

Secular Stagnation and the Labor Market in Japan

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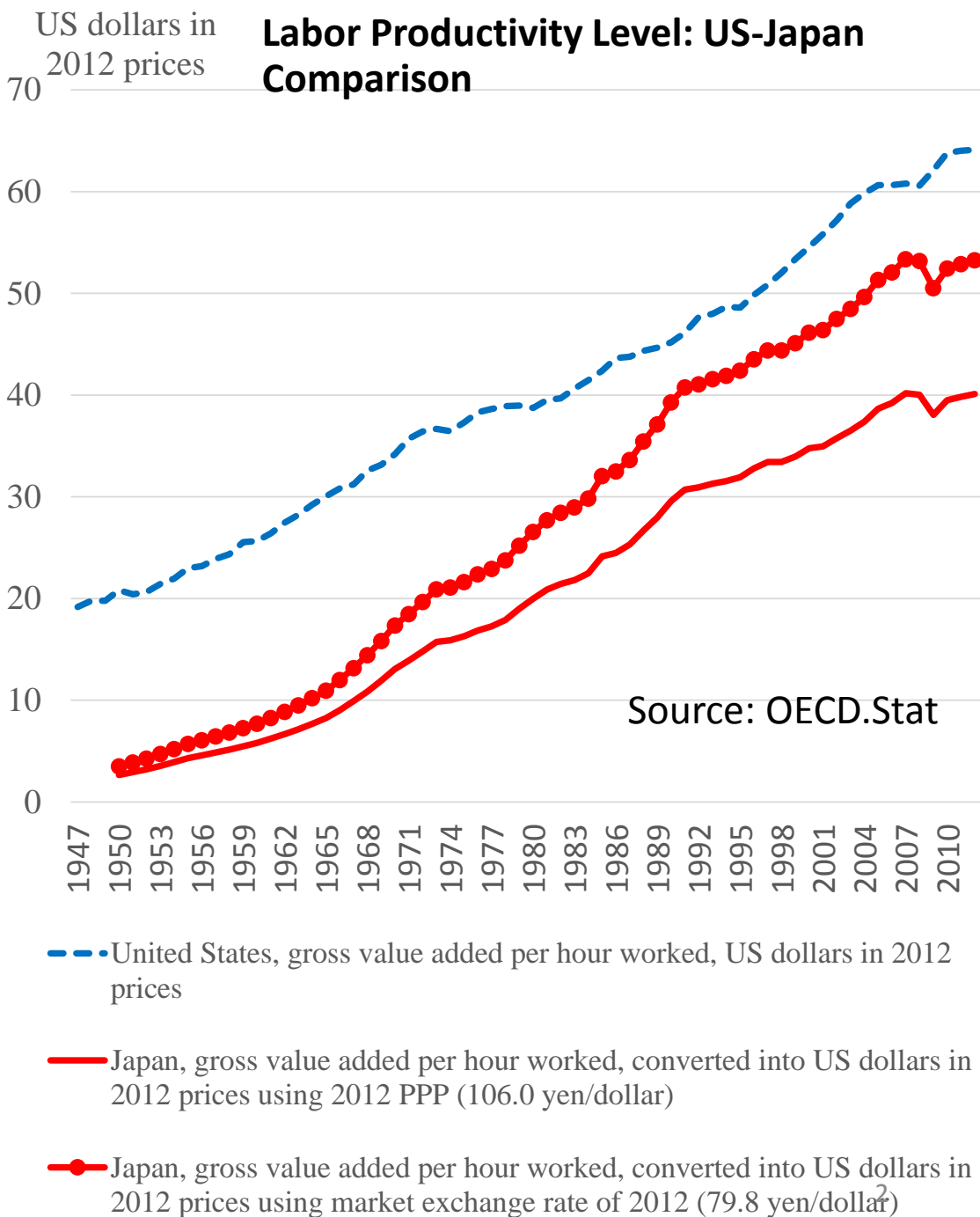
1. Motivation

Japan's catch-up in labor productivity stopped around 1990.

Two major structural causes (Fukao 2013 and Fukao et al. 2016b)

- 1) Insufficient final demand (excess saving problem)
- 2) Slow total factor productivity (TFP) growth.

These two causes are closely related to each other.



Abenomics I (Early 2013-September 2015)

First Arrow: Aggressive monetary easing

Second Arrow: Fiscal stimulus

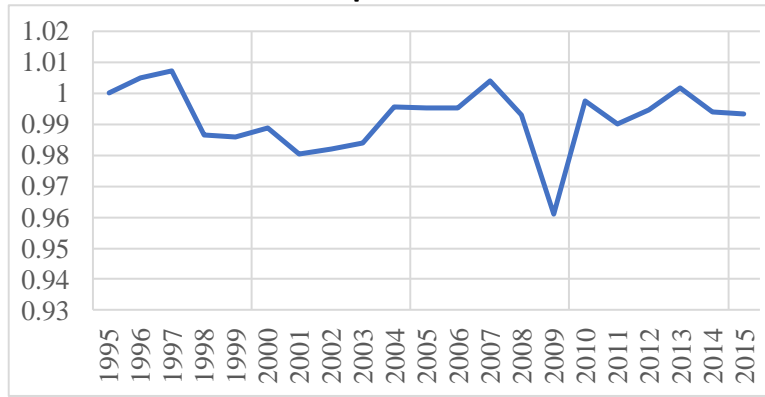
The first two arrows seem to have worked to some extent in resolving the problem of insufficient demand.

The GDP gap had declined to minus 0.4%. The effective job openings-to-applicants ratio reached 1.45 in March 2017, the highest value since November 1990.

Third Arrow: Growth Strategy

This arrow focuses on structural reforms. But Japan's TFP (macro economy) has hardly changed since 2013.

