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Startups and Venture Capital in Japan: How to Grow

Japan

Salih Fendoglu and TengTeng Xu

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Startups and Venture Capital in Japan: How to Grow

Prepared by Salih Fendoglu and TengTeng Xu

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ABSTRACT: The startup ecosystem in Japan has seen gradual growth, supported by the government's recent "Startup Development Five-Year Plan" and a significant interest from overseas venture capital. This paper lays out the startup financing ecosystem in Japan, with comparison to international peers, and studies potential drivers of startup financing and their relevance for startups' performance. The results, based on country-level aggregate analysis, underscore the critical role of firm dynamism and entrepreneurship in supporting capital investment and firm valuations. Further analyses at the firm level suggest that equity funding helps startups innovate, grow, and successfully exit. Moreover, the impact of funding on the likelihood of a successful exit appears to be higher in cultures that seem to reward risk taking.

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Startups and Venture Capital in Japan: How to Grow

Japan

Prepared by Salih Fendoglu and TengTeng Xu[1]

[1] "The author(s) would like to thank Kaustubh Chahande for excellent research assistance. We appreciate useful comments from Yan Carriere-Swallow and seminar participants at the Ministry of Finance of Japan.

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CONTENTS

STARTUPS AND VENTURE CAPITAL IN JAPAN: HOW TO GROW ____ **2**

A. Introduction ____ 2
B. Stylized Facts ____ 3
C. Aggregate Country-Level Analysis ____ 5
D. Firm-Level Analysis ____ 7
E. Policy Implications ____ 11

TABLES

1. Capital Investment and Structural Characteristics ____ 6
2. Valuations and Structural Characteristics ____ 6
3. Does Availability of Funding Affect Startup Performance? (Global Sample) ____ 10
4. Does Availability of Funding Affect Startup Performance? (Japan) ____ 10
5. Does Risk Culture Matter for Startup Exit? ____ 11

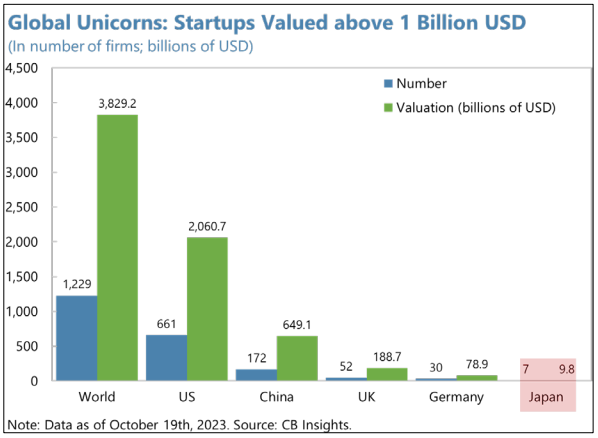
References ____ 13

STARTUPS AND VENTURE CAPITAL IN JAPAN: HOW TO GROW[1]

The startup ecosystem in Japan has seen gradual growth, supported by the government's recent "Startup Development Five-Year Plan" and a significant interest from overseas venture capital. This paper lays out the startup financing ecosystem in Japan, with comparison to international peers, and studies potential drivers of startup financing and their relevance for startups' performance. The results, based on country-level aggregate analysis, underscore the critical role of firm dynamism and entrepreneurship in supporting capital investment and firm valuations. Further analyses at the firm level suggest that equity funding helps startups innovate, grow, and successfully exit. Moreover, the impact of funding on the likelihood of a successful exit appears to be higher in cultures that seem to reward risk taking.

A. Introduction

1. Japan's startup ecosystem has grown gradually in recent years, but with scope for further expansion. Startups in Japan tend to be smaller compared with those in the United States (U.S.), China, and the United Kingdom, with a relatively lower number of unicorns with valuation above US$1 billion.[2] On venture capital (VC) funding, Tokyo has emerged to be a top 20 location for the VC ecosystem globally,[3] with the largest share of startup funding in deep-tech research and development sectors. However, at the national level, Japan's venture capital equity funding remains relatively small as a share of GDP compared with peers.



