heydemann 2004; Schlumberger 2007; King 2009; World Bank 2009). But none of these analyses include direct measurements of the extent of favoritism, or attempts to statistically evaluate the economic impact of cronyism.

Evaluating system performance, relative to a difficult to define counterfactual is by no means an easy task. But at a minimum, one should be able to describe more objectively and quantitatively some of the mechanisms used to provide privileges and measure the magnitude of privileges in some fashion. In this paper, we make an attempt to explore these issues by focusing on state business relations in Egypt during the past decade. The paper has three sections.

First, we identify the politically connected firms and explore the main differences in corporate behavior between politically connected and unconnected firms. Using publicly available corporate data on traded firms, we do so by comparing financial characteristics of connected and unconnected firms – in particular, how much debt they take and how large a market share they control. We find that politically connected firms borrowed more and controlled more market share than non connected firms. The question then is why would private banks agree to lend so much to so few.

Second, we look for evidence that politically connected firms received valuable privileges. Rather than look for direct evidence, we seek to measure the value that the market associated with political connections, if any, by conducting an event study of the Egyptian stock market around the 2011 uprisings. The events of January 2011 were largely unexpected. When the stock market re-opened again in March 2011, with Mubarak out of power, the stocks of "crony" firms must have been re-priced based on a value for political connections at near zero. Thus, this event presents a unique opportunity to learn from the market how it estimates the value of these "connections." Our results indicate that this value is around 13–16% of the connected firms' value. To our knowledge, there has been no recent event that was so unexpected as to allow for the estimation of the effect of regime change using stock market data.

Third, we investigate the nature of the valuable privileges received by the connected firms. These can include present (net) benefits that accrue to connected firms, as well as future and possibly contingent benefits as well (such as bail-outs if they fail). Presumably, current benefits include some privileges that allowed connected firms to increase their profits, but against that, they may also have had obligations towards their political masters which were costly. We compare the (current) profitability of connected and unconnected firms and find that the return to capital was lower for the connected firms, which means that on average, the net current benefits of political connections were negative in Egypt. This then suggests that it was future benefits, such as bail-out guarantees, which accounted for much of the value of connections. We look for, and find, additional evidence to support this claim.

The last section concludes with a summary of the main results and a discussion about the possible importance of the effects of cronyism on growth in Egypt at the macro level.

2 Identifying and Characterizing Politically Connected Firms

In the last decade of Mubarak's 33 years reign, his son Gamal Mubarak, working closely with a group of economic experts and ambitious businessmen, started in the early 2000s to modernize the political and economic programs of the aging ruling party. After the socialism of Nasser (1956–1968), the first opening of Sadat in the mid-1970s, and a long transition with stabilization efforts and timid reforms of the liberal type under Mubarak's first period from the early 1980s up to the early 2000s, a new effort was under way to modernize Egypt's private sector – or so did the official narrative go. This effort included a push to create an internationally competitive corporate sector, in the midst of a renewed effort at privatization and of financial sector and trade reforms.

While Sadat's first *Opening* ("Infitah") involved a handful of businessmen closely associated with his regime, it is under Mubarak in the 1990s that a larger new class of capitalists connected to the state grew very rich (Skafianakis 2004). In the early-2000s, the connected business elite evolved further – well established insider firms were joined by new rising stars more closely connected with the President's son (King 2009; Henry and Springborg 2010; Osman 2010). Roll (2010) in particular documents in great detail the rising entrepreneurs who worked closely with the President's son starting in the early 2000s, and whose companies took off and grew immensely during that decade. These firms took on the modernization of the economy, spearheading the development of new sectors and the expansion of old ones. Over the decade ending with the 2011 uprisings, the Sinai became an international tourist spot, the oil and gas sector started to attract huge FDI, the banking sector flourished, telephony took off, consumers products went large scale, national distribution was reorganized and rationalized within larger corporate structures, and massive housing projects were developed backed by a much expanded construction sector. The rising businessmen were not only well connected, but they increasingly occupied important posts in Government, the ruling party, Parliament, and various influential boards and committees, culminating with the formation of the Nazif cabinet in 2004, which was dominated by businessmen (and which lasted until the Uprisings of 2011).

In event studies that attempt to measure the value of political connections, the first challenge is to find ways to determine with some precision which firms are politically connected firms (thereafter, CFs). Unlike the case in other event studies, especially those in OECD countries, we have found that the composition of the boards of the large firms which are traded on the Egyptian Stock Exchange

(the EGX), and the names of their executives are not too informative about their political connections, which may be due to the fact that Egyptian networks of influence are more concentrated at the top of the economic and political elite than in OECD countries.[1] We have chosen to rely on what appears to be extensive market knowledge in Egypt of the inner working of connected firms. In separate interviews, we asked the three leading stock-brokers in Cairo to indicate which of the top firms traded on the EGX were receiving special state favors in the past. Twenty two firms were on each of the lists, and we took those as the set of politically connected firms for this study (the balance being the non-connected firms or NCFs). Indeed, the names of the main politically connected individuals who own large shares of these firms is "common knowledge" in Egypt. These men were prominent businessmen who were also affiliated with the ruling party and in some cases close to the president and his family. Their business dealings were well covered by the Egyptian press before and especially after the 2011 uprisings. Most of the main owners of the firms that we classify as CFs are currently in court on corruption charges.[2]

Relying on common knowledge makes eminent sense in the Egyptian case, since it is also this knowledge that drives the stock market. There are however possible drawbacks with this approach that we need to keep in mind when we interpret the results of the analysis. It seems likely that what we are capturing are the most salient political connections. One implication is that we are unable to estimate the *total* value of connections – but this is an impossible goal anyway given that listed companies are only one component of the Egyptian economy.[3] Even a partial set would give indications on how connections are valued *relative* to other firms with no connections, and how the CFs behaved in the past compared to NCFs. A more problematic issue relates to selection bias and identification problems. It may be that firms with connections who exhibit superior performance end up being classified as connected, whereas

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1 Wurzel (2004) quotes an influential businessman on this issue: "If there is a problem, it is better to do directly to the government, to one minister, or to the prime minister. He is accessible, so there is no need for organizational interference."

2 In addition to Mubarak and his two sons, and about 20 very prominent businessmen, several members of Mubarak's last cabinet, including the former Prime Minister and Ministers of Oil, Tourism, Interior, Finance, and Housing have been investigated on various charges of corruption and embezzlement of public funds after the 2011 uprisings.

3 Egypt has a large informal sector and a "military" dominated sector that are poorly connected with the formal corporate sector. The military sector is thought to be large (estimates go from 10 to 30% of the economy), but it remains secretive and does not fund itself in the capital markets, allowing it to avoid financial disclosure requirements.

less successful ones are not. It can also be the case that successful firms that had expanded in the past would lose more from the chaotic economic conditions created by the uprisings. If this was the case, it would mean that it was not political connection per se that affected the value of these firms, but rather, other characteristics. We will return to this issue below to examine if this kind of problem is likely to bias our results.

Let us start by characterizing the corporate behavior of the firms that we have identified as politically connected, and see how they compare to the NCFs. Our interest is to focus on the firms traded on the EGX. The corporate data we use comes from the Orbis database and includes more than financial 200 variables providing financial and ownership information on about 2900 large companies in Egypt with more than 200 employees. However, only a small fraction of these are traded on the Egyptian stock exchange. Stock price market information (which we use in the event studies in the next section) comes from DataStream. In the end, 116 companies matched both databases. The Orbis database classifies companies according to the ISIC method. The highest level of classification, which is the one we will use, includes 18 sectors and subsectors, which we further aggregate into the 12 sectors shown in Table 1.[4] CFs are present in many sectors including construction, services, and metals. These tend to be protected sectors serving internal demand rather than exports.

Given data limitations, we are able to investigate three main ways in which CFs are different from NCFs: access to debt, payment of taxes, and market power. Looking first at the raw data, the simple averages reported in Table 2 suggest

Table 1 Number of Firms per Sector for Connected Firms (CFs) and Non Connected Firms (NCFs).

Sector	Services	Metals	Primary	Wholesale	Real estate	Chemicals	Textile	
NCF	19	7	5	2	25	4	13	
CF	6	2	0	0	6	0	3	

Sector	Food	Banks	Hotels	Transportation	Machinery	Publishing	Financial services	Total
NCF	8	4	3	1	1	1	1	94
CF	3	0	1	1	0	0	0	22

Source: Orbis Database.