Figure 3. TFP Level of Japan's Macro Economy, 1995=1



Abenomics II (October 2015-)

Ichi-Oku Sou-Katsuyaku (All 100 Million Playing An Active Role)

- Strong Economy
- Support for child-rearing
- Social security
- Introduction of “equal work, equal pay” rule
- life-work balance policies (to reduce overtime work)

These reforms focus more on labor market and social policy issues than the first round of reforms.

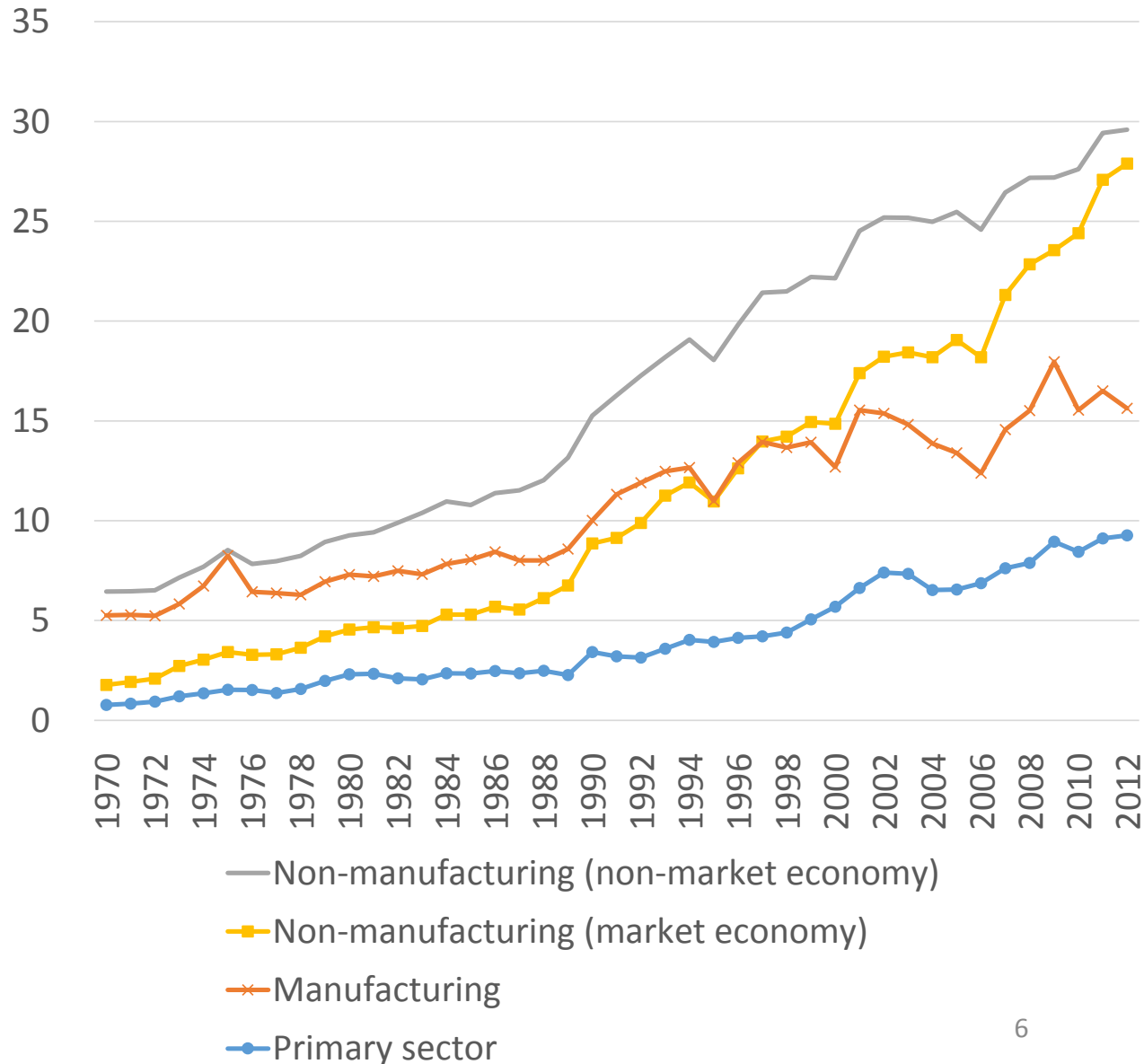
They reflect the widespread view that Japan does not seem to use its high quality labor efficiently. And labor market issues are the key for Japan’s revitalization.

Structure of the Paper

1. Introduction
2. Japan's Non-Regular Employment Problem
3. Productivity and Wage Gaps between Large and Small Firms (Dual Labor Market Problem)
4. Conclusions

