Insights on Productivity and Business Dynamics

Japan: Business Dynamics

Business and employment dynamics play a central role in market economies. Understanding the characteristics and potential of businesses that populate the economy, in different sectors of activity and over time, and the extent to which they contribute to job creation and reallocation are central for economic policy.

This Country Note presents the key findings of the OECD DynEmp project for Japan. The DynEmp project provides cross-country evidence of employment and business dynamics over the last two decades. While the Japanese data is not strictly comparable to most other DynEmp participants due to differences in sectoral coverage and the use of establishment rather than enterprise-level data, cross-country comparisons can still be instructive in understanding trends in business dynamism and employment in Japan. The key results from this note suggest the need for a critical focus on the entrepreneurial environment in Japan, including aspects such as skills upgrading for older workers and SME support policies, in order to counter the headwinds associated with an aging population.

Highlights

- The Japanese manufacturing sector has experienced a long period of low business dynamism.
- The total number of manufacturing plants has declined, and employment has become more concentrated in larger, older establishments.
- While this concentration in large establishments supports productivity growth in the short term, due to the significant productivity gap between large and small firms, the decline in entry and the falling share of employment in young and small plants raises concerns for both productivity growth and inclusiveness.
- As such, policies to de-risk entrepreneurship and job mobility, and to encourage the growth of innovative young firms are likely to be important in securing Japan’s future productivity performance.

Country background

Japan’s economic challenges are largely connected to rapid population ageing and ensuing issues, constituting a challenge to maintaining output and productivity growth. One important consequence of population ageing is a declining labour force. With the unemployment rate having reached a two-decade low in 2019 (Statistics Bureau of Japan, 2020), and the ratio of active job openings-to-applicants ratio at its highest in 45 years (MHLW, 2020a), firms in Japan face difficulties filling open positions.
Male labour force participation rates are already high by OECD standards – among 15-64 year old men, the rate in 2018 was 86.2%, third highest in the OECD and substantially above the OECD average of 80.4%. The female labour force participation rate is much lower, sitting at 71.3% in 2018, but remains high relative to the OECD average of 64.6% (OECD, 2020a).

Over recent years, the government has implemented several labour policy reforms in order to make the working environment more favourable to the parts of the population that are typically out of the workforce in Japan, such as women and older persons. These measures include strict limits to the amount of overtime and a mandatory requirement for employees to take at least five days of annual leave.

Second, to expand the overall size of the workforce, the government is urging the private sector to extend employees’ retirement to the age of 70 and is planning to raise the mandatory retirement age of civil servants to 65 from the current 60. Third, a new residency status was created for lower-skilled foreign workers. The number of foreign workers in Japan reached a record high of 1.65 million in 2019 (MHLW, 2020b), showing firms’ willingness to hire foreign workers.

In the face of falling labour inputs, raising productivity among Japanese firms is critical. Japan’s labour productivity in 2018 was 21th in the OECD countries, 20% below OECD average (OECD, 2020b). Labour productivity growth in the manufacturing sector, while positive, has been lower than in many other OECD economies. This worsening relative position in manufacturing can also be seen in the trade data, where Japan’s share of global manufacturing value added has slipped from 12.6% in 2005 to 6.9% in 2015 (OECD, 2020c). Moreover, the productivity gap between large and small firms is wide in Japan, suggesting that there is both significant potential, and significant need, for productivity catch-up among laggard firms (Figure 1).

In the face of falling labour inputs, raising productivity among Japanese firms is critical. Japan’s labour productivity in 2018 was 21st in the OECD countries, 20% below OECD average (OECD, 2020b). Labour productivity growth in the manufacturing sector, while positive, has been lower than in many other OECD economies. This worsening relative position in manufacturing can also be seen in the trade data, where Japan’s share of global manufacturing value added has slipped from 12.6% in 2005 to 6.9% in 2015 (OECD, 2020c). Moreover, the productivity gap between large and small firms is wide in Japan, suggesting that there is both significant potential, and significant need, for productivity catch-up among laggard firms (Figure 1).

