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Bridging developmental state and entrepreneurial state theory: A typology of startup policies' incumbent firm benefits

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ABSTRACT

Developmental state literature primarily focuses on the state's (evolving) direct relationship with large incumbent firms. This article bridges developmental state and entrepreneurial state theories by employing an open innovation logic. We study Japan (1991-2021) as an archetypal developmental state; we hand coded 83 startup policies and a corpus of media coverage of the policies' launch events and performance for how policymakers speak about ways in which startup policies strive to involve and benefit incumbent firms. Our typology of the strategic "access" benefits for incumbent firms in startup policies are: (1) access to innovative capacity, ideas and (2) access to talent.

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Creative destruction; developmental state; innovation policy; Japan; open innovation; startups

1. Introduction

Developmental state literature primarily focuses on the state's (evolving) direct relationship with large incumbent firms, whether it's the national champion *chaebol* in Korea, *keiretsu* in Japan, state-owned enterprises (SOEs) or now-established tech giants in China and Taiwan (Pempel, 2021; Pirie, 2018; Vogel, 2018). Accordingly, research evaluates shifts in the character and extent of these state–large incumbent firm relations in order to weigh in on the 'developmental state: dead or alive' debate (Wade, 2018). As a result of the analytical lens focusing on direct state-large firm relations, the story continues to be conveyed as one of a death, decline or retreat of the developmental state, as direct home country support is less central to the operations of world-leading firms such as Samsung and TSMC (Yeung, 2016).

At the same time, there is growing acknowledgement of the ubiquity in states' promotion of high-technology startups (Lerner, 2009). Startups are defined as innovative new firms with high-growth potential (see, Audretsch et al., 2020). This 'entrepreneurial state' phenomenon (Mazzucato, 2013; Tiberghien, 2007), which for many underscored the rise of Silicon Valley (Block, 2008; Wade, 2017; Weiss, 2014), has taken root in Northeast Asia. In this setting, states invest into startup accelerators and cohorts of venture

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capitalists, in order to build unicorns and to encourage society's entrepreneurial mindset (Klingler-Vidra, 2018). This is conceived as a contemporary approach to innovation – one largely distinct from the large incumbent firm-focused approach of the 20th century.

Thus, until now research has explored the state's support of large incumbent firms as separate from startup promotion. The state is conceived as either directly engaging large firms, as in classic consortium (Anchordoguy, 2005), or fostering startup-centric entrepreneurial ecosystems (Mazzucato, 2013). Yet, initial studies have suggested that one of the social purposes of startup policy includes boosting the innovation capacity of incumbent firms, rather than the destructive capacity of startups (Klingler-Vidra & Pacheco Pardo, 2020). This emerging line of research argues that the 21st century version of the developmental state can be depicted by the rise of an 'entrepreneurial developmental state', which is a state that is active in coordinating and directing resources through engagement of incumbent firms in entrepreneurial ecosystems (Maggor, 2020; Pacheco Pardo & Klingler-Vidra, 2019). The developmental state, according to this logic, has 'layered' startup promotion into its apparatus, with the same institutions now encouraging startups alongside large firms (Debanes, 2017).

In this article, we strive to advance theoretical tools for systematically examining this entrepreneurial developmental state. Our core research question is: *how do startup policies involve, and strive to benefit, incumbent firms?* Answering this question helps us advance theoretical expectations to help bridge the disparate theoretical arenas of the developmental state, entrepreneurial state, and open innovation. The following section develops our theory, and section 3 details our material and methods. The results – the development of a typology of "strategic access" benefits for incumbent firms in startup policies – are presented in section 4 and then the findings are discussed for their theoretical contribution. We close by discussing limitations and areas for future research.

2. Bridging the developmental state, entrepreneurial state and open innovation

The developmental state comprises a focus on long-term strategic goals driving socio-economic development, the existence of a quasi-autonomous bureaucratic apparatus, and the use of fairly institutionalized mechanisms for the public and private sectors to cooperate (Amsden, 1989; Evans, 1995; Wade, 1990; Woo-Cummings, 1999). The use of industrial policy to foster specific domestic industries to catch up – technological capability-wise – with their counterparts in developed countries, financial repression to stimulate savings, capital allocation management through an acquiescent banking sector, and the use of fiscal policy to promote exports, were common (Wan, 2008). These core components of states' strategic industrial policy approaches have been debated in comparative capitalism scholarship, which portends the states as representative of a singular Asian Capitalism model (Amable, 2003). More state-specific depictions have been conceptualized across East Asian business systems literature (Whitley & Zhang, 2016; Witt & Redding, 2013).

