

Causes of the Prolonged Stagnation in Japanese Wages and Prospects Going Forward: Exploring the Background to the Reversal in Nominal Wages and the Conditions for Real Wage Growth*

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Abstract

From the late 1990s to the end of the 2010s, nominal wages in Japan generally remained stagnant. A closer examination reveals that this period can be divided into three phases (Phase 1: 1997–2002, Phase 2: 2003–2012, Phase 3: 2013–2019), with different causes of wage stagnation in each. In other words, the prolonged stagnation of wages followed a path-dependent trajectory. Notably, in Phase 2, despite an improvement in labor supply and demand conditions, wage growth remained sluggish. This was triggered by a downward shift in the global cost structure due to China's rise. Additionally, the specific features of the Japanese employment system, including (i) the dual structure of regular and non-regular employment, (ii) the dual structure between large and small or medium-sized enterprises, and (iii) the practice of prioritizing employment retention in core segments, had a decisive impact.

In Phase 3, as the labor force approached its supply ceiling, the Japanese employment system was forced to change. Consequently, the ability to respond through cost reduction declined. This, combined with the upward shift in the global cost structure since the 2020s, appears to have ended the long period of stagnation in nominal wages. On the other hand, real wages cannot be said to have fully escaped their long-term stagnation, and the deteriorating trend in terms of trade is a factor that cannot be overlooked. Underlying this are a decline in the non-price competitiveness of exports and an excessive reliance on fossil fuel imports, both of which reflect a delayed transformation of Japan's industrial and energy structures.

Raising labor productivity is essential for real wage growth. In this context, labor market fluidity policies are attracting attention, but the advantages of employment retention cannot be ignored. It is necessary to approach this issue on a case-by-case basis, reducing unproductive employment retention while increasing productive labor market fluidity. The effect of union voice also warrants attention, and policy support to strengthen the bargaining power of labor unions with respect to wages is important.

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JEL Classification: J3, J5

I. Introduction

Wages in Japan are widely believed to have stagnated for roughly three decades since the late 1990s. The concept of “wages,” however, encompasses multiple dimensions—nominal versus real, hourly versus per-employee—and wage trends differ substantially by firm size, industry, and worker age.

This paper first provides a macro-level overview of wage developments from the late 1990s through the 2010s. It then surveys and analyzes the underlying causes of Japan’s prolonged wage stagnation. Finally, it examines whether the recent wage increases observed in the 2020s have the potential to bring an end to the so-called “lost 30 years” and to establish a sustained upward trajectory in real wages—an essential condition for the revitalization of the Japanese economy.

II. Facts Regarding Wage Stagnation

II-1. Four Statistics

In this chapter, I present key empirical facts about wage stagnation over the past 30 years. It is essential to distinguish between nominal and real wages, as well as between wages per person and wages per hour. This yields four distinct indicators:

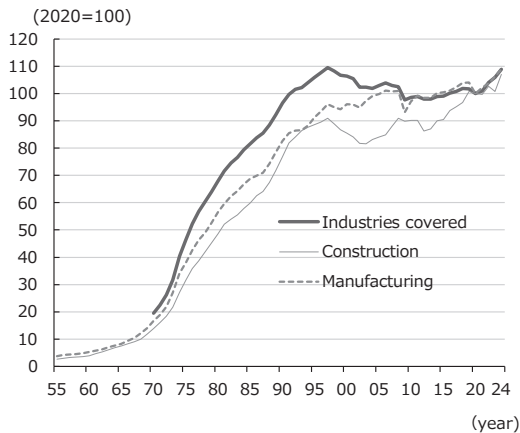
(i) nominal wages per person, (ii) nominal wages per hour, (iii) real wages per person, and (iv) real wages per hour.

All statistics are based on the Monthly Labour Survey.

Nominal wages per person peaked in 1997 and then declined until 2009. After remaining roughly flat for several years, they began to rise again between 2022 and 2024 (Figure 1). Nevertheless, the 2024 level remains slightly below that of 1997. Nominal wages per hour also peaked in 1997, declined until 2012, and then shifted to an upward trend (Figure 2). Compared with nominal wages per person, the post-2010s recovery in hourly nominal wages is more pronounced: the 2019 level exceeded that of 1997, and by 2024 it was approximately

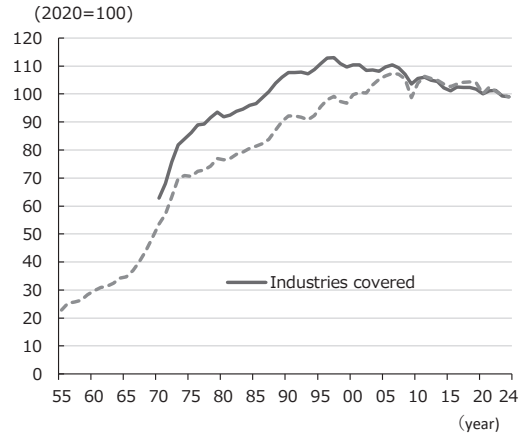
9 percent higher. Real wages¹ per person likewise peaked in 1997 and continued to decline through 2024 (Figure 3). Real wages per hour began to fall in 1999 and either weakened or stagnated until the mid-2010s. After a moderate rise in the late 2010s, they declined again until 2024, when the downward trend finally halted (Figure 4).

Figure 1: Total Cash Earnings
(Total employees)



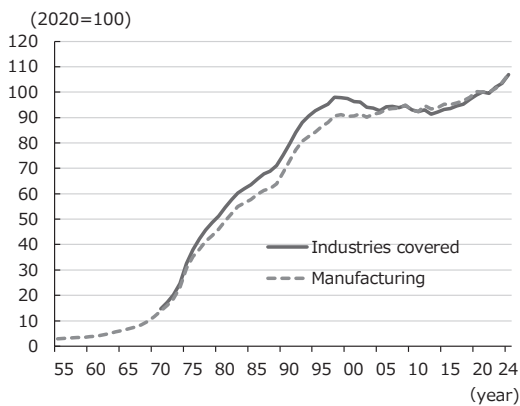
Source: Ministry of Health, Labour and Welfare
"Monthly Labour Survey"

Figure 2: Real Wage Indices
(Total employees)



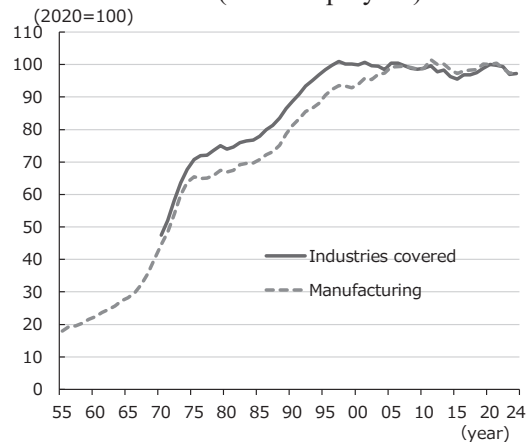
Source: Ministry of Health, Labour and Welfare
"Monthly Labour Survey"

Figure 3: Hourly Total Cash Earnings
(Total employees)



Source: Ministry of Health, Labour and Welfare
"Monthly Labour Survey"

Figure 4: Hourly Real Wages
(Total employees)



Source: Ministry of Health, Labour and Welfare
"Monthly Labour Survey"

¹ As a measure of real wages, I use those from the Monthly Labour Survey, deflated by the Consumer Price Index excluding imputed rent of owner-occupied housing.

Taken together, all four indicators show a clear turning point in 1997. Before 1997, each measure exhibited an upward trend. From 1997 through the 2010s, however, the trends were either moderately downward or stagnant. Thus, the widely cited claim that “wages have stagnated in Japan since the late 1990s” is well supported by statistical evidence. At the same time, nominal wages—particularly hourly wages—have shown signs of recovery since the mid-2010s, and nominal wages per person have begun to rise in the 2020s. This suggests that Japan has been gradually getting out of its prolonged wage stagnation since the late 2010s.

A comparison with other major advanced economies reinforces this picture. According to OECD data, Japan’s annual nominal wages per employee (on a full-time equivalent basis in the total economy) have stagnated far more noticeably than those of peer countries (Figure5). The same pattern appears in hourly wages in manufacturing. In real terms, the stagnation is somewhat less pronounced, yet Japan still exhibits the weakest wage growth among advanced economies.