**Figure 1. The productivity gap between SMEs and large firms**

Value added per person employed in 2016 relative to that in firms with more than 250 workers = 100


Japan also suffers from a low entry rate of firms (SMEA, 2017), with indicators suggesting that the business environment is less favourable than in many other comparable countries. A dynamic business environment, with robust entry and growth of new firms, is important because new firms play a key role in introducing innovations, stimulating creative destruction, generating improvements in productivity and driving industrial development and economic growth in the long-term. Moreover, international research suggests that hiring practices in new and small firms may be more inclusive than in larger establishments, providing employment opportunities for groups that are less well connected to the labour market (Davis and Haltiwanger, 2019; Fackler et al., 2019; Nyström, 2012).

The remainder of this Note complements the established findings of low levels of business and employment dynamics in Japan by comparing levels and trends in manufacturing between Japan and a set of benchmark
countries participating in the DynEmp project. Box 1 provides additional background on the project, the Japanese data source, and a definition of the benchmark countries included.

**Box 1. The DynEmp project**

The DynEmp project provides a unique comprehensive overview of employment and business dynamics across countries over the last two decades. The main contribution of the project is the creation of a harmonised micro-aggregated database with which business and employment dynamics can be analysed across countries in a comparable way. The data are based on administrative records with quasi-universal coverage (such as business registers or social security records). Assessing employment and business dynamics in comparison to those of an appropriately defined benchmark group of countries can further inform and orient policy intervention.  

The DynEmp database generally covers most sectors of the economy, but in order to enhance cross-country comparability, the country profiles focus on manufacturing and non-financial market services (or “services” for brevity). For Japan, due to data restrictions, only on the manufacturing sector is analysed for the years 2000-14. The data source for Japan is the Census of Manufactures dataset from METI, the Ministry of Economy, Trade and Industry.

In this note, data on employment and business dynamics in Japan are compared to a benchmark group of countries for which DynEmp data are available: Austria, Belgium, Brazil, Costa Rica, Spain, Finland, France, Hungary, Italy, the Netherlands, Norway, Portugal, Sweden and Turkey. The data for Japan differ in several aspects from that in most other countries. Importantly, the lower threshold for inclusion in the data is four employees for Japan, while for most other countries the data covers units with two or more employees. Moreover, data are at the establishment level, while for other countries they are at the firm level. The implications of these restrictions for cross-country comparability are discussed throughout the text. See Desnoyers-James, Calligaris and Calvino (2019) for more details on the underlying data.

Unless otherwise indicated, the presented numbers rely on averages for the period for which data are available. Results presented in this paper are sourced from the DynEmp3 database as of August 2019. Owing to methodological differences, figures may deviate from officially published national statistics.

**Employment dynamics in Japan**

**Size distribution**

Understanding the size and employment distribution of firms within the Japanese economy is important for policy makers, as it provides an understanding of the structure of the economy and an indication of the role of firms of different sizes. Comparison of the size composition of the Japanese economy with a benchmark is complicated, due to differences in both coverage and the use of establishment, rather than enterprise-level, data.  

Despite these challenges, investigating changes in the plant size distribution of Japan compared to the benchmark provides interesting and meaningful insights into the structural dynamics of the Japanese manufacturing sector. By focusing on the difference in trends rather than on the absolute gap between Japan and the benchmark, this section considers recent changes in the employment structure and their potential implications.
Figure 2. Size distribution
Manufacturing
Japan vs benchmark countries, 2000 and 2014
(a) Size distribution of plants (firms)

(b) Employment distribution by plant (firm) size

Note: This figure reports the size distribution in Japan and the average of the benchmark group of countries in 2000 and 2014, for six size classes, for the manufacturing sector as a whole. Shares are calculated in terms of (a) number of units, and (b) employment.

