

Population Decline, Employment and Prosperity: Setting the Conditions for Quality Job Creation in All Regions of Japan*

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Abstract

A growing imbalance in population between urban and rural areas is dysfunctional and undermines the quality of life in Japan. Only an integrated approach capitalising on talent and innovation and drawing on effective governance mechanisms can reverse this trend and contribute to delivering prosperity in all regions. This article will demonstrate the need for a balanced and differentiated approach in Japan that improves growth and job creation.

The article will review the structure of population change in Japan and compare it with other countries. It will show that the share of the population in big cities is growing in Japan as well as in other countries, though there is no unique trend among OECD countries. It will then show the importance of taking a balanced approach to the supply and demand for skills. The supply of skills is key for productivity and economic growth, but if skills are not fully used in the workplace, the economy risks becoming less resilient and the regions that host them less attractive. The article will show that rural areas in Japan already feature low skills equilibrium. Stimulating growth and job creation in a way that can transform rural areas into attractors of population requires an integrated approach that combines factors on both the supply and demand side.

The article will draw on international evidence to show that this approach needs to be differentiated across the national territory to take into account the diversity of contexts and the various strengths on the supply or demand side of skills. It requires strong governance mechanisms at the local level, which includes flexibility in the management of policies that enable stronger co-ordination between workforce and economic development, as well as effective partnerships and strong capacities.

Keywords: population decline, skills development, innovation, local economies,
employment, productivity

JEL Classification: H70, R10

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I. Introduction

Growing imbalances in population between urban and rural areas can have serious implications for long-term growth, prosperity and well-being. As the population ages, younger cohorts are tempted to move to places where they can enjoy better salaries and services, even if this comes with important drawbacks such as more pollution, longer commuting times and higher costs of living, notably in housing. As a result, the decline of some areas losing population accelerates, exacerbating polarisation between richer urban and poorer rural areas. Such trends can translate into higher inequalities as older populations have difficulties accessing services and rural populations become impoverished by slower economic growth and a lack of employment opportunities.

The OECD is rich in examples of places that have faced such situations. Both in countries facing a population decline and those with steady demographics, places have seen gradual reductions in both the supply of, and the demand for skills. Several have fallen into low skills equilibrium, where vicious cycles can promote both low-paid jobs and low qualifications. Other areas have experienced skills surplus, where the pool of skills outstrips the local demand for qualifications, leaving talented individuals unable find jobs commensurate to their qualifications. This can encourage these workers to move to other regions.

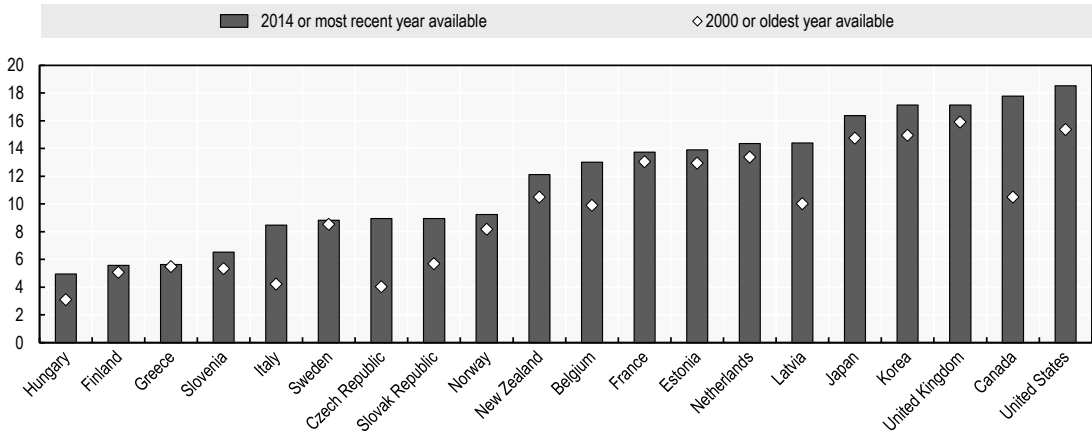
Recent OECD work (2016a) shows that there is actually a widening gap on jobs and skills between leading areas and trailing ones in many countries, including Japan. While most OECD countries have enjoyed an increase in educational attainment over the past 15 years, not all local areas have progressed equally. Local areas that were already leading the pack in terms of education levels have pulled even further ahead. Similar trends have been observed for the distribution of high-skilled jobs in several countries, such as Canada, Finland, France, Italy, Japan, Latvia, Norway, the Slovak Republic, Slovenia, and the United Kingdom.

Figure 1 shows the difference between the leading and trailing sub-regions in terms of the shares of the population with post-secondary education. Overall, the rate of post-secondary educational attainment has increased across most local areas, regardless of size and/or level of urbanisation. This is not surprising given that overall levels of education increased in OECD countries generally during this time period. However, the share of the population with post-secondary education tended to increase more quickly in some areas in comparison to others. Namely, those sub-regions that were already doing well enjoyed even greater gains over this time period. For this reason, in most OECD countries, the gaps between local areas at the top and bottom of the distribution have increased.

When looking at the shares of medium- and high-skilled jobs, the picture is more mixed. Figure 2 shows the difference between the leading and trailing sub-regions in terms of the shares of medium- and high-skilled occupations. Between 2000 and 2014, the gap increased in ten out of twenty countries included in the analysis, albeit with less pronounced changes than for post-secondary education levels (as is the case for Japan).

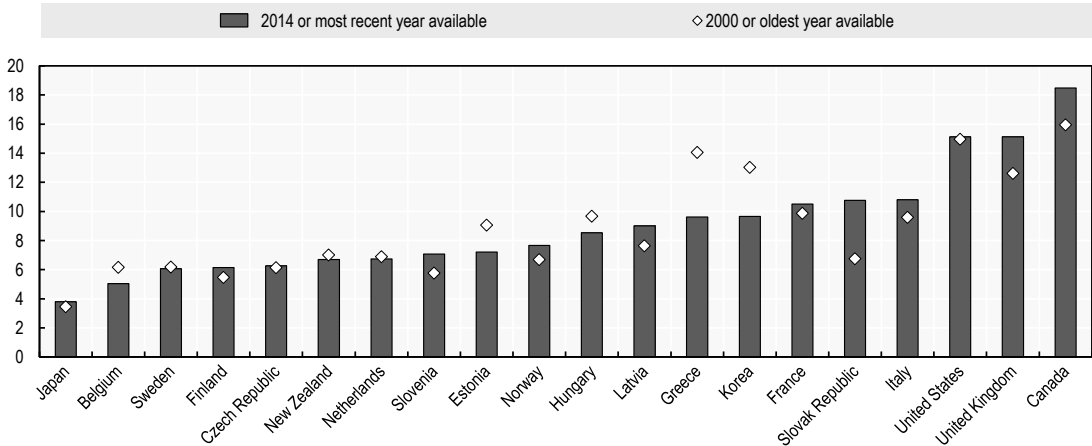
It may be difficult to reverse such trends, as highly-qualified individuals continue to aim

Figure 1. Geographical gaps in post-secondary education levels, sub-regions, 2000 and 2014
Percentage point difference between leading and trailing sub-regions



Source: OECD (2016). Calculations are based on data provided by national statistical offices. This chart is based on the data collected for the country profiles, with the full list of sources included in the overview of the country profiles.

Figure 2. Geographical gaps in medium- and high-skilled occupations, sub-regions, 2000 and 2014
Percentage point difference between leading and trailing sub-regions



Source: OECD (2016). Calculations are based on data provided by national statistical offices. This chart is based on the data collected for the country profiles, with the full list of sources included in the overview of the country profiles.

Note: Figure 1 shows the difference between the shares of the population with post-secondary education for the leading and trailing sub-regions. Figure 2 shows the difference between the shares of the population with medium- and high-skilled occupations for the leading and trailing sub-regions. To minimise the influence of outliers (e.g. big urban centres or very small remote areas), the comparison was done between the sub-regions at the 90th and 10th percentile of the distribution instead of the absolute maximum and minimum. When data were not available for the whole period of 2000-2014 at the same geographic level, the earliest and the latest years available were used. Only countries for which data were available for a period longer than six years were included. The years used for the analysis are: 2000 and 2012 for Japan; 2000 and 2013 for Czech Republic, Finland, Korea and Slovak Republic; 2000 and 2014 for the United States; 2001 and 2012 for Italy; 2001 and 2013 for Belgium, Sweden and the United Kingdom; 2002 and 2013 for Slovenia; 2002 and 2014 for Greece; 2003 and 2013 for Hungary; 2003 and 2014 for the Netherlands; 2005 and 2013 for Norway; 2006 and 2012 for France; 2006 and 2013 for New Zealand; 2006 and 2014 for Canada; 2007 and 2013 for Estonia and Latvia.

to improve their quality of life while companies seek to access the best skills. The OECD experience suggests that an integrated approach capitalising on talent and innovation and drawing on effective governance mechanisms can do much to deliver prosperity to all regions.

