Patient capital, corporate governance and investment in digital innovation: What can Japan learn from South Korea's experience?

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Abstract

This article investigates why the patient capital provision in Japan has been insufficient since the late 1990s, taking Japan's struggle with digitalisation as an example and highlighting 'varieties of patient capital', the finance-digital nexus, and lessons from South Korea. It conceptualises developmentalist and market-based patient capital to fill a literature gap regarding their divergent social purposes and characteristics. Despite mounting pressure to converge with Anglo-American 'financial-digital capitalism', Japan has resisted the convergence. The deterioration of developmentalist patient capital and bureaucratic capacity to coordinate Japanese stakeholder capitalism has made this adaptation more difficult. Stronger government initiatives, market-based patient capital and shareholder-based corporate governance are required to promote Japan's investment in digital innovation. However, these have adverse effects, creating labour precarity and social tensions and eroding the traditional core strengths of Japanese companies (e.g. organisational solidarity and accumulated analogue technology). Therefore, I argue that Japan should learn from South Korea's experience, hybridise shareholder- and creditor-based corporate governance and combine developmentalist and market-based patient capital to re-coordinate stakeholder capitalism while balancing market efficiency and socio-political stability. The concept of varieties of patient capital can be applied across East Asia and beyond as many state financial institutions have recently been established and expanded.

Keywords

Patient capital, developmentalism, corporate governance, digitalisation, Japan, South Korea

Introduction

In 2023, the IMF reported that industrialised Asia, led by South Korea (hereafter Korea), has committed substantial financial and human capital to R&D in digital technologies to emerge as a global innovation powerhouse (Dabla-Norris et al., 2023). Of the 64 countries ranked by economic performance, Japan ranked 32nd, behind Korea in sixth place, in the Institute of Management Development's (IMD) 2023 digital competitiveness survey. From the mid-1980s until the mid-1990s, Japan invested intensively in information and communications technology (ICT), mainly in hardware such as mainframe computers and optical fibres. Nevertheless, its ICT investment has stagnated since the late 1990s. According to the OECD, in 2021, Japan's venture capital investment in ICT as a share of GDP was merely 0.06 per cent, less than one-fourth of Korea's (0.26 per cent). Japan also lacks a sovereign wealth fund. By contrast, the Korea Investment Corporation, Korea's sovereign wealth fund managing foreign reserves, invested in the overseas (mainly US) technology sector and announced a plan to deploy US$5 billion for overseas mergers and acquisitions (M&As) for securing advanced technologies, including semiconductors and artificial intelligence (AI) in July 2024 (BusinessKorea, 2024).

Comparative political economy considers various market-based forms of finance (e.g. supplied by venture capital and sovereign wealth funds) to be patient capital, defined as 'equity and debt whose providers aim to capture benefits specific to long-term investments and who maintain their investment even in the face of adverse short-term conditions for the firm' (Deeg & Hardie, 2016: 627).

Given that Japan and Korea were viewed as similar developmental states during the Cold War (Amsden, 1989), why has patient capital provision in Japan been insufficient since the late 1990s? What can Japan learn from Korea's experience? This article investigates these questions, building on the growing works on various patient capital providers in Asia (e.g.

Thurbon, 2016; Yoshimatsu, 2017; Hameiri & Jones, 2018; Klingler-Vidra & Pacheco Pardo, 2020; Kim, 2020; Dixon, 2022; Lee & Grimes, 2023). Japan's struggle with digitalisation (applying digital technologies to enhance productivity and create new business models) is used as an example to explore these questions, highlighting 'varieties of patient capital', the finance-digital nexus, and lessons from Korea.

This article conceptualises varieties of patient capital to demonstrate the distinctiveness of East Asian financial practices and corporate governance and elucidates the importance of patient capital in digitalisation to fill a literature gap regarding various patient capital's divergent social purposes and characteristics by drawing on Asian capitalism literature built on Regulation Theory approaches (e.g. Lechevalier, 2007; Boyer, Uemura & Isogai, 2012; Peck & Zhang, 2013; Gomez & De Micheaux, 2017, Shibata, 2022; Lechevalier & Shibata, 2024). Regulation Theory (Boyer & Saillard, 2002) is useful to shed light on both coordination between and coordination problems stemming from multiple socio-economic institutions (e.g. state-economy relationships, labour relations, the financial regime, inter-firm competition and the integration into the global economy) in national capitalist models. It regards finance and money as social institutions, whose characteristics vary by region and country (Guttmann, 2002). Patient capital can be divided into the broad categories of developmentalist patient capital (e.g. long-term loans provided by development and industrial banks), developed in continental Europe and East Asia and contributing to continuous innovations, and market-based patient capital, which is provided by portfolio investments and includes equity and other risk capital; the latter is sometimes used to fund disruptive innovations such as digital technology. There are various perspectives on the patience levels of the various types of market-based capital (e.g. Deeg & Hardie, 2016; Klingler-Vidra, 2016; Knafo & Dutta, 2016; Braun, 2016; Bonizzi, Churchill & Kaltenbrunner, 2023).

Developmentalist patient capital was vital in Japan and Korea's pursuit of developmentalism, i.e. 'the state's active engagement in economic development' (Liao & Katada, 2022: 945), following the end of World War II (WWII) to the 1970s. However, since the Japanese and Asian financial crises in the late 1990s, while Japan has witnessed increased shareholder returns, it has not been able to develop or attract as much market-based patient capital as Korea; Korea has combined developmentalist and market-based patient capital to drive digitalisation. Underdeveloped risk capital is a significant obstacle to innovation in Japan (Fukuda, 2020).

The COVID-19 outbreak exposed Japan's insufficient level of digitalisation, which seriously handicapped healthcare provision, education and business. The country's limited digitalisation has also constrained its labour productivity relative to other industrialised countries. This, in combination with its ageing and shrinking population, has led Japan to endeavour to accelerate digitalisation and rebuild its economy (Schaede & Shimizu, 2022; Whittaker, 2024). US-led financial globalisation and digitalisation, which have been integrated, share several characteristics; these include a high level of knowledge intensity, high mobility, increased detachment from labour, and open but oligopolistic features. The shift from analogue to digital has enhanced technological mobility and intensified global economic competition; passing down the skills of engineers is vital for analogue technology. Digitalisation also entails shifting from tangible to intangible assets, including software, databases, R&D investment and brands.

I argue that despite mounting pressure to converge with Anglo-American 'financial-digital capitalism', Japanese capitalism has resisted this convergence, and Japan's investment in digital innovation requires stronger shareholder-based corporate governance that supports high-risk, high-return investment, the right combination of developmentalist and market-based patient capital, and greater government involvement. Under respective, shareholder-

based and creditor-based corporate governance, the shareholder and the creditor (primarily the bank) mainly monitor corporate management (Jackson & Miyajima, 2008; Isogai, 2002; Matsuda, 2021 & 2023). In a specific national capitalist model, socio-economic institutions, such as labour relations, forms of inter-firm competition, the financial regime, the state-business nexus and the integration into the global economy, contribute to shaping the features of corporate governance. Japanese-style stakeholder capitalism, characterised by creditor-based corporate governance, employment stability and in-group favouritism, worked well until the 1980s (Gotoh, 2020). However, since the 1990s, the capacity of Japan's developmentalist patient capital and bureaucracy to coordinate its stakeholder capitalism has weakened. Korea differs from Japan in several ways, including the concentration of power in the presidency, the Ministry of Economy and Finance (MOEF) and chaebols, weaker employment security, and owner management of big businesses. These factors have facilitated the development of market-based patient capital and investment in digital innovation.

With some exceptions, most Japanese companies must overcome the closed corporate system and weak shareholder-based corporate governance to achieve effective digitalisation. Companies that are key members of Keidanren, Japan's largest industrial association, have close relations with the public and private banking sectors (providing developmentalist patient capital). This produces risk-averse creditor-based corporate governance and restricted shareholder power.

There are three interrelated obstacles to digitalisation in Japan. First, strong creditor-based corporate governance has prevented the shift to market-based financing from challenging the vested interests (e.g. employment protection and ties between banks and companies) of Keidanren members and the banking sector, both the traditional guardians of 'employment-sovereignty management' (Dore, 2009). The prevailing governance norm has

restricted labour, capital and knowledge (including technology and information) mobility as well as risk-taking and clashes with digitalisation. Second, underdeveloped shareholder-based corporate governance and risk capital also hamper investment in digital innovation. The bank-centred financial system, which has close ties with traditional industries with mostly tangible assets, is less suitable for financing intangible assets with highly volatile value than the market-based system (e.g. equity market). Third, the deteriorated coordination of stakeholder capitalism has strengthened the status quo and increased resistance to drastic change.

Digitalisation is not entirely positive and promotes labour precarity and technologies that selectively limit workers' choices, creating social tensions (Shibata, 2020 & 2022). Japanese companies need to maintain their traditional core strengths, including their less copyable analogue technology, accumulated experiential knowledge, and organisational solidarity. Therefore, the balance between economic efficiency and social stability is critical. I argue that Japan should learn from Korea's experience, hybridise shareholder- and creditor-based corporate governance, and build the right combination of market-based and developmentalist patient capital to re-coordinate stakeholder capitalism.

The analytical method is qualitative and based on the extensive study of secondary sources in both English and Japanese (including the documents on the Japanese development and industrial banks' histories) and 24 semi-structured interviews with Japanese bureaucrats, corporate executives, financial and power industry experts, and political economy specialists from 2022 to 2023. This approach was chosen because the article does not seek a general theory of the finance-digital nexus but specifically addresses the research question of why the patient capital provision in Japan has been insufficient since the late 1990s. The article primarily focuses on Japan and takes its struggle with digitalisation as an illustrative comparative case study, drawing lessons from Korea's experience. As a Marxist-rooted approach to comparative political economy, Regulation Theory views national capitalist

models as historically and geographically diverse (Boyer, 2018; Clift, 2021). The Regulation Theory-inspired conceptual framework fits the article's qualitative empirical research method well.

