Business Groups and the Big Push: Meiji Japan's Mass Privatization and Subsequent Growth

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Paul Rosenstein-Rodan argues that economic development requires coordinated investment in many interdependent industries, and prescribes a flood of state-controlled investment across all sectors—a so-called big push. Widespread government failure defeated twentieth-century 'big push' schemes. But spillovers across firms and industries, and from public goods, hold-up problems, and capital market limitations are real, and justify coordinated growth across sectors if it can be done without government failures. Large, extensively diversified pyramidal business groups of listed firms dominate the histories of developed economies and the economies of developing economies. Arguing that such groups provided this coordination in prewar Japan after a state-run big push failed,

doi:10.1093/es/khm076

Advance Access publication September 25, 2007

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We are grateful for helpful comments, encouragement, and suggestions from participants in the Society for the Advancement of Socio-Economics 2006 conference in Trier, Germany, and the Asian Finance Association, Financial Management Association, 2007, conference in Hong Kong, as well as from Franklin Allen, Caroline Fohlin, Juro Teranishi, Andrei Shleifer, Yupana Wiwattanakantang, and Bernard Yeung; and especially from Gary Herrigel, Ken Lipartito, and two anonymous referees. We also thank Louise Hébert and Elisabeth O'Kane for careful editing. Support from the Social Sciences and Humanities Research Council is gratefully acknowledged.

we propose that pyramidal business groups are private-sector mechanisms for coordinating big push growth, and that competition between rival groups induces efficiency unattainable in a state-run big push. We postulate that a successful business-group led big push requires economic openness, basic public goods, rule of law, separation of the state from business, and a timely demise of business groups when the big push phase is complete. Where these criteria are not met, growth stalls and oligarchic families become too powerful to dislodge.

Over sixty years ago, Paul Rosenstein-Rodan showed how coordination problems block development.[1] The intuition is clear: a steel mill is profitable if iron and coal mines lie nearby because both provide inputs to steel making that are costly to transport long distances. A steel mill is also profitable if a cement plant lies nearby, for office buildings are made of concrete and steel. Industries that use steel, skilled mechanics to repair their equipment, roads and railways to transport all the above, and consumers with disposable income to buy final goods, all help make a steel mill profitable. Complementary industries, vertically related industries, infrastructure industries, public goods, organizations with network externalities, and consumer demand must all grow in synch or in sequence, each meeting the other's needs.[2]

Such complicated interdependency, Rosenstein-Rodan argued, requires firms in some sectors to operate at inefficient scales, and even

1. Paul Rosenstein-Rodan, ''Problems of Industrialization of Eastern and South Eastern Europe,'' *Economic Journal* 53 (June–Sept. 1943): 202–11.

2. For a history of the concept of spillovers, see Renee Prendergast ''Marshallian External Economies,'' *Economic Journal* 103 (March 1993): 454–58. For a unified discussion of most of these interdependencies and the coordination problems they create, see Kevin Murphy, Andrei Shleifer, and Robert Vishny, ''Industrialization and the Big Push,'' *Journal of Political Economy* 97 (Oct. 1989): 1003–26. Network externalities rise, for example, in telephone systems, where having a phone is irrational unless others also have phones. See Shmuel S. Oren, Stephen A. Smith, and Robert B. Wilson, ''Nonlinear Pricing in Markets with Interdependent Demand,'' *Marketing Science* 1 (Summer 1982): 287–313. Spillovers from certain public goods, such as the rule of law, resemble network externalities—see, for example, William Bygrave and Maria Minniti, ''Social Dynamics of Entrepreneurship,'' *Entrepreneurship Theory and Practice* 24, no. 3 (2000): 25–38. So do investments in education and training; see, Gary Becker, Kevin M. Murphy, and Robert Tamura, ''Human Capital, Fertility, and Economic Growth,'' *Journal of Political Economy* 98 (Oct. 1990): S12–S37. All these phenomena can trigger market failures and create scope for welfare enhancing state intervention.

to lose money, so other sectors can develop. This blocks development because individual firms do not capture these spillovers, and so, do not invest in creating them. Moreover, where the viability of one business depends on another, hold-up problems can present barriers to growth as well.[3] Rosenstein-Rodan therefore concluded that rapid development requires a big push—a colossal flood of investment to build up numerous sectors simultaneously. To finance this, he saw no alternative but the state; and to coordinate it, he saw no alternative but central planners. In 1947, he left the London School of Economics to implement his ideas at the newly established World Bank.

Central planning and state-directed investment are now known to provoke 'government failure' problems.[4] Extensive state intervention magnifies returns to *political rent-seeking*—investing in political influence rather than plant and equipment.[5] High returns to political rent-seeking impede growth by inducing firms to manipulate state policy rather than putting their funds in private sector investments with the positive spillover needed for a successful big push.[6]

3. Murphy, Shleifer, and Vishny, ''Industrialization and the Big Push,'' 1003–126 formalize Rosenstein-Rodan's thinking into an endogenous growth model, which, incidentally, clarifies the importance of hold-up problems in this context. Hold-up problems were first explored by Oliver Williamson, ''Markets and Hierarchies: Some Elementary Considerations,'' *American Economic Revie*w (May 1973): 316–25 and Williamson, ''Credible Commitments: Using Hostages to Support Exchange,'' *American Economic Review* 73, no. 4 (1983): 519–40. Intuitively, if one business's profits depend on others' actions, one can hold the other to ransom. For example, if a steel mill and a cement plant set up next to each other, each augments the other's profits as above. But if a cement plant enthusiastically builds first, a steel company can extort money from it, threatening to walk away, leaving the cement plant alone and unprofitable. If a steel mill is built first, a cement firm can play the same game. Each thus waits for the other to go first, and development stalls—see G. De Fraja, ''After You Sir: Hold-Up, Direct Externalities, and Sequential Investment,'' *Games and Economic Behavior* 26 (Jan. 1999): 22–39. This formalization suggests a way out of the impasse—the firms to sign a contract agreeing to build on schedule. But countries without steel mills and cement plants typically also lack efficient judicial systems. Even with functioning courts, information asymmetries and adverse selection problems limit the scope of contracting and one or both firms can end up operating at inefficient scales.

4. Friedrich Hayek, ''The Use of Knowledge in Society,'' *American Economic Review* 35, no. 4 (1945): 519–30 criticizes Rosenstein-Rodan explicitly, stressing how governments lack detailed information to coordinate a big push. Janos Kornai, *The Economics of Shortage* (Amsterdam, 1980) adds that state subsidies distort investment by softening budget constraints. See a thorough survey in Andrei Shleifer and Robert Vishny, *The Grabbing Hand* (Cambridge, Mass., 1998).

5. Anne Krueger, ''The Political Economy of the Rent-Seeking Society,'' *American Economic Review* 64 (June 1974): 291–303.

6. William Baumol, ''Entrepreneurship: Productive, Unproductive, and Destructive,'' *Journal of Political Economy* 98 (Oct. 1990): 893–921; Kevin M. Murphy, Andrei Shleifer, and Robert Vishny, ''The Allocation of Talent:

Influential critics of the World Bank and its sister institutions now blame big push thinking for prolonging poverty in the developing world. William Easterly despairs of big push plans because they provoke government failures.[7] Peter Thomas Bauer argues that development depends on individual freedom, and that burdensome government causes *poverty traps*.[8]

Recent economic history offers scant support for big push development. Despite vast past big push efforts, a growing income gap separates rich from poor countries.[9] Indeed, the only successful big push Easterly concedes is Meiji Japan.[10] We therefore investigate this success, and find it an informative anomaly.

In the late nineteenth century, Japan organized a big push quite like that advocated by Rosenstein-Rodan, and established numerous state-owned enterprises (SOEs) across all major sectors. An epidemic of government failure problems soon triggered a fiscal crisis. To restore public finances, Japan conducted the world's first mass privatization in the late nineteenth century. Wealthy families and entrepreneurs bought former SOEs or their assets to build up *zaibatsu*, large

Implications for Growth,'' *Quarterly Journal of Economics* (May 1991): 503–30; Kevin M. Murphy, Andrei Shleifer, and Robert Vishny, ''Why is Rent-Seeking Costly to Growth?'' *American Economic Review* 82, no. 2 (1993): 409–14.

7. William Easterly, ''The Big Push Deja Vu: A Review of Jeffrey Sach's The End of Poverty: Economic Possibilities for Our Time,'' *Journal of Economic Literature* 44, no. 1 (2006): 96–105.

8. Peter Thomas Bauer, *Dissent on Development: Studies and Debates in Development Economics* (London, 1972) and Bauer, *Reality and Rhetoric: Studies in the Economics of Development* (London, 1984).

9. For evidence on divergence, see William Easterly, *The Elusive Quest for Growth* (Cambridge, Mass., 2001); Danny Quah, ''Twin Peaks: Growth and Convergence in Models of Distribution Dynamics,'' *Economic Journal* 106, no. 437 (1996): 1045–56; Danny Quah, ''Empirics for Economic Growth and Convergence,'' *European Economic Review* 40, no. 6 (1996): 1353–60, Lant Pritchett, ''Divergence, Big Time,'' *Journal of Economic Perspectives* 11, no. 3 (1997): 3–17, and others. China and India currently sustain historically high growth rates. Because of their large populations, the number of people emerging from poverty is unprecedented, even though most low-income countries seem mired in poverty traps. Nonetheless, both China and India remain low-income countries, challenged by high rates of rural poverty and illiteracy. See Prakash Loungani, ''Inequality,'' *Finance & Development* 40, no. 3 (2003): 22.

10. Others, notably Jeffrey D. Sachs, *The End of Poverty: Economic Possibilities for Our Time* (New York, 2005), see big push growth as critical in the economic histories of other developed economies too. Yet others stress Japan's mid-twentieth century growth as state directed; however, this is the reconstruction of an industrial economy destroyed by war, not a big push in the sense of Rosenstein-Rodan. Also, econometric evidence disputes the positive role of state planning in postwar Japanese reconstruction; see, for example, Richard Beason and David E. Weinstein, ''Growth, Economies of Scale, and Targeting in Japan (1955–1990),'' *Review of Economics and Statistics* 78, no. 2 (1996): 286–95.

diversified pyramidal groups of listed firms. Japan then entered its *high growth era* and W. W. Rostow estimates its economic takeoff as complete by 1914 at the latest.[11]

Large pyramidal business groups are ubiquitous in developing economies.[12] They are typically extraordinarily diversified, with at least one firm in each key industry.[13] Most are organized as pyramids—an apex family firm controls a first tier of listed firms, each of which controls other listed firms, each of which controls yet more listed firms, and so on. We propose that such groups are private-sector big push coordinators. Their diversification gives them a presence in every critical industry needed for big push type growth. In these groups, some sectors subsidize others *via* 'tunneling', moving wealth from one group firm to another.[14] Groups' pyramidal structure puts all their member firms under centralized control, permitting coordination of investment policies and eliminating hold-up problems.[15] By listing some or all of their member firms, business groups tap public savings to finance growth. Developing economies typically host several business groups, so each key industry typically contains firms from more than one group. This structure is rational because no group dares depend on a member firm of another group for a key input, and so, tempt hold-up problems. Competition between groups also drives the inefficiently run ones out of business, avoiding the inefficiencies that plague state-run big push schemes.[16] A detailed exploration of

11. W. W. Rostow, ''The Takeoff into Self-Sustained Growth,'' *Economic Journal* 66, no. 261 (1956): 25–48 defines 'economic takeoff' as the transition from a low income to a high income growth path; and sees big push coordination accomplishing this transition.

12. Randall Morck, Daniel Wolfenzon, and Bernard Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' *Journal of Economics Literature* 43 (Sept. 2005): 657–722.

13. Tarun Khanna and Yishay Yafeh, ''Business Groups in Emerging Markets: Paragons or Parasites?'' *Journal of Economic Literature* (2007 forthcoming) document the extensive industrial diversification of typical business groups at length; Tarun Khanna and J. Rivkin, ''Estimating the Performance Effects of Business Groups in Emerging Markets,'' *Strategic Management Journal* 22, no. 1 (2001): 45–74.

14. For detailed methodology, see M. P. Bertrand, P. Mehra, and S. Mullainathan, ''Ferreting Out Tunneling: An Application to Indian Business Groups,'' *Quarterly Journal of Economics* 117 (Feb. 2002): 121–48. For a survey, see, Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' and others.

15. This logic is an extreme case of that in Sanford Grossman and Oliver Hart, ''The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration,'' *Journal of Political Economy* 94 (Aug. 1986): 691–719.

16. Khanna and Yafeh, ''Business Groups in Emerging Markets: Paragons or Parasites?''

Japan's growth in the late nineteenth and early twentieth centuries provides much anecdotal evidence for the role of private business groups in a big push pattern of growth.[17] If further research confirms our hypothesis about the Japanese case, business groups may provide not just a private-sector alternative, but a more efficient alternative to state-run development plans.

Business groups, especially very old ones, are associated with slow growth and extensive political rent-seeking.[18] For example, after contemporaneous bursts of what appears to be big push growth, Latin American business groups seem to switch to political rent-seeking, largely undermining their past positive contributions.[19] Weak property rights protection apparently forces business groups there to control the government, or for government officials to control the business groups. There seems to be no alternative. But once business and government are controlled by the same oligarchic elite, firms can depend on state largesse and no longer need pursue efficiency.[20] State orchestrated collusion, protectionism, and ready subsidies limit the competitive pressures on business groups, permitting inefficient operations to survive and compromising economic growth. This 'vertical integration' of business groups with the state, often called crony capitalism, makes business groups subject to the same sort of problems found in cases of state-run big push programs.[21]

17. Most explicitly, Masahiko Aoki, *Information, Incentives, and Bargaining in the Japanese Economy* (Cambridge, U.K., 1988), 223, documents such coordination, writing that *zaibatsu* implement 'centralized coordination' as ''[t]he general trading company acted as a sole trading agent for member firms and was in a position to manipulate the terms of transaction with outsiders. The holding company pooled the profits of the operating firms.'' He adds that ''post-World War groups of companies - those of zaibatsu origin or those clustered around the principal banks - do not operate under such centralized coordination.''

18. Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722, and others.

19. The discussion of Latin America summarizes findings developed in Stephen Haber, Armando Razo, and Noel Maurer, *The Politics of Property Rights: Political Instability, Credible Commitments, and Economic Growth in Mexico, 1876–1929* (Cambridge, U.K., 2003); Haber, *Industry and Underdevelopment: The Industrialization of Mexico, 1890–1940* (Stanford, Calif., 1989); and Haber, *Political Institutions and Economic Growth in Latin America: Essays in Policy, History, and Political Economy* (Stanford, Calif., 2000).

20. The economics of this evolution are explained in Morck and Yeung, ''Family Control and the Rent-Seeking Society, ''*Entrepreneurship Theory and Practice* 19 (June 2004): 391–409.

21. On the economics of crony capitalism, see Haber, ed., *Crony Capitalism and Economic Growth in Latin America: Theory and Evidence* (Stanford, Calif., 2002).

Japan largely escaped this fate because, as shown below, 'shock therapy' reforms created a modern legal infrastructure, public education system, and other public goods absent in much of Latin America. Japan's costly failed state-led big push also kept the state out of the economy until the 1930s, making rent-seeking investments in political influence pointless. And its *zaibatsu* were dismantled by the American military government that ruled Japan from 1945 to 1952.[22] The *keiretsu* groups that arose in their place were much looser confederations of professionally managed firms, and perhaps less effective rent-seekers than the pyramidal business groups that survived intact in Latin America.[23] The Japanese experience thus suggests different roles for the state at different stages of development—establish basic public goods like the rule of law and universal education, avoid intervening in the economy during the big push, and dismantle pyramidal business groups once the big push phase of growth is complete.[24]

Our reasoning is admittedly speculative, and one country's history cannot make the case for business groups and governments everywhere. Our argument resonates with much previous work on business groups and crony capitalism, but clearly welcomes confirmation or refutation, more through econometric and historical analysis. However, a new generation of big push advocates may wish to reconsider the best role for government and the possibility of private-sector coordination.[25]

Previous Work on Business Groups

We are not proposing an alternative hypothesis to other economic explanations of business groups. Rather, we seek to synthesize competing hypotheses into a single overarching explanation. Thus, rather than test our thesis against alternative hypotheses, we draw

22. Morck and Masao Nakamura, ''A Frog in a Well Knows Nothing of the Ocean: A History of Corporate Ownership in Japan,'' in *A History of Corporate Governance around the World: Family Business Groups to Professional Managers*, ed. Randall Morck (Chicago, 2005), 367–459.

