

**(Box 3) Determinants of Wages, by Industry and Enterprise Size**

Wages are affected by many factors, including supply-demand conditions in the labor market and inflation expectations. In order to quantify the determinants of wages by industry and enterprise size, a simple wage function is estimated by regressing scheduled cash earnings of regular employees, data for which are from the *Basic Survey on Wage Structure*, on the following variables: labor market tightness (measured by the employment conditions DI in the *Tankan*); the inflation rate (i.e., the year-on year rate of increase in the all-item CPI excluding fresh food) in the previous fiscal year; and the margin (measured by the difference between the DIs for changes in output prices and in input prices in the *Tankan*) (Box Chart 3 [1]).

The estimation results reveal the following, although it should be noted that the estimation is subject to a considerable margin of error: (1) the effect of labor market tightness is statistically significant on wages of small and medium-sized enterprises, both manufacturing and nonmanufacturing, where the mobility of the labor force is relatively active, whereas it is not significant on those of large enterprises; (2) the inflation rate in the previous fiscal year has a statistically significant effect on wages in the manufacturing sector; and (3) the effect of the margin is statistically significant irrespective of the industry and enterprise size.

These estimation results suggest that it is highly probable, particularly for small and medium-sized enterprises in the nonmanufacturing sector, of which employees consist of around 60 percent of all employees, that upward pressure on wages will steadily increase through the tightening of labor market conditions and the increase in the margin due to the improvement of the terms of trade (Box Chart 3 [2] and [3]).

## Determinants of Wages, by Industry and Enterprise Size

### (1) Determinants of Wages

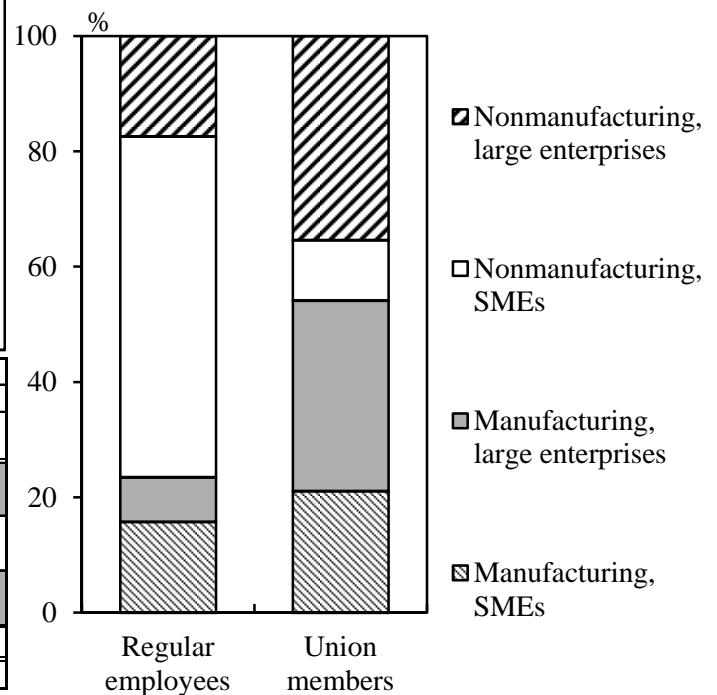
Dependent variable: Scheduled cash earnings of regular employees (y/y % change, based on "Basic Survey on Wage Structure")

Explanatory variables:

1. Labor market tightness ("employment conditions DI," "insufficient"- "excessive," *Tankan*)
2. Inflation rate (previous year, CPI all items less fresh food)
3. Margin (difference between "change in output prices DI" and "change in input prices DI," *Tankan*)