I begin by comparing Japanese stakeholder capitalism, Anglo-American financial-digital capitalism and Korean capitalism, focusing on the mobility of labour, capital and knowledge, the interests of key actors, and social norms. I then discuss varieties of patient capital and Japan's struggle with digitalisation, highlighting shareholder- and creditor-based corporate governance. Finally, I discuss how developmentalist and market-based patient capital need to be combined to re-coordinate Japan's stakeholder capitalism to align with Anglo-American financial-digital capitalism and retain its core corporate strengths.

Comparison of Japanese Capitalism with Anglo-American and Korean Capitalisms

Classic varieties of capitalism approaches set out two ideal types: Anglo-American-style liberal market economies, in which corporate activities rely on hierarchies and market mechanisms for coordination, and coordinated market economies like Germany and Japan, where corporate activities depend on non-market-based coordination and networks (Hall & Soskice, 2001). However, these approaches are too dichotomous and static (Thelen, 2004), nor do they sufficiently address the standings of Asian capitalisms (Peck & Zhang, 2013; Gomez & De Micheaux, 2017; Whittaker, 2024). Japanese and Korean capitalisms have changed over time, based on their evolving socio-economic institutional coordination.

Regulation Theory analyses the transformation of diverse forms of capitalist models, each of which has to deal with coordination problems stemming from multiple forms of socio-economic institutions, including competition (e.g., between firms and regions), state-economy relations (e.g., the state-business nexus), the financial regime, the wage-labour nexus (which

coordinates employment relations), and the insertion of national capitalist models into the world economy and international regimes (Aglietta, 1998; Boyer, 2018 & 2019; Boyer & Yamada, 2000; Boyer & Saillard 2002; Amable, 2018). This theory posits that each capitalist model is inherently unstable, and a mode of regulation (nationally specific configuration of socio-economic institutions) is essential to stabilise a regime of capital accumulation that temporarily reproduces a pattern of how production, consumption, and distribution organise and expand capital in the particular system (Shibata, 2022). Furthermore, the diverse institutional designs shape national capitalisms, and the power behind institutional frameworks (defined as social compromise) influences the trajectories of national capitalisms (Gomez & De Micheaux, 2017). As such, Regulation theory is well-suited to elucidate the diversity and transformation of Asian capitalisms. Divergent socio-economic institutions mentioned above shape distinctive characteristics of various patient capital and corporate governance in diverse capitalisms.

The Regulation Theory approach indicates the hierarchical relations between socio-economic institutions in capitalist models. In Japanese capitalism during the period of embedded liberalism (a combination of open international trade and restricted international capital mobility from the late 1940s to the 1970s), the wage-labour nexus was at the pinnacle of its institutional architecture, supported by the financial regime (providing developmentalist patient capital) and the state-business nexus (through industrial policy), while the integration into the global economy and inter-firm competition were subordinated to these institutions (Yamada & Hirano, 2012; Whittaker, 2024). By contrast, in Korean capitalism from 1962 to 1987, the state-business nexus (particularly the state's close relationships with chaebols) was at the top of its institutional hierarchy, bolstered by the export-led regime (integration into the global economy) and the state-led financial regime, while inter-firm competition and the wage-labour nexus were ranked low in the hierarchy (Kim, 2012). However, in 1987, Korea's

export-led regime was brought to a crisis by the June civil protests and the July-August workers' struggles, which gradually enhanced the position of the wage-labour nexus within the institutional hierarchy (ibid.: 231).

Between the late 1940s and the 1970s, class compromise and Fordist mass production under embedded liberalism fitted Japanese society well (Whittaker et al., 2020). Because of its strategic importance during the Cold War, the US tolerated Japan's developmentalism, which consolidated the power of interventionist bureaucrats, anti-market liberal corporate management centred on Keidanren, and developmentalist patient capital providers. In the 1980s, the US-led international order shifted to neoliberalism – which advocates free capital mobility between sectors, regions, and countries – indicating the restored power of the capitalist class (Harvey, 2005). Following the weakening of the Soviet Union in the 1980s, Western capitalists no longer had to make a class compromise. This enhanced international capital mobility, and the US became progressively less tolerant of Japan's developmentalism.

The rapid development of ICT in the US in the 1980s and 1990s facilitated the expansion of global value chains and international capital mobility. However, the US is not an entirely free-market economy; its considerable state spending and investment (including defence spending) has driven the development of digital technologies such as computers, the internet, AI, and semiconductors (Mazzucato, 2018). The market-government dichotomy is misleading – there are no such things as free markets, and governments are central to market creation through building rather than destroying institutions (Vogel, 2018).

Until the 1980s, developmentalist patient capital and the bureaucracy managed to effectively coordinate Japan's stakeholder or convoy capitalism. As Vogel (2006: 9) explains: 'Japanese managers practiced "stakeholder" governance in the sense that they viewed workers, banks, suppliers, and distributors as members of a corporate community, and they considered the interests of this broader community in making management decisions'.

Convoy capitalism describes the Japanese model, which consists of a bank-centred financial system, cartels and extensive regulation, with government supervision to facilitate its rapid economic growth and provide social protection for vulnerable members of its society, including workers and their families (Schoppa, 2006: 2).

The Japanese have traditionally had stronger attachments to 'ba (social locations)' shared by small groups or fragmented communities (intermediary organisations, for example, villages, company divisions, and bureaus of a ministry) than to larger groups or the state and membership in small groups is a prerequisite for participating in large groups (Brinton, 2011). This has resulted in the dispersion of power and class compromise. The survival of intermediary organisations is their members' top priority, and the mobility of labour, capital and knowledge is restricted to avoid jeopardising their continuity. Drawing on Hayami's (2015) 'industrious revolution', a labour-intensive, capital-saving path of agricultural development that was created by the elimination of landlords four centuries ago, I contend that Japanese elites promoted norms of industriousness (respect for labour and a negative view of financial profit) and systemic support (elites/superiors' support and protection of subordinates in exchange for the latter's obedience) and mobilised the workforce to advance intermediary organisations and the country (Gotoh, 2021). Sugihara (2004: 14) maintains that 'the work ethic associated with the Industrious Revolution path had survived the Meiji Restoration (1868) and the Postwar Reform'. After WWII, the US occupation forces eliminated major capitalists, including landlords and executives of Zaibatsu conglomerates, contributing to the continuity of norms of industriousness. These norms and in-group favouritism shaped a negative view of short-term financial profits and Japanese corporate preferences for employment sovereignty, closed, continuous innovations, and experiential knowledge.

Developmentalist patient capital providers straddled the public and private spheres and included, for example, the Development Bank of Japan (DBJ), three long-term credit banks (the Industrial Bank of Japan, Long-Term Credit Bank of Japan, and Nippon Credit Bank), and commercial banks, playing a critical role in Japan's rapid economic growth (Calder, 1993, Compilation Committee on the Industrial Bank of Japan's History, 1982; Compilation Committee on the Development Bank of Japan's History, 2002; Uzawa & Takeda, 2009a & 2009b).[1] From a Regulation Theory perspective, developmentalist patient capital reflected the characteristics of Japan's financial regime under US-led embedded liberalism and linked the state (and its industrial policy) with businesses and broad society through creditor-based corporate governance, continuous innovation and stable employment. Japan imported its models of development and industrial banking from France and Germany before World War I, which influenced the establishment of the Korea Development Bank (KDB; Moon, 2003; Compilation Committee on the Industrial Bank of Japan's History, 1982). Patient capital compensated for the fragmented nature (power dispersion) of Japanese stakeholder capitalism by linking the government to the industrial sector, encouraging corporate risk-taking, and providing long-term stability for corporate relationships and employment. National development and industrial banks contributed to economic growth across East Asia (Amyx & Toyoda, 2006). Japan also took the initiative to establish the Asian Development Bank in 1966 and use it as an international economic cooperation tool (Yoshimatsu, 2017).

However, the weak governance of developmentalist patient capital suppliers, moral hazard and the delay in public capital injections resulted in Japan's banking crisis in the late 1990s (Ikeo, 2003 & 2006). This crisis, the Basel capital accords that restricted major banks' risk-taking and the 2001 Ministry of Finance breakup weakened the coordination capacity of patient capital. The extinction of the three long-term credit banks weakened Japan's developmentalist patient capital (Nagel, 2024). The prolonged economic slump and a series of

scandals reduced bureaucratic power in the 1990s, while the Ministry of Economy, Trade and Industry (METI) shifted its emphasis from industrial to competition policy. However, the protection of companies and regular workers has remained in place, albeit in a weakened form, and the remnant of convoy capitalism can be found in Keidanren, which succeeded the Council for Control of the Key Industries established during WWII (Gotoh, 2019). According to Harvey's (2005) definition, despite neoliberal globalisation, Japan has not become a fully neoliberal state.[2]

The transition of the US-led international economic order from embedded liberalism (which allowed the US allies' government interventionism and domestic economic autonomy) to neoliberal globalisation disrupted Japan's stable triangular relations between the wage-labour nexus, the developmentalist financial regime and the state-business nexus. From the 1990s onwards, the Japanese government encouraged Japanese big businesses to shift their production from domestic to overseas to deal with problems (e.g. higher prices for exports and decreased domestic consumption) arising from globalisation, for instance, by providing the Japan Export-Import Bank's (currently, the Japan Bank for International Cooperation) massive financing for overseas investment (Hatch, 2011). This had a negative impact on the Japanese labour market. Since the 1990s, the developmentalist financial regime and the state-business nexus have been weakened within the institutional hierarchy, while integration into the global economy has gained influence. However, the wage-labour nexus has been weakened but has remained influential within the institutional hierarchy of Japanese capitalism. This is because the developmentalist financial regime (closely related to creditor-based corporate governance) has become weaker but has not been replaced by an Anglo-American-style financial regime (associated with shareholder-based corporate governance).

