

Cronyism and Competition in Indonesian Manufacturing Pre and Post Suharto[†]

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Abstract: How much does cronyism constrain competition? Using plant-level Indonesian manufacturing census data in which 269 firms with political connections to President Suharto are identified, this paper documents a pro-competitive effect of Suharto's fall on sectors in which his cronies had extensive business interests. While connected firms weathered the crisis well, their growth rates decelerated dramatically. By contrast, at the 5-digit sector level, greater crony presence during the Suharto era is associated with greater entry and exit, faster employment growth, and more re-allocation during the post Suharto period. Increased dynamism in these sectors, did not translate into significant reductions in markups and concentration rates, however. The results are robust to controlling for potential confounders, including changing credit conditions and sector-specific shocks.

Keywords: Creative Destruction, Corruption, Cronyism, Firm Dynamics, Indonesia, Manufacturing Sector, State-business Relationships, Political Turnover

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1. Introduction

How do state-business relationships shape competition? In spite of in-depth theoretical analysis of the relationship between corruption and competition (Shleifer and Vishny, 1993, 1994; Bliss and Di Tella, 1997; Ades and Di Tella, 1999; Acemoglu and Verdier, 2000) and macro-level studies of the economic consequences of political turnover (Londegran and Poole, 1990), evidence of the impact of crony capitalism on creative destruction remain limited. Political connections have been shown to be highly valuable, (Fisman, 2001; Faccio, 2006; Ferguson and Voth, 2008) and associated with a range of anti-competitive practices including cheaper access to finance (Johnson and Mitton, 2003; Khwaja and Mian, 2005; Faccio et al., 2006), and privileged access to operating and import licenses conferring monopoly rents (Mobarraq and Purbasari, 2006; Rijkers et al., 2014). However, empirical testing of their impact on industry structure and competition remains scant.

This paper examines the impact of political connections on industry structure in Indonesia using plant-level manufacturing census data from Indonesia in which 269 firms with connections to the Suharto family are identified. While we have plant-level data, the focus of the paper is on sectoral outcomes, as our main interest is in examining how perverted state-business relationships shape industry structure and competition. We examine how the importance of political connections varies with industry characteristics, and then assess the impact of political turnover on industry outcomes exploiting the fall of President Suharto as a quasi-natural experiment generating variation in the potency of political connections to him. We assess impacts on concentration, markups, and firm dynamics, as these are important determinants of allocative efficiency and productivity growth.

Indonesia provides a suitable environment for analyzing the impact of crony capitalism on competition. Suharto was a notoriously corrupt president, whose family is estimated to have amassed a total wealth of \$35 billion during his time in office. His family's business interests were both extensive and highly diversified. Cronyism was rampant and it was well known that ingratiating one-self with the President's family was an important enabler of business success. Moreover, the fall of the Suharto regime in the wake of the financial crisis was largely unexpected. Last but not least, Indonesia has a high-quality plant-level dataset in which we identify firms with political connections to the Suharto regime, either by virtue of having family members as one of their owners, or by means of cultivated connections. The data span both the Suharto era, the crisis and its aftermath, and are thus well-suited to assess the impact of political turnover.

The main hypothesis assessed in this paper is that Suharto's fall had a pro-competitive impact on industries where firms with connections to him accounted for a higher share of output. If political turnover resulted in a reduction in anti-competitive practices conferring advantages to those directly connected with Suharto, one would anticipate greater competition and more vibrant firm dynamics, especially in those sectors where his cronies' business interests were most extensive. To assess this hypothesis we examine the impact of Suharto's fall on entry and exit rates, competition measures, employment and output growth at the sector level. A

crucial identifying assumption is thus that the collapse of the Suharto regime reduced the value of political connections and consequently state capture.¹ Empirically, the main challenge is to isolate the impact of Suharto's fall from potentially confounding changes due to inter alia the crisis, and other developments, including changing credit market conditions, technological progress, and global demand shifts. To this end, we use a difference-in-difference strategy and aggressively control for sector, sector-time fixed effects and time-varying industry characteristics which absorb much of the variation that cannot be attributed to political connections alone. In our most restrictive models we assess how the difference between the pre- and post- Suharto performance of narrowly defined 5 digit industries within the same 3-digit industry grouping varies with the prevalence of political connections prior to Suharto's demise.

Although the number of politically connected firms we identify is relatively small (1-1.2 percent of the sample), their economic importance is very big (13-16 percent of total output). These firms tend to allocate in larger, more productive, but less competitive and dynamic industries, and occupy leading positions in these markets. Moreover, there is substantial variation in the importance of connected firms in the cross-section even within 3 digit industry groupings, which facilitates identification.

Our regression analysis reveals positive changes in industry structure and reallocation dynamics after the regime collapse in industries in which politically connected firms were dominant. Although their growth rates decelerated dramatically, we find little evidence that politically connected firms we identify themselves were especially adversely hit by Suharto's departure.² Nonetheless, Suharto's fall did spark greater dynamism; we observe significant increase in both entry and exit rates in industries which politically connected firms accounted for a larger share of production during the Suharto era. We also find significant increase in employment rates in these industries. The main driving force of the positive dynamics is newly created firms. This greater dynamism does not translate into significant reduction in concentration rates and markups, however.

Our study contributes to the several branches of literature. First, it complements existing literature on the importance of political connections (Faccio, 2006; Fisman, 2001; Ferguson and Voth, 2008; Mobarq and Purbasari, 2006; Rijkers et al., 2014), by assessing which industry characteristics are associated with a greater importance of state-business relations. While previous studies have mostly focused on documenting anti-competitive practices, this study examines the impact of the existence of such practices on competition and firm

¹ The sharp decline in the stock valuation of firms with political connections to Suharto (Fisman, 2001) is consistent with this assumption. Similarly, the IMF restructuring program deliberately targeted some of the sectors in which state capture was rife.

² This finding may in part reflect the fact that some of the connected firms we identify were "too big to fail". As explained in more detail below, the method we use to detect political connections is more likely to identify large firms with such connections (Mubarak and Purbasari, 2006).

dynamics. The comparative analysis of firm and *sector* performance helps assess the impact of cronyism on aggregate efficiency, and the spillovers of anti-competitive practices on non-connected firms.

Our paper also contributes to the growing literature on the economic consequences of political turnover. Though most of this literature has focused on macroeconomic outcomes, a few micro-economic studies are closely related to ours. Earle et al. (2013) examine the productivity consequences of the Orange Revolution in the Ukraine and show that firms in regions supportive of Viktor Yushchenko improved productivity much faster after his election than firms in regions that did not support him.

Our results also serve as a reminder that political turnover per se does not suffice to undo the detrimental impacts of cronyism. Unless complementary reform efforts are undertaken, the legacy of perverted state-business relationship may continue to impede competition and growth. In spite of significant regulatory change, many of the anti-competitive practices instituted under Suharto have remained in place, which may help explain why his removal has had a relatively mild impact on competition indicators such as markups and measures of concentration.

The remainder of this paper is organized as follows; section 2 provides background on the Indonesian context and elaborates on our hypotheses. Section 3 discusses the data, elaborates on our identification of political connections and explains how we constructed our key explanatory variables. Descriptive statistics are presented in section 4, which also assesses what industry characteristics are associated with greater political connections. Section 5 presents our main results regarding the impact of turnover on create destruction. A final section concludes.

2. The Indonesian context and testable hypotheses

3.1 The Suharto Era

Former president Mohamed Suharto (Soeharto) was notoriously corrupt and his New Order regime is often cited as a quintessential example of crony capitalism. It is often described as a pyramid, with power centralized amongst Suharto and his close confidantes, and characterized by intimate state-business relationships with native Indonesian military officers, ethnic Chinese businessmen, and a select few indigenous Indonesian businessmen. Many former military officers were appointed as ministers, high-level bureaucrats, and directors of state-owned companies. As reward for political support and kickbacks, loyal businessmen received privileges and protection from the government.

