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journal homepage: www.elsevier.com/locate/jcorpfinThe dynamism of partially state-owned enterprises in East Asia[☆]Richard W. Carney^a, Travers B. Child^{a,*}, Wai-Man Liu^b, Phong T.H. Ngo^b^a China Europe International Business School (CEIBS), China^b Australian National University, Australia

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ABSTRACT

We examine the nature of state blockholding across publicly listed firms in East Asia by assembling a unique dataset spanning 16 years and 9 economies. Our newly compiled data identifies ultimate owners for each firm annually between 1997 and 2012, totaling 2984 firm-year observations. Three findings stand out. First, large changes (>5%) to state blockholdings – both investments and divestments – are quite prevalent. Second, the identity of the largest shareholder frequently changes over time between state, family, and widely-held entities. Third, sovereign wealth funds are far more likely to acquire rather than sell large stakes in publicly traded firms.

1. Introduction

State-owned enterprises (SOEs) have been estimated to generate one tenth of global GDP and account for more than 10% of the world's largest listed firms (Kowalski et al., 2013; Bruton et al., 2015). It is now common for SOEs to mix private and state ownership (Musacchio and Lazzarini, 2014) – a phenomenon we refer to as *partial state ownership* (PSOEs). For example, between 2005 and 2012, PSOEs represented nine of the 15 largest initial public offerings globally, and PSOEs account for approximately 15% of global equity market value (Economist, 2012, 2014). The largest PSOEs are located in both democratic and nondemocratic states, and frequently belong to government-controlled corporate pyramids (Carney and Child, 2013; Kowalski et al., 2013).

Numerous studies have demonstrated that partial state ownership of the world's largest companies remains surprisingly resilient (Bruton et al., 2015; Megginson, 2017; Carney, 2018), but recent work suggests it may be more fluid than previously thought. For example, the rise of sovereign wealth fund investments has contributed to a greater prevalence of state ownership on average, but underlying this trend may be frequent buying and selling of shares (Kotter and Lel, 2009; Dewenter et al., 2010; Bortolotti et al., 2015). Moreover, many governments have moved from majority to minority ownership positions as a result of privatization (Megginson and Netter, 2001; Boubakri et al., 2013), but there are also notable instances of governments reclaiming a majority stake (Boubakri et al.,

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2005; Bortolotti and Faccio, 2008; Laeven and Valencia, 2012; Fan et al., 2013).

For example, the Korea Development Bank (KDB), a state-owned entity, acquired a 17% stake in Hyundai Corporation in 2003, making it the largest minority shareholder (after Woori Bank - a private entity). While the KDB sold its stake the next year, in 2006 it bought an even larger stake of 22.7% (while still only a minority owner). In 2007, several Korean state-owned investment funds (the Korea Exchange Bank, Korea Credit Guarantee Fund, and the Export-Import Bank of Korea) also acquired positions. Even though each of these funds individually held minority stakes, the government collectively became majority shareholder.

Although scholars have shown various state ownership arrangements have important performance implications (D'Souza et al., 2001; Inoue et al., 2013), little is known about how such arrangements change over time. In this paper, we seek to fill this gap by compiling longitudinal ownership data for the largest listed corporations located in nine East Asian economies. A significant fraction of the companies are minority or majority state owned at some point in our sample. To reflect the presence of other (potentially larger) blockholders in these publicly-traded firms, we refer to them as *partially* state-owned enterprises (PSOEs). We uncover the government entities managing state ownership, and document levels and variability in state blockholding across our sample region.

East Asia is well-suited to the study of PSOEs for several reasons. First, because East Asia is the fastest growing region in the world, with historically important state-business ties, there is considerable interest in understanding PSOEs in this region. Second, East Asia has a variety of both democratic and nondemocratic regimes, permitting general insights to be drawn with relevance to the global context. Third, anecdotal evidence indicates that varying modes of state ownership are common throughout the region, including SWFs, direct and indirect (i.e., pyramidal), as well as minority and majority state blockholding.

One of the major shortcomings in the study of PSOEs is the lack of longitudinal data across multiple countries. Due to the time consuming nature of hand collecting data and unravelling ownership structures, we sacrifice breadth of coverage *across* firms in favor of depth of coverage *within* firms. Accordingly, we compile a new dataset that maps changes to corporate ownership for 238 firms annually between 1997 and 2012. Our sample selection is based on well-cited research identifying corporate ownership in this region at two points in time. Claessens et al. (2000) identify ownership for 2980 firms in 1996, while Carney and Child (2013) document ownership for 1386 firms in 2008. Both studies reveal ownership patterns across nine economies, including Hong Kong, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand. Our sample comprises all companies among the largest 200 firms by country in both the 1996 and 2008 studies. Thus, our sample represents the largest mainstay firms between 1996 and 2008. We compile ownership data for these 238 firms for all years possible between 1997 and 2012, resulting in a total of 2984 firm-year observations across 16 years. In our sample the state exercises ownership in 27% of firm-year observations. Other blockholders include families and widely-held entities.

To identify changes in state blockholding, we primarily focus on economically significant ownership changes of at least 5%. This rule is adopted for two reasons. First, large changes to blockholder positions can alter the control structure of a firm. For instance, we document a number of instances in which these changes result in a PSOE becoming widely-held, or vice versa. Second, because we focus on the largest publicly traded companies, acquiring even 5% requires significant capital outlays. For example, in 2012 Hyundai's market capitalization was about \$US60 billion; a 5% stake at that point in time amounted to a \$US3 billion outlay or 1.7% of Korean government spending. By comparison, the US government bailout of AIG in 2008 – one of the largest and most controversial bailouts in history – amounted to about 3.2% of the federal budget.

We document several interesting facts. First, state blockholding has exhibited far greater fluidity than previous studies would collectively suggest (e.g., Claessens et al., 2000; Carney and Child, 2013). Focusing on large shifts (>5%) in ultimate state ownership, we document 228 changes. Of the 228 changes mentioned above, 118 cases represent increased investment by the state in publicly listed firms. The remaining 110 cases constitute instances of divestment by the state. Certain countries (i.e. Korea, Malaysia, and Indonesia) display many increases *and* decreases in blockholding levels by the state. Thus, changes to state ownership are not uncommon events, and therefore constitute an important phenomenon to examine (beyond ownership *levels* documented in earlier work).

Second, the identity of the largest shareholder surprisingly changes quite frequently between state, family, and widely-held entities. In general, when the level of state ownership changes, it usually implies a commensurate shift in diffuse (rather than family) ownership. Given the widespread importance of family business groups in East Asia, it is surprising they play a relatively small role in ownership transitions involving the state. Of note, the state is still more likely to relinquish shares to family business groups than to acquire shares from them. Nevertheless, there is considerable heterogeneity across countries in terms of share transfers between the state and family blockholders. Indonesia, Hong Kong, and Malaysia stand out as having a high degree of ownership transfers between the state and family blockholders.

Third, sovereign wealth funds (SWFs) are playing a new and important role in state ownership changes. SWFs are much more likely to acquire rather than sell stakes in our firms. SWFs account for 28% of increases in state ownership, but only 14.5% of decreases. Moreover, we observe a pattern of increasing importance of SWFs as potentially influential shareholders in the region. While global studies find SWFs are generally passive investors (Bodie and Briere, 2014; Mietzner et al., 2015), our findings suggest there may be more heterogeneity than is typically portrayed. Given the importance of the firms in our sample to their respective national economies, our findings suggest that greater attention to understanding the conditions under which SWFs engage in activist behavior may be warranted.

Our data show East Asian governments increased ownership stakes not only during crises, but also during periods of regular economic activity. We offer two non-mutually exclusive explanations for the patterns we observe. First is a *political-strategic* motive for states to exercise control in publicly traded firms. In our sample, government ownership positions are nearly always concentrated in one or two executive branch entities, and this may facilitate the use of ownership vehicles for political purposes. For example, we find that a disproportionate share of changes to state ownership occur within strategic industries. Moreover, at the firm level we offer

preliminary evidence (in our Internet Appendix) that states tend to target underperforming firms, and relinquish ownership once performance improves. At the same time, we also find evidence that states invest in companies with declining market-to-book ratios. These findings suggest a *market-oriented* strategy distinct from political motives. To buttress this interpretation, we find state entities do actively manage blockholdings in a wide variety of industries (and not only within those of national-strategic importance).

Our paper contributes to recent work on corporate ownership across East Asia identifying the relative importance of families, the state, and varying forms of widely held ownership (Claessens et al., 2000; Lemmon and Lins, 2003; Carney and Child, 2013). But there is a gap in our understanding with regard to the frequency and determinants of temporal variation in state ownership. Further, despite the well-documented importance of state ownership to corporate performance and economic development,¹ studies on state ownership are relatively scant compared to other ownership arrangements such as diffuse and family ownership.² Thus, our focus on state ownership dynamics contributes significantly to a broader understanding of the state's role in corporate affairs.

2. Data construction

The process of collecting ownership data, particularly for opaque ownership vehicles, is extremely time consuming. Given our focus on temporal variation in state ownership, we restrict our sample to a narrow but long panel of firms across East Asia. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Singapore, Taiwan, and Thailand. Our sample consists of all firms having appeared among the largest 200 publicly-listed entities of each economy at two well-documented points in time –1996 and 2008 (pertaining to studies by Claessens et al., 2000, and Carney and Child, 2013). As such, we select firms which have persistently accounted for a significant share of total market capitalization. Readers should thus be mindful that our findings relate to the largest mainstay firms within each market, which may exhibit different ownership characteristics from smaller listed entities. Based on our selection criterion, a total of 238 firms are included in our sample. Our period of analysis runs 16 years, from 1997 to 2012, leaving 3808 potential observations.³

Panel A of Table 1 presents the total market share of our sample firms across three periods (1997–2002; 2003–2007; 2008–2012) for each economy. Even though the number of sample firms is small, they are important to their respective markets. On average our sample accounts for over 20% of stock market capitalization. However, there is significant variation in the market share of these firms, across economies and time periods.⁴ Further, the importance of these firms tends to decline slightly over time since capital markets grew during the study period.