Meanwhile, digital capitalism, in which the effective reach of the market system was broadened through the combination of cyberspace and existing capitalism, emerged from US

neoliberal policies – these liberalised telecommunications and drove the rapid expansion of global production chains during the 1980s and 1990s (Schiller, 1999). Advances in digital technology (e.g. social media, digital platforms, cloud computing, blockchain technology, AI and big data) have dramatically enhanced the connectedness of the global economy. Multinational enterprises have been able to build global value chains, and ways of communicating and doing business have been transformed. As SAP, a multinational software company, notes, compared to human labour, digital data is significant for its ultra-fast mobility and perfect copyability. SAP points out five strengths of digital data: very low operating costs after an initial investment, no capacity limit, real-time, valuable recordkeeping for analysis and forecasts, and the possibility of customisation (President Corporate Planning Study Group, 2018). Regulation Theory considers that technical change plays a major role in long-term economic development as the connections between technology, the organisation of production and other institutional forms shape the foundation of a growth regime (Amable, 2002: 161). Digitalisation has posed a challenge to the primacy of the wage-labour nexus, which was a 'socio-technical system covering all aspects of the capital-labour relations' in postwar Fordism (Guttmann, 2002: 57).

Until recently, Japanese elites were stuck in the paradigm of labour-intensive operations, tangible assets and continuous innovations. They were slow to recognise digitalisation as a part of the broader dematerialisation of capitalism and, in particular, the shift to intangible assets (knowledge capital) and a knowledge- and information-intensive society. Haskel and Westlake (2018) emphasise the growing significance of intangible assets, pointing out that in the US and the UK over the last 20 years, the share of intangible investment in GDP has exceeded the share of tangible investment. Japan's total intangible investment increased from around 10 trillion yen in 1980 to 40 trillion yen in 2000 but stagnated from 2000 onwards; in 2012, intangible investment accounted for a smaller share of

GDP than tangible investment (Miyagawa et al., 2015). Corrado et al. (2005) divide intangible assets into three categories: computerised information (software and database development), innovative property (R&D and design development) and economic competencies (training, market research and branding). Relative to tangible assets, intangible assets have four distinctive characteristics: scalability, high sunk costs (little salvage value), significant spillovers (non-rival and non-excludable nature) and high synergies with other intangibles (open innovation; Haskel and Westlake, 2018).

Over the last four decades, many countries have witnessed financialisation, the growing power of financial actors, practices and markets in their economies (Epstein, 2005). Under financialisation, a new institutional configuration, in which the market-based financial regime has become most influential, has replaced Fordism, particularly in Anglo-American countries, peripheralising the wage-labour nexus (Whittaker, 2024: 11-12). US-led financial globalisation and digitalisation share several characteristics, i.e. knowledge and information intensity, high mobility (of capital and knowledge), detachment from labour (causing labour precarity) and open but oligopolistic nature (power concentration). These have co-evolved to establish financial-digital capitalism and drive economic globalisation. Digitalisation has enabled the exponential growth of global financial flows, while financialisation has facilitated the rapid growth of digital giants. Given the high sunk costs of intangible assets, equity finance with higher risk tolerance is more suitable for these assets than debt finance. However, the erosion of coordination has made Japanese stakeholder capitalism more risk-averse and less compatible with Anglo-American financial-digital capitalism.

Korean and Japanese capitalisms have multiple similarities (e.g. developmentalism, the bank-centred financial system and corporate groups), but the former's power is more concentrated at the top. Among the social ties of (1) family and kinship, (2) intermediary organisations outside kinship, and (3) the state, Koreans (like the Chinese) depend on the first

and third, while the Japanese rely heavily on the second (Fukuyama, 1996). The Choson dynasty (1392–1897) was ruled by the king and scholar-bureaucrats (the Yangban, who were highly educated civil servants and military officers with landlord status). The survivors of the Yangban class became privileged politicians, bureaucrats and industrialists after WWII (Amsden, 1989). Contemporary Korean capitalism inherited a concentration of power at the top, for example, in the presidency, the MOEF and owner-managers of chaebols, from the Choson dynasty.

Korea's President exercises more control over the bureaucracy than Japan's Prime Minister (Moon & Rhyu, 1999) and has a significant role in developmentalist policy (Thurbon, 2016). Also, Korea's state bureaucracy enjoyed 'more centralised, integrated formal power over industry and finance' than its Japanese counterpart (Calder, 1993: 264). The MOEF, established through the 1994 merger of the financial activist Ministry of Finance and the neoliberal-leaning Economic Planning Board by the Kim Young-sam administration, is a super-ministry that combines developmentalist and market-based patient capital. Lifetime employment disappeared after the Asian financial crisis (Kim, 2004). However, the founding families still control chaebols, which are much more centralised than the Japanese keiretsu (interlocking business networks often with capital and human relations). Chaebols accounted for 77 per cent of the Asia300 companies' market capitalisation (market value of a company's outstanding shares) in Korea (Nikkei Asia, 2015). This concentration of power has facilitated Korea's digitalisation.

Varieties of Patient Capital and Shareholder-Based Corporate Governance

Regulation Theory considers that finance is a key social mediation mechanism in the regulation of capital accumulation, which is historically and geographically diverse (Aglietta,

1998). This perspective has similarities with the late Timothy J. Sinclair's social foundations approach to finance, and he argued that finance is not a machine or a law of nature but social and historical forms of collective human interaction (Sinclair, 2021; Rethel & Sinclair, 2012; Clift & Clarke, 2025). In this sense, a state's history and domestic social norms, as well as internationally influential ideologies, contribute to shaping the level of capital mobility in a specific capitalist model, which indicates capital's bargaining power vis-à-vis a state and labour (Gotoh, 2019). Regulation Theory and the social foundations approach to finance offer useful perspectives on varieties of patient capital.

Various scholars have used the term patient capital and considered its different types. Developmentalist patient capital is provided by development, industrial, long-term credit, and export-import banks and has been key in continental Europe and East Asia since before WWII. One reason for the recent attention to patient capital is the rise of Chinese international development finance (Hameiri & Jones, 2018; Kaplan, 2021). In contrast, market-based patient capital, supplied mainly by venture capital, private equity, sovereign wealth and pension funds, has, since the 1980s, multiplied, mainly in Anglophone, resource-rich and export-driven economies. East Asia (notably China) has recently demonstrated a significant presence in market-based patient capital associated with its rapid development of advanced technology. Deeg & Hardie (2016) determine the patience levels of capital using Hirschman's (1970) concepts of voice (attempts to improve unsatisfactory relationships through communication) and exit (withdrawal from unsatisfactory relationships). Klingler-Vidra and Pacheco Pardo (2020) maintain that legitimate social purposes (e.g. job creation and economic diversification) have driven Korea's support for entrepreneurial finance, including venture capital. However, the comparisons of the social purposes and characteristics between developmentalist and market-based patient capital remain a gap in the literature (Rethel & Thurbon, 2020).

I argue that the social purposes of developmentalist patient capital are economic growth mainly through continuous innovations and socio-political stability. By contrast, the social purpose of market-based patient capital is economic growth through market efficiency and discipline, taking large risks, and sometimes achieving disruptive innovation. The characteristics of developmentalist patient capital include public orientation (close relations with governments), long-term loans, the use of voice and the risk of moral hazard. In the East Asian context, developmentalist patient capital has contributed to national development objectives, including the development of infrastructure and the internationalisation of national companies (Pape & Petry, 2024). Market-based patient capital is characterised by its emphasis on investment returns, portfolio investments including equity and other risk capital, arm's length relationships between investors and investees, and the use of voice and exit. In Western economies, financial markets have become important sources of patient capital with the decline of relational banking. However, investor engagement in pursuit of short-term performance can lower the patience of market-based finance (Deeg & Hardie, 2016). Despite these differences, developmentalist and market-based patient capital suppliers are not mutually exclusive. For instance, given their ties to the state, sovereign wealth funds and public pension funds are hybrid patient capital providers. Development banks (e.g. the KDB and DBJ) have also expanded their investment portfolios beyond loans. In East Asia, due to insufficient private risk capital, state-owned institutions have expanded their provision of public risk capital, which is generally more patient.

Korea has built confidence in market-based finance by establishing a supply of state-owned market-based patient capital in addition to developmentalist patient capital. Before the 1997-98 financial crisis, the KDB and Korea Export-Import Bank, major developmentalist institutions, advanced Korea's rapid growth. That crisis produced two apparently contradictory results: extensive financial liberalisation (e.g. lifting most capital controls) and

the state's return to the centre of the financial system (including by expanding the KDB and Korea Export-Import Bank) based on its control of the bulk of domestic savings (Thurbon, 2016). In 2005, the Korean government established the Korea Investment Corporation as its sovereign wealth fund and the Korea Venture Investment Corporation, which manages the government-backed Korea Fund of Funds and finances venture capital firms globally. This combination of developmentalist and market-based patient capital has contributed to Korea's digitalisation. The state-business nexus has remained at the top of the institutional hierarchy of Korean capitalism, supported by the state-led financial regime which has expanded into market-based patient capital.