With Taiwan as the exception, across Northeast Asian developmental states, large incumbent firms were conceptualized as the key firms that the state supported (Woo-Cummings, 1999).[1] State-large firm relations formed the backbone of technological upgrading that was essential to development, and these firms were also crucial providers

of high-quality, permanent employment that generated social stability (Pempel, 2021). To be sure, developmental state depictions centre on state support, including encouraging consortia and providing preferential financing, for large incumbent firms to upgrade technological capacity (Anchordoguy, 2005; Callon, 1995).

By the 1990s, however, the state-led and large incumbent firm model was sputtering in even quintessential developmental state settings, including Japan (Klingler-Vidra & Pacheco Pardo, 2020; Pempel, 2021; Vogel, 2018). Due to changes in the global industrial-technological paradigm (Whitakker et al., 2020; Yeung, 2016), labour markets, finance and the nature of technology evolved such that 'open innovation' (Chesbrough, 2003; Weiblen & Chesbrough, 2015; Dahlander et al., 2021) was more advantageous, with incumbents leveraging external resources, such as startups, rather than the internal pursuit of R&D. From at least the 1990s, the inclusion of startups in innovation policy reflected the relative decline of a closed system, towards one of digitally-oriented, global innovation where 'David and Goliath' get along (De Groote & Backmann, 2020) in order for states to compete in the 'compressed development' era (Whitakker et al., 2020).

At the same time, entrepreneurial state literature emerged in the early 2000s (Mazzucato, 2013; Tiberghien, 2007), drawing on Schumpeterian notions of innovation and economic growth. Schumpeter (1943[2010]) espoused the benefits of new entrants – what in today's parlance are 'startups' – in instigating processes of creative destruction. Creative destruction is understood as startups revolutionizing 'the economic structure from within, incessantly destroying the old one, incessantly creating a new one' (1943 [2010], 73). Startups 'continually arrive to compete with existing firms' and the technologies that they develop 'render existing technologies obsolete' (Aghion et al., 2021, p. 1). Startup policies are understood as striving to foster high-growth startups in order to propel innovation and economic growth, intending to creation unicorns (private companies with valuations in excess of US$ 1 billion). This would mean causing the failure of large, incumbent firms, rather than benefitting them.

These theoretical frameworks have remained largely disparate, which has left an analytical gap in understanding contemporary innovation policy. In this paper, we bring these theories together by extending tools for examining the treatment of large incumbent firms – the key partner for developmental states – in the context of startup policies. By drawing on open innovation logic, rather than Schumpeter's creative destruction, we offer an analytical bridge between developmental state and entrepreneurial state studies. In doing so, we contribute to both theoretical traditions; offering analytical tools for entrepreneurial state theory beyond creative destruction assumptions, and for developmental state theory, going beyond the current 'dead or alive' analysis based upon direct state-large firm relations.

3. Material and methods

Startup policies – our area of empirical investigation – are conceived of as a type of a national innovation system (NIS) policy. NIS policies emphasize efforts to build human and social capital as well as formal institutions across organizations (Edler & Faberberg, 2017; Schot & Steinmueller, 2018). Research places startup promotion as a form of NIS policy, one focused exclusively on the aim of creating more, and higher quality, startups in

a bid to advance a Silicon Valley-styled innovation cluster (Autio et al., 2014; Klingler-Vidra & Wade, 2020).

Startup policies are categorized into several typologies, according to life cycle, employment aims, novelty, and instrument. Evolutionary-organized categorizations conceive of an entrepreneurial life cycle, in which initiatives address the antecedents, founding, growth, or outcome conditions of novel, high-growth firms (Audretsch et al., 2020). Others conceive of startup policies as either a form of employment policy or innovation policy (Ramon et al., 2013). Other typologies organize policies according to the novelty of entrepreneurship, delineating the extent to which the entrepreneurial activity targeted by the policy is novel or routine (Acs et al., 2016). Finally, Pacheco Pardo and Klingler-Vidra (2019) taxonomize startup policies in terms of the instrument used. We employed this instrument-themed typology, which defines policies as one of eight instrument types: (1) F unding, (2) Taxation, (3) Regulation, (4) Clusters, Networks, Institutes, (5) Attracting Talent and Investment, (6) Stock Market Access, (7) Technology Infrastructure and Government Procurement, or (8) Education and Training (Pacheco Pardo & Klingler-Vidra, 2019). See, Table 1 for our synthesis of the startup policy types and keywords that we used to operationalize the different instrument types.