To begin amassing ownership data, we first draw shareholder information from ThomsonONE Worldscope. For approximately half our firm-years, significant shareholders are already documented in this database. Where these data are not readily available, we manually code shareholders from the corresponding annual report. Quite often our sample firms are owned in turn by other companies. In order to trace the *ultimate* ownership of our publicly traded entities, we uncover the ownership structure of intermediate shareholders as well. When these shareholders are themselves publicly traded, we repeat the above exercise. When these shareholders are non-listed, the process has been less mechanical.

Non-listed shareholders in our data are either state-owned, family-owned, or subsidiaries of public or other non-public corporations. To resolve the ownership structure of these non-listed entities, we broaden our resources considerably. Our first resort has been the annual reports of the downstream listed firm whose ownership we are ultimately trying to reveal. Often times, through careful reading of this report, the ultimate owner of the intermediate firm can be identified. Next we turn to the website of the non-listed shareholder where this information is sometimes disclosed. We then use stock exchange filings indicating share transfers and, finally, business reports and newspaper articles revealing the non-listed shareholder's owner.

Using this approach we are able to gather sufficient ownership data for 2984 observations (firm-years). Given our panel size and length, our final sample constitutes 78% of the potential data gathered. Missing data (a total of 824 observations) arise for two different reasons. The first cause of missing data is the unavailability of annual reports. If we are unable to draw an annual report pertaining to a given firm-year observation (whose shareholders are not identified on Worldscope), that observation is excluded from our dataset. The second cause of missing observations relates to data availability on indirect ownership. Opaque ownership vehicles are often used to mask the identity of shareholders. When we cannot be sure to have documented the largest owner of a corporation, we omit that observation from our sample. Specifically, an observation is excluded from the dataset if shares held in trust (or through a nominee account) amount to a greater proportion of outstanding shares than the largest revealed shareholder. A company is also excluded from the dataset if there exists a significant shareholder whose identity we are unable to discern due to a lack of information about the intermediate non-listed shareholder through which these shares are owned.

Using the above algorithm, we are left with a panel of firm-year observations for which we can identify ultimate owners. Following Claessens et al. (2000), voting rights are calculated as the proportion of outstanding shares through which voting power can be exercised, directly or indirectly, by an ultimate owner (e.g. a family or the state). For direct shareholdings, the level of voting rights is

¹ For work examining the importance of state ownership to economic development and corporate performance, see Megginson and Netter (2001) Chong and Lopez-de-Silanes (2005), Megginson (2010), and Boubakri et al. (2011).

² See Bebchuk and Weisbach (2010) for a general review of corporate governance research. See Uhlener (2013) for an overview of the literature on family ownership.

³ In section 9 we demonstrate robustness of some key findings under an alternative sample selection criterion.

⁴ For example, the market coverage is 6.7% for Japan during 2003–2007, while the highest coverage is 48.3% for the Philippines from 1997 to 2002.

Table 1
Summary statistics.

Panel A: Ownership by country											
Country	Total obs.	Market share at country level (%)	Period	State ownership			Family ownership			Diffuse ownership	
				Level		% firms with non-zero state ownership	Level		% firms with non-zero family ownership	Level	
				Mean	SD		Mean	SD		Mean	SD
Hong Kong	175	19.5	1	13.0	22.2	32.0	31.6	21.4	78.9	52.7	14.5
	151	10.3	2	11.8	21.7	25.2	35.6	23.9	79.5	51.4	14.0
	153	6.9	3	13.3	23.0	26.8	35.0	24.3	77.8	51.1	14.9
Indonesia	167	27.2	1	11.1	25.8	21.0	44.4	26.0	85.0	37.4	18.1
	134	19.6	2	8.8	23.6	16.4	40.1	27.8	79.9	40.0	22.9
	157	19.9	3	5.8	18.1	9.6	37.3	27.5	77.7	40.2	23.0
Japan	89	7.5	1	2.8	11.5	5.6	2.7	8.9	10.1	90.9	16.6
	79	6.7	2	2.3	9.1	6.3	0.4	1.9	3.8	87.8	21.0
	80	8	3	2.8	10.2	7.5	0.6	2.5	6.3	86.8	21.4
South Korea	70	26.4	1	8.0	17.6	24.3	12.9	22.0	34.3	70.4	22.8
	69	20.7	2	14.8	23.7	37.7	12.0	15.7	46.4	69.4	21.1
	86	22.5	3	15.0	17.2	77.9	15.0	19.3	48.8	73.6	19.6
Malaysia	75	11.1	1	20.8	25.9	53.3	29.6	27.2	62.7	50.3	18.1
	67	9.9	2	22.4	24.8	70.1	23.8	23.9	58.2	55.1	15.2
	79	16.4	3	22.8	23.4	70.9	30.1	26.5	68.4	46.7	17.4
Philippines	162	48.3	1	4.6	10.9	21.0	49.3	26.5	87.0	40.7	21.6
	138	35.3	2	3.9	9.9	18.1	46.1	26.7	84.8	39.8	18.4
	164	30.6	3	3.0	9.1	15.9	49.9	24.1	90.9	39.0	16.8
Singapore	133	36.5	1	15.7	25.9	34.6	30.8	26.4	66.9	51.9	19.9
	126	21	2	14.4	25.6	31.0	35.6	27.0	73.8	48.3	18.8
	135	18.1	3	12.8	24.7	24.4	42.3	29.7	77.0	44.7	19.2
Taiwan	67	10.5	1	4.8	12.0	16.4	4.0	14.0	9.0	88.0	18.9
	64	8.4	2	2.9	7.0	15.6	4.2	11.2	14.1	86.1	16.3
	73	7.6	3	2.3	5.9	13.7	4.7	10.6	20.5	86.8	15.4
Thailand	90	26.7	1	11.2	25.2	21.1	33.5	24.4	77.8	49.1	19.0
	96	22.7	2	12.1	22.6	32.3	27.4	25.1	63.5	54.7	25.3
	105	18	3	12.2	21.2	30.5	27.9	24.1	66.7	51.3	22.9
Total	2984	20.8		10.0	20.7	26.5	30.4	27.7	64.6	54.3	25.2

Panel B: Variables											
	Mean			Median			SD			(1)–(2)	t-stat.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
	State	No State	All	State	No State	All	State	No State	All		
LASSET	14.87	13.87	14.13	15.11	13.60	13.90	1.81	1.91	1.94	1.00	12.96
CAPEX	3.65	8.53	7.24	0.03	0.12	0.08	19.20	27.77	25.87	-4.88	-5.02
CASH	6.31	6.91	6.77	3.86	4.10	4.04	6.94	9.13	8.67	-0.60	-1.63
ROE	7.44	8.59	8.29	10.34	9.10	9.43	24.38	22.05	22.68	-1.15	-1.13
LEV	25.83	25.23	25.38	22.79	23.07	22.98	19.06	20.00	19.76	0.60	0.74
MB	1.53	1.46	1.47	1.27	1.08	1.14	1.48	1.59	1.56	0.07	1.04

Panel A reports the mean and the standard deviations of the level of state, family and diffuse ownership by country. Periods 1, 2 and 3 refer to, respectively, the period between 1997 and 2002, 2003 and 2007, and 2008 and 2012 (inclusive). Panel B reports the descriptive statistics of the following variables (level and year-to-year change): log of total assets (in thousands USD), *LASSET*, total capital expenditure as a % of total assets, *CAPEX*, total cash holding as a % of total assets, *CASH*, return on equity (in %), *ROE*, the total debt as a % of total asset, *LEV* and the firm's market-to-book ratio, *MB*. 'State' (state participation) indicates the set of firm-years in which the state holds an ownership stake (above 5%).

equivalent to the proportion of shares held. For indirect holdings, the level of voting rights is taken to be the lowest denomination across the vertical chain of ownership.⁵ In many cases, an ultimate owner exercises voting rights via multiple vertical lines of ownership. In this case the voting rights held through each vertical line of ownership are summed up horizontally to arrive at an ultimate level of ownership.⁶ In this way we determine the ownership stakes of the state, families, and diffuse owners. The diffuse owner category includes shareholders with less than 10% ownership stakes, widely-held corporations, and widely-held financial

⁵ For example, if the state holds 23% of corporation Y which holds 11% of corporation Z, then the state retains 11% of the voting rights in corporation Z.

⁶ In the example of the preceding footnote, if the state additionally held 50% of corporation X which held 5% of the shares in corporation Z, we would report 16% ultimate ownership by the state in total.

institutions (where the latter two can comprise major business groups).

When recording shareholdings, we use a heuristic 5% cutoff. Because considerable resources are devoted to revealing each blockholder, it is impractical to account for each entity holding small blocks of shares. Similar heuristics are adopted by the financial databases, annual reports, SEC filings, and auditor reports from which we gather our data. Accordingly, there is some measurement error implicit in the ultimate ownership levels reported here, in our data sources, and throughout the related literature. We restrict our attention to ownership changes greater than 5%, thus our analysis may overlook a number of small fluctuations.

