Japan Research Institute
JRI Research Journal
https://www.jri.co.jp/english

Vol.4 No.6
August 24, 2021

High Commodity Prices Are Far from Generating Sustained Inflation in Japan

—Service price rigidity rooted in institutions and practices—

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〈Summary〉

- International commodity prices are skyrocketing, affecting prices in Japan. Import prices rose 20% in the April-June quarter from the previous year, and consumer prices also showed a year-on-year increase. In recent years, the correlation between import prices and consumer prices has been on the rise, and an increase in import prices may further boost consumer prices in the future.
- The correlation between import prices and consumer prices is increasing because Japanese firms are increasingly adjusting their prices. The difficulty of passing on prices has eased since the 2008 global financial crisis, and margins in the manufacturing industry have been improving. Globally, the rate of increase in consumer goods prices has been almost same in Japan, the United States, and Europe, which is quite different from the situation in the 2000s, when the decline in prices in Japan was conspicuous.
- However, the increasing tendency of firms to pass on prices does not necessarily mean that the situation regarding sustained inflation will change. The rise in prices due to higher costs leads to a drop in demand by reducing consumers' purchasing power, which in turn causes prices to decline. In Japan, where economic recovery is slower than in other countries, this mechanism is more likely to work.
- In addition, unlike goods prices, service prices are 1 to 2% lower than in the United States and Europe, hindering sustained inflation. This is strongly influenced by weak wages, and it is possible that Japanese-style employment practices are one of the reasons why it is difficult for wage settings to reflect labor supply and demand. Rents and utility charges, which account for 60% of services, are also inflexible due to transactional systems and practices. Based on these factors, the underlying inflation in Japan is expected to remain low.

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- **This is a English version of “商品市況高も持続的な物価上昇は遠く ― 制度・慣行に根差したサービス価格の硬直性が足かせ ―” in JRI Research Focus (The original version is available at https://www.jri.co.jp/MediaLibrary/file/report/researchfocus/pdf/12809.pdf)**

1. Soaring international commodity prices

International commodity prices are soaring. According to the International Monetary Fund (IMF), international commodity prices bottomed out last spring and have recently been approaching the level of the first half of 2014, right before they plunged in the "reverse oil shock" (Figure 1). In addition to skyrocketing prices for energy, such as crude oil, prices of agricultural products, metals, wood and textiles have risen across the board.

Behind the surge in commodity prices lies the fact that the world economy is entering a recovery phase. In the United States and Europe, where COVID-19 vaccination rates are increasing, restrictions on activities have been gradually lifted and economic activities have been normalized. Demand for energy and raw materials is also increasing, and some products are in short supply because production cannot keep up with the surge in demand. But global manufacturing output is recovering rapidly, with just a +4% divergence from the trend seen just before the global financial crisis (Figure 2).

Although commodity prices have generally subsided in recent times, the global economic recovery is expected to continue for the time being, and commodity prices may remain high.

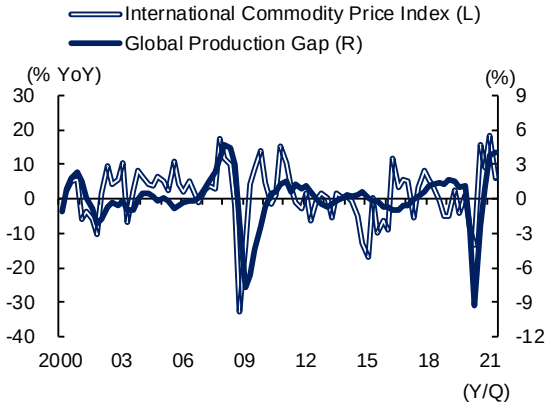
2. Rising import prices put upward pressure on domestic prices

The sharp rise in international commodity prices has pushed up Japan's import prices by about 20% in the April-June period compared to the previous year (Figure 3). Energy and food prices have pushed up overall prices, as well as those for metals, chemicals and other upstream products. The rise in import prices has also spilled over into domestic prices, with the price of consumer goods rising by nearly 1%.

