Estimating the Value of Political Connections

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As the Indonesian economy went into a downward spiral in the latter half of 1997, there was much speculation and debate as to the reasons behind the sudden decline. Most explanations gave at least some role to investor panic, which had led to a massive outflow of foreign capital. At the root of this hysteria, however, were concerns that the capital that had flowed into Indonesia and elsewhere in Southeast Asia had not been used for productive investments. Much of this discussion focused on the role of political connections in driving investment. The claim was that in Southeast Asia, political connectedness, rather than fundamentals such as productivity, was the primary determinant of profitability and that this had led to distorted investment decisions. Obviously, the degree to which this type of problem was truly responsible for the Asian collapse depends very much on the extent to which connectedness really was a primary determinant of firm value. In making the argument that this was in fact the case, anecdotes about the business dealings of President Suharto's children were often cited as evidence. Such stories suggest that the value of some firms may have been highly dependent on their political connections. However, investigations in this area have not progressed beyond the level of case study and anecdote. That is, there has been no attempt to estimate the degree to which firms rely on connections for their profitability.

There are numerous difficulties that would affect any attempt to value political connections, which probably accounts for the paucity of work in this area. In countries where political decision-making is decentralized, simply defining political connectedness is an extremely complicated proposition. For example, in India, analyzing a firm's political associations would require information on its relationships with numerous government decision-making bodies as well as some way of aggregating these connections. Even with a specific measure in mind, collecting the appropriate data would be difficult because business–politics relations is often a taboo topic of conversation and because connections tend to shift considerably over time. Finally, assuming that an appropriate measure were found, it is not clear how one would estimate the *value* of these connections. Simple measures of profitability are unsuitable: in equilibrium, well-connected firms may not earn higher profits, even if they are earning tremendous political rents, because of the resources they may be required to devote to rent-seeking activities. Also, it is plausible that unobservables such as business acumen are correlated with the ability to establish political connections.

By looking at Indonesia, I am able to overcome these problems. Because of Indonesia's highly centralized and stable political structure (until the very end of Suharto's reign), it is possible to construct a credible index of political connectedness. Moreover, my "event study" approach described below allows for a relatively clean measure of the extent to which firms relied on these connections for their profitability.

To infer a measure of the value of connections, I take advantage of a string of rumors about former Indonesian President Suharto's health during his final years in office. I identify a number of episodes during which there were adverse rumors about the state of Suharto's health and compare the returns of firms with differing degrees of political exposure. First, I

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show that in every case the returns of shares of politically dependent firms were considerably lower than the returns of less-dependent firms. Furthermore, the magnitude of this differential effect is highly correlated with the net return on the Jakarta Stock Exchange Composite Index (JCI) over the corresponding episode, a relationship that derives from the fact that the return on the JCI is a measure of the severity of the rumor as perceived by investors. Motivated by these initial observations, I run a pooled regression using all of the events, allowing for an interaction between "political dependency" and "event severity." The coefficient on this interaction term is positive and statistically significant, implying that well-connected firms will suffer more, relative to less-connected firms, in reaction to a more serious rumor. My results suggest that a large percentage of a well-connected firm's value may be derived from political connections.

A few earlier papers dealt with related issues, beginning with Anne O. Krueger's (1974) pioneering work, which focused on rent-seeking behavior and efficiency losses resulting from restrictive trade policies. As Krueger herself concedes, however, the proxies she uses for the value of rents are very rough. Moreover, while her paper finds economic rents to be a substantial percentage of total GDP, it deals only with *aggregate* political rents and is therefore unable to say anything directly about the rents obtained by individual firms. A paper in the political science literature (Brian E. Roberts, 1990) looks more directly at the valuation of political connections. It examines the effect of Senator Henry Jackson's (unexpected) death on various constituent interests and on the constituent interests of his successor on the Senate Armed Services Committee. Robert's event study showed that share prices of companies with ties to Senator Jackson declined in reaction to news of his death whereas the prices of companies affiliated with his successor increased. Not surprisingly, the reported effects are quite small—the companies' ties to the two senators presumably reflected only a small fraction of the full value of their aggregate political connections. Thus, although Roberts' paper showed that connections matter, it did not address the larger question that I attempt to answer here: *How much* do connections matter?