Such privileges were manifold and included (i) licensing arrangements providing monopoly rents *inter alia* in importing, distribution, and exploitation of natural resources (ii) privileged access to inputs including finance and land (iii) tax breaks and subsidies (iv) privileged treatment in public procurement (iv) designation as

mandatory partners in foreign joint ventures and (v) price regulation resulting in supra-normal profits (McLeod, 2000). A few examples illustrate these mechanisms. The National Car Project, for instance, conferred a plethora of taxbreaks on Timor, a car-manufacturing firm owned by Suharto's son Tommy (Aswicahyono, 2006), who also benefitted from an exclusive monopoly on cloves. As another example, price-setting in the cement industry, whilst officially the domain of the Ministry of Trade, was heavily influenced by the Indonesian Cement Association, who acted like a cartel (Maarif, 2001).

In spite of extensive corruption, Indonesia grew rapidly during the 1980s and 1990s, a phenomenon often referred to as the "East Asian Paradox" (McLeod, 2000; Hadiz and Robison, 2005; Vial and Hanoteau, 2010). The economic success is often ascribed to a combination of liberalization efforts and competition amongst cronies, yet the system of crony capitalism was ultimately unsustainable, and ended with the Indonesian financial crisis, which hit the country at the end of July in 1997. In spite of comparatively sound macroeconomic fundamentals, Indonesia was deeply affected and the economy contracted by almost 14%. Public protests forced Suharto to resign by May 1998. He was replaced by his protégé B.J. Habibie. A new wave of democratization, deregulation, decentralization, banking and public management sector reforms started in country after the crisis.

3.2 The Post-Suharto Era

The crisis and political transition sparked led to a substantial number of changes, including liberalization, decentralization, and democratization. Moreover, the financial turmoil forced many big firms to restructure or close altogether (Hill, 2007; Brown, 2006). Some conglomerates closely connected to Suharto (e.g. Bimantara and Humpus) collapsed, others managed to survive but lost at least some of their privileges. For instance, production and trade monopolies in several intermediate good producing industries (cement, plywood and rattan) were eliminated (Pangestu et al., 2002).³ The national car program was abolished. Import protection and export taxes were reduced. In addition, restrictions on FDI were relaxed in many industries, and foreigners were allowed to fully own banks and companies through acquisition (IPA, 2011). Some state dominated sectors (e.g., civil aviation and telecommunications) were deregulated.⁴ In addition, in 1999 a competition commission (KPPU) was established.⁵ These changes potentially increased competition, though it should be noted that many changes did not directly impact the manufacturing sector and, moreover, that regulatory reform was piecemeal and often slow. For example, it was not until 2007 that Indonesia issued a new negative investment list. Also, the functioning of the competition commission is still severely constrained by limited capacity and legal obstacles.

³ Indonesia's parliament passed the Anti-Monopoly and Unfair Competition Law (No. 5/1999) in February 1999, which was ratified in March. Since February 2000, the law prohibits any individual company from holding more than a 50% share of the domestic market. The monopoly of the state logistics agency Bulog over the price and supply of rice was abolished in 1998.

⁴ Indonesia agreed, in its 1998-2003 pacts with the IMF, to end virtually every existing state monopoly.

⁵ Among other policies are *Yayasan* law promoting transparency and accountability of state-controlled charities has been submitted only in 2000 to the parliament and ratified in 2001.

Decentralization reforms redistributed political, administrative, and economic power to provinces, districts and even cities, which encouraged competition (Hill, 2007), yet also resulted in a renegotiation of the state-business relationships. In fact, by bribing parliamentarians, many businessmen were elected themselves. In many other cases, they managed to win the support of heads of local cabinets by supporting them during election campaigns (Hadiz, 2004). Thus, the “gift-exchange” nature of state-business relationships appears to have changed very little.

Many of those with close connections to Suharto managed to maintain their positions of power and prominence. While all children of Suharto, except Titiek, were accused of corruption at some point, none of them were convicted on such charges. Tommy Suharto was convicted in 2002 for ordering the assassination of a Supreme Court Judge, but released in 2006, having served 4 years of his 15 year sentence. Testimony to the Suharto’ family’s lasting political prominence was the recent candidature Suharto’s son in law, Prabowo Subianto, for the presidency in June 2014.

While economic growth in Indonesia recovered by 2000, it did not reach its pre-crisis levels and never exceeded 5%. Productivity growth did not recover fully after the crisis at least in the following 3-6 years, and the crisis did not appear to have improved the process of “creative destruction” (Hallward-Driemeier and Rijkers, 2013; Poczter et al., 2014). Hill (2007) suggests that slow recovery was due to difficulties associated with the implementation of the reforms (e.g. decentralization reforms mentioned above) and political instability.

Nevertheless, deregulation reforms presumably have been beneficial for competition. The Suharto’s regime collapse, in addition, likely has decreased the value of political connections, or at least the value of connections to him. Restructuring of politically connected companies, elimination of a number of production and trade monopolies, and elimination of investment restrictions are arguably all manifestations of reduced capture. In this study, therefore, we test whether economic changes reshaping industry competitiveness and dynamics are more pronounced in industries with higher presence of politically connected firms, as they were exposed to a higher degree of the state capture during the regime.

3. Data and variables

3.1. Data

The main database data used in this paper is the Annual Manufacturing Survey (*Survei Tahunan Perusahaan Industri Pengolahan*) collected by the Central Bureau of Statistics (*Badan Pusat Statistik, BPS*) of the Republic of Indonesia. The survey covers all formal manufacturing establishments with more than 20 employees. They account for approximately 80% of total output produced by the manufacturing sector in the country. Each year we

have approximately 20,000 plant-level observations.⁶ Our sample spans the period from 1993 up until 2005, which enables us to characterize firm-dynamics pre- and post- Suharto years. For our main analysis we exclude the crisis years and the recovery period (1997-2000) as these were characterized by great volatility and because we are concerned reporting in those years was inaccurate. Moreover our interest is in examining the impact of turnover on (medium-term) firm dynamics net of adjustment to the crisis. The survey contains detailed information on industry, employment, production, capital, ownership, and other indicators, enabling us to analyze firm performance, industry organization structure and dynamics. Output, material inputs and capital are deflated to 1993 constant prices in local currency using sector-level deflators obtained from BPS. While the dataset is very rich, substantial data cleaning was required to render the data suitable for analysis (see also Blalock et al, 2008; Harrison and Scorse, 2010; Hallward-Driemeier and Rijkers, 2013).⁷

Data on political connections is taken from Mobarq and Purbasari (2006).⁸ They extend Fisman's (2001) seminal event study analysis and identify firms whose market value on the Jakarta Stock Exchange exhibited abnormally negative movements in response to a number of news episodes about Suharto's deteriorating health during the period 1994-1997. They subsequently identify the major shareholders and members of the Board of Management and Board of Commissioners of each of the adversely affected firms. They then list all conglomerates owned by each of the members, as well as all firms that are part of these conglomerates. Last but not least, they identify 269 of these firms in the 1997 manufacturing census data, of which 97 (36%) s have Suharto family member as one of their owners or on their board. We will refer to these firms as being "politically connected" and as benefiting from "family connections" if a firm was identified to have a Suharto family member on its board, and as benefitting from "cultivated connections" otherwise.

Some limitations of the Mobarq and Purbasari's (2010) approach have to be borne in mind.⁹ To start with, some publicly traded firms might spuriously react to news about Suharto's health and could consequently be incorrectly identified as politically connected. To account for this fact, we ran robustness checks in which we confine attention to firms with a direct link to the Suharto family and our results remain qualitatively unaltered (results are available upon request). Second, it likely that there are other politically connected firms that are not captured by the authors' strategy; in particular, it seems plausible that the methodology used by Mobarq and Purbasari would not work as well for identifying the relatively smaller politically connected firms that are not part

⁶ Hereafter we use terms "plant" and "firm" interchangeably.

⁷ Among the papers utilizing BPS data are Blalock and Gertler (2006), Blalock et al. (2008), Blalock and Gertler (2009), Javorcik and Arnold (2009).

⁸ We are thankful to Ahmed Mushfiq Mobarak for sharing the data with us.