II-2. Industry-Based Developments

We now understand the macro-level evolution of wages. However, macro indicators alone are too coarse to inform future prospects or policy design. It is therefore necessary to examine

Figure 5: Wages in Major Developed Countries

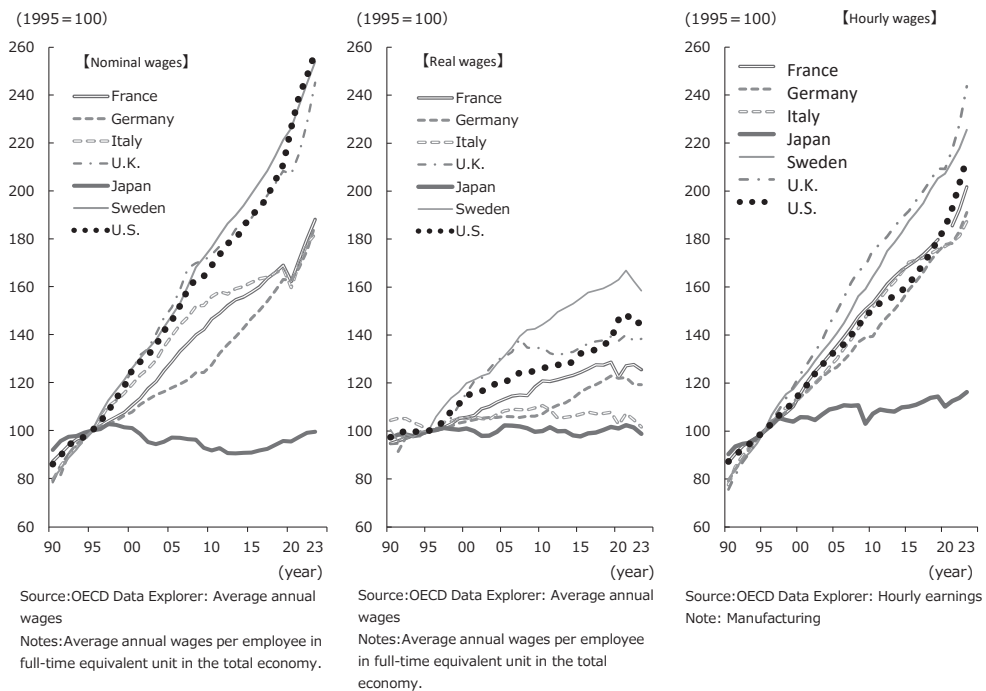


Figure 6: Total Cash Earnings (Total employees)

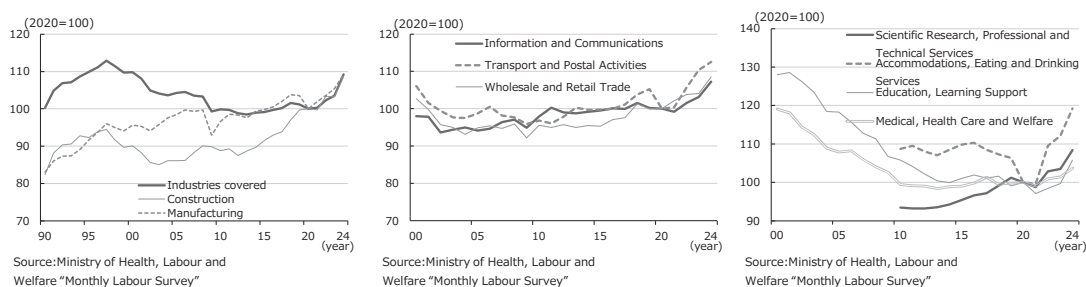
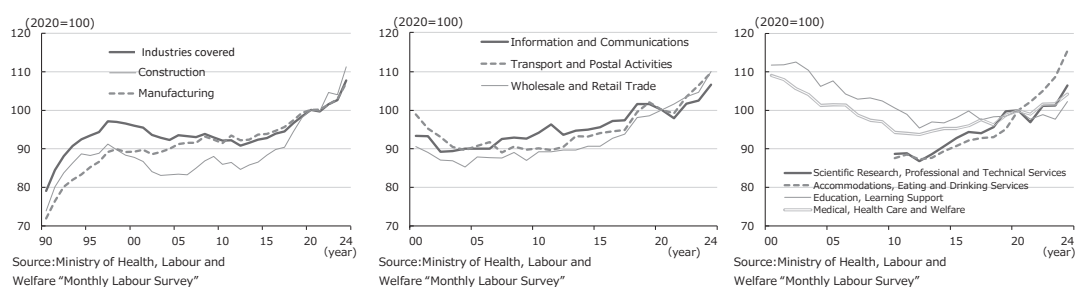


Figure 7: Hourly Total Cash Earnings (Total employees)



wage developments at a semi-macro level, focusing on differences across industries (Figure 6, 7).

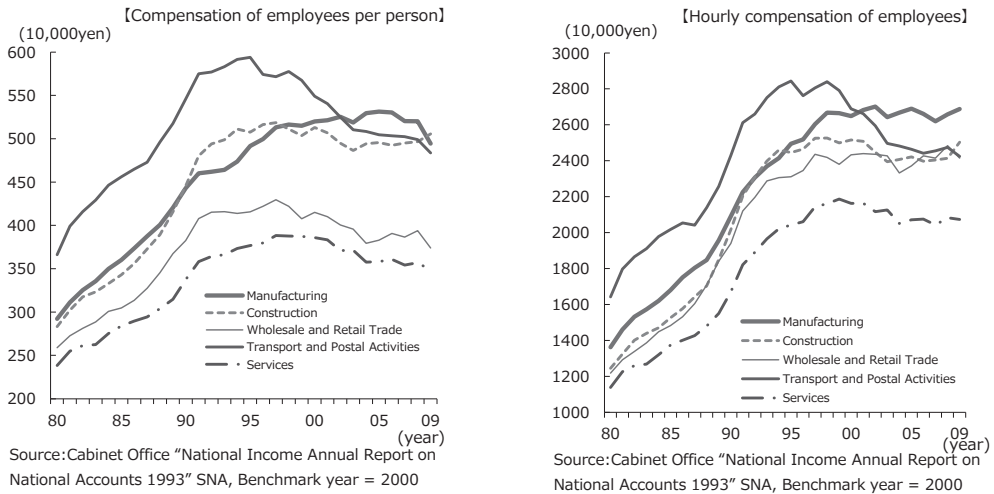
We begin with manufacturing and construction, the two industries for which data are available prior to 1997. In construction, both hourly wages and wages per person followed a downward trend until the mid-2000s. In manufacturing, both measures were either flat or moderately declining between 1997 and 2002. Thereafter, wages in manufacturing shifted to a moderate upward trend, except during the periods of the global financial crisis and the COVID-19 pandemic.

For other industries, data are available only from 2000 onward—or from 2010 onward in some cases. In Information and Communications, Transport and Postal Activities, Wholesale and Retail Trade, Education and Learning Support, and Medical, Health Care and Welfare, wages declined until around 2002. After that, industries diverged into two groups:

- those with moderately rising wages (Information and Communications; Transport and Postal Activities; Wholesale and Retail Trade), and
- those with continued downward trends (Education and Learning Support; Medical, Health Care and Welfare).

From the early 2010s, hourly wages began to rise in most industries. However, wages per person remained flat or moderately declining in several sectors, including Education and Learning Support, Medical and Health Care, and Accommodations, Eating and Drinking Ser-

Figure 8: Nominal Wages of Industries



vices.

These patterns show that while aggregate wages were largely flat or declining, wages in some industries did rise. Thus, the common assertion that “Japan’s wages stopped rising after the late 1990s” is somewhat overstated. At the same time, even in industries where wages increased after 1997, the pace of growth clearly slowed. National Accounts data—available from 1980 to 2009 for Information and Communications, Transport and Postal Activities, and Wholesale and Retail Trade—confirm these longer-term patterns in sectors not fully covered by the Monthly Labour Survey.

In summary, wages at the macro level stopped rising around 1997 and remained flat or declined thereafter. However, wage developments varied substantially across industries. When these differences are taken into account, the post-1997 period can be divided into three distinct phases:

Phase 1: 1997–2002

Wages declined in most industries.

Phase 2: 2003–2012

Wages rose in some industries while continuing to decline in others.

Phase 3: 2013–2019

Hourly wages increased in almost all industries, whereas wages per person in several sectors remained flat or on a downward trend.

II-3. Employment Status–Based Developments

Next, we examine wage developments by employment status. The Monthly Labour Survey provides wage data for both regular workers and part-time workers, with the latter serving as a reasonable proxy for non-regular employees (Figure9,10).