Figure 1. International Commodity Price Index

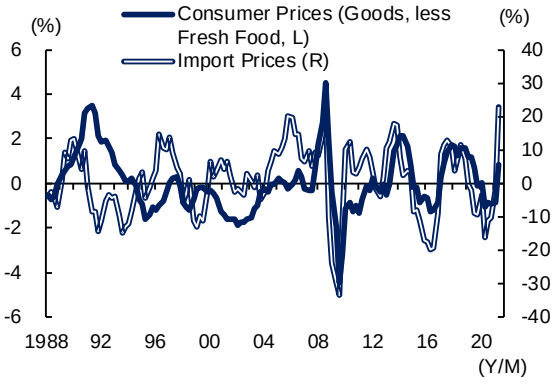
Source: International Monetary Fund Commodity Price

Figure 2. Global Commodity Price Index and Global Production Gap



Source: Corporate Goods Price Index, Bank of Japan; World Trade Monitor, Netherlands Bureau of Economic Analysis
Note: Import prices have been adjusted on a contract currency basis. The global production gap is the rate of divergence between the global production index and trends measured by HP filters. Positive values indicate that the exponent is greater than the trend.

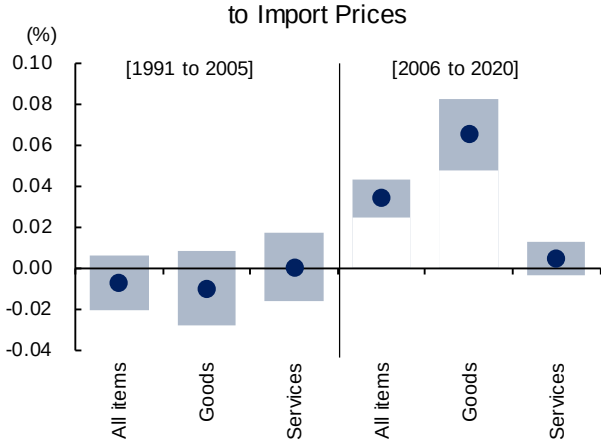
Figure 3. Import and Consumer Price (YoY)



Source: Bank of Japan, Corporate Goods Price Index; Ministry of Internal Affairs and Communications, Consumer Goods Price Index
Note: Import prices are based on the total average in yen. Consumer prices are adjusted for consumption tax (adjusted to smooth year-on-year growth in 89).

In recent years, the correlation between import prices and consumer prices has been strengthening, and there is a possibility that the existing increase in import prices will further push up consumer prices with a lag. Figure 3 shows that the movements of import prices and consumer prices have tended to coincide since both surged in 2008. This is in contrast to the fact that the consumer price index continued to fall despite repeated increases in import prices from the 1990s to the early 2000s.

Figure 4. Consumer Prices Response to Import Prices



Source: Estimated by the Bank of Japan and Ministry of Internal Affairs and Communications
Note: Consumer price response to a 1% increase in import prices. Circle indicates estimated values, and shadow indicates ± 2 standard deviations. Fresh food is excluded from all items and goods. See footnote for details.

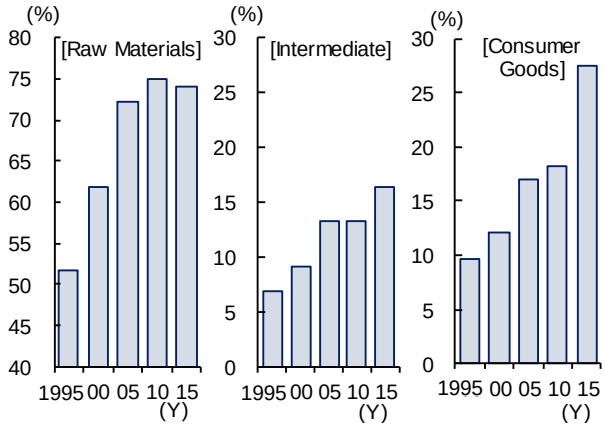
The strengthening of the link between import and consumer prices is also confirmed by the estimated pass-through rate (the degree of impact of import prices on consumer prices). Figure 4 shows the magnitude of the consumer price response to an increase in import prices[1]. There was no significant consumer price response over the 15-year period from 1991 to 2005 (early period), but there was a significant response over the last 15 years, from 2006 to 2020 (late period). Service prices remain near zero, but goods prices are becoming more reactive, and a 1% increase in import prices will push up goods prices by 0.07%. As a result, the overall response rate for goods and services increased to 0.03%. If import prices rise by 20%, consumer prices will rise by 0.6% and goods prices by 1.5%.