⁹ Another limitation of our study is that we are restricted to manufacturing sector only, while political connections widely observed in other economic sectors: minerals, petroleum, timber, land, shipping, finance, utility, and defense related sectors (Brown, 2006). Bourbakri et al. (2008), for example, finds that more than 50% of worldwide newly privatized political connections locate in financial, utilities, telecommunication and energy industries.

of large conglomerates. Thus, our estimates likely underestimate the prevalence and importance of political connections.¹⁰ This issue is compounded by the fact that identified political connections are identified in the 1997 manufacturing survey, such that firms that enjoyed political connections but exited before 1997 are never identified as being connected. The number of politically connected firms we observe increases progressively from 166 in 1991, to a maximum of 269 firms in 1997, gradually decreasing to 222 firms in 2005. However, there is no exit recorded between 1997 and 2000, which is suspicious and part of our motivation for discarding the crisis years. In our sector-level analysis we, therefore, focus on the presence of politically connected firms averaged over 1996-1997. These years give us the most accurate information. Note that we fix their pre-crisis presence at this level, which is essential for our empirical methodology.¹¹

3.2. Variables and measures

Our variable of interest is the presence of politically connected firms in an industry ($PCpresence_j$). It also proxies for the degree of state capture by the connected business in an industry. It is measured as a share of output produced by politically connected firms:

$$PCpresence_j = \frac{\sum_{i,i \in j} PC_i \cdot Y_i}{\sum_{i,i \in j} Y_i},$$

where PC_i is a dummy variable indicating Suharto crony and Y_i is the output of firm i . It varies only at the industry level and we averaged over 1996-1997 to ensure more accurate information on political connectedness before the crisis.

We employ a rich set of outcome variables to analyze changes in competition and industry structure after the crisis. They include indicators of entry and exit, growth, job flows, price-costs margin's, the profit elasticity and indicators of concentration.

The Entry rate at time t is measured the number of all new firms at time t divided by the total number of firms at time $t-1$ in an industry. Exit rate at time t is the number of all firm that do not exist at time $t+1$ divided by the total number of firms at t . It has to be noted that the manufacturing survey design affects definitions of entry and exit. In particular, we cannot separate whether a firm enters (exits) the market or its employment goes above (below) 20 workers. Therefore we define entry as an entry into survey and exit as an exit out of survey. For the robustness check we also define entry when the reported year of firm creation corresponds to the year of entry into survey.

¹⁰ Moreover, if non-identification of political connections is not uniform across industries, our results might be biased.

¹¹ The spectacular survival rate of connected firms might reflect the fact that some of the weaker firms might already have been weeded out, that the strategy is more likely to identify relatively larger firms part of extended business networks, and that some of the connected firms were "too big to fail" (more on this below).

Following Davis et al. (1996) and Haltiwanger et al. (2013), we define the net job creation rate, also referred to as the employment growth rate, as $g_{Lit} = \frac{E_{it} - E_{it-1}}{X_{it}}$ where E_{it} denotes employment in firm i at year t , and $X_{it} = (E_{it} + E_{it-1})/2$.¹² This employment growth measure is symmetric, varies within $[-2; 2]$ and accommodates both entry and exit.¹³ The industry-level employment growth rate is the weighted sum of firm-level growth rates $g_{Ljt} = \sum_{i,i \in j} \frac{X_{it}}{(\sum_{i,i \in j} X_{it})} g_{Lit}$, where $\frac{X_{it}}{(\sum_{i,i \in j} X_{it})}$ represents the relative employment share of firm i in industry j . As explained by Davis et al. (1996) using employment growth rate, it is straightforward to generate aggregate measures of gross job creation and destruction rates. The gross job creation rate is $GJCR_{jt} = \sum_{i,i \in j} \frac{X_{it}}{(\sum_{i,i \in j} X_{it})} \max\{0, g_{it}\}$, and the gross job destruction rate is $GJDR_{jt} = \sum_{i,i \in j} \frac{X_{it}}{(\sum_{i,i \in j} X_{it})} \max\{0, |g_{it}|\}$. The gross job reallocation rate is the sum of gross job creation and destruction rates. The growth rates for output and capital we compute in the same way as for employment, that is they also account for entry and exit of firms.

We focus on several competition intensity and concentration measures. The first competition intensity measure is the price-cost margin (PCM). At the sector-level PCM is a weighted sum of Lerner indices across firms, where weights are firms' market shares. In the sector j and time t , $PCM_{jt} = \frac{(Output - Variable\ cost)_{jt}}{Output_{jt}}$, where variable cost includes labor compensation and intermediate inputs. The second measure is the profit elasticity introduced by Boone et al. (2007) and Boone (2008). For an industry it is estimated from the following econometric specification: $\ln Profit_{it} = \beta_t \ln \left(\frac{Variable\ cost}{Output} \right)_{it} + \mu_i + \theta_t + \varepsilon_{it}$. PE in industry j and time t is the estimated coefficients $\hat{\beta}_{jt}$. Both PCM and PE are inverse competition intensity measures meaning that higher values of these measures stand for lower competition intensity.

The first concentration measure is the Herfindahl–Hirschman Index, defined as the sum of the squared market shares of firms in an industry: $HHIY_{jt} = \sum_{i,i \in j} \left(\frac{Output_{it}}{\sum_{i,i \in j} Output_{it}} \right)^2$, where i is a firm belonging to the industry j at time t . In addition we construct Herfindahl–Hirschman Index using employment instead of output, and refer to it as $HHIL_{jt}$. Another concentration measure is the market share of the four largest firms in terms of output in an industry: $MS4_{jt} = \frac{\sum_{i=1,2,3,4,i \in j} Output_{it}}{\sum_{i,i \in j} Output_{it}}$. The final concentration measure is the market share of the leader in an industry: $MS1_{jt} = \frac{\sum_{i=1,i \in j} Output_{it}}{\sum_{i,i \in j} Output_{it}}$. Although these competition measures are widely used in the literature, they

¹² The desirable features of this growth rate measure, which is a second order approximation of the log difference for growth rates around zero are discussed in Davis et al. (1996). The underlying statistical properties are discussed in detail in Tornqvist, Vartia and Vartia (1985).

¹³ To see, this, note that for firms that enter at year t , $E_{it-1} = 0$, while for firms that exit $E_{it} = 0$, such that for entering firms $g_{it} = 2$, while for exiting firms $g_{it} = -2$.

have some limitations and drawbacks, therefore, we use all of them in attempt to represent a more complete picture of industrial organization in Indonesian manufacturing sector.

4. Descriptive analysis – cronyism in Indonesian manufacturing

We start our analysis by describing the characteristics of politically connected firms and analyzing how their performance has evolved over time in section 4.1, as a prelude to the sectoral analysis which is the focus of this paper. Section 4.2 examines the characteristics of the sectors in which they operate, and how competition and industry structure have evolved in these sectors.

4.1. Politically connected firms

In 1996 we identify 255 politically connected firms.¹⁴ Although they accounted for only 1.1% of the total sample of manufacturing firms, they were very important from a macroeconomic point of view, as is documented in Table 1. In 1996, politically connected firms accounted for 4.8% of all manufacturing jobs, produced 16.0% of total manufacturing output, generated 20.2% of value added, and own 19% of total fixed assets. Politically connected firms consumed 14% of all imported materials in manufacturing sector in 1996, but only account for 5% of all exports, suggesting these firms were mostly focused on production for domestic consumption.

Table 1: Economic Importance of Politically Connected Firms (N=255)

N of firms	Output	Value added	Capital	Labor	Wages	Import	Export	Investments
1.11	16.07	20.19	18.98	4.77	9.60	14.12	5.26	9.40

Note: This table reports shares in total economy attributed to PC firms in 1996, in %.

Panel A, Table 2 documents key firm characteristics and performance indicators, comparing politically connected firms to firms lacking such connections, both in 1996 and 2001. Panel B, Table 2 shows dynamic performance over the periods 1991-1996 and 1999-2005. In addition to presenting averages separately for connected and non-connected firms, the table also presents performance differentials demeaned by 5 digit sector fixed effects, which control for sector sorting. In interpreting these numbers, one has to bear in mind that they partially reflect survivor bias, since identification of connectedness occurs in 1997 only. This is especially relevant for comparisons of growth rates, which inevitably suffer from survivor bias.

Consistent with the descriptive statistics presented in Table 1, connected firms significantly outperform their non-connected peers. In 1996, connected firms generated 50 times more output than non-connected firms on average, and more than 12 times as much output when operating in the same sector. Firms with connections also have higher value-added, both in absolute terms and per worker, and invest more. The superior size of connected

¹⁴ Although in the text we use the presence of politically connected firms averaged over 1996-1997, in the section 4.1 we focus on 1996 year only to avoid the impact of crisis that started in 1997.

firms is also reflected in higher market shares at the 5-digit level, with connected firms having an average market share of 12% compared to 1% for non-connected firms. Even when controlling for industry fixed effects to account for sector sorting, connected firms have market shares which are 7 percentage points higher than those of their peers in the same sector.