Source: OECD calculations based on DynEmp database, August 2019. See Box 1 for details.

Figure 2 shows the average size distribution of units in Japan with four or more persons engaged, and in the benchmark with two or more persons engaged, in 2000 and 2014. Panel (a) treats plants (firms) as units, while Panel (b) weights them by employment so that the figure reflects the employment distribution rather than the distribution of plants (firms).

A clear development in Japan’s manufacturing sector is the decrease in the share of micro units (4-9 persons engaged), and concentration of employment into the three biggest size categories at the expense of the smaller ones. While total employment in the manufacturing sector in Japan has been decreasing continuously since the early 1990s, the employment distribution has clearly shifted towards larger plants. Units with 100 or more employees now
account for around 54% of all manufacturing employment, an increase of almost 7 percentage points. Figure 3 shows that the average size of incumbents’ plants in Japan also has followed an upward trend, in contrast to the benchmark where average firm sizes have decreased over time.\(^4\)

The employment distribution has implications for productivity. Larger firms are typically more productive in manufacturing because of their abundant R&D investment (Fukao and Kwon, 2011) and economies of scale. In Japan, large firms’ labour productivity in manufacturing was almost 2.4 times that of SMEs as of 2015 (SMEA, 2017: 42).\(^5\) OECD MultiProd data also show that labour productivity gap by size class is larger in Japan than in the benchmark (OECD, 2020d). In a static sense, the relative shift of employment towards larger firms in Japan over the last two decades might therefore imply a more efficient allocation of resources in terms of overall labour productivity in manufacturing. However, at the same time, the decrease in the number and employment share of small firms raises questions about start-up dynamics, discussed in more detail further below.

**Figure 3. Average size trends of incumbents**

Manufacturing

Japan vs benchmark countries, 2000-14

---

Note: This figure reports the trend in average size (number of employees) of incumbents in Japan and in the benchmark group of countries from 2000 to 2014 for the manufacturing sector, adjusted for time-constant industry and country-specific factors. It plots the estimated year dummies from a regression of average plant (firm) size on a full set of industry-country dummies, taking the estimated constant as the starting value. Incumbent firms are firms that were present in the previous year.

Source: OECD calculations based on DynEmp database, August 2019. See Box 1 for details.

**Entry, exit and net job creation**

Market entry and exit is at the heart of business dynamism. Young innovative firms are central to innovation, productivity growth, industrial shift and economic growth in the long-term. Meanwhile, the exit of less productive firms is essential to free up resources for use elsewhere in the economy.

Previous studies have shown that the Japanese manufacturing sector exhibits both low entry and low exit rates compared to other countries. Moreover, in most industries, the entry rate is well below the exit rate, contributing to a consistent decrease in the total number of firms (SMEA, 2017).

The entry and exit rates of establishments in Japanese manufacturing from the DynEmp database are plotted in Figure 4. Again, the comparison with the benchmark is complicated by the differences in the unit of measurement (establishments vs. firms). The overall direction of the bias is unclear in this case, as the use of establishment data will tend to boost both the number of entries and the number of existing units. However, due to the exclusion of very small plants below four employees, recorded entry and exit rates may both be downwardly biased in Japan relative
to the benchmark. Nevertheless, the results presented here are broadly consistent with entry rate data from the Ministry of Health, Labour and Welfare’s Annual Report on Employment Insurance Programmes (MHLW 2015, 2016), which lends support to the conclusions derived from the DynEmp data. The above source indicates that the entry rate of manufacturing was 1.9% in 2015, the lowest among all sectors in Japan. In contrast, the same data shows an exit rate of 3.4% in manufacturing, consistent with finding on DynEmp data that the exit rate is higher than the entry rate in manufacturing.

Figure 4 shows that the entry rate in Japan was around 2% across all sectors within manufacturing for 2000-14, while the benchmark value was between 4 to 6%. In contrast, the exit rate is close to, but slightly higher than that of the benchmark across most manufacturing sector. While entry rates are consistently low across all manufacturing sector, exit rates vary substantially, from 3.7% in Chemicals to over 10.7% in Textiles.