Previous studies have pointed out that Japan's consumer prices have become more sensitive to import prices. Shioji [2014] and Hara, Hiraki and Ichise [2015] empirically show that the pass-through rates for import prices and exchange rates on domestic prices have been rising since the late 2000s.

3. Firms' willingness to pass on prices has increased

The following two factors are behind the increasing linkage between import prices and domestic prices. First, the share of imports in the total domestic market for raw materials, intermediate goods, and final consumer goods is increasing (Figure 5). In particular, imports of raw materials and consumer goods have increased by about 20% over the 20 years since 1995. In previous studies, Shioji [2014] attributed the rise in import prices and exchange rate pass-through rates to

Figure 5. Proportion of Imported Goods



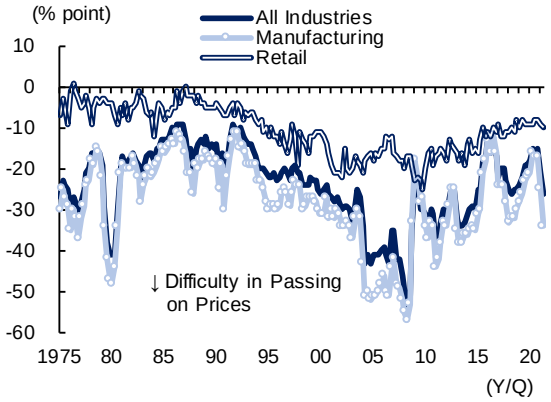
Source: Bank of Japan, Corporate Goods Price Index
Note: The ratio of imported goods in each market is calculated using the w eight of domestic demand goods in the corporate goods price index.

[1] Figure 4 shows the coefficient of import prices in the following equation. $\pi_t=\beta_0+\beta_1 y_t+\beta_2 \pi_t^I+\beta_3 \pi_{t-1}+u_t$ where π_t is the quarter-on-quarter change in the consumer price index, y_t is the supply and demand gap, π_t^I is the quarter-on-quarter change in the import price, u_t is the disturbance term, and t is the time. The estimated period is from January-March 1991 to October-December 2005 (sample size: 60) and from January-March 2006 to January-March 2021 (sample size: 61).

the increasing penetration of imports into consumer goods and raw materials in Japan.

Another factor behind the increasing linkage between import prices and domestic prices is the possibility that firms are showing more willingness to adjust prices. Hara, Hiraki and Ichise [2015] estimate that the impact of price changes is larger than that of the aforementioned increase in imports as the background to the recent increase in the foreign exchange pass-through rate. This can also be seen in a survey of companies. Figure 6 shows the difference between the output price DI and the input price DI in the Bank of Japan's Tankan survey. It is negative in almost all periods, suggesting that companies cannot raise their output prices as much as they raise their input prices (they lower their output prices more than they lower their input prices). From the 1990s until just before the 2008 global financial crisis, the difficulty of price pass-through had been increasing, but since then, the difficulty of price pass-through has eased and the level of difficulty in both manufacturing and retail has returned to what it was in the late 1990s.