The rest of the paper is structured as follows: Section I describes the data that were acquired for this project. In Section II, I present the paper's basic econometric results and provide an interpretation of the implied effect. Section III looks at some issues of robustness. Finally, conclusions and the implications of the results are given in Section IV.

I. Data

Four separate types of data were acquired for this study: 1) stock market and accounting data for companies traded on the Jakarta Stock Exchange (JSX); 2) data on the group affiliations of all JSX firms; 3) a measure of the political dependence of a subset of these firms; and 4) a series of "events" related to the condition of Suharto's health.

A. *Accounting and Share Price Data*

The accounting data were taken from the *Financial Times'* Extel Financials Database (1997). I used data from 1995 because it is the most recent year with reasonably broad coverage. The accounting variables used include total assets (ASSETS), total debt (DEBT), taxes (TAX), net income (NI), and the international standard industrial classification (ISIC) code of the firm's industry.

For stock price data, I use the *Financial Times'* Extel Securities Database (1997). Unfortunately, there are a few gaps in its coverage of Indonesian firms; to fill in these holes, I used data from Investamatic Database (1998), a financial services data base that is commonly used by Southeast Asian securities firms.

B. *Group Affiliation*[1]

In Indonesia, group affiliations are not publicly reported; they must be inferred by looking at a firm's major shareholders and by examining

[1] Diversified business groups (called *grupos* in Latin America, *chaebol* in Korea, *business houses* in India, and *keiretsu* in Japan) are ubiquitous yet poorly understood organizational forms that dominate the private sectors of many countries. Such groups are comprised of a diverse set of businesses, often initiated by a single family (this is certainly the case in Indonesia), and bound together by equity cross-ownership and common board membership. See Yoshihara Kunio (1988) for a detailed description of groups in Southeast Asia.

the composition of its board and management. Several consulting firms in Jakarta collect and sell this information, which facilitates the collection of these data. My primary source is *Top Companies and Big Groups in Indonesia* (Kompass Indonesia, 1996), which lists the top 200 Indonesian groups along with their affiliated companies. This publication was last revised in 1996 and, as a result, is slightly outdated; for newer firms, the *Indonesian Capital Markets Directory 1997* (Jakarta Stock Exchange, 1997) was used to fill in the blanks. No mention of the Tahija Group was made in either of these primary sources. Firms affiliated with this group were identified by using a list of Tahija-affiliated companies given in a recent *AsiaMoney* article (Matthew Montagu-Pollock, 1995). Finally, all group membership classifications were confirmed by investment analysts in Jakarta in December 1997, which resulted in only slight revisions. There were virtually no changes in the group affiliations of publicly traded companies in the period under study, so there is no need to deal with shifts in ownership.

C. *Political Connectedness*

As a measure of political connections, I use the Suharto Dependency Index (1995) (referred to by the variable *POL* below) developed by the Castle Group, a leading economic consulting firm in Jakarta. Over the past few years, the group has assisted over 150 multinationals with entry and market strategies for Indonesia. Its services include "partner searches" to help foreigners find appropriate local business partners and "customized profiles of Indonesian business groups." Among its more popular products is a *Roadmap of Indonesian Business Groups* (1998), which outlines the relationships among these groups along with information about their holdings and government connections.

The index itself was put together for a seminar given to members of the Jakarta business community in early 1996 and is based on the subjective assessments of a number of top consultants at the Castle Group (including the president, James W. Castle). It consists of a numerical rating of the degree to which each of the 25 largest industrial groups in Indonesia is dependent on political connections for its profitability.[2] The ratings range from one (least dependent) to five (most dependent). Most of these groups have multiple companies listed on the JSX, yielding a total sample of 79 firms.[3] All of the companies affiliated with President Suharto's children (Bimantara and Citra Lamtoro Groups) received a score of five, as did those owned by longtime Suharto allies Bob Hasan (Nusamba Group), Liem Sioe Liong (Salim Group), and Prajogo Pangestu (Barito Pacific Group). At the other extreme, firms owned by the Bakrie brothers and Julius Tahija were given a score of one. For this paper, I subtracted one from the index to facilitate the interpretation of coefficients in regressions involving interaction terms.