This article will aim to make the case for a strategy in Japan to take a balanced and differentiated approach to boost growth and job creation. It will review the structure of population change in Japan and compare it with other countries. It will show that the share of the population in big cities is growing in Japan as well as in other countries, though there is no unique trend among OECD countries. It will indicate that rural areas in Japan mainly feature low skills equilibria, and that these situations correlate with unfavourable employment outcomes.

This article will then argue that stimulating growth and job creation in a way that can transform rural areas into attractors of population will require an integrated approach that combines factors that influence both skills development and the demand for skills from employers. It will draw on international evidence to show that this approach needs to be differentiated across the national territory to take into account the diversity of contexts and the various strengths on the supply or demand side of skills. It will require strong governance mechanisms at the local level, which includes flexibility in the management of policies to facilitate co-ordination between workforce and economic development, as well as effective partnerships and strong capacities.

II. Structure of population change in Japan in comparison with other countries

Population change in Japan is characterised by the twin phenomena of rapidly ageing population and important internal migration flows toward major urban centres, most particularly Tokyo. The most distinctive feature of demographic change in Japan over the past few decades is the rapid increase in the average age of the population. The population of persons aged 65 years and older increased by 32% to almost 33 million, while the population of working age people declined by 8.5% over the same period (OECD, 2016b). This resulted in an increase in the dependency ratio of more than 26% over this period (OECD, 2016c). Over a quarter of the Japanese population were aged over 65 in 2014 (see Figure 3).

In particular, rural areas in Japan are ageing faster than more urbanised areas. Almost 30% of the population in predominantly rural-remote areas of Japan are aged over 65 years old in comparison to under a quarter of the population in predominantly urban areas (see Figure 4).

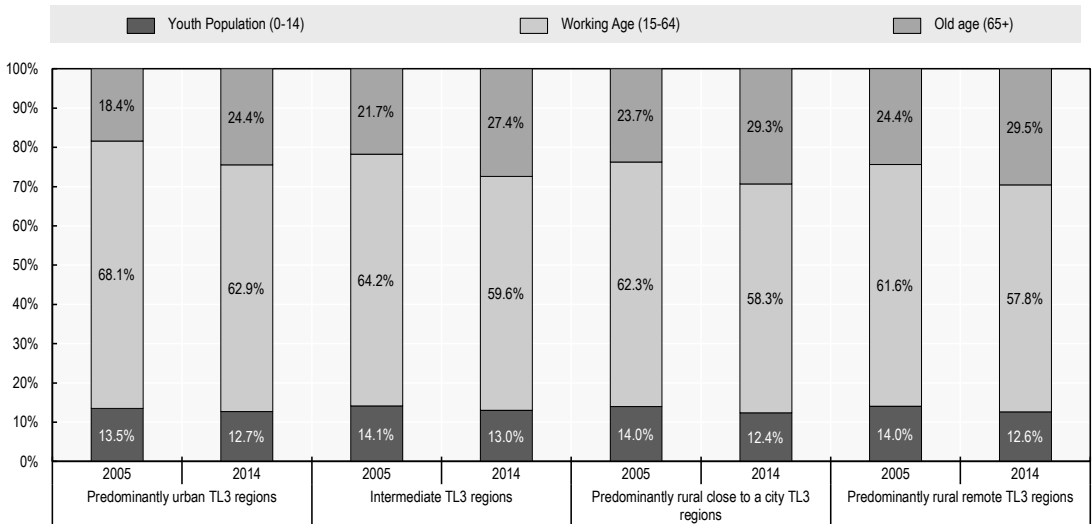
The rapid ageing of non-urban centres in Japan has been exacerbated by increased rural to urban transitions. In Japan, the pattern of internal migration has been dominated by the movement to the Tokyo prefecture, where net internal migration over the period between 2004 and 2014 accounted for 5% of the population in 2014 (see Figure 5). Other prefectures that are part of the Greater Tokyo Area, including Kanagawa, Saitama and Chiba, were also targets for internal migration over this period of time, with net internal migration accounting for 2.3%, 1.6% and 1.6% of their 2014 populations respectively. This can be interpreted as

Figure 3. Japanese population structure, 2005, 2014



Source: OECD Regional Statistics (database), <http://dx.doi.org/10.1787/6b288ab8-en>.

Figure 4. Japanese population structure by territorial category, 2005, 2014

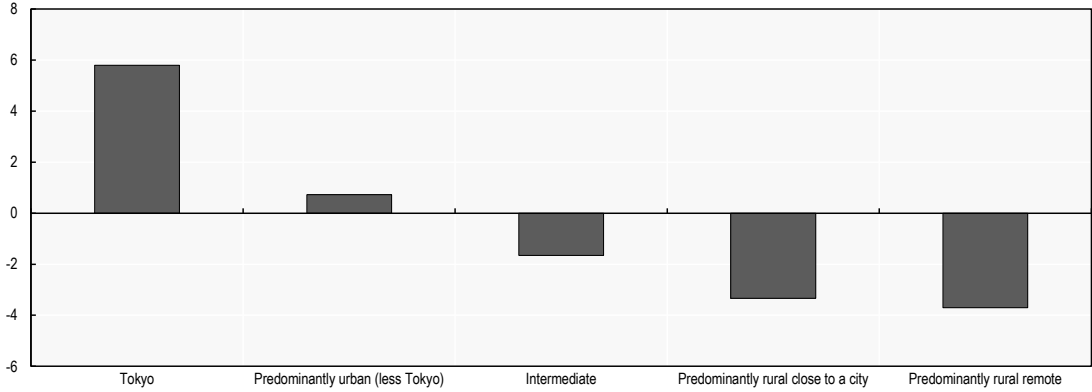


Source: OECD Regional Statistics (database), <http://dx.doi.org/10.1787/6b288ab8-en>.

part of the process of suburbanisation, as much of the population of these prefectures commutes to Tokyo daily for work.

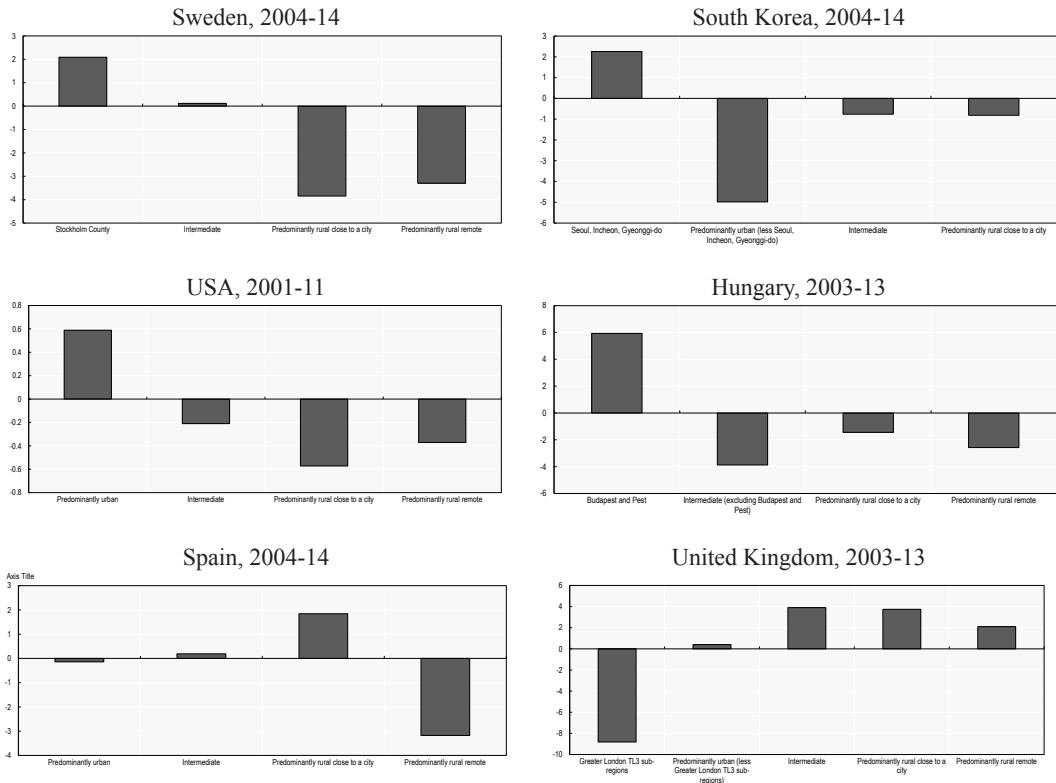
Many OECD countries also have a distinctive pattern of regional development that features a single major centre that drives national economic growth. This economic structure is reflected in patterns of internal migration, as can be observed in Figures 6. Countries across the OECD as diverse as Sweden, South Korea, the United States and Hungary also feature a pattern of inter-regional migration that benefits urban sub-regions at the expense of less

Figure 5. Internal migration as a percentage of total sub-regional population, Japanese TL2 regions by territorial typology, 2004-14



Source: OECD Regional Statistics (database), <http://dx.doi.org/10.1787/6b288ab8-en>.