2. Japan's Non-Regular Employment Problem

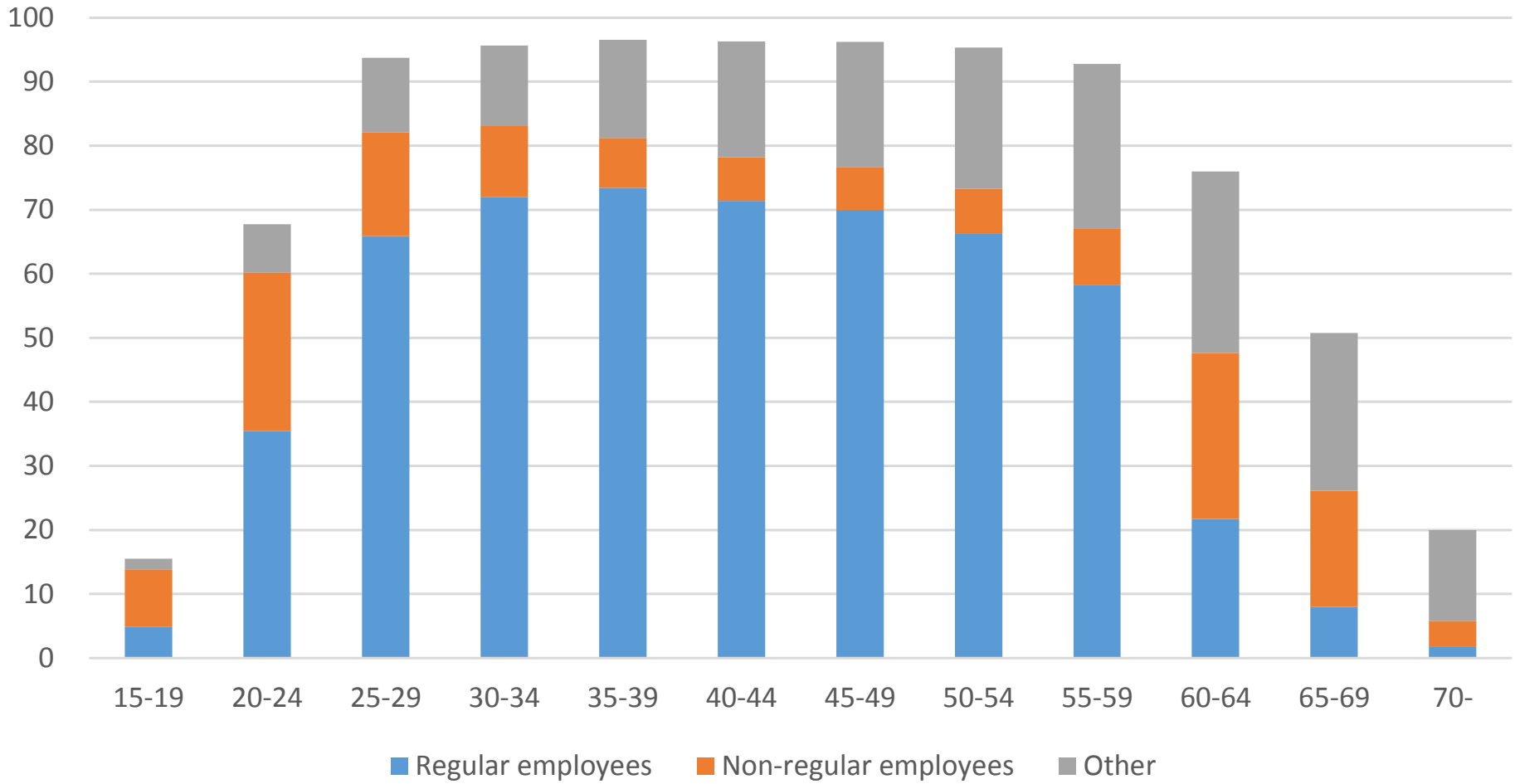
Percentage of Part-Time Workers by Sector



Many firms increased the percentage of part-time workers in total workers and do not provide intensive training in the case of part-time workers. This change reduced firms' training expenditure substantially.

The percentage of non-regular employees is increasing among young male workers. Most aged male workers are not regular employees.

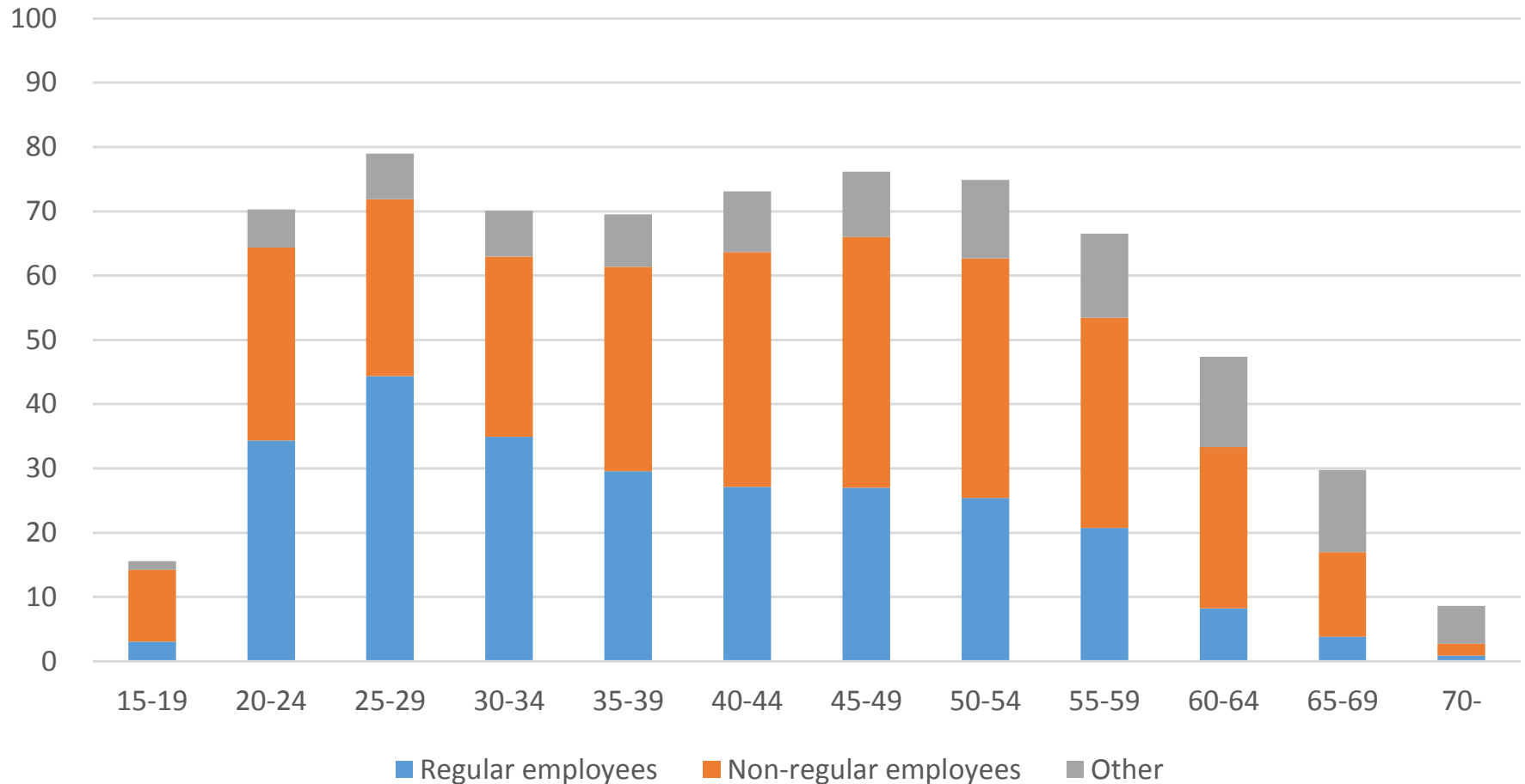
Labor Force Participation Rate by Age and Status in Employment: Male
(%, 2013)



Source: *Labour Force Survey*.

