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# **IMF Working Paper**

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Foreign Help Wanted: Easing Japan's Labor Shortages

by Giovanni Ganelli and Naoko Miake

I N T E R N A T I O N A L M O N E T A R Y F U N D

**IMF Working Paper**

Regional Office for Asia and the Pacific

**Foreign Help Wanted: Easing Japan's Labor Shortages**

**Prepared by Giovanni Ganelli and Naoko Miake\***

Authorized for distribution by Odd Per Brekk and Luc Everaert

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**Abstract**

Data and anecdotal evidence suggest that Japan is suffering from labor shortages, which are large in an international perspective, have a negative impact on potential growth, and reduce the effectiveness of monetary and fiscal stimulus. This paper focuses on policy options to ease Japan's labor shortages. In particular, we focus on possible measures to increase reliance on foreign labor. Other policy recommendations to deal with shortages include policies aimed at increasing female labor participation, encouraging wage growth, increasing investment, as well as training and other active labor market policies.

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## I. INTRODUCTION

This paper focuses on the issue of labor shortages in Japan. The concept of labor shortage can be defined in various ways. In a “demographic” sense, labor shortages can be thought of as a chronic shortfall of labor market entries relative to exits, due to a declining population. In a narrower, “labor market” sense, “labor shortage” can be defined as excess labor demand in a given market or at a specific time. Data and anecdotal evidence suggests that Japan is suffering from labor shortages in both the “demographic” and the “labor market” sense.

Labor shortages have negative economic implications both in the short and the long term. In Japan, “demographic” labor shortages due to a declining population are contributing to bring down medium term potential growth. At the same time, “labor market” shortages—the fact that companies cannot find the workers they need to carry out specific projects—implies that the effectiveness of monetary and fiscal stimulus is also reduced. A prime example of this is in the construction sector, for which disaggregated data point to a high job-to-applicant ratio, and anecdotal evidence suggests that shortages are delaying public infrastructure projects, including reconstruction in the areas affected by the March 11 disaster.

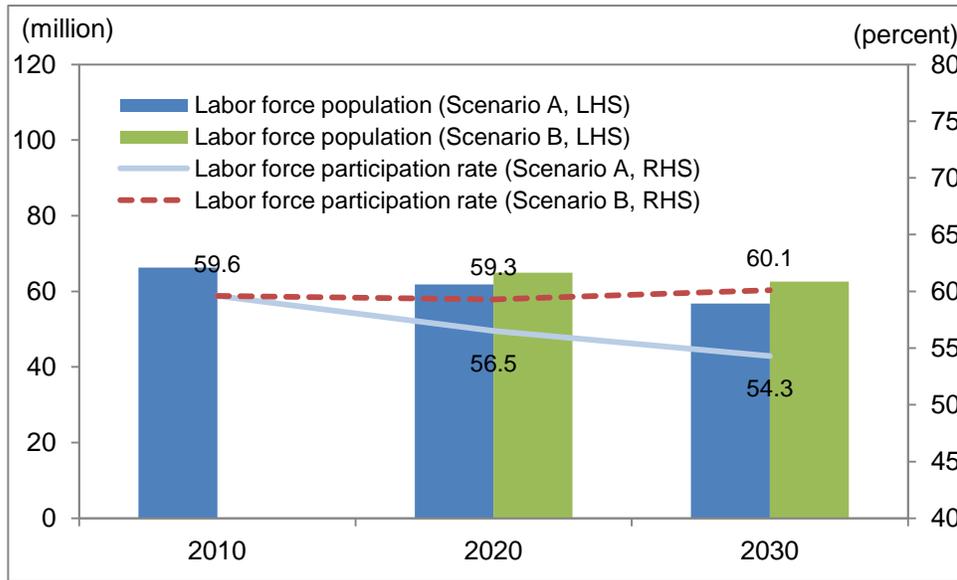
The rest of the paper is organized as follows. Next section looks at trends and estimated costs of labor shortages in Japan. Section III suggests policy options to ease labor shortages in Japan, with a particular focus on measures to increase foreign labor participation. Section IV concludes.

## II. LABOR SHORTAGES IN JAPAN: TRENDS AND ESTIMATED COSTS

### *Demographic Labor Shortages*

According to government projections, Japan’s labor force is projected to shrink in the next two decades. The labor force is expected to decline from 66.3 million in 2010 to 56.8 million in 2030 under a “negative” scenario in which real growth remains near zero percent and the labor force participation rate drops from 59.6 percent in 2010 to 54.3 percent in 2030. Even in a “positive scenario” with real average growth at 2 percent and the labor participation rate increasing to 60.1 percent by 2030, the labor force would still decrease to 62.9 million. The number of persons in employment is also expected to decrease from 63.0 million in 2010 to 54.5 million in 2030 under the negative scenario (see text charts).

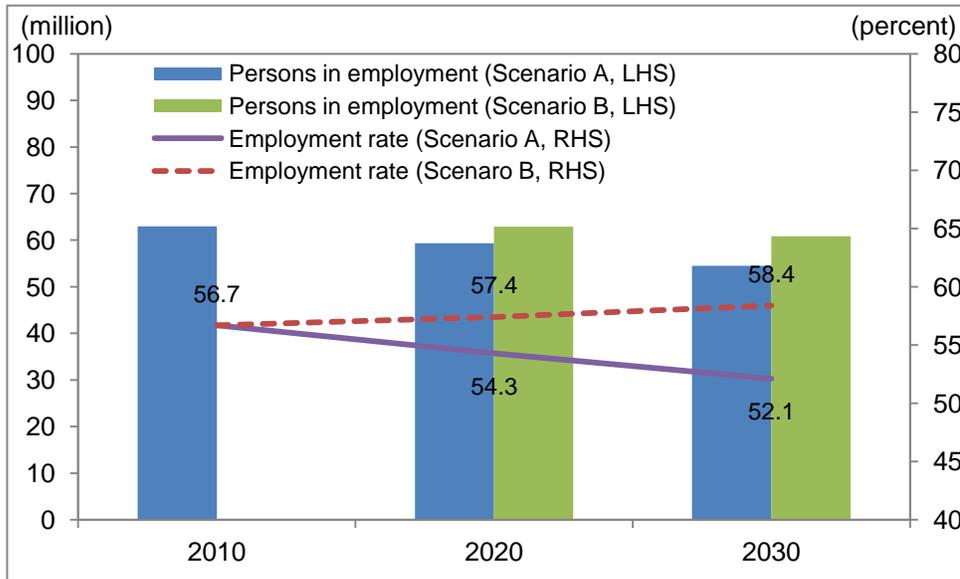
### The Outlook for the Labor Force Population and the Labor Force Participation Rate