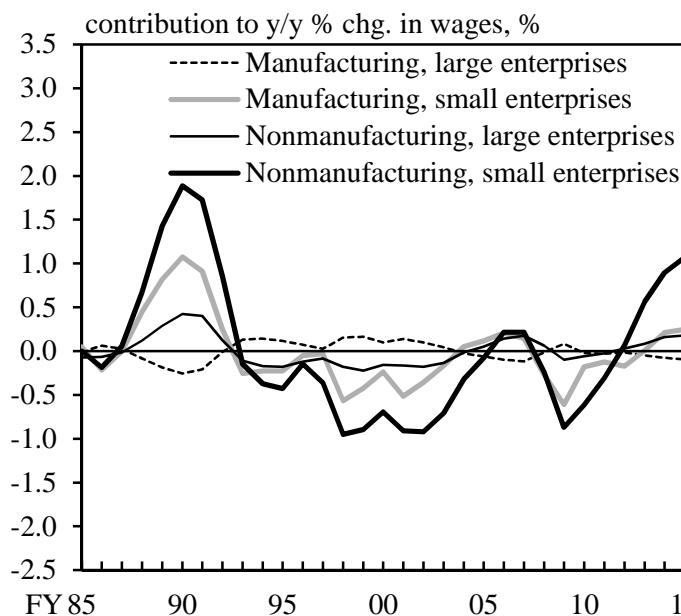
Industry	Estimation period: FY1985-2015			
	Manufacturing		Nonmanufacturing	
	Large	Small, Medium	Large	Small, Medium
Labor market tightness	-0.11 (0.27)	0.39* (0.21)	0.17 (0.26)	0.76*** (0.19)
Inflation rate (previous year, %)	0.59** (0.26)	0.46** (0.20)	0.17 (0.27)	0.28 (0.20)
Margin	1.39** (0.66)	1.22*** (0.42)	1.84*** (0.43)	1.09*** (0.24)
Adj. R <sup>2</sup>				0.53
S.E. of regression				1.34

### (2) Regular Employees in the Labour Force Survey and Union Members of *Rengo*

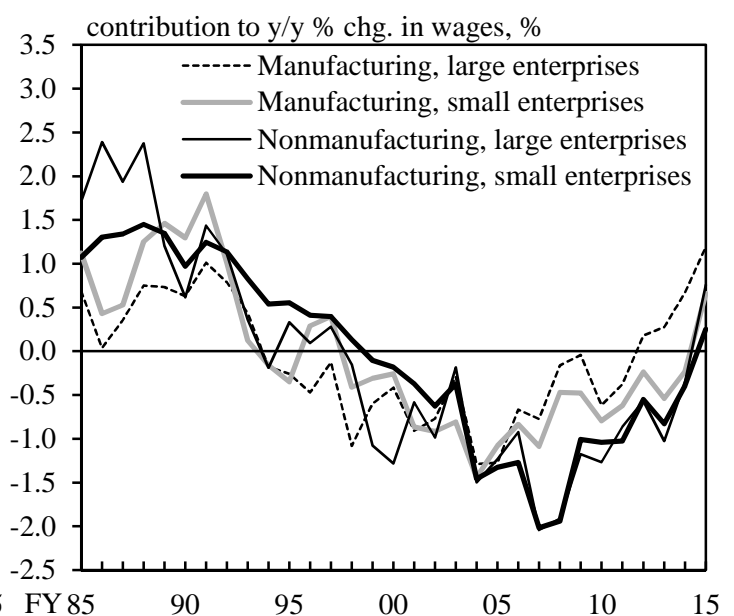


### (3) Contribution of Each Determinant to Changes in Wages

#### (a) Labor Market Tightness



#### (b) Margin



Notes: 1. Except in the *Tankan*, enterprise sizes are defined as follows: large enterprises = 1,000 or more employees; medium-sized enterprises = 100-999 employees; small enterprises = fewer than 100 employees. The size classification in the "Basic Survey on Wage Structure" follows this pattern, but is for establishments.

2. The figures in parentheses in the table in (1) represent standard errors.

\*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

3. The share distribution of regular employees in (2) shows the average for CY 2015 and is based on the "detailed tabulation" in the "Labour Force Survey." The share distribution of *Rengo* union members is based on *Rengo*'s report on the fiscal 2015 *shunto* (spring wage negotiations).

4. The figures based on the *Tankan* are normalized to mean 0 and standard deviation 1.

Sources: Ministry of Health, Labour and Welfare; Bank of Japan; Ministry of Internal Affairs and Communications; Japanese Trade Union Confederation (*Rengo*).