Connected firms also had higher shares of foreign and state ownership, were much more likely to import, and somewhat more likely to export. These findings are consistent with the Suharto family's tendency to partner with foreign firms, and to control big businesses by means of government ownership. Privileged access to import licenses (Mobarraq and Purbasari, 2006) helps explain the greater propensity of connected firms to import. The differences in exporting shares are less striking, though strongly significant.

At first sight, comparing performance differences in *levels* between connected and non-connected firms in 1996 and 2001 would appear to suggest that the crisis did not have a pronounced impact on connected firms. Connected firms remained large and continued to produce more output per worker, even though their average market share decreased. They also continued to import and invest more.¹⁵

Performance differences in *growth rates*, however, reveal a different dynamic, though one has to bear in mind these comparisons are inevitably afflicted by survivor bias. In the pre-crisis period connected firms were expanding output and employment significantly faster than their peers, growing at almost 16% per annum compared to growth rates of 7-8% for non-connected firms.¹⁶ After the crisis the growth rates of connected firms dramatically decelerated to 6-7%, while those of non-connected firms increased slightly. After the crisis both connected and non-connected firms exhibited faster growth in exports, perhaps reflecting a more competitive exchange rate, as well as growth in state ownership, presumably in part reflecting decentralization. The larger prevalence of state ownership appears to contradict some of the post-crisis liberalization efforts (Hadiz, 2004).

To summarize, although we only identify a limited number of connected firms, our data demonstrate that politically connected firms were major industrial players that accounted for a significant share of manufacturing output, employment and investment. While these firms seem to have weathered the crisis fairly well, in the sense that they have remained large, their growth rates have decelerated significantly. These findings might signal financial and production difficulties and the loss of privileges from the government due to Suharto fall. Identification of the precise mechanisms by which such privileges arise and how these have evolved over time is beyond the scope of this paper.

¹⁵ In the Appendix, we also present a table in which we compare performance differences only considering firms that existed in 1996 to minimize selection bias. The qualitative pattern of results we document is robust to restricting the comparison group.

¹⁶ The growth rates presented in Table 2 do not account for entry and exit of firms; they are logarithmic changes of indicators. The relationships between number for PC and non-PC firms, before and after the crisis remain the same if we account for entry and exit.

Table 2: Economic Performance of Politically Connected Firms

	Levels in 1996			Levels in 2001			Changes over 1991-1996			Changes over 1999-2005		
	Panel A						Panel B					
	PC	nPC	(PC-nPC)	PC	nPC	(PC-nPC)	PC	nPC	(PC-nPC)	PC	nPC	(PC-nPC)
	<i>Mean</i>	<i>Mean</i>	<i>Demeaned By 5 digit industry</i>	<i>Mean</i>	<i>Mean</i>	<i>Demeaned By 5 digit industry</i>	<i>Mean</i>	<i>Mean</i>	<i>Demeaned By 5 digit industry</i>	<i>Mean</i>	<i>Mean</i>	<i>Demeaned By 5 digit industry</i>
Output	18.38	14.45	2.56***	18.44	14.85	2.30***	15.60	7.11	7.07***	5.62	7.37	-6.47***
Value added	17.59	13.64	2.60***	17.62	14.08	2.27***	15.76	8.19	5.99**	7.00	8.22	-6.76***
Capital	17.43	13.88	2.29***	17.36	13.62	2.40***	7.55	5.93	3.35	-0.18	0.77	-0.09
Labor	5.93	4.13	1.36***	5.87	4.23	1.26***	5.58	2.35	2.19**	0.48	-0.11	-0.47
Wage/Labor	9.45	8.48	0.56***	10.06	8.86	0.57***	4.53	4.18	-0.31	10.32	8.24	-0.72
Investments	16.56	13.07	2.08***	16.09	12.52	2.13***	2.29	4.42	-3.73	-20.56	-4.39	14.00
Import	0.30	0.08	0.12***	0.33	0.10	0.11***	-0.29	-0.36	0.42	-0.12	-0.29	-0.21
Export	0.18	0.13	0.08***	0.15	0.13	0.04**	1.75	0.59	1.21	1.89	2.10	0.37
Foreign own.	0.14	0.04	0.07***	0.18	0.07	0.07***	0.83	0.15	0.63*	0.64	0.18	0.32
State own.	0.15	0.02	0.10***	0.27	0.09	0.15***	-0.16	-0.01	0.17	0.27	0.48	0.25
Market share	0.12	0.01	0.07***	0.10	0.01	0.06***	-0.16	-0.11	0.02	-0.08	0.02	-0.09

Note: This table reports average values of firm characteristics for PC and non-PC firms, in levels in 1996 and 2001, and in changes over 1991-1996 and 1999-2005. It also reports the differences between PC and non-PC firms, (PC-nPC), after adjustment for 5-digit industry fixed effects. Note, that because of demeaning the differences to do not add up. All variables are in logarithms, except market share (at 5-digit), ownership, import and export, which are shares. Changes are multiplied by 100. *** indicates significance at the 1% level, ** - at the 5% level, and * - at the 1% level.

4.2. Politically connected industries

The primary goal of this study is assessing changes in industry structure and dynamics due to the collapse of the Suharto regime. We start by examining the characteristics of industries in which connected firms operate. Table 3 depicts the presence of politically connected firms in terms of output, number of firms and employment by 3-digit industry in 1996-1997. Connected firms operate in 80% of all 3-digit industry and there is considerable heterogeneity in their importance across such sectors. In manufacture of cement and lime products (363), and in iron and steel basic industries (371), for example, they produce more than 50% of total industrial output.

Table 3: The presence of politically connected firms¹⁷

ISIC	Industry	Output	# Firms	Labor
363	Manufacture of cement and lime products	55.17	1.46	25.99
371	Iron and steel basic industries	51.87	4.13	22.11
341	Manufacture of paper and paper products	37.21	4.85	31.88
351	Manufacture of industrial chemicals	27.79	5.40	17.48
312	Manufacture of food products not elsewhere classified, and manufacture of prepared animal feeds	26.59	1.18	6.57
311	Food manufacturing	20.88	1.57	6.05
362	Manufacture of glass and glass products	18.98	4.17	16.95

¹⁷ Appendix # presents the distribution of the presence of politically connected firms by 5-digit industry code.

361	Manufacture of pottery, china and earthenware	18.81	5.07	8.84
383	Manufacture of electrical machinery apparatus, appliances and supplies	15.46	2.67	6.90
352	Manufacture of other chemical products	14.84	3.79	8.04
384	Manufacture of transport equipment	13.93	2.37	22.82
372	Non-ferrous metal basic industries	7.55	1.25	2.71
382	Manufacture of machinery except electrical	5.72	2.43	16.83
342	Printing, publishing and allied industries	3.68	0.42	0.79
331	Manufacture of wood and wood and cork products, except furniture	3.20	0.46	3.14
356	Manufacture of plastic products not elsewhere classified	2.97	0.85	1.27
381	Manufacture of fabricated metal products, except machinery and equipment	2.72	1.25	4.51
313	Beverage industries	2.63	0.67	1.76
321	Manufacture of textiles	1.78	0.59	1.31
355	Manufacture of rubber products	1.50	0.78	0.87
324	Manufacture of footwear, except vulcanized or mounded rubber or plastic footwear	1.08	0.22	0.92
332	Manufacture of furniture and fixtures, except primarily of metal	0.49	0.13	0.61
369	Manufacture of other non-metallic mineral products	0.44	0.32	0.62
390	Other Manufacturing Industries	0.40	0.19	0.56
322	Manufacture of wearing apparel, except footwear	0.34	0.08	0.18
314	Tobacco manufactures	0	0	0
323	Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel	0	0	0
353	Petroleum refineries	0	0	0
354	Manufacture of miscellaneous products of petroleum and coal	0	0	0
364	Manufacture of clay products	0	0	0
385	Manufacture of professional and scientific, and measuring and controlling equipment not elsewhere classified, and of photographic and optical goods	0	0	0

Note: This table reports the distribution of the presence of politically connected firms in Indonesia by 3-digit ISIC rev. 2 industry code, averaged over 1996-1997. The presence of politically connected firms is measured as a share of output produced by PC firms relative to total output, number of PC firms relative to total number of firms, and labor employed by PC firms relative to total labor. All numbers are in percent (%).