3. Level and frequency of partial state ownership

The average ownership stakes of the state, families, and diffuse owners are presented in Panel A of Table 1. These ownership patterns are consistent with those identified in the much larger cross-section of firms in Carney and Child (2013). On average the mean level of state ownership is 10% which corresponds to 26.5% of our firm-year observations having some degree of state ownership. The mean level of family (diffuse) ownership is 30.4% (54.3%) which corresponds to 27.7% of the firm year observations having some family ownership. Fig. 1(a) plots the average level of state ownership in the region for each year of our sample. We can see the average level of state ownership is relative stable, fluctuating slightly around a mean of 10%. The proportion of state ownership that is indirect (i.e. via a state-owned enterprise in a pyramidal structure) is also relatively stable during our sample period. Fig. 2(a) plots the number of sampled firms with state ownership in the region. Leaving aside variation around the Asian Financial Crisis, this number remains remarkably stable from 2005 onwards. This stability, however, masks considerable cross-country and within-country variation. For example, from Table 1 the highest average level of state ownership recorded was Malaysia in 2008–2012 (22.8%) whereas Taiwan and Japan recorded lows of 2.3% in 2008–2012 and 2003–2007, respectively. Further, while certain countries display stable levels of state ownership (e.g. Japan) others display large temporal variation (e.g. Indonesia and Korea).

Comparing the average levels of state ownerships with the incidence of blockholding by the state reveals another interesting fact. Some countries that display relatively stable levels of state ownership (like Malaysia and Hong Kong) display considerable variation in the incidence of state blockholding. Heterogeneity in the level and incidence of state ownership is apparent when examining Figs. 1(b)-(j) and 2(b)-(j), which plot the level and frequency of state ownership for each economy over time. Malaysia's incidence of state ownership increases from 53.3% to 70.9%, whereas Hong Kong's decreases from 32% to 26.8% between the first and last periods. This implies the Malaysian government is holding smaller stakes in a larger number of firms, while in Hong Kong state ownership is becoming more concentrated.⁷

To the extent there are region-wide trends in state ownership, one might expect variation to be greatest in the immediate wake of the 1997 crisis. Fig. 2(a) supports this idea – changes to state ownership are concentrated primarily around the 1997 crisis. But closer examination reveals changes to state ownership in economies worst affected by the crisis (i.e. Indonesia, South Korea, Thailand, and Malaysia) are not uniformly concentrated around the crisis itself. Although Hong Kong and Malaysia underwent many state ownership changes during that period, South Korea exhibited more changes in the wake of the 2008 global financial crisis (which had a relatively benign impact on the region). Other economies – Japan and Taiwan – display patterns seemingly unrelated to the crises.

4. Significant changes to state ownership

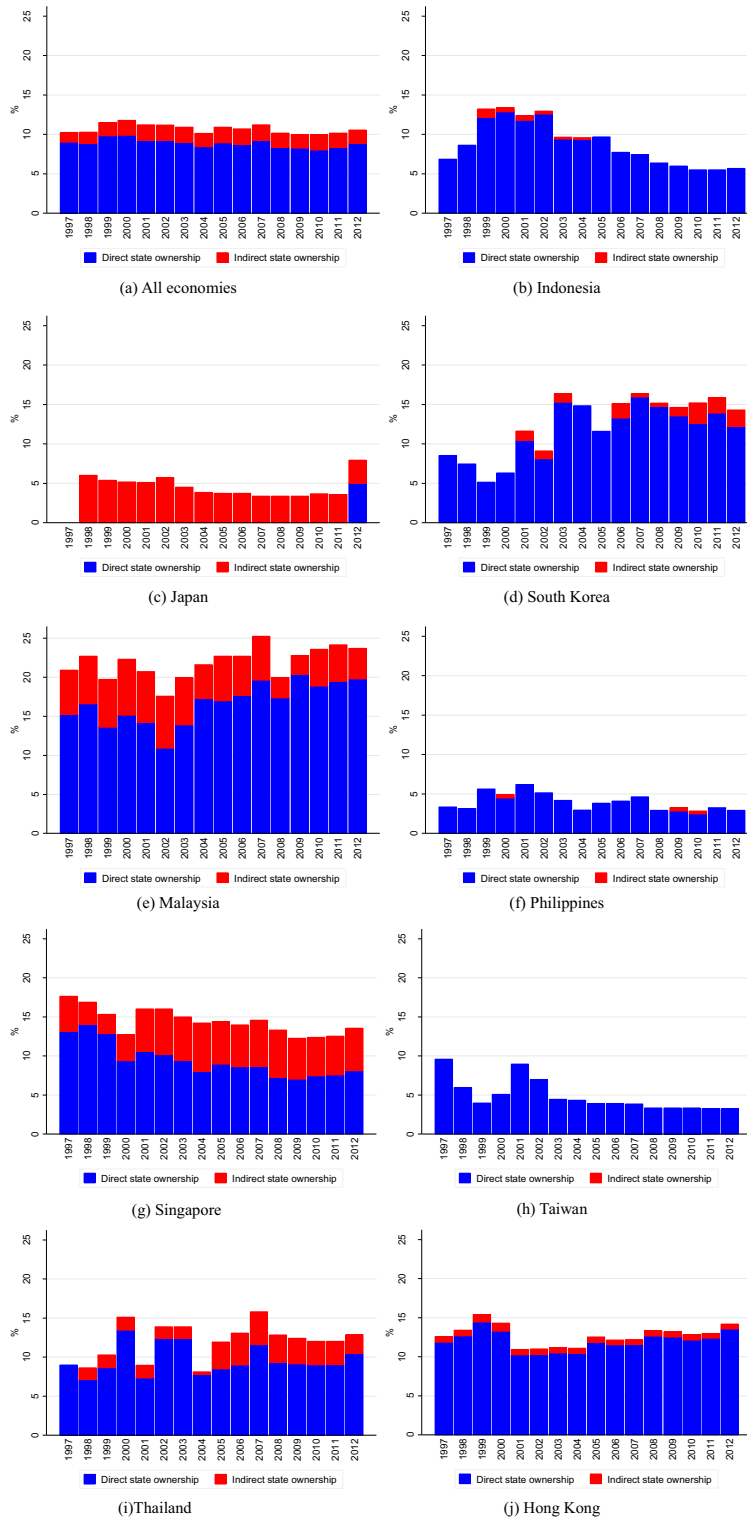
Next we restrict our attention to changes in ownership of more than 5%. In Table 2 we identify 228 cases in which state ownership changed by more than 5% in one year - 118 increases and 110 decreases. Surprisingly, instances of divestment by the state are actually fewer than instances of increased investment, despite the general push toward privatization during this period. Table 2 also presents conditional transition probabilities (conditional on partial state ownership in year t) which suggests that although state ownership is persistent, there is certainly a sizable likelihood that a change in state ownership occurs. If there was partial state ownership in year t , there is a 70.2% chance of relatively equal state ownership in year $t + 1$, and a 29.8% chance that a significant change occurs (see bottom row).

Comparing across countries, South Korea, Malaysia and Indonesia are the most likely to increase state ownership among PSOs (with probabilities of 27.9%, 22.6% and 18.5% respectively). Decreases in state ownership among PSOs are also most likely in those same countries (with probabilities 17.3%, 16.8%, and 24.7%, respectively). Hong Kong and the Philippines also display relatively high variability in this regard. By contrast, Taiwan and Thailand display highly persistent state ownership year-to-year, with the probability of no significant change being 88.9% and 86.1%, respectively.

Two non-mutually exclusive explanations can potentially account for changes to state ownership. First, political or national strategic motivations may lead governments to increase or decrease their ownership stakes. For example, governments may increase their ownership stakes in firms vital to political incumbents holding on to power (e.g., Malaysia's nationalization of the banking industry following the Asian Financial Crisis to control the allocation of credit to politically favored firms), or divest control to reduce the state's crowding-out effects (e.g., Indonesia following democratization in 1998). Second, state-owned entities may pursue market-oriented objectives for capital gains. Temasek of Singapore or Norway's Government Pension Fund Global are notable examples of SWFs deploying sophisticated, market-oriented investment strategies.

To assess the importance of these alternative explanations for changes to government ownership, we first refer to Table IA1 of the

⁷ Mainland Chinese firms began listing on the Hong Kong Stock Exchange following the handover in 1997. Thus, our sample does not capture the increase in large listed Chinese SOEs.



(caption on next page)

Fig. 1. Levels of state ownership over time.

This figure presents the level (in percentage) of direct and indirect (pyramid) state ownership for 238 firms across nine East Asian economies, from 1997 until 2012.

- (a) All economies.
- (c) Japan.
- (e) Malaysia.
- (b) Indonesia.
- (d) South Korea.
- (f) Philippines.
- (g) Singapore
- (i) Thailand
- (h) Taiwan.
- (j) Hong Kong.

Internet Appendix. Regression results show that direct purchases of shares tend to follow declines in the market-to-book ratio. This could be interpreted as evidence of a market-oriented approach insofar as the state purchases undervalued shares. However, this may also reflect a government's political imperative to rescue firms considered 'too big to fail'.⁸ Next in Table 3 we disaggregate state ownership into industry categories, and two notable patterns emerge. First, the largest number of changes to state ownership are concentrated in financials, industrials, and basic materials – three sectors of considerable strategic importance (see, e.g., Manzetti, 1994; Megginson et al., 2004; Boubakri et al., 2009). Second, both increases and decreases to state ownership nevertheless occur across all industries in our sample, which suggests at least some measure of market-oriented investment by the state. Thus, our data suggests both political and market-oriented strategies may be pursued by governments in our sample.

Next in Table 4 we detail transitions between owner types, including state shareholdings being ceded to family or widely-held entities, and vice versa. For each transition type, we report the number of occurrences according to our dataset, as well as the probability of undergoing that transition (conditional on initial ownership structure).⁹ The first four columns present the frequency and conditional transition probabilities of share transfers from the state to families (columns 1, 2) or widely held entities (columns 3, 4). The last four columns correspond to shifts from families (columns 5, 6) or widely held entities (columns 7, 8) to the state.¹⁰

By and large, the tendency of governments to vary ownership positions in large publicly-traded corporations has been surprisingly high. On average, in a given year, family-owned and widely-held firms in East Asia have a 2.0% and 3.1% chance, respectively, of the state significantly increasing its ownership position. Firms in which the state is already an owner have a 15.4% or 3.8% chance of the state ceding ownership to widely-held or family entities, respectively. In general, when the level of state ownership changes, it usually implies a commensurate shift in diffuse (rather than family) ownership. Given the widespread importance of family business groups in East Asia, this finding merits further exploration.