(1) Regular Workers

For regular workers, wage trends differ across the three phases identified earlier.

Phase 1: 1997–2002

Wages per person showed a moderate decline, while wages per hour remained almost flat. This reflects reductions in overtime work against the backdrop of economic recession.

Phase 2: 2003–2012

Until 2007, wages per person were either rising or nearly flat, supported by increased overtime hours during the economic recovery. Although wages declined during the 2008–2009 financial crisis, the downward trend stopped between 2010 and 2012. Wages per hour, however, exhibited a moderate downward trend throughout the entire period, both before and after the crisis.

Phase 3: 2013–2019

Both wages per hour and wages per person followed a moderate upward trajectory.

Figure 9: Wages by Type of Employment

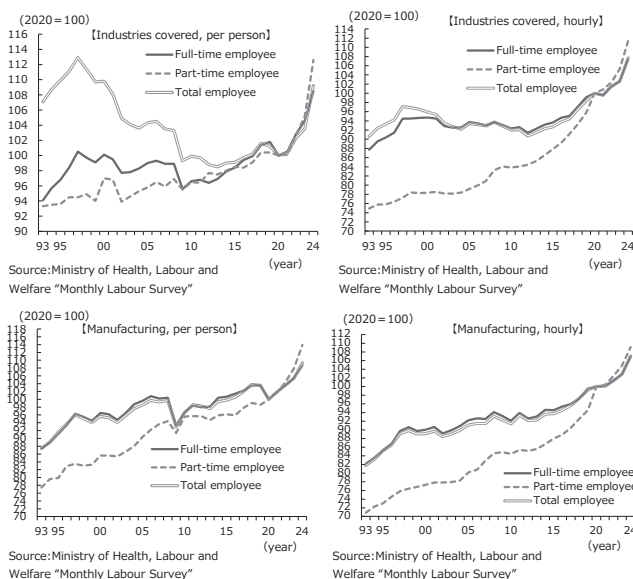
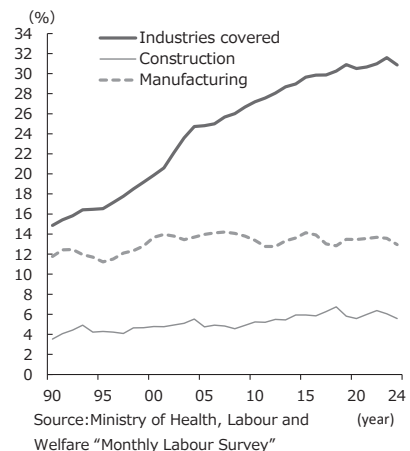


Figure 10: Employment Share of Part-time Workers



(2) Part-Time Workers

Wage developments for part-time workers also vary across the same three phases.

Phase 1: 1997–2002

Wages per person increased in the early 2000s, while wages per hour remained nearly flat. The proportion of part-time workers rose rapidly.

Phase 2: 2003–2012

Both wages per person and wages per hour increased moderately. The share of part-time workers continued to rise at a moderate pace.

Phase 3: 2013–2019

Wages per person increased at a pace similar to the 2000s, while wages per hour rose even more rapidly. The growth rate in the proportion of part-time workers slowed further.

III. Factor Analysis of Wage Stagnation

III-1. Changes in the Phillips Curve

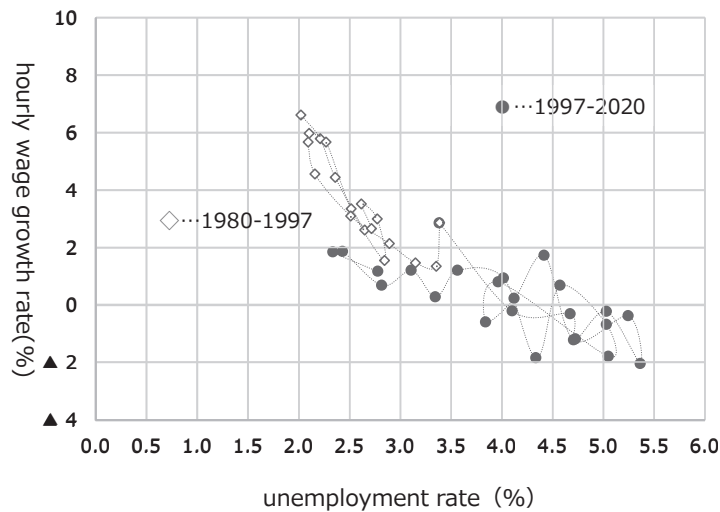
In this chapter, we examine the factors behind wage stagnation from the late 1990s through the end of the 2010s. We begin by reviewing the relationship between wages and labor market conditions through the lens of the Phillips curve. When the unemployment rate is placed on the horizontal axis and the wage growth rate on the vertical axis, the short-term Phillips curve is generally expected to slope downward to the right.

I plot two data series: one covering 1980–1997 and another covering 1997–2020 (Figure 11). In the 1980–1997 period, the Phillips curve exhibits a clear downward slope. In contrast, although the curve for 1997–2020 also slopes downward, the gradient is much flatter. This indicates that a structural shift occurred in the Japanese labor market around 1997.

Next, let us compare the Phillips curves of Japan, the United States, and Germany (Figure 12). In theory, the short-term Phillips curve implies that wage growth accelerates as the unemployment rate approaches and falls below the natural rate of unemployment. In the United States, the downward slope became less apparent after the 1980s, but it has re-emerged more clearly in recent years. In Germany, although the downward slope is also somewhat muted, it remains observable. In both countries, the relatively moderate slopes suggest that firms tend to adjust employment rather than wages in response to business cycle fluctuations.

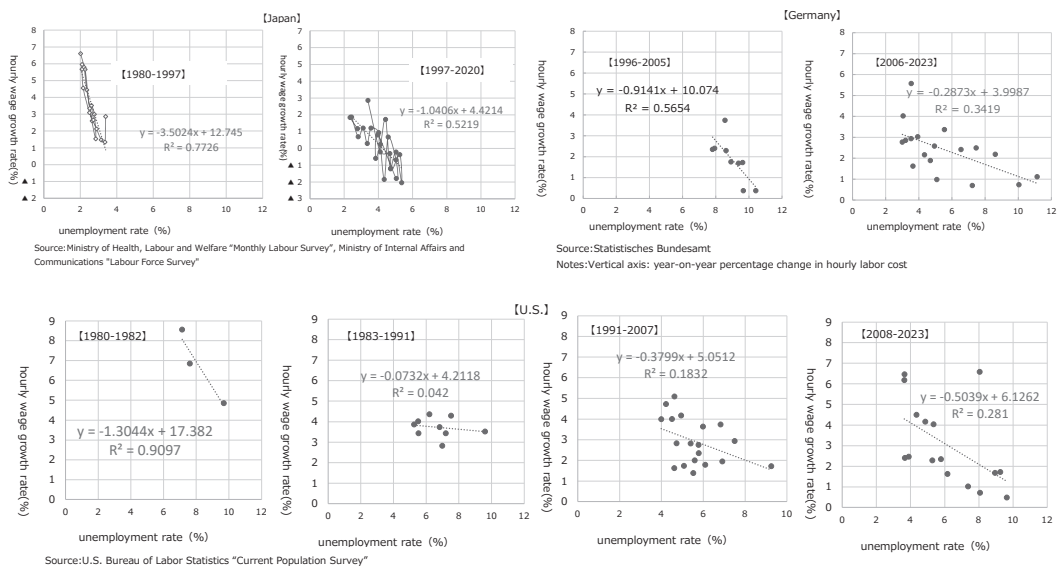
In contrast, Japan's Phillips curve is comparatively steep, indicating that Japanese firms place greater emphasis on wage adjustment than on employment adjustment. This reflects long-standing institutional features of the Japanese labor market, including employment protection norms and seniority-based wage systems.