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4 These are: mining; manufacturing of which: food and beverages, textiles and clothing, chemicals, pharmaceuticals, base metals, machinery and transport; other manufacturing,; utilities; construction; services of which: wholesale trade, retail trade, transport, hotels and restaurant, finance, real estate, business services, travel and tour operators.

that CFs have higher levels of debt relative to the size of their equity compared to NCFs, as well as more market power, but that they seem to pay similar tax rates. But these apparent differences may be due to fact that CFs tend to be large and that large firms enjoy special treatment by the credit market, or that they are over-represented in sectors that use up a lot of debt. To control for these factors, and learn from the variation we have in the sample (where many of the large firms are

Table 2 Evolution of the Median of Main Corporate Ratios, Percentage Points and $ Billion.

	2004	2005	2006	2007	2008	2009	2010	2011	2012
% Total debt									
CFs	47.88%	53.23%	62.13%	68.72%	70.74%	73.39%	73.78%	72.95%	62.43%
NCFs	52.12%	46.77%	37.87%	31.28%	29.26%	26.61%	26.22%	27.05%	37.57%
Market share (MS)									
CFs	9.06%	8.92%	12.62%	13.95%	8.38%	11.35%	18.22%	12.47%	6.12%
NCFs	2.07%	2.45%	2.95%	1.45%	2.04%	2.29%	3.04%	1.46%	2.23%
Average interest rates charged									
CFs	4.65%	5.15%	3.31%	4.18%	4.19%	3.25%	2.76%	2.51%	2.58%
NCFs	4.20%	4.21%	3.93%	4.03%	2.40%	2.71%	2.56%	1.56%	1.48%
Return on Equity (RoE)									
CFs	20.95%	24.20%	24.80%	20.03%	22.76%	13.37%	12.47%	9.04%	8.86%
NCFs	19.66%	22.41%	21.35%	20.03%	22.76%	14.89%	14.42%	9.74%	9.09%
Returns on Assets (RoA)									
CFs	8.64%	9.55%	8.61%	11.63%	6.25%	3.67%	4.06%	2.79%	2.62%
NCFs	8.45%	9.47%	8.48%	11.63%	6.91%	4.01%	4.57%	3.52%	3.28%
Price to earnings ratio (PER)									
CFs	–	–	–	10.14	17.20	13.43	13.07	15.01	12.05
NCFs	–	–	–	10.05	11.67	10.01	10.44	9.85	9.16
D/E ratio									
CFs	91%	121%	92%	99%	124%	116%	137%	143%	163%
NCFs	100%	91%	78%	69%	60%	50%	55%	49%	49%
Assets ($Bil)									
CFs		0.11	0.28	0.44	0.82	0.91	1.00	1.21	
NCFs		0.10	0.10	0.11	0.13	0.13	0.14	0.16	

Source: Computed from Orbis data base on the basis of 116 firms (except for the MS variable, see below). CF stands for connected firms, and NCF for non-connected firms. % of total debt if debt of a firm divided by the sum of the debts to all the firms in the sample. Market share is share of total revenue of a firm over the sum of total revenue of all firms in the industry, using the full Orbis database. RoA stands for return on assets, calculated at book value. RoE stands for returns on equity, also computed at book value. The price to earnings ratio (PER) is the median stock price during the year (from DataStream) divided by net income. The debt to equity ratio, D/E, is a firm's total liabilities divided by shareholder equity (at book value).

not connected), we run the following panel ordinary least square regressions over the period 2003–2010:

LHS = f (connectedness, size of firm, market share,
  Top30 dummy, time dummies, sector dummies, error).   (1)

where the dependant variables are in turn the firms' debt to equity ratio (total debt to shareholder equity), market share of firms in their main sector of activity (measured in terms of the size of each firm's revenue relative to the sum of the revenues of all firms in the firm's main sector of activity, using the full 2900 firms in the Orbis database), size of assets, and tax payments (over income).

As explanatory variables, we include two variables to characterize firm size: size of firm's total assets (at book value and in logs), and a dummy variable to describe if a firm belongs to the top30 firms on the EGX. We use both variables because belonging to the exclusive club of top corporate firms in Egypt may confer distinct advantages, in addition to possible advantages provided by size. We control for time and for the 12 sectors listed in Table 1.

Before discussing our results relating to debt, market power, and taxes (see Table 3), it is useful to describe the results of similar exercises for other countries, against which we could evaluate the effects of political connections in Egypt. Faccio (2010) is an especially rich study because it focuses on a global panel of several thousand firms in 47 countries. It finds that CFs have higher leverage, pay lower taxes, have stronger market power, and that the magnitude of privileges is larger in more corrupt and in poorer countries. In particular, Faccio finds a significant leverage advantage for CFs of 3–7 points, depending of the strength of the political connection (and up to 17 points for Thailand and 10 points for Russia and Malaysia, the countries were these effects are largest in her sample). She also finds a sizable but generally not significant tax effect, and a significant extra market share secured by CFs of about 4 percentage points. In her sample, CFs are on average 3 times larger than NCFs.

– **Debt:** First, we look at the unconditional effect of political connections, controlling only for whether the firm is part of the top30 firms on the EGX. We find that more connected firms have larger debts – the CF's coefficient is positive, large, and significant at the 1% level of confidence, and it indicates that CFs have a debt to equity ratio (thereafter, D/E) ratio of about 108.3 points more than NCFs, given their sector of activity. This is an extremely large advantage, larger than the highest performer in Faccio's (2010) sample. In order to understand which firm characteristics lead to more lending, we re-run the D/E regression, controlling for possible determinants of this lending – firm size, and market share (in its sector of activity). Both market share and top30

Table 3 Corporate Behavior.

	D/E	D/E	MS	MS	Tax ratio	Tax ratio	Ln(assets)	Ln(assets)
CF	1.083***	0.947***	0.0843***	0.0769***	−0.0323	−0.0326	0.550***	0.0374
	(0.167)	(0.173)	(0.0125)	(0.0127)	(0.0393)	(0.0436)	(0.175)	(0.158)
Ln(assets)		−0.0516		0.0338***		0.00227		
		(0.0360)		(0.00245)		(0.00835)		
Market share		1.664***				0.0288		5.056***
		(0.438)				(0.0539)		(0.367)
Top30	−0.51***	−0.505***	0.0655***	−0.0215	0.0358	0.0193	1.809***	1.721***
	(0.169)	(0.188)	(0.0131)	(0.0139)	(0.0401)	(0.0466)	(0.179)	(0.161)
Constant	1.677***	1.172*	0.630***	0.239***	−0.131	−0.176	11.25***	8.174***
	(0.497)	(0.632)	(0.0384)	(0.0465)	(0.116)	(0.157)	(0.526)	(0.510)
Fixed effects	Sectors, years	Sectors, years	Sectors, years	Sectors, years	Sectors, years	Sectors, years	Sectors, years	Sectors, years
Obs.	981	944	1067	949	810	716	898	949
Adj. R-sq	0.123	0.111	0.711	0.752	0.033	0.040	0.289	0.405

***p<0.01, **p<0.05, *p<0.1.

OLS. Panel regression 2003–2010. Standard errors in parentheses. D/E and MS as defined in Table 2. Tax ratio is tax over net income. Ln(assets) is the log of the total assets. Top30 is an EGX classification and it is here a dummy that takes the value of 1 for firms that belong to the top30 largest firms on the EGX.

effects turn out to be significant (at the 1% level). The economic effect of the market share variable is small however – an increase of MS by 1% raises the D/E ratio by 1.664 points. On the other hand, belonging to the top30 group reduces leverage (by 50.5 points), suggesting that these firms tend to be better capitalized. The CF effect however remains significant (at the 1% confidence level) and large (at 94.7 points), indicating that connections are much more valuable than market share per se in securing loans.

Thus, higher borrowing is a key characteristic of connected firms. Table 2, which reports the median values for both groups, shows that from about equal D/E ratios in 2004 at about 100%, the median D/E ratio of the CFs rose by 2010 to 143 points, while that of the NCFs declined to 55 points. So the D/E ratio of CFs and NCFs have diverged over time. In terms of overall lending, of the nearly $24 billion increase in total corporate debt in our sample between 2003 and 2010, a whopping $21 billion went to CFs. By 2010, the 22 CFs were receiving an extraordinary 74% of the debt going to the 116 firms of our sample. CFs borrowed more even as banking regulations became tighter after 2006 when fiscal deficits rose and the government started to take a larger share of the credit available (Soliman 2012).