23. The *keiretsu* were certainly less centrally run; see, for example, Aoki, *Information, Incentives, and Bargaining*, 223.

24. Rostow, ''Takeoff into Self-Sustained Growth,'' 25–48, first envisioned stages of development, postulating five: traditional society; take-off preconditions; take-off; drive to maturity; and mass consumption.

25. Such calls include Kofi Annan's UN Millennium Project, laid out in *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals: Main Report* (New York, 2005) and Sachs, *End of Poverty*.

on previous results to show that apparently clashing explanations and evidence coalesce into our thesis, yet retain their individual validity.[26] Thus, much of what we say is not new. Our thesis accords with Kazushi Ohkawa and Henry Rosovsky, who see *zaibatsu* as foreign technology importers.[27] Their evidence matches our thesis, for a big push coordinates new technology investment across complementary industries. Indeed, without specifically mentioning the big push literature, their wording resonates with ours: ''[t]he most famous zaibatsu [were] based on the rapid industrialization that had occurred in the first two decades of this century. Although it is difficult to generalize, perhaps, one can say that in the nineteenth century commerce was the major activity of zaibatsu; around World War I it was industry with particular emphasis on coal mining, shipbuilding, engineering, and glass; and in the 1920s, it became sophisticated industries.''[28] Detailed industry-by-industry analysis of this shifting emphasis, though beyond our present scope, might accord with a big push.

Tarun Khanna and Yishay Yafeh propose coinsurance as a major purpose of business groups.[29] Using Japanese data, they show *zaibatsu* firms sharing risks in 1932–1943, though not necessarily in earlier periods. Examining data for 1921–1927 and 1933–1937, Hideaki Miyajima detects no such risk sharing, instead suggesting zaibatsu controlling shareholders monitor group firms' capital investment.[30] Our argument accords with both, clarifying the nature of key risks (hold-up problems) and why a single controlling shareholder monitors firms in diverse industries (big push coordination).

26. For recent surveys, see Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722; and Khanna and Yafeh, ''Business Groups in Emerging Markets: Paragons or Parasites?''

27. Kazushi Ohkawa and Henry Rosovsky, *Japanese Economic Growth: Trend Acceleration in the Twentieth Century* (Stanford, Calif., 1973).

28. Ibid., 219–21. See, also, W. W. Lockwood, *Economic Development of Japan* (Princeton, NJ, 1954), 227; and Shigeaki Yasuoka, *Nihonno Zaibatsu* [Japanese Zaibatsu] (Tokyo, 1976) who writes on p. 37: ''that diversified businesses arise from the very beginning of the industrialization of under-developed countries when such countries contact with advanced capitalism, because under-developed countries undertake modernization or industrialization of all industrial sectors.'' Note however, that pyramidal business groups are radically different from diversified single firms. Explaining the advantages of diversification does not explain the ubiquity of pyramidal business groups.

29. Tarun Khanna and Yishay Yafeh, ''Business Groups and Risk Sharing Around the World,'' *Journal of Business* 78, no. 1 (2005): 301–40.

30. Hideaki Miyajima, *Economic History of Industrial Policy and Corporate Governance: Micro Analysis of Japanese Economic Development* (in Japanese) (Tokyo, 2004).

Khanna and Krishna Palepu and others argue that business groups substitute for corrupt capital, labor, and product markets.[31] They find group firms outperforming freestanding firms in corrupt economies, explaining that group firms can safely deal with other firms in the same group while freestanding firms risk being cheated at every turn. The market failures we stress are similar. Central coordination facilitates a big push by sidestepping hold-up problems and coordinating growth across industries. Given an efficient legal system, contracts between independent firms might substitute for a common controlling shareholder under some circumstances.[32] Certainly, a greater centralization of control is plausibly needed to achieve a big push where corruption is rifer.

Yafeh captures part of our thesis, arguing that vertically integrated *keiretsu* in postwar Japan, wherein a major firm like Toyota controls blocks in listed supplier and customer firms, arose to limit hold-up problems.[33] We elevate Yafeh's insight into a broader theory of pyramidal business groups as major players in big push growth. Even closer to our argument, Khanna and Yafeh refer to zaibatsu helping the government coordinate a big push. But ours differs fundamentally, for we see zaibatsu taking command of a big push that was failing under state leadership.[34]

Much work stresses tunneling, the controlling shareholder siphoning wealth from listed group firms to benefit himself, as a primary *raison d'être* for business groups.[35] Our thesis accords with this too. Coordinating a big push requires the massive tapping of national savings, so group firms need public shareholders. It also requires group firms in some industries to subsidize those in other industries, and to

31. Tarun Khanna and Krishna Palepu, ''Emerging Market Business Groups, Foreign Investors, and Corporate Governance,'' in *Concentrated Corporate Ownership*, ed. Randall Morck (Chicago, 2001), 265–94; Tarun Khanna and J. Rivkin, ''Estimating the Performance Effects of Business Groups in Emerging Markets,'' *Strategic Management Journal* 22, no. 1 (2001): 45–74; Tarun Khanna and Raymond Fisman, ''Facilitating Development: The Role of Business Groups,'' *World Development* 32, no. 4 (2004): 609–28.

32. On the importance of law to modern corporations, see Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, Robert W. Vishny, ''Legal Determinants of External Finance,'' *Journal of Finance* 52, no. 3 (1997): 1131–50.

33. Yishay Yafeh, ''Japan's Corporate Groups: Some International and Historical Perspectives,'' in *Structural Impediments to Growth in Japan*, eds. M. Blomström, J. Corbett, F. Hayashi, and A. Kashyap (Chicago, 2003), 259–84.

34. Khanna and Yafeh. ''Business Groups in Emerging Markets: Paragons or Parasites?'' argue that Ohkawa and Rosovsky in *Japanese Economic Growth*, advance this thesis.

35. Surveyed in Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722.

forsake hold-up opportunities. Shareholders would understandably perceive this tunneling as poor fidelity to their investment interests. An undisputed controlling shareholder is needed to overrule other shareholders so the big push can proceed. Thus, evidence of tunneling between group firms accords with our thesis.

One possible problem with tunneling is that it may deter the public from buying group firms' shares. However, this misapprehends agency theory. Rational shareholders forecast tunneling losses and discount share prices accordingly. At low enough prices, they buy and earn equilibrium risk-adjusted returns. Expected tunneling reduces insiders' proceeds from floating a set fraction of a firm's shares, and its cost, like all expected agency costs, falls on the initial owners at the initial public offering (IPO).[36] Expected tunneling raises firms' costs of tapping public equity, but does not 'exploit' public shareholders.

But a large literature portrays a dark side to pyramidal groups. Adolf Berle and Gardiner Means feared that there would be extreme governance abuses in pyramidal groups.[37] This may explain why the United States forcibly dismantled its business groups in the 1930s, the London Stock Exchange did likewise in the 1970s; and Korea seems intent on curbing its *chaebol*.[38] Stephen Haber argues that aging tycoons and the heirs to great business families often undermine sustained growth in Latin America.[39] The wealthy may see a dynamic and consequently unstable economy as threatening the *status quo*

36. Michael Jensen and William Meckling, ''The Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure,'' *Journal of Financial Economics* 3, no. 4 (1976): 305–60.

37. Adolf Berle and Gardiner Means, *The Modern Corporation and Private Property* (New York, 1932); Lucien Bebchuk, Reinier Kraakman, and George Triantis, ''Stock Pyramids, Cross Ownership and Dual Class Equity: The Mechanisms and Agency Costs of Separating Control from Cash Flow Rights,'' in *Concentrated Corporate Ownership*, ed. Morck, 295–315; Randall Morck, David A. Stangeland, and Bernard Yeung, ''Inherited Wealth, Corporate Control, and Economic Growth: The Canadian Disease,'' in *Concentrated Corporate Ownership*, ed. Morck, 319–69.

38. Regarding the United States, see Morck, ''How to Eliminate Pyramidal Business Groups: The Double-Taxation of Intercorporate Dividends and Other Incisive Uses of Tax Policy,'' in *Tax Policy and the Economy*, ed. James Poterba (Cambridge, Mass., 2005), 135–79; regarding the United Kingdom, see Julian Franks, Colin Mayer, and Stefano Rossi, ''Spending Less Time with the Family: The Decline of Family Ownership in the United Kingdom,'' in *History of Corporate Governance around the World*, ed. Morck, 581–601; and regarding Korea, see Phil-Sang Lee, ''Economic Crisis and Chaebol Reform in Korea,'' School of Business Administration, Korea University, Discussion Paper no. 14 (Oct. 2000).

39. Haber, *Political Institutions and Economic Growth in Latin America*; Haber, *Crony Capitalism and Economic Growth in Latin America*.

they enjoy.[40] Others suggest untalented, but well-connected heirs to old-money pyramids find political rent-seeking their highest value investment. [41] This could retard growth as effectively as government failures in a state-run big push.[42]

This dark side to pyramidal groups seems initially to contradict our thesis. But the dark side characterizes business groups controlled by geriatric tycoons or inadequate heirs, not highly talented controlling shareholders. Big pushes generally fail, and a natural progression from entrepreneurial controlling shareholders to entrenched heirs might convert growth-promoting pyramids into growth-blocking artifacts.

If this pattern is common, we must explain Japan's oddly successful big push. To do this, we show this progression failing in Japan because of uniquely sweeping early shock therapy marginalizing the feudal elite, a fiscal crisis draining bureaucratic power, and military governments (Japanese and American) marginalizing *zaibatsu* families. We also argue that Meiji Japan's so-called unequal treaties, even when renegotiated, limited trade and investment barriers. Openness checks elites' power, and thus, the downsides of pyramidal groups.[43] The unequal treaties gave foreign courts jurisdiction in concession enclaves, providing Japanese unobstructed views of foreign jurisprudence, likely helping Japan implement an effective legal system, which further limits these downsides.[44] Openness also lets imports and exports, as well as foreign capital, compensate for missing or

40. Mancur Olson, Jr., ''Rapid Growth as a Destabilizing Force,'' *Journal of Economic History* 23, no. 4 (1963): 529–52; Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722.

41. Morck, Stangeland, and Yeung, ''Inherited Wealth, Corporate Control, and Economic Growth''; Morck and Yeung, ''Family Control and the Rent-Seeking Society,'' 391–409; Kathy Fogel, ''Oligarchic Family Control, Social Economic Outcomes, and the Quality of Government,'' *Journal of International Business Studies* 37 (Sept. 2006): 603–22; Raghuram Rajan and Luigi Zingales, ''The Great Reversals: The Politics of Financial Development in the Twentieth Century,'' *Journal of Financial Economics* 69, no. 1 (2003): 5–50; Anne Krueger, ''Why Crony Capitalism is Bad for Economic Growth,'' in *Crony Capitalism and Economic Growth in Latin America*, ed. Haber, 1–24; Morck and Yeung, ''Agency Problems in Large Family Business Groups,'' *Entrepreneurship Theory and Practice* 27, no. 4 (2003): 367–82.

42. Murphy, Shleifer, and Vishny, ''Allocation of Talent,'' 503–30; Murphy, Shleifer, and Vishny, ''Why is Rent-Seeking Costly to Growth?,'' 409–14; Krueger, ''Political Economy of the Rent-Seeking Society,'' 291–303.

43. Rajan and Zingales, ''Great Reversals,'' 5–50 show Japan relatively open in 1913. See, especially, Table 3. For more general discussion of these points, see Rajan and Zingales, *Saving Capitalism from the Capitalists* (Princeton, NJ, 2003).

44. Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, Robert W Vishny, ''Trust in Large Organizations,'' *American Economic Review* 87, no. 2 (1997): 333–38.

misscaled parts of the domestic economy as a big push builds.[45] Japan's propitious timing and persistent openness may thus highlight conditions for successful big pushes that might be deliberately imposed elsewhere.

Shock Therapy

Before its big push, Japan underwent sweeping institutional renewal that marginalized traditional elites. Unique in depth and scope, this shock therapy may well explain Japan's ultimately successful big push and the failures of analogous efforts elsewhere.[46] Prior to the arrival of Admiral Perry's warships in 1854, Japan was remarkably isolated, with foreigners subject to instant death outside a tiny enclave in Nagasaki. The Tokugawa Shoguns, who ruled Japan from 1603 to 1868, preserved a rigidly stratified society. The elite were *samurai*, a hereditary caste of warriors with the power of life and death over inferiors. The lesser castes were peasants, tradesmen below them, and merchants lowest of all. An intricate code of warrior ethics, *bushido*, forbade class mobility and enshrined *samurai* rule. That foreigners sought the company of merchants was an affront.

The Shogunate, nonetheless, needed merchants, for *samurai* needed weapons and revenues. Two great families, the Mitsui and Sumitomo, arose to such prominence as merchants might attain. The Mitsui traded silk. Since money was not in general use, they ran a sophisticated barter operation—a general trading business. This operation, spanning Japan, was recruited by the Shogunate for tax farming, further enriching the Mitsui. The Sumitomo owned mines and supplied metal for weapons. Other merchant families with Tokugawa roots were important in Japan, but only the Mitsui and Sumitomo survive Japan's transition to play important roles in its big push.

Both families managed without money and modern economic institutions, like corporation or contract law. Consequently, both families developed *house rules*—constitutions dictating how business should be done; how profits were calculated, allocated, and disbursed; and how power passed from generation to generation. House rules assigned key decisions to *family councils*—parliaments, representing

45. See, for example, Vitor Trindade, ''The Big Push, Industrialization and International Trade: The Role of Exports,'' *Journal of Development Economics* 78 (Oct. 2005): 22–48.

46. See Easterly, ''Big Push Deja Vu,'' 1, and cites therein.

clans according to precise voting formulae. Thus, in an environment without ambient business law, merchant houses formulated their own laws and, as far as we can tell, adhered to them rigidly. Private legal systems served both merchant houses well, making their behavior predictable and their promises credible. The Mitsui and Sumitomo became preferred business partners for economic actors of all kinds, including the Shogunate.

In 1853, the United States dispatched about one-fourth of its navy to Japan.[47] The putative humanitarian goal, lifting the death penalty on foreigners shipwrecked off Japan, veiled a commercial mission—opening Japan to American traders. The commander, Admiral Matthew Perry, sailed into Tokyo Bay in violation of Japanese law, presented Tokugawa officials a draft trade treaty, and continued on to China. The following year he returned with a larger fleet and, under American cannon, the Shogunate signed the *Convention of Kanagawa*, which protected shipwrecked sailors, let U.S. ships buy coal, and opened Shimoda and Hakodate to American traders.

Japan's accession to the Victorian global economy was formalized with the 1858 *Treaty of Amity and Commerce*. This U.S.-imposed treaty opened Tokyo, Kobe, Nagasaki, Niigata, and Yokohama to American trade, set low tariffs, and gave consular courts extraterritorial jurisdiction over 'concession' areas in those ports. Similar treaties with the British and other Western powers soon followed. Japan was thus suddenly flung open to free trade and foreign investment. Foreign companies could now operate throughout Japan. General Electric, Western Electric, Vickers Armstrong, and other major firms starred in a large-scale foreign direct investment inflow that continued until 1930.[48] Japan remained open to foreign trade and investment until the Great Depression.[49] Japan's Tokugawa rulers realized that globalization required domestic reforms, and from 1899 on, taxed industry

47. Edwin D. Reischauer, *The Japanese Today: Change and Continuity* (Cambridge, Mass., 1988), 78.

48. Miyajima, *Economic History of Industrial Policy and Corporate Governance*; Takahusa Nakamura, *Taishokino keizai* [Japanese Economy in Meiji and Taisho Era] (Tokyo, 1985), 26, 54.