One potential explanation for the above is that the state may selectively divest control in strategic industries to diffuse owners who are less likely to threaten incumbent rulers. To assess this possibility, in Table 5 we examine transition probabilities of declines in state ownership by industry category. Results indicate the gap in transition probabilities between family and widely-held ownership persists across all industries except consumer cyclicals. Notably, governments were exceptionally more likely to relinquish control rights to widely-held rather than family entities when divesting from telecommunications firms (regarded as a strategic industry by, e.g., Manzetti, 1994; Boubakri et al., 2009; Megginson et al., 2004). However, those observations are limited and we cannot detect a consistent pattern across other sensitive industries (e.g. financials, industrials, basic materials). As such, we remain unable to fully explain this specific pattern of share ownership transfer by the state.

Notwithstanding the above, the state is actually less likely to acquire shares from family blockholders than relinquish shares to them. Also, there is considerable heterogeneity across the region in terms of share transfers between the state and family business groups. In Indonesia, Hong Kong, and Malaysia we observe relatively frequent ownership transfers between families and the state. In Japan, Taiwan, and Thailand, changes to state ownership involve only widely-held counterparts.

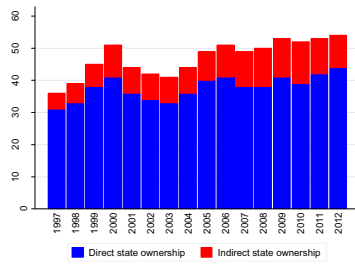
5. Changes to state control

Until now we have defined a change in state ownership as any share transfer implying a minimum 5% change in voting rights by the state. Notwithstanding our argument for the economic significance of these changes, under this heuristic readers may have the following concerns. First, suppose ownership by the state declines from 60% to 55% from one year to the next. The state retains majority voting rights in the company, so this variation may not have a meaningful impact. Second, using a 5% threshold may at the

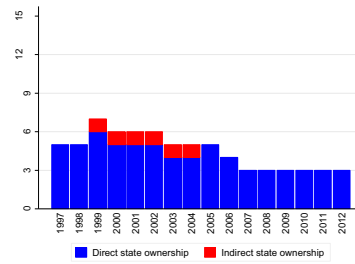
⁸ Notably, in Table IA1 we also find that *indirect* investments by the state tend to follow declines in ROE. This pattern may be more consistent with political/strategic motivations by the state.

⁹ Note that the reported frequencies in Table 4 exceed the counts of investments/divestments in Table 2 because there were cases where changes in state ownership led to commensurate shifts in both family and diffuse ownership.

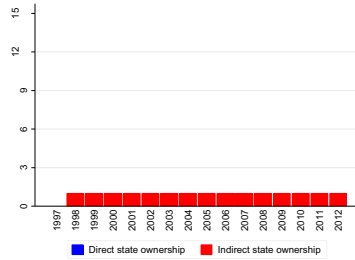
¹⁰ The (conditional) transition probability is calculated by dividing the number of relevant transitions by the number of observations in the relevant state at time t . For example, the transition probability of shifting from state to family equals the total number of state-to-family share transfers divided by the number of firm-years in which the state is a blockholder (excluding those with missing data the following period, such that transitions are not observed).



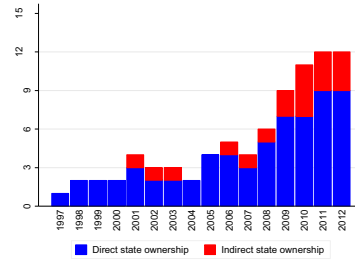
(a) All economies



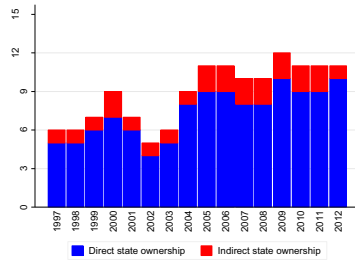
(b) Indonesia



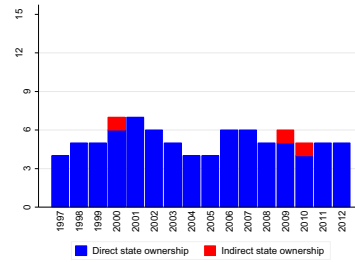
(c) Japan



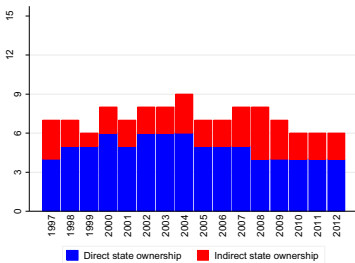
(d) South Korea



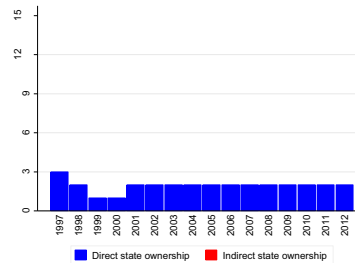
(e) Malaysia



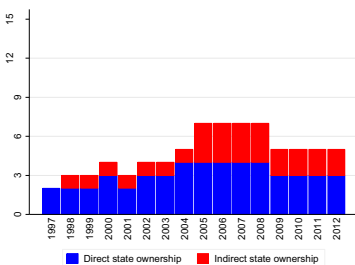
(f) Philippines



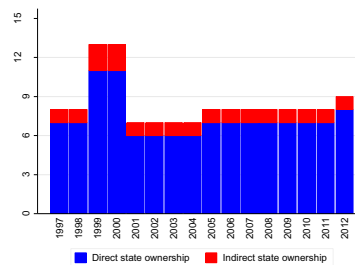
(g) Singapore



(h) Taiwan



(i) Thailand



(j) Hong Kong

(caption on next page)

Fig. 2. Frequency of state ownership over time.

This figure presents the number of firms with direct and indirect (pyramid) state ownership for 238 firms across nine East Asian economies, from 1997 until 2012.

- (a) All economies.
- (c) Japan.
- (e) Malaysia.
- (b) Indonesia.
- (d) South Korea.
- (f) Philippines.
- (g) Singapore.
- (i) Thailand.
- (h) Taiwan.
- (j) Hong Kong.

Table 2

Changes to state ownership.

	Increase in State Ownership		Decrease in State Ownership		Persistent State Ownership	
	Count	Tran Pr.	Count	Tran Pr.	Count	Tran Pr.
Hong Kong	19	13.7	14	10.1	106	76.3
Indonesia	15	18.5	20	24.7	46	56.8
Japan	1	6.7	2	13.3	12	80.0
South Korea	29	27.9	18	17.3	57	54.8
Malaysia	31	22.6	23	16.8	83	60.6
Philippines	11	13.8	11	13.8	58	72.5
Singapore	7	6.4	14	12.8	88	80.7
Taiwan	0	0	3	11.1	24	88.9
Thailand	5	6.9	5	6.9	62	86.1
Total	118	15.4	110	14.4	536	70.2

This table reports the frequency and conditional transition probability (in %) of changes to state ownership. The sample consists of ownership data for 2984 firm-year observations in a broken panel of 238 firms across East Asia, listed in both 1996 and 2008. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand.

same time result in overlooking small share transfers that *do* result in a change to control. For example, if state voting rights increase from 48% to 51%, so far we have not counted this as a significant increase in state ownership, despite there being a material change in control.

We address these concerns by focusing exclusively on changes to state ownership which yield clear changes to corporate control. To do so, we first cast firm-year observations into one of three state ownership categories: (1) dominant state ownership, in which the state is the largest shareholder; (2) minority state ownership, in which the largest shareholder is not the state, but the state owns at least 10%; and (3) no state involvement. We then restrict our analysis to changes among these ownership categories. We are able to document 100 changes to government control of PSOEs (48 declines and 52 increases). [Table 6](#) presents the results (with increases in Panel A and decreases in Panel B). The most common increase in government control is from no state ownership to a minority position, followed by no state ownership to a dominant position. Conversely, the most common decline in government control of PSOEs is from a minority position to no state ownership, followed by dominant to minority control. Countries displaying the highest degree of variability in state control are again South Korea, Malaysia, Hong Kong and Indonesia.

6. Modes of change

We next examine the mode through which state ownership changes. We focus on two dimensions of corporate ownership that have received significant attention in the past. First, we examine whether ownership changes occurred directly (i.e. via a government entity) or indirectly (i.e. via a state-owned enterprise in a pyramidal structure). On this dimension our findings relate to [Almeida et al. \(2011\)](#), [Masulis et al. \(2011\)](#), and [Fan et al. \(2013\)](#). Second, we assess whether ownership changes were initiated by a sovereign wealth fund (SWF) or not. In this respect our findings speak to [Dewenter et al. \(2010\)](#), [Knill et al. \(2012\)](#), [Kotter and Lel \(2011\)](#), and [Bortolotti et al. \(2015\)](#).

[Table 7](#) classifies significant (>5%) changes in state ownership along these two dimensions. Panels A and B distinguish between direct and indirect ownership changes; Panels C and D reflect the involvement of SWFs. In Panels A and B the majority of state ownership changes occur directly, though a significant fraction (around 1/4) are indirect. Comparing across markets, South Korea stands out with more than half of state ownership changes being indirect. Notably, South Korea is among the top three countries in terms of state ownership variation. The other three – Indonesia, Malaysia, and Hong Kong – display a markedly different pattern with far more changes stemming directly from government entities.