To do our theory-building work, we use the typical case selection rationale, in which a case is drawn from a population that represents the central tendency of the phenomenon (Eisenhardt, 1989; Gerring & Cojocaru, 2016, p. 396). In line with the developmental state scholarship, we choose Japan as typical of the population of developmental states that collaborated and coordinated with large incumbent firms in order to boost technological innovation throughout the post-war era (Aoki et al., 2007; Jackson, 2003; Vogel, 2018). Thus, our case selection rationale is based on the widespread depiction of 'Japan Inc'. as an archetypal developmental state, centring on large conglomerates (*keiretsu*; Anchordoguy, 2005; Callon, 1995; Johnson, 1982; Keller & Samuels, 2003; Pempel, 2021; Wade, 1990; Woo-Cummings, 1999).[2]

We canvassed government sources, international policy databases, web sources and academic literature to identify all of Japan's startup policies, implemented between 1991 and 2021. We began by searching government sources to capture all the policies named on ministry repositories. For instance, the METI's policy index has a category called 'Startup and New Business Promotion', which names two policies (J-Startup Initiative and the Startup Visa).[3] We also examined broader categories, such as Economic and Industrial Policy, to identify additional policies. We then covered international policy databases, namely the Global Entrepreneurship Network (GEN) Atlas,[4] as well as the Startup Genome's Global Startup Ecosystem Report. Our next step was conducting a Google search for Japanese startup policies, employing the keywords included in the Pacheco Pardo and Klingler-Vidra (2019) typology (see, Table 1) alongside the search terms 'Japan' and 'startup'. Finally, especially in an attempt to round out historical policy coverage, we closely read relevant academic literature (see, for example, Goto, 2009; Rowen & Toyoda, 2002; Schaede & Shimizu, 2022; Seki, 2008; Uesugi, 2006; Vogel, 2018; Yamawaki, 2002; Yonekura & Lynskey, 2000). Through these steps, we identified a total of 83 startup policies (see Appendix table for a full list of Japan's startup policies).

Once we identified the startup policies, we then compiled a corpus of media coverage of the policies' launch events and performance. To compile this dataset, we conducted Factiva and Google searches for the policy name, in English and

Table 1. Startup policy types.

Startup Policy Type	Specific Policy Tools
(1) Funding	• Direct startup (equity and debt) financing • Investment in VC funds • R&D expenditure for startups • Incentives for investors, particularly VCs and business angels
(2) Taxation	• Incentives for R&D spending • Tax rates by firm age and size
(3) Regulation	• Bankruptcy laws • Intellectual Property rights • Investor regulations and legal structures • Labour market regulations (including pension fund rules)
(4) Clusters, Networks, Institutes	• Accelerators and incubators • Innovation centres • Science parks • Special economic zones
(5) Attracting Talent and Investment	• Incentives to encourage FDI, either for startups or large firms • Programmes to attract (foreign) entrepreneurs
(6) Stock Market Access	• Establishing stock markets catering to startups • Rules around stock market and foreign exchange dual listing
(7) Technology Infrastructure and Government Procurement	• Infrastructure projects (e.g., 5 G) • Open data • Use of government coffers to serve as customers
(8) Education and Training	• Entrepreneurship skills training (e.g., business plan writing and pitch skills) • STEM education

Source: Pacheco Pardo and Klingler-Vidra (2019)

Japanese, as well as the year of launch (e.g., J-Startup Initiative 2018).[5] In Factiva we filtered for news articles and press releases (e.g., from METI) and in Google we focused on 'news' results, often finding coverage of policy launch events including speeches and interviews with ministers and initiative partners speaking to the policy's objectives and structure.

In total, we manually coded (Basit, 2003) two sets of data: (i) the policy documents and (ii) news articles and press releases about the policies.[6] The main function of the manual coding was to identify key terms and phrases used when describing the involvement of, and benefit of, large incumbent firms. Given our engagement with developmental state expectations, we operationalized this incumbent involvement search by developing a dictionary of language for large incumbent firms as well as the names of specific *keiretsu*. To do this, coding began with scanning each policy and news article for one of the following terms to describe an incumbent: 'big', 'established', 'incumbent', 'large', or 'traditional', along with 'company', 'corporation', 'firm', as well as the trading names of the 'big six" *keiretsu* (Fuyo, DKB Group, Mitsubishi, Mitsu, Sanwa, and Sumitomo).