Some basic summary statistics of firms, by degree of political dependence, are listed in Table 1. There do not appear to be any systematic differences in size or debt structure across firm type.

D. *Information on Suharto's Health*

During 1995–1997, the Indonesian financial markets were occasionally hit by rumors about Suharto's health. To determine the relevant events, the keywords SUHARTO, HEALTH and INDONESIA, and (STOCK or FINANCIAL) were used in a Lexis-Nexis literature search. This returned 484 stories, most of which referred to one or more of the six episodes outlined in the unpublished Appendix.[4] For nearly all of these episodes, it was possible to

[2] Definition from a conversation with James Castle, August 12, 1998.

[3] A number of publicly traded companies are associated with several groups, which raises the issue of how to classify companies with multiple affiliations. In my sample, there were 12 firms for which this problem arose. Of these, only three had multiple "top 25" groups as shareholders. For these three firms, I took a simple arithmetic average of the level of political dependency of the top 25 affiliated groups (in only one of these cases was there a difference of more than one among the rankings of the multiple owners). For the others, each firm was assigned the political dependency of the one top 25 group with which it was affiliated. Because I do not have any measure of dependency for smaller groups, this is my best guess of the firm's overall political dependency. All of the analyses below were repeated excluding firms with multiple affiliations; this affected the results only slightly.

[4] The few articles that did not refer to one of these events were unrelated to Suharto's personal health.

TABLE 1—SUMMARY STATISTICS BY DEGREE OF POLITICAL DEPENDENCE AS MEASURED BY THE SUHARTO DEPENDENCY INDEX

POL	1	2	3	4	5	All firms	Observations
Observations	5	34	10	16	14	79	
	2,145.76	2,228.57	2,206.20	1,634.08	1,765.51	2,033.19	
Assets	(2,843.63)	(3,989.85)	(3,676.99)	(2,561.07)	(2,230.52)	(3,321.59)	76
	707.18	791.32	813.25	397.83	712.57	717.37	
Debt	(702.84)	(1,478.83)	(976.28)	(461.06)	(1,070.83)	(1,186.85)	70
Return on assets							
(net income)/	0.038	0.058	0.043	0.037	0.050	0.050	
(total assets)	(0.031)	(0.058)	(0.023)	(0.032)	(0.029)	(0.044)	76
Tax rate (taxes							
paid)/(pretax	0.23	0.24	0.16	0.22	0.15	0.21	
income)	(0.05)	(0.12)	(0.14)	(0.16)	(0.12)	(0.13)	74

Sources: All data are from the *Financial Times' Extel Database* (1997); Assets and Debt are expressed in millions of 1995 rupiah.

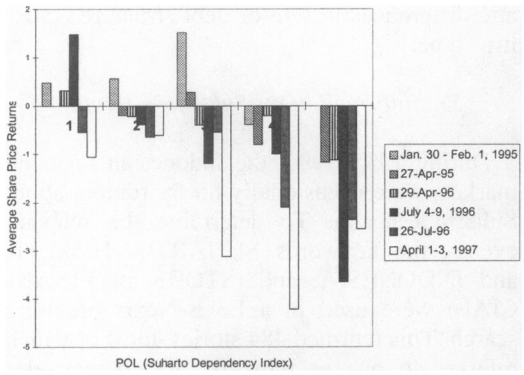

FIGURE 1. EFFECT OF POLITICAL DEPENDENCE ON SHARE PRICE RETURNS

ascertain the date when rumors first hit the Jakarta Exchange—there was generally a specific triggering *event*, which I take as the start of the episode. I assumed that each episode came to an end when it was (1) explicitly put to rest by the revelation of new information or (2) it was reported that analysts had factored the new information about Suharto's health into their pricing of securities.

II. Results

Figure 1 shows the share price returns for the six episodes, with the Suharto Dependency Index on the horizontal axis. The graph strongly suggests that politically dependent firms, on average, lost more value during these episodes than did less-dependent firms.