Source: Ministry of Health Labour and Welfare, Ministry of Internal Affairs and Communication, Cabinet Office

Note: Scenario A (negative scenario) assumes real growth remains zero. Scenario B (positive scenario) assumes real average growth rate will be at 2 percent.

### The Outlook for Number of Persons in Employment and the Employment Rate



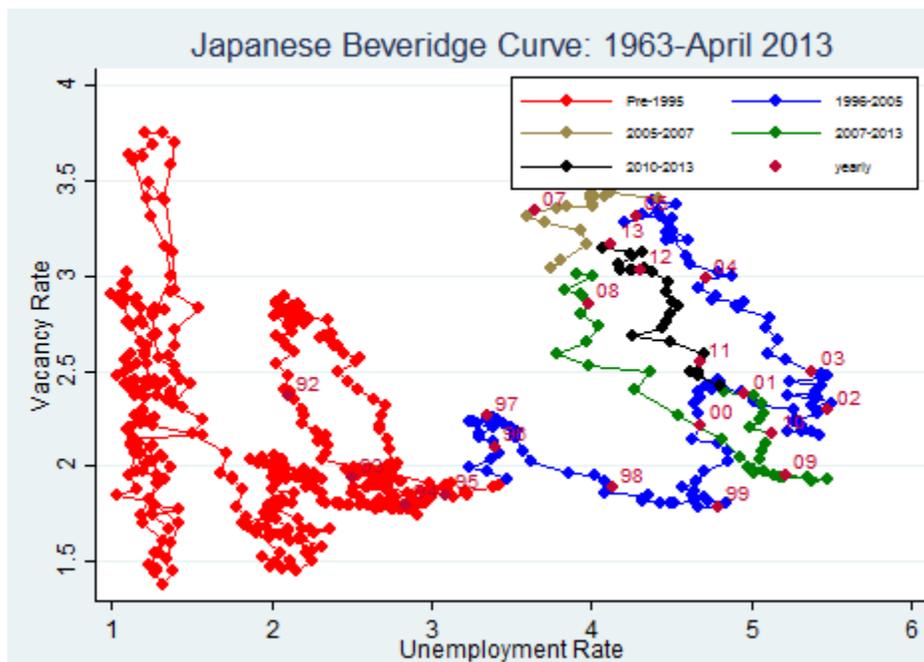
Source: Ministry of Health Labour and Welfare, Ministry of Internal Affairs and Communication, Cabinet Office

Note: Scenario A (negative scenario) assumes real growth remains zero. Scenario B (positive scenario) assumes real average growth rate will be at 2 percent.

Studies by academics and think tanks also point to the existence of “demographic” labor shortages in Japan. A study by Daiwa Institute of Research (Hashimoto 2014) estimates employment shortages in the 340,000–660,000 workers range during 2015–16, with a cumulative negative effect on GDP close to 2 percent. Another paper by Mitsubishi UFJ Research and Consulting (Kobayashi 2009) estimates a shortage of 8 million workers by 2025, compared to the level which would be needed to keep average annual real growth at 2 percent, and assuming unchanged labor productivity.

### ***Labor Market Shortages***

Estimates of the Beveridge curve suggests that Japan also suffers from labor market shortages defined in a narrower sense. Shibata (2013) presents estimates of the Beveridge Curve, which plots the vacancy rate (a measure of labor shortages) against the unemployment rate. As it can be seen in the text chart, Japan’s Beveridge curve has shifted towards the right overtime. The rightward shift implies that, for the same unemployment level, the vacancy rate tends to be higher. This suggests that the labor market has become less efficient, i.e. unemployed workers are not matched to existing job vacancies owing to skill and other mismatches.



Source: Shibata 2013

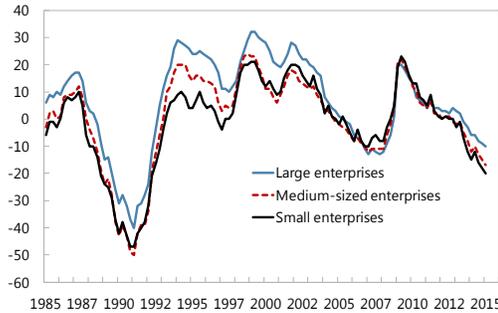
A decomposition of the drivers of mismatches carried out by Dai-ichi Life Research Institute (Suzuki, 2013) suggests that skills mismatches (job content), despite a decline in the last few year, are the largest driver of labor shortages. At the same time, the importance of regional mismatches seem to be on the rise again after a drop, while the age factor is becoming less

relevant, probably reflecting legislation introduced in the 2000s which prohibits explicit age limits in recruiting.

Recent Bank of Japan Tankan survey data also confirm that labor market shortages are on the rise. The Tankan diffusion index, which takes a negative value when companies have perceived labor shortages, suggests that shortages are increasing for companies of all sizes, although the problem is more acute for SMEs (see text chart).

