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**An Analysis of Economic Fluctuations in
Japan and Changes in their Mechanisms**
—An Empirical Analysis Based on 40 Years of Data—

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Abstract

This study analyzes Japan's macroeconomic changes over 40 years (1985–2024). While the service sector expanded and manufacturing's share declined, an F-test shows that the manufacturing sector's volatility still significantly influences the macroeconomy. Additionally, no strong evidence confirms that the labor market has become more flexible under Okun's Law. Crucially, due to household asset accumulation, the marginal propensity to consume has dropped close to zero, meaning short-term disposable income no longer drives consumer spending. Consequently, consumption has become an autonomous driver of economic cycles. This structural shift weakens the Keynesian multiplier effect, suggesting policy should focus on long-term permanent income rather than temporary fiscal stimuli.

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1. Motivation and Background of the Study

Classical business cycle theory in economics has traditionally posited a process in which exogenous economic shocks—such as a sharp decline in exports or fluctuations in capital investment resulting from technological innovation—affect specific sectors of production, and these effects then propagate in a chain reaction to income, employment, and consumption across the entire macroeconomy. For many years, the transmission mechanism of business cycle fluctuations in the Japanese economy was also widely recognized as following a manufacturing-led pattern: Fluctuations in exports and capital investment affect manufacturing output, which in turn spreads to consumer spending through employment and income.

However, the environment surrounding the Japanese economy in recent years differs significantly from that of the 1980s and 1990s. First, the shift toward a service-oriented (non-manufacturing) industrial structure is steadily progressing. Second, the rapid progression of the declining birthrate and aging population is bringing about macro-level changes in household characteristics and asset-holding behavior. Third, changes in the relationship between the level of economic activity and employment have been noted, driven by the expansion of non-regular employment and shifts toward greater fluidity and flexibility in the labor market.

Tsubouchi (2007) compared economic fluctuation indicators for Japan and the United States from 1985 to 2004, highlighting that the Japanese economy places greater emphasis on manufacturing indicators than the U.S. economy, while indicators related to consumption and employment are relatively less important in its economic structure. The conclusion drawn was based on the fact that consumer spending in Japan was heavily dependent on current fluctuations in disposable income (lacking autonomy) and that the correlation between business cycle fluctuations and employment was weak. On the other hand, the paper's outlook predicted that, as the “shift toward a service-based economy,” “the easing of liquidity constraints due to an aging population,” and “the narrowing of differences in employment relationships between Japan and the U.S.” progressed, Japan's business cycle would also transform into a “U.S.-style” model characterized by high consumption autonomy and a flexible labor market.

Since then, the Japanese economy has experienced rapid aging, further progress toward a service-based economy, and large-scale macroeconomic shocks such as the Lehman Shock and the COVID-19 pandemic. It is therefore important from both academic and policy perspectives to examine whether the outlook presented at that time remains valid today or whether new structural changes have occurred.

The purpose of this paper is to examine whether the outlook at that time actually proved accurate and to empirically investigate whether new changes have occurred in the very mechanisms of business cycle fluctuations, using macroeconomic data covering the past 40 years—which incorporates newly accumulated data from the mid-2000s to the mid-2020s, some 20 years after Tsubouchi’s (2007) analysis. While the previous analysis focused primarily on a comparison between Japan and the United States, this study compares Japan’s macroeconomic data from the past (1985–2004) with that from the recent period (2005–2024). Specifically, we will clarify whether the Japanese-style business cycle—in which fluctuations in exports and capital investment affect manufacturing output, which in turn spreads to income, consumption, and ultimately employment—is shifting toward a U.S.-style consumption- and employment-led autonomous cycle. To this end, we reinterpret the “Permanent Income Hypothesis” and “Okun’s law”—core theories of macroeconomics—within the context of the contemporary Japanese economy, and present theoretical and empirical analyses of the transformation of the marginal propensity to consume, which reflects the relationship between current disposable income and consumption, as well as the accompanying downward trend in the multiplier effect.

2. Theoretical Background and Review of Previous Research

Before proceeding to the analysis of contemporary Japanese macroeconomic data, this paper will clarify the theoretical implications of the two major economic theories that form the backbone of this study—the Permanent Income Hypothesis and Okun’s Law—and their relationship to the marginal propensity to consume.

2. 1 The Permanent Income Hypothesis (PIH)

Proposed by Milton Friedman, the Permanent Income Hypothesis (PIH) critiques the Keynesian consumption function—which posits that household consumption behavior is determined solely by current income (period-specific income)—and argues instead that households smooth their consumption based on permanent income, which is the average income expected to be earned over a lifetime.