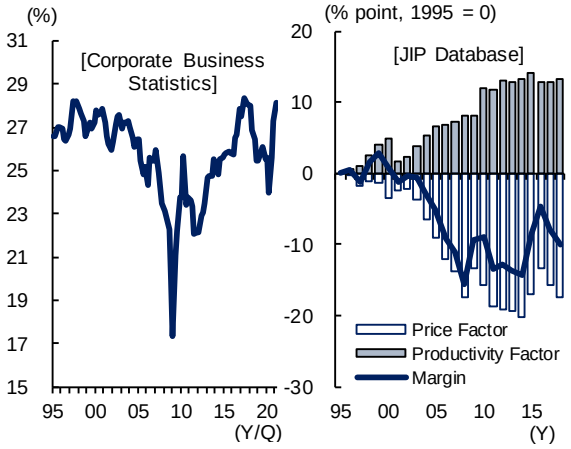
Figure 6. Difference between Output Price DI and Input Price DI



Source: Bank of Japan, Short-Term Economic Survey of Enterprises in Japan
Note: The output price DI minus the input price DI. The DI is calculated by subtracting the percentage of those who said prices were rising from the percentage of those who said prices were falling.

Since the collapse of the bubble economy in the 1990s, Japanese firms had been avoiding price revisions regardless of the magnitude of cost fluctuations. This is because competition among firms had intensified due to deregulation and globalization, and households became more reluctant to pay higher prices. Moves to avoid price revisions despite rising raw material prices squeezed corporate margins. For this reason, firms have now changed their stance on passing on prices. The margin ratio in the manufacturing industry turned upward from the latter half of the 2000s (Figure 7, left). A similar trend can be seen in the "JIP Database" of the Research Institute of Economy, Trade and Industry (Figure 7, right). A factor decomposition of margin movements shows that, since the latter half of the 2000s, price factors (the ratio of output price to input price) have remained more or less flat as productivity improvements have pushed up margins. Households continue to take a tough stance on rising prices, and "real price hikes" (keeping prices unchanged while reducing capacity) are quietly taking hold among firms. According to the Consumer Affairs Agency's Price Monitor Survey (July 2018), 80% of households reported an increase in real prices compared to three years ago.

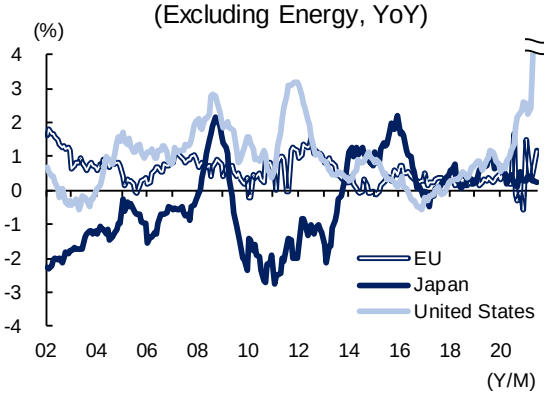
Figure 7. Margin Ratio in the Manufacturing Industry



Source: Ministry of Finance, Financial Statements Statistics of Corporations by Industry; Research Institute of Economy, Trade and Industry, JIP Database
Note: Margin ratio is (sales - cost of sales)/cost of sales or (nominal output - nominal input)/nominal input. The JIP database shows cumulative changes since 1995.

Changes in the attitude of firms to pass on prices have resolved the phenomenon in which the rate of increase in goods prices is remarkably low in Japan. Currently, goods prices in the United States have soared due to supply constraints and other factors. However, in many periods in the 2010s, the rate of increase in goods prices has been almost the same in Japan, the United States, and Europe, unlike in the 2000s, when Japan's decline was conspicuous (Figure 8).