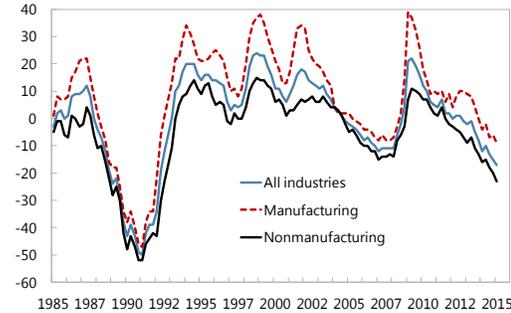
### Employment Condition

**Employment Condition by Size of Enterprise**  
(diffusion index, "excess" minus "shortage")

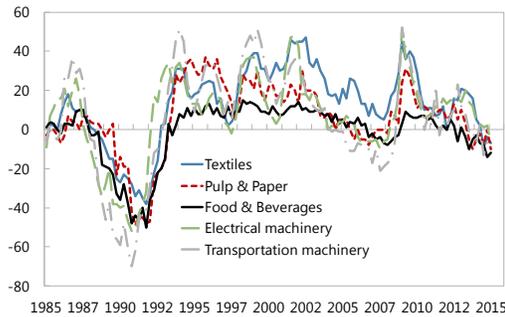


Source: Bank of Japan "Tankan survey"

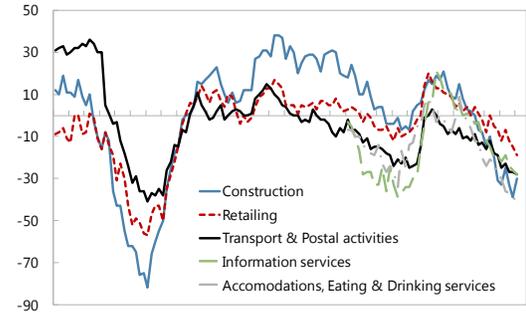
**Employment Condition by Industry**  
(D.I.; enterprise of all size)



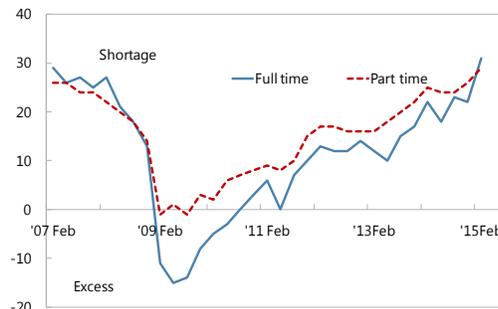
**Employment Condition in Selected Manufacturing Industries**  
(D.I.; enterprise of all size)



**Employment Condition in Selected Non-manufacturing Industries**  
(D.I.; enterprise of all size)



**Employment Condition by Type of Employment**  
(diffusion index, "shortage" minus "excess")

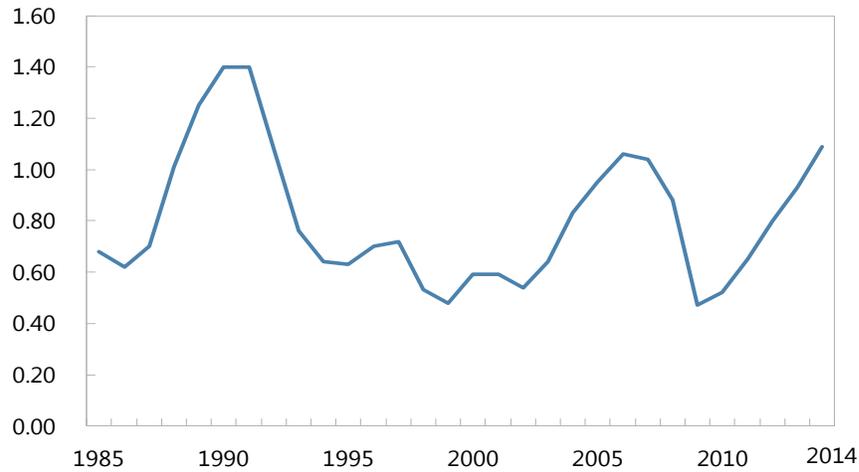


Source: Ministry of Health Labour and Welfare "Survey on Labour Economy Trend"

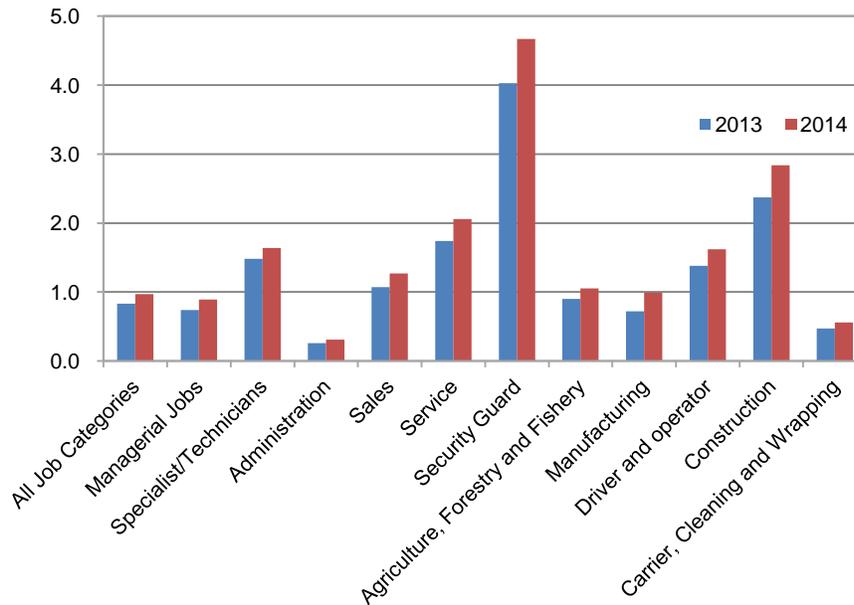
The job-to-applicant ratio, another measure of labor market shortages, is currently above one in Japan. At a disaggregated level by sector, shortages are particularly severe amongst security guards (ratio above 5), and in the service sector (ratio above 2). There are no shortages in managerial and general administrative work, where the ratio is below one (text charts).