Theoretically, current income Y_t is defined as the sum of permanent income Y_t^P —which represents sustainable income—and variable income (temporary income) Y_t^T , which consists of discrete fluctuations such as temporary bonuses or unexpected losses.

$$Y_t = Y_t^P + Y_t^T$$

Consumption C_t is similarly decomposed into constant consumption C_t^P and variable consumption C_t^T ; however, in Friedman’s hypothesis, the fundamental level of

consumption is a constant proportion (α) of permanent income.

$$C_t \equiv C_t^P = \alpha Y_t^P$$

An important implication here is that the majority of current variable income Y_t^T is not consumed but is instead saved (or replenished through the drawdown of assets). In other words, even if a temporary shock occurs in the economy causing current income to surge or plummet, households will not significantly alter their consumption levels as long as their outlook (expectations) regarding future lifetime income remains unchanged.

2. 2 The Relationship Between Liquidity Constraints and the Marginal Propensity to Consume

For the permanent income hypothesis to hold, it requires the assumption of a perfect capital market, in which households can freely borrow funds against the collateral of their future income at no interest (or at a fixed market interest rate). In reality, however, it is difficult to obtain unsecured loans using future income as collateral, and households lacking liquidity on hand (cash, deposits, or financial assets that can be easily converted into cash) are forced to limit their current consumption to the level of their current income, even if their future permanent income is high. This is referred to as a liquidity constraint (or borrowing constraint).

In economies where a high proportion of households face liquidity constraints, macro-level consumption expenditure deviates from the predictions of the Permanent Income Hypothesis and fluctuates strongly in response to changes in current disposable income, as indicated by the Keynesian consumption function (i.e., the marginal propensity to consume has a positive and significant value).

Here, it is necessary to consider differences based on household characteristics (age groups).

- **Young to middle-aged households:** Although their future human capital (wage income) is substantial, they have few accumulated assets (financial assets) at present; therefore, it is difficult for them to maintain consumption in the face of a sudden income shock, making them more susceptible to liquidity constraints.
- **Elderly households:** These households hold substantial financial assets (such as retirement benefits and savings) accumulated during their working years and use these to smooth their living standards; consequently, they tend to behave in accordance with the Permanent Income Hypothesis and are less susceptible to liquidity constraints.

Therefore, as society as a whole ages and the proportion of elderly households among all households rises, the share of households freed from liquidity constraints in the economy as a whole increases. Consequently, it is theoretically expected that fluctuations in macroeconomic consumption expenditure will no longer depend on current income fluctuations (the marginal propensity to consume will decline).

2. 3 The Theoretical Link Between the Marginal Propensity to Consume and the Macroeconomic “Multiplier Effect”

One of the most fundamental conclusions of Keynesian economics is the multiplier effect. Consider the national income identity, in which macroeconomic real GDP (Y) is composed of the sum of consumption (C), investment (I), government spending (G), and net exports (NX).

$$Y = C + I + G + NX$$

Here, we assume the macroeconomic consumption function takes the simplest Keynesian form: $C = c_0 + c_1 Y$ (where c_0 is basic consumption and c_1 is the marginal propensity to consume). In this case, the final increase in aggregate income, ΔY , resulting from an exogenous increase in investment or net exports (ΔI or ΔNX) is determined by the following multiplier process:

$$\Delta Y = \frac{1}{1-c_1} (\Delta I + \Delta NX)$$

As is evident from this equation, the smaller the marginal propensity to consume c_1 becomes, the smaller the value of the multiplier $\frac{1}{1-c_1}$ becomes.

For example, if $c_1 = 0.8$, the multiplier is 5; however, as c_1 approaches 0, the multiplier approaches 1. In recent macroeconomic literature, there has been discussion that “the ripple effect of Japan’s public spending and investment on economic growth (the multiplier effect) has declined” (Hori (2022), among others); it is highly likely that this structural change in the marginal propensity to consume of households lies behind this trend.

2. 4 Regarding Okun’s Law

Okun’s Law, which serves as a key framework for analysis in the context of employment, is a rule of thumb proposed by Arthur Okun that demonstrates a stable negative correlation between a country’s level of economic activity (real growth rate or fluctuations in output) and fluctuations in the labor market (unemployment rate).

In its general formulation, it is expressed as follows in terms of the relationship

between the deviation from the potential growth rate (the GDP gap) or the real growth rate ($\frac{\Delta Y}{Y}$) and the difference from the full-employment unemployment rate (ΔU).

$$\Delta U = -\beta \left(\frac{\Delta Y}{Y} - g^* \right)$$

(where β is the Okun coefficient, and g^* is the economic growth rate required to maintain a constant unemployment rate)

Furthermore, from the perspective of labor input, the growth rate of the number of employed persons is often used in place of the unemployment rate, and the relationship is frequently formulated as an increase in employment is proportional to an increase in real GDP.