2. The government continues to support startups and venture capital funding through the "Startup Development Five-Year Plan". The plan focuses on three main pillars: 1) building human resources and networks for creating startups; 2) strengthening funding for startups and diversifying exit strategies; and 3) promoting open innovation.[4] The authorities have set up

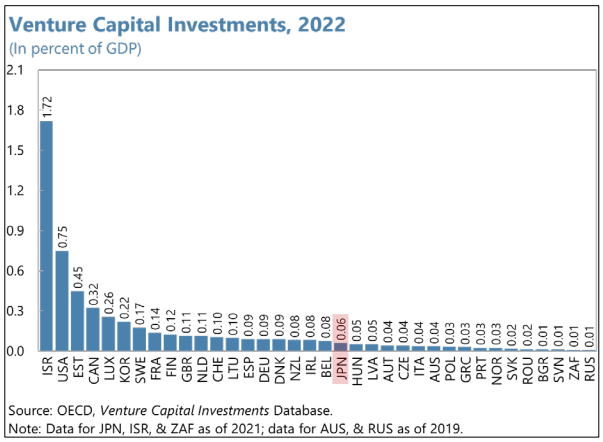
[1] Prepared by Salih Fendoglu (MCM) and TengTeng Xu (APD). We thank Kaustubh Chahande for excellent research assistance. We appreciate useful comments from Yan Carriere-Swallow and seminar participants at the Ministry of Finance of Japan.

[2] The number of unicorns in Japan stood at 7 in 2023, compared with 653 in the U.S. Similarly, the valuation of unicorns in Japan was about US$9.8 billion in 2023, compared with US$2 trillion in the U.S. See CB Insights, "The Complete List of Unicorn Companies". Anecdotal evidence suggests that Japanese startups tend to exit earlier than peers as it is relatively easy to raise funds through the Tokyo Stock Exchange, which may have contributed to the relatively lower number of unicorns.

[3] See PitchBook (2023a), "Global VC Ecosystem Rankings".

[4] See "Startup Development Five-Year Plan", Cabinet Secretariat.

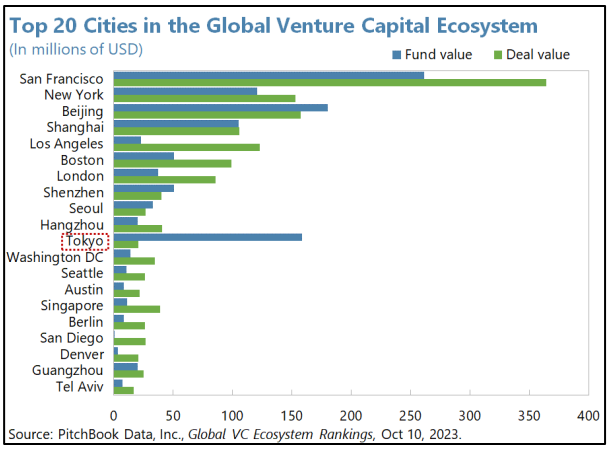
entrepreneur development hubs overseas and promoted startup incubators in central Tokyo, with close collaborations with universities. On financing, the Japan Investment Corporation launched a 200-billion-yen venture growth fund in 2023 to support later stage startups to create unicorns and to target early-stage startups beyond deep tech and life sciences.



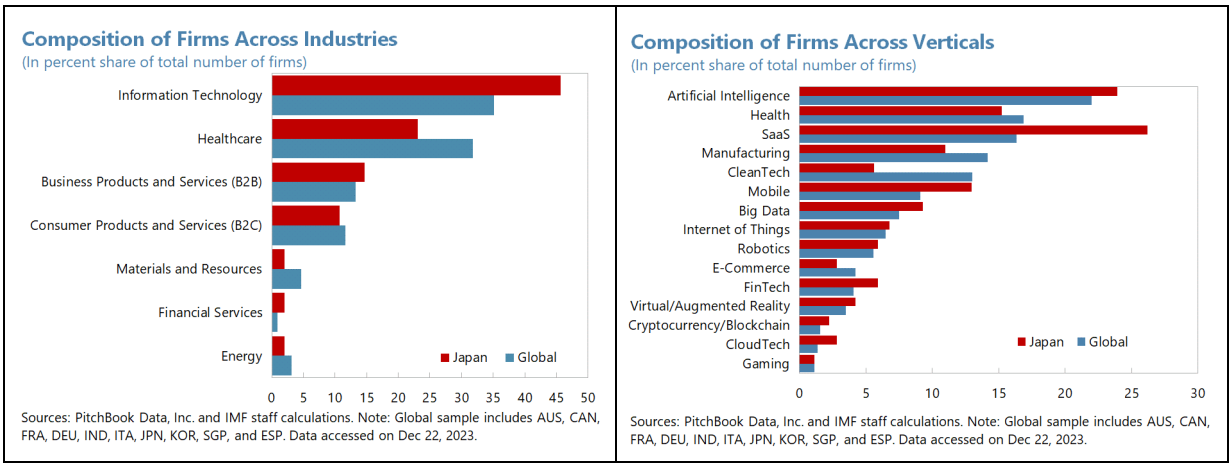
3. This paper examines factors that support startups and venture capital funding. First, it explores the key characteristics of startups and their funding in Japan and compares with other leading countries for startups. Second, it conducts two sets of empirical analysis using a novel database for firms, including startups. In the first set, we examine how structural factors affect capital investment and valuations in firms more broadly in an aggregate cross-country analysis. In the second set, we conduct firm-level analysis on how equity funding determines the performance of startups.