– *Market share*: Larger firms do not necessarily have larger market shares – they could simply be operating in larger sectors. But do firms with political connection tend to enjoy larger market shares? The results in Table 3 clearly indicate that CFs enjoyed extra market power relative to NCFs on account of their political connections, both unconditionally, and conditional on size and belonging to the select club of the Top30. In both regressions, the effect of the CF dummy is positive and significant at the 1% level. CFs tend to have an extra market share of 7.69–8.43 percentage points – in *addition* to a positive size effect (and to varying time and sector effects). The size of the political connections effect is more than double that found by Faccio (2010), indicating again that the extent of privileges seems extremely high in Egypt relative to comparators. Eyeballing the median values of the market share variable for the two types of firms in Table 2 confirms that the difference is large, and suggests that it has grown over time.

– *Tax effect:* There is no evidence that CFs paid fewer taxes than NCFs. The CF coefficient is not significantly different from zero in all regressions. This seems to tell us that some institutions were not biased towards the CF and presumably functioned well even under Mubarak's reign. On average, firms in Egypt have paid about 17% of their net income in taxes, although the coefficient is not significant, indicating a lot of variability around this average. This is a low rate by international standards, and is a measure of how pro-business fiscal policy was in the late Mubarak period. For example, in Faccio's

(2010) international sample, firms pay between 29.7% (for CFs) and 32.7% of their income (for NCFs).

One would expect that in the environment of the 2000s, when banking had largely been liberalized, large bank lending to CFs needs to be explained by profitability considerations. This is in contrast to the cronyism of the 1980s and 1990s which was much more centrally related to directed credit. Back then, banking was dominated by the state. The 1990s was a period of opening up of the economy and of privatizations, much of them financed through state banks. By the end of the decade, very large NPLs were accumulated in these banks (about 35%), necessitating a costly bank recapitalization in 2004 (Osman, p. 138). But in the context of the banking reform of the early 2000s, private banks, including a few international banks, grew larger, several state banks were privatized, and by 2005, the share of private banks had grown to over 50% of total credit. It would be surprising that deregulated banks, especially those in the private sector, could be influenced directly by politicians to lend more to CFs. In reality, a few private banks were controlled by politically connected families (Skafianakis 2004), and public banks, which retained nearly 50% of the market, did finance some of the large CFs (Roll 2010). But most of the truly private banks had their portfolio dominated by these CFs (private interviews with private banks). Indeed, Egypt had one of the largest loan portfolio concentrations in the world in 2008 (World Bank 2009). Thus, banks must have found it more profitable to lend to CFs. Private commercial banks were relatively new to Egypt, and courts have been notoriously slow at recouping unpaid credit. In such a risky environment, the CFs must have looked like the best clients. Banks did charge them higher interests in line with higher indebtedness (Table 2). That CFs seemed more attractive clients than NCFs suggests that their connections endowed them with extra value, which has served as collateral of sorts. In the next section, we try to estimate the value of these political connections using an event study.

3 The Value of Political Connections – Stock Market Reactions to Mubarak's Demise

The goal of this section is to use stock market information to evaluate the "value of political connections" among the large politically connected firms that are traded on the Egyptian stock market. The celebrated Fisman study (2001) provided the first such attempt, and it measured the value of political connections in Indonesia by looking at the relation between reports on Suharto's health and

the value of the firms that had special connections to his regime. Fisman found a significant negative correlation between rumors about Suharto's health and the value of firms controlled by his cronies.[5] Other studies at the country level have tended to look at the evolution of corporate boards and executives in terms of their members who are also part of government, and they too tend to find significant benefits to connections – see, for example, Roberts (1990) and Goldman et al. (2008) for the US, Ramalho (2003) for Brazil, and Ferguson and Voth (2008) for Nazi Germany. In a recent paper, Boubakri et al. (2008) conduct a simulated event study in a global panel of 243 firms by looking at the impact of entering into a political connections on firms value. They show that firms increase their value *after* establishing connections.

While the Egyptian stock market is an old institution (founded in 1903), it has been sleepy since the 1930s and its revival is relatively recent. The market only took off as a vehicle for raising corporate funds in the early 2000s when going public became encouraged by generous tax advantages.[6] The stock market allowed firms to raise funds in addition to what could be obtained from banks, which was necessary for expanding firms because of the strict way in which banking regulation evolved after the banking sector was reformed and recapitalized.[7] The stock market also allowed the connected businessmen to capitalize their gains and exit successful ventures in order to move their capital to new domestic investment or abroad (Roll 2010).

Market capitalization grew from US\$ 28 billion in 2002 (29% of GDP) to US\$ 82 billion in 2010 (40% of GDP). The real value traded also increased significantly from 2002 to 2007 with a turnover ratio that reached 50% in 2007.[8] The market exhibited very strong growth from 2002 to 2007, partly as the result of the entry of foreign investors, reaching an all time high capitalization of 107% of GDP in 2007. The bubble crashed in 2008 in reaction to the global crisis, and but it recovered partially in 2009, before crashing again in the heels of the Egyptian uprisings of 2011 (see Figure 1).

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5 He speculates that the value of connections, the extent to which the value of connected stocks would fall if Suharto was to suddenly die – an event that did not occur, would be in the range of 20% of the value of the connected firms. However, he also recognizes that "this calculation involves an inference that is quite far out of sample" (Fisman 2001: p. 1100).

6 Fiscal reforms in the 1990s removed taxes on capital gains and dividend income for listed companies. In addition, investment by individuals in stocks, as well as the interest paid on borrowings to finance this investment, can be fully deducted from taxable income (Kienle 2004).

7 In particular, a binding constraint to growth for ambitious firms was the 5% limit on bank equity per firm.

8 But the market remained concentrated among some big players – for example, the capitalization of the 10 largest companies was about 50% of the total market capitalization in 2010 (Feyen 2008).
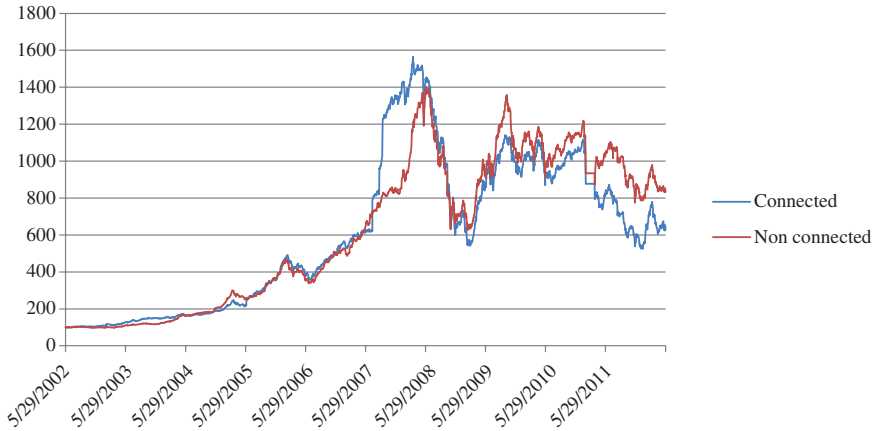
Figure 1 Evolution of Index of Market Valuation for Connected Firms (CFs) and Non-Connected Firms (NCF): 2002–2012.
Source: Computed on the basis of stock prices (from Data-Stream), weighted by market capitalization.

The stock market value of the 116 largest firms traded on the EGX fluctuated between 2008 and 2011 between $42 and 64 billion (at the market exchange rate). The value of our group of CFs fluctuated during this period between $16 and $30 billion, representing 47% of the total at the highest time, and 38% at the lowest. Table 3 shows that this was largely explained by the phenomenal growth in the size of CFs – in 2003, the median CF was only 10% larger than the median NCF; by 2010, the asset size differential grew to seven times. As a result, the group of CFs came to be significantly represented in the "Core 30 firms" – 10 of our 22 CFs were in this group in 2010.

Our main focus is the popular uprising that started on January 15, 2011. Demonstrations intensified on January 22 and turned into street battles in early February. On February 11, Mubarak resigned and left Cairo. The stock market closed early in the events, on January 27 and only reopened its doors on March 23, 2011, when the Army was firmly in control of the situation, having put in place a new government under the umbrella of the Supreme Council of the Armed Forces. We first focus on a window around the main event starting 5 days before the market closed and lasting until 5 days after it re-opened.