In contrast, Japan has not sufficiently supplied market-based patient capital. Private equity funds, another type of market-based patient capital, make long-term investments into privately held companies in turnaround, growth, or carve-out projects. Most corporations in Japan saw private equity funds in a negative light as they took advantage of Japan's economic woes during the 1990s and 2000s. Under the Abe administration, from 2012 to 2020, private equity investments in Japan grew (Schaede, 2020). Korea's private equity deal value nevertheless exceeded Japan's in 2021 (Financial Times, 2023).

Until the mid-1990s, two-thirds of shares of all Japanese listed companies were held by domestic financial institutions and companies, mainly through cross-shareholdings, restricting the voice of independent shareholders (Japan Exchange Group, 2022). However, domestic financial institutions had to sell off a large part of this shareholding due to the financial crisis, the Basel Capital Accords, and the introduction of mark-to-market accounting on shareholdings in 2001. At the same time, foreign investors rapidly purchased Japanese equities (30.2 per cent of total shares in 2020) and transplanted Anglo-American-style practices of shareholder capitalism in Japan (Hattori, 2020). The aggregate shareholder

returns (dividends and share repurchases) of Japanese listed companies rose from 3 trillion yen in 1995 to 23 trillion yen in 2021 (Mitsui Sumitomo DS Asset Management, 2022).

However, since the late 1990s, the weakened developmentalist patient capital and government initiatives for industrial development have decreased corporate risk-taking. Despite increased foreign shareholdings, shareholder-based corporate governance has remained inadequate, contributing to low tolerance for corporate risk-taking. At the end of March 2018, cash on hand exceeded debts at 59 per cent of Japanese listed companies (Nikkei Asia, 2018), and at the end of March 2023, about half of these companies had price-to-book ratios of less than 1, which means the market price of their shares is lower than the book value of their assets (Japan Times, 2023). These issues are largely due to the corporate sector's risk aversion because of weak shareholder-based corporate governance and the unravelling of stakeholder capitalism.

After the bubble economy burst, Japan introduced Anglo-American-style financial practices and corporate governance, but the transplantation of Anglo-American liberal norms has been insufficient. Japan's transition to shareholder capitalism has been modest as the financial sector lacks the willingness and capability to take high risks, and households have not chosen to be a part of financialisation as borrowers (Hattori, 2020). Japan's inadequate development of shareholder-based corporate governance is the most acute when its financial practices and corporate governance are compared with the Anglo-American model. Anglo-American countries have long maintained the concept of 'shareholder democracy' (meaning that shareholders, including small ones, should increase their influence over corporate governance), and since the 1980s, the equity culture (willingness to take ownership risk of investment in companies to obtain ownership rewards) has been promoted in these countries to support innovation and enhance the international economic competitiveness (Dore, 2008). The equity culture has contributed to the growth of innovative industries such as ICT and

pharmaceuticals and created an oligopolistic industrial structure through M&As and bankruptcies. It could be argued that in Anglophone countries, debts are utilised to enhance shareholder value, while, in Japan, debts (primarily bank loans) are used to curb shareholder power.

Under financial globalisation, Japanese employment sovereignty (primacy of the wage-labour nexus in the institutional hierarchy) has been gradually eroded. However, Japanese capitalism has not converged with the Anglo-American model, despite Dore's (2009) perception that Japanese employment sovereignty had succumbed to shareholder sovereignty (supremacy of the financial regime in the institutional hierarchy). From the mid-1990s to the mid-2000s, Anglo-American financial practices and corporate governance were imported to Japan, but many Japanese companies have demonstrated mock and cosmetic convergence,[3] and in-group favouritism has remained as the core of corporate governance. Japan's late-1990s financial crisis and the global financial crisis starting in 2007 could have hampered its capital market development and financial risk-taking.[4] Significantly increased corporate bankruptcies due to the financial instability from the late 1990s to the early 2000s have made the corporate sector reduce expenses, investment and debt to lower credit risk. In addition to the prolonged downsizing, anti-neoliberal backlashes beginning in 2006 and the global financial crisis strengthened a negative view of financialisation and shareholder-based corporate governance in Japan (Gotoh, 2019).

Another issue is that Japanese small and medium-sized enterprises (SMEs) and start-ups have difficulty obtaining grant funds and risk capital that finance innovation. In contrast, the Korea Venture Investment Corporation has significantly contributed to the development of Korea's start-up (including digital technology start-up) ecosystem: the director of a financial facilitator stated that without the state-backed venture capital fund of funds management institution, the start-up ecosystem would not exist (Klingler-Vidra and Pacheco

Pardo, 2020: 348-349). METI (2022a) has recognised the significant contribution of this state institution in Korea and has planned to expand similar public risk capital in Japan. Risk capital for start-ups is critical in high-technology industries. Japan's small amount of annual venture capital investment (US$ 4.5 billion) in 2021, dwarfed by the US (US$ 347.4 billion), China (US$ 107.9 billion) and Korea (US$ 12.9 billion), exemplified its weak equity culture (Goto & Wickham, 2022).

Meanwhile, the roles of state financial institutions are not only to provide public patient capital but also to influence the governance norms and behaviour of other actors, including investee companies and private-sector financial institutions, through collaboration and monitoring. For instance, these state institutions can provide finance for investee companies jointly with private-sector financial institutions to encourage the latter institutions' risk-taking. Furthermore, Japan's Government Pension Investment Fund (GPIF), the world's largest pension fund by asset value (US$1.5 trillion in 2023), can contribute to strengthening its investees' shareholder-based corporate governance by using voice and exit.

Japan's Struggle with Digitalisation

Stagnant labour productivity and international requirements for responsible supply chain traceability to prove no conflicts with sustainability (e.g. human rights and environmental) issues prompted METI to emphasise the necessity of digitalisation, which needs large investment in intangible assets including software and databases (METI, 2021). The 2022 DBJ survey indicates that only 18 per cent of Japanese big businesses used the Internet of Things (IoT, a digital network that interconnects and exchanges data) or AI (DBJ, 2022). The IoT platform consisting of sensors, software, databases and other technologies is a key system for digitalisation. My interviews with government officials, corporate executives, financial

professionals, and academics have confirmed Japan's struggle with digitalisation, which is ascribed ultimately to its corporate governance and social norms.

In Korea, the government and the ICT industry (e.g. Samsung Electronics and LG Electronics) have collaborated on IoT promotion since 2016, and according to the 2023 National Information Society Agency survey, 53 per cent of Korean companies used IoT (Ajunews, 2024). Korea's National Pension Service (a major shareholder of Korean ICT giants such as Samsung Electronics and LG Electronics) and the KDB have provided massive finance for large ICT companies. In contrast, Japanese major private-sector banks had to sell off shares of their borrowers including Japanese ICT companies (e.g. Hitachi and NEC Corporation) due to their own financial crises, while the GPIF's and the DBJ's financing for Japanese ICT companies has not been as supportive as their Korean counterparts' financing for Korean ICT firms. One major difference between Japan and Korea before the late 1990s financial crises was that in Japan, private-sector financial institutions (including the three long-term credit banks) provided a much greater proportion of developmentalist patient capital than in Korea (where the KDB was the largest bank by asset value as of 1996). Under embedded liberalism, Japanese private-sector financiers provided developmentalist patient capital for public purposes, such as long-term credit allocation and financial support for strategic industries (Calder, 1993), but neoliberal globalisation, which pursued short-term financial profits and eroded Japan's domestic economic autonomy, made these private-public partnerships unravelled. Meanwhile, since the 1980s, the DBJ has been criticised for squeezing private-sector financial institutions and faced strong privatisation pressure, and its corporate lending market share has been curbed (Uzawa & Takeda, 2009b). Moreover, in contrast to Korea which has maintained the 'developmental mindset' (aiming for national techno-industrial catch-up and export competitiveness through state economic intervention) for financial activism (Thurbon, 2016: 2), such a mindset has been weakened in Japan due to

various factors including the Ministry of Finance breakup and the extinction of the long-term credit banks.

Furthermore, the Korea Venture Investment Corporation has supported SMEs and start-ups and attracted overseas venture capital to the Korean market. After the Asian and Japanese financial crises in the late 1990s, the accumulation of intangible assets contributed to Korea's economic growth, but the low accumulation of intangible and tangible assets caused Japan's economic stagnation (Miyagawa & Takizawa, 2011). Korea's state financial institutions contributed to its accumulation of intangible assets. In contrast, although Japanese companies with higher ratios of intangible assets tend to choose equity issuance, the proportion of equity issuance to all Japanese listed companies' total financing from 2002 to 2010 was only 3 per cent (Hosono & Takizawa, 2017). This suggests that Japan's underdeveloped equity market and shareholder-based corporate governance hampered its accumulation of intangible assets. Furthermore, despite the significance of SMEs and start-ups in digitalisation, they have faced difficulty financing digital investment (e.g. IoT platforms) and innovation.

Japan's struggle with digitalisation is due not only to the underinvestment in intangible assets but also to insufficient capabilities and willingness to optimise entire corporate operations and share information with other companies (interview with a transportation company executive, 22 July 2022). For instance, the automobile industry has extensive domestic and international supply chains. Original equipment manufacturers (OEMs, e.g. Toyota, Honda and Nissan) have tier 1 (direct suppliers), tier 2 (providing components and raw materials for tier 1), tier 3, and tier-n suppliers in their supply chains. OEMs do not necessarily have sufficient information on transactions between lower-tier suppliers. One example of poor supply chain management is that Japanese OEMs experienced a serious shortage of semiconductors from 2020 to 2022. Also, some suppliers, especially

those outside keiretsu of OEMs or higher tier suppliers, are reluctant to share information with OEMs. Sharing information on which party's digital platform is another issue, and it is difficult to establish an industry-wide standard of digital platform. Furthermore, many SMEs have limited financial and human resources to cope with investment in intangible assets. Automotive supply chains in Japan are more extensive and include more SMEs than in the US and Europe, where suppliers are more consolidated (interview with automobile company executives, 5 August 2022). Companies with multiple business divisions face greater difficulties promoting digitalisation as each business division maintains autonomy, and corporate headquarters are often insufficiently powerful and fragmented by function (e.g. planning, finance, and human resources).[5] Consequently, their digitalisation often falls into partial optimisation rather than overall optimisation.