We hand coded any mentions of the above-specified incumbent firm terms in order to identify all the key terms and phrases by which the incumbent firms were associated. Over the course of manually coding, we were able to identify recurring themes (e.g., extrapolating words and phrases into thematic ideas). We had two researchers code each mention of incumbent firms to ensure intercoder reliability. Any discrepancies were discussed and a coding decision was agreed. This strategy, and regular meetings to debate the appropriate coding at an individual phrase level as well as to discuss emerging

Table 2. Strategic benefits and forms of involvement for incumbent firms in startup policies.

Strategic benefits	Forms of involvement
Access to innovation capacity and ideas	• Acquiring startups • Cluster development (incumbents, startups, universities) • Incubation and accelerator facility sponsor or host • Investment (encouraged by tax incentives) • Judge of startups in business plan competitions
Access to talent	• Allowing employees to pursue internships or secondments at venture-backed startups • Enabling spin-offs • Networking and advisory programmes

impressions of overall themes, was time-consuming but helpful to our development of a typology of two forms of incumbent benefits.

4. Results: towards a typology of startup policy in terms of incumbent firm benefits

Our manual coding distilled two types of strategic 'access' benefits for incumbent firms: (1) access to innovation capacity and ideas and (2) access to talent. Table 2 details these strategic access benefits and the forms of involvement associated with them.

These different forms of involvement are conveyed as helping to shore up the competitive positioning of the incumbent firms, rather than disrupt them. The expectation is not one of creative destruction, but rather, open innovation, with startups construed as an important external resource that will boost the open innovation system's capacity.

4.1 Access to innovation capacity and ideas

Efforts strive to benefit incumbents by extending access to innovation capacity and ideas, and in so doing, drive 'revitalisation' (Watanabe, 2021). Media statements point to this desire to boost incumbents' access to innovative ideas, without always specifying the mechanism for. For instance, Takuya Fukumoto, the director of Industrial Finance within METI's New Business Policy Office, explained that:

> if fast-moving startups are linked with large companies and research institutions that have the technical and management resources, they will definitely be able to compete globally in the future (Forbes Japan, 2018).

To be sure, efforts broadly aim to deliver mutual benefits for startups and incumbent firms; with the implicit expectation that by bringing them together, both will benefit.

White papers such as those on the 'Open Innovation and the Venture Challenge 2020', published by the Cabinet and a number of ministries, reiterate the commitment of the Japanese government to boost the participation of startups in the *keiretsu*-anchored innovation system (METI, 2020). Expressing a similar sentiment, at the Shibuya QWS Symposium in 2018, Tokyo Governor Yuriko Koike noted that their aim is to 'promote open innovation' so they work to 'link universities and venture companies that have advanced technologies, foreign companies, major corporations, and investors, as well

as financial institutions' (Logmi, 2018). Echoing this objective, METI's Yoshiaki Ishii asserted that:

> Rather than simply supporting startups, we are also incorporating a mechanism to develop VCs and strengthen cooperation between large companies and startups to accelerate open innovation (Newswitch, 2018).

This open innovation system aim was initially advanced in 2000, through a series of cluster-building activities that were implemented by METI bureaucrats who were keen to apply the work of Michael E. Porter on 'Clusters and Competition' (Yamawaki, 2002). The Cluster Plan aimed to enhance the competitiveness of incumbent Japanese industry through collaborations with local SMEs and startups, which were conceived as external resources to aid incumbent capabilities (Rowen & Toyoda, 2002; Ibata-Arens, 2005, p. 92). Collaborative programmes aim at bringing together large incumbents and startups, rather than large firm consortia as in the classic developmental state context.

Delivering this access to capacity and ideas has comprised several modes of involvement. Startups fuse ideas into incumbents by effectively serving as an external R&D provider. Takuya Hirai, former Minister of State for Science and Technology Policy, noted in 2020 that 'startups will be central players' and, relatedly, that 'large firms are embracing open innovation in addition to their own R&D' (Rao, 2020). This fits with open innovation's notion of external resources, such as startups, becoming part of an incumbent firm's R&D process (Chaudhary et al., 2022).