To get a sense of the magnitude of the effect of political dependence during each episode, I ran a set of regressions using the following specification:

$$(1) \qquad R_{ie} = \alpha + \rho \cdot POL_i + \varepsilon_{ie}$$

where R_{ie} is the return on the price of security i during episode e, POL_i is the firm's Suharto Dependency Number, and ε_{ie} is the error term.[5] The results of this set of regressions are listed in Table 2; consistent with the raw pattern illustrated in Figure 1, ρ is negative in every instance.

Now, in each episode, investors were reacting to a different piece of news, so we expect the coefficient on POL_i to differ across events. More precisely, a more severe threat to Suharto's health should intensify the effect of political dependence, hence the magnitude of ρ should be increasing with event severity. As a measure of the market's concerns regarding the threat to Suharto's health in each episode, I use

[5] All regressions reported in this paper use standard errors that correct for heteroskedasticity. I also ran regressions using an error structure that only allowed for the correlation of ε_{ei}s for each company, i.e., $\text{Cov}(\varepsilon_{ei}, \varepsilon_{fj}) \neq 0$ if and only if $i = j$. The regressions were also run using an error structure that allowed for the correlation of ε_{ei}s within each group. These various approaches yielded very similar sets of standard errors.

TABLE 2—EFFECT OF POLITICAL CONNECTIONS ON CHANGES IN SHARE PRICE, SEPARATE ESTIMATION FOR EACH EVENT

	Jan. 30–Feb. 1, 1995	April 27, 1995	April 29, 1996	July 4–9, 1996	July 26, 1996	April 1–3, 1997
POL	−0.58* (0.34)	−0.31 (0.18)	−0.24* (0.15)	−0.95*** (0.27)	−0.57*** (0.22)	−0.90** (0.35)
Constant	1.29 (0.79)	0.21 (0.32)	0.12 (0.46)	0.83 (0.64)	−0.07 (0.41)	0.77 (0.97)
R^2	0.037	0.043	0.025	0.147	0.078	0.075
Observations	70	70	78	79	79	79

Note: Robust standard errors are in parentheses.
* Significantly different from 0 at the 10-percent level.
** Significantly different from 0 at the 5-percent level.
*** Significantly different from 0 at the 1-percent level.

the return on the Jakarta Stock Exchange Composite Index net of broader Southeast Asian effects[6] [referred to using $NR_e(JCI)$]. The preceding observations suggest that the coefficient on *POL* should be more negative if the threat to Suharto's health, as proxied by $NR_e(JCI)$, is greater.[7] This turns out to be the case: the correlation between ρ and $NR_e(JCI)$ is 0.98. This implies a specification where observations from all events are pooled together, with an interaction term, $NR_e(JCI) * POL_i$, added to allow the effect of political dependence to vary across events, depending on the event's severity. Thus, I use the following full-sample specification:

TABLE 3—EFFECT OF POLITICAL CONNECTIONS ON CHANGES IN SHARE PRICE

	(1)	(2)
POL	−0.60** (0.11)	−0.19 (0.15)
NR(JCI)	0.25 (0.14)	−0.32 (0.28)
$NR(JCI) \cdot POL$		0.28* (0.11)
Constant	0.88 (0.27)	0.06 (0.35)
R^2	0.066	0.078
Number of observations	455	455

Note: Robust standard errors are in parentheses.
* Significantly different from 0 at the 5-percent level.
** Significantly different from 0 at the 1-percent level.

$$(2)\quad R(P_{ie}) = \alpha + \rho_1 \cdot POL_i + \rho_2 \cdot NR_e(JCI) + \rho_3 \cdot [NR_e(JCI) \cdot POL_i] + \varepsilon_{ie}.$$

The results of this regression are listed in Table 3.[8]

If the severity of a rumor affects politically dependent firms more than less-dependent firms, then the coefficient on the interaction term $NR_e(JCI) \cdot POL_i$ should be positive. The estimated coefficient, ρ_3, is statistically significant at 5 percent and is equal to 0.28. Thus, if the overall market declined by 1 percent in reaction to news about Suharto's health, we might expect a firm with $POL = x$ to drop 0.28 percent more than a firm with $POL = x - 1$.