Figure 6. Internal migration as a percentage of total sub-regional population, TL3 regions by territorial typology



Source: OECD Regional Statistics (database), <http://dx.doi.org/10.1787/6b288ab8-en>.

dense or developed sub-regions. In the cases of Sweden, South Korea and Hungary, the pattern of inter-regional migration is towards a single core city and its surrounding areas, which also impacts other secondary urban areas.

However, there are some exceptions to this pattern of inter-regional migration. In particular, Spain has experienced a net decline in the percentage of internal migration over the period from 2004 to 2014 as a percentage of sub-regional population in 2014. Over this period, the area of Toledo, which is classified as a predominantly rural area close to a city according to the OECD typology, has experienced net internal migration that was equivalent to 7.6% of the population in 2014.

Similarly, urban sub-regions in the United Kingdom have experienced a net decline in the percentage of net internal migration over the period from 2003 to 2013 as a percentage of sub-regional population in 2013. It should be noted that the United Kingdom is a highly urbanised country, with 84 sub-regions of a total 146 sub-regions classified as urban according to the OECD typology. Consequently, there is a wide degree of variation in the trend of migration to these sub-regions. Of more salient interest is the net decline in internal migration over the reference period as a percentage of population in the Greater London area. This indicates that although the Greater London population has been increasing over time as a result of external immigration, existing British residents have tended to move away from the capital in recent years.

The pattern of migration that favours a single major economic centre, observed in Japan and other countries across the OECD, is often associated with a number of negative externalities in the major centre, including but not limited to high housing prices, increased pollution and increased strain on public services. Japan's unipolar economic structure raises two distinct policy challenges with respect to territorial inequalities. The first is the challenge of shifting economic activities that rely on spatial concentration and agglomeration, such as knowledge-intensive services activities, to other cities outside of the Greater Tokyo Area. As noted above, this challenge has been faced by a number of countries across the OECD.

A second challenge that arises from the concentration of people, employment, skills and economic activity in Tokyo is how to revitalise local economies in non-urban areas. Japan is characterised by a number of intermediate, semi-rural and rural prefectures that have been left behind as a result of the migration of people of working age and the rapid ageing of those who remained.

III. Large intra-regional disparities can be observed in terms of skills and employment opportunities

In Japan, the supply of skills, as measured by the share of population with post-secondary education, was significantly higher in the prefecture of Tokyo than in other prefectures in 2012 (Table 1). The second highest performing prefecture was Kanagawa (40.6%), which is in the area surrounding Tokyo. A clear divide between urban and non-urban prefectures can be observed, with the average share of population with post-secondary education in rural

Table 1. Skills supply (share of population aged 15 or older with post-secondary education) by territorial typology, 2012

Region	Skills supply 2012
Tokyo	46.3
Predominantly urban (less Tokyo)	32.9
Intermediate	23.9
Predominantly rural close to a city	20.9
Predominantly rural remote	20.3

Source: Employment status survey, Japan 2012 (residence based)

Table 2. Skills demand (share of employed individuals in medium- and highly-skilled occupations; GVA per worker) by territorial typology, 2012

Region	Medium- and highly skilled occupations 2012	GVA per worker 2012 (million yen)
Tokyo	24.1	1,336,277
Predominantly urban (less Tokyo)	18.9	740,398
Intermediate	17.1	755,136
Predominantly rural close to a city	16.1	702,660
Predominantly rural remote	16.4	712,827

Source: Employment Status Survey (residence based); *OECD Regional Statistics (database)*

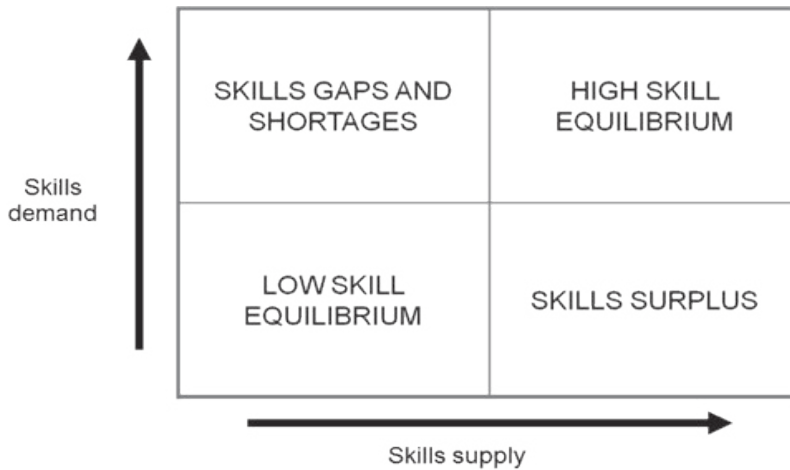
prefectures standing at less than half that of Tokyo.

Similarly, in 2012, the demand for skills was highest in the Tokyo prefecture by a large margin, both when measured by the share of employed individuals in medium- and high-skilled occupations or by GVA per worker, a proxy for labour productivity (Table 2). The prefectures of Aichi and Osaka, which host the two biggest urban areas outside of Tokyo, also showed high GVA per worker figures. Conversely, predominantly urban prefectures such as Nara, Saitama and Chiba, which are located outside of the cities of Tokyo and Osaka, had the lowest levels of GVA per worker. This high concentration of economic activities in core urban centres that attracts commuting flows is a clear indication that Japanese cities are organised according to a mono-centric model. While on average rural areas show lower levels of productivity and have a lower share of medium- and high-skilled occupations, the gap with intermediate and predominantly urban prefectures is not as large as one might expect. Some rural areas actually perform above the Japanese average for GVA per worker (Fukui and Yamaguchi) and occupations (Kochi, Miyazaki, Shimane and Yamaguchi).

A statistical tool has been developed by the OECD LEED Programme to understand the balance between skills supply and demand within local labour markets (Froy, Giguère and Meghnagi, 2012). Combining indicators of skills supply and demand can provide policy makers with an understanding of potential skills mismatches that may be occurring at the sub-national level. It can also inform place-based policy approaches at the local level.

Looking at Figure 7, a skills “deficit” can occur in regions where demand is high and

Figure 7. Understanding the impact of matching skills supply and demand



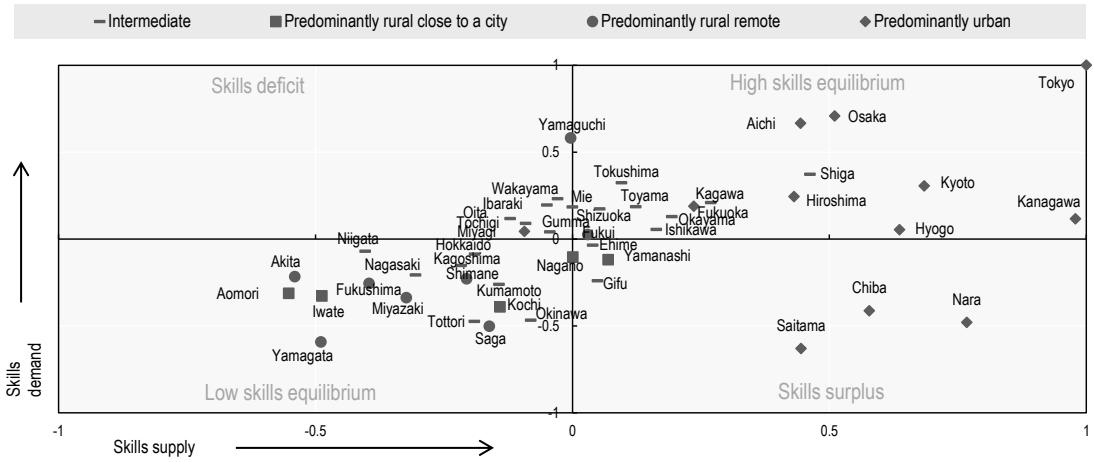
Source: Froy, F. and S. Giguère (2010), “Putting in Place Jobs that Last: A Guide to Rebuilding Quality Employment at Local Level”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2010/13, OECD Publishing. doi: 10.1787/5km7jf7qtk9p-en

supply low. In these regions, businesses may not be able to find the skills that they need, at the level that they need. In the bottom-right corner, a low demand for skills is met by a high supply of high skills, resulting in a regional economy where those high skills are unlikely to be fully utilised. This may lead to the out migration of talent, underemployment, over qualification, and attrition of human capital, all of which signal missed opportunities for creating prosperity. However, equally worrying, are regions in which skills demand and skills supply are both low. This situation is known as the “low skills equilibrium”.