The shape of incumbent involvement aimed at accessing innovative ideas has also involved Japan's *keiretsu* as sponsors and hosts of accelerator and incubator programmes. The 500 Kobe programme – that takes the form of a seven-week intensive accelerator – costs 120 million yen to run, with the Kobe City government paying half, and the remaining funding coming from Sumitomo Mitsui Banking Corporation and Nomura Securities (JETRO, 2020). Sumitomo Mitsui's support is framed as a means of giving the *keiretsu* access to startup innovation capacity and ideas, which it can integrate into its own business.

Incumbents glean benefit from access to ideas through their work as judges in startup competitions. This form of involvement is perhaps best illustrated by through METI's J-Startup initiative, announced in June 2018 with the aim of building 20 unicorns by 2023. The programme itself is designed so that METI run it in collaboration with *keiretsu* leaders, who serve on the 66-member 'recommendation committee' responsible for choosing winning startups (Ikeda, 2018). METI's Takuya Fukumoto explained that the initiative's long-term aim includes the *keiretsu* acquiring participating startups:

> As an exit strategy for startups, there is the option of mergers and acquisitions by large corporations, and through the J-Startup initiative, I hope to increase collaboration between startups and large corporations (Forbes Japan, 2018).

By participating in competitions like the J-Startup initiative, the large incumbents learn of innovative ideas that they could incorporate into their business, and as evidenced here, identify startups as acquisition targets. METI Minister Hiroshige Seko said that such a 'friction heat' from exchanges among large companies and startups was an aim (METI, 2019). This

'friction heat' aim does not orient towards creative destruction, but rather, to invigorate the *keiretsu* position, benefitting by the access to startups' innovative capacity and ideas.

Another means of involvement is as an equity investor in startups. The government has explicitly encouraged large incumbent firms to invest in startups, such as in the December 2021 'open innovation tax relief programme'. The programme aims to 'promote corporate investments in startups' by allowing 'existing companies to deduct from their taxable income 25% of the value of their investments in startups' (Japan Times, 2021).

4.2 Access to talent

Startups are conceived as arenas in which innovative talent pools exist, and also, settings in which current employees can themselves become more innovative. In speaking about startups and employment, METI's Yoshiaki Ishii asserted that 'young and mid-career workers at large companies [could] add a secondment to a venture-backed company to their career path' to increase their creative thinking (Matsugae, 2018). In this sense, secondments have been presented as new ways of working and thinking for current employees, rather than seeing startups as distinct human capital pools (see, Schaede & Shimizu, 2022, p. 52).

In addition to startups offering training ground for innovative talent, the other direction of travel has been construed as contributing to future ecosystem activities. To illustrate, in 2003, METI initiated a study to look at the potential for corporate spin-offs, finding that *keiretsu* spin-offs were more promising than independent, new firms and so wanted to encourage a venture movement that was embedded in the activities of the large firms (METI, 2003). This policy sought spin-offs that would have close engagement with the *keiretsu* rather than truly independent startups.

As a means of developing access to startup talent pools, METI's Organization for Small & Medium Enterprises and Regional Innovation, JAPAN (SMRJ), created in 2004, promotes technology ventures, by grafting them into existing networks with Japan's incumbent firms. As an example, its 2005 Programme for Strengthening Functions of Organizations for Support of Local SMEs paired senior advisors from established businesses with startups to share their operational expertise and deepen social networks. Speaking to the aim of delivering access to talent, Soichi Kariyazono, chairman of the Japan Venture Capital Association (JVCA), remarked on the value of talent movements between startups and large corporations:

> Large, traditional companies experience the speed and bold decision-making that only a startup can bring to the table through the new wave of talent (Newswitch, 2018).

Experience in a startup, and close relationships built through mentorship and networking events, are conceived as desirable in policy terms, as they deliver benefits in the form of access to talent for large incumbent firms. Thus, startup policies strive to build bridges for large incumbent firms to external pools of startup talent and also by developing the entrepreneurial intentions and skills of their existing workforce.

5. Discussion and conclusion

5.1 Discussion and theoretical contribution

The contribution of this article is our development of theoretical tools for conceptualizing and testing the convergence of the developmental state and entrepreneurial state. We extend these theories by building an initial typology of the benefits and forms of involvement for large incumbent firms in startup policies, which helps to analytically connect seemingly disparate areas of investigation: the (developmental) state's engagement with large incumbent firms and the entrepreneurial state's emphasis on startup-centric innovation. Open innovation, rather than Schumpterian logic of creative destruction, underpins our analytical approach.