Most female workers work as non-regular employees.

Labor Force Participation Rate by Age and Status in Employment: Female
(%, 2013)



Source: *Labour Force Survey*.

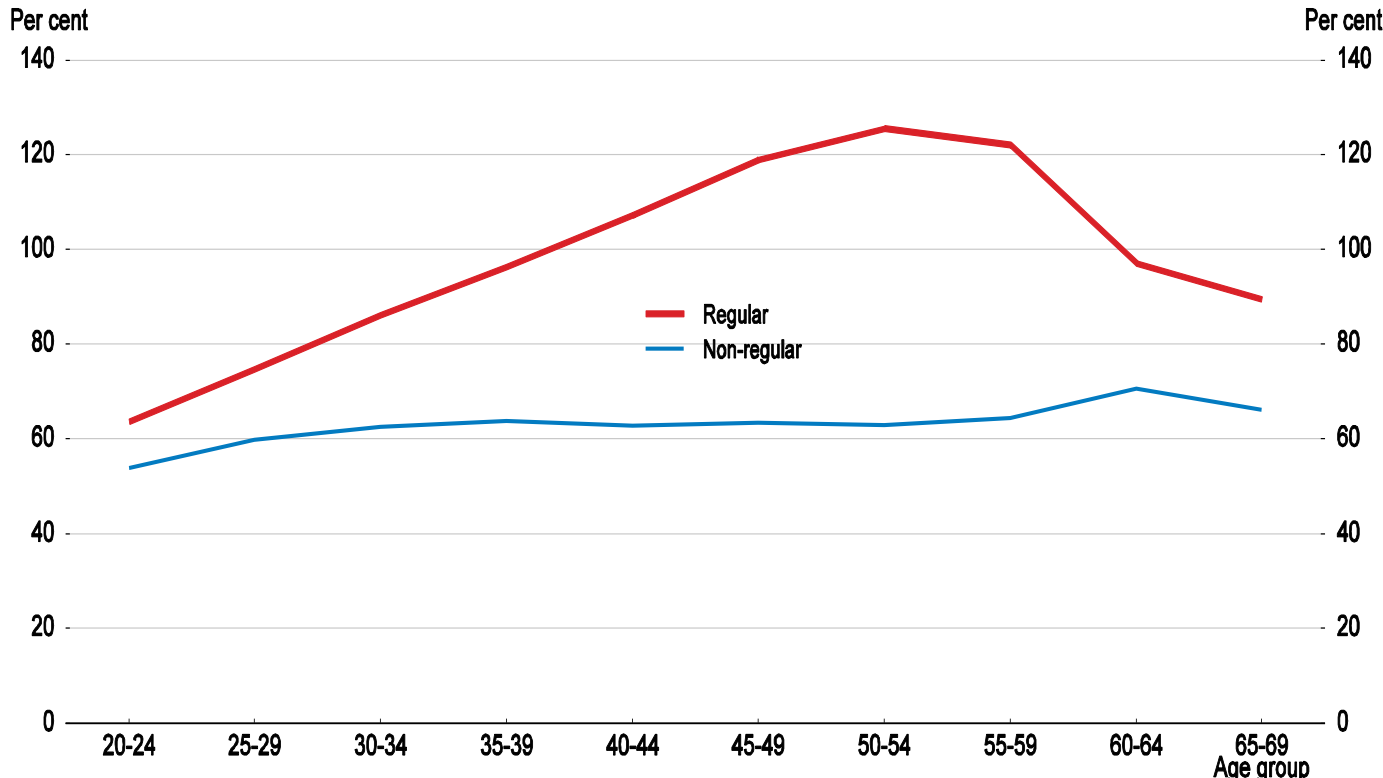
Why is the percentage of non-regular employees increasing so rapidly in many industries in Japan?

- It seems that firms are increasing the number of non-regular employees in order to maintain the flexibility of employment levels.
- Given the decline of the working age population and economic stagnation, most firms cannot expect their need for employees to steadily increase, as was the case during the high-speed growth era. At the same time, areas in which individual firms have a competitive advantage over their rivals are changing quickly and Japan's comparative advantage as whole is also changing over time.
- Given the high job security provided under traditional employment practices, increasing the reliance on non-regular employees is almost the only way for firms to keep both the level and the mix of employment flexible.

Increase of non-regular employees and Accumulation of Human Capital

- Using employer-employee matched data at the factory level, Fukao et al. (2006) found that the productivity gap between non-regular employees and regular employees is larger than the wage gap. This means that firms pay a premium to non-regular employees in order to obtain flexibility of employment.
- Such behavior by firms is quite rational in the context of slow economic growth and Japan's system of high job security. However, at the same time it may also be creating a huge economic loss by reducing human capital accumulation.

Figure 8. Wage Level as a Percentage of the Average Wage of Regular Employees, June 2015



Necessary Labor Market Reforms

- To resolve the non-regular employment problem, simply prohibiting non-regular employment would not be the appropriate policy response. This would cause a substantial misallocation of workers among firms.
- On the other hand, reducing the job security of regular workers and improving the social security net would also not be an appropriate policy response, since there is a risk that this might substantially slow down skill accumulation among workers, given that training of workers in Japan greatly depends on the life-time employment system.
- Instead, Japan needs to reform the labor market, focusing on the following two aspects simultaneously.