Within 3-digit industries, however, the variation of the presence of PC firm is high as well, as is documented in Appendix A which provides an overview of the importance of connected firms by 5 digit industry. For instance, within the 3-digit ISIC category manufacturing of cement and lime products connected firms are actually only manufacturing cement (ISIC categorization 36310), whereas in the 3-digit ISIC category iron and steel basic industries they are present only in iron and steel smelting and steel rolling industries (37102 and 37103). Overall, connected firms are active in 38% of the 5-digit industry sectors. Production of margarine, other cooking oils made from vegetables and animal oils, synthetic rubber, x-ray apparatus, railroad equipment, aircrafts and components is exclusively executed by connected firms. Our main measure of the presence of politically connected firms, the share of output produced by PC firms relative to total output at 5-digit industry code, reflects this heterogeneity.¹⁸

To examine the characteristics of industries with higher involvement of politically connected firms, Table 4 presents a snapshot of correlations between the presence of connected firms and industry-levels aggregates (Panel A) and competition and employment dynamic variables (Panel B). Panel A documents that industries with higher presence of politically connected firms are also produce more output, add more value, pay higher average wages and have greater SOE penetration. These industries, however, are mostly non-tradable as they export less. In 1996

¹⁸ Its distribution is right-skewed, with a mean value of 9.7%, and median 0.

these industries were more capital intensive and productive, which is no longer the case after the crisis. Panel B, shows that industries in which connected firms are more important are more concentrated and less competitive, as indicated by higher price-cost margins and the profit elasticity (i.e. in industries where connected firms account for a larger share of output increases in marginal costs are associated with proportionately smaller reductions in profits). Before the crisis, these industries were associated with exceptionally low entry and exit rate, job creation, destruction and reallocation rates, after the crisis the correlations become insignificant.

Table 4 demonstrates that politically connected firms account for larger share of output in concentrated, stagnant industries with both less entry and exit. This suggests high protection of PC industries and, presumably, industry capture by PC firms. It is, however, notable that after the crisis we observe significant changes in correlations, which signals about the effectiveness of liberalization reforms, especially in more PC industries. In the next section we investigate these effects in a more rigorous framework.

Table 4: Pairwise correlation between the presence of politically connected firms and industry characteristic

	1996	2001	2005		1996	2001	2005
	Panel A				Panel B		
Output	0.14**	0.16***	0.13**	Price-cost margin	0.14**	0.12**	0.14**
Value Added	0.17***	0.17***	0.15**	Herfindahl–Hirschman Index	0.27***	0.22***	0.18***
Capital	0.14**	-0.01	0.05	Market share of the leader	0.24***	0.19***	0.16***
Labor	-0.01	0.01	0.02	Market share of 4 largest firms	0.31***	0.19***	0.20**
Wage/Labor	0.38***	0.31***	0.29***	Profit elasticity	0.14**	0.13**	0.01
VA/Labor	0.11*	0.07	0.06	Entry rate	-0.16***	0.06	-0.01
Investment	-0.06	-0.02	n/a [§]	Exit rate [#]	-0.13**	-0.06	-0.08
Exports	-0.12**	-0.12**	-0.15**	Employment growth	-0.05	-0.05	0.02
Imports	-0.03	0.07	0.08	Gross job creation rate	-0.10*	-0.08	-0.03
Foreign own.	0.01	-0.02	0.03	Gross job destruction rate [#]	-0.11*	-0.07	-0.10*
State own.	0.36***	0.31***	0.28***	Gross job reallocation rate [#]	-0.15***	-0.10*	-0.08

Note: This table reports the pairwise correlations between the presence of PC firms and industry characteristics, at 5-digit industry code, in 1996, 2001 and 2005. Number of industries in the sample is around 312. The presence of PC firms is averaged over 1996-1997. *** indicates significance at the 1% level, ** - at the 5% level, and * - at the 1% level. [#] correlation for exit is for 2004 instead 2005. [§]After 2001 manufacturing firms do not report investment.

5. Sector-level analysis

5.1. Empirical strategy

To examine the impact of state-business relationship on competition and industry dynamics, we use the Suharto regime collapse as a quasi-natural experiment by which the value of connections was reduced and employ a difference-in-difference approach. Our most general estimation equation is

$$Y_{ijt} = \alpha PCpresence_i \cdot PostCrisis_t + \pi X_i \cdot PostCrisis_t + \mu_i + \delta_{jt} + \varepsilon_{it}, \quad (1)$$

where Y_{ijt} is one of the outcome variables in 5-digit ISIC sector i , which is a sub-sector of 3-digit ISIC industry j at time t . We use a variety of competition indicators as dependent variables, notably entry and exit rates of firms, proxies for market concentration, sales growth, employment growth as well as measures of job creation, destruction, excess job reallocation and gross churning. The key explanatory variable of interest is the interaction term between the measure of the presence of politically connected firms in an industry ($PCpresence_i$) and the post-crisis dummy variable ($PostCrisis_t$) that equals 0 for the years before the crisis 1994-1996, and equals 1 for the years after the crisis 2000-2005. The crisis years and the recovery period are excluded from the main analysis. X_i is a vector of time-invariant and pre-crisis industry characteristics, which we discuss below.¹⁹ We control for 5-digit sector-effect μ_i and 3-digit industry-time-effects, δ_{jt} , to account for time-invariant industry characteristics and industry-specific shocks. Thus in our most restrictive specifications, presented in section 5.2.2., identification is based on comparing 5 digit sectors to their peers within the same 3-digit industry grouping.

Our main hypothesis is that Suharto's fall had a pro-competitive impact, and that this effect was more pronounced in sectors in which politically connected firms accounted for a higher share of output at the eve of the fall of the regime. Thus, we test the null hypothesis that this is not the case, i.e. that $\alpha = 0$. Since we control for industry fixed effects, the coefficient α shows exactly the difference in outcome variable after and before the crisis in more politically connected industries within the same industry grouping.²⁰

The key econometric challenge is to distinguish the impact of the fall of Suharto from potential confounding impacts such as global demand shifts, technology shocks, and differential exposure to the financial crisis. Changes in industry dynamics may also reflect changes in foreign trade participation and regulation.²¹ To mitigate the impact of these, we aggressively control for fixed effects and include a rich number of controls.

5.2 Preliminary Results

5.2.1. Baseline Results

Tables 5 presents our baseline results on the impact of political turnover on firm dynamics. For each outcome measure, we present two separate specifications. The first one, which his presented in the top panel merely

¹⁹ In future drafts we will also assess the impact of time-varying industry characteristics, such as the prevalence of foreign and government ownership. These are not included in our main specifications as they are arguably endogenous to political connections. Note that in that case the estimating equation becomes: $Y_{ijt} = \alpha PCpresence_i \cdot PostCrisis_t + \gamma X_{it} + \pi X_{it} \cdot PostCrisis_t + \mu_i + \delta_{jt} + \varepsilon_{it}$,

²⁰ In classical difference-in-difference specification $PCpresence_j$ would be a dummy variable.

²¹ Note, however, that we are not specifically controlling for sector-specific regulations not only because these are hard to come by, but also because these – and their implementation – are arguably endogenous to political connections.

includes an interaction term between the market share of politically connected firms before the crisis and year dummies. The second specification is presented in the bottom panel and includes additional interactions between the post-crisis dummy and the a sector's dependence on external finance, and proxies for pre-crisis importing, exporting and lending from abroad. We include these since we would like to isolate the impact of connections from crisis associated changes in credit conditions and openness.

Turning to the results, our main finding is that the fall of Suharto had a pro-competitive impact on industry dynamics. Greater presence of political connections before the fall of Suharto is associated with exhibited significantly more entry, exit, employment growth, and job reallocation post-crisis. The coefficients estimates are not only statistically significant, but economically meaningful; for example sectors in which politically connected firms had a market share of 10% pre crisis, witness 0.9% higher entry, 0.4% more exit, and 1.0% faster employment growth compared to firms that did not. By contrast, the coefficients on output growth and growth in the capital stock, though positive, are not statistically significant. Adding interaction terms between other industry characteristics and the pre-crisis dummies does not affect the significance of the estimates, and if anything, leads to larger effects.