Through our analysis, we build theoretical tools for examining how an increasingly entrepreneurial developmental state has operationalized its 'layering in' (Debanes, 2017) of startup support. We are the first to conceptually frame how startup policies benefit incumbent firms. The contemporary developmental state has found a new way of engaging and publicly showcasing its support of advancing large firms' innovativeness: through the use of policies that emphasize startups. In making this analytical link, we extend a growing body of literature suggesting that the developmental state has not retreated, but rather adapted, to a changing domestic and international environment (e.g., Pirie, 2018; Wade, 2018). Likewise, we offer a further means of entrepreneurial state theory's engagement with wider innovation system actors, and a challenge to the presumption that, in practice, startup policies have Schumpeterian analytical foundations.

Startup policies, like METI's J-Startup Initiative, which aim to create cohorts of unicorns, are designed with incumbent firm involvement and strategic benefits in the form of access to innovation capacity and ideas and access to talent. In this illustrative example, the *keiretsu* select winners in startup competitions and initiatives aim for incumbents to make equity investments in startups, or to fully acquire them. In doing so, policies strive for the *keiretsu* to glean innovative approaches, entrepreneurial talent and technologies from startups, as South Korean policymakers have encouraged startups as a means of delivering innovative DNA to the *chaebol* (Klingler-Vidra & Pacheco Pardo, 2020). One of the aims of startup policies in the contemporary developmental state, then, is to support the competitive positioning of large incumbent firms; this objective is diametrically opposed from Schumpeter's understanding of the role of startups in instigating creative destruction in order to boost economic growth, on which entrepreneurial state scholarship implicitly rests.

Startup policies aim of benefiting incumbent firms does beg concerns. Mutual benefits between startups and incumbents are possible (Aghion & Tirole, 1994). Studies on corporate venture capital, for example, explore the ways in which value is created for new venture firms as well as the large incumbent firms (Bugl et al., 2022). As investors in startups, incumbent firms offer access to their networks, market knowledge and sales and distribution channels (Alvarez-Garrido & Dushnitsky, 2016), which can help the startup grow.

Research has revealed challenges and risks associated with open innovation, for startups as well as incumbent firms (Shaikh & Randhawa, 2022). Incumbent involvement, for instance, has been found to exploit startups, through early acquisitions, intense competition and predatory pressures (Korshunova et al., 2021). Startups worry that their

efforts and ideas will be appropriated by potential partners, which limits how, and how much, they engage with external organizations (Laursen & Salter, 2020). There are also downsides for large incumbent firms, as they may not reap direct benefits from their investments, accelerator sponsorships, or employment flexibility, and so, the objective of startup promotion as a means of revitalizing their innovation capacity can go unmet. For instance, Chaudhary et al. (2022, p. 1011) delineate challenges including effective integration, intellectual property management, and the production of knowledge spillovers. Despite the challenges, research suggest that there are strategies for overcoming the inherent collaboration difficulties (Minshall et al., 2010), and perhaps given this potential, startup-incumbent interactions grow in number and scope.

5.2. Limitations and future research directions

This paper helps bridge disparate bodies of literature; the developmental state and entrepreneurial state. We build theory by studying the typical case of Japan as an archetypal developmental state that relied on policies that target large incumbent firms in order to bolster technological innovation. Through this approach, we develop theoretical constructs for studying ways in which startup policies strive to involve and benefit incumbent firms. The Japan case is helpful for this typology-building effort, because of its well-document inclination to engage large incumbent firms.

However, further research is needed to test the prevalence of incumbent benefits in startup policies. Studies are needed to explore how incumbents are involved, and how they are expected to benefit, in other settings, especially in 'least likely' cases (Gerring & Cojocaru, 2016). Exploration of incumbent involvement in startup policies deployed in neoliberal economies (Block, 2008; Wade, 2018), such as the United Kingdom and United States, would be fruitful contexts for such theory testing. In addition, future research is needed to interrogate the involvement of incumbent firms that are *not* large firms, as we have done here. Analysis of the ways in which startup policies involve incumbent SMEs, for instance, would offer important nuance. Studies can test how the access benefit types fit policy instruments (e.g., funding) as well as individual policies (e.g., the J-Startup Initiative). Further studies can also explore the impact of the different instruments by which incumbents are most, and least, likely to benefit from their involvement in startup policies. For instance, research can explore whether it is involvement as judges, as investors, or as employers that delivers the greatest benefit for incumbent firms, as well as startups.