B. Stylized Facts

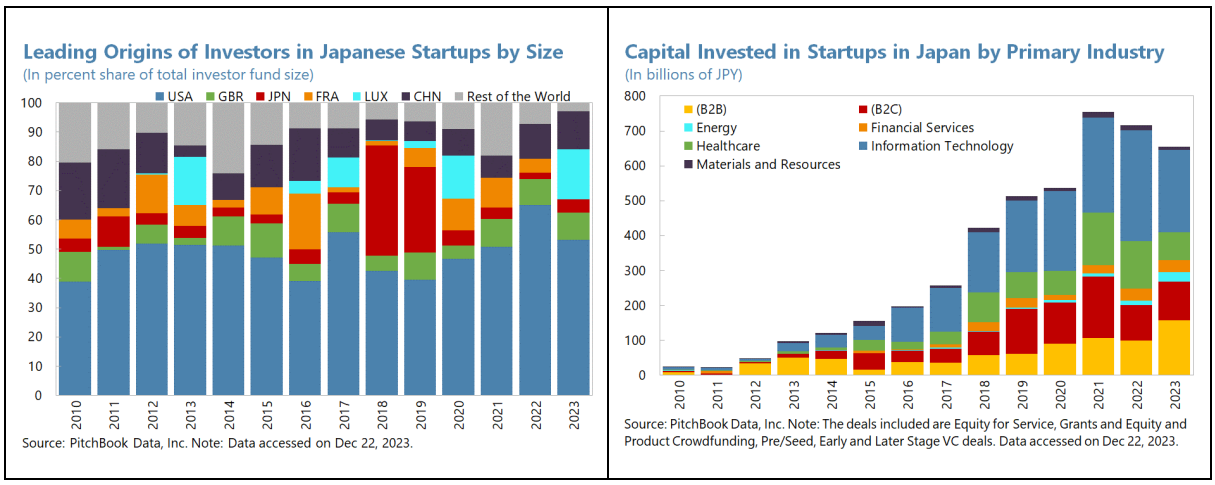
4. In recent years, Tokyo has emerged as a global VC hub. Tokyo is among the top 20 cities in the global VC ecosystem, based on rankings by PitchBook, which tracks startups and VCs globally. Tokyo ranks as the third city in terms of fund value, and relatively high in terms of deal value. The other leading cities tend to concentrate in the U.S., China, the U.K., and Korea. In Japan, the funding for startups tends to concentrate in the Tokyo metro area, accounting for about 80% of total funding.



5. The industrial composition of startups in Japan is similar to that in global peers. Based on firm-level data, most startups operate in the information technology (IT) sector, followed by health care, and business products and services (B2B). Using an alternative industry classification—"vertical" that spans various sectors—we reach a similar conclusion that the industrial composition of startups in Japan is similar to global peers. There are some subtle differences: the share of startups in IT or SaaS (Software-as-a-Service) appears somewhat higher in Japan than the global average. In Japan, CleanTech startups seem to be less prevalent than they are in the global sample.

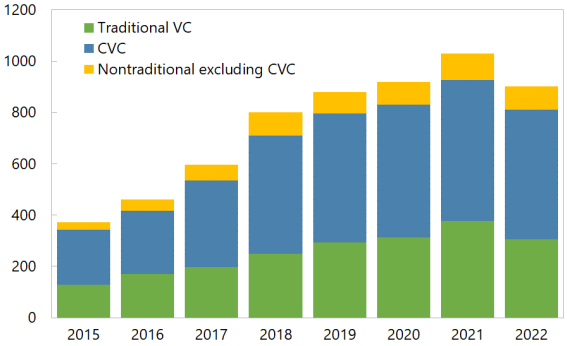


6. Most investors in Japan's startups are from overseas. U.S. investors account for the major share in Japan's startups, with their share at about 50 percent between 2010 and 2023. U.K. investors account for about 10 percent, while Japanese investors saw their share declining to about 5 percent in recent years. By sector, most of the capital is invested in startups in IT and health care, in which Japan has a comparative advantage. More recently, there has been a rise in capital invested in startups that focused on business products and services B2B and Business-to-consumer (B2C) industries.