Figure 11: Phillips Curve (1980-2020, Japan)



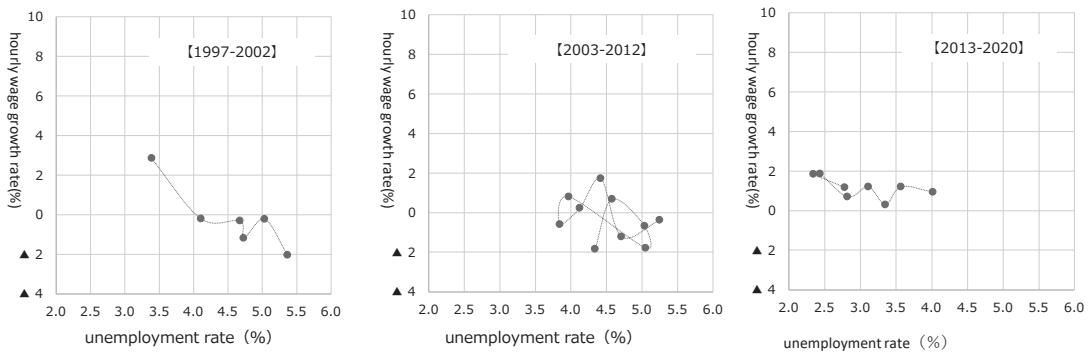
Source: Ministry of Health, Labour and Welfare "Monthly Labour Survey", Ministry of Internal Affairs and Communications "Labour Force Survey"

Figure 12: Phillips Curve: Comparison among Japan, the U.S., and Germany



Finally, let us examine the Phillips curve across the three phases identified in the previous chapter (Figure13). From 1998 to 2001, the curve is nearly flat, reflecting strong downward

Figure 13: Phillips Curve: Developments in Japan



Source: Ministry of Health, Labour and Welfare "Monthly Labour Survey", Ministry of Internal Affairs and Communications "Labour Force Survey"

rigidity in nominal wages. In 2002, wage growth fell below zero, and from then until 2012 it fluctuated within a narrow range between -2% and $+2\%$. Since 2013, wage growth has turned positive.

III-2. Phase 1: 1997–2002

During this phase, Japan underwent prolonged economic adjustment as structural pressures accumulated after the bubble collapse. These pressures were triggered by the consumption tax hike, the Asian currency crisis, the domestic financial crisis, and later the decline in exports following the dot-com bust. Until the mid-1990s, Japanese firms had largely absorbed negative shocks by increasing the share of non-regular workers while maintaining core employment practices such as lifetime employment and seniority-based wages.

However, between 1997 and 2001 the economy contracted to an unprecedented degree. Many small and medium-sized enterprises went bankrupt, and large firms began reducing regular employees through voluntary retirement programs. Under these conditions, the Phillips curve flattened and the unemployment rate rose sharply².

At the same time, seniority-based wage systems weakened under the banner of performance-based pay, which widened wage disparities among employees, particularly through bonuses. This shift formed the backdrop to the nominal wage decline in 2002, when Toyota Motor Corporation—then the “pattern setter” in the annual spring wage negotiations—halted

² According to Yamamoto (2010), after entering the 1990s, downward rigidity in nominal wages weakened as the absorption mechanism through flexible wage adjustment diminished under a lower inflation rate. As a result, the pressure for employment adjustment increased.

base-pay increases³. This marked the beginning of a more restrained approach to wage hikes, which contributed to resolving the “three excesses” (excess capital stock, excess employment, and excess debt) and to lowering the labor share.

III-3. Phase 2: 2003–2012

By this phase, the three major excesses had been largely resolved, labor share had normalized, and the economy experienced a recovery from 2003 to 2006. Labor market conditions tightened, and upward pressure on wages should have emerged. Nevertheless, wages—both per person and per hour—remained stagnant. Globalization is often cited as a key factor behind this abnormal outcome. At the time, China’s entry into the global market had a profound impact. The participation of a large economy with abundant low-cost labor pushed global labor costs downward, exerting strong downward pressure on wages, particularly in labor-intensive industries.

A comparison with the United States provides useful context. In the U.S., wage growth in manufacturing moved in line with overall industry wage growth during the 1980s, and although manufacturing wage growth fell below the national average in the 1990s, it rarely turned negative. Japan’s experience was quite different: wage growth in manufacturing exceeded the average for all industries, implying that wage growth in non-manufacturing—where the indirect effects of globalization were stronger—was disproportionately weak. This comparison suggests that globalization was a contributing factor, but not the decisive cause of Japan’s stagnating nominal wages.

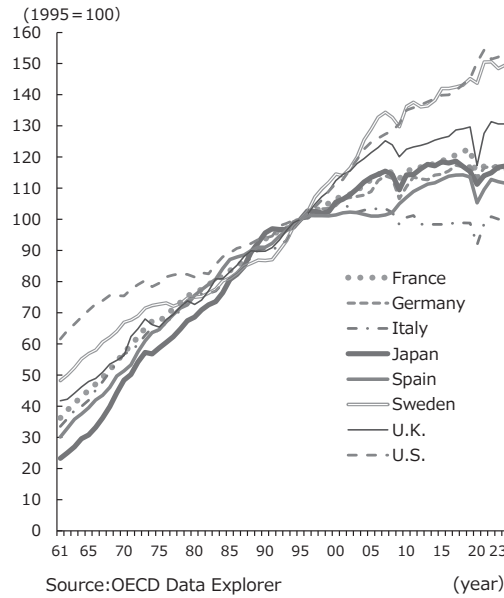
Changes in corporate governance offer another explanation. Noda and Abe (2010) argued that the main reason for wage stagnation between 1997 and 2004 was the shift in shareholder composition, particularly the growing influence of foreign investors who prioritized profitability and restrained wage growth. However, this explanation applies primarily to publicly listed firms and cannot account for wage stagnation among small and medium-sized enterprises.

A third explanation is the slowdown in productivity growth. Here it is important to distinguish between nominal and real wages, and between wages per person and wages per hour. In economic analysis, real productivity per hour worked is the standard measure. Although real productivity growth per hour has indeed trended downward over time, similar slowdowns have been observed across other advanced economies (Figure14).

To deepen the analysis, we can decompose the determinants of nominal wage changes using the following identity. Let w : wage per hour, Y : real GDP, L : employment, h : average working hours, P : GDP deflator, p : output price.

³ Ogura (2017) P21

Figure 14: Real Labor Productivities



Then:

$$w = [Y/(Lh)] \times [(wLh) / (YP)] \times [p] \times [P/p]$$

This implies: wage per hour = real productivity per hour $\times$ labor share $\times$ output price $\times$ production factor cost ratio

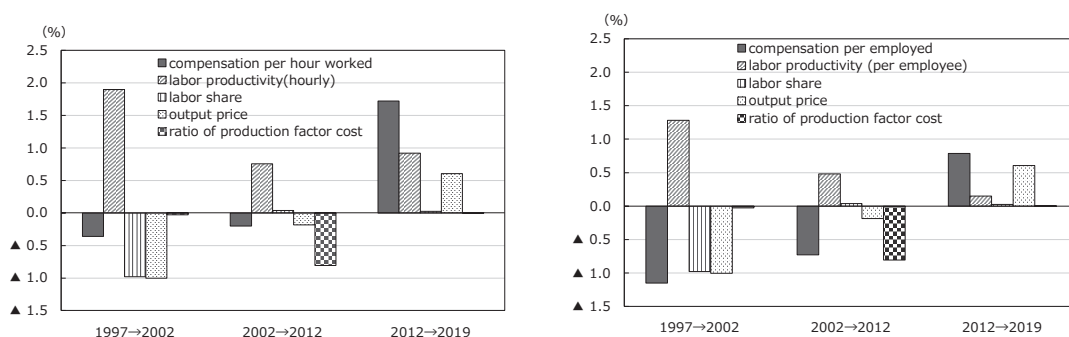
The production factor cost ratio represents the share of total production-factor costs relative to the unit sales price.

Applying this decomposition, nominal wages per hour declined slightly from 2002 to 2012, even though real productivity rose by about 0.8% annually and labor share remained nearly flat. The most striking factor was the sharp decline in the production factor cost ratio. Workers continued to improve productivity on the factory floor, but firms maintained an aggressive cost-cutting stance. They persistently reduced fixed costs—such as interest payments, rent, and personnel expenses. Against the backdrop of declining population growth, firms widely believed that continuous cost reduction was essential for survival. This cost-cutting mindset permeated inter-firm transactions as well, reinforcing downward pressure on wages⁴.

Figure 15 presents a factor decomposition of wages per person, which mirrors the pattern observed for wages per hour.

⁴ Aoki, Hogen and Takatomi (2023) showed that the shrinking of price markups — the gap between sales prices and marginal costs — strengthened firms' incentives to restrain wage increases.