Notes

1. In the Taiwanese developmental state, SMEs were the primary target (Wade, 1990; Woo-Cummings, 1999).
2. We note that the lifetime, or permanent, employment system did not include all workers.
3. The METI policy index can be accessed here: https://www.meti.go.jp/english/policy/economy/startup_nbp/index.html.
4. The GEN Atlas is available here: https://www.genglobal.org/atlas. Three policies are indexed for Japan: the Startup Loan Programme, Startup Visa, and Japan Investment Corporation.
5. Factiva is a Dow Jones resource and can be accessed here: https://www.dowjones.com/professional/factiva/.

6. Our approach is consistent with that employed across state-of-the-art social science literature (see, Hecker et al., 2019; Yokoyama, 2006).

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Appendix. Japan's startup policies 1991–2021.

Year	Initiative	Innovation Policy Type	Implementing Organization
1993	Tax Deduction on Special Experimental and Research Expense increased to 12%	Taxation	National Tax Agency
1995	New Business Development programme	Funding	Development Bank of Japan
	Venture Plaza	Clusters, Networks, Institutes	Organization for Small & Medium Enterprises and Regional Innovation, Japan (SMRJ)
	SME Creative Business Promotion Law	Regulation	Diet
1997	Angel tax incentives launched	Taxation	National Tax Agency
	Stock options issuance law passed	Regulation	Central government
1998	Limited Partnership Act for Investment passed	Regulation	Diet
	Venture Fair: Matching event to introduce products and services of select startups and help them to expand their marketing channels	Clusters, Networks, Institutes	SMRJ
	Government-backed loans (40 trillion yen) for SMEs	Funding	MOF and MITI
1999	Small Business Innovation Research (SBIR)	Funding	SMRJ
	Venture Fund: Investing in startups at the early stage, less than seven years after foundation	Funding	SMRJ
	Industrial Revitalization Law aimed at improving the competitiveness of large firms	Regulation	Central government
	Mothers (Market for High-Growth and Emerging Stocks, on the Tokyo Stock Exchange) and Centrex (Nagoya Stock Exchange) are launched to encourage growing high-tech company IPOs	Stock market access	Central government
	Improvement of entrepreneurship education: for elementary and secondary school students to develop their 'entrepreneurship'	Education and training	MITI
	Venture School: short-term intensive training	Education and training	Local governments
	Small and Medium-sized Enterprise Basic Act amendment: Promotion of Startups	Regulation	Diet
2000	Nasdaq Japan (JASDAQ) launches	Stock market access	Central government
	New Business Development Fund	Funding	Japan Finance Corporation for Small and Medium Enterprise (JASME)
	Launch of incubation facilities	Clusters, Networks, Institutes	SMRJ, local governments
	Japan Venture Awards	Clusters, Networks, Institutes	SMRJ
2001	New Business Financing Programme: providing loans without security	Funding	JFC
	Industrial Cluster Policy	Clusters, Networks, Institutes	METI
	Pension fund portability	Regulation	MOF
	The Commercial Law amended to make the system of classified stocks more flexible	Stock market access	Diet
	J-Net 21: portal site for SMEs	Technology Infrastructure and Government Procurement	SMRJ
2002	Cluster Plan	Clusters, Networks, Institutes	METI
	Deregulation of Share Issues and Stock Options	Regulation	MOF

(*Continued*)

Appendix. (Continued).