## Job-to-Applicant Ratio

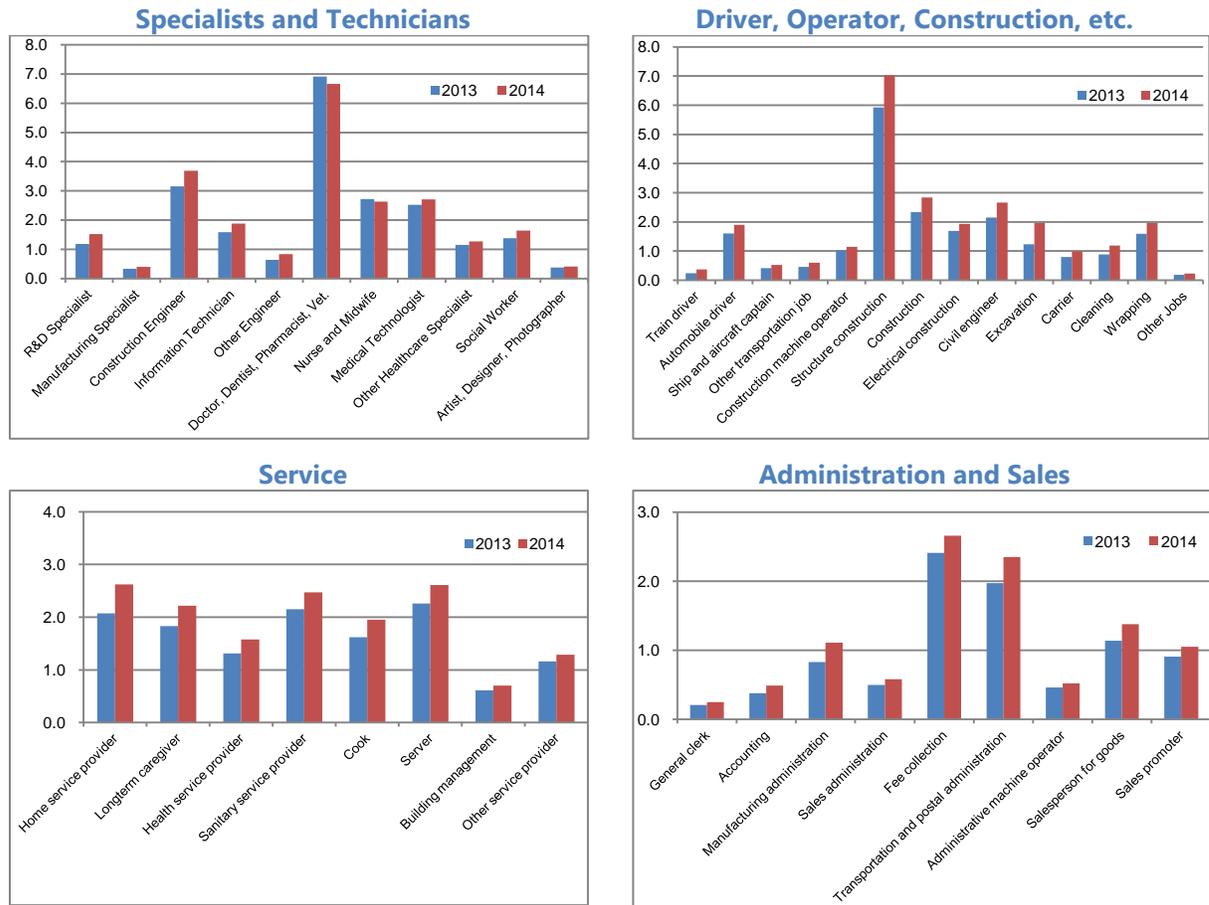
### Nationwide Job-to-Applicant Ratio



### Job-to-Applicant Ratio by Occupation (Regular Workers including Part-Timers)



Looking at a more disaggregated level at shortages by job description, amongst specialist and technicians shortages are particularly strong for medical doctors (ratio above 6) and medical technicians and nurses and midwives (ratios above 2). In the service sector, the most severe shortages are observed for restaurant servers and home service and long-term care providers (ratios above 2). In the construction sector, there is particular shortage of structure construction workers, with a ratio above 6 (see text charts).

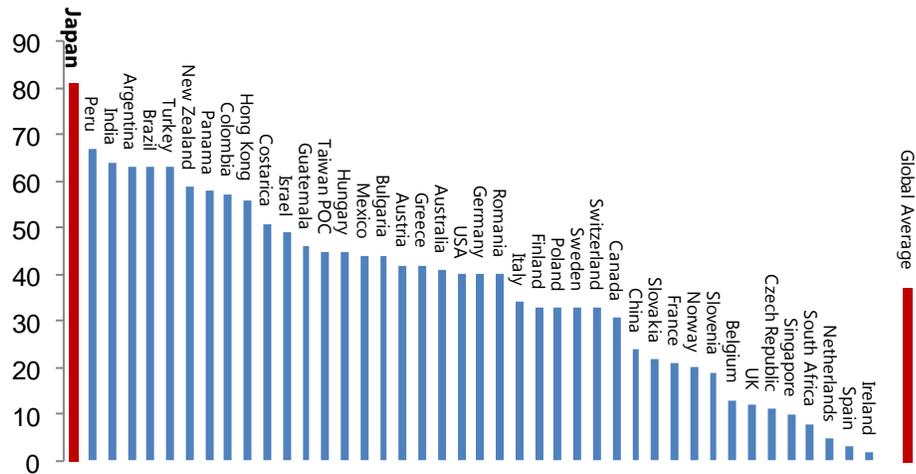


Source: Ministry of Health Labour and Welfare "Employment Referrals for General Workers"