[6] To net out broader Southeast Asia effects, I ran the following "market model" for daily returns during 1994:

$$R_t(JCI) = \alpha + \sum_{m \in M} \beta_m \cdot R_t(m) + \varepsilon_t$$

where $R_t(JCI)$ is the return on the Jakarta Composite on day t, $R_t(m)$ is the return on market index m, and M is the set of ASEAN market indices (including Tokyo's Nikkei 225, Hong Kong's Hang Seng, Singapore's Straits Times, Bangkok's SET, Taiwan's Weighted, Philippines' Composite, Kuala Lumpur's Composite, and Seoul's Composite). This produced a set of coefficients reflecting the degree of correlation between the JCI and other market indices. For each episode e, the *net* return for the JCI is then given by

$$NR_e(JCI) = R_e(JCI) - [\hat{\alpha} + \sum_{m \in M} \hat{\beta}_m \cdot R_e(m)].$$

[7] It may seem somewhat circular to use $NR_e(JCI)$ as a measure of the severity of the threat to Suharto's health when many of the firms in my sample are constituents of the JCI. Note, however, that $NR_e(JCI)$ is a difference, of which the coefficient on *POL* is a difference in differences. As Section III, subsection B, illustrates, these two variables need not be correlated.

[8] Regressions were also run using log(ASSETS), log(DEBT), and industry dummies as controls. These additions did not alter the size of significance of the interaction term.

One problem with the events described above is that they cannot be used to infer the full value of connections because the associated rumors only *increased* the probability that Suharto would leave office. To estimate the full value of connections would require an event involving Suharto's sudden and unexpected removal from office. (To the extent that connections were expected to continue to have some value even after Suharto, the shifts in share prices associated with such an event would understate the full value of connections.) However, no such event took place.[9]

In the absence of an actual sudden regime shift, we may be able to infer what the coefficient on POL would have been in such an event by using equation (2). During a visit to Jakarta in August 1997, I asked a number of investment bankers how much they thought the Jakarta Composite Index would have dropped if Suharto had died suddenly; 20 percent was the modal response to this question. If this value is taken as the best estimate of investor expectations, then (2) implies that the coefficient on POL would have been about 5.8 in the event of a sudden regime shift. This suggests that, in reaction to such an event, the returns for a firm with $POL = 4$ would have been about 23 percentage points lower than the returns for a firm with $POL = 0$. Thus, for plausible parameters, the results suggest that connections were very valuable for well-connected firms (though this calculation involves an inference that is quite far out of sample).

[9] Although Suharto was forced from office in May 1998, it is difficult to utilize this event for a number of reasons. Most importantly, there were many confounding events that took place simultaneously, including a drastic devaluation of the Indonesian rupiah, rioting and general political instability, and the implementation of an IMF rescue package. Moreover, by the end of 1997, shares on the Jakarta Stock Exchange were very thinly traded, making it relatively easy for prices to be manipulated. There are also serious difficulties in trying to define an appropriate event window: expectations of a regime shift had begun to form long before Suharto was replaced, so it is difficult to allow for a reasonably short event window. Finally, it is not even clear that Suharto's removal from power was actually accompanied by a regime change, given that he was succeeded by his longtime associate and apparent ally, B. J. Habibie.

Thus, although Suharto's children's companies declined quite drastically over the first few months of 1998, there is no systematic relationship between share price returns and political dependence, perhaps owing to the difficulties described above.

III. Robustness

A. *Thinly Traded Firms*

Whenever the market received adverse information regarding Suharto's health, it declined on average. However, if a company was not traded on that day, it would register no price change, even if it suffered a decline in its underlying value. There are two counteracting biases that may result, and the overall effect depends on their relative strengths. The intuition for a bias toward zero is that, among firms with zero trading volume, no "difference in difference" in returns between different types of firms will be recorded, even if there is such an effect on the underlying values of the securities. This could similarly bias the coefficient on $POL \cdot NR_e(JCI)$ toward zero. The direction of the second source of bias depends on whether connected or unconnected firms are more thinly traded. Suppose that unconnected firms are more likely to have zero trading volume. Then, what is being interpreted as the effect of connectedness may be a manifestation of the general market decline—a smaller decline in unconnected firms is observed simply because they are not being traded. This could also potentially bias the coefficient on the interaction term away from zero if an increase in the size of the rumor decreased the proportion of nontraded well-connected firms relative to nontraded unconnected companies. The data show that the opposite is true so, if anything, a bias toward zero may result.