The market went down sharply in the days after it reopened. Some of the stocks, and in particular those of some of the CFs, fell by as much as 80%. In addition to using the market index as provided by the EGX, we have built two other stocks price indexes to track the market evolution of the returns of connected and non-connected firms that traded on the EGX, and these are depicted in Figure 1.

It is quite clear in Figure 1 that the CFs index fell by more than that of the NCFs in the weeks after the uprisings occurred in the beginning of 2011. On a cumulative basis, the overall market index fell by 17.9% during our event window, the NCFs index fell by 11%, and the CFs index fell by 23% (see Table 4). One month later, the cumulative losses were larger – at 26% for the market as a whole, 16.3% for the NCFs, and 31% for the CFs. Afterwards, the differential between CFs and NCFs stayed about constant until the end of 2012 (Figure 1), suggesting that the market did not over-react initially and/or that the new information that came out after the first quarter did not affect the initial valuation of connections.

The large market decline indicates that the sudden departure of Mubarak was expected to lead to period of uncertainly and instability, with possible risks of dramatic shifts in power within society, and thus, possible large changes in economic policy. The question here is how each stock would be expected to react to a large market movement. The differences in the average price movements among CFs and NCFs do not necessarily reflect only differences in their levels of connections. They can also reflect differential firm or sector specific sensitivities to market or to revolution risks. We thus make three corrections to account for such differences, one related to the sensitivity of firms to the aggregate shock

Table 4 Cumulative and Abnormal Cumulative Returns for CFs and Non-CFs During Event Windows.

	2011 long window	2011 event window	Aug 2007 event window	July 2004 event window
All (non weighted)				
CR	−20.20%	−15.00%	−2.40%	−4.20%
CAR	12.50%	3.70%	−1.40%	−2.10%
All**				
CR	−26.00%	−17.90%	−1.80%	−3.40%
CAR	−0.50%	−0.40%	−0.20%	−1.50%
Connected**				
CR	−31.00%	−23.00%	−3.50%	−3.50%
CAR	−5.70%	−7.70%	−8.50%	−5.10%
Non connected**				
CR	−16.30%	−11.00%	−1.70%	−3.10%
CAR	16.70%	6.50%	0.10%	−1.80%

Event windows start 5 days before event and close 5 days after event. The 2011 long window starts 5 days before the close of the market until of one month after the market reopens. CR stands for cumulative returns and CAR for cumulative abnormal returns. Weighted indexes are weighted by market capitalization at the start of the year.

** = weighted.

experienced by the economy, one to sector specific risk (connected to the impact of the uprisings on the economy), and one to firm characteristics (which may affect their specific exposure to the uprisings and its aftermath).[9]

To account for the sensitivity of stocks to market risk, we follow MacKinlay (1997) in factoring out price changes that are directly related to the movement of the market index. We start by estimating the "alphas" and "betas" of each stock traded on the EGX through a linear regression of the daily return of a stock on the market return (over an estimation window of 6 months). The estimated betas (not reported) tend to be highly significant, and more than half of them are above 1.5 or below 0.5, indicating that the structure of abnormal returns deviates a lot from the uncontrolled returns. We then compute the daily abnormal return by subtracting from the actual return alpha + beta* market return. And we finally aggregate the daily abnormal returns over the event window. The calculated "cumulative abnormal returns" (CARs), which are in excess of the return predicted by the market model for the event window, are shown in Table 4. The CARs are deviations from the market trend – they can be positive or negative and the overall effect is near zero.[10] Over the short window, the average CAR for the CFs is –7.7%, while that of the NCFs is +16.7% – the difference between the two is 24.4%, which is a first approximation of the value of political connections.

But in response to a shock with such multi-dimensional implications, it is likely that a single risk dimension (market risk) is insufficient to capture all the risks – for example that there is a likelihood that alcohol would be prohibited in the future if the new regime becomes more conservative religiously (the two beverage related stocks did collapse), or that labor strikes will become more prevalent during the transition thus affecting performance in all labor intensive sectors, or that sectors connected to land will suffer as a result of the controversies over the acquisition of public land by firms in sectors that use land more intensively. It is also possible that macro-economic changes, for example, exchange rate devaluation, would affect sectors engaged in international trade differently from those that are not. We therefore control in the regressions below for fixes sector effects. Finally, it is also possible that large inflation or large changes in interest rates would affect firms with different levels of debt differently, and that larger

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9 To the extent that connected firms are losing advantages in ways that can be expected to benefit their competitors (who could receive more credit in the future, or be able to compete more fairly for a larger market share), we can also expect those to gain some value in parallel.

10 We will see below that CFs have high leverage, and on this score, they would be expected to react strongly to the market decline. This high riskiness should in theory be reflected in higher betas relative to the market return. It is the case? We checked by running regressions of the type beta (i) = f (CF, case30, sector) – we found that being connected adds 0.32 to betas in 2010 (significant at the 5% level).

firms with larger market shares will be more affected by economic recession. We therefore also ran a regression that controls for firms characteristics – their size, market share in their industry, and debt to equity ratio. The resultant coefficients will be taken to be *conditional* on firms' characteristics, recognizing that this might entails a selection bias, since CFs could have acquired higher levels for these variables *because* of their connectedness.

We use a simple OLS method and we estimate a regression of the type:

$$CAR\ (i) = a + b\ CF\ (i) + c\ (Firms\ controls\ i) + d\ SEC\ (i) + x\ (i) \qquad (2)$$

where CAR (i) is the excess return of firm i, and CF is a dummy that takes the value of zero for NCFs and 1 for CFs. Firms controls include the size of firm's total assets (at book value and in logs), the debt to equity ratio (measured at the end of year t–1), and the market share within the industry, also computed at year end in the previous year. SEC is a vector of sector dummy variables (using the 12 sectors listed in Table 1), and x is the error term.

The results are in Table 5. The coefficient b is significant in the 2011 event at the 1% level. During the uprisings of 2011, the stocks of the CFs fell on average by 12.8% points (conditionally only on sectors), and by 16.1% points (conditional on firms' sectors *and* characteristics) *on account of connections*, in addition to firm specific effects and of sector effects experienced by firms (not shown).

Some of the firms' characteristics have significant effects. In particular, the values of large firms fell by *less* during the event window (as measured by firm size). This shows that unlike the CFs, large firms were at a relative advantage during these politically fragile moments. On the other hand, firms' market shares did not have a significant impact on the change in their stock market prices (when controlling for their size).

When the market reopened, Mubarak was no longer president and he was under house arrest. The probability that he would make a quick come back was close to zero, and so the estimated discount on CFs, while an under-estimate for the total value of connections, must have been quite close to the full value. To give a sense of magnitude, since the market value of the connected stocks was about $30 billion in 2010, the valuation by the market of the total benefit of the political connections of these 22 firms was between $3.8 and $4.8 billion.

3.1 Robustness Tests

There are two types of objections one could make to our estimates of the value of political connections. First, how robust are they to slight variations in the estimation procedure? The results may be driven by the size of the event window

Table 5 Event Analysis: Explaining Cumulative Abnormal Returns.

Variables	2004			2007			2011		
	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR
CF	-0.0252	-0.0140	-0.0240	-0.0683*	-0.105**	-0.0481	-0.128***	-0.186***	-0.161***
	(0.0220)	(0.0283)	(0.0277)	(0.0399)	(0.0474)	(0.0463)	(0.0599)	(0.0728)	(0.0791)
D/E		-0.00278	-0.00355		-0.00413	-0.00457		0.0263	0.0286
		(0.00439)	(0.00417)		(0.0101)	(0.00911)		(0.0222)	(0.0221)
Ln(assets)		0.0229	0.00105		0.0722	0.00790		0.00881	0.0676***
		(0.0271)	(0.00428)		(0.0472)	(0.0102)		(0.0706)	(0.0249)
MS			-0.00892			-0.103			0.155
			(0.0468)			(0.0925)			(0.125)
Fixed effects	Sectors	Sectors	Sectors	Sectors	Sectors	Sectors	Sectors	Sectors	Sectors
Constant	-0.0904	-0.0854	-0.0950	-0.194	-0.188	-0.261	0.125	0.130	-0.703**
	(0.0701)	(0.0673)	(0.0695)	(0.134)	(0.139)	(0.158)	(0.168)	(0.163)	(0.335)
Obs.	83	70	56	90	80	76	108	94	79
Adj. R-sq	0.026	0.171	0.224	-0.009	0.229	0.220	0.089	0.309	0.320

***p<0.01, **p<0.05, *p<0.1.

OLS. Standard errors in parentheses. CAR is cumulative abnormal returns over a five days event window. CF is a dummy that takes a value of 1 for connected firms and zero otherwise. D/E, Ln(assets), and MS are defined in Tables 2 and 3.

we used or by outliers, and also, by the large impact of the CFs on the market index, which may make the MacKinlay procedure less robust. Second, there is the more difficult identification challenge in interpreting our results – firms that we have identified as politically connected may have been affected by other factors which we do not observe but which may explain both their past rise and their post-uprising decline.