In the Japanese economy, internal firm unemployment (such as job retention through employment adjustment subsidies or flexible adjustments to working hours) has traditionally been preferred; consequently, β (the Okun coefficient) is smaller than in the United States, and it has been said that even with slight fluctuations in output, employment (as measured by the unemployment rate or the number of employed persons) remains largely stable (i.e., the correlation is weak). However, following structural reforms and labor market flexibilization (such as flexible adjustments to non-regular employment) since the 2000s, it has been pointed out (by Wakita (2024) and Ito & Hoshi (2020)) that Japan's labor market has moved closer to the U.S. model, and that the unemployment rate and the number of employed persons now react sensitively even to slight changes in real GDP. Statistical verification of these findings is also necessary.

3. Review of Previous Research and Outlook at the Time

In his 2007 study, Hiroshi Tsubouchi focused on differences in the process by which economic shocks spread to other sectors and examined the reasons for the significant divergence in the economic indicators of interest in Japan and the United States based on the following three points.

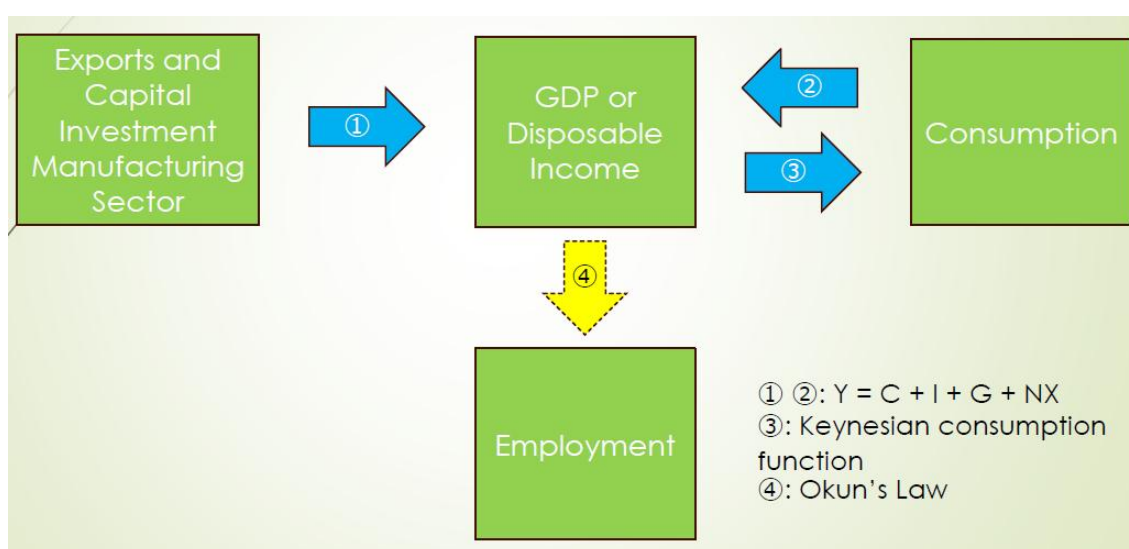
- **Emphasis on manufacturing-related indicators:** Compared to the United States, Japan has a higher proportion of the manufacturing sector—which exhibits greater volatility in growth rates—within its overall economy; as a result, fluctuations in the overall level of economic activity tended to be larger than in the United States.
- **Neglect of Consumer Spending Indicators:** While U.S. consumer spending is smoothed out and does not depend heavily on short-term fluctuations in income (i.e., it is autonomous), Japanese consumer spending is strongly dependent on

current income fluctuations and lacks such autonomy; consequently, it was not regarded as an independent driver of the economy.

- Lack of consistency in employment indicators: In Japan, there was a weak correlation between fluctuations in the level of economic activity (goods market) and fluctuations in employment (labor market), making it difficult to use employment indicators as a measure of real-time economic activity.

Based on these characteristics, the paper concluded that “economic fluctuations in Japan occur when fluctuations in exports and capital investment affect manufacturing output, which in turn spreads to income and consumption” (Figure 3).

Figure 3: Traditional Mechanism of Business Cycles in Japan (1985–2004)



Furthermore, looking ahead, we predicted that Japan’s economic cycle would gradually shift toward a U.S.-style model (consumption- and employment-led) due to: (1) a decline in the share of manufacturing resulting from the shift toward a service-based economy; (2) the easing of liquidity constraints associated with an aging population (as elderly households rely less on disposable income for consumption by drawing down their assets); and (3) the continued convergence of the correlation between economic activity and employment in Japan and the United States. In this paper, we examine these three outlooks using data accumulated over the past 40 years (primarily from 1985 to 2024).