49. Although trade grew robustly, domestic capital investment and applying foreign technology appear more important to Japan's growth. Carl Mosk, ''Japan, Industrialization and Economic Growth,'' in *EH.Net Encyclopedia*, ed. Robert Whaples (2004), available at eh.net/encyclopedia/article/mosk.japan.final (viewed Jan. 19, 2004); Ryoshin Minami, *Economic Development of Japan: A Quantitative Study* (Houndmills, UK, 1994); Ohkawa and Rosovsky, *Japanese Economic Growth*.

more lightly than agriculture.[50] But comprehensive liberalization proved beyond their abilities. In 1868, a band of young *samurai* overthrew the craven Tokugawa Shoguns. With the Meiji emperor previously relegated to ceremonial duties as their figurehead, these zealous warriors launched the *Meiji Restoration*.[51] Their coup triggered perhaps the deepest transformation ever effected on a major economy. The regime dispatched young Japanese abroad to study science, law, economics, engineering, and every other field relevant to modernization. The knowledge these emissaries brought back frightened the Meiji rulers, who resolved to restore Japan to its rightful place in the world. But it spurred unparalleled commitment to modernization.[52]

Meiji shock therapy, like its late twentieth-century analogs, launched comprehensive reforms across all aspects of the economy almost simultaneously. Within a few years, Japan adopted parliamentary democracy modeled on the German Diet, compulsory public education modeled on French and German schools, universities, a modern military fashioned after those of Prussia, and a fleet modeled on the Royal Navy. Religious freedom, social mobility, and land reform became official policy. Most pertinently, the reformers imposed nineteenth-century liberal capitalism. Finding hereditary casts and warrior ethics hopelessly outdated the Japanese leaders abolished all

50. In 1899, Japan enacted a flat 2.5 percent corporate income tax, though the rate rose to 6.25 percent for the 1904–05 Russo-Japanese War. A permanent inheritance tax was enacted in 1905. See Kazuya Horiguchi, *Meiji 32nen no shotokuzeiho kaisei no rippoteki enkaku* [Outline of the 1898 Income Tax Legislation], Zeimu Daigakko [Japanese Government's Tax University Paper] (Tokyo, 1997). See also Zeimu Daigakko, *Zeimu shiryo library* [Tax Law References], (Tokyo, 2007). Both are available at www.ntc.nta.go.jp/sozei/siryou/index.html.

51. The Meiji Restoration was a sequence of radical political, economic, military, and cultural transformations. Beginning in the late Tokugawa era, the Restoration is generally considered complete by 1877 when, a conscript army suppressed the Seinan Uprising, the last in a series of rebellions by feudal warlords and other traditionalists. See also Richard Samuels, *Rich Nation, Strong Army: National Security and the Technological Transformation of Japan* (New York, 1994).

52. Shock therapy holds that institutional reform must be comprehensive, not piecemeal. Lipton and Sachs argue that Poland cannot establish a market economy without simultaneously establishing supporting institutions: law, courts, regulators, institutional investors, social insurance, and the like. Each, in turn, requires other supporting institutions. Shock therapy advocates the total replacement of one set of institutions by another. Japan's Meiji leaders drew similar conclusions for similar reasons. Hence, the term, shock therapy, though not used then, describes aptly their policies. David Lipton and Jeffrey Sachs, ''Creating a Market Economy in Eastern Europe: The Case of Poland,'' *Brookings Papers on Economic Activity* 1 (1990): 75–147.

feudal ranks and privileges in 1871.[53] Replacing the feudal glue that had bound Japanese society together was a modified form of the German Civil Code. Japan rapidly built a state-of-the-art late-nineteenth-century legal system. Regulations permitting public bond trading arrived in the early 1870s, and an 1878 Stock Exchange Ordinance opened the way for equity markets in Tokyo and Osaka. By 1888, Japan's Civil Code was fully as sophisticated as its German prototype.

Aftershock

Under the new code, merchant houses were suddenly general partnerships subject to previously unknown constellations of laws that overrode house rules and family councils. Adaptation proved beyond the capabilities of some merchant houses, and severely strained others. Mitsui and Sumitomo survived, but navigating the aftershocks was simple for neither. Both modernized by adopting Western technology—textiles manufacturing and mining technologies, respectively—and by supplementing general trading with banking as money gained acceptance. But institutional change proved harder than technological change. The legal system created previously unheard-of liabilities, so, many merchant families incorporated to obtain limited liability. But this move created more problems, for the merchants now found squabbling relatives claiming rights that had not existed under the ancient house rules. Even worse, rewards traditionally bestowed on successful hired managers turned out to be shares with voting rights. In short, new institutions undermined traditional norms, creating uncertainty around previously clear business dealings.

Hired managers holding shares proved unbearable, and many old families went to great lengths to avoid this situation. Mitsui Bank, founded in 1876, found itself with over 400 manager-shareholders and reorganized in 1893 to buy them all out. Other merchant families also

53. Reischauer, *Japanese Today*, 81–83 explains "With the disappearance of the domains, the samurai lost their position as a hereditary bureaucratic class, and in 1873 universal military conscription was substituted for the old class basis for military service. In 1876 the samurai were even prohibited from wearing their swords, their badge of distinction. Samurai stipends were also drastically reduced and by 1876 were entirely commuted into relatively small lump-sum payments of cash or government bonds. Thus the samurai in a brief nine-year period were deprived of all their privileges, and Japan was started on a great change that was to transform its society in a mere generation or two from one in which status was determined primarily by heredity to one in which it depended largely upon the education and achievements of the individual."

bought back shares from hired managers. These buyouts alienated outsiders by underscoring their inferior status. A few merchant families, notably the Shimomura and Ohmura, financed growth with public equity and lost control to outsiders. Others, therefore, remained unlisted and dependent on internal funds. This curtailed their growth, and explains the eclipse of many Tokugawa merchant dynasties.

Into this void stepped a new generation of entrepreneurs without Tokugawa roots. Yataro Iwasaki (1834–1885) organized Mitsubishi around a state-subsidized shipping monopoly. Mitsubishi probably had a genuine business advantage, for Iwasaki instituted modern accounting before his rivals.[54] But its main advantage was government favors. The government wanted Japan to be a maritime power, and Iwasaki stepped forward to help. From 1875 on, his *Yubin Kisen Mitsubishi Kaisha* shipping company received ¥250,000 annually for carrying government mail. This subsidy protected Mitsubishi from foreign competition. Quickly acquiring thirty-seven seafaring ships, Mitsubishi soon carried most of Japan's foreign trade. More subsidies flowed through the state-owned Nagasaki Shipyard, which lost money repairing and maintaining Mitsubishi ships, probably at cut rates. Iwasaki plowed his rapidly rising earnings into capital investment, and Mitsubishi grew rapidly to rival Mitsui and Sumitomo.

The State's Big Push

Japan's shock therapy aimed to build modern munitions plants, shipyards, and the like. Although Mitsui and Sumitomo embraced new technology for spinning silk or refining copper, and supplemented their trading operations with banking, they remained cool towards totally new industries. This, perhaps, reflected a realistic assessment

54. The government required a double entry bookkeeping account for its annual subsidies, which were of unprecedented size. Yukichi Fukuzawa (1835–1901), the Meiji statesman, educator, author, philosopher, and political theorist who founded Keio Gijuko, later Keio University, introduced Western accounting to public finances. See, Yukichi Fukuzawa, *Chuai no hou* [Methods of Bookkeeping] 1873; and Shinichiro Shimme, ''Introduction of Double-Entry Book Keeping into Japan,'' *Accounting Review* 12 (Sept. 1937): 290–95. Although the Mitsui and Sumitomo also hired Keio graduates, Iwasaki, appreciated modern accounting and enthusiastically implemented it throughout his business operations. His son Hisaya, his manager Heigoro Masuda (1847–1922), and many other Mitsuibishi executives were Fukuzawa students. See, for example, Mitsubishi Public Affairs Committee, *People of Mitsubishi* available at www.mitsubishi.or.jp/e/h/hism.html, 2006.

of their expertise. But building new business plainly required outside capital, and neither family dared risk joining the Shimomura and Ohmura in economic oblivion. And though Mitsubishi grew rapidly, it too lacked expertise outside shipping and related businesses. Government prodding of merchant families to pool capital met determined resistance. The state exhorted many families into jointly capitalizing banks in the 1870s, but interfamilial squabbling paralyzed governance, and each family soon established its own bank. The Mitsui thus abandoned the First National Bank, co-founded with the Ono and other families, to establish Mitsui Bank in 1876. More prodding to pool their capital and develop new industries seemed a poor plan.

Instead, state owned enterprises (SOEs) would build new industries essential to modernization. More SOEs would be needed to provide inputs to the first set, and still more to build railroads and other infrastructure. SOEs materialized in one modern industry after another.[55] This effort was massive. From 1868 to 1885, the Industry, Interior, and Agriculture Ministries' 'special subsidy funds' of 52.9, 4.6, and ¥9.6 million totaled ¥69.3 million for SOE operating deficits, frontier development initiatives, and targeted loans. Adding the ministries' operating costs −15.4, 3.1, and ¥18.1 million, respectively—totals ¥42.4 million, bringing the grand total to ¥111.7 million per year. Separate accounts for new SOEs, an investment capital trust fund, and other programs totaled ¥16.1 million. Finally, prefecture industrial promotion grants totaled ¥1.6 million. All told, subsidies and their administration cost ¥127.83 million from 1868 to 1885. Given Japan's national income—¥397 million in 1878, the first year of data—these sums are huge.[56]

55. The Ministries of Industry (*kobusho*) and the interior (*naimusho*) emerged from a spate of administrative restructuring in the early Meiji era in 1871 and 1873, respectively.

56. The figures here are from Ishizuka (p. 131), Kobunkan (chap. 4), and Umemura and Nakamura (p. 29). Kobayashi, using slightly different years, concurs as to general magnitudes. On National Income, see Kazushi Okhawa, ''Production Structure,'' in *Patterns of Japanese Economic Development: A Quantitative Appraisal*, eds. Kazushi Ohkawa and Miyohei Shinohara with Larry Meissner (New Haven, Conn., 1979), 34–58; Hiromichi Ishizuka, *Nihon shihonshugi seiritsushi kenkyu* [Study of the Development of Japan's Capitalism] (Tokyo, 1973); M. Kobayashi, *Nihon no kogyoka to kangyo haraisage* [Japan's Industrialization and Privatization of Government Enterprises] (Tokyo, 1977); Ohkawa's estimates given in Japan Statistics Research Institute, *Nihon keizai tokei shu* [Japan Economic Statistics Data] (Tokyo, 1958); Mataji Umemura and Takahusa Nakamura, eds., *Matsukara zaisei to shokusan kogyo seisaku* [Matsukata Finance and Industrial Development Policies] (Tokyo, 1983).

The Industry Ministry oversaw mining, railways, civil engineering, telegraphy, navigation, shipbuilding, iron production, and manufacturing, and all SOEs therein. The greater parts of its investment flowed into state-owned railways and mines −47.9 and 31.5 percent, respectively. Lesser amounts financed SOEs in telegraphy (12.3 percent) and manufacturing (8.3 percent). The ministry operated ten large mines directly, and leased the management of others to private contractors. But Japan's only modern colliery, the Takashima mine near Nagasaki, was Dutch-owned, with Japanese partners.[57] This embarrassed the government, and the state bought the Takashima mine for $400,000 in 1874. Many thought this ridiculously generous and accused the government variously of bribing foreigners or bargaining ineptly. Japan needed railroads to transport goods, but also to build Japan's regions into a nation. The ministry thus emphasized linking interior regions to ports. The same nation-building agenda charged the ministry with modernizing Hokkaido, spotting the undeveloped territory with cotton and sugar mills, breweries, creameries, canneries, and other SOEs.

The Interior Ministry oversaw commerce, vital statistics, the post, cartography, surveys, and policing. It had budgets for civil engineering projects and SOEs. Its control over policing and other regional matters brought direct involvement in local economies. Thus, the ministry financed experimental farms, farm factories, and dairy farms—all on small local scales. Its model silk, cotton and other textile, and paper mills, unlike the Industry Ministry's gargantuan SOEs, were not designed to force industrialization; but to introduce new technologies that would eventually substitute domestic goods for imports. Its policies thus foreshadowed twentieth century 'import substitution' theories.[58]

The government also inherited state-owned mines and enterprises the Tokugawa established in their final years. Many went to the military. However, the most important SOEs were established by the state anew. These include large ventures in chemicals, machinery, mining, printing, railways, shipbuilding, telegraphy, and textiles. Telegraphy and lighthouses ultimately fell to the Communications Ministry. The railways ultimately ended up directly run by the Cabinet. The navy and army controlled munitions and related enterprises. For example,

57. The Dutch merchant, T. B. Glover, held a controlling interest.

58. See, for example, Kobayashi, *Nihon no kogyoka to kangyo haraisage* on the Interior Ministry, and Raul Prebisch, *The Economic Development of Latin America* (New York, 1950) on import substitution.

the navy ran Yokosuka Iron and Steel, Yokohama Iron and Steel, Uraga Shipbuilding, and Ishikawajima Shipbuilding.[59]

Government Failure

To finance its big push, the government seized control of all taxation, abolishing the feudal rice tax and requiring payment in coin from 1873 on. From 1871 through 1875, the government's primary balance (tax revenues less ordinary expenditures excluding interest) remained marginally positive. But there was not sufficient state revenue to finance thoroughgoing modernization. The state, therefore, borrowed.[60] Its first bond issue raised £ 1 million at 9 percent in London in 1870 to finance railways, with duties and future railway profits as collateral. A second London issue in 1873 raised a further £2.4 million at 7 percent due in 30 years for warlords and *samurai* pensions. These were abruptly terminated in August 1876, freeing up the funds.[61] This issue was collateralized by general revenues plus up to 400,000 tons of rice, worth about $16 million, slightly more than the annual interest. In total, these two issues netted ¥16 million.

Japan issued no more foreign debt until the Sino–Japanese War. But the government now appreciated the advantages of debt markets over the private (and secret) debts the Tokugawa incurred from merchants. From 1872 to 1883, a succession of domestic debt issues raised ¥292 million—a huge amount.[62] The fiscal situation deteriorated sharply in 1877, when suppressing the Seinan Uprising—Japan's last feudal rebellion—cost ¥41.57 million, roughly 70 percent of the previous year's budget. The government managed the immediate crisis

59. These weapon factories and some other SOEs were transferred from the Tokugawa state.

60. For further information about Japanese sovereign debt in London during this era, see Toshito Suzuki, *Japanese Government Loan Issues on the London Capital Market, 1870–1913* (London, 1994); and Nathan Sussman and Yishay Yafeh, ''Institutions, Reforms, and Country Risk: Lessons from Japanese Government Debt in the Meiji Period,'' *Journal of Economic History* 60 (June 2000): 442–67.

61. These cost ¥17.67 million annually—a third to half the normal budget, and benefited about 1 percent of the population, 467 lords and about 320,000 *samurai*. In lieu, the state granted them 30-year bonds, so it netted (allowances less interest) only ¥6 million annually. Subsequent inflation greatly eroded the real value of the obligation.