The electric power industry is another example of an industry in which digitalisation is critical. Japan's ten electric power companies maintained regional monopolies until 2016, when retail electricity sales were liberalised. Their transmission and distribution divisions were then spun off from the power companies to encourage new power generators (mainly renewable power producers) to enter the market. However, unlike the National Grid, which is responsible for the power transmission network across the UK (apart from Northern Ireland), Japan's network is not yet nationally integrated. As a result, the efficiency of its nationwide electricity supply chain management must be enhanced to match the supply and demand of power (particularly renewables) across regions through transmission network integration and digitalisation by using IoT (interview with a power industry expert, 12 July 2023). Many companies in Japan still prefer fossil fuel power, which is cheaper and more stable than renewables. Digitalisation will allow supply to be matched with demand timely to enhance the demand for renewables and lower their costs (interview with a financial professional, 14 July 2022).

Japan must expand market-based patient capital to encourage corporate risk-taking to invest in intangible assets. Its state financial institutions' expansion of public risk capital can stimulate the provision of private risk capital, but this alone cannot resolve the delay in investment in digital innovation. The largest obstacle to digitalisation in Japan is its traditional corporate governance approach, namely, employment-sovereignty management, stability orientation and aversion to power concentration, and its strong creditor-based and weak shareholder-based corporate governance, which are interrelated. First, labour management is the foundation of Japanese corporate governance and the source of power for anti-market liberal elites, making typical Japanese companies closed and exclusive membership organisations.[6] Such characteristics prevent the standardisation of business processes in industry and information sharing among companies beyond keiretsu relations, which are the key to digitalisation. Japanese corporate executives, who are internally promoted and share similar traits (e.g. in-group favouritism) with bureaucrats rather than capitalists and entrepreneurs, do not fit with shareholder capitalism. This type of corporate culture hinders the hiring and retention of high-calibre ICT professionals (interview with a venture capitalist, 28 June 2022).

Second, the preference for employment and business stability over profit maximisation and the aversion to concentrated power align with creditor-based corporate governance; the latter is risk-averse and tolerates greater business diversification and lower profitability than shareholder-based corporate governance.[7] Creditor-based corporate governance is egalitarian and stability-oriented but susceptible to government failure (e.g. moral hazard). By contrast, shareholder-based corporate governance accommodates diversity and is efficiency-oriented but vulnerable to market failure (e.g. short-termism). The orientation of creditor-based corporate governance toward stability and power dispersion constrains the power of shareholders and top management and results in partially optimal and

fragmented digitalisation. Supply chain management professionals point out that the major weaknesses of Japanese companies relative to Korean firms in digitalisation include the lack of rapid decision-making by top management and their inability to control the entire organisation (Fujiwara, 2021). An orientation toward stability also restricts the mobility of labour, capital, and knowledge and, in turn, hampers digitalisation. Until recently, Japanese big business had taken control of key technologies and enclosed them as sources of competitive advantage. However, this strategy is not conducive to digitalisation.

Third, the strong equity culture in Anglo-American countries is conducive to investment in digital innovation, while the weak shareholder-based and strong creditor-based corporate governance in Japan results in greater risk aversion, holding back the large, relatively risky investments in intangible assets required for digitalisation. Stronger shareholder-based corporate governance is indispensable for the development of market-based patient capital. Successful digitalisation also requires economies of scale through standardisation and oligopoly, which often conflicts with the nature of Japanese corporate governance.

Japanese corporate governance is not monolithic and has changed incrementally due to the influence of Anglo-American corporate practice (Aoki, Jackson & Miyajima, 2008). Some large companies that are managed by their founders and founding families are more market-oriented and entrepreneurial. However, strong creditor-based corporate governance at most traditional companies persists due to its link to Japanese social norms, including in-group favouritism, norms of industriousness and systemic support. In Japan, mutual surveillance – by which members ensure compliance with social norms – reassures group members. Strong in-group favouritism produces group security but destroys the general trust of people outside (Yamagishi, 2011). General trust in society (social openness), which facilitates risk-taking and is a prerequisite for market liberalisation, is weak in Japan.

In-group favouritism, systemic support, and norms of industriousness are the cornerstones of Japanese employment-sovereignty management. Systemic support offsets weak general trust and unites management and labour within an organisation while connecting different organisations (e.g. creditor banks and corporate borrowers, as well as big businesses and subcontracting SMEs) and providing social stability. However, in-group favouritism and systemic support restrict the mobility of labour, capital and knowledge, preventing Anglo-American-style financial practices and digitalisation from taking root. Meanwhile, since labour gained greater control and was better rewarded during the 'industrious revolution' than at any time before, industriousness became a family ethos in Japan, but this has weakened due to stagnant labour wages over the last three decades (Hayami, 2015).

Japanese social norms are linked to Keidanren's primary mission, which is the protection of member companies and their regular workers. In 2000, the IT Strategic Council (led by Nobuyuki Idei, chairman and CEO of Sony) in the Cabinet Secretariat requested the government make significant public investments in broadband networks. This effort was in vain because, at the request of Keidanren, the government prioritised supporting traditional manufacturers during the economic slump.[8] Today, however, market pressure prompts Keidanren to promote digitalisation,[9] and Japan needs to bolster shareholder-based corporate governance and expand market-based patient capital for intangible asset investment.

Combining Developmentalist and Market-Based Patient Capital

Japan's employment sovereignty, associated with its weak shareholder-based corporate governance and anti-market liberal social norms, has conflicted with Anglo-American financial-digital capitalism based on highly mobile capital, labour and knowledge. Although

the Japanese government has implemented a series of corporate governance reforms by importing Anglo-American-style practices since 2013, its listed companies' average return on equity has remained substantially lower than that of their Western peers. One reason is that the erosion of patient capital and the bureaucracy's coordination of stakeholder capitalism has left Japanese businesses more risk-averse and reluctant to mobilise capital and knowledge and pursue narrow divisional interests. Many Japanese market liberals (e.g. reformist politicians and bureaucrats, entrepreneurs and neoclassical economists) who pushed for Japan to adopt the Anglo-American capitalist model underestimated the persistence of social norms and misunderstood market liberalisation as the withdrawal of government.[10] By collaborating with the suppliers of patient capital and industrial associations, the Japanese government should minimise the friction between Anglo-American and domestic norms to adapt to digitalisation and shareholder-based corporate governance. The US government has been the primary risk-taker and has invested heavily in radical innovation. Japan must understand the gap between what the US did and what they say they did (Mazzucato, 2018).

In addition to the eroded capacity of patient capital and the bureaucracy to coordinate stakeholders, the regionalisation of the Japanese political economy is another cause of its coordination problem. As Hatch (2002 & 2011) argues, from the 1990s onwards, Japan not only provided enormous outward foreign direct investment for East Asia but also regionalised Japan's core networks of relationship-based political and economic institutions in East Asia to reduce structural pressure from globalisation on these institutions. However, although these institutions bought some time for the status quo, Japan's central position in the region declined dramatically. Furthermore, the reduced structure pressure has held back the drive for innovation in Japan, while huge outward foreign direct investment has made the government's industrial coordination difficult. Kwon (2021: 168) claims that the state's active role is required for rebuilding the industrial commons and improving national industrial

capabilities to counter neoliberal globalisation, but Japan's economic reforms in the 2000s did not succeed due to the lack of the government's coordination capacity (Kwon, 2024: 183). The Japanese government must take the stronger initiative in coordinating stakeholders to promote investment in digital innovation.

Japan should learn from Korea's experience in patient capital provision and investment in digital innovation. For instance, Japan can obtain a lot of insight from Korea's creation of the start-up ecosystem by using the Korea Venture Investment Corporation. However, given the different capitalist models (Korea's state-led model vs. Japan's stakeholder model) between the two countries, Japan's pressing priorities are re-coordinating its unravelling stakeholder capitalism and strengthening shareholder-based corporate governance. This may sound contradictory, but the shareholder is one of the main stakeholders and needs to play a vital role in making Japanese stakeholder capitalism and Anglo-American financial-digital capitalism compatible. Japan must restore patient capital to re-coordinate its stakeholder capitalism and promote corporate risk-taking, public-private-sector cooperation and national economic optimisation while enhancing its shareholder-based corporate governance's adaptability to digitalisation.

During the COVID-19 pandemic, under intensified geopolitical tensions, fierce international competition over advanced technology and growing interventionism in many parts of the world, the Japanese government rolled out new economic statecraft (Igata & Glosserman, 2021). In 2021, METI (2022b) announced a 'new direction of economic and industrial policies', aiming to strengthen the semiconductor and digital infrastructure (e.g. data centres and 5G networks) to support digitalisation. In addition, the Japan Investment Corporation, a government-backed fund under METI, has expanded its private equity and venture capital investments to boost international competitiveness and digitalisation.