To further examine the overall bias that these effects may have on the results, I revisited all of the basic models, limiting the sample to the set of firm–event observations where the firm had a positive trading volume during the relevant period. This affected the interaction term in Table 3 only slightly.

B. *Are Politically Dependent Firms More Sensitive to Bad News?*[10]

As noted previously, the JSX consistently declined whenever Suharto's health was

[10] This section essentially examines whether politically dependent firms have high betas.

brought into question. If politically dependent firms are more sensitive to bad news of any kind, then they will register larger losses on such days. This could be the source of the "difference in differences" that is being interpreted as the connectedness effect. To examine this possibility, I analyzed share price returns in reaction to other shocks that were more or less unrelated to the longevity of the Suharto regime. The beginning of the Southeast Asian financial crisis in 1997 provides a suitable example. The above analyses were repeated for trading days in the week following August 12, when the rupiah was floated by the Indonesian government. On these days, there was no relationship between share price returns and dependence. Similarly, there was no relationship between returns and political dependence on trading days following those days when the S&P 500 Index lost more than 2 percent.

C. *Appropriateness of the Event Window*

There may be some concern that trading on inside information prior to the onset of the rumors described in the unpublished Appendix could lead to price changes among well-connected firms earlier than my chosen starting day. When regressions were run using *total* returns over an event window expanded to include the two days (or one day) prior to the onset of the actual event, for all events except April 25–27, 1995, there was simply a minor attenuation of the results.

D. *Monotonicity of POL*

I have assumed throughout a linear specification for *POL*. It would be of concern if the relationship between *POL* and R_{ie} were not, at a minimum, monotonic. If this were not the case, it would bring into question the validity of the Castle Index and/or the appropriateness of my analyses. To examine this possibility, I ran the following, which allows *POL* to have a flexible functional form:

$$(3)\quad R_{ie} = \alpha + \sum_{p=2}^{5} \beta_p I_{POL \geq p} + \sum_{e=2}^{6} \gamma_e + \varepsilon_{ie}$$

where

$$I_{POL \geq p} = \begin{cases} 0 & \text{if } POL < p \\ 1 & \text{if } POL \geq p \end{cases}$$

and the γ_es provide event fixed effects.

The coefficients on the indicator variables were uniformly negative, ranging from -0.35 to -0.87. These results are consistent with the use of the Castle Index as a measure of political dependence.

We may go a little further by testing for the equality of the β_ps with the test statistic $F(3, 445) = 0.24$ (3 restrictions, 455 observations, and 10 variables). This implies that the hypothesis of equality of coefficients cannot be rejected at any significance level below 86 percent. Thus, the use of a linear specification on *POL* is also justified.

IV. Conclusion

This paper has concentrated on the valuation of rents for a relatively small subsample of Indonesian firms. However, the 25 groups associated with these firms account for a very large percentage of economic activity in Indonesia, with revenues of more than U.S. $60 billion in 1995 (as a frame of reference, Indonesia's GNP in 1995 was about U.S. $200 billion). Thus, for a very large part of the Indonesian economy, political connections apparently matter a lot.

Although the preceding analysis focused on Indonesia, there is reason to believe that the results apply to many other countries. For example, in Transparency International's frequently cited "Perceived Corruption Ranking (1998)," Indonesia ranks 45th out of the 54 countries surveyed. It was perceived as being less corrupt than, among others, India, Russia, Pakistan, China, Nigeria, and Bangladesh. To the extent that perceived corruption is a reasonable proxy for the prevalence of political rents, the results of this paper suggest that political connections may play an important role in many of the world's largest and most important economies.

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