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The Widening Inflation Gap Between Japan and the United States Keeps a Weaker Yen

-Behind service-led price volatility-

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<Summary>

- The inflation gap between Japan and the United States is widening. The year-on-year difference in consumer prices between Japan and the United States is about 6%, the highest level in 40 years. This is mainly because of the tight supply-demand balance in some goods markets. The underlying inflation gap has been a mild 1 percentage point since before the coronavirus outbreak.
- However, there is a possibility that the inflation gap between Japan and the United States could widen in the future due to service initiatives. In the United States, soaring housing prices are likely to accelerate rent hikes. Wage growth is also increasing due to a severe labor shortage, which is expected to affect service prices. In Japan, housing prices are rising and labor shortages are intensifying, but wages will only grow at a sluggish pace due to Japanese trade and employment practices.
- In general, if the inflation gap widens due to an increase in U.S. prices, the yen will weaken in the short term due to expansion in the interest rate gap (interest rate parity), and in the medium to long term, the yen is likely to rise in order to establish the law of one price (purchasing power parity). However, the service-led inflation gap may keep a weaker yen in the future due to weak adjustment pressure to the yen's appreciation. The reason for this is that there is little opportunity for price arbitrage in the service market through trade transactions and other means, making it difficult to establish purchasing power parity. In fact, unlike goods, purchasing power parity, which is measured by service prices, is not linked to the exchange rate, and the law of one price does not hold. In recent years, the

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imbalance in the prices of services between Japan and the United States has widened, with the price of services currently 1.7 times higher in the United States than in Japan.

The benefits of a weak yen tend to be enjoyed mainly by overseas investors such as global companies. On the other hand, the burden of paying for imports is rising for the economy as a whole, and higher local prices are increasingly being faced by overseas travelers. It should be noted that many companies and households are facing greater disadvantages from a weaker yen than before.

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1. The Goods Driven Inflation Gap between Japan and the United States

The inflation gap between Japan and the United States is widening. Consumer prices in the United States are close to 7% on a year-on-year basis, widening the gap with Japan, which remains near zero percent. A similar difference can be seen in the core index excluding food and energy. While the year-on-year rate of change in the United States accelerated to + 4.9% in November 2021, the rate of decline in Japan was -1.2% in October 2021, marking the first decline since the global financial crisis (Figure 1, left). The gap between the two widened to 5.8 percentage points in October 2021, the largest difference in 40 years since September 1981 (Figure 1, right).

The widening of the inflation gap includes special factors and does not necessarily reflect underlying developments. A rebound in U.S. prices from the previous year's decline and special movements in individual items are contributing to the inflation gap. In the United States, year-on-year growth in 2021 was boosted by a reaction to a drop in inflation in 2020 during the coronavirus outbreak. Moreover, in the United States, the price of used cars has soared due to automobile supply constraints, which has greatly increased overall prices. Used car prices in the United States are highly sensitive to supply and demand conditions and are known to fluctuate widely. In Japan, mobile phone charges have fallen sharply this year, depressing overall prices.

Figure 2 shows the inflation rate adjusted for these effects. The inflation rate is (i) measured on an annualized basis compared to two years prior in order to eliminate the rebound from the previous year, and (ii) used cars and mobile phone charges are excluded from the core index in the United States and Japan, respectively. Inflation in the United States is mild at just under 3%, while in Japan it is in the low zero percent range. The inflationary gap, which is the U.S. inflation rate minus the Japanese inflation rate, is in the mid 2 percentage point range, which is the same level as the historical average, and is only about 1 percentage point larger than before the coronavirus outbreak (Figure 3). The underlying inflation gap is not as large as the headline and core indexes suggest.









Source: the Ministry of Internal Affairs and Communications, U.S. Department of Labor Note: In the United States, food and energy, used cars and trucks are excluded. Food, energy and communication charges (mobile phones) excluding Japan. Adjusted for Japan consumption tax.