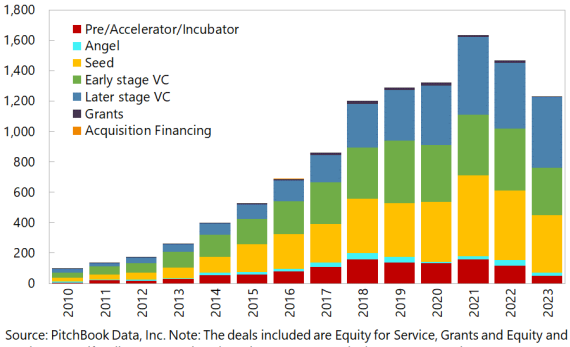


7. An interesting aspect of VCs in Japan is the prevalence of corporate VCs or CVCs. Large Japanese corporations play in important role in funding startups through CVCs, utilizing their sizable stock of cash holdings. Between 2015 and 2022, Japanese CVCs invested in at least half of all VC deals in Japan, peaking at 62 percent in 2020.[5] In terms of the stage of funding, most of the deals are in seed and early-stage VC, which may explain the relatively small size of Japanese startups.[6] However, the share of funding for later-stage VC has increased in recent years.

[5] See PitchBook (2023b), "The State of CVCs in Japan".
[6] Anecdotal evidence also suggests that Japanese startups tend to exit earlier than peers as it is relatively easy to raise funds through the Tokyo Stock Exchange.



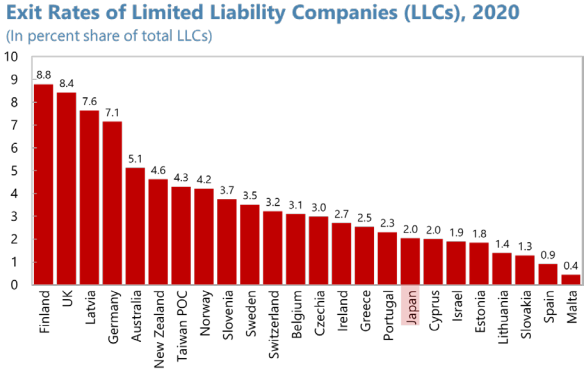
Source: PitchBook Data, Inc., *The State of CVCs in Japan*. Note: Data as of Dec 31, 2022.



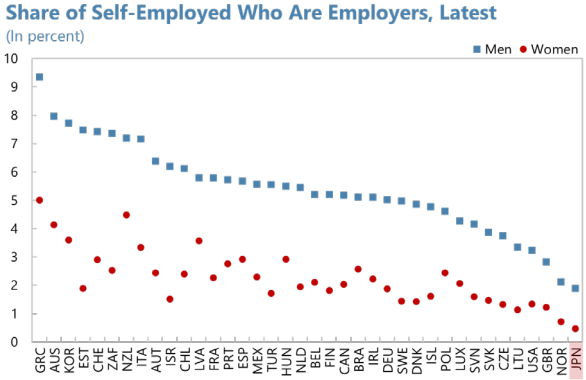
Source: PitchBook Data, Inc. Note: The deals included are Equity for Service, Grants and Equity and Product Crowdfunding, Pre/Seed, Early and Later Stage VC deals. Data accessed on Dec 22, 2023.

C. Aggregate Country-Level Analysis

8. We construct a cross-country aggregate database for 30 large advanced and emerging market economies. On firm performance, we rely on PitchBook, which is one of the most comprehensive databases on private markets globally, covering detailed information on capital investment and firm valuations. On macro and structural variables: we include GDP growth, inflation, firm dynamics, and entrepreneurship. Firm dynamics are captured by firm entry and exit rates and entrepreneurship is proxied by the share of self-employed who are employers. As can be seen below, Japan has a relatively low exit rate and low share of self-employed (who are employers) compared with other OECD countries. The time coverage of the database is from 2000 to 2022.



Note: Data for Germany and Switzerland are as of 2019; and Malta as of 2011.
Source: World Bank, *Entrepreneurship Database*.



Note: NZL, CAN, & USA as of 2022; JPN as of 2021; GBR as of 2019; AUS, KOR, ZAF, CHL, & MEX as of 2017; ISR as of 2016; BRA as of 2015; rest all as of 2020. Source: OECD, *Gender Portal*.

9. The key question in our empirical analysis is how country-specific macro and structural conditions affect the outcome for firms and financing at the aggregate level. We estimate a panel regression with capital investment and valuations as dependent variables, and country-specific macro and structural variables as independent variables. The panel regressions are estimated with the Arellano-Bover/Blundell-Bond linear dynamic panel data estimator with robust standard errors, specified as follows:

$$Y_{kt} = \alpha + \vartheta_k + \delta Y_{k,t-1} + \phi' X_{k,t-1} + \varepsilon_{kt}, \qquad (1)$$

where Y_{kt} captures capital invested (mean) in firms or valuation (mean) of firms (millions of U.S. dollars) in country *k* at time *t* and X_{kt} captures country-specific macro and structural variables.