First, Japan needs to enhance labor market flexibility.

Second, Japan needs to enhance human capital accumulation among workers who do not participate in the life-time employment system.

Necessary Labor Market Reforms

- Improve the social security net and reduce the job security of regular workers.
- Increase “limited regular employment,” where workers are employed based on job-specific labor contracts without lifetime employment guarantees but receive high compensation for their professional skills (Tsuru 2017).
- Improve job card system
- Replace the system of internal training of regular employees through training and education outside of firms, which would require reforms of Japan’s professional education system at universities and vocational schools.
- Regulations to reduce the unfair payment gap between regular and non-regular employees.

Life-Work Balance Policies

- According to a recent survey, 15.6% of female non-regular workers, when asked why they worked as non-regular employees (respondents could choose up to three from fifteen possible answers), answered that they could not find regular employment, while 35.9% replied that they worked as non-regular employees in order to have a job compatible with their family circumstances. Judging from this result, it seems that, to reduce non-regular employment among women, it is also important to make regular employment compatible with workers' family circumstances.
- Life-work balance is also important to resolve the problem of Japan's low fertility rate. Among the female population, the average age of first marriage has increased especially in the case of educated full-time female workers. Such women appear to be too busy to get married and take care of their families (Sakamoto and Kitamura 2008, Brinton 2015).

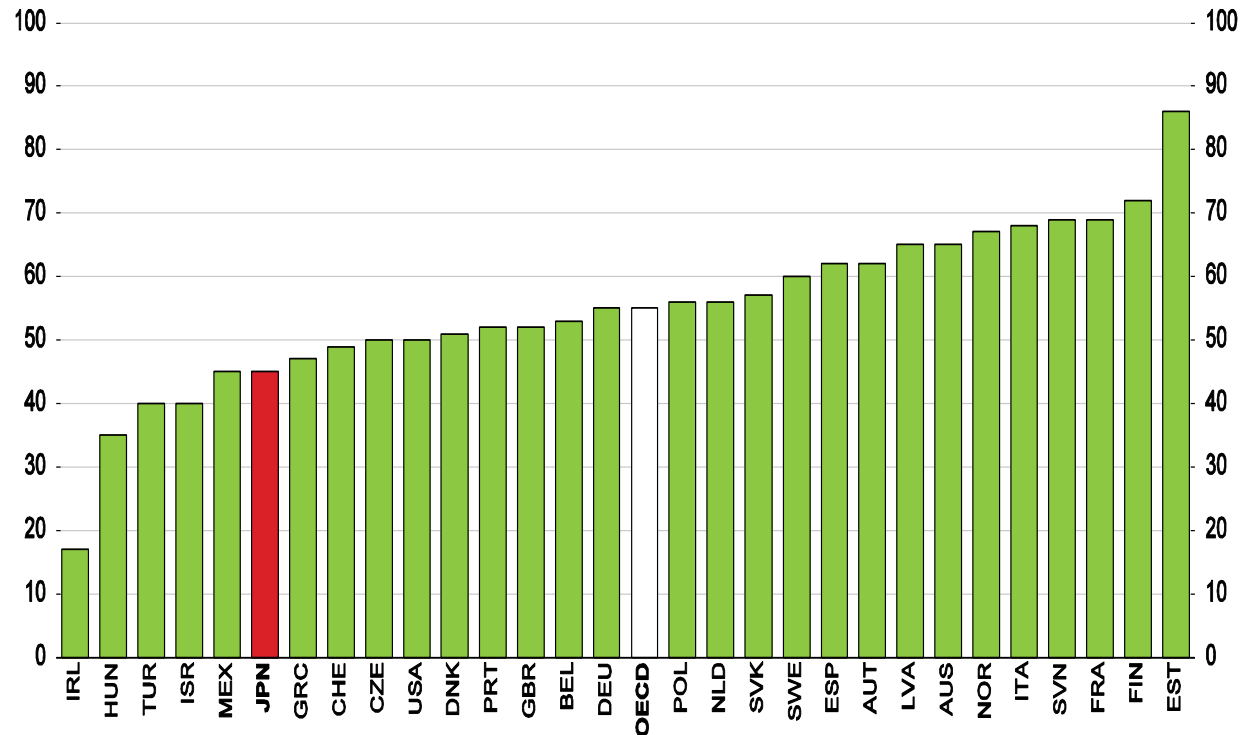
The rigidity of Japan's labor market is related to Japan's low inflation rate problem.

- Reflecting the increasingly tight labor market, wages of non-regular workers have started to rise considerably (at an annual rate of about 2%). However, regular workers have seen very limited wage increases (Bank of Japan 2017, Chart 28). This is likely due to the following facts.
 - 1) Labor unions, which are composed of regular workers, tend to give more priority to job security than to wage increases.
 - 2) Because of deferred compensation, workers do not change their job even when their wages are temporarily lower than at other firms.
 - 3) Since labor unions oppose wage cuts and it is difficult for firms to fire regular workers, wage setting for regular workers is like a long-term leasing contract for durable machines with a fixed fee. Firms' decision making with respect to the wage rates of regular workers crucially depends on their expectations regarding future inflation. And since inflation expectations are still low in Japan, firms are reluctant to raise the wage rates of regular workers.

3. Productivity and Wage Gaps between Large and Small Firms

- Labor productivity difference between small and large firms in Japan are larger than in most other OECD countries.