This statistical tool was applied to prefectures in Japan, divided according to the typology based on the degree of urbanisation (see Figure 8). The figure shows that urban prefectures are mostly in a situation of high skills equilibrium, with the exception of Miyagi, which is in skills deficit, and Saitama, Chiba and Nara that are in skills surplus for reasons related to commuting patterns as mentioned previously. It can also be noted that most rural prefectures are in a low skills equilibrium, which confirms the urban-rural divide in terms of the balance between skills supply and demand in Japan. The geographic distribution of skills supply and demand in Japan can also be observed in Figure 9.

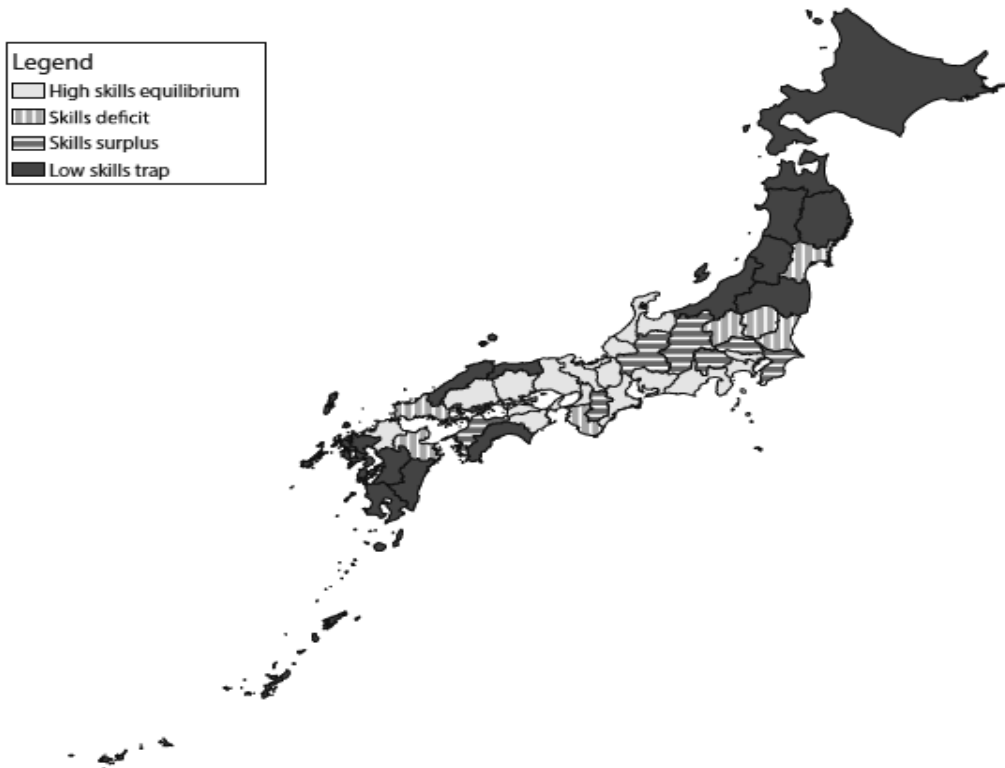
Table 3 presents the change in the performance of local areas in terms of skills supply and demand between 2000 and 2012. This table shows that while education levels have improved across all sub-regions in Japan during this period, the fastest average increase in the share of the population with post-secondary education has been observed in rural remote areas, with Fukui and Shimane seeing particularly high rates of increase. When looking at the demand side, it can be noted that the gap between Tokyo and other prefectures has widened between 2000 and 2012 in terms of the share of medium- and high-skilled occupations. This is an indication of the growing concentration of quality employment within the Tokyo area. Yet at

Figure 8. Skills supply and demand, Japanese sub-regions by typology of urbanisation, 2012



Source: OECD calculations based on data from Employment status survey, Statistics Bureau of Japan and *OECD Regional Statistics* (database), <http://dx.doi.org/10.1787/6b288ab8-en>.

Figure 9. Skills supply and demand, Japanese sub-regions, 2012



Source: OECD calculations based on data from Employment Status Survey, Statistics Bureau of Japan and *OECD Regional Statistics* (database), <http://dx.doi.org/10.1787/6b288ab8-en>.

Table 3. Change in skills supply and demand, by territorial typology, 2000-12

Region	Change in skills supply 2000-2012	Change in skills demand 2000-2012	
		Medium and high-skilled occupation	GVA per worker
Tokyo	0.08	0.15	-0.02
Predominantly urban (less Tokyo)	0.06	0.11	0.14
Intermediate	0.09	0.10	0.17
Predominantly rural close to a city	0.05	0.09	0.18
Predominantly rural remote	0.10	0.11	0.16

Source: OECD calculations based on data from Employment status survey, Statistics Bureau of Japan and OECD Regional Statistics (database).

the same time, Tokyo has seen a decrease in productivity while this has not been the case in any other territorial typology. The highest increases in productivity over this period have been in the rural remote prefecture of Yamaguchi, followed by the intermediate prefectures of Mie, Wakayama, Tokushima, Ibaraki and the prefectures of Iwate and Yamanashi that are in the ‘rural close to a city’ typology. The urban area that has seen the highest increase in productivity has been Kyoto, followed by Hiroshima and Aichi.

IV. Link with other labour market indicators

Table 4 shows that labour market outcomes are relatively similar across territorial typologies in Japan. Tokyo had the highest employment rate in 2014 at 61.6% while all other territorial typologies had similar employment rates on average. The participation rate was also highest in Tokyo, at 72.8% in 2014. While rural prefectures had relatively high participation rates on average compared with more urbanised prefectures, this may be explained by the fact that the working age population in rural areas has declined at a faster pace due in part to the patterns of internal migration towards urban areas as mentioned previously.

When looking at the change in local employment over time, which can be a useful proxy for local job creation, the divide between urban and non-urban prefectures is particularly striking. Okinawa is the only non-urban prefectures that showed an increase in total employment between 2001 and 2014. All other non-urban prefectures saw the total number of jobs decline over this period. Among urban prefectures, Tokyo leads by a large margin with an annual average rate of growth of 1.3%, compared with 0.01% growth on average in other urban prefectures. Figure 10 details how local employment as evolved over time in Tokyo, predominantly urban prefectures and non-urban prefectures.

The data clearly indicates a concentration of skills and employment opportunities in the Tokyo area, to the detriment not only of non-urban prefectures but also of other major urban centres.

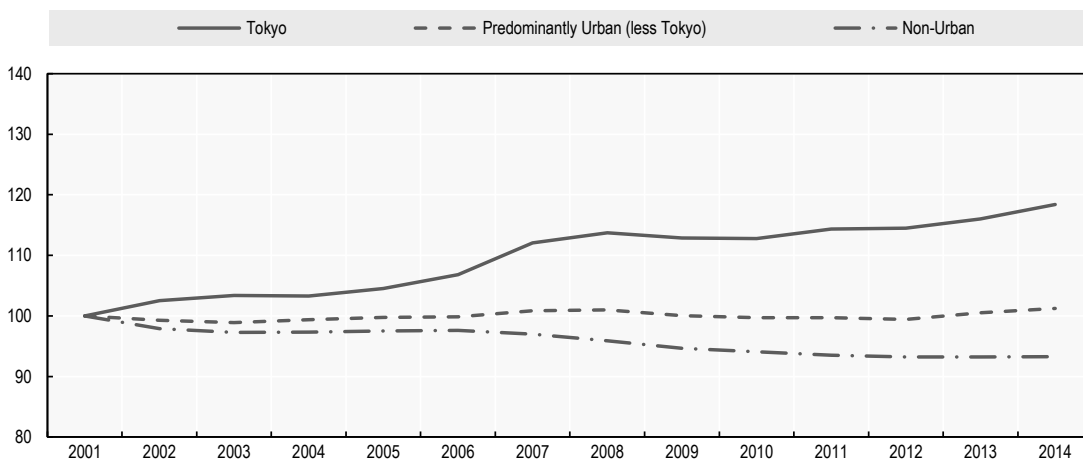
Table 4. Labour market outcomes by territorial typology

Region	Job creation 2001-14	Employment rate 2012	Participation rate 2014
Tokyo	1.3	61.6	72.8
Predominantly urban (less Tokyo)	0.0	56.2	67.9
Intermediate	-0.5	56.5	69.4
Predominantly rural close to a city	-0.9	56.4	71.2
Predominantly rural remote	-0.8	56.9	71.5

Source: OECD calculations based on data from the OECD Regional Statistics (database), <http://dx.doi.org/10.1787/6b288ab8-en>.

Note: Job creation refers to the average annual rate of change in total employment between 2001 and 2014.