10. The results highlight the importance of firm dynamism and entrepreneurship in supporting capital investment and valuations in firms. On capital investment, we find that a higher share of entrepreneurship is associated with higher *capital investment* in firms in a country. Better firm dynamism (higher entry rate) is also associated with higher capital investment (Table 1). Similarly, a higher share of entrepreneurship is associated with higher *valuation* of firms at the country level, and better firm dynamism (higher entry and exit rates) are associated with higher valuation (Table 2).

Table 1. Cross Country: Capital Investment and Structural Characteristics

	Dependent variable: valuation (mean)				
Valuation (lagged)	-0.013	**0.0883***	0.0236	-0.00293	**0.101*****
	(0.02)	(0.05)	(0.05)	(0.02)	(0.04)
Real GDP growth (lagged)	5.479	4.218	3.148	-0.335	3.363
	(5.60)	(5.20)	(4.56)	(3.22)	(5.43)
Inflation (lagged)	6.924	-2.6	14.33	11.02	0.402
	(10.86)	(7.61)	(10.39)	(10.41)	(4.87)
Enterpreneurship (lagged)	**32.44***	12.73			
	(17.12)	(24.95)			
Exit rate (lagged)	17.12		**18.35***		
	(12.84)		(9.78)		
Entry rate (lagged)				**5.619***	
				(3.09)	
Average job tenure (lagged)					-40.24
					(47.13)
Constant	-256.4	111.8	**135.9****	**195.1*****	670
	(215.80)	(358.80)	(67.36)	(45.60)	(459.30)
Observations	170	501	214	334	418

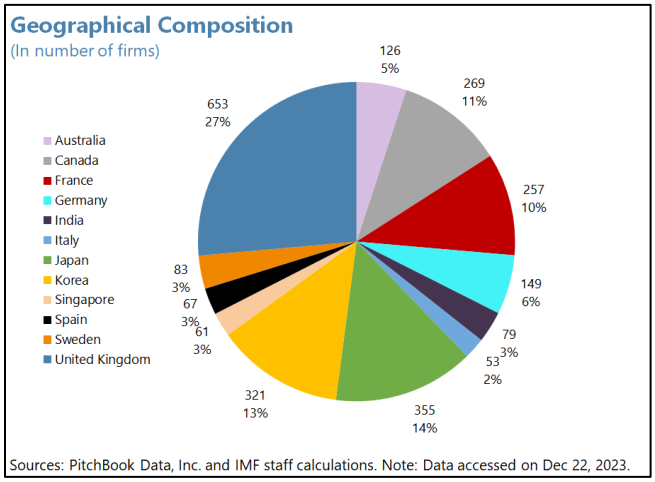
Table 2. Cross-Country: Valuations and Structural Characteristics

	Dependent variable: capital invested (mean)				
Capital invested (lagged)	-0.0399	**0.0803****	0.00502	0.0144	**0.103*****
	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)
Real GDP growth (lagged)	**2.971***	1.213	1.84	-0.806	-0.84
	(1.55)	(2.30)	(1.20)	(1.22)	(1.67)
Inflation (lagged)	5.828	1.729	4.605	2.663	-1.688
	(5.92)	(2.99)	(4.26)	(3.11)	(1.74)
Enterpreneurship (lagged)	**17.37*****	**15.40*****			
	(3.98)	(5.94)			
Exit rate (lagged)	5.996		4.595		
	(5.23)		(3.91)		
Entry rate (lagged)				**9.061***	
				(5.28)	
Average job tenure (lagged)					-30.86
					(25.25)
Constant	-154.1***	-100.4	71.33***	16.48	432.2*
	(54.54)	(82.77)	(23.69)	(41.25)	(254.40)
Observations	170	501	214	334	418

D. Firm-Level Analysis

11. We now take a complementary view and explore the impact of funding on startups' performance by utilizing firm-level data. It is empirically challenging to properly measure the impact of early-stage funding on startups' subsequent performance. This is mainly because angel or venture capital investors select firms that they assess to have the greatest potential to grow, as they seek to maximize returns (see, for example, Kerr and others, 2014, about the detailed screening process used by angel investors in California). This identification challenge is well-known in the literature (see, for example, Kerr and others, 2014; Puri and Zarutskie, 2012; Akcigit and others, 2022; and references therein). Several empirical strategies have been proposed to address it, including matching funded and unfunded firms and the use of detailed firm-level data—if not more granular, for better identification—that provides information about funding details (for example, timing and volume of funding) along with firm characteristics (for example, size and industry) and performance indicators (for example, patents, total employees, and exit timing). Here, we follow a similar route, where we employ coarsened exact matching to reduce potential gaps in observables across firms, and a standard endogenous treatment model to reflect the possibility that startups' quality may drive both the availability of funding and their subsequent performance.