62. Domestic bond issues raised ¥23 million in 1872, ¥22 million in a sequenced issue from 1873 through 1875, ¥17 million in 1874, ¥174 million in 1876, ¥12 million in 1878, and ¥44 million in a sequenced issue from 1880 through 1883. For comparison, the national budget for 1876 was about ¥60 million.

by borrowing ¥15 million and printing ¥27 million in inconvertible paper currency.[63] The influx of new money fuelled inflation, which induced the national banks to quicken their presses. Japan was now in an unsustainable inflationary spiral. The Finance Minister, Masayoshi Matsukata, resolved to confront the crisis with a dual reform. His monetary reform unified the currency. Previously, only coinage was official, and private national banks issued banknotes in currencies of their choice. Matsukata created the Bank of Japan in 1886 to issue one official currency, the yen, backed by silver.[64]

Matsukata's fiscal reform was a general belt tightening, slashing subsidies and raising money by privatizing SOEs *en masse*. Matsukata's predecessor, Shigenobu Okuma, had been fired amid a political struggle after proposing a mass privatization in 1880.[65] Economic liberalism was inescapable, however. Subsidies slowly fell for many SOEs, but continued for maritime shipping, railways, and silk. But resistance faded as fiscal crisis loomed, and ending all subsidies soon seemed imperative.

Matsukata initially merely slashed SOE subsidies and shelved plans for new SOEs. This hardened SOE budget constraints and improved governance.[66] From mid-1878 on, each SOE provided detailed income statements and balance sheets. Modern accounting made SOE managers' budgetary excesses visible to their superiors.[67] This undercut lobbying for expanded subsidies. SOE balance sheets also gave politicians a look at book values, reflecting past subsidies to

63. In the late 1860s and 1870s, government paper currency was not convertible to gold. The *dajokansatsu*, introduced in 1868, was the first government paper currency usable throughout Japan. A legal reform let numbered national banks, modeled on U.S. national banks, issue paper money in their own currencies.

64. Japan switched from silver to the gold standard in 1897.

65. M. Harada, *Nihonno kindaikato keizai seisaku* [Japan's Modernization and Economic Policies] (Tokyo, 1972).

66. On government failures associated with SOEs, see Andrei Shleifer and Robert Vishny, ''Politicians and Firms,'' *Quarterly Journal of Economics* 109, no. 4 (1994): 995–1025. Matsukata's reforms are described in detail by Garrett Droppers, ''Monetary Changes in Japan,'' *Quarterly Journal of Economics* 12, no. 2 (1898): 153–85; Ministry of Finance, *Meiji zaiseishi* [History of Public Finance in the Meiji period] 14 vols. (Tokyo, 1904–05); and Yoshimasa Muroyama, ''Matsukata deflation no mechanism'' [Mechanisms of the Matsukata deflation], in *Matsukata zaiseito shokusan kogyo seisaku* [Matsukata Finance and Industrial Development Policies], eds. Matatsugu Umemura and Takahusa Nakamura (Tokyo, 1983), 127–55.

67. See Andrei Shleifer and Robert Vishny, *Grabbing Hand* for a general discussion of the importance of transparency in limiting lobbying; and Andrei Shleifer and Daniel Treisman, *Without a Map: Political Tactics and Economic Reform in Russia* (Cambridge, Mass., 1999) for a discussion of these issues in Russian reformers' strategies.

each company. These were substantial, and the prospect of recovering these amounts through privatizations seemed increasingly attractive. Dissenting voices claimed that SOEs were intended to pull the whole economy towards comprehensive modernization, with gains in some offsetting losses in others.[68] Some of this was likely disingenuous, for at least some sectors should have posted gains. But the crisis made SOEs justify benefits against realistic cost assessments, including opportunity costs recoverable via privatizations.

A few SOEs escaped the mass privatization—military suppliers, mints, government printing, railways, postal services, and telegraphs. But military suppliers judged obsolete or unimportant were privatized, and private railways and military suppliers displaced SOEs as subsidies ended and SOEs sold off plant and equipment. With few exceptions, SOEs were on the block. The state privatized twenty-six large SOEs by 1896.

Under escalating fiscal pressure, and reluctantly conceding that most SOEs were not worth their gross book values, they offered profitable state-owned mines to the highest bidder. The model was the Takashima mine, nationalized in 1874, then sold to its manager, the merchant and Meiji politician Shojiro Goto, in 1875. Goto financed the deal, essentially a management buy-out (MBO), with debt, including a loan from the British firm Jardine, Matheson.[69] Production rose, but earnings struggled to cover hefty interest costs. Still, the government paid $400,000 to nationalize the mine and got ¥550,000 privatizing it less than a year later, netting ¥190,000 at prevailing exchange rates.[70] Repeating this with other SOEs promised fiscal salvation.

Still, at first, Japan's major private mining business remained aloof to the offer to purchase government mines. The Sumitomo ran the Besshi copper mines for the Tokugawa, and the Meiji government confiscated these as state property in 1868. Soon realizing they needed Sumitomo expertise to operate the mines, the government reversed itself a month later. But Sumitomo's general manager, Saihei Hirose, distrusted the government and bid for no SOEs in this or subsequent privatization rounds. In contrast, Mitsui bid enthusiastically in every major privatization round. Its major purchases were the Shinmachi

68. Murphy, Shleifer, and Vishny, ''Industrialization and the Big Push,'' 1003–26.

69. See John McMaster, ''The Takashima Mine: British Capital and Japanese Industrialization,'' *Business History Review* 37 (Autumn, 1963): 217–39 regarding Jardine, Matheson's role in management.

70. An average market exchange rate for 1871–1873 was £1.00 = ¥4.5 *yen* = $5.00; or $1.00 = ¥0.90; see Kunitake Kume, ed., *Beio kairan jikki* [Real Experience of America and Europe] (Tokyo, 1996).

and Tomioka silk textiles mills, bought in 1887 and 1893, respectively. The Iwasaki too entered the fray. Shojiro Goto was struggling to keep Japan's first privatized SOE, the Takashima mine, out of bankruptcy. Yataro Iwasaki once worked under Goto, but showed no interest until an elaborate sales contract was drafted in 1881 by the Meiji statesman Yukichi Fukuzawa.[71] The contract imposed strict financial conditions on the departing Goto, but gave Mitsubishi clear title after a one-time payment terminating the mine's debts.[72] Mitsubishi paid ¥859, 636.45: ¥259, 636.45 to the state and ¥600,000 to Takashima's creditors. Iwasaki saw the mine's remaining reserves and salvage value as marginal, but apparently sought political capital by rescuing Goto.[73] Mitsubishi acquired twenty more coal mines from 1884 through 1911. Eleven were large-scale operations that compensated for Takashima's falling output.

The expertise developed at Takashima proved invaluable, for coal was essential to Japan's rising chemical and heavy industries, positioning Mitsubishi well to retain its 'national champion' status and attendant political influence. But, perhaps unsurprisingly, being a 'national champion' ultimately became a liability. By the late 1870s, rival politicians took to attacking Mitsubishi for manipulating shipping and passenger fares. After two major Mitsubishi supporters, Toshimichi Okubo and Shigenobu Okuma, retired, more politicians attacked Mitsubishi for redirecting shipping subsidies to other businesses.[74]

In 1882, the government ordered Mitsubishi to restrict itself to shipping or forego further subsidies. Sensing an opportunity, the Mitsui had organized a maritime shipping firm, Kyodo Unyu Kaisha, with military personnel as CEO and vice-CEO. Generous subsidies let Kyodo Unyu cut sharply into Mitsubishi's shipping revenues, which fell from ¥4.6 million in 1881 to only ¥2.3 million by 1883. Kyodo Unyu had 29 ships with a 28,010 ton total capacity by 1881, rivaling

71. Yukichi Fukuzawa (1835–1901) was a highly regarded Meiji leader—an educator, author, and political theorist.

72. See Kobayashi, *Nihon no kogyoka to kangyo haraisage*.

73. Iwaskaki calculated that the mine contained 1,500,000 tons, implying eight more years of operation and earnings of ¥1,125,750. This fell short of his estimate of mine's accumulated debt at that time by ¥128,250, but his estimate of the mine's salvage value in eight years was ¥200,000. His reserves estimate was excessively conservative, for the mine continued producing until 1986.

74. Pyramidal group controlling families often have complex relationship with governments; see Khanna and Yafeh, ''Business Groups in Emerging Markets: Paragons or Parasites?''

Mitsubishi's 29 ships and 36,599 ton capacity.[75] Iwaskai and the Mitsui appreciated the merits of cooperation, and merged their shipping lines in 1885 to form Nippon Yusen Kaisha, renamed Nippon Yusen Kabushiki Kaisha (NYK).[76] The merger also let Mitsubishi remain in mining and diversify further.

Mitsubishi developed ship maintenance, shipbuilding, and iron production in Yokohama, its primary port. These facilities were gargantuan, with 1882 sales revenue of ¥187,338, assets of ¥119, 986, and over a hundred thousand employees.[77] In 1887, Mitsubishi bought another major SOE, Nagasaki Shipyards, which it operated at the government's request since 1884. Citing the increasingly vociferous political attacks on Mitsubishi, Kobayashi suggests the lease and subsequent purchase of the money-losing Nagasaki Shipyard were forced upon Mitsubishi to weaken the Iwasaki.[78] If so, they quickly turned the tables, massively expanding and modernizing the shipyard and restaffing it with graduates of Japan's new engineering universities and others with modern training. Mitsubishi transformed the money-losing SOE into Japan's premier ship building facility. By 1895, Nagasaki Shipyard was the undisputed industry leader, having built Japan's first government-standard rank 1,392-ton ocean liner, the Suma.

The Meiji mass privatization was one of the world's first, and foreshadowed later initiatives in Eastern Europe.[79] Table 1 provides details of the Meiji mass privatization, listing the most important

75. Kobayashi, *Nihon no kogyoka to kangyo haraisage*.

76. NYK was the first joint stock company registered under the 1893 Revised Commercial Code, which endowed listed companies with many standard features, including limited liability. H. Mito, N. Katsube, and H. Ikeuchi, *Corporations* (in Japanese) (Tokyo, 1999); and S. Tomooka, *What is a Stock Company?* (in Japanese) (Tokyo, 1998).

77. Kobayashi, *Nihon no kogyoka to kangyo haraisage*.

78. Contemporary rumors of Naval Ministry takeover or a lease to Kyodo Unyu, the former Mitsubishi shipping's main competitor, proved false. Other rumors viewed the initial lease as a plot to weaken Mitsubishi by ex-*samurai* bureaucrats. Mitsubishi survived fierce competition from Kyodo Unyu, which struggled and failed to pay any dividends. Forcing the money-losing shipyard on Mitsubishi would allegedly weaken it while helping the state and Kyodo Unyu. Kobayashi, *Nihon no kogyoka to kangyo haraisage*.

79. Olivier Blanchard, *et al., Post-communist Reform: Pain and Progress* (Cambridge, Mass., 1993); and for the former Soviet Union, see Maxim Boycko, Andrei Shleifer, and Robert Vishny, *Privatizing Russia* (Cambridge, Mass., 1995).

Table 1 The Meiji Mass Privatization Program: Details of Important State-Owned Enterprises Privatized between 1874 and 1896

Sale date	State-owned enterprise	Book value (Dec. 1885)	Est. value (June 1885)	Sale price	Initial buyer	Subsequent buyer, sale date	Current status (successor firm)
Nov. 1874	Takashima Coal Mine	¥393,848[a]	—	¥550,000	Shojiro Goto	Mitsubishi, 1881	Closed, 1986. (Mitsubishi Material)
Phase I privatization							
June 1882	Hiroshima Cotton Spinning	54,205[b]	—	12,570	Hiroshima Menshi Boseki Co.	Kaizuka Boseki, 1902	—
Jan. 1883	Aburato Coal Mine	48,608	17,192	27,943	Nariteru Shirase	Mitsubishi, 1896[c]	Closed, 1956 (Mitsubishi Material)
Phase II privatization							
July 1884	Nakakosaka Iron Ore	85,507	24,300	28,575	Yahachi Sakamoto, others	—	Closed
July 1884	Cement Manufacturing & Fukagawa Shirorengaishi	101,559 (combined)	67,965 (combined)	61,741 12,121	Soichiro Asano Katsuzo Nichimura	Nihon Cement Shinagawa Shirorenga	Closed (Taiheiyo Cement)
Oct. 1884	Nashimotomura Shirorengaishi	—	—	101	Raizo Inaba	—	—
Aug. 1884	Kosaka Silver Mine	547,476	192,000	273,659	Shosaburo Kuhara	—	(Dowa Kogyo)
Dec. 1884	Innai Silver Mine	703,093	72,993	108,977	Ichibei Furukawa	Furukawa Kogyo	Closed, 1953 (Furukawa Kogyo)
Mar. 1885	Ani Copper Mine	1,673,211	240,772	337,766	Ichibei Furukawa	Furukawa Kogyo	Ani Kozan, 1973
May 1885	Shinagawa Glass	294,168	66,305	79,950	Katsuzo Nishimura, Eiichi Isobe	—	Closed, 1892
June 1885	Daikatsu Makiyama Gold Mine	149,546	98,902	117,142	Sen Abe	Mitsubishi, 1888	Okosawa Kozan, 1972
Nov. 1886	Aichi Cotton Spinning	58,000	?	?	Naoto Shinoda	—	Burned down, 1896
Dec. 1886	Sapporo Brewery	?	?	27,672	Kihachiro Okura	Sapporo Beer, 1887	Sapporo Beer
May 1887	Shinmachi Textile (Silk)	138,984	?	141,000[c]	Mitsui	Yasushi Asaba, Kanebo, 1911	Kanebo Co.
June 1887	Nagasaki Shipbuilding	1,130,949	459,000	459,000	Mitsubishi	Mitsubishi Heavy Ind.	Mitsubishi Heavy Ind.

July 1887	Hyogo Shipbuilding	816,139	320,196	188,029	Shozo Kawasaki	Kawasaki Heavy Ind.	Kawasaki Heavy Ind.
Dec. 1887	Kamaishi Iron Ore	2,376,625	733,122	12,600	Chobei Tanaka	Kamaishi Kozan, 1924	Nippon Steel
Jan. 1888	Mita Agricultural Tools Mfg.	?	?	33,795	Shun Koyasu	Tokyo Kikai Mfg.	Tokyo Kikai Mfg.
Mar. 1888	Banshu Vineyard	8,000[d]	?	5,477	Shomei Maeda	—	—
Phase III privatization							
Aug. 1888	Miike Coal Mine	757,060	448,549	4,590,439	Hachiro Sasaki	Mitsui, 1889	Mitsui Coal, closed, 1997
Nov. 1889	Hornai Coal Mine & Railway	2,291,500[e]	—	352,318	Hokkaido Tanko Tetsudo	Mitsui, 1889	Hokkaido Tanko Kisen, closed, 1989
Mar. 1890	Monbetsu Sugar Beets	258,492[f]	—	994	Kuninari Date	Sapporo Seito, 1895	Closed, 1896
Sept. 1893	Tomioka Textiles (Silk)	310,000[g]	105,000[h]	121,460	Mitsui	Katakura Kogyo, 1939	Closed, 1987
Sept. 1896	Sado Gold Mine	1,419,244	445,250	1,600,000[i]	Mitsubishi	Mitsubishi Materials	Closed, 1973
Sept. 1896	Ikuno Silver Mine	1,760,866	966,752				

[a] Nov. 1874.
[b] June 1882.
[c] ¥72,000 for factory; ¥69,000 for intangibles.
[d] March 1888.
[e] Nov. 1889.
[f] Mar. 1890.
[g] Sept. 1893.
[h] ¥25,000 for the factory plus ¥80,000 for contracted raw silk-worms.
[i] Mitsubishi acquired Sado and Ikuno in a package deal worth ¥2,560,926, which also included Osaka Metal Smelting and the Aburato Coal Mine.
Source: M. Kobayashi, *Nihon no kogyoka to kangyo haraisage* [Japan's Industrialization and Privatization of Government Enterprises] (Tokyo, 1977), Table 5–1

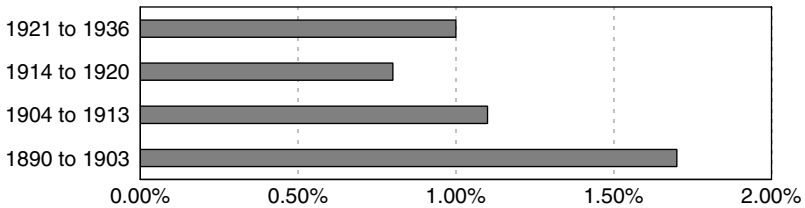

Figure 1 Business Subsidies, 1890–1936. Average government subventions to business as fractions of average total government spending.
Source: Hideaki Miyajima, *Economic History of Industrial Policy and Corporate Governance: Micro Analysis of Japanese Economic Development* (in Japanese) (Tokyo, 2004).