Table 5: Estimating the Impact of Political Turnover on Industry Dynamics

Without Industry Controls								
Dependent Variable (at the 5 digit ISIC level)	I Entry	II Exit	III GJCR	IV GJCR	V GJDR	VI GJRR	VII	VIII
	0.087*** (0.033)	0.038*** (0.014)	0.098*** (0.028)	0.102*** (0.026)	0.005 (0.010)	0.111*** (0.030)	0.036 (0.067)	0.065 (0.068)
1995	0.071***	0.019***	0.018	0.013	-0.006*	0.001	-0.027	-0.013
1996	0.029**	0.041***	-0.020	-0.023*	0.002	-0.019	0.038	-0.157***
2001	-0.089***	-0.007	-0.080***	-0.080***	0.001	-0.084***	-0.111***	-0.168***
2002	-0.108***	0.005	-0.118***	-0.128***	-0.010**	-0.141***	-0.111***	-0.072*
2003	-0.117***	0.012**	-0.136***	-0.138***	-0.001	-0.140***	-0.132***	-0.003
2004	-0.065***	0.012***	-0.096***	-0.103***	-0.006	-0.115***	-0.053*	-0.173***
2005	-0.093***	n/a	-0.104***	-0.112***	-0.007	-0.119***	-0.083***	-0.155***
Sector (5-digit) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry (3-digit)×Year FE	No	No	No	No	No	No	No	No
N observations	2,402	2,111	2,384	2,408	2,408	2,408	2,384	2,384
N groups	312	312	312	312	312	312	312	312
R2 within	0.218	0.059	0.104	0.127	0.008	0.125	0.027	0.027
With Industry Controls								
Dependent Variable (at the 5 digit ISIC level)	I Entry	II Exit	III GJCR	IV GJCR	V GJDR	VI GJRR	VII	VIII
	0.097*** (0.035)	0.043*** (0.015)	0.110*** (0.032)	0.115*** (0.032)	0.008 (0.011)	0.127*** (0.037)	0.048 (0.070)	0.090 (0.080)
	-1.645* (0.888)	-0.206 (0.256)	-1.088 (0.813)	-1.116 (0.825)	-0.135 (0.141)	-1.311 (0.858)	-0.202 (1.286)	-2.159 (1.349)
	-2.596** (1.256)	0.121 (0.312)	-2.145* (1.169)	-1.675 (1.256)	0.251* (0.129)	-1.454 (1.460)	-4.664** (1.897)	-4.633*** (1.416)
	0.186*** (0.064)	0.043* (0.025)	0.027 (0.072)	0.026 (0.070)	-0.011 (0.017)	-0.004 (0.074)	-0.151 (0.116)	0.092 (0.122)
	0.050**	0.025***	0.026	0.030	0.001	0.027	0.010	-0.017

	(0.024)	(0.010)	(0.026)	(0.026)	(0.006)	(0.029)	(0.045)	(0.055)
Year FE	Yes							
Sector (5-digit) FE	Yes							
Industry (3-digit)×Year FE	No							
N observations	2,351	2,063	2,333	2,355	2,352	2,355	2,331	2,331
N groups	302	302	302	302	302	302	302	302
R2 within	0.262	0.068	0.115	0.139	0.010	0.137	0.036	0.037

Note: This table reports the results from the estimation of the specification (1) for the following dependent variables: entry rate, exit rate, employment growth, gross job creation, destruction and reallocation rates, output and fixed assets growth. Exit rate is not defined in 2005. Standard errors are robust and clustered at the industry level. *** p<0.01, ** p<0.05, * p<0.1.

This greater dynamism, however, is not associated with significant improvements in competition indicators. Table 6 presents the results regarding different metrics for competition and allocative efficiency, notably, the price cost margin, the profit elasticity, Herfindahl indices, the market share of the largest and 4 largest firms in a given sector. Although the point estimates are all suggestive of improved competition in sectors where cronyism was rife, none of them are statistically significant, with the exception of the profit elasticity, which appears to have declined faster in industries where connected firms accounted for a large share of output. Once we add interactions between the post crisis dummy and other industry characteristics, even this coefficient loses statistical significance.

Table 6: Estimating the Impact of Political Turnover on Competition and Efficiency Measure

<i>Without Industry Controls</i>							
Dependent Variable	I	II	III	IV	V	VI	VII
(at the 5 digit ISIC level)	PCM	PE	HHIL	HHIY	MS1	MS4	Allocative Efficiency
	-0.050 (0.055)	-0.332** (0.167)	-0.054 (0.054)	-0.067 (0.059)	-0.065 (0.050)	-0.019 (0.023)	-0.124 (0.222)
1995	-0.008	0.057*	-0.011*	-0.007	-0.007	-0.014***	0.008
1996	0.006	0.160***	-0.020***	-0.010	-0.005	-0.012***	0.110***
2001	-0.007	0.127**	-0.010	-0.016	-0.006	-0.020**	-0.065
2002	0.017	0.139***	-0.009	-0.009	0.002	-0.010	0.040
2003	0.016	0.078*	-0.004	-0.003	0.005	-0.002	0.047
2004	0.008	0.168***	0.001	0.003	0.006	-0.008	-0.039
2005	-0.005	0.136***	0.006	0.005	0.007	-0.005	-0.049
Sector (5-digit) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry (3-digit)×Year FE	No	No	No	No	No	No	No
N observations	2,327	2,368	2,407	2,408	2,408	2,408	2,381
N groups	312	309	310	312	311	311	312
R2 within	0.008	0.016	0.012	0.008	0.005	0.007	0.018
<i>With Industry Controls</i>							
Dependent Variable	I	II	III	IV	V	VI	VII
(at the 5 digit ISIC level)	PCM	PE	HHIL	HHIY	MS1	MS4	Allocative Efficiency
	-0.057 (0.056)	-0.265 (0.163)	-0.007 (0.047)	-0.029 (0.057)	-0.031 (0.050)	-0.010 (0.024)	-0.191 (0.198)
	0.033 (0.682)	1.668 (2.037)	-1.639** (0.806)	-2.041** (0.931)	-1.935** (0.818)	-0.290 (0.203)	0.279 (1.823)
	-0.838 (0.584)	-2.220* (1.237)	-0.283 (1.287)	0.201 (1.210)	0.313 (0.999)	-0.160 (0.139)	2.986 (1.833)
	-0.086 (0.088)	-0.491* (0.225)	-0.058 (0.227)	-0.171** (0.077)	-0.170** (0.077)	-0.172*** (0.055)	-0.531 (0.222)

	(0.084)	(0.279)	(0.056)	(0.080)	(0.078)	(0.050)	(0.373)
<i>Price-cost margin</i>	0.122***	0.337***	0.042**	0.025	0.017	-0.017	0.023
	(0.029)	(0.104)	(0.020)	(0.025)	(0.026)	(0.018)	(0.096)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector (5-digit) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry (3-digit)×Year FE	No	No	No	No	No	No	No
N observations	2,276	2,316	2,349	2,350	2,350	2,350	2,325
N groups	302	300	300	302	301	301	302
R2 within	0.039	0.033	0.047	0.039	0.028	0.025	0.031

Note: This table reports the results from the estimation of the specification (1) for the following dependent variables: price-cost margin, profit elasticity, HHI based on employment and output, market shares of the first and four largest firms, and allocative efficiency. Standard errors are robust and clustered at the industry level. *** p<0.01, ** p<0.05, * p<0.1.

Thus, although the fall of Suharto was associated with greater dynamism, faster employment growth, and more reallocation in sectors in which his cronies had extensive business interests, conventional competition indicators did not improve markedly.

5.2.2. Robustness Checks

One major concern is that our findings might be driven by unobserved sector shocks, such as changing global demand and technological shocks, correlated with both competition and firm dynamics metrics as well as political connections. To control for this possibility, we run robustness checks in which we include interactions between 3-digit sector and time dummies. Identification is thus based on comparing the performance of a given 5 digit industry to that of other 5 digit industries within the same 3-digit industry grouping, and explaining variation between them as a function of pre-crisis connectedness. The results, which are presented in Table 7 below, are qualitatively robust to the inclusion of these sector-time interactions.