Figure 15: Factor Analysis of Changes in Nominal Wages



Source: "The Cabinet Office "National Accounts"

Note: Factor Decomposition was conducted based on the following equation:

$$w = [Y/(Lh)] \times [(whL)/(Y P)] \times [p] \times [P/p]$$

$$W = [Y/L] \times [(WL)/(Y P)] \times [p] \times [P/p]$$

w: compensation per hour worked, Y: real GDP, L: employee, h: average working hours, P: GDP deflator, p: output deflator, W: compensation per person

Compensation of employee = compensation of employee + mixed income $\times 0.5$

Labor share = compensation of employee / nominal GDP

Ratio of production factor cost = GDP deflator / output deflator

III-4. Phase 3: 2013–2019

During this phase, under the second Abe administration, bold reflationary policies known as Abenomics were implemented. The government also urged firms to raise wages through tripartite meetings involving the government, employers, and labor representatives. As a result, average nominal wages per hour began to rise—an important shift from the previous phases. However, the slope of the Phillips curve remained flat, which presents a puzzle. Between 2018 and 2019, the unemployment rate hovered around 2.5% at most, well below the natural rate of unemployment⁵. Economic theory suggests that wages should rise rapidly under such tight labor market conditions, yet this did not occur.

A key factor behind this puzzle is composition bias⁶: the rising share of part-time workers suppressed overall wage growth, even though wages for both regular and non-regular workers increased. Because part-time workers earn significantly less than regular workers, their growing share mechanically dampened the aggregate wage index. Beyond this, however, it is important to emphasize that wages for regular workers increased only very modestly despite

⁵ The equilibrium unemployment rate was estimated at 3% in 2017, and actual unemployment has remained below it thereafter.

⁶ Kawaguchi and Hara (2017) p106-107.

historically tight labor market conditions.

This reflects the dual structure of Japan's labor market, divided between regular and non-regular workers. The responsiveness of wages to labor market tightness differs sharply between these groups. Wages for non-regular workers are more sensitive to supply–demand conditions, whereas wages for regular workers are far less flexible⁷. Understanding the mechanisms that determine regular-worker wages is therefore essential for explaining wage stagnation during this period.

In principle, wages can rise through two channels: job changes or wage negotiations between workers and employers. In Japan, employees at large firms tend to change jobs infrequently, while those at small and medium-sized firms change jobs more often. Because wage levels at smaller firms are generally lower, job changes often result in lower wages on average, limiting upward wage pressure.

For regular workers, wage increases are primarily determined through collective bargaining between labor unions and employers, known as *Shuntō* (the “Spring Offensive”). Until around 1997, *Shuntō* functioned effectively to raise wages annually. Since the late 1990s, however, its influence weakened. With no alternative mechanism to generate wage increases, the government sought to revitalize *Shuntō* by convening meetings with social partners to encourage wage hikes. Although this contributed to shifting wages from a downward or stagnant trend to a modest upward trajectory, the pace of increase remained exceptionally slow compared with other advanced economies.

To understand why, we can decompose the factors contributing to changes in nominal hourly wages (see Figure15). Between 2002 and 2012, productivity increased by about 1% annually. Output prices rose only moderately, at below 1%. labor share of income increased slightly, and the production factor cost ratio remained flat. As a result, hourly wages rose by at most 2%. Overall, Japanese firms maintained a defensive stance, limiting the effectiveness of reflationary policies despite the government's comprehensive efforts.

Recently, the concept of “Norms” has gained attention as a useful framework for explaining Japan's prolonged deflation in both prices and wages. A “Norm” refers to shared expectations or collective beliefs held by individuals and firms within a country during a particular period. The term was first used by Arthur Okun and later revived by Dr. Watanabe in his book *What Are Prices?* to describe Japan's price dynamics.

While the concept of Norms is indeed helpful in explaining persistent deflation, the deeper question is how such Norms formed in the first place. In a keynote speech at an international conference in 2024, Mr. Uchida, Deputy Governor of the Bank of Japan, highlighted

⁷ Kurozumi, et al (2023)

firms' pricing behavior as a key factor shaping these Norms⁸. Although pricing stance is undoubtedly important, the reasons why firms maintained such conservative pricing strategies—and why these strategies are now beginning to change—remain open questions.

III-5. Recent Changes in Japan's Employment System

The unique characteristics of Japan's employment system have played a significant role in shaping the country's prolonged deflationary environment from the late 1990s through the 2010s. Specifically, these employment practices have influenced firms' pricing behavior, contributing to what has been termed Japan's "deflation norm."

Japan's employment system is often associated with a distinctive human resource management model characterized by lifelong employment and seniority-based wages—features collectively referred to as the "membership-style" system (Hamaguchi, 2009). However, these practices have traditionally applied primarily to regular employees in large firms. More accurately, Japan's employment structure is defined by a dual-layered dualism: (1) large firms versus small and medium-sized enterprises (SMEs), and (2) regular versus non-regular workers.

Within this framework, three key "buffers" have historically suppressed the pass-through of rising input costs to consumer prices:

Increased reliance on non-regular workers, whose wages are significantly lower than those of regular employees, allowing firms to reduce labor costs without raising prices.

Downward pressure on SMEs' profit margins, achieved by constraining inter-firm transaction prices, particularly between large firms and their smaller suppliers.

Wage restraint among regular employees in large firms, reflecting a hallmark of Japan's employment practices: prioritizing wage adjustments over employment cuts during economic downturns.

These mechanisms help explain why Japan alone experienced a particularly prolonged period of wage and price stagnation, even as other advanced economies also faced disinflationary pressures due to the integration of emerging economies—especially China—into global markets. However, it is important to note that Japan's employment system has not remained static. While firms have continued to leverage the dual structure to contain costs, gradual changes have emerged, largely driven by demographic shifts—most notably, a structural labor shortage.

This transformation can be understood through a revised interpretation of the "Lewis Turning Point." During the 2000s, wages for non-regular workers remained relatively flat due to the shallow slope of their labor supply curve. This group—comprising mainly married women and older workers over 60—had limited availability for full-time work. As labor de-

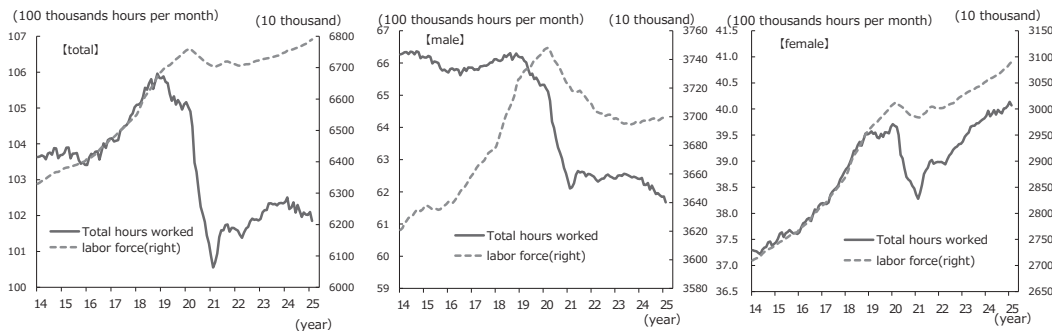
⁸ https://www.boj.or.jp/en/about/press/koen_2024/data/ko240527b1.pdf

mand intensified, the pool of potential non-regular workers began to dry up, exerting upward pressure on wages (Kawaguchi and Hara, 2017).

At the macro level, however, the current labor shortage is more accurately attributed to constraints on total labor input measured in hours, rather than on the number of workers per se (Figure16). The supply of labor in terms of working hours has already peaked, as the population of prime-age workers—traditionally the core labor force—has been declining for some time. Meanwhile, the share of older workers, who typically work fewer hours, has increased.

The shortening of average working hours signals that Japan has reached a threshold where marginal labor forces—those with limited availability—are increasingly relied upon. As a result, wage pressure on non-regular workers has intensified, narrowing the wage gap between them and regular employees. Similarly, wages in SMEs have risen due to the tightening labor market. According to the Basic Survey on Wage Structure, base pay in SMEs grew more rapidly than in large firms during the late 2010s (Figure17).