Figure 4. Average entry and exit rates
Manufacturing
Japan vs benchmark countries, 2000-14

*Note: These figures report the 2000-14 average entry and exit rates in manufacturing, in Japan and averaged across the benchmark countries. The entry rate is defined as the number of entering units over the sum of entering and incumbent units in an industry, while the exit rate is defined as the number of units which will exit in the following period over the total number of units in operation at time t. Source: OECD calculations based on DynEmp database, August 2019. See Box 1 for details.*

Low entry rates in manufacturing are likely to reflect a number of factors, including offshoring, the declining competitiveness of Japanese manufacturing in the face of strong competition from China and South Korea, and the age structure of the Japanese population. An ageing society is likely to become less entrepreneurial, both because of direct effects of age on risk aversion and entrepreneurial incentives, and because as the size of successive cohorts fall, older workers continue to occupy key management positions, preventing younger workers from gaining the management and decision-making experience they need to succeed as entrepreneurs (Liang, Wang and Lazear, 2018). In particular, the median age of managers in SMEs has shifted from 47 years in 1995 to 66 years in 2015 (SMEA, 2018), suggesting that managerial experience among younger workers is limited.

Lifetime employment security and strong employment protection for permanent workers may also make entrepreneurship a less attractive option for someone already employed. In addition, low protection of personal assets in the case of bankruptcy may have reduced entrepreneurial incentives by raising the risks associated with failure. Discouraging entrepreneurship limits the emergence of innovative new firms and may trap labour and capital in low productivity activities. Acknowledging the need to raise entry and exit rates, the 2013 Japan Revitalization Strategy set a target of raising rates from 4-5% to 10% by 2020 (OECD, 2019, 2017a, 2015).
While high exit rates in large part reflect ongoing shifts away from manufacturing and into services, there are unique factors other than a lack of profitability affecting exit among Japanese SMEs. Key factors of Japanese SMEs that have been identified in the literature include the aging of business owners and a lack of available successors to take over, and business suspensions and closures due to workforce shortages rather than business profitability (Tokyo Shoko Research Ltd., 2019, 2018, 2017). These factors weigh on aggregate productivity, as even high profitability and high productivity firms are forced to exit the market (SMEA, 2017: 46).

In recent years, the government has taken action through several policy measures to mitigate the impact of the expected extensive market exit of SMEs. The Small and Medium Enterprise Agency (SMEA), one of the agencies of Ministry of Economy, Trade and Industry (METI) has expanded the deferral and exemption framework for the payment of inheritance tax and gift tax on non-listed shares (the “business succession taxation scheme”) to encourage business succession. The METI will also be promoting mergers and acquisitions as an alternative method of business succession through a new tax incentive programme. The private sector is also responding to this challenge, developing online platforms and databases for business-to-business matching to foster fruitful mergers and acquisitions for old SMEs, while third parties, such as banks, are trying to match acquirers and target old SMEs through these platforms in order to maintain their pool of potential clients in the region.

To sum up, the number of firms and employees in manufacturing has been shrinking in Japan due to low entry and high exit rates. With fewer new plant entries (which tend to be smaller), the share of employees working in medium-sized plants has increased. To the extent that entry and exit rates simply reflect ongoing moves towards the services sector, and consolidation of manufacturing into large, highly productive establishments, these dynamics may be simply a reflection of the changing structure of the economy. However, there appears to be some cause for concern given low levels of entrepreneurship, and observed exit among otherwise profitable firms.

**Age-size distribution and trends in employment creation**

While job creation is not, in itself, a key concern for Japan at the moment, employment dynamics remain an important indicator of the health of the economy, indicating an ability for resources to move to meet new areas of demand. Moreover, international research has found that young firms hire disproportionately from more disadvantaged groups in the workforce, suggesting that strong job creation by young firms is important to maintain an inclusive labour force (Davis and Haltiwanger, 2019; Fackler et al., 2019; Nyström, 2012).