Let us start by checking the robustness of the results. We have so far used a relatively long window that starts 5 days before and ends 5 days after the event. A tighter window may give more precise results, but a longer window may be needed to capture all the relevant information – the market may have started to fall when Ben Ali was deposed in Tunisia; and the market may have struggled to adjust to the new information when it reopened, given the magnitude of the shock. To check how sensitive the results are to the size of the window, we re-run the event study with windows ranging from one day before and after the market closed, to ten days. The results are in Table 6A. The CF discount builds over time – the largest CF discount occurs with a 7 days window (at 15.6%, in the unconditional form), although the variation in the size of the coefficient when we move from 2 days to 10 days is relatively small (from 10.2 to 13.9%). The adjusted R square rises as the length of the window gets larger, indicating that the market becomes tighter over time, presumably as it adjusts to the large amount of information that needs to be processed on the impact of the event on every stock and on the market index.

Second, we removed the 5 financial firms from the sample (all NCFs), to test if their presence influenced unduly the results. The effect of connectedness on the stock price remain highly significant and, in its unconditional form, its size increases to 14.9% (see Table 6B, first 3 columns).

Third, we removed from the CFs sample 3 stocks that are controlled by the largest businessman's family in Egypt – the capitalization of these three stocks amount to about 23% of the market. The impact of the 2011 event on CFs is again stronger (18.2%, see Table 6B, last 3 columns).

Finally, we redid the event study on the basis of cumulative returns rather than cumulative *abnormal* returns. The results, including with event windows that vary from 1 to 10 days are in Figure 6C. Here too, the results are stronger – the market adjusts faster, posting a discount of 12.3% on the first day of trading, and 17% on day 6.

Another criticism can be made relative to the thin nature of the EGX. It may have been that the price decline of the CFs was manipulated by parties that stood to gain from this. Such accusations have emerged in Egypt in the past when some firms have been accused of exaggerating bad news in order to buy back their stocks on the cheap. But in this particular instance, the "connected businessmen"

Table 6A 2011 Event – Cumulative Abnormal Returns: Varying the Size of the Event Window.

Variables	CAR1	CAR2	CAR3	CAR4	CAR5	CAR6	CAR7	CAR8	CAR9	CAR10
CF	-0.0561**	-0.102***	-0.102***	-0.104***	-0.128***	-0.151***	-0.156***	-0.156***	-0.147***	-0.139***
	(0.0327)	(0.0382)	(0.0386)	(0.0378)	(0.0397)	(0.0408)	(0.0426)	(0.0432)	(0.0398)	(0.0416)
Constant	0.0544	-0.0206	-0.0190	-0.0101	0.00205	-0.0147	-0.0456	-0.0638	-0.0286	-0.0183
	(0.0920)	(0.107)	(0.108)	(0.106)	(0.112)	(0.115)	(0.120)	(0.121)	(0.112)	(0.117)
Obs.	108	108	108	108	108	108	108	108	108	108
Adj. R-sq	0.122	0.143	0.141	0.161	0.148	0.164	0.171	0.170	0.177	0.153

***p<0.01, **p<0.05, *p<0.1.

Ordinary least squares with sector fixed effects and no controls for corporate variables. Standard errors in parenthesis. CF is a dummy variable that takes a value of 1 for connected firms and 0 otherwise. CAR(i) is the cumulative abnormal return starting i days before the market closed on January 23 and ending i days after it reopened on March 23.

Table 6B 2011 Event – Cumulative Abnormal Returns: Varying the Set of Connected Firms.

	Without financial institutions			Without largest businessman		
	2004	2007	2011	2004	2007	2011
	CAR	CAR	CAR	CAR	CAR	CAR
CF	−0.0242	−0.0699*	−0.149***	−0.0111	−0.0701*	−0.182***
	(0.0237)	(0.0497)	(0.0605)	(0.0215)	(0.0512)	(0.0614)
Constant	−0.0904	−0.152	0.134	−0.0904	−0.0927	0.150
	(0.0739)	(0.147)	(0.168)	(0.0618)	(0.139)	(0.162)
Obs.	75	83	101	80	88	105
Adj. R-sq	0.195	0.236	0.247	0.176	0.236	0.276

***$p<0.01$, **$p<0.05$, *$p<0.1$.

Ordinary least squares with sector fixed effects and no corporate controls. Standard errors in parentheses. CF is a dummy variable that takes a value of 1 for connected firms and 0 otherwise. In the first 3 columns, 5 financial firms are removed from the NCFs set. In the last 3 columns, 3 companies controlled by the family of the richest businessman in Egypt are removed from the CFs set. Here, CAR refers to CAR(5).

had no interest in buying back their stocks – indeed, most of them flew out of the country, and their interest must have been to sell parts of their share. If they tried to manipulate the market, they must have done in ways to minimize the price decline. It is also doubtful that other interests wanted to acquire CFs at this point in time, given the uncertainties hanging over the future of their companies. Moreover, no financial news emerged to suggest that prices were tampered with for personal interest during this period.

The identification issue, to which we now turn, refers to the possibility that the drop in the values of the CFs was related not to their connection with the fallen regime, but rather, with the massive change in economic circumstances. It may well be, for example, that these firms, being among the largest, were in favor politically because of their economic success, and were at the same time more leveraged on economic stability, international trade, or the stability of the exchange rate. While we have included several controls to account for size and sector effect, these may still be insufficient given the wholesale nature of the change. Other techniques must be used to increase our confidence that the losses they experienced were actually connected to the loss of political support. Here, we resort to two quasi-natural experiments to deal with this problem. First, we look at the impact of the global financial crises in 2008 to access whether these firms were hit more than the rest of the market by a large macro-event. Second, we exploit two past events when rumors about Mubarak's death circulated and affected to market (in 2004 and 2007) to check whether these firms were also affected differentially then.

Table 6C   2011 Event – Cumulative Returns: Varying the Event Window.

Days	cr1	cr2	cr3	cr4	cr5	cr6	cr7	cr8	cr9	cr10
CF	−0.123***	−0.123***	−0.123***	−0.146***	−0.166***	−0.170***	−0.170***	−0.159***	−0.152***	−0.147***
	(0.0304)	(0.0304)	(0.0306)	(0.0338)	(0.0350)	(0.0379)	(0.0394)	(0.0367)	(0.0382)	(0.0391)
Constant	−0.297***	−0.297***	−0.282***	−0.261***	−0.258**	−0.295***	−0.305***	−0.249**	−0.277**	−0.319***
	(0.0856)	(0.0856)	(0.0860)	(0.0949)	(0.0983)	(0.107)	(0.111)	(0.103)	(0.107)	(0.110)
Obs.	108	108	108	108	108	108	108	108	108	108
Adj. R-sq	0.243	0.243	0.249	0.253	0.272	0.269	0.264	0.265	0.243	0.243

***p<0.01, **p<0.05, *p<0.1.

Ordinary least squares with sector fixed effects and no controls for corporate variables. Standard errors in parentheses. CF is a dummy variable that takes a value of 1 for connected firms and 0 otherwise. CR(i) is the cumulative return starting i days before the market closed on January 23 and ending i days after it reopened on March 23.

The EGX index took a severe beating in 2008. The market fell by 42% in reaction to the 2008 global crisis between mid-September 2008 and end-November. This decline was related to the many relations between the Egyptian and global economies (tourism, oil and gas, Suez Canal receipts), and it was also driven by foreign investors liquidating their portfolios to cover their losses in their home markets, pushing the market further down.[11] We use two event windows: a short one, around the Lehman event (5 days before and 5 days after September 15, 2008), and a long window that captures most of the decline of the EGX index connected with the global financial crisis, between mid-September and mid-November 2008. As apparent in Table 7, it turns out that both CFs and NCFs were affected equally by these events, as the coefficient for the CFs dummy is not significant. This then suggests that the CFs are not more highly leveraged on the health of the Egyptian and on the global economy than other firms traded on the EGX. Instead, they react to large "pure" economic shocks, on average, like any other large corporation traded on the EGX.