Year	Initiative	Innovation Policy Type	Implementing Organization
2003	IT Startups Support Programme	Funding	METI
	Tax Deduction on the Total Experimental and Research Expense (increased to 10%)	Taxation	National Tax Agency
	Dream Gate, startup support platform	Clusters, Networks, Institutes	VEC
	Plan to Promote IT among SMEs	Technology Infrastructure and Government Procurement	METI
	Programme for Training of Venture Capitalists	Education and training	METI
	Challenge Community Creation Programme	Education and training	METI
	Business Startup Support Fund	Funding	SMRJ
	SME Growth Support Fund and SME Revitalization Fund	Funding	SMRJ
2005	New Limited Liability Corporate and Limited Liability Partnership structures for VC funds	Regulation	Central government
2006	Comprehensive Support Programme for Creation of Regional Innovation	Clusters, Networks, Institutes	Japan Agency of Science and Technology (JST)
	Companies Act Amendment	Regulation	Central government
2008	The New Startup Fund, the New Business Startup Loan Programme, Provision Scheme for Challenge Support and Capital Enhancement, and Loan with Stock Acquisition Rights	Funding	JFC
	Re-challenge Support Loans	Funding	JFC
2009	Innovation Network Corporation of Japan (INCJ) Investment programme	Funding	INCJ
	University & Graduate Schools Entrepreneur Education Promotion Network (Japanese)	Education and training	METI
2010	New JASDAQ	Stock market access	Ministry of Finance
2011	Act to Facilitate Technology Transfer from Universities to the Private Sector (TLOs Law)	Regulation	Diet
2012	Programme for Creating Startups from Advanced Research and Technology (START)	Funding	JST
	The SME Business Capabilities Enhancement Support Act	Regulation	METI
	Entrepreneurs' Challenge	Education and training	MIC, NICT
	Startup Subsidy	Funding	SMRJ
2013	Center of Innovation (COI) Programme	Funding	MEXT, JST
	Next Generation Technology Transfer Programme (NexTEP)	Funding	JST
	Industrial Competitiveness Enhancement Act	Regulation	Cabinet Office
	Micro enterprise revitalization project	Funding	METI
	Super Cluster Programme	Clusters, Networks, Institutes	JST
	Mirasapo (SME portal)	Technology Infrastructure and Government Procurement	METI
	Article 18 of the Labour Contracts Act	Regulation	Diet
	National Strategic Special Zones	Attracting talent and investment	Cabinet Office
	High School Student Business Plan Grand Prix	Education and training	JFC

(*Continued*)

Appendix. (Continued).

Year	Initiative	Innovation Policy Type	Implementing Organization
2014	ICT Innovation Creation Challenge Programme (I-Challenge!)	Funding	MIC
	Government-public Innovation Programme	Funding	MEXT
	Support programme of Capital Contribution to Early-Stage companies (SUCCESS)	Funding	JST
	Taxation to promote companies' venture investment	Taxation	National Tax Agency
	EDGE program (Enhancing Development of Global Entrepreneur Programme	Education and training	MEXT
2015	Seed-stage Technology-based Startup (STS) support programme and Startup-Up Innovation (SUI)	Funding	NEDO
	Strengthening the global venture ecosystem	Clusters, Networks, Institutes	METI
	Act for Demand Creation for SMEs amendment	Technology Infrastructure and Government Procurement	Diet
	Startup Visa in National Strategic Special Zones	Attracting Talent and Investment	Immigration Bureau of Japan
	Jump Start NIPPON	Education and training	METI
	Promote the global alliance of Japan's core companies and SMES	Attracting Talent and Investment	METI
	Project Creating a Bridge of Innovation between Silicon Valley and Japan	Attracting Talent and Investment	METI
2016	Open Innovation Platform with Enterprises, Research Institute and Academia (OPERA)	Clusters, Networks, Institutes	JST
	Entrepreneurial experience promotion project for elementary and junior schools	Education and training	MEXT
	Female entrepreneurs support network (10 hubs)	Clusters, Networks, Institutes	METI
	Startups in Corporate Alliance (SCA) Subsidies of up to 70 million for R&D in the SCA	Funding	NEDO
	Formation of Regional Innovation Ecosystem	Funding	MEXT
2018	J-Startup Initiative	Clusters, Networks, Institutes	METI, NEO, JETRO
	12-month Startup Visa Programme	Attracting Talent and Investment	METI and MoJ
2019	Start Next Innovator 2019	Attracting Talent and Investment	METI
	25% tax incentive on startup investments	Taxation	National Tax Agency
2020	Startup Visa scheme requirements relaxed	Attracting Talent and Investment	METI and regional governments
2021	Startup Visa eligibility extended to students already residing in Japan	Attracting Talent and Investment	METI and regional governments
	Guidelines for Business Collaboration with Startups	Clusters, Networks, Institutes	Japan Fair Trade Commission ('JFTC') and METI
	Open innovation tax relief programme allows existing companies to deduct from their taxable income 25% of the value of their investments in startups	Taxation	National Tax Agency