4. Three Analyses of Structural Changes in the Japanese Economy

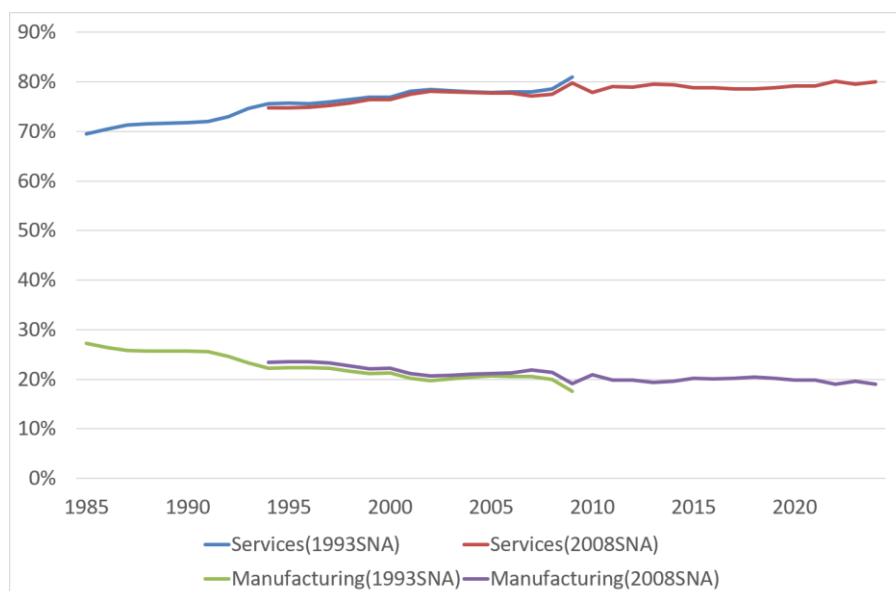
4. 1 The Progress of the Economy’s Shift Toward Services and the Changing Impact of Manufacturing Fluctuations on the Macroeconomy

First, we examine the impact of fluctuations in the manufacturing sector on the macroeconomy (Path ① in Figure 3). As Tsubouchi (2007) pointed out, Japan has a higher proportion of “manufacturing—which exhibits greater dispersion in growth rates”—relative to the total economy compared to the United States, and this has been a factor driving up overall macroeconomic volatility. The outlook predicted that the influence of the manufacturing sector would decline as the shift toward a service-based economy progressed.

4. 1. 1 Consistent Trends in the Ratios of Manufacturing and Services

Using macroeconomic statistical data (SNA: System of National Accounts), we examine the long-term trends (1985–2024) in the shares of the service and manufacturing sectors within the total economy (Figure 4-1-1).

Figure 4-1-1: Share of Manufacturing and Services in Total Industry



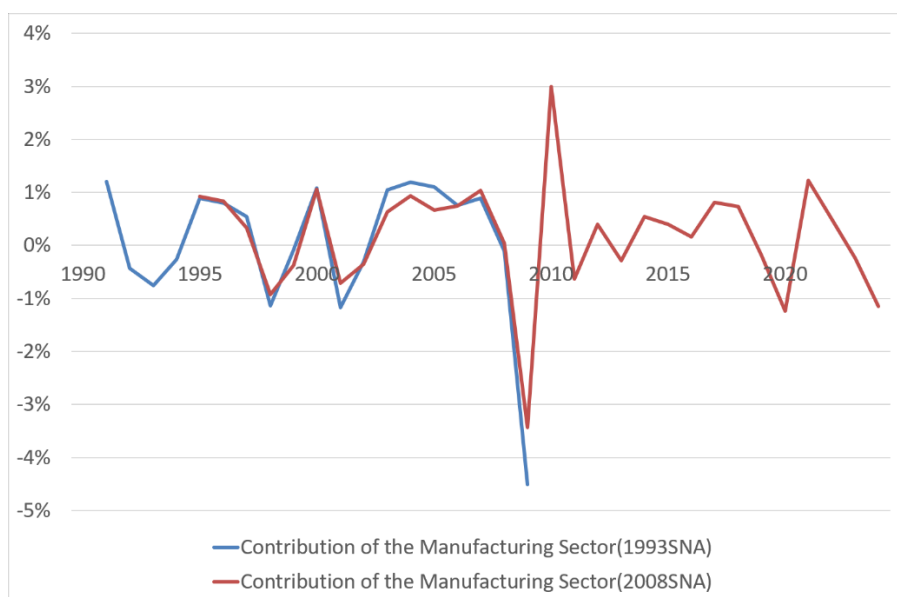
Source: Cabinet Office, “National Accounts”

- **Share of the service sector:** This rose from 69% in 1985 to 78% in 2005, reaching 80% by 2024. This confirms that the shift toward a service-based economy in Japan has progressed consistently over the past 40 years.
- **Share of the manufacturing sector:** Conversely, it has consistently declined from 27% in 1985 to 21% in 2005, and further to 19% in 2024.

4. 1. 2 Comparison of the Variance in Manufacturing’s Contribution and Statistical Testing (F-test for variances)

Has the impact of fluctuations in manufacturing output on the overall economy diminished as a result of the decline in the sector’s share of the economy? To examine this, we excluded 2009—a year in which the impact of a major global economic shock (the Lehman Shock) was exceptionally pronounced—and compared the variance in the manufacturing sector’s contribution to real growth rates between two periods: the earlier period (1991–2008) and the current period (2011–2024) (Figure 4-1-2).