To verify that it is indeed only political events that affect CFs differentially, we looked at two well-documented events related to rumors about the health of President Mubarak. These are:

Table 7 Stock Market Reaction to the 2008 Event.

Window	5 Days around September 15, 2008			September 15–November 15 2008		
	CAR	**CAR**	**CAR**	**CAR**	**CAR**	**CAR**
CF	−0.0122	−0.00815	0.00774	−0.00312	−0.0194	−0.0393
	(0.0181)	(0.0196)	(0.0213)	(0.0985)	(0.100)	(0.112)
D/E		−0.00251	−0.00360		0.00524	0.00629
		(0.00376)	(0.00376)		(0.0192)	(0.0197)
Top30			−0.0420*			0.0304
			(0.0221)			(0.115)
Constant	0.0317	0.0334	0.0270	−0.110	−0.110	−0.102
	(0.0476)	(0.0493)	(0.0489)	(0.258)	(0.252)	(0.256)
Obs.	100	90	89	99	89	88
Adj. R-sq	0.240	0.282	0.317	0.077	0.102	0.103

***p<0.01, **p<0.05, *p<0.1.
OLS, Standard errors in parentheses. See Tables 2 and 3 for the definition of CF, D/E, and Top30.

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[11] Economic growth slowed down in 2008, coming down from 6.5% in 2007 to 2.5% in 2008, before bouncing back to 4.5% in 2009. The sectors that experienced the largest decline on the EGX during 2008 were Hotels (highest decline of 71%), followed by construction (minus 69%), and Financial Services excluding Banks (a 64% decline).

- August 29, 2007. Mubarak gave an interview to the Ahram on August 31st calling on the public to ignore rumors in the media about his deteriorating health.
- June 17, 2004. Mubarak appeared on TV to contradict rumors about his death following the cancellation of a scheduled meeting with the Palestinian Prime Minister.

In both events, the market fell as a whole – by 2.4% in August 2007, and 4.2% in June 2004. In both cases, but especially in 2007, the CFs, as a group, lost a larger part of their value than NCFs (see Table 4). The result of the more formal event studies are in Table 5. It appears that the CFs were affected differentially in 2007 events but not in the 2004 event. During the 2007 event CFs lost between 6.8% (unconditionally) and 8.8% (conditionally) on account of their connections. This suggests that these firms were clearly identified by the market to be politically connected in 2007. However, they were not yet perceived to be connected in 2004, indicating that as a group, their "political connectedness" is a recent phenomenon, as indeed stressed by the analysts quoted in the first part of the article. If the CFs were simply successful firms, they would not have been affected differentially by the 2007 event. Both natural experiments therefore suggest, in different ways, that our event study of 2011 has correctly measured the impact of the uprisings on the value of political connections. The firms that we have identified as connected in 2011 were already more affected by news about Mubarak's health in 2007 than those we identified as non-connected. However, they behave like other firms during the 2008 global crisis, suggesting that they were not more leveraged on macro shocks.

In sum, our main result, which is that following the uprisings of 2011, the CFs have lost on average 13–16% of their value *on account* of their political connections, appears to be quite robust. The value of political connections that we estimate is large – much larger than found in other studies which tend to be in the range of 3–8% (Boubakri et al. 2008), and in the neighborhood of the figure of 20% "guessed" by Ray Fisman for the "total" Suharto effect (Fisman 2001). This indicates that "cronyism" in Egypt must have been close to Indonesian levels and much deeper than in the other countries studied by the corporate literature so far.[12] Having established that political connections were a valuable collateral that must have encouraged banks to lend more to CFs, we investigate in the next section the extent to which they increased current profits, versus the extent to which they were perceived to increase future payouts to shareholders.

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12 This result is consistent with the finding in Faccio (2011) that the magnitude of privileges is larger in more corrupt and in poorer countries.

4 Are Connected Firms More Profitable or Too Connected to Fail?

Conceptually, there is nothing intrinsically bad about close state-business relations. The case of South Korean Chaebols illustrates how industrial policy can foster accumulation and the development of new sectors, even when state-business relations are characterized by cronyism (Kang 2002; Khan 2010). Shleifer and Vishny (1994) argue that politicians try to influence firms through subsidies and firms try to influence politicians through bribes. More generally, we can conceptualize state-business relations as an exchange of favors between firms and politicians. In this relation, CFs obtain advantages that boosts their profits, and they in turn need to return the favor and do the politicians' bidding. Depending on the patron's objective function, and on the respective bargaining powers of patrons and clients, close state-business relations can provide the right incentives to perform and form the basis for dynamic forms of capitalism, or they can become a sources of undue influence, corruption and other forms of rent-seeking that distort economic incentives (Bohnet and Rock 2009).

While we have found that politically connected firms use up more capital than NCFs, the question arises as to whether they use this capital more or less productively than NCFs. It is possible that CFs be both less productive, and at the same time more able to attract capital, if they were perceived to be less risky, if they were expected to be bailed out by the state in case of failure. This situation could arise if politicians cared more about return favors than about economic growth. In this section, we attempt to separate the net impact of political connections on current profitability and on riskiness (as perceived by the stock market) by combining corporate performance measures and information extracted from the market valuation of these firms.

An emerging global literature has looked into the mechanisms that allow firms to increase their profits after they establish political connections. These studies show that political connections increase current profits though more access to government contracts (Goldman et al. 2008), more regulatory protection (Kroszner and Stratmann 1998), and to a lesser extent, more tax, more market power, and generally, larger state favor. Diwan et al. (2014) study several mechanisms of privileges in Egypt and show that CFs had preferential access to energy subsidies and to scarce land (especially in the housing and tourism sector); that regulations (for example the granting of investment licenses) were applied in ways that favor them and hurt their competitors; and that they have tended to operate in sectors protected by trade barriers. Other alleged benefits that could not be evaluated quantitatively include lax application of competition rules,

benefits from access to policy related information, and influence on policies to improve their business interests.[13]

While CFs obtained privileges that must have boosted their profits, there are several other factors that could have depressed their profits. Luciani (2013) suggests that the connected firms in Egypt were pushed by the government to grow fast as a quid-pro-quo for receiving valuable privileges. This may have reduced profitability, especially if they were "directed" to grow in sectors with low profitability. Second, when politicians care more about loyalty than management skills (see Henry and Springborg 2010),[14] these firms may end up badly managed. Third, they may have to return politicians' favors, for example by financing political patronage and campaigns, and this would reduce their values (Owen 2002).[15] It is also possible that politicians were less able to discipline their client businessmen when political conditions started to deteriorate in the late 2000s (Bohnet and Rock 2009), and indeed, some of these businessmen became very rich.

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13 Two iconic cases illustrate the nature the cronyism of the past. The first concerns Ahmad Ezz, a Steel magnate and former member of Parliament, whose companies dominated the steel industry after 2000, controlling at some stage 65% of the local market, and who is accused of having improperly acquired the largest public steel corporation at an artificially low price, used market power to generate excess profits, and lobbied to raise external tariffs to gain protection from foreign competition and for Parliament to pass watered down anti-monopoly legislation. Ezz was a prominent member of the National Democratic Party (NDP), the dominant party in Egypt – a member of its influential Policy Committee, and the chair of Mubarak's election campaign in 2005 and of the NPD for the Parliamentary elections of 2010. In Parliament, he was the Chair of the Budget Committee, which among other functions oversaw the work of the Competition Commission (Werker et al. 2012). A second example, also the focus of a current court case, is that of Palm Hill Corporation, the second largest real estate developer in Egypt. The main owner of Palm Hill, Ahmed El-Maghrabi, was Minister of Housing and has been accused of exploiting his ministerial position to sell his company as well as others individuals connected to the NPD large tracts of land in various parts of the country at exceptionally cheap prices.

14 Henry and Springborg (2010) writing on Egypt, put the "political management of capital by all means, including using intimidation and managed predation" at the center of the "active efforts by political elites to strongly discourage potential manifestations of political behavior by business elites."