SOEs divested, details of the transactions, and both the immediate and ultimate buyers.

For the most part, the Meiji government kept its hand out of the economy in subsequent decades.[80] Japan established only one new state-owned enterprise—Yawata Steel—in 1901, and figure 1 shows subsidies to business remaining small until World War II blurred the lines between the military and industry. This fiscal probity let Japan return to bond markets when necessary to sustain government spending and refinance old debts. The government raised ¥45 million from 1884 through 1889, and floated a ¥175 million sequenced issue from 1886 through 1897.

Zaibatsu Big Pushes

The Mitsui, Mitsubishi, and other wealthy families, despite ongoing earnings from traditional businesses, lacked capital to buy more than a few SOEs. This handful whet their appetites for profitable opportunities further afield, but seizing them would require pooling capital with outsiders, risking the dishonor of the Shimomura and Ohmura. Fortunately, a solution presented itself—the 'pyramidal business group.' This structure, apparently devised earlier in the nineteenth century by British trading firms, let a wealthy family (or

80. Hidemasa Morikawa, *Zaibatsu: The Rise and Fall of Family Enterprise Groups in Japan* (Tokyo, 1992), 57 writes: ''During the first twenty years of Meiji rule, the government had intervened to support industrialization in the private sector by encouraging the spread of the company system and the accumulation of capital by entrepreneurs. By the 1890s, however, the state had cut back on its direct role in the economy, giving way to private corporations.''

individual) use public investors' money to control corporate assets worth vastly more than its own wealth.[81] By the late nineteenth century, pyramids existed in the United States, Canada, Europe, and elsewhere. By the 1920s, they were a preferred structure for big businesses throughout the world.[82]

The Japanese variant of the pyramidal business group is called a *zaibatsu*.[83] As elsewhere, *zaibatsu* were multitiered structures with a lead business at the apex, as figure 2 illustrates. The apex firm holds equity control blocks in a first tier of listed companies. Each of these, in turn, holds control blocks in a second tier of listed firms. Each of these, in turn, holds control blocks of yet other listed firms. In each tier, public investors own all remaining shares in each firm.

Pyramids have several advantages.[84] By controlling the apex firm, a wealthy family control can control an almost limitless number of other firms. The apex firm controls 51 percent of the votes in every first tier firm, and so appoints whomsoever it pleases, usually family members, to their boards. These firms control 51 percent of each second tier firm, so the latter's boards are appointed by the boards of the former, who are appointed by the family. In this manner, the family controls every firm in the pyramidal group. The apex firm's controlling shareholder needs invest only a modest amount of his own money, because the pyramidal business group is mainly financed by public investors. The listed firms in the first tier are 49 percent financed by outside shareholders. Those in the second are 49 percent directly financed by outside shareholders and 51 percent financed by first tier firms, which are also 49 percent financed by outside shareholders. The net result is that second tier firms are

81. On the early British trading groups, see Geoffrey Jones, *Merchants to Multinationals: British Trading Companies in the Nineteenth and Twentieth Centuries* (New York, 2000); on the magnification of wealth, see Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722.

82. Randall Morck, *History of Corporate Governance around the World*.

83. We define *zaibatsu* to include any large pyramidal group with listed firms controlling other listed firms. This distances the term from issues of origin, control, monopoly power, and land rents; which some Japanese scholars hold as definitional. It also distinguishes the pyramidal *zaibatsu* from the horizontal *keiretsu* business groups of postwar Japan, which lack apex firms and pyramidal structures. Literally *zaibatsu* means 'wealthy group.' Japanese economic and business historians debate the precise definition of a *zaibatsu*. The literature generally dates *zaibatsu* to the period after World War I, while the Mitsui, Sumitomo, and Mitsubishi pyramidal groups predate that era by many decades and are the models for subsequent *zaibatsu*. Yasuoka, *Nihonno Zaibatsu*.

84. For further details regarding each advantage, see Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722.

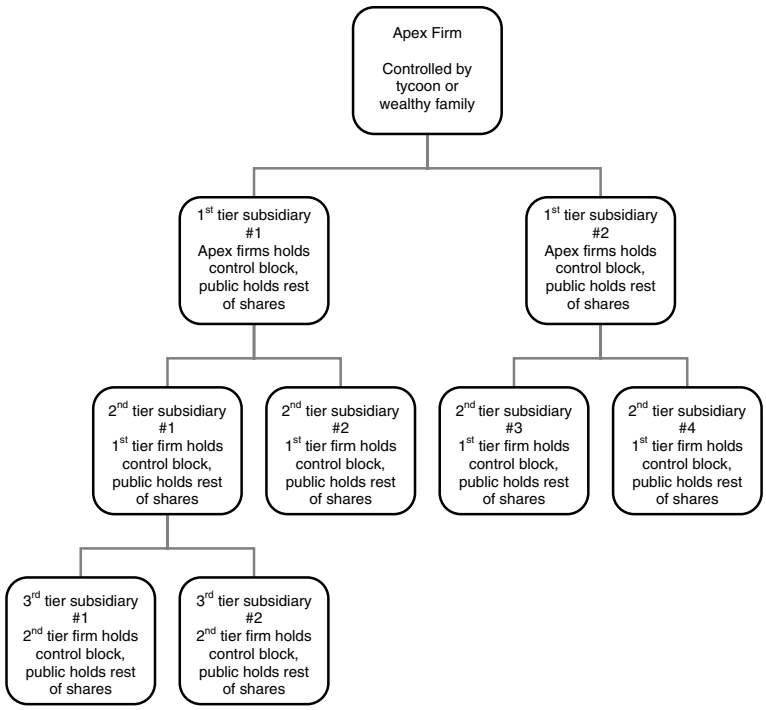

Figure 2 Archetypal Pyramidal Business Group. An apex firm holds control blocks in a first tier of listed firms, each of which holds control blocks in other listed firms, each of which holds control blocks in yet more listed firms. A pyramidal structure of this sort can leverage family wealth sufficient to control one firm into effectively unconstrained control over an arbitrarily large constellation of firms worth vastly more.
Source: Randall Morck, David A. Stangeland, and Bernard Yeung, ''Inherited Wealth, Corporate Control, and Economic Growth: The Canadian Disease,'' in *Concentrated Corporate Ownership*, ed. Randall Morck (Chicago, 2000), 319–69.

74 percent financed by outside shareholders. Firms in the third tier are 85.25 percent financed by outside shareholders, and those in the fourth tier are 92.25 percent financed by outside shareholders. Lower tier firms are successively more thoroughly financed by public shareholders.[85] Despite this, every firm is still controlled by the

85. Continuing this example, listed firms in the nth tier are $1—\alpha^n$ financed by external shareholders, where α, the intercorporate control stake, is 51 percent in this example. A 51 percent stake is often unnecessary for effective control if most shareholders fail to vote, the control stake shares have multiple votes, or debt and nonvoting preferred shares are added to the mix. Cross-holdings—shares held by firms not in the level immediately above, but elsewhere in the pyramid—further

apex firm's controlling shareholder. Berle and Means stress this stark separation of ownership from control in pyramids, and argue that it induces seriously suboptimal management.[86]

Pyramids also magnify the political and economic clout of the controlling shareholder.[87] Wealthy families controlled most *zaibatsu*. A few, like the Nissan *zaibatsu* had widely held apex firms. But Aikawa and his family controlled Nissan's board, so here too pyramiding magnified a family's power. Existing firms' earnings can finance control blocks in new firms. The controlling shareholder needs no additional funds to control new firms created in existing or new lower tiers of the group.[88] Through the pyramid structure the family is also protected from lawsuits. Each firm is separately incorporated and listed. Each has distinct shareholders. And multiple layers of limited liability shield the controlling shareholder from legal problems afflicting lower tier firms.

In most ways, *zaibatsu* resembled pyramidal groups in other countries, and Japanese academics call pyramidal groups elsewhere *zaibatsu*. However, some peculiarities merit note. Most *zaibatsu* owned land and mines, either initially (Sumitomo) or after the mass privatizations (Mitsui and Mitsubishi). Mines were cash cows that financed control stakes in new subsidiaries. Also, *zaibatsu* had *sogo-shosha*, or general trading companies. Through these, *zaibatsu* bought and sold all goods, gleaning market information to guide entry into new industries. *Sogo-shosha* also served as *de facto* banks, with trade credit replacing loans, helping *zaibatsu* avoid debt.

These characteristics combined to facilitate big push growth in Japan after privatization. With one controlling shareholder controlling all group firms, it was possible to make customers and suppliers grow in tandem. *Zaibatsu* also had the ability to move money between firms as needed. In this way, they allocated national savings, which they tapped by financing their subsidiaries with public shares. But they could also use the retained earnings of their firms to finance ventures into new industries. The controlling shareholder had an interest in the profitability of the entire group, and by extension in

complicate the arithmetic in real pyramidal groups. See Bebchuk, Kraakman, and Triantis, ''Stock Pyramids, Cross Ownership and Dual Class Equity.''

86. Berle and Means, *Modern Corporation and Private Property*.

87. Morck, *History of Corporate Governance around the World*; and Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722 discuss this immense political influence in many countries, both historically and presently.

88. Heiter Almeida and Daniel Wolfenzon, ''A Theory of Pyramidal Ownership and Family Business Groups,'' *Journal of Finance* 61 (Dec. 2006): 2637–81.

laws and regulations that benefited the economy overall. Thus, for purely private reasons, Japan's *zaibatsu* took over direction of Japan's big push. No government mandate was needed. Each *zaibatsu*, quite likely acting alone and for profit, thus did precisely what Rosenstein-Rodan asked of the State.[89]

The Mitsui constructed Japan's first *zaibatsu*. Whether they devised pyramiding independently or imitated foreign pyramids, is unclear. The group began in 1876 when Mitsui Bank, then the family council's control center, divested Mitsui Bussan. Since the bank's owners bore unlimited liability, it avoided risky high return ventures. These Mitsui Bussan undertook. To protect the bank, Takenosuke and Yonosuke Mitsui, representing two major Mitsui clans, legally renounced their birthrights and were formally cast out by the family. Takenosuke and Yonosuke assumed ownership of Mitsui Bussan, which funneled Mitsui money into various risky ventures, including maritime shipping. This limited the family's downside risk, absent formal limited liability. A contract specified Mitsui Bank's limited liability for Mitsui Bussan obligations, obligations of each to the family should the other fail, salaries Mitsui Bank paid Takenosuke and Yonosuke, and that Mitsui Bank controlled Mitsui Bussan.

This finely crafted document let Mitsui Bussan take risks intolerable to other families, and earn sizable commissions shipping coal from the state-owned Miike mine to politically volatile China, gaining political capital by fattening state coffers. The Mitsui repeated this separation of ownership from control wherever a business grew risky. Thus, when Japanese clothing sales flagged in 1873, the silk clothing store was transferred to the newly created Mitsukoshi, owned by distant relatives. Again, a contract established Mitsui Bank's control over Mitsukoshi and limited the bank's liability. In each case, one Mitsui firm controlled another without owning it. Thus, some date the formation of the Mitsui zaibatsu to 1876.[90] The Sumitomo followed

89. Rosenstein-Rodan, ''Problems of Industrialization of Eastern and South Eastern Europe.'' We find no evidence that the State directed the *zaibatsu*-led big push, that they coordinated it with each other, or indeed that they coordinated production in any way. The Revised Commercial Code of 1890 allowed cartel contracts between producers, but also let firms freely exempt themselves and freely withdraw. After the Russo–Japanese War, cartels were organized in a few industries, including sugar and oil. But most Japanese economic historians see industrial organization as competitive until the late 1920s. In fact there is evidence that firms with large shareholders, such as Sumitomo *zaibatsu* firms, avoided cartel contracts. On all these points, see Miyajima, *Economic History of Industrial Policy and Corporate Governance*, 49–50, and references therein.

90. Shigeaki Yasuoka, *Mitsui Zaibatsu* (in Japanese) (Tokyo, 1982), 90.

suit with similar structures shielding family wealth from downside risk.

After much trial and error, civil and commercial codes were announced in 1880, though implemented much later. These formalized limited liability, rendering controlled subsidiaries unnecessary. Yonosuke and Takenosuke Mitsui quickly revised their birth certificates to restore their Mitsui lineage, and Mitsui Bank assumed ownership of Mitsui Bussan and Mitsukoshi. But Japanese controlling shareholders were now used to separating their businesses into distinct companies.

By the late 1890s, after several additional legal reforms, the Mitsui group began to tap public equity. Although most Mitsui businesses remained unlisted, the Mitsui Partnership, the group's apex firm, through the Mitsui Bank, held control blocks in Oji Paper and Kanegafuchi Boseki (Kanebo) Textiles, with public shareholders owning the remaining shares.[91] Mitsui mines were cash cows, producing earnings the family council could redirect into other companies as they diversified from silk business into banking, which provided financial services to their customers and suppliers; electrical equipment, which their modernized mills required; and then other more diverse industries that became relevant as Japan's growth accelerated. This succession reflects precisely the industry complementaries envisioned in the big push.[92]

This developing pyramidal structure let Mitsui organize new joint stock companies to expand into additional lines of business from the late 1890s through the early 1920s. Soon, most Mitsui firms were listed, for promising investments outpaced the family's wealth, necessitating public equity issues. But all firms in the group remained under Mitsui Partnership control, directly or indirectly. The family's actual ownership, though, varied. Figure 3 depicts the *zaibatsu* in 1914.

Mitsui Partnership retained full ownership of three of the four first tier firms through 1921, but reduced its stake in the rapidly growing Mitsui Bank from 100 to 67.2 percent, even as the book value of its holdings rose from ¥20 million to almost ¥43.6 million. The expansion is thus predominantly financed with public shares. Figure 3 groups remaining firms into *affiliates*, second tier firms, and

91. The Mitsui Council functioned as a holding company, with various committees and departments but was not a corporation and therefore could not own property. Actual operating businesses were owned directly by the family from 1898 to 1909.