Figure 4-1-2 Trends in the Contribution of the Manufacturing Sector



Source: Cabinet Office, “National Accounts”

The statistical values extracted from the Cabinet Office’s National Accounts data are as follows (Figure 4-1-3).

Table 4-1-3: Two-Sample Test of Variance

	Contribution of the Manufacturing Sector (1991–2008)	Contribution of the Manufacturing Sector (2011–2024)
Average	0.002904563	0.000752938
Variance	6.75744E-05	5.347E-05
Number of observations	18	14
Degrees of freedom	17	13
Observed Variance Ratio	1.263782685	
P(F ≤ f) one-sided	0.338811536	
F Critical Value (One-sided)	2.498672123	

Numerically, the variance in the manufacturing sector's contribution appears to be decreasing in the 2011–2024 period compared to the 1991–2008 period. However, when an F-test for the ratio of variances was conducted to verify the statistical significance of the null hypothesis that the variances are equal between these two periods, the one-tailed p-value was 0.34 (33.88%). This means that the null hypothesis cannot be rejected at the 5% significance level.

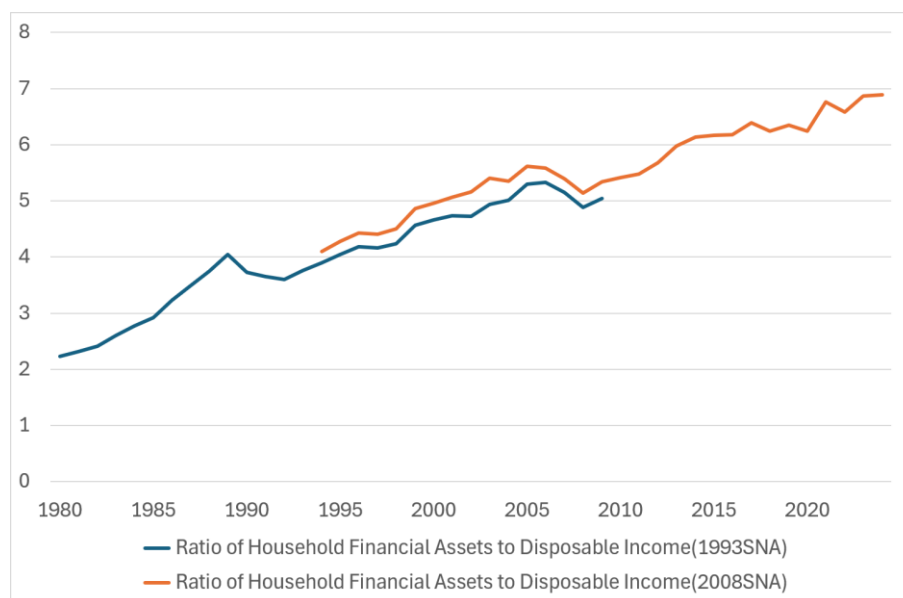
In other words, while the structural shift toward a service-oriented economy in Japan is clearly progressing in terms of market share, the conclusion is that “it cannot be said that the impact of fluctuations in the manufacturing sector on the macroeconomy as a whole has become statistically significantly smaller.” This suggests that the breadth of the manufacturing supply chain and its high sensitivity to investment and exports continue to determine macroeconomic volatility.

4. 2 Changes in the Dependence of Consumer Expenditures on Current Disposable Income (Marginal Propensity to Consume)

Next, we examine the transmission from income to consumption (Path ③ in Figure 3). In the Japanese economy of the past, consumption was viewed as a passive force driven by income (lacking autonomy); however, according to the Permanent Income Hypothesis, as households accumulate financial assets and become able to optimize their consumption over time, liquidity constraints on fluctuations in consumer spending should ease, and dependence on fluctuations in current disposable income should decrease.

4. 2. 1 Long-Term Upward Trend in the Ratio of Household Financial Assets to Disposable Income

Figure 4-2-1: Ratio of Household Financial Assets to Disposable Income



Source: Cabinet Office, “National Accounts”

When examining the accumulation of financial assets across the entire Japanese household sector as a ratio of disposable income, the balance of household financial assets has continued to grow at a pace significantly outpacing the growth of disposable income since the 1980s (Figure 4-2-1). From just over twice the level of disposable income in the early 1980s, it has reached a level of nearly 6 to 7 times disposable income in the 2010s and 2020s.

This accumulation of assets at the macro level suggests that Japanese households as a whole have gained significantly greater capacity to smooth consumption in the face of temporary income shocks by drawing down assets or adjusting savings—in other words, the proportion of households facing liquidity constraints has decreased, creating an environment conducive to the Permanent Income Hypothesis.

4. 2. 2 Changes in Correlation Coefficients Between 1985–2004 and 2005–2024

Therefore, we first analyzed how the correlation between disposable income (year-on-year) and household final consumption expenditure (year-on-year) changed between 1985–2004 (first half) and 2005–2024 (second half) using quarterly data. The results are as follows.