[Fig. 3](#) plots increases and decreases to state ownership pooled across all countries over time. In [Fig. 3\(a\)](#) and (b) we consider increases in state ownership. [Fig. 3\(a\)](#) differentiates direct from indirect investments, whereas [Fig. 3\(b\)](#) reflects whether the increase was

Table 3
Changes to state ownership by industry.

Panel A: Increases in state ownership.										
	Basic Materials	Consumer Cyclicals	Consumer Non-Cyclicals	Energy	Financials	Healthcare	Industrials	Technology	Tele-communications Services	Utilities
Hong Kong	7	3	0	0	4	0	3	0	0	2
Indonesia	2	1	1	0	9	0	2	0	0	0
Japan	0	0	0	0	0	0	0	0	0	1
Korea	1	6	0	0	2	3	9	5	0	3
Malaysia	0	0	4	4	16	0	7	0	0	0
Philippines	3	0	0	1	3	0	2	2	0	0
Singapore	0	0	1	1	1	0	3	0	1	0
Taiwan	0	0	0	0	0	0	0	0	0	0
Thailand	1	0	0	0	3	0	1	0	0	0
Total	14	10	6	6	38	3	27	7	1	6
Panel B: Decreases in state ownership.										
Hong Kong	5	1	0	0	3	0	2	0	0	3
Indonesia	2	1	2	0	12	0	3	0	0	0
Japan	0	0	0	0	0	0	0	2	0	0
Korea	0	1	0	0	1	1	10	2	0	3
Malaysia	2	1	1	1	12	0	5	1	0	0
Philippines	2	0	0	3	3	0	2	1	0	0
Singapore	0	2	3	2	1	0	1	1	4	0
Taiwan	2	0	0	0	1	0	0	0	0	0
Thailand	1	0	0	0	2	0	2	0	0	0
Total	14	6	6	6	35	1	25	7	4	6

This table reports the frequency of increases and decreases in state ownership across 10 industries, for 2984 firm-year observations in a broken panel of 238 firms across East Asia, from 1997 until 2012. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand.

Table 4
State ownership transitions.

	Loss of State Ownership				Shift to State Ownership			
	To Family		To Widely Held		From Family		From Widely Held	
	Count	Tran. Pr	Count	Tran. Pr	Count	Tran. Pr	Count	Tran. Pr
Hong Kong	4	3.2	14	11.3	11	2.4	13	2.7
Indonesia	7	10	17	24.3	7	2.1	9	2.0
Japan	0	0	2	14.3	0	0	1	0.4
South Korea	2	2.6	18	23.4	6	6.5	28	12.4
Malaysia	8	7.2	20	18.0	11	8.1	23	10.4
Philippines	3	4.2	10	14.1	3	0.8	9	1.9
Singapore	1	1	13	12.7	1	0.4	7	1.8
Taiwan	0	0	3	11.1	0	0	0	0
Thailand	0	0	5	7.5	0	0	5	1.7
Total	25	3.8	102	15.4	39	2.0	95	3.1

This table reports the frequency and the conditional transition probability (in %) of changes to state ownership. The sample consists of ownership data for 2984 firm-year observations in a broken panel of 238 firms across East Asia, listed in both 1996 and 2008. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand.

Table 5
State ownership transitions by industry.

	Loss of State Ownership				Shift to State Ownership			
	To Family		To Widely Held		From Family		From Widely Held	
	Count	Tran. Pr	Count	Tran. Pr	Count	Tran. Pr	Count	Tran. Pr
Basic Materials	3	2.6	14	12.1	6	3.0	10	3.1
Consumer Cyclical	4	8.9	4	8.9	7	1.9	9	1.6
Consumer Non-Cyclical	2	8	5	20	1	0.4	4	1.2
Energy	1	3.1	5	15.6	0	0	6	8.1
Financials	7	3.4	33	16	15	2.5	26	3.4
Healthcare	0	0	1	10	0	0	3	5.2
Industrials	5	3.3	23	15.3	10	3.8	24	4.6
Technology	1	3	7	21.2	0	0	7	3.6
Telecommunications Services	0	0	4	28.6	0	0	1	2.2
Utilities	2	6.3	6	18.8	0	0	5	4.1
Total	25	3.8	102	15.4	39	2.0	95	3.2

This table reports the frequency and the conditional transition probability (in %) of changes to state ownership across 10 industries. The sample consists of ownership data for 2984 firm-year observations in a broken panel of 238 firms across East Asia, from 1997 until 2012. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Singapore, Taiwan, and Thailand.

initiated by a SWF. [Figs 3\(c\) and \(d\)](#) are analogous to [Fig. 3\(a\) and \(b\)](#), respectively, but applied to instances of divestment by the state. Indirect ownership changes (both increases and decreases) feature more prominently in later years, particularly after the 2008 Global Financial Crisis. On the other hand, increases via SWFs appear more frequent in the second half of the sample, while decreases by SWFs remain low and do not display any trend.

Theory on corporate pyramids suggests they arise in countries with institutional voids to facilitate either tunneling ([Bebchuk, 1999](#); [Wolfenzon, 1999](#); [Bebchuk et al., 2000](#); [Bertrand et al., 2002](#); [Morck et al., 2004](#)), information-sharing ([Khanna and Thomas, 2009](#)), or the creation of internal factor and financing markets ([Khanna and Palepu, 2000](#); [Almeida and Wolfenzon, 2006](#); [Almeida et al., 2011](#)) which ultimately facilitate investment ([Masulis et al., 2011](#)). Our data do not particularly suggest pyramids in PSOs arise from institutional voids as South Korea and Singapore are home to many indirect PSOs, despite having relatively strong institutions. Moreover, if pyramids in PSOs arise from institutional voids, then pyramidal structures should be persistent. Yet our data reveal the opposite – there is considerable variation in indirect ownership over time.

Panels C and D of [Table 7](#) show the majority of state ownership changes do not involve a SWF. About 28% of increased shareholdings by the state are initiated by SWFs, while the latter are involved in only 14.5% of divestments. This asymmetry may reflect a growing importance of SWFs over our sample period ([Bortolotti et al., 2015](#); [Carney, 2018](#)). The pattern is also consistent with [Kotter and Lel \(2011\)](#) who argue SWFs act in a similar fashion to passive (i.e. buy and hold) institutional investors.

7. Synthesis of state ownership vehicles among PSOs in East Asia

In [Table 8](#), we detail the state entities that initiate and manage ownership stakes on behalf of each government. Entities acting as the primary state ownership vehicle for each country are listed first and italicized. The entities include both SWFs (e.g., Hong Kong's Exchange Fund, Singapore's Temasek, and South Korea's National Pension Service), and non-SWFs (e.g., Malaysia's investment fund Permodalan Nasional Berhad, the Philippines Social Security System, Japan's Ministry of Finance, and Thailand's central bank).

Table 6
Changes to state control.

Panel A. Increases in State Control and Conditional Transition Probability						
	No State-to-Minority State		No State-to-Dominant State		Minority-to-Dominant State	
	Count	Tran Pr.	Count	Tran Pr.	Count	Tran Pr.
Hong Kong	6	1.8	5	1.5	1	3.7
Indonesia	5	1.4	3	0.8	1	5.9
Japan	0	0	1	0.4	0	–
South Korea	9	8.1	3	2.7	1	2.8
Malaysia	4	5.7	1	1.4	3	5.2
Philippines	5	1.5	0	0	0	0
Singapore	2	0.8	0	0	0	0
Taiwan	0	0	0	0	0	0
Thailand	0	0	0	0	2	28.6
Total	31	1.6	13	0.7	8	3.8

Panel B. Decreases in State Control and Conditional Transition Probability						
	Minority State-to-None		Dominant State-to-None		Dominant-to-Minority State	
	Count	Tran Pr.	Count	Tran Pr.	Count	Tran Pr.
Hong Kong	6	22.2	0	0	0	0
Indonesia	7	41.2	4	7.1	2	3.6
Japan	0	–	0	0	0	0
South Korea	3	8.3	1	1.8	3	5.4
Malaysia	5	8.6	0	0	2	2.7
Philippines	4	10	1	2.9	2	5.7
Singapore	5	26.3	0	0	0	0
Taiwan	0	0	1	5	1	5
Thailand	0	0	0	0	1	1.5
Total	30	14.2	7	1.4	11	2.2

This table reports the frequency and conditional transition probability (in %) of changes to state ownership, for 2984 firm-year observations in a broken panel of 238 firms across East Asia, from 1997 until 2012. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Singapore, Taiwan, and Thailand.

There are some notable commonalities and differences among these state entities. First, there are multiple state entities for each country. Japan and Taiwan have the fewest, which is unsurprising given they exhibit the most infrequent state ownership. But some other countries with relatively few PSOEs (i.e. the Philippines, Indonesia, and Thailand) nevertheless host multiple entities. At the same time, the government's ownership positions are nearly always concentrated in one or two entities within the executive branch (Thailand is one exception), facilitating the use of these vehicles for political purposes.¹¹

Interestingly, the specific purpose of the primary state ownership entity varies considerably across countries, and in some cases the primary entity itself changes over time. In Hong Kong, for example, the Exchange Fund was used to buy ownership stakes in listed companies in order to stabilize financial markets during the Asian Financial Crisis. But because the primary purpose of the fund is to manage the value of the Hong Kong Dollar, the Exchange Fund ceased taking significant ownership positions after the crisis subsided. This explains the spike in state ownership depicted in Fig. 2(j) for 1999 and 2000. Thereafter, state ownership nevertheless continued around pre-crisis levels due to increasing involvement by mainland Chinese entities. The latter consisted primarily of SOEs located within the State-Owned Assets Supervision and Administration Commission (SASAC) of the State Council – the highest executive organ of state power in China.