Figure 8. Goods Prices (Excluding Energy, YoY)

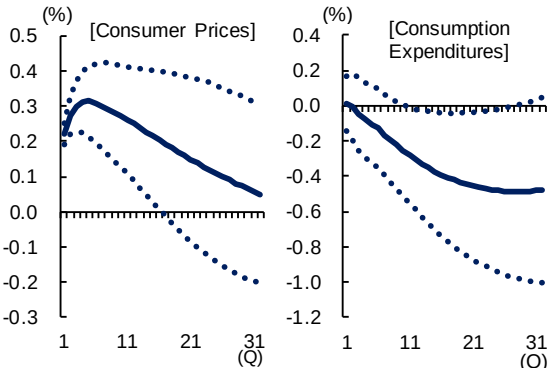


Source: Ministry of Internal Affairs and Communications, Consumer Price Index; Bureau of Labor Statistics, U.S. Department of Labor, Consumer Price Index (CPI); Eurostat, Consumer Price Index (HICP).
Note: In Japan, agricultural, fishery and livestock products and energy are excluded. Values for 2014 are adjusted for consumption tax.

4. Inflation due to high costs is not sustainable.

As mentioned above, firms are increasingly changing their prices. This does not mean, however, that the situation regarding sustained inflation will change. The rise in prices due to high costs can lead to a decline in demand by reducing consumers' purchasing power, and in the long run can exert downward pressure on prices. Estimates based on the pattern of interaction among prices, consumption, and income also show that price increases without an increase in income have a negative impact on consumption, which in turn has a negative impact on future prices (Figure 9)[2]. According to this estimate, if consumer prices temporarily rise by about 0.3%, consumer spending will fall by about 0.4% over the long term. This means that the pace of increase in consumer prices will gradually diminish as income and consumption decline[3].

Figure 9. Response to Consumer Prices



Source: Estimated based on the Cabinet Office's National Accounts and the Ministry of Internal Affairs and Communications' Consumer Price Index.
Note: Consumer prices, disposable income (real), and household consumption expenditures (real) in response to the consumer price shock. Dotted lines indicate ± 2 standard deviations. See footnote for details.

It should be noted that such mechanisms are likely to work in Japan. Japan lags behind the United States and Europe in vaccination programs and lags behind other countries in the recovery of domestic demand. As a result, in the United States, where the economy is recovering rapidly, the overall demand shortage in the economy is expected to be resolved soon, turning into an inflation gap, while in Japan, a deflationary gap of 2 to 3% is

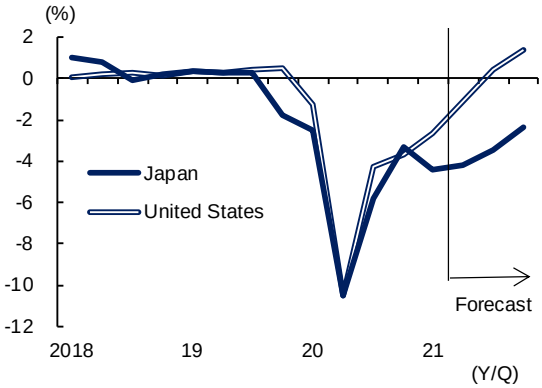
[2] The response of consumption to consumer price increases is based on the impulse response function of the vector autoregressive (VAR) model. The model uses three variables: consumer prices (excluding fresh foods), real disposable income, and real domestic household final consumption expenditures (all logarithmic values). A dummy variable at the time of the consumption tax increase is also used (a variable with 1 each in the April-June of 1997 and the April-June of 2014). The impulse response function is a Cholesky decomposition of the above order of variables. Even if the variables are rearranged, there is no big difference in the shape of the response function. The lag degree is 4. The estimated period is from January-March 1995 to October-December 2019.

[3] Variance decomposition based on VAR model estimates shows that the impact of changes in disposable income and consumer spending on changes in consumer prices rose from 10% in the fourth quarter to 38% in the 32nd quarter.

expected to remain this year (Figure 10). In Japan, it is difficult to expect a full-fledged rise in income levels, as the general trend in the annual spring wage negotiations this fiscal year has been to postpone pay-scale increases.

While the rise in the international commodity market has been triggered by the recovery of the U.S. and other overseas economies, it is also a cost-push for Japan, where demand recovery is slow, and income is stagnant. It should be noted that if domestic prices rise without an increase in income, demand tends to decline and prices tend to decline.