92. Murphy, Shleifer, and Vishny, ''Industrialization and the Big Push,'' 1003–26.

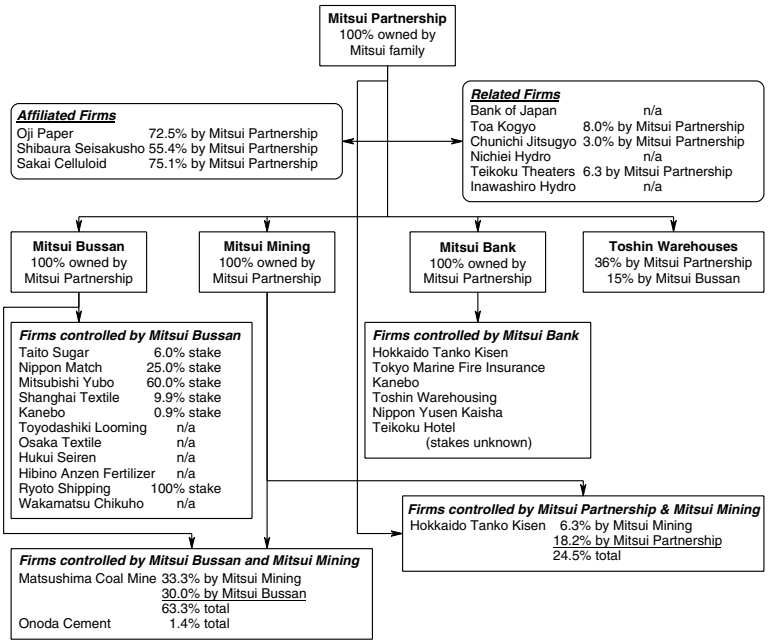

Figure 3 The Mitsui Pyramidal Group, 1914. Controlling corporate shareholder's control stake is indicated where available. In some cases, control is clear but the precise size of the control block is unknown. Related firms were likely influenced, but were not unambiguously controlled, by the Mitsui Partnership.
Source: Constructed using data Shigeaki Yasuoka, *Mitsui Zaibatsu* (in Japanese) (Tokyo, 1982), 222–23, originally gathered from the Mitsui Archive.

related firms, located in lower tiers. Again, substantial public equity infusions erode the family's percentage stakes even as their value rises. Thus, the book value of family holdings in Oji Paper rose from ¥4.35 million in 1914 to ¥5.23 million in 1921, while its ownership stake dropped from 72.5 to 31.6 percent.

The increasingly complex pyramidal structure let the Mitsui reposition firms to their advantage. Hidemasa Morikawa argues that higher tier firms attracted greater family 'concern,' and hence, posted higher profitability and lower risk.[93] But key firms in low levels belie this claim. Mitsukoshi, heir to the ancestral silk business, moved to a low tier after its 1904 transformation into a department store chain. Oji Paper and Kanebo, firms of national prominence, also placed in

93. Hidemasa Morikawa, *Zaibatsuno keieishiteki kenkyu* [Business History Research of Zaibatsu] (Tokyo, 1980), 46–57.

low tiers, as did Shibura Engineering Works, which merged with Tokyo Electric to form Tokyo Shibura (Toshiba) Electric in 1939.[94] General Electric confirmed Shibura's importance when it bought a 25–30 percent stake in 1904 for technology licensing.

It seems plausible that firms were positioned to maximize the family's returns, while minimizing its risk. Putting highly profitable low-risk firms in the top tier accomplished this. Korean pyramidal group restructurings in the late twentieth century traded control blocks at prices favorable to controlling families, so changes in *zaibatsu* structures might be similarly motivated.[95] However, firms might also be repositioned to facilitate tunneling—to facilitate big push growth, to concentrate net profits in firms owned directly by the family, or both. This too is consistent with superior performance of firms higher in the pyramid, and the location of many clearly important firms in lower tiers.[96]

Records attest that Mitsui Partnership carefully considered which firms to place where, and what stake each should hold in others. As the *zaibatsu* grew more complex from 1912 to 1930, lower tiers were periodically restructured, but the upper tier changed little. Mitsui Bank, Mitsui Bussan, Mitsui Mining, and Toshin

94. Morikawa, *Zaibatsuno keieishiteki kenkyu*, proposes some Mitsui managers and partners recognized the importance of Shibaura's operations without understanding them. The Mitsui considered divesting Shibaura in 1902, but opposition from Mitsui Mining and others forestalled this. Shibaura went public as a Mitsui company in 1904.

95. Kee-Hong Bae, Jun-Koo Kang and Jin-Mo Kim, ''Tunnelling or Value Added? Evidence from Mergers by Korean Business Groups,'' *Journal of Finance* 57, no. 6 (2002): 2695–2741.

96. On tunneling, see, for example, Stijn Claessens, Simeon Djankov, and Larry Lang, ''The Separation of Ownership and Control in East Asian Corporations,'' *Journal of Financial Economics* 58, no. 1–2 (2000): 81–112; Stjin Claessens, Simeon Djankov, Joseph Fan, and Larry Lang, ''Expropriation of Minority Shareholders in East Asia,'' *Journal of Finance* 57 (Dec. 2002): 2741–71; Mara Faccio and Larry H. P. Lang, ''The Separation of Ownership and Control: An Analysis of Ultimate Ownership in Western European Countries,'' *Journal of Financial Economics* 65, no. 3 (2003): 365–95; Bertrand, Mehra, and Mullainathan, ''Ferreting Out Tunneling,'' 121–48; and Simon Johnson, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, ''Tunneling,'' *American Economic Review* 90, no. 2 (May 2000): 22–27. Recent work suggests that tunneling is more common in countries whose minority shareholders are poorly protected, like Japan in this era. Even in the 1990s, La Porta, et al., ''Trust in Large Organizations,'' 333–38, assign Japan one out of six in an international comparison of shareholder rights. Michael Porter, *The Competitive Advantage of Nations* (New York, 1990) argues that weak shareholder rights advantaged Japanese companies by freeing their managers from myopic shareholders; but Randall Morck and Masao Nakamura, ''Banks and Corporate Control in Japan,'' *Journal of Finance* 54 (Feb. 1999): 319–39 dispute this.

Warehousing remained Mitsui Partnership direct subsidiaries.[97] The only significant change added Mitsui Life Insurance and Mitsui Trust Bank to the first tier after 1912.[98]

Mitsui's intensive diversification began with Mitsui Mining's entry into chemicals in the early 1910s. The Mitsui textiles business needed dyes, and a Mitsui chemicals firm grew apace with the textiles operation. Mitsui Bussan founded a shipbuilding firm in 1917 to complement its export business, bought a steel mill in 1924 to supply its shipbuilding and electrical equipment operations, and established Toyo Rayon to enter artificial fibers. This coordinated diversification wave occurred exclusively through new subsidiaries of Mitsui Mining, Mitsui Bank, and Mitsui Bussan, or new subsidiaries of subsidiaries.

The growth of the Mitsui *zaibatsu* seems consistent with a privately orchestrated big push enabled by the increasingly active public equity markets. The state declared many of these industries priorities, but subsidies were now checked by legislators' reluctance to undermine public finances again. Instead, the Mitsui turned to equity markets. Statutes precisely defining the nature of the business corporation and the rights and liabilities of its shareholders made stocks and bonds viable ways for people to save. The Mitsui responded to each such legal reform with more shares, increasingly using public equity issues to expand existing firms or to enter new industries.[99] By 1909, most Mitsui subsidiaries were listed. Older upper tier subsidiaries—Mitsui Bank, Mitsui Bussan, or Mitsui Mining—typically controlled newer high-growth companies, which drew on public equity (and some debt). Thus, earnings from Mitsui Mining and Mitsui Bussan helped capitalize high-growth subsidiaries in chemicals, machinery, shipbuilding, and maritime shipping. These ventures fulfilled government development plans, but public share issues, not subsidies, funded their growth. In contrast, Mitsui's ancestral silk business, now the financially staid Mitsukoshi Department Stores, controlled no major subsidiaries and sat quietly in

97. In a 1909 restructuring, the Mitsui Bank spun-off its warehousing operations as Toshin Warehousing Co. Toshin's shares were unlisted and held entirely by Mitsui companies and families.

98. See Hajime Tamaki, *Nihon Zaibatsushi* [History of Japanese Zaibatsu] (Tokyo, 1976), 84–86. W. Mark Fruin, *The Japanese Enterprise System: Competitive Strategies and Cooperative Structures* (New York, 1992), 100–02 describes how the Mitsubishi pyramid was reorganized several times between 1916 and 1926, and argues that this reflected evolving strategic considerations such as economies of scope and scale.

99. Miyajima, *Economic History of Industrial Policy and Corporate Governance.* This behavior validates arguments in La Porta, et al., ''Legal Determinants of External Finance,'' 1131–50, about the importance of law to public equity investors.

a lower tier. Mitsui's pyramidal structure seemed generally consistent with Mitsui Partnership channeling earnings and public savings into high growth industries, consistent with a big push.

The Mitsui zaibatsu was the first great Japanese pyramidal business group. The others, Mitsubishi, Sumitomo, and Nissan, grew similarly, and ended up with similar structures. These expansions also accord with *zaibatsu* head offices supplanting the state in coordinating big push growth. Mitsubishi, of course, kept the best double entry accounting records. Each operating unit had to remit its annual profits less depreciation to the head office, for reallocation.[100] From 1897, 2 percent daily interest on excess working capital due the partnership insured timely compliance.

The partnership distributed these profits across the group to cover losses at weaker firms and finance expansions at firms with growth opportunities. The head office thus devolved management but controlled operating and investment budgets at each location. This let it orchestrate the growth of each business so as to maximize the Iwasaki family's returns as the *zaibatsu* expanded. One exception to this, the Mitsubishi Bank, acquired in 1895, remitted only one-tenth of its profits, and so served as a second earnings reservoir for the group. This rendered it more secure in depositors' eyes, but still let the Iwasaki allocate lending by dint of their controlling equity block.

Distant Iwasaki relatives held 'income shares,' and enthusiastically used their dividends to establish new companies. This practice developed so the Iwasaki could operate other businesses while Mitsubishi obeyed a one-time state edict to focus on shipping or forego subsides. The practice outlived the edict, and Iwasaki relatives formed Meiji Life Insurance, Asahi Glass, Kirin Beer, and other ventures that built up the pyramid. These were managed independently, but remained dependent on head office capital. The head office relied on operating unit managers for information about viable investment opportunities.[101] Devolving capital budgeting to

100. We translate *jigyobu* as operating unit. The term describes a division in a conglomerate as well a firm's operations pertaining to a specific particular product line.

101. Morikawa, *Zaibatsu: The Rise and Fall of Family Enterprise Groups in Japan*, 105, notes that ''the survey of salaried managers during the formative period of the *zaibatsu* leaves the strong impression that such managers were highly oriented to national goals and relatively well educated. Graduates of Tokyo Imperial University and Keio Gijuku University were especially enormous. Their education had prepared them to seek as businessman to enhance their country's place in the world.'' Such broadmindedness would perhaps help group firm managers accept decisions detrimental to their firm, but beneficial to the overall group.

these mangers, therefore, seemed reasonable. Thus, from 1909 on, the minerals mining operation followed the bank's lead and retained 90 percent of its profits. Other mining, shipbuilding, and sales operations followed in 1911; and the real estate operating unit went a step further, remitting only 6 percent of its profits.

Earnings merely accumulated in many profitable operating units, so the head office soon widely reinstituted full remission. Thus, the minerals mining operation, after retaining ¥1.65 million in 1911, resumed full remissions in 1912. The coal mining unit's ¥1 million retention in 1913, likewise, triggered restoration of the old rule. These ventures served Mitsubishi better as profit centers, for growth opportunities lay elsewhere. This failed experiment in investment devolution highlights the head office's coordinating function—the role of big push planning. The shipbuilding operating unit, in contrast, continued retaining 90 percent of its earnings despite accumulating over ¥1 million in a single year. Presumably, the head office felt the operating unit had viable growth opportunities.

Mitsubishi fully modernized accounting procedures throughout all operations at this time. Operating units consolidated balance sheets and income statements for each location and passed the information to Mitsubishi Limited Partnership. The head office then set retention levels, borrowing, and capital budgets for each operating unit. This let the operating unit managers finance investments directly related to their own operations, but also let the head office coordinate the growth of the different operating units and finance diversification into new industries.

Thus, Mitsubishi's growth, formerly financed with state subsidies, now drew mainly on retained earnings. Profitable operating units with growth opportunities financed their own expansion. Growth elsewhere depended on Mitsubishi Bank loans and earnings redeployed by the head office. After World War I, coal mining and shipbuilding profits financed major expansions in iron works, shipbuilding, and banking. The highly profitable mining operating units, especially, had scant growth opportunities of their own. Very occasionally, especially when head office profits were low, Iwasaki family money was also plowed back into Mitsubishi. But expansion was still financed internally, or with bank depositors' money. Internal funds proved insufficient to finance the burgeoning growth of the 1920s. Mitsubishi Mining was the first to list in 1920, raising ¥14.84 at its initial public offering (IPO). One by one, other Mitsubishi operating units listed, and started issuing more shares to fund growth. Mitsubishi share offerings raised a total of about ¥45 million from

1920 to 1931.[102] Further offerings in the early 1940s brought in many times more. These offerings often entailed an established firm listing, and then using the funds raised to finance new subsidiaries rather than growth in its own operations. For example, the first major Mitsubishi listing, Mitsubishi Mining, had more sufficient earnings to cover its own investment needs.

From the early 1920s on, equity issues steadily diluted the Mitsubishi Limited Partnership's stakes in its listed operating subsidiaries, from an average of 85.5 percent in 1921 to only 69 percent by 1928.[103] To stem this dilution, these subsidiaries took to financing growth by issuing shares in their own subsidiaries, rather than issuing more of their own shares. Thus, by 1928, the Mitsubishi group had a standard pyramidal structure. Mitsubishi firms' bank debts shrank rapidly, disappearing by 1928. Mitsubishi Bank's 1929 IPO raised ¥13.72 million, and a subsequent seasoned offering raised another ¥5.87 million. The Mitsubishi Bank now lent mainly to unrelated firms, and thus held a highly diversified loans portfolio that helped it survive the 1923 Great Kanto Earthquake and the Great Depression. A few Mitsubishi companies issued bonds, though.[104] Other groups, like the Suzuki *zaibatsu*, which relied mainly on their banks rather than equity issues, generally did not survive those crises.[105]

The Sumitomo eschewed the Meiji mass privatization, and diversified more slowly than the Mitsui or Mitsubishi. Sumitomo accumulated profits from its Besshi copper mine, but its manager, Saihei Hirose, opposed diversifying into banking. Sumitomo Bank was established only in 1895, after his departure. Nevertheless, it grew rapidly through the early 1900s, soon eclipsing Mitsubishi Bank. Sumitomo diversification likewise lagged, as did issuing shares. Sumitomo let the others test the pyramidal group model first, and then moved quite quickly. Like the others, Sumitomo diversified first into businesses complementary to mining, its core business, and then more broadly. Sumitomo acquired several distressed firms during Japan's

102. Y. Mishima, *The Mitsubishi Zaibatsu* (in Japanese) (Tokyo, 1981).

103. Though a large part of this dilution involved equity sales to Iwasaki relatives.

104. Mitsubishi Shipbuilding issued ¥10 million in bonds in 1918, Mitsubishi Warehousing ¥5 million in 1928, Mitsubishisha ¥30 million in 1938, Mitsubishi Heavy Industries ¥30 million in 1938; and Mitsubishi Mining ¥75 million in 1942–43.

105. Morck and Nakamura, ''A Frog in a Well Knows Nothing of the Ocean,'' 367–459.

deep post-World War I recession.[106] Some of this diversification seems opportunistic. For example, the Sumitomo took over Japan–U.S. Sheet Glass, a troubled Mitsubishi joint venture, in 1922 and replaced all its managers. The rechristened Nippon Sheet Glass prospered and, by 1930, essentially monopolized Japan's flat glass market along with Mitsubishi's Asahi Glass. But the diversification's thrust was entry into industries complementary to existing operations. The Sumitomo expanded from copper mining to large-scale bulk copper and wire production; and from iron and coal mining into large-scale iron and steel production. Increasingly sophisticated business dealings required commensurate banking services, so the family established Sumitomo Trust Bank in 1926. Shipping and storing valuable metals and metal products required insurance, so they acquired Hinode Life in 1925 and Fuso Marine Fire and Casualty in 1930. Large-scale coal mines were better sustained if coal had alternate uses, so Sumitomo Chemicals ventured into ammonia/nitrogen fertilizer production at new coal-based chemical plants in 1928.