Table 7: Estimating the Impact of Political Turnover on Industry Dynamics – Allowing for Sector Shocks

Dependent Variable (at the 5 digit ISIC level)	I Entry	II Exit	III HHI	IV GJCR	V GJDR	VI GJRR	VII Market Share	VIII Allocative Efficiency
<i>Price-cost margin</i>	0.066*	0.054***	0.104***	0.108***	0.015	0.131***	0.021	0.078
	(0.038)	(0.018)	(0.037)	(0.034)	(0.012)	(0.036)	(0.079)	(0.085)
<i>Profit elasticity</i>	-0.717	-0.451*	-0.154	-0.099	-0.201	-0.416	0.636	-0.993
	(0.850)	(0.256)	(0.764)	(0.772)	(0.141)	(0.813)	(1.360)	(1.377)
<i>HHI</i>	-3.264***	0.237	-2.931**	-2.426*	0.396***	-1.938	-4.655***	-4.969***
	(1.180)	(0.359)	(1.286)	(1.362)	(0.135)	(1.548)	(1.719)	(1.439)
<i>Market Share</i>	0.188***	0.049*	0.051	0.051	-0.008	0.022	-0.100	0.056
	(0.056)	(0.029)	(0.066)	(0.062)	(0.018)	(0.066)	(0.122)	(0.141)
<i>Allocative Efficiency</i>	0.001	0.013	0.002	0.019	0.008	-0.002	0.071	-0.064
	(0.038)	(0.025)	(0.044)	(0.041)	(0.012)	(0.058)	(0.064)	(0.131)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector (5-digit) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry (3-digit)×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N observations	2,351	2,063	2,333	2,355	2,352	2,355	2,331	2,331
N groups	302	302	302	302	302	302	302	302
R2 within	0.378	0.173	0.240	0.260	0.113	0.251	0.163	0.132

Note: This table reports the results from the estimation of the specification (1) for the following dependent variables: entry rate, exit rate, employment growth, gross job creation, destruction and reallocation rates, output and fixed assets growth. Exit rate is not defined in 2005. Standard errors are robust and clustered at the industry level. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Estimating the Impact of Political Turnover on Competition and Efficiency Measure – Allowing for Sector Shocks

Dependent Variable (at the 5 digit ISIC level)	I	II	III	IV	V	VI	VII
	PCM	PE	HHIL	HHIY	MS1	MS4	Allocative Efficiency
<i>Entry Rate = PostCrisis</i>	-0.034	0.011	-0.014	-0.035	-0.030	0.004	0.029
	(0.050)	(0.181)	(0.054)	(0.060)	(0.053)	(0.024)	(0.191)
<i>Exit Rate = PostCrisis</i>	-0.085	2.402**	-1.379*	-1.763*	-1.725**	-0.278	-2.472
	(0.626)	(1.222)	(0.772)	(0.976)	(0.843)	(0.290)	(1.952)
<i>Employment = PostCrisis</i>	-0.605	0.019	-0.417	0.097	0.412	0.075	5.910***
	(0.682)	(1.094)	(1.132)	(1.064)	(0.865)	(0.282)	(2.277)
<i>Gross Job Creation = PostCrisis</i>	-0.101	-0.486*	-0.105*	-0.223***	-0.211**	-0.165***	-0.481
	(0.078)	(0.283)	(0.064)	(0.085)	(0.082)	(0.054)	(0.352)
<i>Destruction = PostCrisis</i>	0.185***	0.126	0.008	0.021	0.039	0.002	0.228
	(0.071)	(0.166)	(0.029)	(0.041)	(0.054)	(0.043)	(0.277)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector (5-digit) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry (3-digit)×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N observations	2,276	2,316	2,349	2,350	2,350	2,350	2,325
N groups	302	300	300	302	301	301	302
R2 within	0.206	0.314	0.173	0.171	0.138	0.108	0.160

Note: This table reports the results from the estimation of the specification (1) for the following dependent variables: price-cost margin, profit elasticity, HHI based on employment and output, market shares of the first and fourth largest firms, and allocative efficiency. Standard errors are robust and clustered at the industry level. *** p<0.01, ** p<0.05, * p<0.1.

6 Conclusion

Using plant-level census data spanning the East Asian Crisis this paper analyzed the impact of cronyism on competition and industry structure in Indonesian manufacturing. We exploit the crisis as a quasi-natural experiment inducing variation in the value of political connections with president Suharto and control for potential confounders such as changing credit market conditions and sector-specific shocks that may impact firm dynamics.

The comparative analysis of firm and industry dynamics is suggestive of spillovers. Whereas politically connected firms were resilient to the crisis and continued to outperform their competitors in the post-Suharto period, their growth rates dropped precipitously. By contrast, at the sector-level, greater market share of politically connected firms before the crisis is associated with faster employment growth, higher entry and exit, and more employment re-allocation post crisis. Increased dynamism in these sectors, did not translate into significant reductions in markups and concentration rates, however.

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Appendix A: The presence of politically connected firms by 5-digit industry ISIC code

This table presents the distribution of the presence of politically connected firms in Indonesia by 5-digit ISIC rev. 2 industry code, for 1996, 2001 and 2005. The presence of politically connected firms is expressed as a share of output produced by PC firms relative to total output in an industry (first column), number of PC firms relative to total number of firms in an industry (second column), and labor employed by PC firms relative to total labor in an industry (third column for each year). All numbers are in percent (%). We only present sectors in which they ever had a presence.