Figure 5 compares net job creation and destruction across four groups of firms, distinguished by age and size. Values below zero represent net job destruction, and positive values indicate job creation of the respective group. In both size categories and across both Japan and the benchmark countries, young and old units show opposite tendencies in job creation, with young units tending to be net creators of employment and older units tending to shed more jobs than they create. The stronger positive job creation of young units reflects both new entry and relatively strong employment creation among young incumbents, while older units shed jobs both through exits and through downsizing of existing operations.

Consistent with the evidence presented above, as a group, small manufacturing units in Japan have shed more than twice as many jobs as they created over the period 2000-2014. This contrasts with the benchmark, where net job destruction by small, old units was largely matched by job creation in small, young units. Meanwhile, both net job creation and net job destruction were more muted in the larger units, both in Japan and the benchmark, with minimal change in overall employment over the period.

While we do not have information about employment composition in Japan, if it is the case that younger firms tend to have more inclusive employment practices than older firms, this suggests that changes in the employment distribution are doing little to support inclusion, at least in the manufacturing sector. Meanwhile, significant levels of net job destruction may raise concerns about transition costs, as primarily older workers in small manufacturing plants may have limited alternative employment opportunities.
Conclusion

The DynEmp data reveal low business dynamism in the manufacturing sector in Japan. Focusing on entry and inclusive job creation, there are the following issues: (i) an extremely low entry rate (Figure 4); (ii) employment shifts away from smaller establishments to larger ones (Figure 2); and (iii) positive but comparatively weak net job creation of young and small establishments. From a resource allocation point of view, the issues are (i) the very high exit rate relative to the entry rate (Figure 4) and (ii) a large level of net job destruction by old units, in particular small ones (Figure 5). This is in line with the discussed issues of ageing of business owners.

These issues are reflected in current economic policy concerns in Japan. To mitigate the impact of the expected extensive market exit of SMEs created by an ageing population, recent policies by the government to support SMEs succession can be an appropriate solution for the short to medium term. However, caution is required: if business succession support policies are implemented without distinguishing between productive and unproductive old SMEs, this might adversely affect business dynamism by keeping capital and labour in relatively inefficient uses, at the cost of potential entrants and growing firms (OECD, 2019; 54-55).

A complementary policy focus on improving entrepreneurship and encouraging constant mid-career skills upgrading to mitigate the adverse consequences of business closures could pay dividends across multiple spheres. A stronger focus on skills development, and particularly upskilling of mid-career workers, would complement the Japanese government’s existing focus on business development (OECD, 2019, 2018b). At the micro level, finding a job could be a big challenge for large numbers of low- and middle-skill workers with low digital skills, especially for older workers. At the same time, the growth potential of new start-ups will be limited if they cannot attract and retain suitably skilled workers. Government strategies to enhance digital uptake and innovation, such as the “AI Strategy 2019”, include measures to nurture AI professionals and attract foreign talent, as well as encouraging the diffusion of digital technologies to a broader population. To ensure that society as a whole benefits from an evolving entrepreneurial ecosystem and new technologies, a straightforward policy measure could promote mid-life training, thereby enhancing the potential for older (less digitally experienced) workers (OECD, 2019), and support the
diffusion of advanced technologies to all firms (for example via procurement policies or direct support for R&D in SMEs). As well as having benefits for labour supply and inclusiveness, such measures have been found to support productivity catch-up among laggard firms, particularly in high-skill and digital intensive industries (Berlingieri, Blanchenay and Criscuolo, 2017), which are likely to be key to Japan’s future economic growth.

Notes

¹ While this largely reflects the rise of China and Korea, and continuing deindustrialisation of high-income countries, the decline in Japan has been much more pronounced than in other OECD economies.