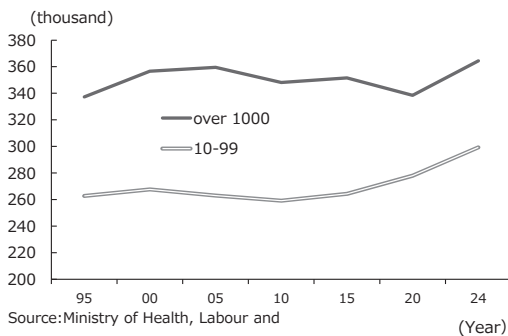
Figure 16: Labor Force and Total Labor Input Measured in Hours



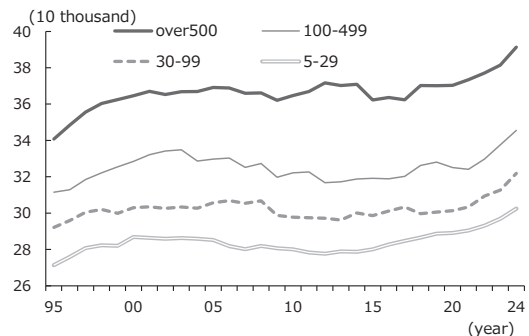
Source: Ministry of Internal Affairs and Communications "Labour Force Survey"

Note: 12-month backward moving average

Figure 17: Base Pay by Firm Size, Classified by Number of Employees



Source: Ministry of Health, Labour and Welfare "Basic Survey on Wage Structure"



Source: Ministry of Health, Labour and Welfare "Monthly Labour Survey"

Several factors contribute to this trend:

Some SMEs, facing disadvantages in recruitment, raised wages to attract and retain workers. In the absence of younger hires, the proportion of older (and higher-paid) workers increased. Unprofitable firms unable to offer competitive wages were forced out of the market. Government-led hikes in the minimum wage raised average earnings for low-paid workers.

In contrast, wage growth in large firms has been more subdued. This is partly due to slower wage increases among middle-aged and older employees compared to younger cohorts, and a rising share of female workers, whose average wages remain lower than those of male workers⁹. Moreover, wage adjustments in large firms are often mediated through labor-management negotiations, which are only indirectly influenced by labor market conditions. In SMEs, by contrast, wages are more directly responsive to labor supply and demand dynamics.

IV. Factor Analysis of Prolonged Stagnation in Real Wages

IV-1. Decomposition of Factors Behind Changes in Real Wages

As discussed above, nominal wages appear to be getting out of a prolonged stagnation trend. However, from the perspective of national economic welfare, the more critical issue is the trajectory of real wages. Real wage growth is typically calculated by subtracting the inflation rate from the nominal wage growth rate. While this suggests that higher nominal wage growth should lead to higher real wage growth, the relationship is not so straightforward. In practice, higher nominal wage growth can fuel inflation, thereby offsetting gains in real wages. A historical example is the stagflation of the 1970s in Western economies, where strong wage demands by labor unions—intended to counter rising prices—prompted firms to raise prices in turn, eroding real income gains.

To better understand the dynamics of real wage changes, we can decompose real wages using the following identity:

$$w/P_c = Y/(Lh) \times (wLh/(YP)) \times (P/P_c)$$

Where: w : real wage per hour P_c : private consumption deflator Y : real GDP

L : number of employed persons h : average working hours P : GDP deflator

The ratio P/P_c reflects the “terms of trade,” which is closely linked to the ratio of export prices to import prices¹⁰. This is because the private consumption deflator generally tracks the domes-

⁹ Nishimura and Higo (2024).

¹⁰ Fukao (2013) highlights the importance of 'terms of trade' as a key component in the decomposition of real wages in earlier research.

tic demand deflator. A deterioration in the terms of trade—when income outflows from imports exceed inflows from exports—reduces real domestic income, even if productivity is rising.

Using this analytical framework, I decomposed the factors contributing to changes in real wages across five distinct phases from 1994 to 2023 (Figure18). The decomposition was conducted for both real wages per hour and per person, with broadly consistent results:

1994–1997: Real wages increased significantly, driven by robust productivity growth and stable labor share.

1997–2002: Real wage growth slowed markedly. Although productivity growth remained steady, a declining labor share and deteriorating terms of trade were key drags.

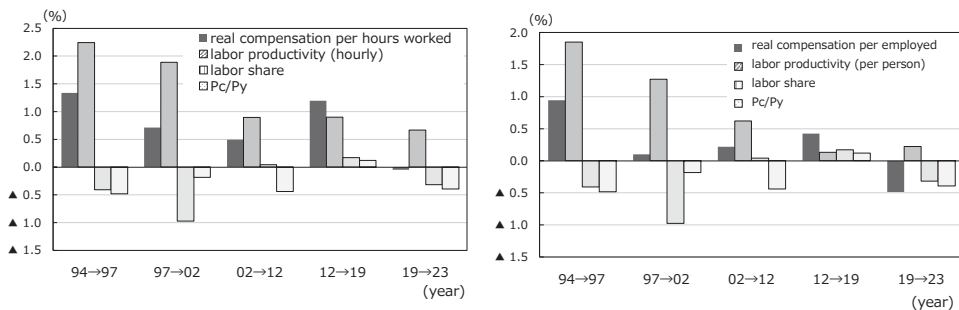
2002–2012: Labor share stabilized, but productivity growth decelerated. The terms of trade continued to exert downward pressure on real wages.

2012–2019: Real wages saw modest improvement, supported by a slight recovery in labor share and some improvement in the terms of trade.

2020s: Both labor share and terms of trade have again contributed negatively to real wage growth.

In summary, while stagnating productivity and a declining labor share are often cited as

Figure 18: Factor Analysis of Changes in Real Wages



Source: The Cabinet Office “National Accounts”

Note: Factor decomposition was conducted based on the following equation:

w: compensation per hours worked, Pc: consumption deflator, Y: real GDP,

L: employed, h: average working hours, P: GDP deflator

Compensation of employee = compensation of employee + mixed income $\times 0.5$

Labor share = compensation of employee / nominal GDP

The ratio of GDP deflator to the consumption deflator (P/P_c) moves in line with the terms of trade (export prices / import prices), which correspond to the deflator of the external demand sector. This is because the consumption deflator generally follows the movements of the domestic demand deflator.

primary causes of real wage stagnation, their influence has varied across different periods. Notably, the persistent deterioration in the terms of trade has played a significant and often underappreciated role in suppressing real wage growth.

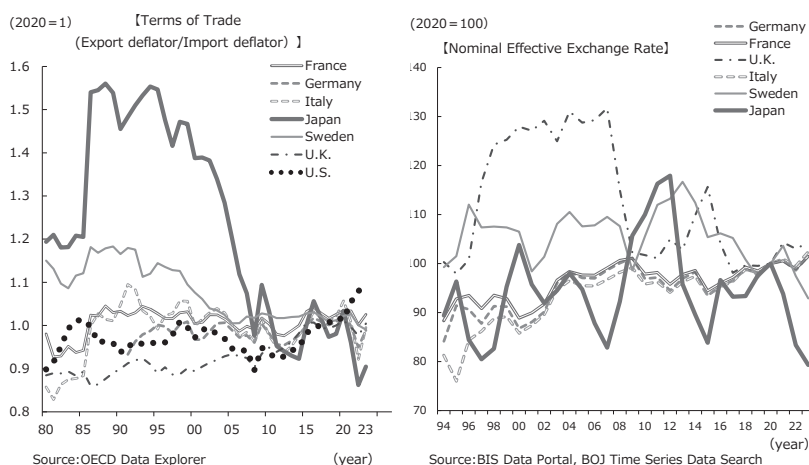
IV-2. Factor Analysis of Terms of Trade

Let us begin by comparing the terms of trade among advanced economies. Japan stands out for both the magnitude of its fluctuations and its distinct downward trend (see Figure19). In contrast, the United States, whose currency—the U.S. dollar—serves as the global key currency, experiences relatively stable terms of trade over time. This stability is to be expected given the dollar’s central role in international transactions.

European countries such as Germany, France, and Italy also exhibit relatively stable terms of trade. This can be attributed in part to the euro, which functions as a semi-key currency. Sweden shows slightly more fluctuation, yet its terms of trade remain more stable than Japan’s. One contributing factor to this relative stability in Europe is the high proportion of intra-regional trade. However, we must also consider differences in the composition of traded goods, which play a significant role¹¹.