The Sumitomo's inexhaustible cash cow, the Besshi Copper Mine, continued yielding healthy profits, but Mitsui and Mitsubishi mining operations both generated nearly twice its profits by 1909. While Sumitomo Bank grew to rival Mitsubishi Bank, Sumitomo's overall diversification lagged, and its businesses remained smaller in scale than their Mitsui and Mitsubishi peers through the early 1900s. The first Sumitomo listing was Sumitomo Fertilizer in 1934, when the family finally came to terms with the need to tap public equity markets to diversify further.[107] From this point on, the Sumitomo diversified more energetically with rapid-fire share issuances.[108]

The fourth of Japan's great *zaibatsu*, Nissan, has a different provenance. The Mitsui and Sumitomo pyramids grew from old family wealth. Mitsubishi grew with the newly wealthy Iwasaki family. Nissan, in contrast, was built entirely with public shareholder wealth virtually from its outset, perhaps because the pyramidal model was already proved when Nissan, the youngest of the four, was conceived. Nissan was formed by the initially impecunious Husanosuke Kuhara and his brother-in-law, Yoshisuke Aikawa. By 1919, Kuhara controlled 30 percent of Japan's copper mines, 40 percent of its gold mines, and 50 percent of its silver mines; all

106. H. Hatakeyama, *Sumitomo zaibatsu seiritsushi no kenkyu* [Formation of Sumitomo Zaibatsu] (Tokyo, 1988).

107. Miyajima, *Economic History of Industrial Policy and Corporate Governance*, 218–20.

108. Ibid.

financed with a ¥2.4 million IPO to capitalize his Kuhara Mining. Japan prospered during World War I, but subsequent downturns weakened Kuhara Mining and ultimately bankrupted its subsidiary, Kuhara Trading. The ailing Kuhara retired, leaving Aikawa in charge. An engineer with state-of-the-art iron U.S. training, Aikawa successfully steered his much smaller Tobata Cast Iron through the economic turmoil. To save Kuhara Mining, he pooled his money with that of relatives, managers, and outsiders to inject over ¥25 million into that company. Against all expectations, he saved Kuhara, became a director in 1926, and then became president. To restore the firm's long-term health, Aikawa needed capital. In 1928 he issued shares in a new holding company, Nippon Sangyo (Nissan) and used the proceeds to capitalize Nippon Mining, which he then merged with Kuhara Mining. Since Kuhara was already listed, this left Nippon Mining publicly held, but controlled by the widely held Nissan.

The older *zaibatsu* families clearly understood the advantages of public equity, but balanced these against privacy and undisputed control. This balance limited public shareholders' participation, for it required unambiguously dominant control blocks throughout the pyramid. The apex firm of the Nissan group, in contrast, was widely held, and could issue shares to create new subsidiaries, like Nippon Metal, or acquire control blocks in already listed companies.

Aikawa rapidly built Nissan into a large, diversified *zaibatsu*, though machinery remained its most important business. His technical expertise, still rare in Japan, made him irreplaceable to the group's core profit centers, so Aikawa needed no control blocks.[109] This let Nissan expand rapidly, since equity-financed mergers and acquisitions (M&A) permitted faster growth than constructing new facilities.[110] Aikawa preserved Nissan's technology focus, for its major diversification was into heavy industries, chemicals, and electric power. Unafraid of public equity, but averse to debt because of Kuhara's near-bankruptcy, Aikawa saw no need for Nissan to control a bank, and kept Nissan firms' leverage moderate.

The big push logic underlying the expansion of the Mitsui, Mitsubishi, and Sumitomo *zaibatsu* relies on circumstantial evidence. But Aikawa makes the logic explicit for Nissan in figure 4, taken

109. This sort of situation is also thought to lock in control in some U.S. firms. Andrei Shleifer and Robert Vishny, ''Management Entrenchment: The Case of Manager-Specific Investments,'' *Journal of Financial Economics* 25, no. 1 (1989): 123–39.

110. M. Udagawa, ''Shinko Zaibatsu'' [New *Zaibatsu*], in *Nihonno Zaibatsu* [Japanese *Zaibatsu*], ed. Shigeaki Yasuoka (Tokyo, 1976), 107–44.

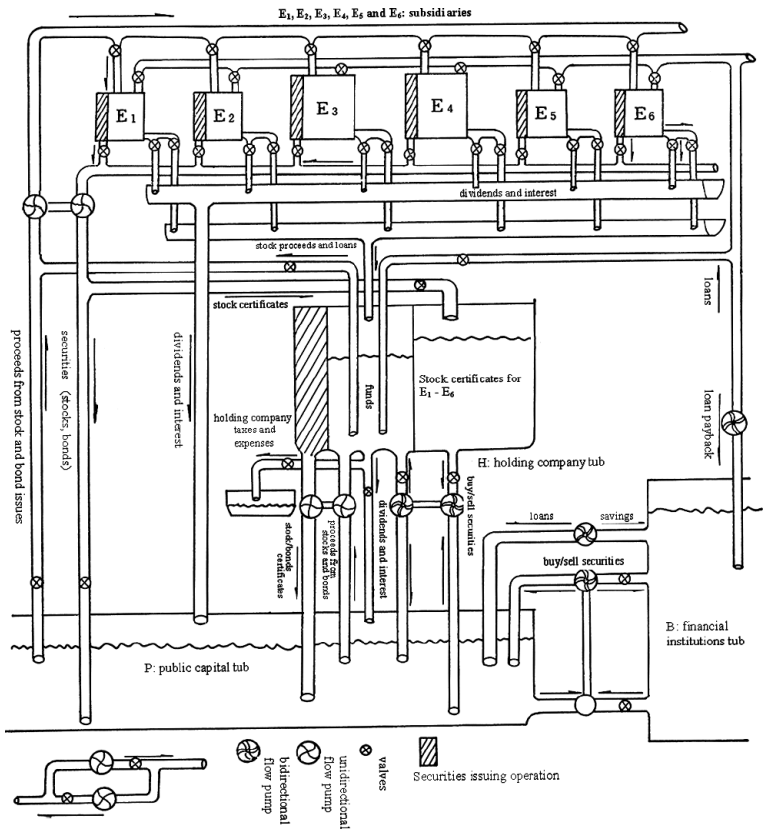

Figure 4 Aikawa's Diagram of the Nissan Pyramidal Group. Capital is pumped from the public capital tub at the bottom up to the operating subsidiaries at the top, directly, through the Nissan holding company tub in the center, or through the financial institutions tub at the lower right. By turning one-way and bidirectional valves, Aikawa could adjust the level of capital in each operating subsidiary to its needs, subsidizing weak but necessary units with the overall profits of the industrially diversified group. Source: Yoshisuke Aikawa, *New Capitalism and Holding Companies* (Tokyo, 1934), English translation by the authors.

directly from his autobiography. Here, Aikawa models Nissan and its directly owned subsidiaries to a plumbing system, in which water represents capital.

Nissan was listed and Aikawa had to keep its shareholders satisfied. He accomplished this with a slowly rising dividend, flowing through the central pipe of the five extending downwards from his 'public holding company tub' representing Nissan, the pyramid's apex firm. The valve in that pipe is turned so as to drain the central compartment of that tub—Nissan's retained earnings—slowly enough that fluctuations in its water level never alter its dividend flow into

the public capital tub at the bottom of the diagram. Nissan's other two compartments are filled with capital from securities issues (left) and the sale of treasury securities (right).

Nissan's many operating subsidiaries are represented by the smaller capital tanks across the top of the diagram. The level of water in these is kept constant across the subsidiaries by their drainage into a common pipeline to Nissan and their own public investors. Note, especially, the prominent bidirectional values on a pipe linking their primary inflow and outflow pipes. By adjusting these, as well as the flow directly out of the top of the holding company tub, Aikawa can raise or lower the common level in all the subsidiaries. By carefully adjusting the one-way values on the inflow pipes to each, he can prevent profitable ones from accumulating capital, and less profitable ones from draining empty. A parallel system of debt-financing pipes tapping water from a financial institutions tub completes the picture.

Figure 4 is a perfect depiction of tunneling.[111] But on closer inspection it is clear that this tunneling sustains a big push. The plumbing is arranged to keep a constant level of water across subsidiary tanks, so those with large investment needs do not run dry, and those with few investment needs do not overflow. Aikawa specifically justified using overall profits to subsidize losses in key firms, and investing in ''a few new business lines'' that would lose money, but were nonetheless ''important to the nation'' and likely to augment Nissan's long run financial health.[112] These ventures included an auto manufacturing firm, subsequently named Nissan Motor, an Antarctic whaling business, and a broadcasting company.[113] This cross-industry and intertemporal subsidization, financed by current earnings from a constellation of industries, is precisely what big push development strategists envision.

As Nissan grew, Aikawa carefully structured voting blocks and crossholdings so every listed subsidiary was unambiguously controlled by other group firms. This was presumably necessary because big push growth requires firms in some industries to subsidize those in other industries. While this might optimize overall gains for the group, as reflected in Nissan's own share price, shareholders of subsidiaries conscripted to provide subsidies might 'hold up' the transaction

111. Morck and Nakamura, ''A Frog in a Well Knows Nothing of the Ocean.''

112. Yoshisuke Aikawa, *New Capitalism and Holding Companies* (Tokyo, 1934), 13.

113. Udagawa, '' Shinko Zaibatsu,'' 134, 142.

to seize the group's economic profits.[114] Wielding a control block let Aikawa marginalize tetchy shareholders under such circumstances.[115]

Nissan's share price rose steadily through the Great Depression, allowing repeated equity issues to finance opportunistic mergers and acquisitions in the bear market of the 1930s. The company's broad strategy was to buy promising firms, develop them as fully owned subsidiaries, and then refloat them via partial IPOs. In creating these spin-offs, or *bunshin kaisha*, Nissan resembled modern U.S. private equity firms.[116] However, the latter usually sell all their shares to the public to raise funds for the next venture, while Nissan always retained a control block, using further IPOs to extend the pyramid. This let Aikawa channel earnings from across the widely diversified group back to Nissan, and thence to other group firms.

Aikawa constantly recognized his duty to keep Nissan's dividends on track, so other listed group firms were managed to benefit the apex firm.[117] To Aikawa, this mandated broad group diversification to provide Nissan low-risk cash inflows. Subsidiaries in many industries meant a downturn in one was likely to be offset by an upturn in another. When the government began accumulating gold in 1932, Nissan sold Nippon Mining shares and used the proceeds to diversify further. By 1937, the group included Nippon Mining, Hitachi Ltd., Hitachi Power, Nissan Motor, and numerous other large manufacturers and utilities.

Nissan grew rapidly, surpassing Sumitomo as the third largest *zaibatsu* by the 1930s; and its apex holding company grew successively more widely held. Its shareholder base rose from 20,000 in 1934 to 51,804 in May 1937. Although 98 percent of the latter held fewer than 500 shares, these small investors collectively owned over 50 percent of Nissan's equity. Only 33 shareholders owned over 10,000 shares, and the Aikawa family's combined stake totaled only 5.2 percent in 1937.[118] Nissan's listed subsidiaries

114. Oliver Williamson, ''Transactions-Cost Economics: The Governance of Contractual Relations,'' *Journal of Law and Economics* 22, no. 2 (1979): 233–62 and Williamson, ''Credible Commitments,'' 519–40.

115. An alternative strategy, of combining all Nissan operations into a single widely held company could also have prevented such shareholder hold-up problems. One possible advantage of the pyramidal structure might have been that Aikawa could tunnel earnings into Nissan in order to give its shareholders a generous return at the expense of selected subsidiary shareholders even during downturns.

116. Paul Gompers and Josh Lerner, *The Venture Capital Cycle* (Cambridge, Mass., 2002).

117. Aikawa, *New Capitalism and Holding Companies*.

118. Udagawa, '' Shinko Zaibatsu,'' 107–44.

prospered on average, further enriching both Nissan's shareholders and their own. Listed subsidiaries formed or acquired more lower tier subsidiaries, and the pyramid expanded. Nissan's own paid-in capital, ¥5.25 million in 1933, rose to ¥198.37 million in 1937, as its total assets soared from 91.08 to ¥383.10 million. This mainly reflected the rising value of its direct subsidiaries, for Nissan's stock portfolio rose in value from 53.38 to ¥269.92 million over the period.

Lesser Pyramids and Other Structures

The top four *zaibatsu* were widely imitated by other families and entrepreneurs.[119] The chemistry experts, Shitagu Noguchi, Tomonori Nakano, and Nobuteru Mori, modeled their widely held Nichitsu, Nisso, and Mori *zaibatsu* on Nissan. Masatoshi Okochi, an expert in machinery manufacture, constructed the Riken *zaibatsu*, again with a widely held firm at the apex. Of prominent merchant families from the Tokugawa era, only the Yasuda clan ultimately joined the Mitsui and Sumitomo in constructing significant pyramidal groups. The Yasuda kept to finance, and never gained the prominence accorded the other two. Other zaibatsu, imitating Mitsubishi, arose as wealthy entrepreneurs sought to establish dynasties. Again, none grew to anything approaching the scale and scope of the top four. Finally, *zaibatsu* were not coextensive with Japan's business sector. By the 1920s, Japan's stock markets were large by world standards.[120] Numerous freestanding firms also traded, and professional managers played important roles in many.[121]

Pyramid Power

Japan transformed itself from a feudal barter economy into a modern industrial state in one lifetime. Real living standards doubled

119. This section draws from Morck and Nakamura, ''A Frog in a Well Knows Nothing of the Ocean,'' 367–459.

120. Yasushi Hamao, Takeo Hoshi, and Tetsuji Okazaki, ''The Genesis and Development of Capital Markets in Prewar Japan,'' University of Tokyo Working Paper (Feb. 2005).

121. Takeo Hoshi and Anil K. Kashyap, *Corporate Financing and Governance in Japan: The Road to the Future* (Cambridge, Mass., 2001); Gary Herrigel, ''Corporate Governance: History without Historians,'' in *The Oxford Handbook of Business History* eds. Geoffrey Jones and Jonathan Zeitlin (Oxford, UK, 2007—forthcoming).

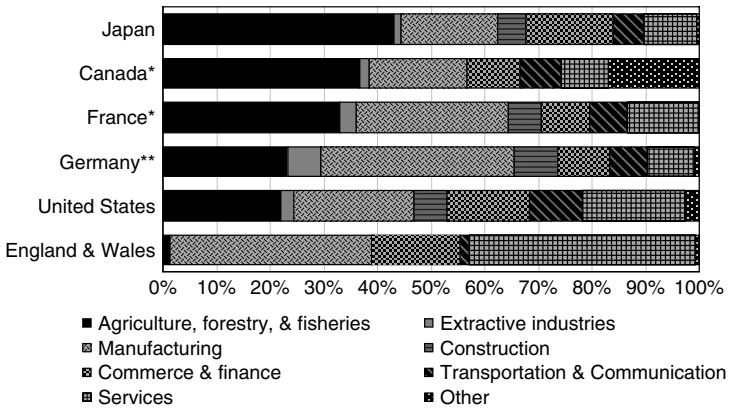

Figure 5 Industrial Structure of the Japanese Economy, 1921. The fraction of the labor force of the Japanese economy employed in each industrial sector is indicated by the shadings in the first bar. For comparison, similar breakdowns are provided for Canada, France, Germany, the United States, and England (including Wales).
Source: Compiled from statistics reported in Brian Mitchell, *International Historical Statistics: Africa, Asia and Oceania, 1750–2000* (Basingstoke, UK, 2003); Mitchell, *International Historical Statistics: Americas, 1750–2000* (Basingstoke, UK, 2003); and Mitchell, *International Historical Statistics: Europe, 1750–2000* (Basingstoke, UK, 2003).

from 1885 to 1920, and tripled by World War II. figure 5 shows a labor force only slightly more concentrated in primary sectors than in Canada or France. The Japan that achieved this economic miracle is quite different from the Japan of today. Its financial system was market-centered, for equity finance predominated. It entrusted corporate governance to powerful families and tycoons, who organized listed firms into pyramidal groups, and likely maximized of their own wealth, concentrated in the pyramids' apex firms. Apex firm value maximization is unlikely to coincide with shareholder value maximization in any individual lower tier firm.[122] At least for a time, however, it may align the wealthy families' and tycoons' interests with the social welfare goal of a successful big push of economic development. Such a development strategy requires that industries grow in tandem, with suppliers and customers eschewing opportunities to hold each other up. This sometimes requires one industry to lose money temporarily so another can exploit profitable growth opportunities. Pyramidal business groups give the apex firm

122. Morck, Stangeland, and Yeung, ''Inherited Wealth, Corporate Control, and Economic Growth.''

undisputable control over a large constellation of listed subsidiaries, and subsidiaries of subsidiaries, populating many industries. The family or tycoon in control of the apex firm can prevent firms from holding each other up, and can coordinate cross-subsidized investment where spillovers financially benefit the group as a whole. To the extent that the controlling shareholder's interests align with those of a theoretical selfless central planner coordinating a big push is unclear. But a degree of alignment seems plausible, and further investigation is needed to resolve this question.