Figure 10. Indexed changes in local employment over time, Japanese sub-regions by territorial typology, 2001-14



Source: OECD Regional Statistics (database)

V. Boosting job creation in rural areas in Japan

Rural areas risk being left behind in light of the twin demographic phenomena of rapidly ageing population and internal migration towards urban areas. The skills analysis proposed in this article showed that 75% of Japanese prefectures classified as rural-remote according to the OECD typology were in a position of low skills equilibrium in 2012. These local areas are more likely to be characterised by low value-added production where employers do not invest in skills development and workers have little incentive to boost their own skills. While employment and unemployment indicators remain positive in most rural areas, there are looming challenges linked to the lack of quality employment opportunities offered to both highly skilled and low skilled workers. Public authorities have to find ways to break the self-fulfilling vicious cycle of insufficient qualifications, low-skilled jobs and out-migration in which a number of non-urban areas are caught.

The need to promote job creation and growth in rural areas has long been recognised by the Japanese government. The most recent approach has been through a pillar of the updated Japanese Revitalisation Strategy introduced by Shinzo Abe in 2016. This strategy focusses on developing an integrated approach where the fruits of national growth are shared across both urban and less-urbanised areas. It aims to increase productivity and added value in the production of goods and services, targeting in particular the agri-food industry, tourism and hospitality, health and childcare, wholesale and retail, with a focus on small and medium-sized enterprises (SMEs). The regional revitalisation strategy pursued by the Japanese government will also feature hundreds of billions of yen in grants to local prefectures to pursue projects that are tailored to local assets and economic opportunities.

These actions are undoubtedly contributing to make rural areas more dynamic and distribute the benefits of growth more evenly. However, to make the Japanese government's strategy more impactful on growth and job creation in rural areas, it will also be important to put in place a strategy that learns the lessons from low skills equilibriums in other OECD countries. As suggested above, a situation of low skills equilibrium can develop where there is a concentration of employers in a region that are pursuing price-based competition strategies, and that rely on low-skilled and standardised production. This is often a problem experienced by more peripheral rural regions. In such situations, only investing in the productive capacity of the economy may not give positive results since the corresponding skills may be lacking. Conversely, investing in skills development in order to improve productivity may fail if there are no adequate jobs to match those skills. Likewise, in "skills surplus" regions, increasing the effort in education may yield disappointing results since the region may already be losing skills to other areas of the country, and skilled people who remain in such regions may be either doing work for which they are overqualified, or unemployed. A combination of different investment strategies is required to improve both skills supply and skills demand, and ensure that the skills produced are fully utilised by local firms to become more productive and in turn create better quality jobs.

VI. Skills demand and utilisation is closely linked to firm product market strategies

In order to better support growth and quality job creation in low skills equilibrium and skills surplus regions, it is important to stimulate the utilisation of skills by existing enterprises, or, in other words, to 'shape' their demand for skills. Skills demand and utilisation increases if existing firms are able to diversify, upgrade their product market strategies, and move towards more knowledge-intensive production processes. As companies move into higher value added product and service markets, the levels of skills that they require, and the extent to which they utilise skills, tends to increase. Analysing data from the National Employers Skills Surveys in England, for example, Mason (2011) showed that firms varied greatly in the extent to which they were seeking to engage in "high-end" or high value added production, and that product market strategies and the level of workforce skill in an establishment were strongly positively correlated.

In helping firms to develop new product market strategies, it will be important to encourage innovation and investment in new technologies. The importance of technology transfer in stimulating innovation and growth has long been recognised. Coyle (2001) argued that it can take up to 50 years for new technologies to be fully absorbed into the economy, and investment in technology transfer can help to speed this process up. But non-technological innovation can even be a more important source of productivity growth amongst firms, particularly for SMEs. This can include changes to the organisation of production, and to marketing strategies. Knowledge-sharing networks can play an important role in promoting such non-technological innovation, both within sectors and across sectors. While some knowledge sharing networks involve purely private sector companies and universities, vocational training schools can also help inject new ideas and new technologies into such networks, particularly when they carry out relevant applied research (see Froy et al., 2012).

Non-technological innovation can also emerge from within firms, particularly when the skills of their workers are well-utilised (see Box 1 below). Innovative new ideas often come from problem-solving on the ‘shop floor’ or in front line services, and the importance of local innovation strategies in the OECD’s Innovation Strategy (OECD, 2015a). Toner (2011) has identified that most of the new innovation that has taken place in recent years in OECD countries has been arrived at incrementally within the workplace, as opposed to being developed within high level R&D.

Management practices are important here, as new ideas are more likely to emerge when workers have the ability to use their discretion and “learn by doing”. This applies both to workers involved in production, and workers directly dealing with and responding to customer needs (Froy and Giguère, 2010). Equally important is the ability of the company or organisation to recognise and mainstream such new ideas and approaches across the workforce as a whole (Toner, 2011). Of course, the ability of firms to move towards higher-value added product market sectors will depend on access to appropriate markets. Strategies to upgrade product market strategies need to be accompanied by strategies to build local markets and better access regional, national and international markets.

In the Riviera del Brenta industrial district in Northern Italy, a local employers association has helped to raise productivity and skills utilisation in local footwear firms, through tapping into international markets for high-quality, high-fashion and shoes. Through the association, firms have collaborated on a common marketing strategy, while also pooling investment in training provision and helping firms to collectively upgrading their product market strategies. The region traditionally hosted cottage-based shoe making industries which mainly employed low-skilled blue collar workers. However the area has now become a global centre for the production of shoes for brands such as Giorgio Armani, Louis Vuitton, Chanel, Prada and Christian Dior, and now significant numbers of local people are employed in design and commercial development (50% in design, 10% in commercial development and 40% in frontline production).

The privately-run local polytechnic institute, Politecnico Calzaturiero has played an important role, employing firm managers to train local workers and job seekers after hours,

Box 1. What practices promote more effective skills utilisation?

The Australian Workforce and Productivity Agency (now mainstreamed within the Department of Industry) has outlined the following types of initiatives designed to make the use of skills more effective:

- **Job redesign:** involves changing the role or description of a job so that the skills of the employee are put to better use. This can include teamwork and flexibility in job descriptions and work arrangements with colleagues.
- **Employee participation:** includes involving employees in discussion on business strategy, which aims to more effectively use employees' knowledge and experience.
- **Autonomy:** includes giving employees more freedom and autonomy to make decisions in how they perform their job.
- **Job rotation:** involves facilitating the learning of new skills by shifting employees into different jobs and positions within the company.
- **Skills audit** (training needs assessment): aims to identify the skills that employees currently have and identify which skills are most needed.
- **Multi-skilling:** is related to job rotation and involves training employees in multiple skill sets, which enables them to perform other tasks, which are not included in their job description.
- **Knowledge transfer:** these types of initiatives can include developing new skills and training that is related to work or working with experienced workers to develop mentorships opportunities for younger staff.

Source: Skills Australia (2012), Better Use of Skills, Better Outcomes: A Research Report on Skills Utilisation in Australia, www.awpa.gov.au/publications/documents/Skills-utilisation-research-report-15-May-2012.pdf.

while also offering management training, and investing in research, innovation and technology transfer. The polytechnic therefore invests in skills supply whilst also optimising skills utilisation through new product development and improved human resource management. The fact that firms are members of the local association means that they are less worried about pooling training, technology and new innovations. Investment in local human capital will not only improve prospects for individual firms but also for the global brand as a whole (Destefanis, 2012). The local association has also worked in partnership with local unions to ensure that during this time, improved productivity resulted in higher wages and better health and safety for the workers.

VII. Policy makers can use a variety of tools to help ‘shape’ skills demand and utilisation

How can policy makers help support such transformational processes in local economies? The OECD LEED Programme has identified a number of different actions that policy makers can carry out in this field (Froy, 2013; Froy and Giguère, 2010).

For one, guidance, facilitation and training can be important tools for enhancing the demand for and utilisation of skills. Policy makers can give incentives to collaboration and networking across firms to help them share knowledge, new technologies and innovation; pool investment for training; and develop shared regional brands. Incentivising and funding universities and colleges to carry out applied research of relevance to local industrial sectors can also contribute to these processes. Specific technical assistance and training for managers can also help firms to improve work organisation to ensure skills are more effectively harnessed and technology fully utilised.

Policy makers can also take advantage of the public sector’s role as an employer and purchaser. The public sector can serve as a role model to private enterprises by ensuring that public sector jobs make best use of people’s skills; allow for flexibility and discretion in carrying out work tasks; and provide opportunities for progression. Additionally, public sector procurement can be used to develop a quality-driven supply chain. For example, awarding “patient capital” and providing longer-term contracting periods can encourage contractors to invest in staff and production processes.