12. The firm-level data is first narrowed down to startups. PitchBook provides detailed information about nearly 4 million companies globally, over 2 million deals, and 5,000 investors (as of end-2023). We limit the sample to startups, defined as companies that are young (less than 10 years old) and backed by any early-stage funding (venture capital, accelerator/incubator, or angel) at least once over its life cycle. We further limit the sample to those with non-missing information on several key characteristics that are used in the empirical model discussed below. The final sample includes startups from 12 countries for which the coverage (number) of startups is the largest, namely, Australia, Canada, France, Germany, India, Italy, Japan, Korea, Singapore, Spain, Sweden, and United Kingdom.[7] The data is as of end-2023.



Sources: PitchBook Data, Inc. and IMF staff calculations. Note: Data accessed on Dec 22, 2023.

13. The estimation equation is as follows:

$$Outcome_i = \beta X_i + \delta WellFunded_i + \varphi_{country,sector} + \epsilon_i \quad (2)$$

[7] The US is excluded due to data limitations.

where $Outcome_i$ is a set of performance indicators of startup i: log of total patent documents, log of number of employees, and the exit probability.[8] $WellFunded_i$ is a dummy variable that takes a value 1 if total capital raised per employee by startup i is above the country-industry median, and 0 otherwise.[9] X_i denote the set of firm controls, in particular firm age and number of employees.[10] $\varphi_{country,sector}$ are country-sector fixed effects, which help to identify within country-industry variation. Standard errors are clustered at the country level. Note that there is no time dimension, as we have cross-sectional information (as of end-2023).

14. The availability of funding, $WellFunded_i$, is treated as endogenous in the estimation. As noted in ¶10, we would like to account for the fact that unobservables, for example, entrepreneurial ability or ambition, could drive both the outcome and the availability of funding (by how much investors would be interested in investing in the startup). To this effect, we assume that $WellFunded_i$ depends on the number of active investors in startup i, as a proxy for how promising the startup is in the spirit of Kerr and others (2014). $WellFunded_i$ is assumed to depend also on the number of years since the first and last fund raising due to the fact that the underlying data is cross-sectional. That is, we are able to observe only a snapshot of firms at a given time (end-2023) and there are differences across firms in the time that has passed since funding. The procedure allows error terms in equation (2) to be correlated with the auxiliary regression that links $WellFunded_i$ to its determinants:

$$WellFunded_i = \beta Z_i + u_i, \qquad (3)$$

where Z_i denote (i) total number of active investors, (ii) years since the first funding, and (iii) years since the last funding, for start-up i, and the test statistic for the null hypothesis, $\text{cov}(\epsilon_i, u_i) = 0$ has a χ^2 distribution.

15. The key hypothesis is that funding has a positive impact on the outcomes for startups ($\delta > 0$). That is, we study whether startups that have total capital raised per employee above the country-industry median perform better than the startups that are less funded. Due to data limitations, we are not able to take a particular funding round as the starting point and track the evolution of the performance of funded and non-funded startups, as typically done in the related literature (see, for example, Akcigit and others, 2022). This said, by focusing on startups that receive at least some funding, we are in principle able to reduce potential differences across the "treated" (well-funded) and "control" (not well-funded) set of firms. Moreover, to further reduce potential

[8] The available firm-level data does not include information about firm exits (e.g., whether or when a firm exited and in what form), and in effect, is available for only non-exited firms (as of end-2023). To be able to study the potential impact of the availability of funding on the likelihood that a startup exits successfully, we use the probability of exit (via IPO or M&A) as reported by PitchBook. Based on proprietary data, PitchBook leverages several granular variables and uses machine learning techniques to estimate the probability of exit (via IPO or M&A) for each individual firm.

[9] The results are broadly robust to choosing different thresholds, e.g., choosing startups with total capital raised per employee above the 75th percentile of the country-industry as "well-funded" and those below the 25th percentile as not "well-funded" do not affect the results materially, though the sample size drops notably.