² Additional OECD cross-country studies based on the DynEmp database (such as Criscuolo, Gal and Menon, 2014; Calvino, Criscuolo and Menon, 2015, 2016) provide complementary policy-relevant findings.

³ Observed size distribution differences may partially reflect the division of firms into smaller units in the Japanese data. This will be particularly relevant for manufacturing, where firms tend to have multiple plants in various locations. At the other end of the scale, the exclusion of micro units (2-3 employees) will tend to reduce the share of observed units at the bottom of the size distribution. However, this may be less relevant in the manufacturing sector, where average plant and firm sizes tend to be larger than in the services sector (MIAC and METI, 2018).

⁴ As the Japanese data is collected at the establishment level, employment in very large firms is likely to be understated relative to the benchmark. However, there is no clear reason to suspect that the over-time trend should be affected.

⁵ In the cited report, large firms are defined by paid-in capital of JPY 100 million or more, and SMEs are defined by paid-in capital of between JPY 10 million and JPY 100 million. The statistic refers to all industries.

⁶ Some progress has been made on the latter point, with the introduction of the 2014 Guidelines for Personal Guarantees Provided by Business Owners.

⁷ SME statistics in this paragraph refers to all industries.

⁸ Business transfer of SMEs is becoming a problem in several other OECD countries as well. See Koreen, Schlepphorst and Pissareva (2019) for more details.

⁹ Business demography in the country also matters. For example, whereas headquarters of the large firms accumulate in the metropolitan areas, SMEs are more scattered geographically. Due to transaction costs, there are limits to worker-side regional mobility. Therefore, supporting SMEs business succession is also meaningful to protect regional employment in rural areas. Additional OECD studies (such as OECD, 2017b, 2017c) provide the interested reader with complementary policy-relevant findings.

¹⁰ Current policy initiatives include programmes to support high growth potential start-ups, through a range of government support measures and by facilitating networking between firms and potential investors, as well as subsidies for entrepreneurs available at multiple levels of government.
References


OECD Insights on Productivity and Business Dynamics

The global productivity slowdown and the simultaneous decline in business dynamism has prompted widespread policy concern. Productivity is the ultimate driver of living standards improvements in the long run, whereas a dynamic business environment is key in enabling job creation. Persisting negative trends can increase earnings inequalities and exacerbate pressures on governments’ budgets, thus threatening social cohesion and political stability.

While most existing analysis of productivity and business dynamics rely on macro-aggregated data, the OECD MultiProd and DynEmp projects utilise a distributed microdata methodology to construct unique sets of harmonised micro-aggregated statistics from confidential firm-level data. The resulting databases allow studying the role of individual firms in driving aggregate outcomes and explaining the observed macro trends across countries and over time.

OECD Insights on Productivity and Business Dynamics is a series of country profiles with a focus on the microdrivers of aggregate productivity and job creation. It makes available, to wider audiences, analytical material from the MultiProd and DynEmp databases that was prepared for use within the OECD.

Comment on this country profile is invited, and may be sent to OECD, 2 rue André Pascal, 75775 Paris Cedex 16, France, or by e-mail to dynemp@oecd.org.

The contribution to the DynEmp project of Kenta Ikeuchi from the Research Institute of Economy, Trade and Industry (RIETI) is gratefully acknowledged.

Please cite this country profile as:


This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 811181.

The findings, recommendations and conclusions expressed in this paper are those of the authors.

Neither the OECD nor the European Commission are responsible for any use that may be made of the information contained herein.

Stay informed by subscribing to our newsletter: OECD News on Innovation, Science, Technology and Industry: http://oe.cd/stinews

@OECDInnovation

http://oe.cd/dynemp

Contact us at: dynemp@oecd.org


This document, as well as any data and any map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

Find out more about our work at http://www.oecd.org/sti/dynemp.htm

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d’exploitation du droit de copie (CFC) at contact@cfcopies.com