Figure 10. Labor Productivity Differences: Firms with 20-49 Workers/Firms with more than 250 Workers



3. Productivity and Wage Gaps between Large and Small Firms

Level Accounting across Firm-Size Groups

For each year and each industry, we decompose labor productivity differences between firm-size group s and s' by the following equation;

$$\ln\left(\frac{V_s}{H_s}\right) - \ln\left(\frac{V_{s'}}{H_{s'}}\right) = \ln(q_s) - \ln(q_{s'}) + \frac{1}{2}(\nu_s + \nu_{s'}) \left(\ln\left(\frac{K_s}{q_s H_s}\right) - \ln\left(\frac{K_{s'}}{q_{s'} H_{s'}}\right) \right) + \ln(RTFP_{s,s'})$$

where

V_s : Nominal value added of firm-size group s ,

H_s : Total hours worked in firm-size group s ,

q_s : Labor quality of firm-size group s ,

← **Caveat:** For calculation of Jorgenson-Griliches-type labor quality indices, we use industry average wage premium of each category of workers. We are assuming that there is no gap in labor quality between, for example, male university graduated full-time workers of 30-34 years old in large automobile firms and their counterparts in small automobile firms.

ν_s : Cost share of capital in firm-size group s ,

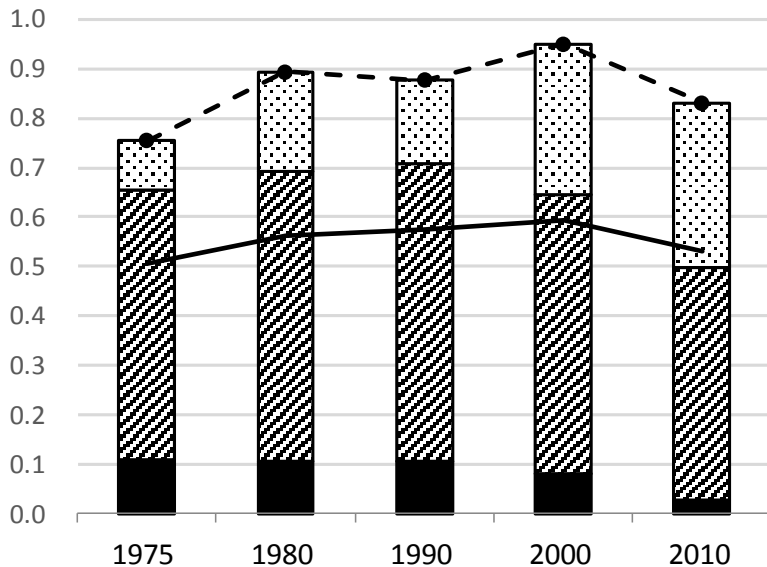
K_s : Capital service input of firm-size group s ,

$RTFP_{s,s'}$: Relative TFP level of firm-size group s in comparison with that of firm-size group s' .

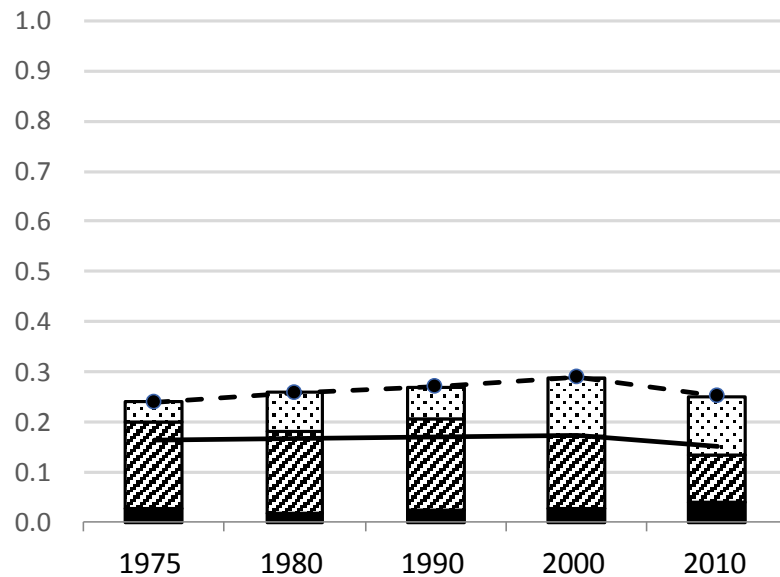
3. Productivity and Wage Gaps between Large and Small Firms

- There is huge wage and labor productivity differences between large firms and small firms.
- Firm-size wage differences in Japan are greater than that in the United States (Oi and Idson 1999).
- Labor productivity differences are mainly caused by differences in capital-labor ratio. But TFP differences also play important role.
- Contribution of labor quality differences is very small and declining.

Wage and Productivity differences (logarithmic values): 1000~/~99, The Total Market Economy,



Wage and Productivity differences (logarithmic values): 100~999/~99, The Total Market Economy



Labor quality
 Capital-labor ratio
 TFP
 Wage gap
 • Labor productivity gap

Wage and Labor Productivity Gaps across Firm-Size Groups (contd.)