Economic development agencies clearly have a key role to play in improving local productivity and competitiveness. However it is not always clear that they fully take into account the importance of human resources and skills to that growth in the context of the knowledge economy. While economic development agencies are often encouraged to think in terms of “job outcomes”, they do not always consider the degree to which productivity improvements bring real impacts in terms of salaries and quality of life. At the same time, economic development strategies often focus on “winning sectors” which may bring high added value and highly skilled employment, but often constitute only a small percentage of local employment. Work to help employers to improve productivity and job quality in lower skilled sectors is also important.

Universities and colleges can be instrumental in helping local industries to better access and better utilise skills when they are fully embedded in local economies. In areas of traditional low -skills, low -wage employment, the role played by vocational training colleges in stimulating innovation in the local economy would seem to be particularly important (as can be seen in the Riviera del Brenta example above). However in order for them to be involved, it is important that funding streams and performance management targets reward and encourage this type of “locally embedded” activity. In Canada, community colleges are often successful in helping local sectors make incremental innovation through applied research and in providing advices to small and medium-sized enterprises on their work

organisation and workforce planning.

Unions have shown themselves to be valuable partners in working alongside firms in tripartite agreements to raise labour productivity and skills utilisation while also improving wage levels and working conditions. Their involvement is crucial to ensuring that any productivity gains from increased employee discretion and problem-solving are passed back to workers in terms of raised salaries and improved working conditions. An example is the “Better not cheaper” campaign in the metalworking industry in North-Rhine Westphalia in Germany. Here unions promoted new forms of production that more actively used the skills of the workers and which produced new and innovative products with high standards of quality (Haipeter, 2011).

Employers and trade associations can also play a key role in helping employers, and particularly SMEs, to “raise their game”, through developing trust-based relationships between firms that stimulate knowledge sharing and collaborative investment.

Local authorities often have an overview role which makes them natural brokers and catalysts for bring together those involved in both skills supply and skills demand in a local economy. In addition to galvanising a local community approach, it is also important that they make use of their capacity to better train and utilise skills within their own workforce, while influencing change as a local purchaser of services.

Finally, employment services (public, not-for-profit and private) can also play a role in ensuring that they prioritise matching people to jobs that are commensurate with their skills and that provide opportunities for career progression. The province of New Brunswick in Canada, for example, has developed a definition of “underemployment”, enabling them to provide guidance for those workers in poor quality employment on how they might find better skilled work locally, through participating in training courses (Wood, 2010). Such actions can reduce labour market churn and also discourage employers from relying on the public sector to fill poor quality vacancies.

VIII. Policies to tackle low skills demand and utilisation remain underdeveloped

However, despite longstanding academic research on this issue, and some strong attempts to boost such actions at the national level, it is clear that this is an area where local policy makers are only starting to act. Ongoing research by OECD LEED shows that actions in this area are largely piecemeal, and that there are generally much greater policy attention given to addressing skills deficits, as opposed to tackling the more entrenched issues faced by low skills equilibrium and skills surplus regions.

Despite an overall lack of local strategies to tackle this issue, inspiration can be drawn from the work being done in Queensland, Australia; Flanders, Belgium; Canada; and Korea to boost skills utilisation. In the State of Queensland in Australia, Manufacturing Skills Queensland (MSQ) acts as a workforce development network with industry representatives from respective industry sub-sectors working together to inform state government planning. The network encourages firms to develop career development pathways, and assists

businesses with organisational change programmes with a focus on people management, employee development and work organisation (OECD, 2014a). This initiative builds on a strong history of experimentation in the state – in 2002 skills formation strategies were introduced in 60 different industry sectors in Queensland to address persistent skills shortages (Eddington and Toner, 2012). These strategies required employers to take a step beyond advising government on training requirements. Skills formation strategies were based on the assumption that successful skill formation within a firm needed to be integrated with a business strategy, product market definition, technology, business systems and processes, and good workforce management practices.

In Flanders, Belgium, collaborations have been built between the unions, academics and government representatives to help managers to promote better skills utilisation in a number of different sectors. Such collaboration is particularly in evidence in the province of Limburg. The fragility of the local economy, which has traditionally been based on low-skilled work and a few major employers, was recently demonstrated by the movement of a major employer, Ford, out of the region. Local policy makers are now faced with the problem of finding new employment for low skilled ex-factory workers whose transferable skills are limited. At the same time, there is a desire to move the region towards more productive higher skilled employment. The local union (ACV) has responded by setting up practice labs for innovative work organisation, in cooperation with a coalition between academics, unions, enterprises and consultants (Flanders Synergy), subsidised by the Flemish government (see Box 2 below).

The practice labs have been set up in the construction, logistics, healthcare, social economy, social service/care sector and agricultural sectors, with each functioning as a learning network where companies share experience. Each lab covers seven themes, each of which is a different area where the manager can have an influence. One theme has been exploring new ways that firms can expand their market base while also improving job quality; another has been exploring ways of involving workers more in decision making. The workshops have proved so useful that one sector, construction, is now running its own labs, independent of public funding. The Foundation for Innovation in Work (Stichting Innovatie en Arbeid) in Flanders also collects examples of initiatives that combine skills utilisation and work organisation, making these tools publicly available through a website (OECD, 2015b4b).

The health and social care sectors in Flanders have also been the focus of restructuring to produce better quality jobs in a number of regions, spurred on by local labour and skills shortages. In Limburg, the Provincial Development Agency (POM Limburg) set up a platform to address work organisation issues within the care sector in 2010 called Platform Zorglandschap Limburg (Platform Care Limburg), with support from the provincial government. This scheme has focused on improving work organisation within local hospitals and nursing homes to create more flexible work organisation and increase labour productivity. One workstream has focused on combining part-time jobs across organisations to create full-time jobs (OECD, 2015). This shows the potential for the public sector to improve skills utilisation and job quality in its own workforce, which can be particularly important in rural

Box 2. Practice labs for innovative work organisations, Flanders, Belgium

In Limburg in Flanders, “Practice labs for innovative work organisation” have been set up to work with businesses on work organisation issues. The ACV union has played a key role in establishing and implementing the initiative.

The practice labs have been set up in the construction, logistics, healthcare, social economy, social service/care sector and agricultural sectors. Separate labs were established for each sector but in practice, labs can work with mixed groups, and can support both large and small firms. Eight workshops have taken place in 2013/14, each involving 6-8 companies. A consultant was hired to work on the workshops. They function as a learning network where companies share experience. Managers are encouraged to consider where they can effect change to make sure that workers have more involvement in the way that the firm operates.

Each lab covers seven themes, each of which is a different area where the manager can have an influence. One theme, for example, has been exploring new ways that firms can expand their market base to improve the quality of their organisation (in terms of efficiency, flexibility, quality, innovation, sustainability) while also improving job quality. Supervisors play the role of coach and act as a sounding board for participants who have questions, both within and outside of the lab sessions. Participants receive assignments to translate theory into practice when they return to the workplace. Unions report that the workshops have improved their relationships with local employers.

Source: OECD (2015b), Employment and Skills Strategies in Flanders, Belgium OECD Reviews on Local Job Creation, OECD Publishing, Paris.

areas where the public sector is a significant local employer.

In Ontario, Canada, local community colleges and universities appear to be particularly useful partners in helping to raise product market strategies locally (OECD, 2014b). Niagara College, for example, has not only geared their curricula towards meeting local industrial demands in horticulture and wine making (an example being the Winery and Viticulture Technician programme), but has also set up an applied research unit which helps local firms to upgrade their products and business strategies. It collaborates with firms in areas such as product and process applied research, engineering design, technology development, product testing, proof of concept, piloting and problem solving. In 2011, there were 64 applied research projects in progress with more than 50 industry partners (Verma, 2012). The local Brock University has also developed Cairns Family Health and Bioscience Research Centre which includes, alongside scientific and technical research, a business incubator to encourage spin-offs and ensure that products can be taken to market. Elsewhere in Ontario, the SMART manufacturing programme (developed in collaboration with the Canadian Manufacturers and Exporters association) has helped to both transfer technology to SMEs and fund training of

workers to support absorption. SMEs seeking funding through the scheme work with a qualified expert to develop a vision and strategy for increasing their competitiveness in global markets.

In Bucheon, in Korea, several so-called “Techno Parks” provide services to enhance the business administration capabilities of SMEs; for example, exploring overseas markets, operating show rooms, hosting design contests, and arranging international certification supports. The Techno Parks run classes for firm managers to enhance their skills for business administration and decision-making. In some countries, the public sector also subsidises broader management training in a bid to improve work organisation and skills utilisation (OECD, 2014c).

Northern Ireland has a significant percentage of people employed in low skilled work, and the importance of better utilising skills is articulated in Northern Ireland’s Skills Strategy. The Department for Employment and Learning provides a suite of programmes focused on management and leadership development, all delivered under a “Made not born” banner. They are delivered by accredited training providers (OECD, 2014d).