[10] For the specification that has the number of employees as the outcome variable, number of employees is dropped from the set of control variables X_i.

differences across firms, we employ coarsened exact matching (Iacus and others, 2012; Blackwell and others, 2009). In particular, we match each well-funded startup with a non-well-funded startup in the same country and industry that has the same age and number of employees.[11]

16. The results suggest that the availability of funding can improve startups' performance (Tables 3 and 4). Based on the global sample, we find that well-funded startups have higher number of total patent documents, are larger, and have higher exit probabilities (via initial public offering (IPO) or merger and acquisition (M&A)) (Table 3). The results are not only statistically significant but also economically relevant. For instance, well-funded startups are predicted to have 1.5 times more employees and exit with 43 percentage points higher probability, compared to non-well-funded startups. The results also confirm potential endogeneity of well-fundedness, where the p-value of the null hypothesis of uncorrelated errors terms in the main and auxiliary regressions is strongly rejected in the majority of the specifications (the p-value of the χ^2 statistic reported in the last row of the upper panel of Table 3). Moreover, as documented in the lower panel, the number of active investors is statistically significant in predicting whether a startup is well-funded or not. Finally, these results hold qualitatively for the sample focusing only on Japan (Table 4). For the Japan sample, the impact of availability of funding on the number of patents seems larger and is more precisely estimated, while the estimated impact on other outcome variables does not seem to be materially different.

17. We next explore whether cross-country differences in risk-taking culture also matters. To explore whether heterogeneity across countries in risk-taking culture matters, we augment the main empirical model:

$$Outcome_i = \beta X_i + \delta WellFunded_i x Y_{country} + \varphi_{country,sector} + \epsilon_i, \qquad (3)$$

where $Y_{country}$ denotes a set of country-level variables reflecting proxies for cultural differences as measured by Hofstede (2013), namely (i) uncertainty avoidance, reflecting a society's tolerance for uncertainty and ambiguity; and (ii) power distance, reflecting how much a society delegates power to a person of authority and expect and accept that the power is distributed unequally. We expect a greater positive impact of the availability of funding on startup performance in countries that reward risk-taking behavior. The results suggest that risk-taking culture indeed matters. In particular, the predicted impact of the availability of funding on the exit of a startup is higher in countries with less uncertainty avoidance (for IPO exit) and with less power distance (for M&A exit).

18. The results should be read with some caveats, in large part due to data limitations. First, we were not able to track startups' performance following funding rounds, given that the data is cross-sectional. Second, we study a particular vintage of the data, i.e., end-2023, that includes surviving startups. The data for firms that had exited before end-2023 is not available, hence there remains survivor bias –though it is not evident if the bias would be in a particular direction. Third, we

[11] Two-sided t-test of means for treated and control samples imply (i) for age, a p-value of 0.05 before matching and 1.00 after the matching; (ii) for total number of employees, a p-value of 0.003 before matching and 0.42 after matching. Matching drops 13 percent of the firms in the final sample.

study the impact of the availability of funding, and do not explore to what extent the cost or the conditionality of funding or the type of investors would matter, similarly due to data limitations. Moreover, the estimated impacts are identified within country-industry, mainly to sharpen the identification, but this comes at the expense of overlooking potential variation across countries and/or industries. Finally, the analysis does not shed light on whether private equity funding is a complement or substitute to other types of financing (for example, debt financing). This said, exploiting country-industry variation in the identification strategy in part mitigates potential bias due to omitting other potential sources of funding.

Table 3. Global: Does Availability of Funding Affect Startup Performance?

	Dependent Variable				
	log(patent docs)	log(# employees)	exit	IPO	MA
Well-Funded	0.744*	1.540***	43.848***	14.500***	39.903***
	(0.408)	(0.171)	(1.774)	(3.108)	(1.819)
log (# employees)	0.159***		11.635***	4.833***	7.229***
	(0.030)		(0.471)	(0.409)	(0.689)
log(age)	0.677***	0.285***	-6.517***	-0.237	-7.174***
	(0.041)	(0.105)	(1.174)	(0.770)	(1.116)
Observations	1,854	1,854	1,854	1,854	1,854
chi2 - p-value (rho=0)	0.328	0	0	0	0

	Treatment Variable = Well-Funded				
	log(patent docs)	log(# employees)	exit	IPO	MA
# Active Investors	0.033***	0.064***	0.035***	0.041***	0.026***
	(0.007)	(0.006)	(0.007)	(0.008)	(0.006)
Years since first funding	0.045***	0.018	0.035***	0.029**	0.040***
	(0.010)	(0.012)	(0.008)	(0.011)	(0.008)
Years since last funding	-0.124***	-0.108***	-0.356***	-0.138***	-0.305***
	(0.026)	(0.026)	(0.024)	(0.024)	(0.023)
Observations	1,854	1,854	1,854	1,854	1,854

Table 4. Japan: Does Availability of Funding Affect Startup Performance?