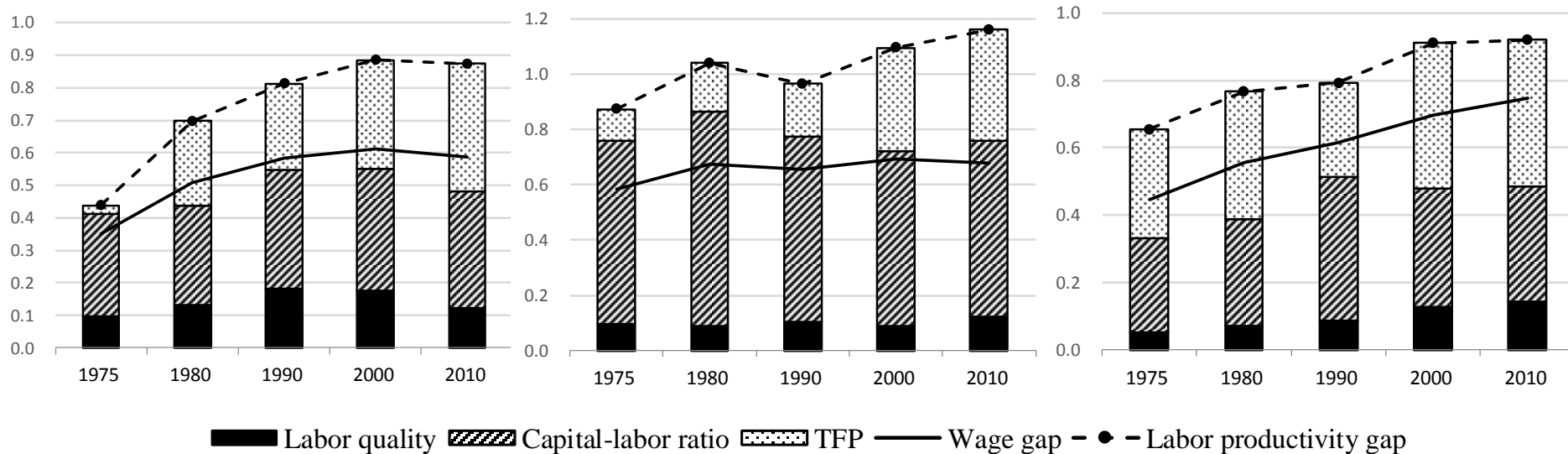
- In the manufacturing sector, both the labor productivity differences and wage differences have increased.
- Widening of TFP differences has substantially contributed to the increase of labor productivity differences.

Wage and Productivity differences (logarithmic values): 1000~/~99

Light Industry

Heavy Chemical Industry

Machinery



Wage and Labor Productivity Differences across Firm-Size Groups (contd.)

- In wholesale and retail and other services, both the productivity and the wage differences are relatively small and declining.

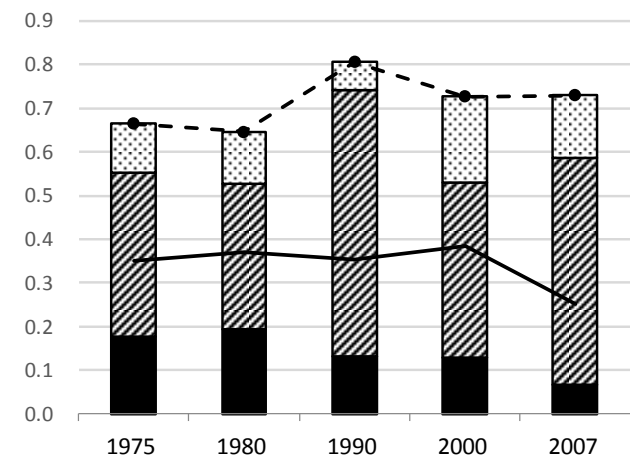
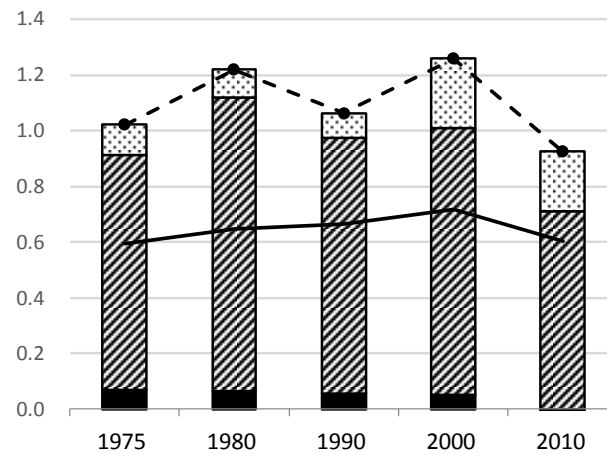
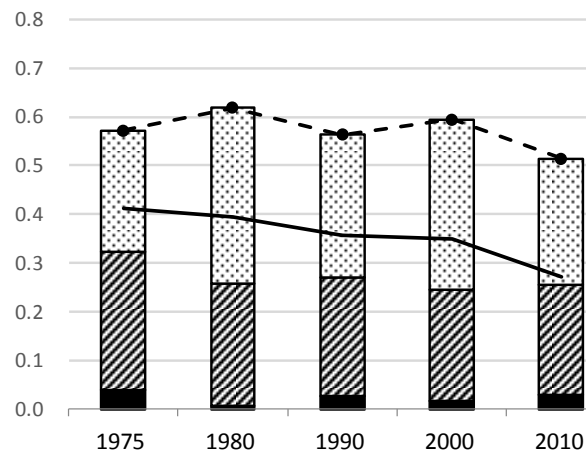
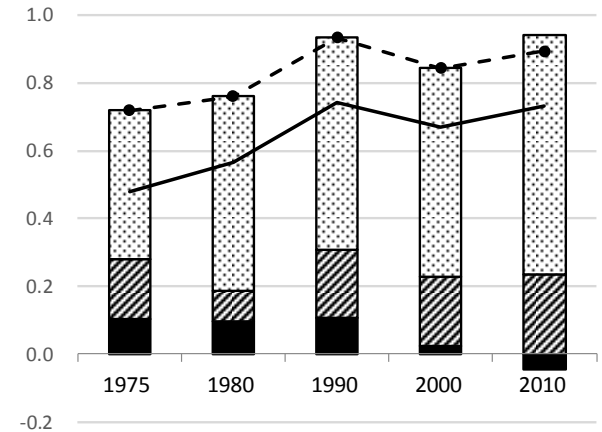
Wage and Productivity Differences (logarithmic values):
1000~/~99