The GPIF raised the target allocation of equity investment in its portfolio from 24% to 50% (25% each for domestic and international equities) in 2014, but it makes largely passive portfolio investments and delegates most of its funds to external asset managers. In contrast to its Korean counterpart, the National Pension Service, which directly managed 58% of its total assets as of 2020, the GPIF's proportion of directly managed assets to its total assets was only 18% as of 2018 (Lee & Grimes, 2023). This reflects the difference between the two countries' capitalist models. The GPIF has encouraged its equity investment managers to improve corporate value reflected in yardsticks, such as price-book ratios, through dialogue with companies, which is positive for the improvement of shareholder-based corporate governance (GPIF, 2024). The fund started private equity investment in 2020 but has room to expand its private equity investment (outstanding amount of US$4.2 billion in 2024).

Japan could also establish a sovereign wealth fund using a portion of its foreign exchange reserves, the world's second-largest (US$1.2 trillion in 2023) after China. In that case, it would have to avoid any political risks of interfering with the sovereign wealth fund and overcome public criticism of the high compensation paid to high-calibre investment professionals to ensure successful investments (AsianInvestor, 2021). Meanwhile, the DBJ, a traditionally developmentalist institution, has also gradually expanded its venture capital and private equity investments, which are market-based patient capital. Japan's state financial institutions have started expanding public risk capital, but larger market-based patient capital including private risk capital is needed to improve international competitiveness.

However, given its traditional corporate strengths and stability-oriented social norms, Japan should not throw away the baby with the bathwater and should seek to hybridise creditor- and shareholder-based corporate governance rather than replace the former with the latter. Organisational solidarity, accumulated analogue technology, and experiential knowledge are intertwined core strengths of Japanese corporate establishments (Dore, 2009).

Accumulated analogue technogies and experiential knowledge have been supported by organisational solidarity. As digitalisation has progressed, analogue technologies that cannot be digitised (e.g. optical lenses and analogue integrated circuits) have become even more valuable for Japan. Also, Japanese companies excel at combining analogue and digital technologies, as seen in a range of industries, such as robotics, automobiles, and semiconductor manufacturing equipment. Although Japanese companies must become more open and relax their rigid dismissal restrictions, there is still a need for a degree of organisational solidarity.

Stronger government initiatives for industrial development and market-based patient capital can encourage Japan's corporate sector to advance investment in intangible assets and enhance capital, labour and knowledge mobility among traditionally conservative Japanese companies; this is especially the case given that the negative aspects of anti-market liberal social norms have recently become more evident. However, developmentalist patient capital is also required to strengthen public digital infrastructure (e.g. submarine networks, hyper-scale data centres and 5G networks), support companies' transition to digitalisation (e.g. corporate reorganisation and creation of new business models), mitigate the risk of business failure (e.g. bankruptcies and mass layoffs) caused by digitalisation, and preserve social stability and Japan's traditional corporate strengths. The re-coordination of Japanese stakeholder capitalism needs the right combination of developmentalist and market-based patient capital.

Table 1: Varieties of Patient Capital

Conclusion

Inspired by the literature on the diversity and transformation of Asian capitalisms built on Regulation Theory approaches, this article offers an explanation of developmentalist and market-based patient capital to fill a gap in the literature regarding their divergent social purposes and characteristics. It elucidates how insufficient patient capital provision contributed to Japan's struggle to advance investment in intangible assets. Developmentalist and market-based patient capital are aligned with creditor-based and shareholder-based corporate governance. Shareholder-based corporate governance and digitalisation are manifestations of US-led liberal norms promoting the mobility of capital, labour and knowledge, and these are linked to the interests of oligopolistic knowledge-intensive multinational corporations and financial conglomerates and their shareholders. By contrast, employment-sovereignty management backed by strong creditor-based and weak shareholder-based corporate governance is still dominant in the Japanese political economy and has constrained the healthy mobility of capital, labour and knowledge. The interviews contribute to demonstrating that the weakening of Japan's developmentalist patient capital and the persistence of creditor-based corporate governance have left Japan with a stagnant innovation system, without the strengths of either market-based or state-led patient capital, or the more centralised corporate governance system like Korea's. In Korea, the state has strongly supported investment in digital innovation by using state financial institutions to combine developmentalist and market-based patient capital and collaborating with the ICT industry. Japan can gain much insight from Korea's experience in patient capital and digitalisation, but it needs to be mindful of the differences between the two countries' capitalist models. Insights associated with Regulation Theory can better address the research questions than the classic varieties of capitalism approach.

While the interests of one stakeholder, i.e. the shareholder, dominate shareholder capitalism, the coordination of multiple stakeholders is critical for stakeholder capitalism. However, the weakened coordinating capacity of patient capital and the bureaucracy has made Japanese stakeholder capitalism ineffective. Japan's lagging digitalisation and stagnant labour productivity reflect its deteriorated international competitiveness. Under such predicaments, the Japanese government must support the corporate sector in hybridising domestic and Anglo-American corporate governance norms and financial practices. As this study based on a Regulation Theory-inspired approach and empirical qualitative research indicates, stronger government initiatives, market-based patient capital and shareholder-based corporate governance are required to promote Japan's investment in intangible assets. The suppliers of market-based patient capital, such as the GPIF, the Japan Investment Corporation and private investors, play a critical role in these missions. However, the enhanced mobility of capital, labour and knowledge has adverse effects, causing labour precarity and social unrest and eroding the core strengths of Japanese companies. The providers of developmentalist patient capital, including the DBJ and commercial banks, need to mitigate these problems. Japan should learn from Korea's experience, hybridise shareholder- and creditor-based corporate governance and combine developmentalist and market-based patient capital (i.e. strike a balance between the wage-labour nexus and the hybridised financial regime with stronger state initiatives in the institutional architecture) to re-coordinate stakeholder capitalism while balancing market efficiency and socio-political stability. One limitation of this article is that negative aspects of the Korean political economy's power concentration (e.g. in the presidency and chaebols) are out of scope in this article as it primarily focuses on Japan. The Korean political economic issues will be examined elsewhere.

The concept of varieties of patient capital can be applied across East Asia (particularly China) and beyond. Today, while growing mobile capital is required to pursue short-term

performance under financial globalisation, there is a shortage of private patient capital for enlarging state activism (e.g. promoting digitalisation and decarbonisation and supporting technology start-ups). This creates a strong demand for public risk capital from state financial institutions in industrialised and emerging economies. The Greater China region demonstrates a significant presence of both developmentalist and market-based patient capital. Many Southeast Asian countries have sovereign wealth funds, while the ADB and the Asian Infrastructure Investment Bank have been involved in the development of Southeast Asia. Furthermore, Western governments have recently established and expanded state financial institutions despite their enormous private-sector market-based finance. For instance, the UK established the British Business Bank for SME financing in 2014 and the UK Infrastructure Bank in 2021, and the latter became the National Wealth Fund in 2024. In 2023, the Korea Investment Corporation announced its plan to invest £9.7 billion to finance UK renewables, green infrastructure and waste management projects (GOV.UK, 2023). As Pape & Petry (2024) suggest, the influence of East Asia's developmentalism (e.g. domestic and international patient capital provision), the international competition over advanced technologies amidst geopolitical tensions could explain the recent emergence of interventionist practices, including the establishment and expansion of state financial institutions in Western economies. These areas provide fertile grounds for future cross-regional comparative analysis of patient capital.

Notes

1. The origins of the three long-term credit banks date back to state-owned financial institutions established before WWII, and after WWII, the US occupation forces ordered the Japanese government to privatise them as lenders of long-term loans funded by bank debentures. Despite its private-sector status, during the postwar period, the Industrial

Bank of Japan, the largest long-term credit bank, became a key industrial finance provider and maintained close ties with the government. The DBJ was established in 1951, and its origin was the Rehabilitation Finance Corporation founded in 1947 to support Japan's economic recovery. It provided long-term loans mainly for the energy, transportation and industrial sectors but has shifted its financing towards crisis response and support for structural change using various instruments (including equity investments) over the last two decades.

2. Interview with a Financial Services Agency official, 3 August 2022.
3. Interview with a METI official, 1 August 2022.
4. Interview with Tetsuji Okazaki, University of Tokyo, 21 July 2022.
5. Interview with Chieko Matsuda, Tokyo Metropolitan University, 29 June 2022.
6. Interview with Fujio Nakatsuka, Nikkei FTRI, 5 August 2022.
7. Interview with Matsuda.
8. Interview with Nobuteru Kikuchi, Tsuru University, 21 July 2022.
9. Interview with Kikuchi.
10. Interview with Yoshio Shima, Tamagawa University, 18 July 2022.

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References

Aglietta, M. (1998). Capitalism at the turn of the century: Regulation theory and the challenge of social change. *New Left Review*, 232, 41-90.

Ajunews. (2024). Kankoku kigyo 10-sha ni 3-sha ha AI gijutsu to sabisu katsuyo … IoT mo kahansu (30% of Korean companies use AI technology and services, and over 50% adopt IoT). https://japan.ajunews.com/view/20240102124707185 [Accessed 30 April 2024]

Amable, B. (2002). Régulation theory and technical change. In: R. Boyer & Y Saillard eds. *Régulation Theory: The State of The Art*. Abingdon: Routledge, 161-167.

Amable, B. (2018). Diversity and the dynamics of capitalism. *European Journal of Economics and Economic Policies*, 15 (2), 238-248.

Amsden, A. H. (1989). *Asia's Next Giant: South Korea and Late Industrialization.* Oxford: Oxford University Press.

Amyx, J., & Toyoda, A. M. (2006). The evolving role of national development banks in East Asia. *The International Centre for the Study of East Asian Development, Kitakyushu – Working Paper Series*.

Aoki, M., Jackson, G., & Miyajima, H. (eds.). (2008). *Corporate Governance in Japan: Institutional Change and Organizational Diversity.* Oxford: Oxford University Press.