State ownership entities in South Korea also underwent considerable change. Following the Asian Financial Crisis, numerous state entities initiated ownership positions. These were primarily located in the executive branch, including the Ministry of Strategy and Finance, the Korea Deposit Insurance Corporation, and the Korean Development Bank. Each entity had a different mandate, but each implemented ownership stakes in various capacities to rescue strategically important firms. Corresponding to the government's initiative to rescue and then divest ownership, we see in Fig. 2(d) a gradual increase and decline in the number of PSOEs from 1997 to 2004. Around the time of the Global Financial Crisis in 2008, the National Pension Service (NPS) became an increasingly active investor due to the streamlining of its investment decision-making process.¹² It was then announced the NPS would increase its investments in equities to 40% by the end of 2012 from its then-current 17.5% allocation. Hence, we observe in Fig. 2(d) a marked rise in the number of Korean PSOEs (by the NPS) from 2008 onwards.

The Philippines, like South Korea, has a large pension fund as the primary entity exercising state ownership. This occurs via the

¹¹ See section 1 of the Internet Appendix for deeper discussion on this issue.

¹² The pre-existing management structure of the NPS included 21 members with fragmented interests, which effectively inhibited change. Following the election of a new president and legislature in 2008, a new law was passed that would place the operation of the fund in the hands of seven private sector experts appointed by the President.

Table 7
State ownership changes by mode.

Panel A. Increases in State Ownership (by more than 5%)				
	Increase in Direct State Ownership		Increase in Indirect State Ownership	
	Count	Proportion of Increases	Count	Proportion of Increases
Hong Kong	17	89.5	2	10.5
Indonesia	11	73.3	4	26.7
Japan	1	100	0	0
South Korea	13	44.8	16	55.2
Malaysia	25	80.6	6	19.4
Philippines	10	90.9	1	9.1
Singapore	4	57.1	3	42.9
Taiwan	0	–	0	–
Thailand	4	80.0	1	20.0
Total	85	72.0	33	28.0

Panel B. Decreases in State Ownership (by more than 5%)				
	Decrease in Direct State Ownership		Decrease in Indirect State Ownership	
	Count	Proportion of Decreases	Count	Proportion of Decreases
Hong Kong	12	92.3	1	7.7
Indonesia	16	88.9	2	11.1
Japan	0	0	2	100
South Korea	7	41.2	10	58.8
Malaysia	14	70.0	6	30.0
Philippines	10	90.9	1	9.1
Singapore	11	78.6	3	21.4
Taiwan	3	100	0	0
Thailand	4	80.0	1	20.0
Total	77	74.8	26	25.2

Panel C. Increases in State ownership (by more than 5%)				
	Increases through SWF Ownership		Increases through non-SWF Ownership	
	Count	Proportion of Increases	Count	Proportion of Increases
Hong Kong	6	31.6	13	68.4
Indonesia	0	0	15	100
Japan	0	0	1	100
South Korea	19	65.5	10	34.5
Malaysia	1	3.2	30	96.8
Philippines	0	0	11	100
Singapore	7	100	0	0
Taiwan	0	–	0	–
Thailand	0	0	5	100
Total	33	28	85	72

Panel D. Decreases in State ownership (by more than 5%)				
	Decreases through SWF Ownership		Decreases through non-SWF Ownership	
	Count	Proportion of Decreases	Count	Proportion of Decreases
Hong Kong	1	7.1	13	92.9
Indonesia	0	0	20	100
Japan	0	0	2	100
South Korea	5	27.8	13	72.2
Malaysia	1	4.3	22	95.7
Philippines	0	0	11	100
Singapore	9	64.3	5	35.7
Taiwan	0	0	3	100
Thailand	0	0	5	100
Total	16	14.5	94	85.5

This table reports the frequency of state ownership acquisition for a panel of 238 firms across East Asia, from 1997 until 2012. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Singapore, Taiwan, and Thailand. In Panels A and B, we divide the state acquisition into direct and indirect state acquisition. In Panels C and D, we further subdivide them into acquisition through Sovereign Wealth Fund (SWF) and non- Sovereign Wealth Fund (Non-SWF).

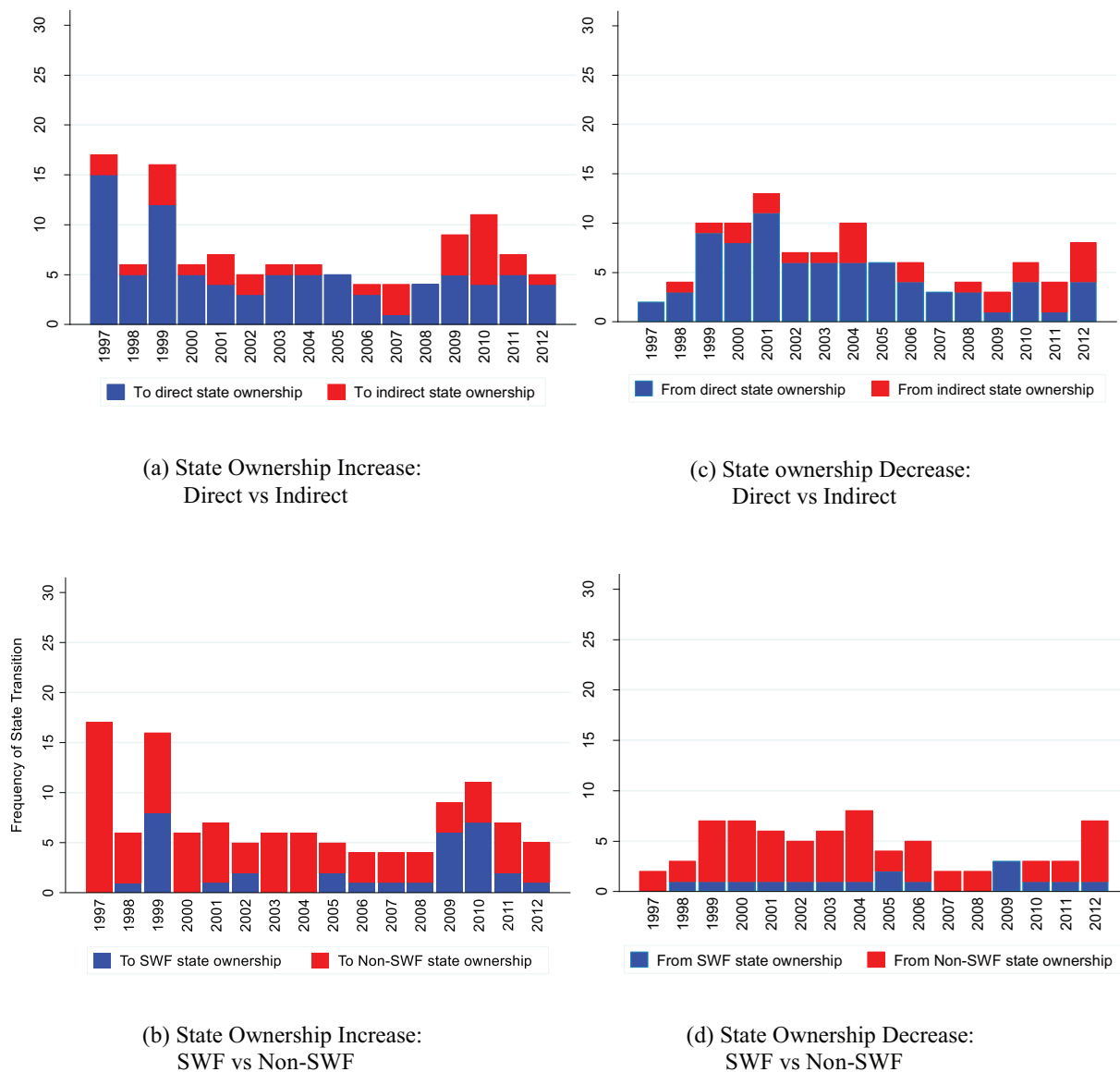


Fig. 3. Frequency of state ownership changes by mode. This figure presents the frequency of state ownership transitions by ownership type (direct versus indirect and SWF vs Non-SWF) for a sample of 238 firms from 1997 until 2012.

- (a) State Ownership Increase: Direct vs Indirect.
- (b) State Ownership Increase: SWF vs Non-SWF.
- (c) State ownership Decrease: Direct vs Indirect.
- (d) State Ownership Decrease: SWF vs Non-SWF.

Social Security System (SSS), which is a social insurance program for non-government employees. Although the SSS is the most significant state investor, it is a relatively minor player in the corporate landscape of the Philippines since the state has few ownership positions in comparison to other countries. Panel A of Table 1, for example, indicates that it has the third lowest proportion of PSOs (after Japan and Taiwan).

Two governments with the relatively fewest PSOs are Japan and Taiwan. In contrast to other countries in the region, both of these governments manage state ownership positions via Ministries rather than through entities with a dedicated investment purpose (such as an exchange fund, a pension fund, or a state-run investment fund). One notable exception is a new ownership stake initiated in the Tokyo Power Electric Company in 2012 by the Nuclear Damage Compensation Facilitation Corporation, which was created in September 2011 in response to the Fukushima Daiichi nuclear disaster.

Indonesia is similar to Japan and Taiwan insofar as the government controls state ownership positions directly, rather than through a fund delegated with this responsibility. However, in the wake of the Asian Financial Crisis, the Indonesian Bank Restructuring

Table 8
State entities with corporate ownership positions.