Wholesale and Retail

Transportation, Communication,
Utility and Real Estate

Construction

Other Services

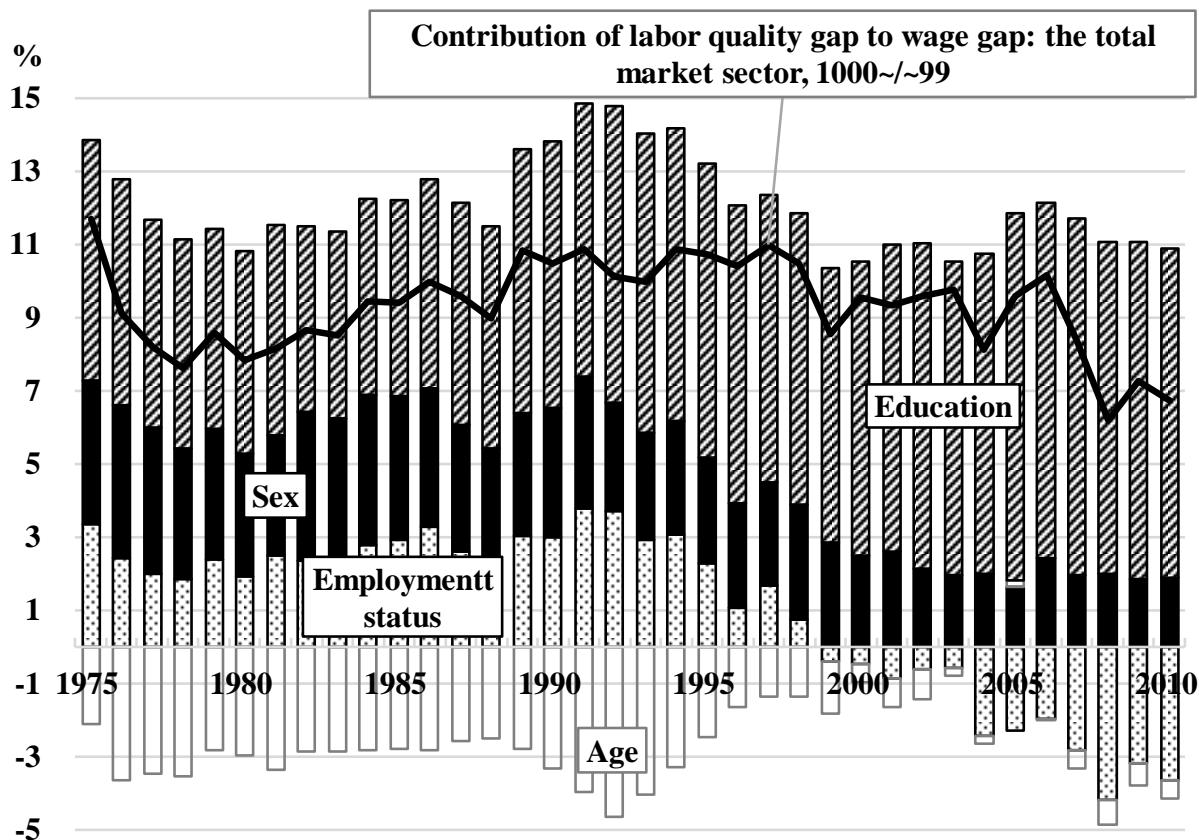


Labor quality
 Capital-labor ratio
 TFP
 Wage gap
 Labor productivity gap

On Labor Quality Differences

- In the United States, about one third of firm-size wage differences is explained by labor characteristics, such as, education, experience, etc. (Rebick 1993). But in Japan it is only one seventh.

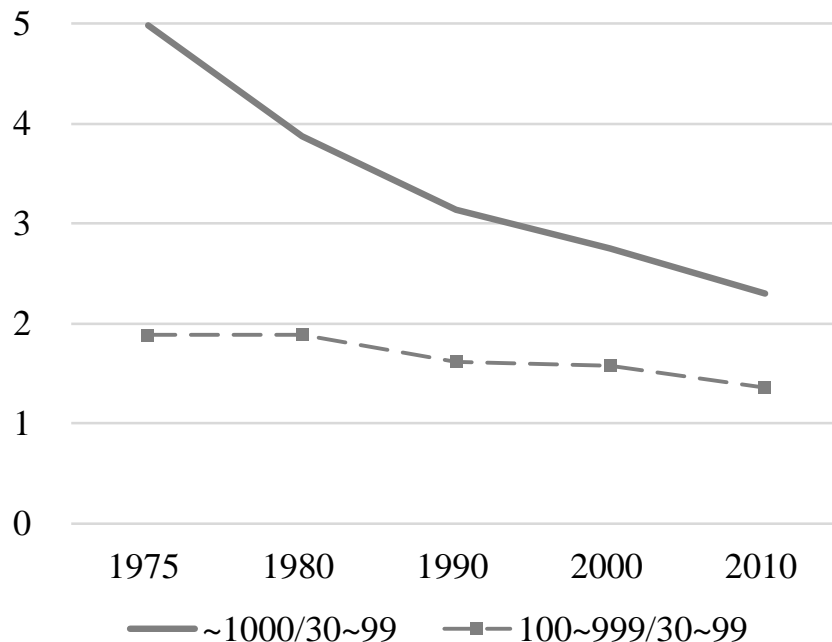
Decomposition of Labor Quality Gap: The Total Market Sector, 1000~/~99



On Labor Quality Differences (contd.)

- What causes firm-size wage differences, which cannot be explained by Jorgenson-Griliches approach?
- Rents? Since most large firms remain large and do not go bankrupt, it is difficult to understand why employees at large firms can continue to enjoy windfalls in the form of high wages.
- Large firms' job training (Genda 1996)
- In Japan, graduates of top-ranked universities are much more likely to get a job at a large firm than other graduates (Higuchi 1994).

6 On-the-Job Training Cost (Including Opportunity Cost) by Firm Size: The Total Market Sector



3. Productivity and Wage Gaps between Large and Small Firms

- If we assume that the whole part of firm-size wage differences, which is not explained by standard Jorgenson-Griliches-type approach, is caused by difficult-to-measure labor quality differences, almost all of firm-size TFP differences can be explained by this factor.
- If this hypothesis is correct, this would imply that there might be large room to improve Japan's macro-level TFP by improving the quality of workers in SMEs through education and training.
- In Japan, firms with less than 1,000 employees account for 72% of all employment (In the US, 55%). It's an important problem.