Figure 3 Difference in Consumer Prices (Core excluding Special Factors)

[Annualized Rate from Two Years Ago] (Percentage Points)



^{1979 82 85 88 91 94 97 00 03 06 09 12 15 18 21} (Y/M)

Source: the Ministry of Internal Affairs and Communications, U.S. Department of Labor Note: In the United States, food and energy, used cars and trucks are excluded. Food, energy and communication charges (mobile phones) excluding Japan. Adjusted for Japan consumption tax. The horizontal line represents the level on October 21. The recent widening of the inflation gap is mainly caused by the price of goods (Figure 4). In the United States, supply constraints are becoming more severe, and shortages of parts and tight logistics networks are driving up the prices of new cars, home appliances and furniture. In recent years, there has been little difference in inflation when comparing goods between Japan and the United States, but it has increased since the coronavirus outbreak. On the other hand, there has been a stable inflation gap of about 2 percentage points in service prices since before the coronavirus outbreak, with no significant change in the situation since the start of the pandemic.

2. The Future Inflation Gap Will Be Service-Driven

The inflation gap between the United States and Japan could widen in the future, led by services. This can be attributed to (i) fluctuations in asset prices and (ii) fluctuations in wages. First, in terms of asset prices, it is thought that the difference in the housing price pass-thorough to rents creates an inflation gap. In both Japan and the United States, housing prices have been rising since before the coronavirus outbreak, and have accelerated ever since (Figure 5, left). In the United States in particular, housing prices are up nearly 20% year on year. On the other hand, rent movements between Japan and the United States differ. In the United States, rent prices have continued to rise by about 3%, while in Japan, they have barely budged (Figure 5, right).

This disparity is strongly influenced by differences in trading practices, as noted by Nishioka [2021]. In both Japan and the United States, rents are revised when a contract is renewed, but the lease term in the United States is generally one year, while in Japan it is more than two years. Furthermore, in Japan, when a single resident continuously renews a contract, the rent is often kept unchanged, and rent revision is limited to contracts for new residents. According to studies in Japan, the number of contracts for which rent was revised in one year is estimated to be only 5% of all contracts in Japan, far lower than the 70% seen in the United States. Looking at the time-lagged correlation coefficient between rents and housing prices, in the United





Figure 4 Consumer Prices

Source: the Ministry of Internal Affairs and Communications, U.S. Department of Labor Note: Annual rate compared to two years ago. Food, energy, used cars and trucks, excluding U.S. goods. Food and energy, excluding Japanese goods. Communication charges (mobile phones), excluding services in Japan. Adjusted for Japan consumption tax.

Figure 5 Housing Prices and Rent (YoY)



Source: the Ministry of Land, Infrastructure, Transport and Tourism, the Ministry of Internal Affairs and Communications, Federal Housing Finance Agency, U.S. Department of Labor

Figure 6 Correlation Coefficient between Housing Prices and Rent



Source: Adapted from the Ministry of Land, Infrastructure, Transport and Tourism, the Ministry of Internal Affairs and Communications, the Federal Housing Finance Agency, and the U.S. Department of Labor

Note: Time-lagged correlation between housing prices and rents over the previous year. From January-March 1995 to July-September 2021.

States, there is a lag between the movement of spreads to rent, with the correlation coefficient reaching 0.8 after one and a half years, while in Japan, there is no correlation (Figure 6). If we simply apply this pattern, rents in the United States will rise by $5 \sim 6\%$ over the next year or two, whereas in Japan they will rise by very little.

Differences in wages are also seen between Japan and the United States. While wages in the United States have accelerated since the coronavirus outbreak, the wage growth rate in Japan has remained near zero (Figure 7, left). The rise in wages in the United States is the result of a growing labor shortage. The U.S. labor force participation rate has fallen nearly 2 percentage points since before the coronavirus outbreak, whereas in Japan, the rate has almost returned to its pre-coronavirus level (Figure 7, right). It has been pointed out that the decline in the labor force participation rate in the United States is partly attributable to early retirement of the elderly, since the health risk caused by the coronavirus and an increase in financial assets due to the rise in policy support funds and stock prices have encouraged retirement. As a result, labor shortages may continue in the United States, and wages are likely to face upward pressure.