Country	State Entity	Purpose
Hong Kong	<i>Exchange Fund*</i>	Primary purpose: Manage the exchange value of the currency of Hong Kong. Secondary purpose: Maintain the stability and integrity of Hong Kong's monetary and financial systems.
	Ministry of Foreign Trade and Economic Cooperation of the PRC	Responsible for formulating policy on foreign trade, export and import regulations, foreign direct investments, consumer protection, market competition and negotiating bilateral and multilateral trade agreements. Renamed Ministry of Commerce in 2003.
	China State Construction Engineering Corporation	Chinese SOE ranked third largest construction company in the world according to the Economist (Oct 272,012). Headquarters in Beijing.
	China Resources National Corporation	Group of companies with businesses in mainland China and Hong Kong. Primarily focuses on exports from mainland China to Hong Kong. Chinese SOE ranked 21st largest SOE in China (NY Times August 82,013).
	CITIC Group Corporation	China International Trust and Investment Corporation is a state-owned investment corporation of the PRC. Headquarters in Beijing.
	Guangdong Holdings Ltd.	Provincial level SOE investment holding company established in 2001
	China Ocean Shipping (Group) Company Shougang Holding (Hong Kong) Limited	Shipping and logistics services supplier SOE headquartered in Beijing. Subsidiary of the Shougang Group (Beijing) which is an SOE headquartered in Beijing. It is one of China's largest steel companies.
Indonesia	<i>Government of the Republic of Indonesia</i>	This is the name referred to in the sources that we consulted; no additional information was made available.
	The Indonesian Bank Restructuring Agency	IBRA was established on 26 January 1998 and terminated IBRA on 30 April 2004. IBRA's objectives were to supervise, manage and restructure distressed banks in response to the Asian Financial Crisis. A subsidiary of Indonesian Bank Restructuring Agency.
	PT Holdiko Perkasa Edaran Otomobil Nasional Bhd	This is one of Malaysia's largest conglomerates which was established in 1984 to distribute Proton cars - Malaysia's first national car. The main shareholders of the company are DRB-HICOM Group Khazanah Nasional Berhad
Japan	<i>Ministry of Finance</i>	Oversees the financial policies for the Japanese government.
	Nuclear Damage Compensation Facilitation Corporation	Established in September 2011 to manage the granting of compensation funds and secure a stable supply of electricity, etc.
South Korea	<i>National Pension Service*</i>	The fourth largest public pension fund in the world, and the largest investor in South Korea, established in 1987.
	Korea Deposit Insurance Corporation	Established in 1996 to protect depositors and maintain the stability of the financial system through insurance management, risk surveillance, resolution, recovery, and investigation.
	Ministry of Strategy and Finance	Oversees the financial policies for the South Korean government.
	Export-Import Bank of Korea	Official export credit agency of South Korea. Its primary purpose is to support South Korea's export-led economy by providing loans, financing mega projects and thereby facilitating economic cooperation with other countries.
	Bank of Korea	Central bank of South Korea.
	Korea Development Bank	State-owned policy bank founded in 1954 to finance and manage major industrial projects to expedite industrial development and enhance the national economy.
	Woori Bank	A subsidiary of the Woori Financial Group, which is a banking and financial services holdings company and is the largest bank in South Korea. It was formed in 2001 from the forced merger of 4 predecessor commercial banks and an investment bank (Hanvit, Peace, Kwangju and Kyongnam Banks and Hanaro Investment Banking and their subsidiaries). The banks were taken over and recapitalised by the government because they had fallen below the Basel I Accord mandated 8% capital adequacy ratio. The South Korean Government, through the Korean Deposit Insurance Corporation, remains the primary investor as a result.
	Korea Resolution and Collection Corporation	Wholly-owned subsidiary of KDIC.
	Korean Finance Corporation	Established in 2009 as a result of the divestment of assets and liabilities from Korea Development Bank. It is a policy-based financial institution mandated to support the sound growth of the Korean economy with 100% direct ownership by the Korean government.
	Malaysia	<i>Permodalan Nasional Berhad (PNB)</i>
<i>Employees Provident Fund (EPF)</i>		It is a state-owned institution that manages the compulsory savings plan and retirement planning for private sector workers in Malaysia. Membership in the EPF is mandatory for Malaysian citizens employed in the private sector, and voluntary for non-Malaysian citizens. It is the fourth largest pension fund in Asia and the seventh largest in the world (TowersWatson, 4 April 2015)
Armed Forces Fund (Lembaga Tabung Angkatan Tentera, or LTAT)		It is a government statutory body that provides retirement benefits and other benefits to members of Malaysia's armed forces.
Khazanah*		It is the strategic investment fund of the Government of Malaysia. Khazanah holds and manages selected commercial assets of the Government and undertakes strategic investments on behalf of the nation.
	Sarawak Economic Development Corporation	It is a state-owned statutory body with the general aim of promoting the commercial, industrial and socio-economic development of the state of Sarawak.
Philippines	<i>Social Security System</i>	It is a state-run, social insurance program for non-government employees in the Philippines founded in 1957.
	Province of Cebu Philippines National Oil Company	Provincial government of Cebu.

(continued on next page)

Table 8 (continued)

Country	State Entity	Purpose
Singapore	Government Service Insurance System	It was created in 1973 as a government-owned and controlled corporation to supply oil to the Philippines.
	<i>Temasek*</i>	It is a state-run, social insurance program for government employees in the Philippines established in 1936.
	NTUC Income Insurance Corporation	Investment company owned by the government of Singapore and was founded in 1973.
	Ministry of Manpower (Statutory Board)	It is the only insurance cooperative in Singapore, and was founded in 1970.
Taiwan	Central Provident Fund	This is a Singapore Ministry which is responsible for the formulation and implementation of labor policies related to the workforce in Singapore. It has three statutory boards, including the Central Provident Fund, the Singapore Labour Foundation, and the Singapore Workforce Development Agency.
	Lentor Investments	This is a compulsory comprehensive savings plan for working Singaporeans and permanent residents primarily to fund their retirement, healthcare, and housing needs.
	<i>Ministry of Economic Affairs</i>	It is a wholly-owned subsidiary of Temasek.
Thailand	<i>Ministry of Finance</i>	It is responsible for formulating policy and laws for industry and trade, foreign direct investment, energy, minerals, measurement standards, intellectual property, and state-owned enterprises in Taiwan.
	Taiwanese Provincial Government	Oversees the financial policies for the government of Taiwan.
	Ministry of Finance	The provincial government that governs Taiwan province of the Republic of China.
	Bank of Thailand	Oversees the financial policies for the government of Thailand.
	Crown Property Bureau	Central bank of Thailand.
	Government Savings Bank	It is the quasi-government agency responsible for managing the property of the crown of the Kingdom of Thailand. The king appoints six members of the bureau's governing board, with the seventh the sitting Minister of Finance of Thailand. Crown property does not belong to the king in his private capacity, but to the monarchy as an institution which continues from reign to reign
	Government Pension Fund	It is a state-owned savings bank founded in 1913, with more than 1100 branches across the country. It is the largest pension fund provider and institutional investor in the country with assets under management of over USD14 billion.
Thailand	Stock Exchange of Thailand	It is the largest state-owned investment fund that focuses on investing in key state enterprises. It was started in 2003.
	Vayupak Fund 1	The national stock exchange of Thailand.
	Mass Rapid Transit Authority of Thailand	A state-owned investment fund that focuses on investing in key state enterprises. It was started in 2003.
	Krung Thai Bank	It is a government agency under the Ministry of Transport. It is responsible for overseeing the operation of rapid transit systems in the Bangkok Metropolitan Region.
		It is the largest state-owned financial institution in Thailand.

This table reports the state entities with corporate ownership positions (above 5%). Those entities which manage a large fraction of total state ownership positions in an individual economy are italicized and listed first or second. Sovereign wealth funds are marked with an asterisk.

Agency (IBRA) played an important role in cleaning up corporate debt and restructuring firms before their subsequent divestment. In Figs. 1(b) and 2(b), we can see this process reflected in the increase and subsequent decline in state ownership. Throughout the post-crisis sample period, however, the ownership positions of the IBRA are relatively few in comparison to those of the government.

The two countries in our sample with the highest levels of state ownership include Malaysia and Singapore. The primary state entity charged with administering state ownership in Malaysia is the Permodalan Nasional Berhad (PNB), a government-run investment fund. The PNB is under the jurisdiction of the Bumiputera Investment Foundation (YPB), which is chaired by the prime minister. It was established to increase ethnic Malay ownership in the corporate sector by purchasing shares of publicly held companies and keeping them in trust for ethnic Malays. When the Asian Financial Crisis struck, it was the largest investment body in Malaysia with investments occurring through several unit trusts. The other major state investor in Malaysia has been the historically important Employees Provident Fund (EPF), which manages the compulsory retirement savings plan for all private sector workers (Freeman and Than, 2002). The EPF reports to the Minister of Finance who, from 2003 to the end of our sample in 2012, was also the Prime Minister. Panel A of Table 1 indicates that Malaysia consistently retains the highest proportion of PSOs in our sample, and increasingly so over time. This is largely attributable to the rising accumulation of funds on the part of the country's main state-owned institutional investors due to forced savings as well as attractive returns via the PNB's unit trust funds (Vithiatharan and Gomez, 2014).

In Singapore, a different type of investment fund is used as the primary vehicle for state ownership – Temasek Holdings. This is a government-run investment company used to manage the city-state's strategically important domestic enterprises. Temasek reflects the most concentrated ownership and control of the corporate sector of any state entity in our sample, giving rise to the country's persistently high level of state ownership. Panel A of Table 1 indicates that Singapore's mean level of state ownership is the second highest in our sample.

In contrast to the other states included in the sample, Thailand's state ownership positions are spread among numerous state entities. The individual functions of these entities seem to encompass nearly all those used by other governments, with none playing a clear central role for the management of state ownership. Nevertheless, as mentioned above, they are all located within the executive branch, potentially granting the prime minister considerable influence over their investment activities.