- **Correlation coefficient for 1985–2004: 0.768441** (strong positive correlation)
- **Correlation coefficient for 2005–2024: –0.16919** (weak negative correlation; virtually no correlation)

To test the statistical significance of this difference in correlation coefficients, we performed a test using Fisher’s Z-transformation (Z-value). The Z-value was -0.17083, and the P-value (two-tailed) was 1.74×10^{-13} —a value that is extremely close to zero. Consequently, the null hypothesis that the correlation coefficient does not change between the two periods is rejected at the 5% significance level. In other words, it can be seen that the correlation between income fluctuations and consumption fluctuations has weakened since the mid-2000s.

4. 2. 3 Estimation Results of the Macro Consumption Function Using the Instrumental Variables (IV) Method

Furthermore, to rigorously capture changes in the mechanism determining consumption, we estimated the macro consumption function separately for each of the two periods. In doing so, we used the instrumental variables (IV) method to eliminate endogeneity bias—the feedback relationship of simultaneous determination in which income determines consumption and, at the same time, consumption determines GDP (income).

Consumption Expenditures (year-on-year) = $a_0 + a_1$ Disposable Income (year-on-year)

The quarterly estimation results are as follows (Figure 4-2-2).

Table 4-2-2 Estimation of the Macro Consumption Function

Estimation Period: 1985–2004				
Adjusted R ² : 0.478156				
Number of observations: 80				
	Coefficient	Standard error	t-value	P-value
Constant	0.009117	0.003158	2.887519	0.005
Disposable Income	0.898053	0.109952	8.167704	0
Estimation Period: 2005–2024				
Adjusted R ² : 0.000226				
Number of observations: 80				
	Coefficient	Standard error	t-value	P-value
Constant	0.007748	0.004992	1.552193	0.1247
Disposable Income	-0.0523	0.560576	-0.09329	0.9259

For the period 1985–2004, the coefficient for disposable income (marginal propensity to consume) was extremely high at approximately 0.90 and was statistically significant at the 1% level. This supports a strong liquidity constraint (Keynesian model), implying that a 10,000-yen increase in current-period income leads to a 9,000-yen increase in consumption.

However, for the period 2005–2024, the marginal propensity to consume turned negative at -0.052 ; furthermore, given that the p-value is 0.9259, the null hypothesis—that it is statistically zero (current fluctuations in disposable income do not affect consumption expenditure)—cannot be rejected.

Furthermore, to determine whether the model’s dynamic lag structure (residual effects of income and consumption from previous years) should be taken into account in this estimation, we also conducted a reference estimation that included a 4-period lag (data from one year ago) of disposable income and consumption expenditure as explanatory variables; however, in both the previous period (1985–2004) and the current period (2005–2024), the p-values for the coefficients of the 4-period lag variables significantly exceeded the 5% significance level, confirming that they do not contribute to the model’s explanatory power. Therefore, adding lags is unnecessary, and the above conclusion—that current-period income and consumption are decoupled—is robust regardless of whether lags are included.

The statistical data demonstrate a structural change in Japan in recent years, namely that fluctuations in consumption expenditure no longer depend on fluctuations in current-period income (the marginal propensity to consume is no longer positive). It can be said that households have shifted toward a world governed by the Permanent Income Hypothesis, in which they make autonomous consumption decisions based on future expectations, asset balances, or other factors, rather than being swayed by short-term fluctuations in income.

4. 3 The Deepening Correlation Between the Level of Economic Activity (Real Growth Rate) and Employment (Number of Employed Persons and Unemployment Rate)

We turn our attention to structural changes in the labor market. Several recent studies (e.g., Wakita (2024) and Ito & Hoshi (2020)) have pointed out that the flexibility of Japan’s labor market has increased, and—as Okun’s Law suggests—unemployment rates and employment have become more sensitive to even slight fluctuations in real

GDP. We examine whether this represents a statistically significant trend (structural change) beyond a mere temporary phenomenon.

Specifically, as in Section 4. 2, we exclude 2009—which contains outliers due to the Lehman Shock—and compare the correlation coefficients between real growth rates and employment indicators (number of employed persons [year-on-year] and the unemployment rate [year-on-year change]) for the periods 1991–2008 and 2011–2024.

4. 3. 1 Comparison of Correlation Coefficients Between Real Growth Rate and Number of Employed Persons (Year-on-Year)

- **Correlation coefficient for 1991–2008: 0.625076**
- **Correlation coefficient for 2011–2024: 0.260133**
- **Results of the difference test: Z-value = 1.176554, P-value (two-tailed) = 0.239374**

Numerically, the correlation between the economic growth rate and the number of employed persons has actually weakened in recent years ($0.63 > 0.26$). Even when testing for the homogeneity of the correlation coefficients, the p-value is 0.24, and the null hypothesis that the correlation coefficients have not changed cannot be rejected at the 5% significance level. In other words, from the perspective of the number of employed persons, it cannot be said that the relationship has become even stronger.