15 Owen (2002) describes the economic regime that has emerged after the economy was liberalized in the following way: "Instead of encouraging a more plural political system .. the Arab regimes produced .. an Egyptian, or Tunisian, or Jordanian version of "crony capitalism" in which competition was stifled and entrepreneurs with close connections with the regime were able to obtain most of the major contracts, as well as to bend or break planning laws and other legal constraints when it suited them. What they had to put up with, in turn, is a great deal of bullying from the regime itself, which showed no compunction in forcing each country's leading businessmen to invest in its favorite business or welfare project as a quid pro quo" (p. 234).

Since political connections entail both benefits and costs, the next question is whether on net terms, this relation is increases return on capital or not. Most country studies show that the benefits of connections tend to be greater than their costs – for example, Roberts (1990) and Goldman et al. (2008) in the US, Ramalho (2003) for Brazil, and Ferguson and Voth (2008) for Nazi Germany. Similarly, Boubakri et al. (2008) find that firms increase their financial performance after establishing connections. However, Faccio (2006, 2010) finds that in spite of the advantages they have, connected firms have a poorer performance in her panel, with a lower return on assets of about 2.4%. But she also finds, as reported earlier, that the value of connections is country specific – the magnitude of the net benefits decline more in poorer and more corrupt countries. At the limit then, it is possible that connections may destroy value in environments where political concerns dwarf economic considerations. One of the very few papers to uncover such a case is Bertrand et al. (2007), who find that firms managed by connected CEOs in France create more jobs and pay higher wages than NCFs, but that as a result, they end up with being less profitable than NCFs.

In addition to current benefits, CFs may receive future and contingent benefits, and in particular, more frequent bail-outs, allowing them to borrow more. Studies that show that political connections allow for larger debt include Cull and Xu (2005) for China, Johnson and Mitton (2003) for Malaysia, Khwaja and Mian (2005) for Pakistan, Leuz and Oberholzer-Gee (2006) for Indonesia, and Boubakri et al. (2008) in a global panel. Some of these studies, and in particular Khwaja and Mian (2005) and Faccio (2010) also find higher default rates and higher occurrences of bailout.

In investigating whether political connections increased current profitability or not in the case of Egypt, we compare the return on assets (RoA), as well as the related return on equity (RoE), among CFs and NCFs. These measures of profitability are book value measures – the RoA is given by net income before financing costs, divided by the total capital stock of the firm; the RoE is the net profit that accrues to the equity holders after financing costs are paid, divided by the book value of the equity (total assets minus debt). The median values of the RoAs and RoEs from 2003 to 2012 are in Table 2. They reveal noteworthy trends. First, the RoAs of CFs tend to be smaller than those of the NCFs (and the distance between them seems to increase over time). We also observe that their median RoAs fall after the 2011 revolution by more than the NCFs median ROAs. Second, unlike RoAs, the RoEs of CFs and NCFs were broadly similar throughout the period.

But as in the preceding section, we need to look more carefully at the behavior of the RoAs and RoEs, controlling for firm, sector, and time effects, in order to extract a more precise measure of the relation between political connections and

profitability. The regressions that we run are similar to equation 1, with the ROA and the ROE as dependent variables. The results are shown in Table 8. We find that CFs have a lower RoA with the gap at –1.6 percentage point (in the unconditional regression) and at –3.5 points (in the regression conditional on firm characteristics), and both significant at the 1% confidence level. This means that comparing two firms in the same sector, with similar size and market share, the connected firm has an ROA that is 3.5 point below that of a non connected but otherwise similar firm. This difference is large, given that the median RoAs in our sample over the period 2004–2010 are within the range of 3.7%–11.6%. The gap is larger than the effect measured by Faccio (2010) in her international sample, in spite of the fact that we had uncovered more valuable advantages related to debt and market size, which would have suggested a smaller discount, if not a premium.

The lower ROA can be due to the several ways in which connections can be taxing, as discussed above. But a more positive "oil in the wheel" interpretation is also possible, where connections allow firms to "get things done" in inefficient bureaucratic environments (see Méon and Sekkat 2005, for a review of this literature). Abdel-Latif and Schmitz (2010), make this case for Egypt, arguing that tight state business relations should be seen as "growth alliances" between businesses and policy-makers, which can help to solve particular problems related to

Table 8 Profitability – Panel Regressions.

	RoA	RoA	RoE	RoE	PER	PER
CF	−1.614*	−3.581***	1.681	−2.539	2.858	7.772**
	(0.838)	(0.879)	(2.206)	(2.199)	(2.259)	(3.868)
Ln(assets)		−0.0628		0.264		−0.326
		(0.183)		(0.458)		(1.016)
MS		17.04***		37.77***		−17.28*
		(2.238)		(5.611)		(10.35)
Top30	2.349***	1.778*	2.620	−0.834	−3.504	0.976
	(0.838)	(0.946)	(2.198)	(2.366)	(2.199)	(3.963)
Cst	1.261	−8.438***	−0.962	−27.71***	15.18***	22.59
	(2.542)	(3.205)	(6.658)	(8.016)	(5.659)	(14.39)
FE	Sectors, years	Sectors, years	Sectors, years	Sectors, years	Sectors, years	Sectors, years
Obs.	1049	947	1041	939	487	479
Adj. R-sq	0.160	0.201	0.088	0.128	0.033	0.014

***$p<0.01$, **$p<0.05$, *$p<0.1$.

OLS panel regression over 2003–2010. Standard errors in parentheses. All variables as defined in Tables 2 and 3.

related to a poor business environment, and that as a result, they end up enhancing investment and growth. In this narrative, Egypt's was in a messy state in the early 2000s, struggling to escape the weight of its past, and its leaders were trying hard to get the country to grow out of its weaknesses. A predatory bureaucracy and high levels of political risk kept investors away – they required high rates of return to invest in Egypt. Thanks to the state protection they enjoyed, a few dynamic entrepreneurs lowered their perceptions of risk and became willing to invest more. In this interpretation, the 13–16% of equity value that was lost by CFs after the 2011 uprisings reflects the fact that their assets became valued at the higher risky rate of return, given that these firms would now be subject to as much predation as the rest of the market. The story is also, at face value, consistent with observed corporate behavior: firms that are protected from predation expanded their operations, reached decreasing returns, and accepted lower returns.[16]

The simple way of testing this hypothesis is to check if, within a sector, a larger firm would tend to have lower profits than smaller firms with the same characteristics. This can be verified by controlling for firm size and market share in the RoA regression, in addition to sector of activity. As apparent in Table 8, we find do not find that larger firms have lower RoAs – the effect is not significant even at the 10% level. In addition, firms in the top30 firms tend to have *higher* RoAs (significant at the 1% level), suggesting that they tend to be better managed. Thus, the lower ROAs observed among the CFs cannot be explained by decreasing returns per se. Indeed, the CF effect persists (and more than doubles in size) after taking size and membership in the top30 into account. We also find that a larger market share increases both the RoA and the RoE – this effect is significant at the 1% confidence level. Thus, CFs take advantage of market size to develop market power, leading to higher profits.[17] The effect is also large for CFs: the CFs' RoA increases on average by 3.1 percentage points on this account (17.04*0.182, the market share median for CFs in 2010). This finding highlights that CFs underperformed *in spite* of the fact that they tend to have market power which by itself increases profitability. So size actually helped CFs increase their profitability, and resorting to an argument about a "size effect" cannot explain why they end up with lower profitability overall. Thus, we are left to conclude that CFs were "taxed" in various ways – by poor management, tunneling of profits, high levels

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16 In this narrative, access to credit does not have value per se as it is in excess supply – the constraints to growth are related to the high costs of doing business due to high predatory and political risks.

17 Political scientists working on Egypt have argued that privileges led to high profits through monopoly power. See in particular Sadowski (1991), who studies the micro foundations of food markets, using ethnographic methods, to prove this point.

of repayments of political favors, or over-investment in low return sectors – we cannot untie these possible channels due to a lack of disaggregated data on expenditures.

On the other hand, we also find that there is no significant RoE (dis-)advantage to CFs – the sign of the CF dummy in the RoE regression is not significant. Thus, minority shareholders were not expropriated as they benefitted from higher leverage (and a premium on the pricing of these earnings, see below). This in itself is not contradictory with the previous result. CFs have much higher leverage, as we have seen, and as long as the interest rate charged on their loan is low enough, more leverage leads to higher RoEs. Taken together, smaller ROAs and similar RoEs then suggest that CFs have been borrowing at favorable terms, and that in effect, the shareholders gain is the bankers' loss – or the state loss, if banks perceived the state to be backing up these loans with an implicit bail-out guarantee.