	Dependent Variable				
	log(patent docs)	log(# employees)	exit	IPO	MA
Well-Funded	3.443***	0.848***	51.863***	23.050***	46.359***
	(0.283)	(0.173)	(3.026)	(2.172)	(5.190)
log (# employees)	0.057		11.802***	4.750***	7.187***
	(0.073)		(1.083)	(0.955)	(1.269)
log(age)	0.730***	0.575***	-3.726	1.739	-7.524**
	(0.214)	(0.141)	(3.613)	(2.174)	(3.339)
Observations	302	302	302	302	302
chi2 - p-value (rho=0)	0	0	0	0	0

	Treatment Variable = Well-Funded				
	log(patent docs)	log(# employees)	exit	IPO	MA
# Active Investors	0.001	0.054***	0.018**	0.011	0.011
	(0.006)	(0.009)	(0.009)	(0.010)	(0.011)
Years since first funding	-0.016	0.040	0.057*	0.085**	0.045
	(0.027)	(0.040)	(0.030)	(0.037)	(0.038)
Years since last funding	-0.080*	-0.146***	-0.432***	-0.237***	-0.307***
	(0.041)	(0.054)	(0.047)	(0.050)	(0.064)
Observations	302	302	302	302	302

Table 5. Global: Does Risk Culture Matter for Startup Exit?

	Dependent Variable: Successful Exit	
Country Characteristic:	Uncertainty Avoidance	Power Distance
Well-Funded	46.022***	48.184***
	(1.484)	(1.412)
Well-Funded * Country Characteristic	-1.617	-4.376***
	(1.671)	(1.138)
log (# employees)	11.999***	12.090***
	(0.459)	(0.428)
log(age)	-3.198**	-3.230**
	(1.452)	(1.463)
Observations	1,854	1,854
chi2 - p-value (rho=0)	0	0
	Dependent Variable: IPO Exit	
Country Characteristic:	Uncertainty Avoidance	Power Distance
Well-Funded	16.574***	11.204***
	(4.084)	(2.660)
Well-Funded * Country Characteristic	-5.241**	2.344
	(2.178)	(1.957)
log (# employees)	4.293***	4.221***
	(0.446)	(0.459)
log(age)	-3.943***	-4.065***
	(1.266)	(1.388)
Observations	1,854	1,854
chi2 - p-value (rho=0)	0.00360	0.00285
	Dependent Variable: MA Exit	
Country Characteristic:	Uncertainty Avoidance	Power Distance
Well-Funded	40.367***	48.153***
	(3.285)	(2.244)
Well-Funded * Country Characteristic	2.514	-7.293***
	(3.479)	(1.496)
log (# employees)	8.005***	8.158***
	(0.755)	(0.706)
log(age)	-0.920	-0.680
	(2.123)	(2.072)
Observations	1,854	1,854
chi2 - p-value (rho=0)	0	0

E. Policy Implications

19. In line with international experience, our results highlight the importance of equity funding in supporting startups to grow and eventually exit in Japan. Better access to equity funding is crucial for startups to grow, innovate, and exit successfully. Angel or venture capital investment not only provides startups with private equity financing when they do not have access to capital markets, bank loans, or other debt instruments at the early stage of their businesses, but also offers value-added services (for example, operational and market insights).

20. A more flexible labor market is crucial for entrepreneurship and innovation. A gradual shift away from the lifelong employment system could encourage talented individuals to consider setting up startups and to have a second chance in case they fail. Reducing labor-market dualism, encouraging merit-based promotions, and facilitating more job mobility can also encourage entrepreneurship, which is associated with higher capital investment and firm valuations at the country level.

21. Greater firm dynamism can help support startups and innovation. Dynamic firm entry and exit and reduced personal liabilities can also encourage entrepreneurship, innovation, and more efficient allocation of resources. For example, a gradual reduction of zombie firms could help improve the allocation of capital and labor to more productive ventures, boosting productivity and growth.

References

Akcigit, U., Dinlersoz, E., Greenwood, J., and Penciakova, V. 2022. "Synergizing Ventures," *Journal of Economic Dynamics and Control* 143 (104427): 1-31.

Blackwell, M., Iacus, S., King, G., and G. Perro. 2009. "cem: Coarsened Exact Matching in Stata," *Stata Journal* 9(4): 524-546.

Hofstede, G. 2013. "Values Survey Module." Available at https://geerthofstede.com/research-and-vsm/vsm-2013/

Iacus, S. M., G. King, and G. Porro, 2012. "Matching for Causal Inference Without Balance Checking," *Political Analysis* 20(1): 1-24.

Kerr, W., Lerner, J., and A. Schoar. 2014. "The Consequences of Entrepreneurial Finance," *Review of Financial Studies* 27(1): 20-55.

Puri, M. and R. Zarutskie. 2012. "On the Life Cycle Dynamics of Venture-Capital and Non-Venture-Capital-Financed Firms," *Journal of Finance* 67 (6): 2247-