8. Firm fundamentals and changes to state ownership

In sections IA2 and IA4 of our Internet Appendix, we take a preliminary look at firm level factors correlated with changes to state

ownership. The analysis reveals some interesting patterns. First, direct increases in state ownership tend to follow declines in the market-to-book ratio; whereas indirect investments by the state follow declines in profitability (i.e. ROE). In either case, ownership tends to increase following underperformance. Second, divestment by the state tends to follow positive growth in cash holdings. Third, we examine how firm performance changes in the short- and long- term, following changes to state ownership. We find firm performance (i.e. profitability and market-to-book) tends to improve after an increase in state ownership. These effects are more pronounced and longer lasting for indirect investments by the state. Taken together, the results are consistent with states increasing ownership when firms underperform and then relinquishing ownership once performance improves.

The above results are correlational as the corresponding analysis lacks a comprehensive identification strategy. In the absence of causal empirical evidence however, we can nevertheless offer theoretical conjectures for how state blockholders may enhance firm performance. There are two theories by which blockholder monitoring may improve performance according to related literature. First, large shareholders have a stronger ‘voice’ and their presence thus improves monitoring, limits managerial discretion, reduces agency costs, and enhances firm value (Shleifer and Vishny, 1986; Holmström and Tirole, 1993; Huddart, 1993; Admati et al., 1994; Bolton and von Thadden, 1998; Maug, 1998). A second strand of research argues that large blockholders improve performance via the threat of ‘exit’ rather than ‘voice’. From this perspective, blockholders follow the so-called Wall Street rule by ‘voting with their feet’, and this threat of selling ownership stakes effectively disciplines managers (Admati and Pfleiderer, 2009; Edmans, 2009; Edmans and Manso, 2011).

9. Survival bias

As discussed in section 2, our main sample comprises firms which persistently account for a significant share of total market capitalization. Firms are selected into the sample if they are among the largest 200 companies on their exchange in both 1996 and 2008 (corresponding to studies by Claessens et al., 2000, and Carney and Child, 2013). Importantly, this sample selection criterion introduces a *survival bias* to our statistics. In particular, our analysis reflects ownership patterns among firms whose survival is assured by construction. But the nature of state ownership among relatively stable firms may differ from ownership patterns among counterparts having eventually delisted or undergone M&A activity.

To address this concern, we construct an alternative sample in the following way. First, we tabulate the largest 30 firms in 1996 by market capitalization (from Claessens et al., 2000), in each of nine economies covered in our study. For this group of 270 firms, we track their ownership structures through 2012, or until they exit the sample. The average level of state ownership is 8.3% (compared to 10.0% in our original sample), and the fraction of firms with non-zero state ownership is 35.8% (compared to 26.5% in our original sample). The corresponding level (incidence) of family ownership is 15.9% (52.5%), and the average level of diffuse ownership is 44.7%.

Importantly, firm-level attrition from this alternative sample is significant. Twenty-three percent (61) of our 270 firms exit the sample prior to 2012.¹³ The final dataset consists of 2683 firm-year observations (compared to 2984 in our main sample). Firms leave this sample for three primary reasons: bankruptcy, delisting or M&A activity. More than three-quarters (47) of the attrition firms leave this sample due to M&A activity. Five firms delist from their domestic stock market, and nine firms declare bankruptcy (including eight financial firms during the Asian Financial Crisis). Figure IA2 of our Internet Appendix reflects spikes in attrition in 1998 (coinciding with the peak of the Asian Financial Crisis), and in 2005 (due to a series of M&As). In other years attrition is more evenly distributed. Comparing across markets in Table IA3, we note Japan and Thailand incur exceptionally high attrition rates. Half of the initial top-30 firms in those countries exit the sample due to attrition. In Japan, heavy attrition is driven by M&As; in Thailand it is a combination of bankruptcies during the Asian Financial Crisis and a series of M&As between 2002 and 2010.¹⁴ Finally, in unreported industry analysis we find that 56% of attrition is driven from the finance industry, with a majority being attributable to M&As.

Crucially, the above patterns demonstrate that *non-random* attrition progressively skews the characteristics of our alternative sample over time. By the end of our sample period, the share of financial firms and those from Japan and Thailand is significantly eroded, thereby reducing the representativity of this alternative sample. Because attrition is not random, the alternative sampling criterion of this section suffers from *attrition bias*, somewhat complicating interpretability.¹⁵ This attrition bias introduced by our alternative sampling criterion may be of greater inferential concern than the survival bias incurred by our original sample. Given our goal of understanding state ownership dynamics across mainstay firms of nine East Asian economies, our original sample remains preferable in this regard.

Notwithstanding the above, it is nevertheless worth verifying the sensitivity of our findings to sample selection criteria. For this purpose, Tables 9 and 10 report the analogous results of Tables 2 and 4, but based on our alternative sample. At the country level of analysis, patterns observed for Indonesia, South Korea, Malaysia, and Taiwan are similar to those in the main sample. There are, however, differences in the ownership patterns for Hong Kong, the Philippines, Singapore, Japan, and Thailand. These differences may be driven by either survival bias or attrition bias (the latter applying especially to Japan and Thailand). However, despite some differences in *country-level* inferences across sampling strategies, the overall dynamics of state ownership in the East Asia region appear

¹³ We lose additional observations due to the aforementioned difficulties associated with hand-collecting historical ownership data (of comparable proportion to our main sample).

¹⁴ In some cases, the M&As in Thailand were government assisted transactions. For example, Nava Finance and Securities had its operations temporarily suspended in 1998 during the financial crisis and later merged with CMIC Finance and Securities Public Co. Ltd.

¹⁵ In particular, inferences regarding firms in Thailand, Japan, or the finance industry are relatively unreliable.

Table 9
Changes to state ownership (Alternative Sample).

	Increase in State Ownership		Decrease in State Ownership		Persistent State Ownership	
	Count	Tran Pr.	Count	Tran Pr.	Count	Tran Pr.
Hong Kong	7	24.1	6	20.7	16	55.2
Indonesia	7	14.3	10	20.4	32	65.3
Japan	5	33.3	3	20	7	46.7
South Korea	22	30.1	22	30.1	29	39.7
Malaysia	29	23.6	26	21.1	68	55.3
Philippines	26	24.5	28	26.4	52	49.1
Singapore	15	15	16	16	69	69
Taiwan	2	6.3	4	12.5	26	81.3
Thailand	10	20.4	9	18.4	30	61.2
Total	123	21.4	124	21.5	329	57.1

This table reports the frequency and conditional transition probability (in %) of changes to state ownership. The sample consists of ownership data for 2683 firm-year observations for the top-30 largest listed firms in 1996 only. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand.

Table 10
State ownership transitions (Alternative Sample).

	Loss of State Ownership				Shift to State Ownership			
	To Family		To Widely Held		From Family		From Widely Held	
	Count	Tran. Pr	Count	Tran. Pr	Count	Tran. Pr	Count	Tran. Pr
Hong Kong	3	12	6	24	4	1.5	6	2.1
Indonesia	4	8.9	9	20	4	3.6	4	1.5
Japan	0	0	3	30	0	0	5	1.5
South Korea	4	7.4	21	38.9	7	7.2	21	6.8
Malaysia	4	4.1	25	25.8	3	5	27	10.2
Philippines	7	8.3	25	29.8	7	3.9	23	7
Singapore	0	0	16	18.8	2	2.1	15	5
Taiwan	0	0	4	13.3	0	0	2	0.7
Thailand	0	0	9	23.1	0	0	10	3.3
Total	22	4.7	118	25.2	27	3	113	4.2

§ Note that the total count is more than on this table than the total listed in Table 9 because there are cases where there are simultaneous change to family and widely held.

This table reports the frequency and the conditional transition probability (in %) of changes to state ownership. The sample consists of ownership data for 2683 firm-year observations for the top-30 largest listed firms in 1996 only. Our sample firms are listed on the main boards of Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand.

remarkably similar.

In Table 9 we find that large changes to state blockholdings are quite common also in the alternative sample (as reflected in Table 2 for our original sample). Among our 2245 new firm-year observations, we identify 247 changes in state ownership (compared to 228 changes among the 2984 observations of our main sample). In Table 9, consistent with our original sample, instances of increased investment by the state are similar to instances of divestment, despite the general push toward privatization during this period. Finally, in Table 9 we again identify a (more) sizable likelihood that year-on-year changes in state ownership occur (42.9% as compared to 29.8% in the main sample).

Next, in Table 10 our inferences closely resemble those based on Table 4. The likelihood of government investment in family or widely-held firms is higher at 3% and 4.2% respectively (compared to 2.0% and 3.1% in the main sample). The state's likelihood of relinquishing ownership control to family or widely-held entities is also more pronounced in this sample, at 4.7% and 25.2% (compared to 3.8% and 15.4%). Finally, in Table 10 we again observe that transitions between state and family ownership are significantly less likely than transitions involving the state and widely-held entities.

10. Conclusion

Prior research on state ownership patterns in East Asia has relied on cross-sectional snapshots. We advance the literature's understanding of this phenomenon by assembling long panel data. We identify several noteworthy findings. First, large changes (>5%) to state blockholdings – both investments and divestments – are far more prevalent than previous studies would suggest. Second, the identity of the largest shareholder frequently changes over time between state, family, and widely-held entities. More specifically, we find that when the level of state ownership changes, a commensurate shift in diffuse (rather than family) ownership typically occurs. Third, sovereign wealth funds are much more likely to acquire rather than sell stakes in publicly traded firms.

To strengthen our understanding of contemporary state ownership, we highlight two potential avenues for future research. First,

political institutions may play an influential role insofar as they constrain the ability of political leaders to adjust state ownership. This feature of political institutions may be particularly salient since most state entities responsible for initiating and managing government portfolios are located in the executive branch. Second, firm-level factors (such as financial performance) are also likely to influence government investment and divestment in publicly-traded firms. These topics are briefly addressed in our Internet Appendix, but both merit further investigation.

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Appendix A. Supplementary data

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