AsianInvestor. 2021. The case for – and against – a SWF for Japan. https://www.asianinvestor.net/article/the-case-for-and-against-a-swf-for-japan/465867 [Accessed 15 July 2023]

Bonizzi, B., Churchill, J., & Kaltenbrunner, A. (2023). UK pension funds' patience and liquidity in the age of market-based finance. *New Political Economy*, 28 (5), 780-798.

Boyer, R. (2018). Marx's legacy, régulation theory and contemporary capitalism. *Review of Political Economy*, 25 (2), 237-258.

Boyer, R. (2019). How scientific breakthroughs and social innovations shape the evolution of the healthcare sector. In: S. Lechevalier ed. *Innovation Beyond Technology: Science for Society and Interdisciplinary Approaches*. Singapore: Springer, 89-119.

Boyer, R., Uemura, H., & Isogai, A. (eds.) (2012). *Diversity and Transformations of Asian Capitalisms*. London: Routledge.

Boyer, R., & Saillard, Y. (eds.) (2002) *Régulation Theory: The State of The Art*. Abingdon: Routledge.

Boyer, R., & Yamada, T. (eds.) (2000). *Japanese Capitalism in Crisis: A Regulationist Interpretation*. London: Routledge.

Braun, B. (2016). From performativity to political economy: index investing, ETFs and asset manager capitalism, *New Political Economy*, 21 (3), 257-273.

Brinton, M. C. (2011). *Lost in Transition: Youth, Work, and Instability in Postindustrial Japan.* Cambridge: Cambridge University Press.

BusinessKorea. (2024, July 16). KIC to deploy $5 billion for overseas M&A, establishing strategic investment committee. https://www.businesskorea.co.kr/news/articleView.html?idxno=221311 [Accessed 5 August 2024]

Calder, K. E. (1993). *Strategic Capitalism: Private Business and Public Purpose in Japanese Industrial Finance.* Princeton: Princeton University Press.

Clift, B. (2021). *Comparative Political Economy: States, Markets and Global Capitalism.* Second Edition. London: Bloomsbury Publishing.

Clift, B., & C. Clarke. (eds.) (2025). *The Social Foundations of Global Finance*. Newcastle upon Tyne: Agenda Publishing. to be published in September 2025 (ISBN: 9781788218085).

Compilation Committee on the Development Bank of Japan's History. (2002). *Nippon Kaihatsu Ginko Shi (The History of the Development Bank of Japan)*. Tokyo: The Development Bank of Japan.

Compilation Committee on the Industrial Bank of Japan's History. (1982). *Nippon Kogyo Ginko 75 Nen Shi (The 75-Year History of the Industrial Bank of Japan)*. Tokyo: The Industrial Bank of Japan.

Corrado, C., et al. (eds.). (2005). *Measuring capital in the new economy.* Chicago: University of Chicago Press.

Dabla-Norris, E., et al. (2023). Accelerating innovation and digitalization in Asia to boost productivity. *IMF Departmental Paper*. https://www.elibrary.imf.org/view/journals/087/2023/001/article-A001-en.xml [Accessed 5 May 2023]

DBJ. (2022). Nendo Setsubi-toshi Keikaku Chosa (2022 Survey for Planned Capital Spending). https://www.dbj.jp/pdf/investigate/equip/national/2022_summary.pdf [Accessed 20 April 2023]

Deeg, R., & Hardie I. (2016). What is patient capital and who supplies it? *Socio-Economic Review*, 14 (4), 627-645.

Dixon, A. D. (2022). The strategic logics of state investment funds in Asia: Beyond financialisation. *Journal of Contemporary Asia*, 52 (1), 127-151.

Dore, R. (2008). Financialization of the global economy. *Industrial and Corporate Change*, 17 (6), 1097-1112.

Dore, R. (2009). Japan's conversion to investor capitalism. In: D. H. Whittaker and S. Deakin eds. *Corporate Governance and Managerial Reform in Japan.* Oxford: Oxford University Press, 134-162.

Epstein, G. A. (ed.). 2005. *Financialization and the World Economy*. Cheltenham: Edgar Elgar.

Financial Times. (2022, August 18). How South Korea learned to love private equity. https://www.ft.com/content/9ba55806-2899-4c1f-9244-9c5b8b29eb58 [Accessed 15 October 2023]

Fujiwara, R. (2021). Gurobaru meka SCM-bumon no ugokikata (The working of global manufacturers' supply chain management division). *Logi-Biz*, May 2021 issue, 38-43.

Fukuda, K. (2020). Science, technology and innovation ecosystem transformation toward society 5.0. *International Journal of Production Economics*. 220, 107460.

Fukuyama, F. (1996). *Trust: The Social Virtues and the Creation of Prosperity.* New York: Free Press.

Gomez, E. T., & De Micheaux, E. L. (2017). Diversity of Southeast Asian capitalisms: evolving state-business relations in Malaysia. *Journal of Contemporary Asia*, 47 (5), 792-814.

Goto, N., & Wickham, P. (2022). *Venture Capitalist.* Tokyo: NewsPicks Publishing.

Gotoh (2019). *Japanese Resistance to American Financial Hegemony: Global versus Domestic Social Norms*, Abingdon: Routledge.

Gotoh, F. (2020). Industrial associations as ideational platforms: why Japan resisted American-style shareholder capitalism. *The Pacific Review*, 33 (1), 125-152.

Gotoh, F. (2021). Social norms and (de-)financialization: Japan's and China's divergent paths in consumer credit. *Contemporary Politics*, 27 (4), 397-418.

GOV.UK. (2023). UK and South Korea to launch talks on new trade deal as Korean businesses back Britain with £21 billion of investment. https://www.gov.uk/government/news/uk-and-south-korea-to-launch-talks-on-new-trade-deal-as-korean-businesses-back-britain-with-21-billion-of-investment [accessed 10 February 2024]

GPIF. (2024). Evaluation project on the effects of engagement, https://www.gpif.go.jp/en/investment/esg_stw_project/project_report-1.html [accessed 5 July 2024]

Guttmann, R. (2002) Money and credit in régulation theory. In: R. Boyer & Y. Saillard eds. *Régulation Theory: The State of The Art*. Abingdon: Routledge, 57-63.

Hall, P. A., & Soskice, D. (eds.) (2001). *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.

Hameiri, S., & Jones, L. (2018). China challenges global governance? Chinese international development finance and the AIIB. *International Affairs*, 94 (3), 573-593.

Harvey, D., 2005. *A Brief History of Neoliberalism.* Oxford: Oxford University Press.

Haskel, J., & Westlake, S. (2018). *Capitalism without Capital: The Rise of the Intangible Economy*. Princeton: Princeton University Press.

Hatch, W. (2002). Regionalizing the state: Japanese administrative and financial guidance for Asia. *Social Science Japan Journal*, 5 (2), 179-197.

Hatch, W. F. (2011). *Asia's Flying Geese: How Regionalization Shapes Japan*. Ithaca NY: Cornell University Press.

Hattori, S. (2020). Financialization in Japan. *Evolutionary and Institutional Economics Review*, 17, 295-311.

Hayami, A. (2015). *Japan's Industrious Revolution: Economic and Social Transformation in the Early Modern Period.* London: Springer.

Hirschman, A. O. (1970). *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge, MA: Harvard University Press.

Hosono, K., & Takizawa, M. (2017). Intangible capital and the choice of external funding sources. *RIETI Policy Discussion Paper Series* 17-E-080.

Igata, A., & Glosserman, B., 2021. Japan's new economic statecraft. *The Washington Quarterly*, 44 (3), 25-42.

Ikeo, K. (2003). *Ginko ha Naze Kawarenainoka: Nippon Keizai no Airo (Why Japanese Banks Cannot Change: The Japanese Economy's Bottleneck)*. Tokyo: Chuokoron-shinsha.

Ikeo, K. (2006). *Kaihatsu Shugi no Boso to Hoshin: Kinyu Shisutemu to Heisei Keizai (Developmentalist Rampage and Self-Protection: The Financial System and the Heisei Economy)*. Tokyo: NTT Publishing.

IMD World Competitiveness Center. (2023). World digital competitiveness ranking 2023. https://www.imd.org/centers/wcc/world-competitiveness-center/rankings/world-digital-competitiveness-ranking/ [Accessed 20 March 2024]

Isogai, A. (2012). The transformation of the Japanese corporate system and the hierarchical nexus of institutions. In: R. Boyer, H. Uemura & A. Isogai eds. *Diversity and Transformations of Asian Capitalisms*. Abingdon: Routledge, 31-55.

Jackson, G., & Miyajima, H. (2008). Introduction: The diversity and change of corporate governance in Japan. In: M. Aoki, G. Jackson, & H. Miyajima eds. *Corporate Governance in Japan: Institutional Change and Organizational Diversity*, New York: Oxford University Press, 1-50.

Japan Exchange Group. (2022). 2021 Shareownership survey, https://www.jpx.co.jp/english/markets/statistics-equities/examination/b5b4pj0000050ilw-att/e-bunpu2021.pd. [Accessed 12 March 2023]

Japan Times. (2023, April 18). TSE finally ramps up market reform one year after questionable reforming. https://www.japantimes.co.jp/news/2023/04/18/business/tse-market-reform-ramp-up/#:~:text=TSE%20finally%20ramps%20up%20market%20reform%20one%20year%20after%20questionable%20restructuring,-Noriaki%20Maruyama%2C%20president&text=About%20a%20year%20ago%2C%20the,left%20many%20investors%20feeling%20frustrated [Accessed 15 March 2024]

Kaplan, S. B. (2021). *Globalizing Patient Capital: The Political Economy of Chinese Finance in the Americas*, Cambridge: Cambridge University Press.