By contrast, Japan's earlier state-led big push attempt collapsed amid a fiscal crisis because the required state involvement in the economy triggered political rent-seeking. Rent seeking became more profitable than efficient management, soft budget constraints distorted business decisions, and government finances deteriorated sharply, forcing a mass privatization upon a reluctant government. Japan's subsequent *zaibatsu*-led big push avoided these problems because it was a private sector initiative. The state avoided intervening in business affairs and let market mechanisms work. Since each major *zaibatsu* had member firms in many different industries, most industries contained several competing firms.[123] Although we can find no reference confirming explicit strategies along these lines, this is rational if each *zaibatsu* feared that dependence on another, or on an independent firm in a key industry might risk hold-up problems. This competition meant that *zaibatsu* apex firms could orchestrate transfers between member firms to finance spillover creating investments, but had to do so efficiently.[124] Wasteful investments, inefficient operations, and inept management anywhere in the group gave other *zaibatsu* a competitive advantage. If a *zaibatsu* group operated its big push less efficiently, its apex shareholder would earn a lower return or provide the public shareholders of its listed firms with a lower return, making future equity issues more difficult. If shareholder returns were artificially raised to match those provided by more efficient zaibatsu,

123. One exception is the Yasuda group, which operated only in finance sector businesses, and which played a much less important role in Japan's economic development. See Morck and Nakamura. ''A Frog in a Well Knows Nothing of the Ocean.''

124. Obviously, if the various zaibatsu colluded to gain market power, this argument is undermined. The American military government justified breaking up the zaibatsu on the grounds that they harmed consumers by colluding. However, subsequent studies dispute this. See, for example, Jennifer Frankl, ''An Analysis of Japanese Corporate Structure, 1915–1937,'' *Journal of Economic History* 59, no. 4 (1999), 997–1015, and cites therein.

the inefficient group would have to raise prices and risk losing customers or cut wages and risk losing mobile workers. Regardless of which dimension of performance the inefficiency compromises, the poorly run group suffers a disadvantage that, if sustained long enough, would limit its growth and perhaps even drive it out of business. More likely, its controlling shareholder would demand more efficient management in the laggard group firms causing the problem. Thus, the market forced efficient levels of spillover producing investments in the pyramidal business structures.

The idea that the market can force the efficient provision of goods with spillovers is not new, but previously, is found mainly in discussions of competition between local governments.[125] Competition makes inefficiently run business groups to improve efficiency or go out of business, protecting a business-group led big push from the inefficiencies that plague state-run big push schemes.[126] If more thorough research confirms this thesis, business groups can be more than just a private sector alternative to a state run big push; they may be a more efficient alternative!

The Pyramids' Curse

Why did Japan's big push succeed, while similar programs in Latin America, South Asia, and Africa repeatedly fail?[127] We propose that Japan's unique success occurred because its feudal elite, then its reformist government, and finally its *zaibatsu* families, propitiously bowed out. Japan's feudal elite was uniquely marginalized by early Meiji shock therapy. Elsewhere, traditional elites, intent on preserving

125. See Charles Tiebout, ''A Pure Theory of Local Expenditures,'' *Journal of Political Economy* 64, no. 5 (1956): 416–24; and James Buchanan, ''An Economic Theory of Clubs,'' *Economica* 32 (Feb. 1965): 1–14. The intuition is that a local government that produces a spillover-generating public good—like education—inefficiently, must either levy higher taxes or provide less education to its citizens than a more efficient proximal jurisdiction. Because of this, people move to a more efficient locality. The inefficient jurisdiction loses taxpayers until its civil service becomes more efficient, or until higher population density reduces the quality of public goods in the efficient jurisdiction. In this setting, spillovers from public goods do not cause market failure, and market forces induce the efficient provision of public goods. Our argument is basically that competition between business groups for customers and investors resembles competition between local governments for taxpayers, and hence can force the efficient provision of spillovers, subject to similar limitations.

126. Khanna and Yafeh, ''Business Groups in Emerging Markets: Paragons or Parasites?''

127. Easterly, ''Big Push Deja Vu,'' 1.

their social and economic dominance, are thought to stifle growth.[128] After the failed 1877 Seinan Uprising, Japan's feudal elite was a spent force. The Meiji state too was propitiously marginalized. It began a classic big push, subsidizing SOEs in all major industries. Standard government failure problems forced a mass privatization to restore government finances. Thus burned, the state avoided subsidizing industry or establishing SOEs for several decades. This left business largely to itself. Elsewhere, big push programs remain state-directed indefinitely, magnifying political rent seeking returns. Rampant government failure, unsurprisingly, strangles growth after an initial spurt.[129] Japan's *zaibatsu* took over the big push, brought it to completion, and then were also abruptly marginalized.[130] Economic development stalls when old money families manipulate the state to entrench their status.[131] This could not happen in Japan, for the *zaibatsu* families were fortuitously sidelined after a couple of decades of rapid growth.

The military government, which seized power in the 1930s had a surprisingly populist—in some respects, almost socialist—ideology

128. Daron Acemoglu, Simon Johnson, and James Robinson, ''Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution,'' *Quarterly Journal of Economics* 117, no. 4 (2002): 1231–94 describe nonwestern elites blocking growth to preserve traditional extractive economic systems. René Stulz and Rohan Williamson, ''Culture, Openness, and Finance,'' *Journal of Financial Economics* 70, no. 3 (2003): 313–49 describe hierarchical traditions impeding financial development, and hence, growth. Olson, ''Rapid Growth as a Destabilizing Force,'' 529–52, models elites blocking growth to protect the favorable (to them) *status quo*.

129. Krueger, ''Political Economy of the Rent-Seeking Society,'' 291–303; Murphy, Shleifer, Vishny, ''Allocation of Talent,'' 503–30; Murphy, Shleifer, and Vishny, ''Why is Rent-Seeking Costly to Growth?,'' 409–14; Easterly, *Elusive Quest for Growth* and *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good* (New York, 2006).

130. The *zaibatsu* families' control rights were sharply curtailed by the military government in the 1930s and 1940s; they were then stripped of their shareholders by the American military government after 1945. For details, see Morck and Nakamura, ''A Frog in a Well Knows Nothing of the Ocean,'' and cites therein.

131. See David Landes, ''French Entrepreneurship and Industrial Growth in the Nineteenth Century,'' *Journal of Economic History* 9 (May 1949): 45–61, Morck, Stangeland, and Yeung, ''Inherited Wealth, Corporate Control, and Economic Growth''; Asher Blass and Yishay Yafeh, ''Vagabond Shoes Longing to Stray: Why Foreign Firms List in the United States,'' *Journal of Banking and Finance* 25 (March 2001): 555–72; Morck and Yeung, ''Agency Problems in Large Family Business Groups''; Morck and Yeung, ''Family Control and the Rent-Seeking Society''; Rajan and Zingales, ''Great Reversals''; Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' and Kathy Fogel, ''Oligarchic Family Control, Social Economic Outcomes, and the Quality of Government,'' *Journal of International Business Studies* 37 (Sept. 2006): 603–22.

for a fascist dictatorship.[132] Coining an expression that echoes through financial history, the military condemned *zaibatsu* families for an unpatriotic 'short-term focus' on the current earnings and dividends of their apex firms.[133] Acting on these 'concerns,' the military *de facto* took control of the investment policies and strategic decisions of the country's great corporations. Whether *zaibatsu* families were co-opted or conscripted is debated, but the military substantially sidelined them.[134]

The U.S. occupation's *zaibatsu* dissolution program completed their marginalization. Justified on antitrust grounds, but probably to diffuse *zaibatsu* families' political power, the program confiscated the families' shares and intercorporate equity blocks, and sold these in the open market.[135] Thus, Japan's *zaibatsu* families did not become an old-money elite of the sort Haber portrays in Latin America.[136] Instead, postwar Japan entrusted the governance of its largest corporations to professional managers. The *zaibatsu* families added momentum to the big push, but then lost their hold.

Finally, Japan's unequal treaties kept trade barriers low and precluded foreign investment barriers. Many works link elite entrenchment to financial insularity.[137] These Japanese treaties empowered foreign courts to apply foreign law to disputes in treaty concession enclaves, demonstrating a spectrum of foreign legal systems in action. These working examples let Meiji Japan devise and rapidly implement a modern legal system. The structure of a country's legal system correlated with its financial development and growth.[138] Japan's stock markets were large by contemporary standards in the early twentieth

132. Isao Hatate, *Nihonno zaibatsu to Mitsubishi* [Japanese *Zaibatsu* and Mitsubishi] (Tokyo, 1978), 56; and Udagawa, ''Shinko Zaibatsu,'' 107–44; see also Kobayashi, *Nihon no kogyoka to kangyo haraisage*.

133. Kamekichi Takahashi, *Nihon zaibatsu no kaibo* [Analysis of Japanese *Zaibatsu*] (Tokyo, 1930); and Takahashi, *Kabushiki Gaisha Bokokuron* [The Stock Company—A Cause of National Decay] (Tokyo, 1930).

134. Morck and Nakamura, ''A Frog in a Well Knows Nothing of the Ocean,'' 367–459.

135. Ibid.

136. For general arguments and evidence that openness checks elites, see Rajan and Zingales, *Saving Capitalism from the Capitalists*. For Latin American evidence, see Haber, *Political Institutions and Economic Growth in Latin America*; and Haber, *Crony Capitalism and Economic Growth in Latin America*. For a survey, see Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722.

137. Surveyed in Morck, Wolfenzon, and Yeung, ''Corporate Governance, Economic Entrenchment and Growth,'' 657–722.

138. Jeffrey Wurgler, ''Financial Markets and the Allocation of Capital,'' *Journal of Financial Economics* 58, nos. 1–2 (2000): 187–214.

century.[139] Openness also lets imports and exports, as well as foreign capital, substitute for missing pieces of the domestic economy in a big push.[140]

This reasoning suggests different roles for the state at different stages of development.[141] Early-stage policies are needed to lay the institutional foundations for growth. Japan's Meiji era shock therapy was important in dislodging its feudal elite, and also in establishing schools, the rule of law, financial markets, and other very basic public goods. The rule of law, in particular, seems relatively absent in Latin American countries where business groups and government elites overlap extensively. Such basic public goods established, the state should stand aside in a second stage as business groups organize big push growth, acting to stimulate domestic and foreign competition. Once the big push phase of growth is complete, the well-known problems associated with business groups become paramount, and the third-stage state should act either to dismantle them or limit their negative effects with appropriate regulation. This line of argument is obviously highly speculative, based as it is on the history of only one country, and clearly requires much additional empirical verification to be regarded as more than a hypothesis.

Conclusion

Easterly concedes Japan as exemplifying a successful big push, a government-coordinated expansion of interdependent industries that sidesteps hold-up problems.[142] That Japan joined the modern world remarkably quickly is clear. The Meiji Restoration took place in 1868, and by the end of World War I, Japan was an industrial economy on par with much of Europe. But most of its big push was likely not government coordinated. Rather, Japan's economic history suggests

139. Rajan and Zingales, ''Great Reversals,'' 5–50, in Table 3, show Japan's stock markets to be relatively open in 1913 compared to those in Canada, the United States, and western Europe; and their other tables accord with this.

140. See, for example, Trindade, ''Big Push, Industrialization and International Trade,'' 22–48.

141. Stages of growth were first proposed by Rostow, ''Takeoff into Self-Sustained Growth,'' 25–48 who envisioned five: traditional society; take-off preconditions; take-off; drive to maturity; and mass consumption. Our stages are differently demarcated, but bear some resemblance to his.

142. Easterly, ''Big Push Deja Vu,'' 1.

a big push can succeed under certain circumstances despite gloomy evidence to the contrary.[143] Specifically:

1. The state gives an initial shove, marginalizing traditional elites, reforming basic institutions, perhaps even subsidizing technology imports, and then withdraws its hand. This withdrawal checks government failure problems.
2. Pyramidal business groups emerge to propel the big push. An undisputed controlling shareholder focusing on the apex firm's value, prevents hold-up problems and coordinates cross-industry subsidies, as group member firms tap public equity markets to capitalize cascades of subsidiaries spanning all relevant industries. At least to some extent, this echoes what a selfless central planner coordinating a big push would do.
3. The controlling shareholders are marginalized as the big push nears completion. This prevents entrenched oligarchy problems from reversing the big push.
4. All this is done with limited trade barriers and no barriers against foreign investment.

If this thesis is valid, Japan offers an alternative big push prescription for today's emerging economies. That Japan's experience is replicable is unclear. Inefficient SOEs became a political liability in Meiji Japan, perhaps because of Confucian expectations that bureaucrats should be honest.[144] Japan's feudal elite, central planners, and *zaibatsu* families were auspiciously discredited in circumstances difficult to replicate elsewhere. Elites, once established, are usually hard to dislodge.[145]

Our big push theory of pyramidal business groups is not an alternative hypothesis to other explanations of pyramidal business groups. Business group firms may well let firms finance and coinsure each other to spread risk.[146] Group firms may well trust each other

143. Ibid.

144. Reischauer, *Japanese Today*, 85. Ronald Dore, *Taking Japan Seriously: A Confucian Perspective on Leading Economic Issues* (Stanford, Calif., 1987).

145. Daron Acemoglu, Simon Johnson, and James Robinson, ''The Colonial Origins of Comparative Development: An Empirical Investigation,'' *American Economic Review* 91, no. 5 (2001): 1369–1401, Acemoglu, Johnson, and Robinson. ''Reversal of Fortune,'' 1231–94; and Acemoglu, Johnson, and Robinson, ''The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth,'' *American Economic Review* 95, no. 3 (2005): 546–79.

146. Takeo Hoshi, Anil Kashyap, and David Scharfstein, ''The Role of Banks in Reducing the Costs of Financial Distress in Japan,'' *Journal of Financial Economics* 27, no. 1 (1990): 67–88; and Hoshi, Kashyap, and Scharfstein, ''Corporate Structure,

to do business in economies where corruption stymies arm's-length dealing.[147] Without denying such possibilities, we suggest a broader argument that subsumes them. The highly industrially diversified pyramidal structure common to business groups throughout the world permits a controlling shareholder to stem hold-up problems and coordinate growth across diverse complementary industries, permitting very rapid growth financed by public equity—a big push. Further research is clearly needed to test these ideas. If our thesis is valid, diversification in pyramidal business groups, at least in rapidly growing economies, should do more than spread risks. These groups should disproportionately contain firms that would risk hold-up problems were they freestanding. Cross-subsidization should also balance growth across complementary industries, not just enrich controlling shareholders. In contrast, pure risk-sharing implies that groups should contain firms whose returns are as little correlated as possible. We welcome further work exploring these issues more thoroughly, and hope to pursue them ourselves in subsequent studies.

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