4. 3. 2 Comparison of Correlation Coefficients Between Real Growth Rate and Total Unemployment Rate (Year-on-Year Change) (Direct Test of Okun’s Law)

Regarding the relationship between the level of economic activity and employment, Wakita (2024, pp.156-157) compared the trends in the real growth rate and the unemployment rate (year-on-year change), concluding that “since 2003, the unemployment rate has become sensitive to even slight changes in real GDP under Okun’s Law.” Furthermore, Ito and Hoshi (2020, pp.87) also note that “from 2003 until 2014, the unemployment rate in Japan fluctuated markedly as output activities expanded and contracted, suggesting that the Japanese labor market became more flexible, similar to the US labor market.”

To verify this, we compared the correlation coefficients between real growth rates and the unemployment rate (year-on-year change) for the periods 1991–2008 and 2011–2024.

- **Correlation coefficient for 1991–2008: –0.57673** (a stable negative correlation, where higher economic growth leads to a lower unemployment rate)

- **Correlation coefficient for 2011–2024: -0.52252** (continues to maintain a negative correlation)
- **Results of the test for differences: Z-value = -0.19586 , P-value (two-tailed) = 0.84472**

Even after conducting a test for the homogeneity of correlation coefficients, there is no evidence of a significant difference in the correlation coefficients between the two periods (P-value = 0.84), so the null hypothesis that the correlation coefficients remain unchanged is not rejected.

4. 3. 3 Conclusions of the Analysis on Employment

As described above, the results of the statistical analysis show that, regardless of whether the number of employed persons or the unemployment rate is used as the employment indicator, the null hypothesis that the correlation coefficient remains unchanged across the two periods was not rejected at the 5% significance level.

In other words, based on the statistical data, the “sensitive response of the unemployment rate since 2003” pointed out by Ito and Hoshi (2020) and Wakita (2024) was most likely due to the employment adjustment phase following the bursting of the bubble or a temporary phenomenon, rather than long-term structural changes in the labor market as a whole. Based on long-term and statistical analysis, the conclusion is that “it cannot be said that the relationship between fluctuations in the level of economic activity and fluctuations in employment has deepened further in recent years (or shifted toward the U.S. model).” Okun’s Law in the Japanese labor market has consistently maintained a unique characteristic—namely, that while it has been stable from the past to the present, it does not fluctuate as vividly as in Western countries (as indicated by the constant influence of Path ④ in Figure 3).

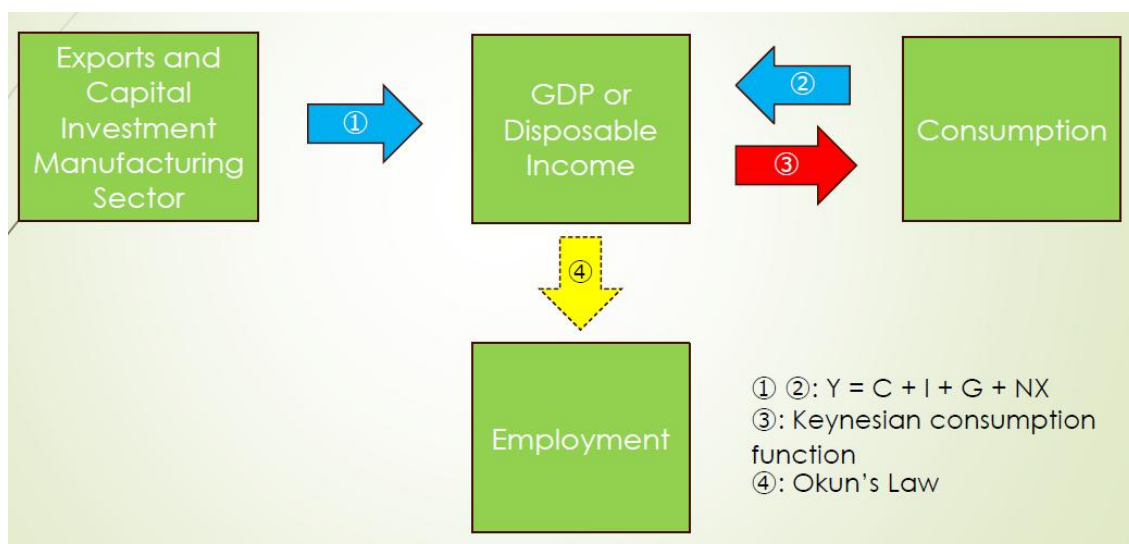
5. Comprehensive Discussion: Transformation of the Business Cycle Mechanism

By integrating the results of the three empirical analyses presented thus far, we will conduct a comprehensive discussion on the transformation of the characteristics of business cycle fluctuations in the Japanese economy from a macro-structural perspective.