ISIC	Industry name	1996-1997			2001			2005		
		output	firms	labor	output	firms	labor	output	firms	labor
31152	Manufacture of margarine	100	100	100	100	100	100	100	100	100
31155	Manufacture of other cooking oil made of vegetables and animal oils	100	100	100	100	100	100	100	100	100
35132	Manufacture of synthetic rubber	100	100	100	0.8	25	34.1	0.3	25	33.6
31168	Manufacture of wheat flour	99.5	50	92.7	93.5	44.4	87.5	76.8	40	77.2
31122	Manufacture of food primarily made of milk	97.9	50	79.3	18.3	20	23.6	33.2	20	31.9
35111	Manufacture of basic inorganic chemicals chloride and alkali	96.1	25	60.4	49.2	13.3	40.3	71.2	25	74.3
35292	Manufacture of explosives and ammunition	94.1	12.5	27.8	93	16.7	32.9	98.4	20	31.3
36310	Manufacture of cement	83.1	56.3	79.6	69.7	50	64.6	83.2	45	66.5
31171	Manufacture of macaroni, spaghetti, noodle and the like	79.9	3.9	32.4	63.7	4.1	32.6	54.8	4.3	31.3
32420	Manufacture of footwear except made of leather, etc.	75.1	4.2	44.5	90.8	7.1	64.4	86	11.1	68
36113	Manufacture of laboratory, electricity/technical wares made of porcelain	73.1	14.3	31.9	44	20	34.3	89.8	25	37.5
34112	Manufacture of cultural papers	70.1	11.9	50.6	64.7	11.7	52.1	56.5	11.5	57.3
31261	Manufacture of prepared food spices	69.6	18.2	58.9	60.6	11.8	45.2	58.7	8.3	44.3
37103	Steel rolling industry	61.1	6.3	26.9	71	6.3	31.6	41.2	6.5	30
37102	Iron and steel smelting industry	50.3	3.4	14.9	32.1	3.4	9.1	11.8	4	10.5
35299	Manufacture of chemicals n.e.c	48.8	7.7	18.6	38.2	5.9	12.7	19.5	4.5	12
34114	Manufacture of tissues paper	47.2	10.3	37.8	21.6	4.3	19.4	28.5	3.6	17.2
31184	Manufacture of syrup	47	3.7	32.4	0	0	0	0	0	0
35122	Manufacture of straight fertilizers	46.1	15.4	47.5	39.2	30.8	30.5	29.7	25	37.3
36222	Manufacture of safety glass	44.8	14.3	31.6	66.4	14.3	64.8	96.6	16.7	70.5
35224	Manufacture of herbal medicine	43.5	1.7	12.7	27.9	1.6	10.3	59.5	1.9	15.1
31212	Manufacture of sago	43.4	4.2	42.3	14.8	3.2	13.5	0	0	0
35112	Manufacture of basic inorganic chemicals industrial gas	43.4	5.8	10.3	39.4	6.1	9.5	1	4.3	2.8
31121	Manufacture of powdered, condensed and preserved milk	41.7	13	34.6	31.7	13	32.5	38.3	9.1	18
36214	Manufacture of glass containers	36.6	9.1	22.4	27.9	10	11.1	37	12.5	14.6
31281	Manufacture of prepared animal feeds	36.5	9.8	32.7	42.4	12.7	31.9	33.2	11.7	29
34113	Manufacture of industrial papers	31.3	5.6	17.8	17.9	6.3	21.8	0	0	0
36211	Manufacture of glass products for household purposes	28.6	6.9	24.8	20.4	8	20.3	19.2	9.1	21.7
35222	Manufacture of drugs and medicines	21.7	6.9	14.7	11.6	7.1	9	19.3	5.4	7.9
31154	Manufacture of cooking oil made of palm oil	21.1	11.8	17.6	19.5	12.1	15.9	14.3	7	10.1
35291	Manufacture of adhesive	20.8	12.5	19.6	10.5	12.8	18.5	14.7	9.8	13.4
34111	Manufacture of pulp	20.5	14.3	35.9	16.8	12.5	28	7.8	12.5	23.9
38114	Manufacture of kitchen ware made of metal other than aluminum	19.8	1	9.5	20.1	1	8.8	10.6	1.2	12.3
35117	Manufacture of basic organic chemicals from crude oil, natural gas and coal	18.9	50	58.8	44.5	28.6	50	91.4	28.6	88.4
35119	Manufacture of basic chemicals n.e.c	18.7	8.6	12.6	24.8	8.1	9.5	13.2	9.4	9.3
31279	Manufacture of other food products n.e.c	16.8	1.3	5.8	0.7	1.3	3.7	0.7	1.1	4.3
35131	Manufacture of synthetic resins	16.7	7.5	14.9	15.4	9.4	16.8	30.9	8.8	18.8
38139	Manufacture of fabricated metal products n.e.c	16.4	8.3	15.2	42.7	9.3	28.1	15.2	5.4	10.2
35210	Manufacture of paints, varnishes and lacquers	15.9	1.6	4.1	7.1	1.6	1	3.2	1.6	2.5
36112	Manufacture of structural materials made of porcelain	15.7	7.1	10.6	12	6.8	12.5	23.1	7	17.8
35114	Manufacture of basic inorganic chemicals n.e.c	15.5	4.7	2.7	5.4	4.2	2.4	24	2.3	2.7
31251	Manufacture of all kinds of chip (shrimp chip, fish chip etc)	15.2	0.2	6.6	11.3	0.2	4.7	8.1	0.2	3.8
35118	Manufacture of basic organic chemicals resulting special chemicals	14.8	6.7	12.2	6.4	4.5	4.4	6.7	5	3.7
31153	Manufacture of cooking oil made of coconut oil	11	7.5	11.4	10	6.1	7.3	2	5.7	6.1
37201	Manufacture of non ferrous metal basic industries	10.8	3.8	7.5	2.7	3	3.6	7.5	2.6	5.8
31179	Manufacture of bakery products	10.7	0.7	3.5	10.4	0.8	3.8	12.7	0.6	2.2
35603	Manufacture of plastic sheets	10.5	1.7	3.6	11.2	1.5	4.2	26.7	1.4	4
38134	Manufacture of plate working, pressure vessel, steel tank, for industry	9.3	8.3	14.6	18.6	7.9	11.8	22.9	3	6.1
31141	Manufacture of canned fish and other similar products	9.2	3.6	10.1	11.6	2.5	15.8	22.3	2.3	2.6
31164	Peeling and cleaning of seed other than coffee	9.1	3.7	7.9	4.7	2.3	3.6	0.2	2.6	0.8
31282	Manufacture concentrate animal feeds	9.1	13.6	10.5	17.7	17.6	17.2	32.2	14.3	27.4
34190	Manufacture of products of paper and cardboard n.e.c	8.5	2.3	8.5	15.7	2.1	6.7	3.6	2.1	7.3
31222	Manufacture of processed coffee	8.3	1.8	5.6	14.1	2.3	5.6	1.1	2.9	3.8
34120	Manufacture of boxes made of paper and cardboard	8	1.9	4.8	6.3	2	4	8.6	1.8	3.9
31181	Manufacture of granulated sugar	7.2	1.4	2.1	6.2	1.7	6.3	6.3	1.6	3.9
35593	Manufacture of products of rubber n.e.c	6.8	2.2	1.3	3.5	2.3	1.1	0.6	2.5	1.3
35601	Manufacture of pipes and hose made of plastics	6.6	2.6	2.6	0	0	0	0	0	0
33111	Sawmills	5.9	0.3	1.8	2.6	0.3	0.8	0.2	0.2	0.4
36111	Manufacture of household wares made of porcelain	5.9	2	2.7	15.9	4.7	11.3	13.6	5.3	16.1
32122	Manufacture of made up textile for health purposes	5.8	3.7	2.1	5	3	1.6	0	0	0
34200	Printing, publishing and allied industries	4.6	0.4	0.8	1.7	0.5	0.9	1.4	0.5	0.8
38133	Manufacture of fabricated structural steel products	4.6	3.6	2.7	4.3	3.2	5.7	4.7	3.2	4.3
34119	Manufacture of paper n.e.c	4.5	5.6	2.7	12.3	5	2.2	6.2	4.2	3
35231	Manufacture of soap and cleaning preparations, including tooth paste	4.5	1.7	1.3	5.6	2	1.8	0.4	2	1.4

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33113	Manufacture of plywood	4.1	3.5	5	2.2	2.7	3.6	0	0	0
32114	Weaving mills except gunny and other sacks	3.6	1.1	1.5	3.6	1.4	1.5	5.3	1.3	1.6
33115	Manufacture of block board, particle board and the like	3.6	2	1.4	4.7	2.3	1.9	1.8	2.3	2.1
33112	Manufacture of molding and building components	2.8	0.5	2.5	3.7	0.5	1.5	1.7	0.3	1.5
35116	Manufacture of basic organic chemicals intermediate cyclic, dyes and pigment	2.8	5.3	6.3	7	5.3	6.9	11.3	5.3	7.8
36911	Manufacture of household wares, made of stone	2.6	0.7	2.1	2.1	0.6	2	1.4	0.6	2
33212	Manufacture of furniture and fixtures made of bamboo and /or rattan	2.3	0.9	2.1	2	0.9	1.5	6.7	0.9	4.3
31112	Processing and preserving of meat	1.7	3.2	1.7	1.2	3.7	1.2	3.9	3.6	5.5
31151	Manufacture of crude vegetable and animal cooking oil	1.4	0.9	1	1.4	0.9	0.9	0.9	0.7	0.5
32111	Spinning mills	1.3	2.9	3.2	1.3	2.6	2.4	0.4	1.9	1.6
35606	Manufacture of plastics bags, containers	1.3	1.1	1.5	1.7	0.9	1.1	1.9	0.9	1.1
35511	Manufacture of tire and inner tubes	1.2	4.3	2.7	1.3	3.8	2.3	0.5	3.4	1.8
35523	Manufacture of crumb rubber	1.2	0.6	0.8	0.9	0.6	0.8	1	0.6	0.9
31144	Manufacture of frozen fish and other similar products	0.8	1.5	1.1	1.1	0.6	0.9	0.7	0.5	0.9
38131	Manufacture of fabricated structural metal products other than aluminum	0.8	1.4	7.9	3.6	1.5	7.4	8.9	1.7	8
38120	Manufacture of furniture and fixtures primarily made of metal	0.7	0.8	0.6	1.9	1.7	3.1	0.9	1.9	2.2
35609	Manufacture of plastic products n.e.c	0.4	0.9	1.7	1.5	1	1.7	0.7	0.4	0.5
38193	Manufacture of all kind of metal containers	0.4	1.2	6	4.2	1.3	3.9	4.1	1.5	4.6
31249	Manufacture of other food made of soya bean / other nuts	0.3	2.3	0.6	0.3	3.4	0.6	0.4	4.3	0.5
31340	Manufacture of soft drinks	0.2	0.4	1.1	2.2	1.3	2.4	2.4	1.1	2.1
31221	Manufacture of processed tea	0.1	0.6	0.1	0	0	0	0	0	0
36321	Manufacture of structural cement products	0.1	0.2	0.7	4	0.6	1.2	1.9	0.4	1.8