Figure 10. GDP Gap

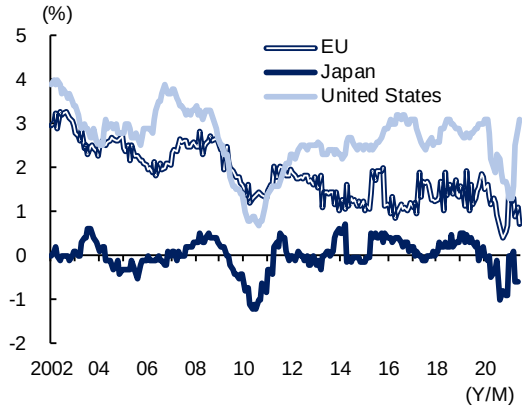


Source: Cabinet Office, Congressional Budget Office
Note: The U.S. forecast comes from the Congressional Budget Office. Estimates for Japan are based on projections by the Japan Research Institute, assuming a transition at the latest potential growth rate (+0.5% per annum).

5. No prospect of a rise in service prices

Wage increases are essential for sustained price increases. As higher wages stimulate demand, firms are likely to pass on the cost of higher wages to their customers. However, the movement of wages in Japan has been weak for a long period of time, and the growth in service prices, which is strongly affected by wages, has also been slow. The difference in service prices between Japan and the U.S. and Europe is still large (Figure 11), in contrast to goods prices where the difference in growth between Japan, the U.S., and Europe has diminished substantially as noted above. Even in the 2010s, the rate of increase in service prices in Japan was 1 to 2% lower than in the United States and the Europe, which mainly results from the lower inflation rate in Japan than in the United States and Europe. It has been pointed out that many factors are behind Japan's stagnant wages. In particular, many studies indicate Japan's employment practices as one of the main factors. For instance, (i) the basic stance of labor and management toward maintaining employment and curbing wage increases and (ii) the existence of middle-aged and elderly people who continue to moderate excessively high wages may be factors related to weak wages.

Figure 11. Service Price (YoY)

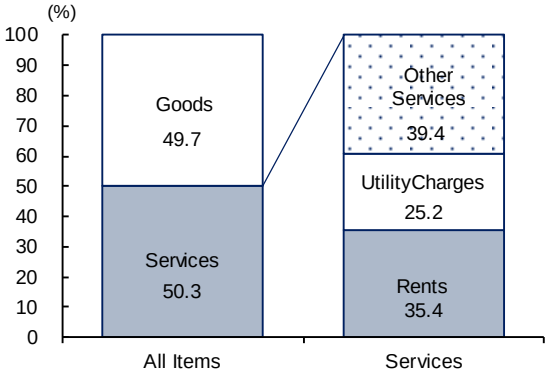


Source: Ministry of Internal Affairs and Communications, Consumer Price Index; Bureau of Labor Statistics, U.S. Department of Labor, Consumer Price Index (CPI); Eurostat, Consumer Price Index (HICP).
Note: The 2014 value for Japan is adjusted for consumption tax. Energy excluding services in the United States.

Wages aren't the only reason for service price weakness. It is also partly due to rigid pricing practices rooted in institutions and their practices. As will be described later, rents and utility bills fall into this category, and together these account for 60% of all services (Figure 12). When comparing price movements with those in the European Union, rents in Japan have barely increased and are nearly 2% lower than in the EU on a year-on-year basis. Public utility charges in Japan have recently fallen by more than 1% from the previous year, although

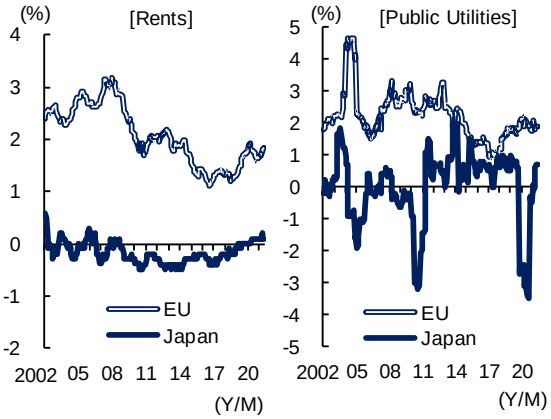
they have come close to the growth seen in the EU at times (Figure 13).