### ***Japan's Labor Shortages in an International Perspective***

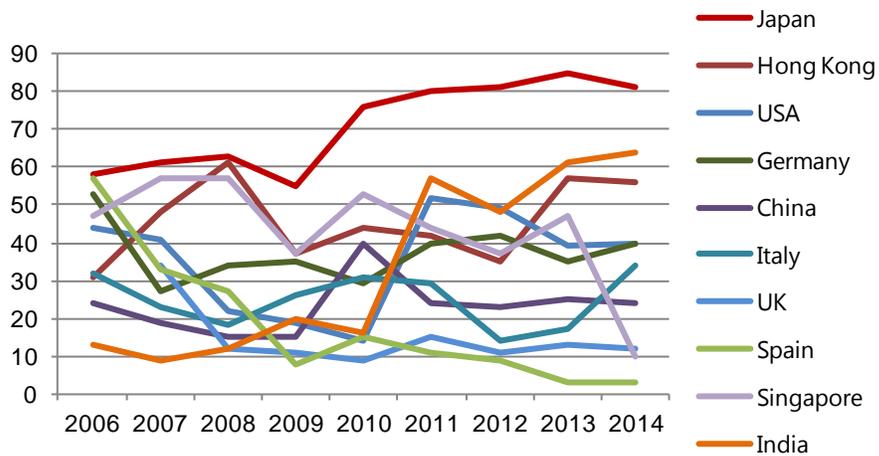
Japan's labor shortages are large in an international perspective. According to a survey of global employers carried out by the Manpower Group, 81 percent of Japanese firms reported having difficulties in filling jobs in 2014. This is the highest number amongst all the countries surveyed and more than double than the global average of 36 percent. Furthermore, the same survey, which has been conducted since 2006, shows that labor shortages as measured by this indicator have significantly increased in Japan in the last decade (from about 60 percent to about 80 percent), Japan has ranked consistently at the top in terms of reported labor shortages, and the latter are now significantly higher in Japan compared to other advanced countries (see text charts).

**Percentage of Firms Having Difficulties Filling jobs (2014)**



Source: Manpower.

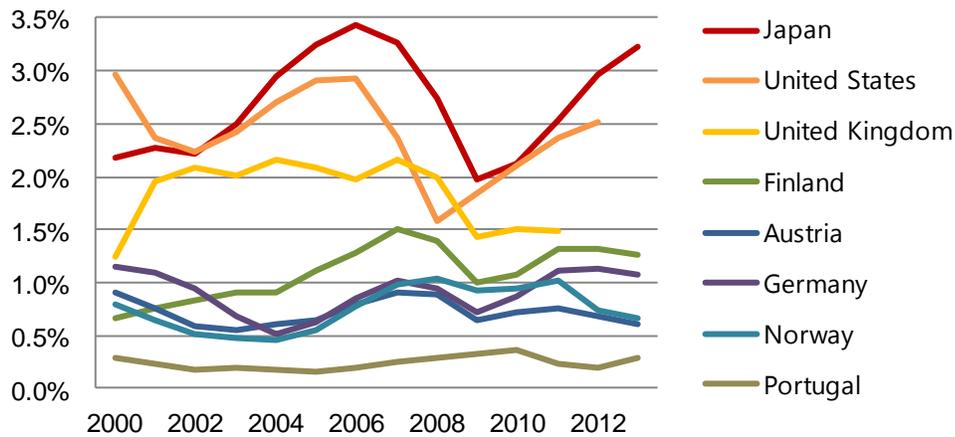
**Percentage of Firms Having Difficulties Filling Jobs (2006-14)**



Source: Manpower.

The ratio of job vacancies as percentage of the labor force population, another indicator of labor shortages, is also high in Japan compared to other advanced countries. After dropping to 2 percent in the wake of the Lehman shock, this indicator stood at 3.2 percent in 2013, compared for example to 1.1 percent in Germany and 2.5 percent in the United States (text chart).

### Job Vacancies per Labor Force Population



Source: OECD; and IMF Staff Calculations.

In summary, the evidence presented in this Section supports the argument that Japan suffers from labor shortages, both from a demographic and from a labor market point of view, and that Japan's labor shortages are severe in an international perspective. In light of this, in next section, we discuss specific policy options to reduce labor shortages in Japan.

### III. POLICY OPTIONS EASE LABOR SHORTAGES IN JAPAN

As stressed for example by Ducanes and Abella (2008), countries which face labor shortages can use various policy options to try to ease them. These include:

- Moving towards more capital intensive technologies by increasing investment;
- Attracting more domestic workers into the labor force by increasing wages;
- Attracting more workers in the labor force from certain under-represented demographic groups (e.g. implement policies, such as increasing availability of child care, which can increase female labor participation);
- In cases in which there are workers who would like to work at current wage levels but lack the needed skills, training workers and using active labor market policies;
- Increasing the supply of foreign labor.

The Japanese authorities have already undertaken policy initiatives in several of the above areas. As stressed by Aoyagi and Ganelli (2014), improving corporate governance could help using firms' cash reserves for investment. In addition to corporate governance, policies to foster investment could also include improving funding conditions to reduce the cost of capital, and more in general, forceful implementation of Abenomics's third arrow to reduce

uncertainty and improve the demand outlook (see Kang 2014 on the determinants of corporate investment in Japan).

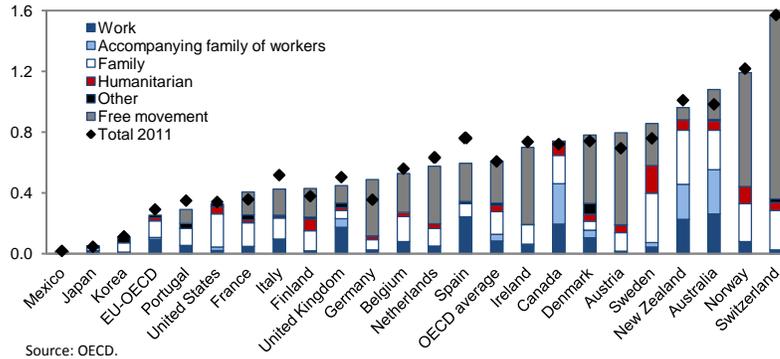
The authorities' efforts to attract more women in the labor force by increasing the availability of child care will also help reduce labor shortages. Further reforms in this area could include removing tax distortions which discourage women from joining the labor force on a full time basis. Current efforts to encourage wage growth, for example through meetings of the Tripartite Commission, would also help reducing shortages by attracting more workers in the labor force.