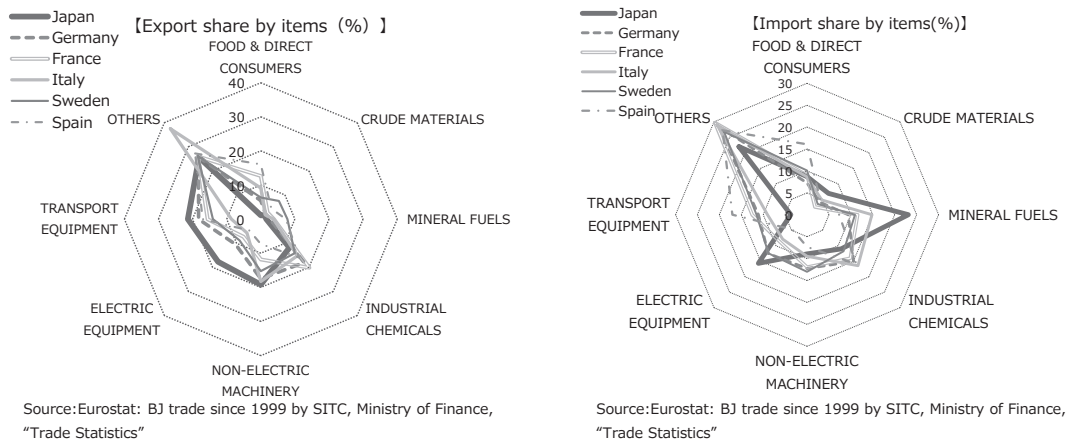
In terms of import composition, Japan relies more heavily on mineral fuels than its European counterparts. This makes Japan particularly vulnerable to fluctuations in global commodity prices. As climate change increasingly drives up these prices, Japan’s terms of trade

Figure 19: Terms of trade and Nominal Effective Exchange Rate



¹¹ Cabinet Office (2011)

Figure 20: International Comparison of the Composition of Trade Items



tend to deteriorate (Figure20).

On the export side, Japan's trade is characterized by a high share of transport machinery, electronic equipment, and general machinery. These sectors face intense competition from China, South Korea, and Taiwan, making it difficult for Japanese firms to raise export prices. This price rigidity has contributed to the long-term decline in Japan's terms of trade.

Taken together, these factors suggest that the deterioration in Japan's terms of trade is rooted in delayed adjustments to both its industrial and energy structures.

IV-3. Relationship Between Nominal Wages and Real Wages

An increase in nominal wages does not necessarily translate into higher real wages. However, a sustained decline in nominal wages is generally associated with negative effects on real wages, primarily through its dampening impact on productivity. In other words, nominal wage increases tend to stimulate productivity more effectively than nominal wage decreases. This is largely because nominal wages are closely linked to consumer prices; moderate inflation can enhance the signaling function of wages and prices, thereby improving the efficiency of resource allocation.

Although further empirical investigation is warranted, several analyses support this perspective¹². Motoshige Itoh, Professor Emeritus at the University of Tokyo, argues that when the inflation rate rises to 2%, wage growth across firms ranges from 0% to 4%. This variation encourages labor mobility across firms and industries, thereby enhancing economic dyna-

¹² Bank of Japan (2024) p156.

mism¹³.

Oikawa (2019) offers a complementary view using the concept of “menu costs.” When inflation increases production costs, technologically advanced firms are better equipped to absorb these costs, while less competitive firms struggle and are eventually forced out of the market. This process fosters structural upgrading and productivity gains.

These discussions suggest that nominal wages are not simply the result of adding inflation to predetermined real wages. Rather, nominal wages themselves influence real wages by affecting resource allocation and, ultimately, productivity. This has important policy implications: while real wages cannot be directly controlled, nominal wages can be influenced through policy measures, thereby indirectly shaping real wage outcomes.

IV-4. Relationship Between Real Wages and Labor Mobility

From a policy perspective aimed at sustaining real wage growth, the relationship between real wages and labor mobility is a critical issue. Standard economic theory suggests that facilitating labor mobility enhances the efficient allocation of productive resources, thereby boosting productivity and ultimately leading to real wage growth. Conversely, human resource theory emphasizes that long-term, stable employment increases the value of firm-specific skills, encouraging investment in human capital and contributing to productivity gains. These contrasting views imply that the impact of labor mobility on real wages cannot be determined theoretically alone and must be assessed through empirical research.

In this regard, Yamamoto and Kuroda (2016) offer valuable insights. Their analysis reveals an inverse U-shaped relationship between labor mobility and corporate profitability: moderate levels of labor mobility are associated with higher profitability, but excessive mobility tends to reduce it. Furthermore, the study indicates that firms with traditional Japanese employment practices can improve profitability and productivity by increasing mid-career hiring from other firms. In contrast, so-called “black companies,” which impose excessive workloads and exploit employees, tend to experience declines in both profitability and productivity when labor mobility increases.

Drawing on the analytical insights of Yamamoto and Kuroda (2016), I examined the relationship between wages and labor mobility using panel data analysis (Table1). The dependent variable is base pay, and the independent variables include productivity, tenure, and the share of female workers. For tenure, I estimated two specifications: one including squared tenure and one without it. The model incorporating squared tenure provides a better fit, suggest-

¹³ Motoshige Itoh (2024) emphasizes this point in his article, “Read the Earth: Rising Inflation Prompts Economic Dynamism”, published in the Yomiuri Shimbun on October 6, 2024.

ing a nonlinear relationship. In other words, moderate levels of mobility contribute to wage growth, whereas excessively high mobility does not.

In practice, labor mobility sometimes leads to higher wages, but not always; similarly, retaining employees can raise wages in some cases but not in others. Fundamentally, employment expands in response to business growth. To raise wages, firms must adapt their business structures to evolving market needs. When profits increase through the creation of new business areas that require hiring additional workers, labor mobility becomes advantageous. Conversely, improving the quality and competitiveness of existing business operations also raises wages, and this approach depends on maintaining a stable workforce.

Table 1: Estimation of Base-Pay Functions: Panel Estimates

Dependent variable: ln(Base Pay)

Estimation method	Fixed effects(1)		Fixed effects(2)		Random effects	
Independent variables						
Constant	5.2510	(183.3408) ***	5.0318	(115.7408) ***	5.0120	(110.0912) ***
ln(Value-added productivity)	0.0168	(1.9672) **	0.0172	(2.0545) **	0.0263	(3.2887) **
Female share	0.0012	(2.5018) **	0.0010	(2.1287) **	0.0010	(2.3006)
Tenure	0.0284	(22.0194) ***	0.0629	(11.7179) ***	0.0625	(11.7772) ***
Tenure ²			-0.0013	(-6.6177) ***	-0.0012	(-6.5367) ***
Number of observations	1344		1344		1344	
Modified R-squared	0.9488		0.9505		0.3046	
Hausman test				Chi-Sq. Statistic= 19.8756		
				Prob>Chi-Sq. d.f.= 0.0005		

Source: Author's compilation

Table 2: Estimation of Real Wage Functions: Panel Estimates (Time Fixed Effects)

Dependent variable:ln(Real Wage)	28 Countries				19 Countries			
Estimated method	Fixed effects		Random effects		Fixed effects		Random effects	
Independent variable								
ln(hourly labor productivity)	0.2179	(5.473) ***	0.2222	(5.888) ***	0.0314	(1.236)	0.0395	(1.811) *
Unemployment Rate	-0.0056	(- 3.350) ***	-0.0067	(- 4.079) ***	0.0003	(0.203)	0.0000	(0.021)
Tenure	0.3829	(5.331) ***	0.2993	(4.470) ***	0.0932	(1.678) *	0.0081	(0.194)
Tenure ²	-0.0172	(- 4.928) ***	-0.0135	(- 4.127) ***	-0.0068	(- 2.580) **	-0.0024	(- 1.180)
Union Density	0.0000	(1.326)	0.0000	(1.276)	0.0116	(8.857) ***	0.0051	(6.103) ***
Constant	7.7527	(19.317) ***	8.2015	(22.139) ***	10.0490	(31.069) ***	10.6480	(45.622) ***
Number of observations	308		308		209		209	
Modified R-squared	0.9832		0.5013		0.9753		0.3829	
Hausman test	Chi-Sq. Statistic= 14.84478				Chi-Sq. Statistic= 60.368842			
	Prob>Chi-Sq.= 0.011				Prob>Chi-Sq.= 0.000			

Note: The values in parentheses to the right of each parameter are t-statistics.

The superscript asterisks indicate statistical significance: *** at the 1% level, ** at the 5% level, and * at the 10% level.

Source: Author's compilation

IV-5. Relation Between Real Wages and Labor–Management Relations

Aside from promoting job mobility, another pathway to raising wages is through negotiations between workers and employers. To understand how such negotiations between social partners influence real wages, A. O. Hirschman’s classic framework is instructive. Hirschman (1970) characterizes the behavior of economic actors with divergent interests using the contrasting concepts of “Exit” and “Voice,” which can be applied to mechanisms through which workers affect wage outcomes. “Exit” refers to workers leaving their jobs in search of better-paid opportunities, a pattern typically observed in the United States. In contrast, “Voice” refers to workers negotiating with employers for higher pay, a role generally played by labor unions. From this perspective, both job mobility and union density influence wage formation.