Figure 12. Weighting of the Consumer Price Index



Source: Ministry of Internal Affairs and Communications Consumer Price Index
Note: Of these, services represent a percentage of overall services. Rents for public services, the Urban Renaissance Agency, and public corporations are not included in public utility charges, but are included in rents.

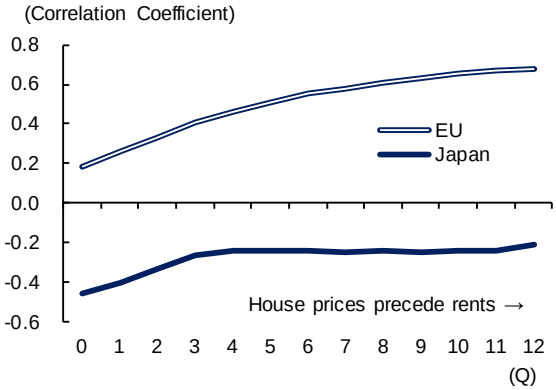
Figure 13. Rents and Utility Charges (YoY)



Source: Ministry of Internal Affairs and Communications, Consumer Price Index; Eurostat, Consumer Price Index (HICP)
Note: Energy-related, excluding utilities in the euro area. Public utility charges in Japan are adjusted for the 2014 consumption tax.

Rents in Japan are known to be rigid and not reflective of supply-demand trends. This is because, as a rule, the timing of rent revision is limited to the renewal of the lease contract, and the contract period is often set at longer than two years. Another reason for the rigidity is that rent is often left unchanged when the same resident continues to renew the contract. A previous study in Japan, which analyzed microdata on rent, estimated that rents were revised for new contracts 25% of the time, while only 3% of the time for renewals. On a combined basis, 5% of new and renewal contracts are revised, compared with one-fourth in Germany and one-fourteenth in the United States, the report said. As a result, most rents remain unchanged in Japan and do not flexibly reflect developments in the housing and land markets. Figure 14 shows the correlation coefficient between rents and housing prices. In the EU, housing price movements spread to rents with a delay, and the correlation coefficient after three years reached about 0.7. In Japan, however, the correlation coefficient is slightly negative, and there is no positive correlation between rents and house prices.

Figure 14. Time Difference Correlation Coefficient between Rents and House Prices



Source: Ministry of Internal Affairs and Communications, Consumer Price Index; Eurostat, Consumer Price Index (HICP); BIS, Residential Property Prices
Note: The time difference correlation coefficient between the preceding year's rents and the preceding year's house prices. Calculated based on data from January-March 2002 to October-December 2020.

Furthermore, there are significant differences in public utility charges between Japan and the United States and Europe. According to Shintani et al. [2016], in the United States and Europe, public sector reform was implemented from the 1980s to the 1990s, when fiscal deterioration was seen as a problem, and independent regulatory commissions were established along with privatization and stronger governance. These commissions

were given the authority to decide public utility charges, taking into account the profitability of the business, and set up a system to eliminate government intervention that tends to disfavor unpopular price increases. As a result, utility charges in the United States and Europe tend to be flexibly revised in response to changes in costs. In Japan, on the other hand, many public enterprises, such as those involved in the provision of water supply, hospitals, and transportation, set rates that are lower than the cost, and deficits in profits and the injection of subsidies have become normal. This difference in fiscal discipline has caused a difference in the growth of public utility charges between Japan and the West.

In this way, the weak prices in Japan are strongly influenced by various systems and practices such as the labor market, rent market, and fiscal management. Therefore, it is difficult to achieve sustained inflation simply by changing firms' pricing behavior, and the underlying inflation rate in Japan is expected to remain low.

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