It should also be noticed that Japan spends less than other advanced countries for active labor market policies. In 2010, for example, it amounted to 0.6 percent of GDP, compared to 4.0 percent in Spain, 2.6 percent in France, 2.3 percent in Germany but close to the U.S.'s level at 0.7 percent. Increasing such spending could therefore be part of the strategy followed to reduce labor shortages, but such policies should of course keep into account fiscal sustainability concerns, given Japan's high public debt.

As mentioned above, increasing foreign labor supply can also help reduce labor shortages. Given that this policy option has received less attention in the literature and in the policy debate in the context of Japan (compared to the other possible policies discussed above), the rest of this section focuses on this particular aspect.

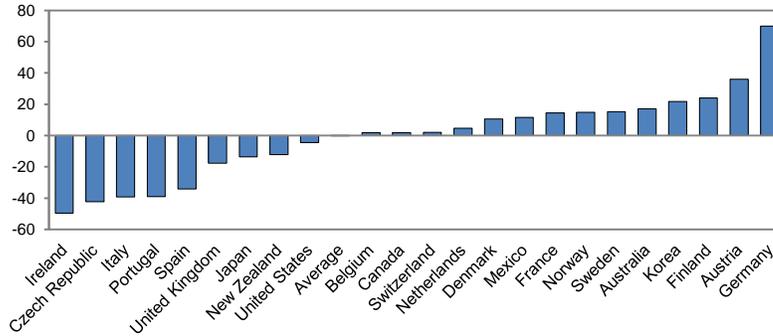
As it can be seen from the text charts below, Japan has the second lowest (after Mexico) immigration rate (number of immigration as percentage of total population) among OECD countries. Furthermore, while the majority of OECD countries saw positive growth in the number of immigrants between the 2007–11 average and 2012, Japan faced a modest decrease. While most OECD countries had positive net migration in the last few years, Japan, along with Mexico and Poland (and for a shorter period, the Netherlands) experienced net outflows. Low immigration rates are reflected in the fact that, while most OECD countries have more than 5 percent share of foreign workers in the labor force, Japan's reliance on foreign labor is only 0.3 percent, marking the lowest amongst advanced countries.

**Permanent Immigration by Category of Entry or of Status Change into Selected OECD Countries**  
(percent of the total population; 2012)



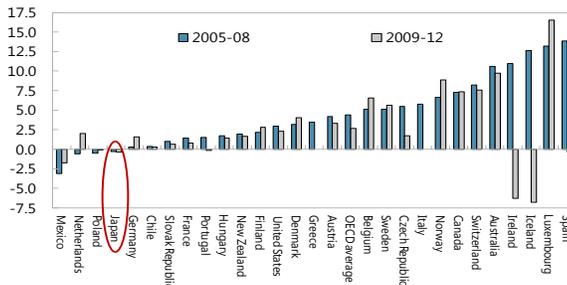
Source: OECD.

**Change in Permanent Flows between 2007-11 average and 2012**  
(percent)



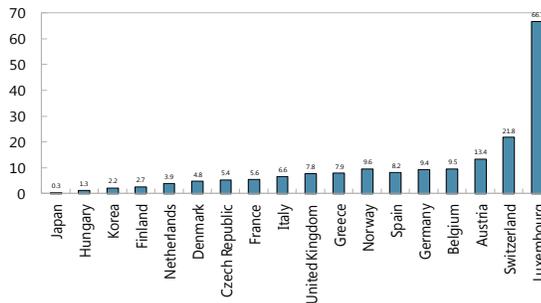
Source: OECD.

**Average Annual Net Migration Rates, 2005-08 and 2009-12**  
(per thousand population)



Source: OECD.

**Stocks of Foreign Labor Force**  
(percent of labor force; 2008)



Source: OECD "International Migration Outlook 2010"

Under the current growth strategy, the so-called “third arrow” of Abenomics, the government has already taken steps to increase foreign labor supply. In particular, the following measures have been taken or are under consideration:

- The requirements for highly skilled foreign professionals to work in Japan (e.g. in terms of salary level and research achievements) have been relaxed (in December 2013), and a new type of residence status with unlimited period of stay has been created for such professionals (in June 2014);
- Plans are under consideration to allow foreign housekeeping support workers to work in Special Economic Zones.
- The government is also considering allowing businesses to bring foreign employees with technical backgrounds to Japan for training for a short term. The program is meant to target employees at overseas subsidiaries of Japanese corporation with technical backgrounds.

While these are steps in the right directions, they are likely to have a limited impact in reducing labor shortages in Japan. For example, while the relaxation of entry requirements for highly skilled professionals is a positive step, it will not help reducing severe shortages in the areas highlighted in Section II, such as construction, security guards, services, and nursing.

Given the above background, Japan could consider some additional steps to strengthen its framework for attracting foreign workers. In particular, drawing on the experience of other countries (see Box 1), the measures discussed below could be considered.

While Japan is very welcoming towards highly skilled professionals, it offers very limited avenues for lower-skilled foreign worker entry. Unlike the countries discussed in Box 1, Japan does not announce a quota on total admission and does not have guest work programs which target lower skilled workers. Therefore, in principle Japan does not accept low-skilled foreign workers. While there are various way in which Japan could expand entry for lower-skilled foreign workers, in practice it would mean introducing guest workers programs, and loosening entry requirements in sectors with labor shortages using a sector-based, skill-based approach. Japan could move in the direction of policies adopted by other countries (see Box 1), which use various quota systems aimed at making decisions on admission of foreign workers on the basis of economic needs, allow in certain cases lower-skilled foreign workers in guest worker programs, and allow certain industries (e.g. the mining sector in Australia) to enter in direct agreements with the government to fill labor shortages.