Kim, A. E. (2004). The social perils of the Korean financial crisis. *Journal of Contemporary Asia*, 34 (2), 221-237.

Kim, H. (2012). The great transformations in the Korean economy since 1962: processes and consequences. In: R. Boyer, H. Uemura & A. Isogai eds. *Diversity and Transformations of Asian Capitalisms*. Abingdon: Routledge, 229-240.

Kim, K. (2020). The state as a patient capitalist: growth and transformation of Indonesia's development financiers. *The Pacific Review*, 33 (3-4), 635-668.

Klingler-Vidra, R. (2016). When venture capital is patient capital: seed funding as a source of patient capital for high-growth companies. *Socio-Economic Review*, 14 (4), 691-708.

Klingler-Vidra, R., & Pacheco Pardo, R. (2020). Legitimate social purpose and South Korea's support for entrepreneurial finance since the Asian financial crisis. *New Political Economy*, 25 (3), 337-353.

Knafo, S., & Dutta, S. J. (2016). Patient capital in the age of financialized managerialism. *Socio-Economic Review*, 14 (4) 771-788.

Kwon, H. K. (2021). *Changes by Competition: The Evolution of the South Korean Developmental State*. Oxford: Oxford University Press.

Kwon, H. K. (2024). *Openness and Coordination: National Economies of the U.S., Japan, and Germany in a Globalized World*. Singapore: Palgrave Macmillan.

Lechevalier, S. (2007). The diversity of capitalism and heterogeneity of firms: a case study of Japan during the lost decade. *Evolutionary and Institutional Economics Review*, 4, 113-142.

Lechevalier, S., & Shibata, S. (2024). The contribution of digitalization to non-inclusive growth in Japan. A Régulationist perspective on post-industrial dynamics. *Competition & Change*, published online first.

Lee, Y., & Grimes, W. W. (2023). Manifesting the embedded developmental state: the role of South Korea's National Pension Service in managing financial crisis. *Review of International Political Economy*, 30 (5), 1933-1956.

Liao, J. C., & Katada, S. N. (2022). Institutions, ideation, and diffusion of Japan's and China's overseas infrastructure promotion policies. *New Political Economy*, 27 (6), 944-957.

Matsuda, C. (2021). *Sasutenaburu Keiei to Koporeito Gabanansu no Shinka (Sustainable Management and Progress in Corporate Governance)*. Tokyo: Nikkei Business Publications.

Matsuda C. (2023). *Kangaeru Michishirube toshiteno Keiei Senryaku (Guideposts for Management Strategy)*. Tokyo: Nippon Jitsugyo Publishing.

Mazzucato, M. (2018). *The Entrepreneurial State: Debunking Public vs Private Sector Myths*. London: Penguin Books.

METI. (2021). *White Paper on International Economy and Trade 2021*.

METI. (2022a). Start-ups. https://www.meti.go.jp/shingikai/sankoshin/shin_kijiku/pdf/004_03_00.pdf [Accessed 18 May 2023]

METI. (2022b). Interim report for committee on new direction of economic and industrial policies. https://www.meti.go.jp/english/policy/economy/industrial_council/pdf/0818_001.pdf [Accessed 18 May 2023]

Mitsui Sumitomo DS Asset Management. (2022). Nippon-kabu nimatsuwaru itsutsuno gokai (Five misunderstandings for Japanese equities). https://www.smd-am.co.jp/market/daily/marketreport/2022/07/news220705jp/ [Accessed 27 June 2023]

Miyagawa, T., & Takizawa, M. (2011). Nippon to kankoku no seisansei-kakusa to mukei-shisan no yakuwari (The role of intangible assets on the economic performances in Japan and Korea). *RIETI Policy Discussion Paper Series* 11-J-018.

Miyagawa, T., et al. (2015). Mukei-shisan toshi to Nippon no keizai seicho (Intangible asset investment and Japanese economic growth). *RIETI Policy Discussion Paper Series* 15-P-010.

Moon, C. I., & Rhyu, S. Y. (1999). The state, structural rigidity, and the end of Asian capitalism: a comparative study of Japan and South Korea. In: R. Robison et al. eds. *Politics and Markets in the Wake of the Asian Crisis.* Abingdon: Routledge, 77-98.

Moon, W. S. (2003). Industrial bank in Korea: a legacy of German banking or French banking? *Entreprises et Histoire*, 32 (1): 107-119.

Nagel, M. (2024). Tilting the playing field: government strategies to bolster control over policy paths in Japan and South Korea. *The Pacific Review*, 37 (2), 245-276.

Nikkei Asia. (2015, November 26). South Korea's mighty 'chaebol' still make the economy tick. https://asia.nikkei.com/Business/South-Korea-s-mighty-chaebol-still-make-the-economy-tick [Accessed 12 November 2023]

Nikkei Asia. (2018, June 26). 59% of Japan corporations are essentially debt-free. https://asia.nikkei.com/Business/Business-trends/59-of-Japan-corporations-are-essentially-debt-free#:~:text=TOKYO%20%2D%2D%20Six%20out%20of,cash%20earned%20from%20strong%20operations [Accessed 12 November 2023]

OECD. Venture capital investment in the ICT sector as a share of GDP. https://goingdigital.oecd.org/en/indicator/35 [Accessed 3 September 2023]

Pape, F., & Petry, J. (2024). East Asia and the politics of global finance: a developmental challenge to the neoliberal consensus. *Review of International Political Economy*, 31 (1): 224-252.

Peck, J., and Zhang, J. (2013). A variety of capitalism… with Chinese characteristics? *Journal of Economic Geography*, 13 (3), 357-396.

President Corporate Planning Study Group. (2018). *Why Digital Matters?* Tokyo: President-sha.

Rethel, L., & Sinclair, T. J. (2012). *The Problem with Banks*. London: Zed Books.

Rethel, L., & Thurbon, E. (2020). Introduction: finance, development and the state in East Asia. *New Political Economy*, 25 (3), 315-319.

Schaede, U. (2020). *The Business Reinvention of Japan: How to Make Sense of the New Japan and Why It Matters*. Stanford: Stanford Business Books.

Schaede, U., & Shimizu, K. (2022). *The Digital Transformation and Japan's Political Economy*. Cambridge: Cambridge University Press.

Schiller, D. (1999). *Digital Capitalism: Networking the Global Market System.* Cambridge MA: MIT Press.

Schoppa, L. J. (2006). *Race for the Exits: The Unraveling of Japan's System of Social Protection.* Ithaca: Cornell University Press.

Shibata, S. (2020). Gig Work and the Discourse of Autonomy: Fictitious Freedom in Japan's Digital Economy. *New Political Economy*, 25 (4), 535-551.

Shibata, S. (2022). Digitalization or flexibilization? The changing role of technology in the political economy of Japan. *Review of International Political Economy*, 29 (5), 1549-1576.

Sinclair, T. J. (2021). *To the Brink of Destruction: America's Rating Agencies and Financial Crisis*. Ithaca NY: Cornell University Press.

Sugihara, K. (2004). The state and the industrious revolution in Tokugawa Japan. *LSE Working Paper*, No. 02/04.

Thelen, K. (2004). *How Institutions Evolve: The Political Economy of Skills in Germany, Britain, the United States, and Japan*. Cambridge: Cambridge University Press.

Thurbon, E. (2016). *Developmental Mindset: The Revival of Financial Activism in South Korea*. Ithaca: Cornell University Press.

Uzawa, H., & Takeda, H. (eds.) (2009a). *Nippon no Seisaku Kinyu I: Ko-Seicho Keizai to Nippon Kaihatsu Ginko (Policy-Based Finance in Japan Volume I: The High-Growth Economy and the Japan Development Bank*. Tokyo: University of Tokyo Press.

Uzawa, H., & Takeda, H. (eds.) (2009b). *Nippon no Seisaku Kinyu II: Sekiyu Kiki Go no Nippon Kaihatsu Ginko (Policy-Based Finance in Japan Volume II: The Japan Development Bank after the Oil Crisis*. Tokyo: University of Tokyo Press.

Vogel, S. K. (2006). *Japan Remodeled: How Governments and Industry Are Reforming Japanese Capitalism?* Ithaca: Cornell University Press.

Vogel, S. K. (2018). Marketcraft: *How Governments Make Markets Work*. Oxford: Oxford University Press.

Whittaker, D. H. (2024). *Building a New Economy: Japan's Digital and Green Transformation.* Oxford: Oxford University Press.

Whittaker, D. H., et al. (2020). *Compressed Development: Time and Timing in Economic and Social Development*. Oxford: Oxford University Press.

Yamada, T., & Hirano, Y. (2012). How has the Japanese mode of régulation changed? In: R. Boyer, H. Uemura & A. Isogai eds. *Diversity and Transformations of Asian Capitalisms*. Abingdon: Routledge, 15-30.

Yamagishi, T. (2011). *Trust: The Evolutionary Game of Mind and Society.* New York: Springer.

Yoshimatsu, H. (2017). Japan's export of infrastructure systems: pursuing twin goals through developmental means. *The Pacific Review*, 30 (4), 494-512.

Table 1: Varieties of Patient Capital

	Developmentalist Patient Capital	Market-Based Patient Capital
Social purposes	Aiming for economic growth mainly through continuous innovations and maintaining socio-political stability	Seeking economic growth by using market efficiency and discipline, taking large risks, and sometimes achieving disruptive innovations
Characteristics	Public orientation, long-term loans, the use of voice, and the risk of moral hazard	The emphasis on investment returns, portfolio investments including equity and other risk capital, arm's length relationships between investors and investees, and the use of voice and exit
Main providers	Development, industrial, long-term credit, and export-import banks	Venture capital, private equity funds, pension funds, and sovereign wealth funds