The Japanese economy is also suffering from chronic labor shortages, which may become more apparent as the economy recovers. However, in Japan, wages are not reflective of labor shortages. This is particularly true for full-time employees, and contrasts with part-time wages, which before the coronavirus





Source: the Ministry of Health, Labour and Welfare, the Ministry of Internal Affairs and Communications, and the U.S. Department of Labor

Note: Wage per person is the annual rate compared to two years ago.

Figure 8 Wages by Type of Employment



had grown at the same pace as those in the United States (Figure 8). Many people cite Japanese employment practices as the reason why wages for regular workers do not reflect labor shortages. It has been pointed out that in Japan, where long-term employment is the basic policy, it is difficult to adjust employment during recessionary periods, and wage increases during boom periods tend to be restrained. The fact that the job market is not active due to long-term employment may also restrain wage increases. In contrast to the United States, there is no mechanism in place for widespread wage increases in Japan to prevent worker outflow during boom periods. In light of these factors, there is a possibility that wage increases will differ between Japan and the United States, particularly among full-time employees, and that the inflation gap in services will widen.



3. The Service-Driven Inflation Gap is not Leading to a Strong Yen

In general, if the inflation gap widens due to an increase in U.S. prices, the yen tends to weaken in the short term and strengthen in the long term. According to the interest rate parity theory, if the inflation gap (between the United States and Japan) widens, the interest rate gap between the United States and Japan will widen and the yen will weaken¹. Higher expected inflation and a tighter monetary policy are contributing factors to higher interest rates. On the other hand, according to the purchasing power parity theory, when the inflation gap widens, price arbitrage between Japan and the United States works to establish the law of one price, and the yen rises. Therefore, a widening inflation gap exerts a countervailing force on the exchange rate through interest rate parity and purchasing power



parity, but the pace of adjustment through financial transactions is faster than through trade transactions. Therefore, the yen is likely to weaken in the short term but strengthen in the medium to long term. This movement is shown conceptually as goods in Figure 9. When the inflation gap widens due to price increases in the United States, the yen initially depreciates in line with the interest rate parity and then adjusts to a stronger level in line with the new purchasing power parity over the medium to long term.

However, when inflation differentials occur in services, exchange rate movements may differ from those for goods. One of the reasons for this is that purchasing power parity is difficult to achieve for services that have few opportunities for price arbitrage through trade transactions. For this reason, as illustrated in Figure 9, even

if the inflation gap in services widens, the appreciation pressure on the yen after its depreciation will be weak, and the exchange rate will only return to its original level². Depending on the speed of the convergence, the yen will remain weak for a long period of time. The failure of purchasing power parity means that the law of one price has not been established in the service sector, and service prices in the United States are higher than those in Japan.

According to estimates, purchasing power parity, as measured by service prices, is not linked to actual exchange rates³ (Figure 10). This is in contrast to the fact that the purchasing power parity of goods is generally in line with long-term exchange rate Figure 10 Exchange Rate (Yen/Dollar) (JPY/USD)



¹ The rise in U.S. interest rates will lead to stronger demand for the dollar and a weaker yen due to higher investment yield on dollar assets. As a result, the yield on dollar assets converted into yen will be balanced by the yield on yen assets.

 $^{^{2}}$ In this case, we assume that there is no inflation differential in goods. The purchasing power parity will remain unchanged, and the exchange rate will converge to the initial level in the medium to long term.