Another area in which the framework could be strengthened is that of portability of qualifications and recognition of skills. As noted by Ducanes (2013), this is a thorny issue, because many countries, including some advanced ones, lack a framework to classify qualifications according to a set of criteria that measures learning achievements (see also

OECD 2005). This situation makes it more difficult to increase foreign labor supply, because it makes receiving countries reluctant to accept the qualifications of foreign workers at face value. Although Japan has a system to measure achieved skills for certain job categories, as stressed by OECD (2005) and Burke (2009), it lacks a comprehensive and uniformed qualification framework, and therefore has difficulties in properly performing skills accreditation. The establishment of qualification framework, for example similar to the one adopted by Singapore in 2003, could therefore be another reform which Japan could undertake to rationalize its foreign-labor policy and help filling labor shortages in specific areas.

While the above discussion shows that expanding foreign labor supply would make sense from the economic point of view, policy decisions in this area are also likely to be affected by political economy considerations. Box 2 discusses some relevant factors in this regard, taking into account attitudes towards immigration and its social costs.

### **Box 1. Policies Towards Foreign Workers: an International Comparison**

Countries differ in their policies towards foreign workers. Drawing on Ducanes (2013) and Levush (2013), this box reviews the experiences of various countries with regards to admission policies and skill recognition.

#### **Admission Policies**

Admission policies differ widely in the amount of government planning, the level of private sector involvement, and the choice of sectors in which foreign workers are allowed to work, and the rights granted to them. Countries are generally more open to admission of highly skilled workers, but less so in the case of lower skilled ones. In this box we focus on the latter, since most of the labor shortages in Japan are for lower skilled work.

In Korea, the admission process is led in a centralized way by the government, through its Employment Permit System (EPS), which in 2004 replaced an industrial training system similar to the one still in place in Japan. The government decides on the quota of foreign workers to be admitted. The quota is publicly announced and distributed among a selected group of potential source countries, with which the Korean government has forged Memoranda of Understanding (MOU). The recruitment is done government to government and the involvement of private recruitment agencies is strongly discouraged. The share of each country in the total quota is adjusted every year, and potential migrant workers are required to pass a Korean language test. Foreign workers under the EPS can work only at the designated workplace. If they want to change workplace, they must obtain prior permission from the Ministry of Justice. Employment under the EPS is in general limited to three years, but can be extended for up to two years, and there is no path to permanent residency for workers under this program. A separate program, with a path to permanent residency, exists for people of Korean descent with foreign citizenship.

In Singapore, the government does not announce a specific quota for foreign workers, but enforces a foreign worker dependency ratio limit by sector, and imposes a foreign worker levy on enterprises, which is higher for lower-skilled workers. Unlike Korea, Singapore does not discourage foreign worker recruitment through private agencies.

In Canada, the Department of Citizenship and Immigration sets annual immigration targets to meet the Canadian government economic, family reunification, and humanitarian goals. In setting its immigration targets, the Canadian government carries out a process of consultation with sub-national government entities and key economic and social stakeholders, on the basis of research on economic conditions and labor market needs. There are four main federal programs that allow eligible lower-skilled workers to enter and work in the country on a temporary basis. The provinces and territories also have their own programs, which might be eligible to lower-skilled workers. Generally speaking, employers from all types of businesses can recruit foreign workers with a wide range of skills to meet temporary labor shortages. Before a work permit for a low-skilled temporary worker can be issued, the employer might have to obtain a positive Labor Market Opinion (LMO) from a government agency. An LMO assesses the impact on the job market of the hiring, and ensures that wages and working conditions are consistent with those of Canadians. Under certain programs, the employer might also have to demonstrate having made sufficient efforts to first fill the position with a Canadian. Depending on the kind of program, work permits can extend for up to four years and are, in certain cases, renewable. With limited exceptions, lower skilled workers cannot apply for permanent residency. However, workers under the Live-in Caregivers Program (a program to hire foreign nannies) can apply to become permanent residents as long as they meet certain requirements.

### **Box 1. Policies Towards Foreign Workers: an International Comparison (concluded)**

In Australia, the number of admissions is set annually under the government's migration program, following broad consultation across the country, and taking into account community views, economic and labour force forecasts and international research. A cap and queue system is in place. When a cap is reached, no further visas will be granted in that visa class in the program year. However, processing of applications continues and applicants who meet the requirements applicants then wait in a queue for visa grant consideration in a following year, subject to places becoming available. While the range of available work visas are largely targeted at skilled workers, some programs enable employers in particular sectors and part of the country to sponsor lower-skilled foreign workers to fill labor shortages. The Seasonal Worker Program (SWP), for example, is available for citizens of certain countries (mostly Pacific island countries) to work for up to six months in the horticulture, tourism, sugarcane, and aquaculture industries (location restrictions might also apply). In addition, companies in the resource sector (e.g. mining companies) can enter into Enterprise Migration Agreements with the federal government as part of a program aimed at easing access to the country by employer-sponsored, semi-skilled temporary workers in order to address labor shortages. A further Regional Migration Agreement program is designed to reduce semi-skilled labor shortages in remote areas. Apart from these programs, lower skilled positions may in some cases be filled by New Zealand citizens who, under special reciprocal arrangements, can live and work in any occupation in Australia indefinitely, without any sponsorship or skill requirement applying.

#### **Skill Recognition**

As stressed by Ducanes (2013), skill recognition for high-skilled foreign professionals is often handled by recruiting firms or their agents, and is less than a problem compared to skill recognition for lower-skilled workers. With regards to the latter, there are wide differences amongst countries, with several countries, including some advanced ones, still lacking a framework to classify qualifications.

Singapore, for example, established its National Skills Recognition System (NSRS) in 2003. The NSRS is open to both local and foreign workers. Under the NSRS foreign workers can apply for an assessment in a certified assessment and training center. If the foreign worker passes the assessment, he or she receives a National Skills Certificate which is recognized across the country.