Building on this idea, I estimated wage equations—primarily determined by productivity and labor-market demand–supply conditions—while incorporating job mobility and union density as independent variables, using OECD panel data (Table2). The results, presented in Table2, indicate that moderate job mobility and higher union density both exert positive effects on real wages. The positive contribution of higher union density reflects the “Voice” effect. At first glance, the finding that longer tenure has a negative effect on wages appears inconsistent with the fact that unions often demand employment security. This result is largely driven by the Nordic countries, where union density is exceptionally high and job mobility is also relatively high. In these countries, unions with strong membership bases and a macro-oriented perspective do not seek employment security within individual firms. Instead, they advocate for employment security at the societal level by supporting substantial investment in active labor market policies, including training and job-matching programs.

In Japan’s case, several studies show that the “Voice” effect enhances productivity. However, higher productivity does not automatically translate into higher real wages unless value added is distributed in a manner consistent with labor’s contribution. The experience of the Nordic countries underscores the importance of strengthening labor’s bargaining power to ensure that productivity gains are reflected in real wages.

V. Conclusions and Policy Implications

V-1. Conclusions

The discussion above can be summarized as follows.

1. Japan’s nominal wages remained largely stagnant from the late 1990s through the 2010s, but this prolonged stagnation can be divided into three distinct phases—Phase 1 (1997–2002), Phase 2 (2003–2012), and Phase 3 (2013–2019)—each driven by different underly-

ing mechanisms. In this sense, Japan's wage stagnation followed a path-dependent trajectory.

2. In Phase 1, the sharp decline in wages is primarily attributable to the deterioration of labor market conditions caused by the collapse in business demand following the early 1990s bubble burst. In Phase 2, however, wage growth remained sluggish despite improvements in labor supply–demand conditions. This stagnation was triggered by a downward shift in the global cost structure associated with China's rise, compounded by structural characteristics of the Japanese employment system.
3. Key features of the Japanese employment system—(i) the dual structure between regular and non-regular employment, (ii) the divide between large firms and small or medium-sized enterprises, and (iii) the strong emphasis on employment retention in core segments—played a decisive role in suppressing wage growth during this period.
4. In Phase 3, as the labor force approached its supply ceiling, the traditional Japanese employment system came under increasing pressure to adapt. As a result, firms' ability to rely on cost-reduction strategies weakened.
5. Combined with the upward shift in the global cost structure since the 2020s, these developments appear to have brought an end to the long era of nominal wage stagnation.
6. Real wages, however, have not fully escaped their long-term stagnation. A persistent deterioration in Japan's terms of trade remains a critical concern. This reflects both declining non-price competitiveness in exports and an excessive dependence on fossil fuel imports—symptoms of delayed structural transformation in Japan's industrial and energy systems.
7. Nominal wages are not simply real wages plus inflation. They exert an active influence on real wages. Sustained nominal wage increases, accompanied by moderate positive inflation, can promote industrial restructuring and productivity growth.
8. Raising labor productivity is indispensable for real wage growth. While policies to enhance labor market fluidity are gaining attention, the benefits of employment retention should not be dismissed. A balanced, context-specific approach is required—one that reduces unproductive employment retention while fostering productive forms of labor mobility.
9. The role of union voice also deserves renewed attention. Strengthening the wage-bargaining power of labor unions through appropriate policy support is an important component of a comprehensive wage strategy.

V-2. Policy Implications

1. Favorable Cycle Between Prices and Wages

This paper's analysis suggests that positive inflation is a crucial condition for sustaining wage growth. It also provides the foundation for a continuous rise in labor productivity,

which ultimately leads to improvements in real wages. In this context, the Tripartite Roundtable plays an important role in fostering a social environment conducive to wage increases. The current central-level roundtable has been effective, but it also has limitations. Therefore, the recent emergence of local tripartite roundtables is welcome, and strong coordination between the central and local levels will be essential.

2. Labor Market Reform

The fundamental source of real wage growth is higher productivity. One way to raise productivity is to reallocate labor from low-productivity sectors to high-productivity sectors. From this perspective, the “Integrated Three-Pronged Labor Market Reform” initiated under the Kishida administration is appropriate for large firms. However, for small and medium-sized enterprises, which must retain their workforce, different policy tools are required. Measures such as wage subsidies to support the hiring of middle-aged workers from large firms could be particularly effective.

3. Structural Reform

Even if productivity rises and the labor share is set at an appropriate level, deteriorating terms of trade can cause the gains in workers’ income to flow abroad. To improve the terms of trade, Japan must advance its industrial structure to strengthen non-price competitiveness and reform its energy structure to reduce excessive dependence on fossil fuels. These measures are indirect but effective ways to support real wage growth.

4. Looking Ahead

Following the burst of the asset bubble in the early 1990s, the Japanese economy experienced prolonged stagnation, resulting in persistent stagnation of both nominal and real wages. Today, however, with dramatic changes in both domestic and global conditions, Japan has a real opportunity to break out of this long slump. Over the past three decades, we have learned many lessons. Now is the time for government, social partners, and academia to join forces and implement effective measures.

References

- Aoki, Kosuke; Hogen, Yoshihiko; Takatomi, Kosuke (2023). “Price Markups and Wage Setting Behavior of Japanese Firms.” Bank of Japan Working Paper Series, No. 23-J-4.
- Bank of Japan (2024). Review of Monetary Policy from a Broad Perspective.
- Cabinet Office (2011). “Changes in Terms of Trade and International Income Transfers.” World Economic Report, First Half of 2011, Chapter 1: Europe, Section 1, Subsection 4.
- Fukao, Kyoji (2013). “Conditions for Wage Growth (Part 2): Productivity Improvement Alone Is Not Enough.” Nikkei Shimbun, Economic Classroom column, November 1, 2013.
- Hamaguchi, Keiichiro (2009). *The New Labor Society: Toward Reconstructing the Employment*

System. Iwanami Shinsho.

- Hirschman, Albert O. (1970). "Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States." *Cambridge, MA*: Harvard University Press.
- Kawaguchi, Daiji; Hara, Hiromi (2017). "Can Economic Theory Explain the Coexistence of Labor Shortages and Wage Stagnation?" In Y. Genda (Ed.), *Why Don't Wages Rise Despite Labor Shortages?* Keio University Press, Chapter 7, pp. 106–107.
- Kurozumi, Takuji; Sugioka, Yu; Ito, Hiroki; Nakazawa, Takashi (2023). "Heterogeneity among Full-Time Workers and Wage Growth in Japan: Evidence from Microdata." Bank of Japan Working Paper Series, No. 23-J-6.
- Motoshige Itoh (2024). "Read the Earth: Rising Inflation Prompts Economic Dynamism", *Yomiuri Shimbun* on October 6, 2024.
- Nishimura, Kiyohiko; Higo, Masahiro (2024). "Wage Trends Seen from Pension Data: Large Firms' Wage Growth Outpaces That of SMEs." *Nikkei Shimbun*, Economic Classroom column, May 22, 2024.
- Noda, Tomohiko; Abe, Masahiro (2010). "Labor Share and Wage Decline." In Y. Higuchi (Ed.), *Labor Markets and Income Distribution*, Keio University Press, Chapter 1.
- Oikawa, Hiroki (2019). "What Is the Optimal Inflation Rate for Innovation? How the Quantity and Quality of Innovation Shape Economic Growth." *Toyo Keizai Online*.
- Ogura, Kazuya (2017). "Management Perspectives on Wage Increases and Their Background." In Y. Genda (Ed.), *Why Don't Wages Rise Despite Labor Shortages?* Keio University Press, Chapter 2.
- Uchida, Shinichi (2024). "Price Dynamics in Japan over the Past 25 Years" Keynote Speech at the 2024 BOJ-IMES Conference Hosted by the Institute for Monetary and Economic Studies, Bank of Japan.
- Yamamoto, Isao (2010). "Wage Adjustment, Employment Adjustment, and Changes in the Phillips Curve: The Changes in the 1990s and Their Background." In Y. Higuchi (Ed.), *Labor Markets and Income Distribution*, Keio University Press, Chapter 2.
- Yamamoto, Isao; Kuroda, Sachiko (2016). "Does Labor Mobility Improve Firm Performance? Evidence from Firm-Level Panel Data." *RIETI Discussion Paper Series*, 16-J-06.
- Watanabe, Tsutomu (2022). *What Are Prices?* Kodansha Sensho Metier.