IX. Traditional employment and skills responses are often inadequate

If understanding the balance of the supply and demand for skills can help in the design of more effective skills strategies, a “one size fits all” approach to employment and skills policy at the national level will not necessarily help. Indeed, in responding to problems of skills mismatch, governments often promote geographical mobility, which may exacerbate the problems that low skills equilibrium regions face. Further investing in skills supply may help to transform local employment in such regions over the long term, as employers can more easily recruit skilled workers and these workers improve the quality of the work that they do. However, this can be a slow process, and some management practices discourage this kind of transformation, particularly where employees on the shop floor or in front line services work to a “blue-print” devised by higher management that they have little ability to influence or evolve (see Sennett, 2009).

While governments in some OECD countries have been keen to promote “employer-led” approaches to skills development as a way of improving relevance to labour market needs, such strategies may also fail in low skills equilibrium regions, as skills policies will benefit little from being steered by employers that are characterised by low levels of ambition (Froy, 2013). Public employment service programmes will also fail to effect change if they simply match local people to any available local job. Where the overall quality of employment in a region is poor, local public employment service offices often become diverted towards “fire - fighting” to fill labour shortages (which occur when vacancies remain unfilled or are repeatedly advertised either due to a sheer lack of local people to fill them, or because people are not attracted by the pay or working conditions). Helping employers to fill such vacancies is a poor use of public resources, as it subsidises weakly productive business activity and slows down structural adjustment. At the same time this type of job placement often leads to

poor job retention and labour market “churning” as people move from one poor quality job to the next (Froy and Giguère, 2010).

This is why shaping the skills demand implies new approaches for the implementation of national policy, notably in the area of employment and skills. We have seen already that colleges and training institutes can play a decisive role, notably when working with small firms. Equally, public employment services can have a critical role as they are well placed to spot weaknesses in enterprises’ human resource management capabilities and work organisation. Employers that experience high turnover due to poor quality jobs can be key contributors to labour market churn at the local level – and it represent a poor use of employment policy helping such employers to fill their vacancies.

Accordingly, local public employment services (PES) are increasingly being asked to collaborate. In addition to providing training for unemployed people that is specifically adapted to employers’ needs, local employment services can contribute to broader economic development by taking a longer - term approach to skills matching and taking into account the sustainability of employment. When a job becomes repeatedly vacant, it may be a signal that the work organisation is not optimal and there is potential to improve the way skills are used within the firm. Although assisting firms in skills utilisation is not part of the standard portfolio of PES, local PES offices can play a central role in helping firms to identify weaknesses in the management of human resources. Since local PES offices are often the first to be aware of a high turnover problem in a firm, they are also in a position to convey these concerns to other competent bodies. Playing such a role requires effective partnerships with other actors, such as economic development agencies, Chambers of Commerce and training institutions.

Therefore local collaboration is needed at the implementation level between the spheres of economic development, education and employment, in order to ensure that skills policies are understood in the context of broader economic development. Various models of partnerships have been experienced over the past years to better connect workforce and economic development. The areas that have enjoyed successful partnerships along these lines have often been in a good position to address skills utilisation issues in their community.

For example, tri-partite management boards in Germany have been developed at the local level to enable employers, employee representatives, ministries and municipalities to collaborate on workforce and economic development issues. Similarly, there are over 600 workforce investment boards in the United States of America that collaborate on the development of more integrated strategies to address employment and skills within local economic development programmes. In Japan, local economic development councils have been developed that act as a forum for chambers of commerce, primary industry co-operatives, prefectural governments and non-governmental organisations to develop employment measures for the local area. These councils determine proposals for local economic development which are eligible for national funding. Since the establishment of local economic development councils, 92 projects have been undertaken and over 15 000 jobs have been created in local area (OECD, 2016a).

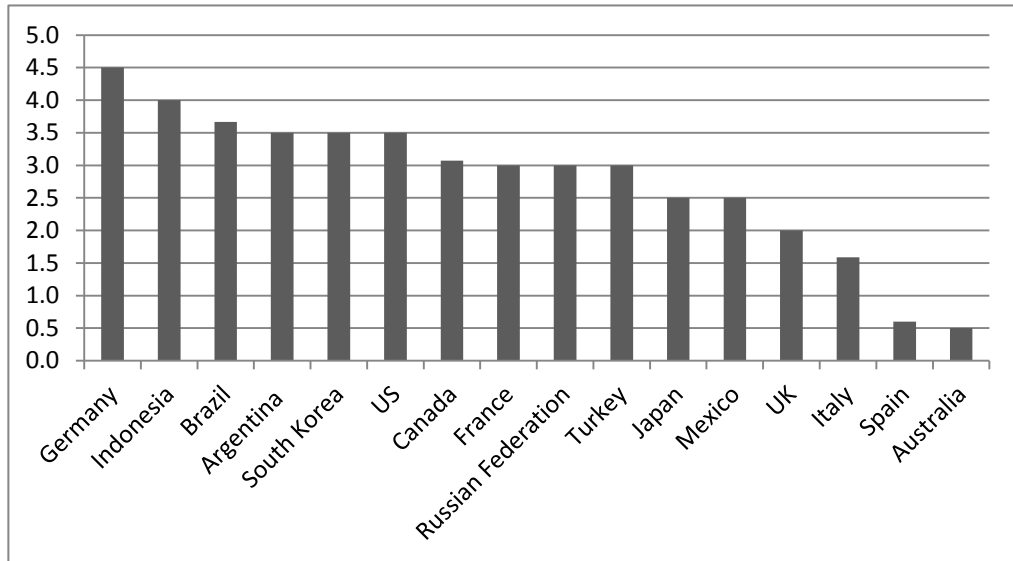
In establishing successful partnerships able to grasp difficult issues around skills utilisation, flexibility in the management of policies and programme at the local level is often a key ingredient. Flexibility in programme management is the necessary condition of good co-ordination between local employment, education and economic development. The OECD defines local policy flexibility as “the possibility to adjust policy at its various design, implementation and delivery stages to make it better adapted to local contexts, actions carried out by other organisations, strategies being pursued, and challenges and opportunities faced” (Giguère and Froy, 2009).

Figure 11 provides an estimation of the degree of flexibility available to local employment offices in managing labour market policies and programmes currently in G20 countries. Local flexibilities in programme design, performance management, budget management, the determining of eligibility, outsourcing and the possibility to collaborate with other stakeholders were assessed to create a composite index which ranges between 0 and 5.

In Japan, flexibility is lower than average across G20 countries. There is only moderate possibility for local employment offices to alter targets for the implementation of local labour market programmes. Local offices have little leeway in the management of budgets – i.e. they cannot move funding between budget lines or use funds to support innovative measures of their own choosing, as is the case in a number of OECD countries. Nevertheless, local budgets are not uniform, but rather allocated by the respective Prefectural Labour Bureaux in line with the performance targets agreed between the local and regional offices. In contrast, in Germany, local offices have a broad budget envelope linked to an approved annual strategic plan designed locally. In some countries flexibility is offered incrementally to those offices that have the most capacity to deliver. For example in Mexico, more flexibility in performance management is offered to local offices that have demonstrated efficiency and that are performing well, although common targets still have to be met. In federal or more decentralised countries, local flexibility can actually vary considerably between regions, as is the case in Canada. In such places approaches to local flexibility can be tested at a smaller scale, and mechanisms to promote learning between regions can ensure these learnings get shared.

Increasing the degree of flexibility in the management of employment programmes may help local employment services to play a meaningful role in local strategies to work with enterprises and shape their skills demand. Strong local capacities of the various partners (employment services, economic development agencies, training institutions among others) will also be a major determinant. The capacities of local stakeholders vary widely in OECD and G20 countries. In the case of employment services, many offices having little time to engage with activities outside of their daily client caseloads. At the same time, while employment service officials may be skilled at working with individual unemployed people, they may not have the skills required to work with other agencies, build networks, and plan activities strategically with other agencies. In France, where increased flexibility has been awarded to local employment offices in recent years, this has been accompanied by a campaign to promote innovation (through a special innovation lab), share good practice, and provide extra training for staff (5 days of training per year per agent). The reforms are

Figure 11. Local flexibility in the management of employment policies and programmes, selected countries, 2015



Note: Estimates of flexibility in the management of labour market policy have been prepared by the OECD Secretariat (LEED Programme) drawing on results from a survey administered to Public Employment Services in collaboration with the World Association of Public Employment Services (WAPES) and the Inter-American Development Bank (IDB), the OECD Reviews on Local Job Creation, and a series of telephone interviews with PES representatives. At the time of drafting, information was not available for all G20 countries.