Malaysia also has a well formulated qualifications framework, under the oversight of the Malaysia Qualifications Agency, which includes a system for recognizing foreign workers' vocational competencies through the National Vocational Training Council. Foreign construction workers, for example, can seek accreditation from the Construction Industry Development Board and, if they pass the assessment, are issued a Foreign Personnel Skills Recognition certificate.

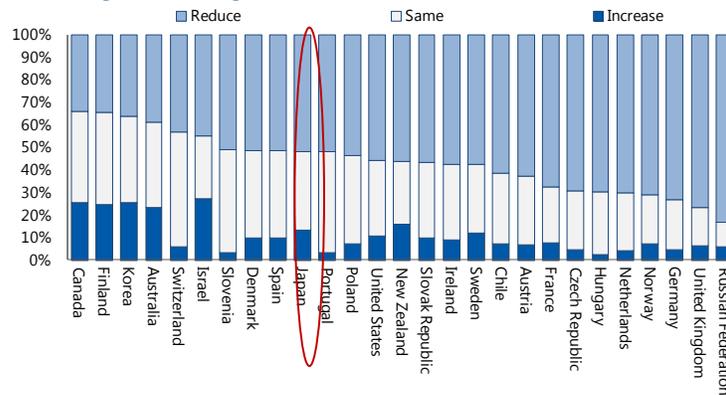
Unlike the countries discussed above, Japan and Korea still lack a comprehensive and uniformed qualification framework, which makes it difficult to properly perform skills accreditation. According to Ducanes (2013), Korea is moving steadily towards the goal of establishing a skill recognition system for its guest worker program (the EPS, discussed above). For example, the Korean government has expanded the selection criteria for admission to the EPS, from its initial heavy focus on Korean language and basic skills, to include work experience and qualifications.

### Box 2. Political Economy Factors in Immigration Policy

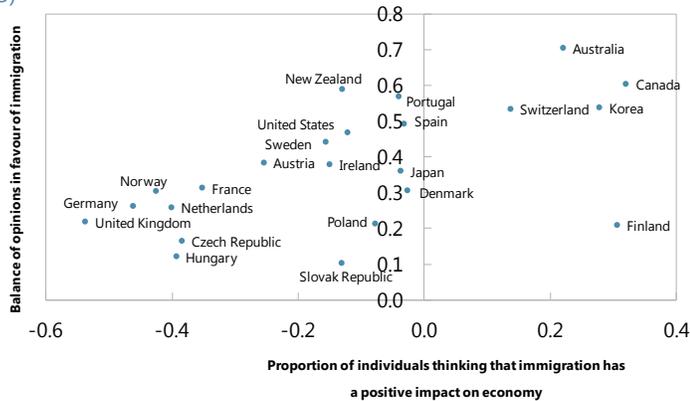
One possible political economy obstacle to expanding foreign labor supply is the fear that the social costs of immigration will outweigh the benefits. While, according to anecdotal evidence, this seems to be a widespread fear, there are very limited estimations on this issue. Iguchi (2001) estimates that the fiscal costs of accepting 500 thousand immigrants would be JPY 80.6 billion, while they would contribute JPY 326.6 billion through their tax and social security premiums, assuming the foreign workers will stay in Japan only temporarily. However, in the case of permanent immigration, the cost will increase by nearly seven times to JPY 653 billion, while the benefits they will stay at JPY 316.6 billion. If the immigrant workers invite their family from home country, the costs would be larger than this estimation (actual estimates are not available), although the benefits might also be larger if some dependents (e.g. spouses) enter the labor force.

While Iguchi's estimation points to a net negative fiscal impact, it does not take into account the indirect positive effect of expanding immigration, such as those which can derive from reducing labor shortages and therefore increasing potential growth. If the latter are taken into account, the political economy obstacles to introducing temporary guest workers program (such as the ones common in other advance countries described in Box 1) would not seem insurmountable, also considering that attitudes towards immigration is more or less like in other OECD countries (negative but not to the extreme extent, see the charts below).

Figure Box 3.1 Proportions of Respondents in Favor of Increasing, Maintaining or Reducing Current Immigration Flows to Their Countries (2003)



Opinions About the Impact of Immigrations on the Economy and the Balance of Opinions in Favor of Immigration in Certain OECD Countries (2003)



Source: OECD 2010, International Social Survey Programme 2003

#### IV. CONCLUSIONS

This paper focuses on labor shortages in Japan. Labor shortages have negative economic implications both in the short and the long term. In Japan, “demographic” labor shortages due to a declining population are contributing to bring down medium term potential growth. At the same time, “labor market” shortages—the fact that companies cannot find the workers they need to carry out specific projects—implies that the effectiveness of monetary and fiscal stimulus is also reduced.

Increasing foreign labor supply could be an effective strategy to reduce labor shortages. Given that this policy option has received less attention in the literature and in the policy debate in the context of Japan (compared to the other possible policies, which were discussed in various papers including Aoyagi and Ganelli 2014; and Kang 2014), our paper focuses on this particular aspect.

While recent steps taken by the authorities to increase foreign labor supply go in the right direction, Japan could also push further reforms in this area. These could include introducing guest workers programs, and loosening entry requirements in sectors with labor shortages using a sector-based, skill-based approach. Japan could move in the direction of policies adopted by other countries, which use various quota systems aimed at making decisions on admission of foreign workers on the basis of economic needs, allow in certain cases lower-skilled foreign workers in guest worker programs, and allow certain industries (e.g. the mining sector in Australia) to enter in direct agreements with the government to fill labor shortages. Another area in which the framework could be strengthened is that of portability of qualifications and recognition of skills. The establishment of qualification framework, for example similar to the one adopted by Singapore in 2003, could therefore be another reform which Japan could undertake to rationalize its foreign-labor policy and help filling labor shortages in specific areas.

In addition to increasing reliance on foreign labor, other policy recommendations to deal with shortages include measures aimed at increasing female labor participation, encouraging wage growth, increasing investment; as well as expanding training and other active labor market policies.

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