³ Purchasing power parity is defined as the ratio of prices in Japan to those in the United States. We assume January 1987 as a reference point, when the yen's rapid appreciation after the Plaza Accord stopped. It is also important to verify the direction of change, as values vary greatly depending on the setting of the reference point.



levels. The direction of purchasing power parity and exchange rates is more consistent for goods than for services. As mentioned above, in recent years, the purchasing power parity of goods has remained flat due to the small inflation gap in goods, which is consistent with the direction of the exchange rate. In contrast, purchasing power parity in services where inflation disparity is the norm continues to deviate from the exchange rate. The purchasing power parity of services was 66 yen to the dollar in October in 2021, considerably higher than around 110-yen exchange rate. This means that the price imbalance between Japan and the United States has become significant in the service sector. Currently, the U.S. service



prices are 1.7 times higher than those of Japan⁴ (Figure 11). In the future, if the inflation gap in services widens and the yen weakens at the same time, the imbalance will become stronger.

4. There is a Bias Toward the Economic benefits of a Weaker Yen

In the economy as a whole, the benefits of a weaker yen outweigh the disadvantages. It should be noted, however, that in recent years, the benefits of a weak yen have tended to be only partially enjoyed, and the disadvantages of a weak yen have increased for many companies and households. Exchange rate fluctuations affect the overall income of the economy through changes in the current account balance. Japan's current account surplus has been running consistently, and in recent years, the surplus in the income account has accounted for most of the current account surplus (Figure 12). A surplus in the income balance means that the interest and dividend income received from overseas investments exceeds the amount paid overseas. When the yen depreciates, revenue in yen terms increases.

However, financial institutions and global corporations are disproportionately the beneficiaries of this surplus. According to the Bank of Japan's "Flow of Funds," (i) foreign securities investment by financial institutions and the general government (pension funds) and (ii) direct investment by corporations account for the majority of the outstanding amount of foreign investment, while the amount invested by households is small





⁴ This is equivalent to the depreciation of the yen in the real exchange rate. Recently, it has been pointed out that the real effective exchange rate for the yen has weakened significantly, partly due to the widening gap in service prices.

(Figure 13). Although the amount of investment by households does not include indirect investment through financial institutions, the amount of foreign currency deposits held by households is small overall.

In terms of the trade balance, the former constant surplus has disappeared, and the effect of the weak yen on swelling the trade surplus has diminished. According to the Bank of Japan's Corporate Goods Price Index, the ratio of contracts denominated in foreign currencies is 63% for exports and 74% for imports. Therefore, if the trade balance is balanced, it will likely be in deficit due to the weak yen. In fact, due to an increase in imports, the burden on companies and households





to pay as a result of the weak yen has been increasing. From 1995 to 2015, imports of raw materials and intermediate goods rose $10 \sim 20\%$, and imports of consumer goods rose 20% (Figure 14). In addition, based on the previous estimation of purchasing power parity, overseas travelers tend to face considerably higher service prices than those in Japan, which is one of the sources of the increased payment burden due to the weak yen.

The effect of the weak yen on boosting export volumes has also declined. This includes (i) the tendency of exporters to stabilize sales prices in local currencies regardless of exchange rate fluctuations, against the backdrop of intensifying competition overseas (Shimizu and Sato [2015]) and (ii) the possibility that the relationship between exchange rate fluctuations and export volumes has been weakened as a result of an increase in exports of components to local companies due to the shift of production bases overseas.

In terms of service exports, the effect of the weakening yen will be minimal for the time being. If the yen continues to depreciate and the prices of services become cheaper than those of overseas countries, normally, more foreign tourists would come to Japan; however, due to the coronavirus outbreak, acceptance of visitors to Japan has been limited and there is no prospect of a recovery in inbound demand.

In this way, the benefits of the weak yen are enjoyed only by some foreign investors. The weakening yen has not boosted exports, and inbound demand is not expected for the time being. On the other hand, the burden of paying for imports is increasing for the economy as a whole, and higher prices are increasingly being faced overseas. It should be noted that the disadvantages of the weak yen may outweigh the disadvantages that many companies and households are facing.

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