But then, why then did the stock market values of CFs drop in the 2011 event? If their RoA could rise when they free themselves of political connections, one could expect their value to actually rise when this connection is severed. But this is unlikely to happen in reality, as there is a fair amount of hysteresis in this situation, which obliges them to continue paying the costs of their past connections, even as the benefits of connections disappear. Even if CFs would save on political bribes in the future, they can remain burdened in various ways, stuck with bad managers or in bad sectors, or with oversized operations. They are also likely to be asked by their bankers to repay some of their debts, leading to costly fire-sales.

The other possible reason for value loss after the uprisings is that they had been priced at a premium relative to NCFs in the past, in ways that reflected either large perceived future growth and profit opportunities, or the possibility of future bail-outs, and that it is the loss of this pricing premium which explains much of the price decline in the 2011 event. The way the market prices earnings is captured by the price to earnings ratio (PER) – defined as the market value of the firm (which we evaluate at the average quarterly stock price), divided by total earnings. Inspection of Table 2 reveals that median PERs were indeed much higher for the CFs than for NCFs, but that these fell in 2012 by more than the PERs of NCFs.

To look more formally into this hypothesis, we ran regressions similar to (1) with PER as the dependent variable (see Table 8). We find that the CFs traded at a PER premium of 7.7 points during the period 2007–2010, when controlling for size and market share. This suggests that some of the value that was lost in the 2011 event was the pricing premium enjoyed by the CFs until that date.

Can we learn more from the market reaction in 2011 about the extent to which the PER, but also the D/E ratio, and MS influenced the market reaction of CFs and NCFs differentially? We re-ran the 2011 event study by including, instead of a dummy

variable to identify the CFs, the corporate variables of interest (PER, D/E, MS) as well as the interaction of these variables with the CF dummy, in the following form:

$$CAR = f (D/E, CF * D/E, MS, CF * MS, PER, CF * PER, SEC, time, error). \quad (3)$$

The results are shown in Table 9. They are surprisingly rich and they both confirm and enrich our speculations above. They reveal that firms' PERs and MSs mattered for pricing, but only for the CFs. In particular, prices fell more for CFs that had higher PERs initially, and to a lesser extent, higher market shares, and so, they suggest that from the point of view of the market, the change in the value of political connections was made up largely by the loss of favorable pricing, and to a lesser extent by the expected loss of monopoly power. When valued at the median CFs, the loss on the PER account adds up to a decline in the value of these stocks of about 17.0% (−0.013*13.07). This is a very large effect, of the same magnitude than the overall market price drop for CFs in the 2011 event. One can speculate that much of it must have been due to a loss of bail-out guarantee rather

Table 9　2011 Event Study: Decomposing the Market Reaction.

	CAR8	CAR5
CFs	0.187*	0.109
	(0.109)	(0.101)
PER	−5.99e−05	2.82e−05
	(0.000472)	(0.000438)
CF*PER	−0.0190***	−0.0130**
	(0.00576)	(0.00535)
CF*MS	−0.368***	−0.276**
	(0.118)	(0.110)
MS	−0.0122	−0.0178
	(0.0642)	(0.0596)
CF*DE	0.0296	0.0202
	(0.0358)	(0.0332)
D/E	−0.00739	−0.00389
	(0.0168)	(0.0156)
Constant	0.109***	0.101***
	(0.0236)	(0.0219)
Obs.	79	79
R-sq	0.424	0.345

***p<0.01, **p<0.05, *p<0.1.
Ordinary least squares with sector fixed effects. Standard errors in parentheses. CAR(i) is the cumulative abnormal return starting i days before the market closed on January 23 and i days after it reopened on March 23. All the other variables as defined in Tables 2 and 3.

than to a loss of future growth opportunities, given that CFs were already much larger than their competitors. Second, the loss on account of the expected loss of market share, again evaluated at the sample's median, is smaller at about 5% ($-0.276*18.22$). Finally, market prices were not affected by firms' debt levels. This may be due to the opposite effects of high debts, being unfavorable from a cash flow perspective on the one hand, but at the same time giving firms a bargaining advantage over their banks.[18]

In sum, we have found that a large share of the value of connections in Egypt was related to the (implicit) promises of future gains – whether in the form of larger growth opportunities, or more likely, of bail out guarantees by the state for these firms, and not by their superior profitability. In effect, while CFs had a comparative advantage at attracting capital, but they did not make a productive use of it compared to their potential competitors.

5 Concluding Remarks

The paper has focused on the large corporations in Egypt and has studied empirically the magnitude, mechanisms, and effectiveness of political connections. While CFs had access to valuable privileges, they did not perform as well as the NCFs. Our results corroborate the view in political science that an important constraint to economic growth in Egypt has been political rather than economic per se. This view suggests that the uprisings, by shifting the political constraint, can end up having an important impact on growth and development. The hope is that more open political system would eliminate the need for the systematic granting of privileges to business insiders and foster a more effective use of capital as well as more competition, and thus to generate more jobs and growth.

The historical events of 2011 in Egypt present a unique case study for the measurement of the value of political connections. We used a publicly available data-base of publicly traded Egyptian firms, and so some of our results could have been found before the 2011 uprisings. But it is the event study that allows us to verify with some degree of confidence that our information on the nature of connections bears some resemblance to reality, based on information revealed by the market. While the identity of the closely connected businessmen in Egypt was well known to the Egyptian public and to financial markets before the 2011 uprisings, it is the ongoing trials of previously connected businessmen, and the

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18 Recent developments confirm that the market was right. While there has been some extent of deleveraging after the 2011 event, highly indebted firms did relatively well and became even more leveraged, even though their profitability collapsed (see Table 2).

fall in their market values, that makes the claims about unfair treatment more credible.

We have focused on only one element of the growth story, that of the efficiency of investment. Capital was being misallocated in the sense that it would have produced higher economic returns if it went instead to the non politically connected sector. The PC firms borrowed a larger share of national savings not because they were more efficient, but because of the implicit state guarantees that made them more attractive to banks in spite of their low levels of efficiency. When the market fell in early 2011, it was mainly the value of state guarantees that disappeared, plus part of the value of these firms related to their market power.

If credit has gone instead to the NCFs, it would have yielded an additional 3.5% return per year, and thus should have created more jobs. Clearly, while this is not insignificant, the effect is relatively small as it is a once-off level effect only. In the bigger picture, there may have also been dynamic effects at play, economic, political, and social that may have magnified the net effects of the political connections on growth. These should be investigated more carefully in future research.

First, on the economic front, exclusionary mechanisms may have reduced entry, and privileges may have reduced creative destruction. Indeed in our sample, the NCFs essentially did not grow in the last decade. With fewer threats from frontier entrants, incumbents have fewer incentives to invest in innovation and push the efficiency frontier (Aghion et al., 2009). More direct tests, using existing enterprise surveys would be very helpful to understand better the dynamic impact of cronyism on NCFs. One could look at variations among sectors using a cronyism index that could be constructed from the type of data we made use of. Additionally, comparative case studies could be useful – for example, it seems that cement was a competitive sector in Egypt, unlike steel. Since both industries serve the same construction sector, and both are capital intensive, an evaluation of their differential dynamism can reveal much about the dynamic costs of political connections.

Second, the unwillingness of autocrats to liberalize polity ended up generating enormous social discontent, thus subjecting the corporate sector, including connected firms, to larger political risk ex ante. That private investment in Egypt had struggled to stay above 10% GDP, and that capital flight has been estimated at over $5 billion/year during the decade ending in 2010 (Kar and Curcio 2011), is a testimony that risks were perceived to be high.

Third, the political costs imposed by cronyism are likely to have been large too. Extreme patronage went hand in hand with the repression of the opposition, and this mix of sticks and carrots allowed the autocratic regimes to survive much longer than they would have otherwise. When the uprisings came, the level of

popular frustrations was high, but the political opposition was not organized to allow for an orderly succession. As a result, insecurity increased dramatically, resulting in several years of sharply lower output. There are also risks of falling into a transition trap, with political tensions feeding on a bad economy, and making the transition to a more stable political order even harder to complete successfully.

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