The analysis is for local level offices at the level of OECD smaller regions (NUTS 3 in European nomenclature). This means that the flexibility of the most local service delivery offices (often called “branch offices” operating at the neighbourhood level) are not necessarily taken into account. Similarly, the flexibility at the level of governments of larger regions (such as the provinces in Canada and regions in Italy) are also not considered here. To construct the flexibility index, local flexibility was explored in five aspects i) programme design, ii) budget management, iii) performance management, iv) eligibility criteria, v) outsourcing and vi) collaboration with other local stakeholders. In each case, one of three scores was awarded for each country on the basis of the degree of flexibility available (1.0 flexibility, 0.5 some flexibility and 0 no flexibility). All aspects of flexibility were given equal weight in the resulting analysis, except for collaboration and outsourcing, which were each given a total possible score of 0.5. Where a country does not use a particular tool in managing local offices (for example performance management by objectives in the case of Italy and outsourcing in the case of both Italy and Brazil), this factor was not included in determining the flexibility score, and a standard normalisation process was used to make the indices for these countries comparable to the other countries.

supporting stronger local partnerships between the public employment service, businesses and other economic actors. Boosting skills utilisation for higher productivity is a difficult task, and policymakers should be aware that this requires attention.

X. Conclusion

The geographic polarisation in terms of demography, employment and economic opportunities across Japan is a serious issue, and it impacts Japan’s long-term growth

prospects. Yet the situation of its local areas losing skills and shrinking economically is not unique. To boost productivity and local job creation, policy makers need to consider not just how skills are produced locally, but also how they are harnessed by local employers. This requires thinking more broadly about skills policy and its contribution to local productivity and local economic development. It also requires better understanding the overall balance between skills supply and demand in any given labour market.

Escaping the low skills equilibrium may require harnessing the energies of a wide range of partners, from local colleges and universities to economic development agencies, to help local employers upgrade their management practices and exploit new product market strategies. Incremental innovations put in place by frontline and medium-skilled workers to better respond to customer needs, or spin off new products, may be as important as the latest high-level research and innovation or science and technology.

In order to encourage such activities, it will be important to ensure that performance management frameworks are set up appropriately. It is difficult for training institutions to help companies resolve skills shortages through better work organisation when their main funding is based on the delivery of training places. Likewise, employment services may find it hard to contribute when their effectiveness is judged by the amount of jobseekers placed into employment or training. More flexibility in the management of policies can give training institutions and public employment services the latitude they need to join up work with other local actors and contribute to broader economic development efforts as well as adapt policies to local labour market conditions.

Partnerships are a valuable governance tool in efforts to better connect the supply of skills to demand and boost economic development opportunities. Many stakeholders can play a role locally, and they need to work together. It is important that all key actors in the public and private spheres (economic, employment, education) share compatible strategic objectives so that their actions are complementary and well aligned. Local stakeholders are the best placed to design effective strategies that generate the most desirable outcomes in a collective perspective. The Japanese government can play a vital role by setting the right conditions for their actions and providing them with guidance and tools that they can use across the country.

References

- Coyle, D. (2001), *Paradoxes of Prosperity: Why the New Capitalism Benefits All*. New York, Texere.
- Destefanis, S. (2012), “Skills for competitiveness: Country Report for Italy”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2012/4, OECD Publishing, Paris, <http://doi.dx.org/10.1787/5k9bb1vhzmr2-en>.
- Eddington, N. and P. Toner (2012), “Skills Formation Strategies in Queensland: A Skills Shortage?”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2012/07, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k9b9mjdj4xr->

en.

- Froy, F. (2013), “Global policy developments towards industrial policy and skills: skills for competitiveness and growth”, *Oxford Review of Economic Policy*, 29(2), 344-360.
- Froy, F., S. Giguère and M. Meghnagi (2012), “Skills for Competitiveness: A Synthesis Report”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2012/09, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/5k98xwskmvr6-en>
- Froy, F. and S. Giguère (2010), “Putting in Place Jobs that Last: A Guide to Rebuilding Quality Employment at Local Level”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2010/13, OECD Publishing, <http://dx.doi.org/10.1787/5km7jf7qtk9p-en>.
- Froy, F. and S. Giguère (2010), *Breaking Out of Policy Silos: Doing More with Less*, Local Economic and Employment Development (LEED), OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264094987-en>.
- Giguère, S. and F. Froy (eds.) (2009), *Flexible Policy for More and Better Jobs*, Local Economic and Employment Development (LEED), OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264059528-en>.
- Haipeter, T. (2011), “Better not cheaper – a German trade union campaign and the problems of union revitalisation”, Working paper presented at the 32nd Annual Conference of the International Working Party on Labour Market Segmentation (IWPLMS), “Education and Training, Skills and the Labour Market”, Bamberg University (Germany) on 11-13 July 2011.
- Mason, G. (2011) “Product strategies, skills strategies and skills updating needs in England: New Evidence from the National Employer Skills Survey”, 2009, Evidence Report 30, UK Commission for Employment and Skills, Wath-upon-Deane and London.
- OECD (2016a), *Job Creation and Local Economic Development 2016*, OECD Publishing, Paris.
DOI: <http://dx.doi.org/10.1787/9789264261976-en>
- OECD (2016b), “Regional demography”, *OECD Regional Statistics* (database).
DOI: <http://dx.doi.org/10.1787/a8f15243-en> (Accessed on 13 July 2016)
- OECD (2016c), Elderly population (indicator). doi: 10.1787/8d805ea1-en (Accessed on 13 July 2016)
- OECD (2016d) OECD Regional Statistics (database), <http://dx.doi.org/10.1787/6b288ab8-en>.
- OECD (2015a) OECD Innovation Strategy 2015: An Agenda for Policy Action, presented at Meeting of the OECD Council at Ministerial Level, 2015.
- OECD (2015b), *Employment and Skills Strategies in Flanders, Belgium*, OECD Publishing, Paris.
DOI: <http://dx.doi.org/10.1787/9789264228740-en>
- OECD (2014a), *Employment and Skills Strategies in Australia*, OECD Reviews on Local Job Creation, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264207899-en>.
- OECD (2014b), *Employment and Skills Strategies in Canada*, OECD Publishing, Paris.

- DOI: <http://dx.doi.org/10.1787/9789264209374-en>
- OECD (2014c), *Employment and Skills Strategies in Korea*, OECD Publishing, Paris.
DOI: <http://dx.doi.org/10.1787/9789264216563-en>
- OECD (2014d), *Employment and Skills Strategies in Northern Ireland, United Kingdom*, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264208872-en>
- Sennett, R. (2009), *The Craftsman*, United States, Yale University Press.
- Skills Australia (2012), *Better Use of Skills, Better Outcomes: A Research Report on Skills Utilisation in Australia*, www.awpa.gov.au/publications/documents/Skills-utilisation-research-report-15-May-2012.pdf.
- Toner, P. (2011), “Workforce Skills and Innovation: An Overview of Major Themes in the Literature”, *OECD Science, Technology and Industry Working Papers*, Paris, No. 2011/01, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5kgkdgdkc8tl-en>.
- Verma, A. (2012), “Skills for Competitiveness: Country Report for Canada”, *OECD Local Economic and Employment Development (LEED) Working Papers*, 2012/03, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k9bb1vz5jhb-en>.
- Wood, D.E. (2010), “Building Flexibility and Accountability into Local Employment Services: Country Report for Canada”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2010/17, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k9fmrlbh942-en>.

ANNEX 1 – JAPANESE TL3 SUB-REGIONS BY OECD TERRITORIAL TYPOLOGY

Aichi	predominantly urban
Akita	predominantly rural remote
Aomori	predominantly rural close to a city
Chiba	predominantly urban
Ehime	intermediate
Fukui	predominantly rural remote
Fukuoka	predominantly urban
Fukushima	predominantly rural remote
Gifu	intermediate
Gumma	intermediate
Hiroshima	predominantly urban
Hokkaido	intermediate
Hyogo	predominantly urban
Ibaraki	intermediate
Ishikawa	intermediate
Iwate	predominantly rural close to a city
Kagawa	intermediate
Kagoshima	intermediate
Kanagawa	predominantly urban
Kochi	predominantly rural close to a city
Kumamoto	intermediate
Kyoto	predominantly urban
Mie	intermediate
Miyagi	predominantly urban
Miyazaki	predominantly rural remote
Nagano	predominantly rural close to a city
Nagasaki	intermediate
Nara	predominantly urban
Niigata	intermediate
Oita	intermediate
Okayama	intermediate
Okinawa	intermediate
Osaka	predominantly urban
Saga	predominantly rural remote
Saitama	predominantly urban
Shiga	predominantly urban
Shimane	predominantly rural remote
Shizuoka	intermediate
Tochigi	intermediate
Tokushima	intermediate
Tokyo	predominantly urban
Tottori	intermediate
Toyama	intermediate
Wakayama	intermediate
Yamagata	predominantly rural remote
Yamaguchi	predominantly rural remote
Yamanashi	predominantly rural close to a city