When comparing the 20-year period before 2005 with the 20 years since then, the changes in the strength of macroeconomic shock transmission channels can be

summarized as shown in the following diagram (Changes in Transmission Processes) (Figure 5).

Figure 5: Transformed Mechanism of Business Cycle in Japan (2005–2024)



The empirical results indicate that the only factor responsible for the change in the characteristics of business cycle fluctuations is the diminished impact of disposable income on consumer spending (the disruption of Path ③), rather than changes in industrial structure or labor market sensitivity (Path ① and ④).

- **Validity of Current Economic Trend Indices:** Section 4-1 showed that, despite the ongoing shift toward a service-based economy, the impact of the manufacturing sector on business cycle fluctuations has not statistically diminished. This supports the view that the current approach—in which the Cabinet Office’s Economic Trend Indices (CI and DI) incorporate numerous manufacturing and mining-related indicators, such as the Production Index (Mining and Manufacturing), Final Demand Goods Inventory Ratio Index, and Durable Consumer Goods Shipments Index, into their coincident and leading series—remains effective and reasonable for capturing macroeconomic trends even today.
- **Consumption Expenditure as a “Starting Point”:** The most significant change lies in the decision-making process for consumption expenditure. As liquidity constraints on consumption have eased due to the increase in household financial assets, consumption expenditure has, in the short term, become less dependent on

fluctuations in disposable income (the marginal propensity to consume is not positive). This indicates that, in modern Japan, consumption is no longer a passive recipient of income growth—it does not simply increase because income has risen. Consumption has transformed into an autonomous factor that moves of its own accord, driven by households’ expectations regarding the future (such as growth expectations and concerns about social security) and fluctuations in asset values. This means that consumption expenditure, alongside capital investment and exports, has become the very trigger that autonomously causes economic fluctuations. Therefore, in modern business cycle analysis, it has become essential to conduct a detailed analysis of the unique determinants of consumer spending (macro-mechanisms of expectation formation) on a layer independent of how income has moved.

6. Implications for Economic Policy

The results of the empirical analysis in this paper—particularly the disappearance of the marginal propensity to consume and the stable validity of the Permanent Income Hypothesis—have significant policy implications for the macroeconomic policies (fiscal policy and economic stimulus measures) implemented by governments and central banks.

6. 1 The Structural Decline in the “Multiplier Effect” and the Limitations of Conventional Fiscal Policy

The decline in the marginal propensity to consume ($a_1 = 0$), as revealed in Section 4. 2, mathematically and directly supports the waning of the Keynesian multiplier effect, as discussed in the theoretical background.

Even if the government enacts a large-scale supplementary budget and expands public spending (such as public investment and lump-sum payments), the income (variable income) of households and businesses—which is temporarily boosted by these measures—will, in the absence of liquidity constraints, be largely channeled into savings (further accumulation of financial assets), failing to trigger a ripple effect of consumption into the next cycle. This is the primary factor behind the “diminished spillover of public spending into growth” pointed out by Hori (2022).

Considering that the population will continue to age and the baby boomer junior generation will enter the elderly demographic in large numbers, the trend toward further increases in financial assets within the household sector is unlikely to reverse. Therefore, it is structurally unlikely that the macroeconomic multiplier effect will return

to the high levels seen in the past, and policymakers must fully recognize that the effectiveness of fiscal policy through temporary demand-stimulating measures (stimulus-type economic measures) will inevitably be limited.

6. 2 The Importance of Structural Policies: A Shift Toward Policies That Raise Long-Term “Expected Income (Permanent Income)”

On the other hand, this phenomenon does not mean that consumption has become completely unrelated to income.

Although the correlation in short-term fluctuations (year-on-year) on a quarterly basis has disappeared, from a broader perspective, the average growth rate of household consumption and the average growth rate of disposable income have moved in parallel over the long term. This is precisely the essence of what the Permanent Income Hypothesis predicts.

Households expand their current consumption not when their temporary take-home pay for the current period increases, but only when they are convinced that long-term, stable income (permanent income) that they will continue to receive into the future will definitely increase. Therefore, effective growth and economic policies in modern Japan must not consist of temporary benefits, tax cuts, or merely additional public works projects, but rather structural fiscal spending focused on the following points:

1. Fundamentally improve corporate productivity and instill in households the expectation that sustainable, long-term wage increases (base-up raises) are viable.
2. Dispel uncertainty regarding the long-term sustainability of the social security system (pensions, medical care, and long-term care) and alleviate the incentive to save in anticipation of future increases in financial burdens.

In other words, “fiscal spending that boosts productivity” (Hori, 2022) and structural reforms that contribute to raising the potential growth rate are the only way to stimulate autonomous consumption in modern Japan through the permanent income channel.

7. Conclusion and Future Challenges

By conducting a detailed analysis of Japan’s macroeconomic data over the past 40 years, this paper has verified the outlook presented by Tsubouchi (2007) and highlighted the unique characteristics of the business cycle mechanism in contemporary Japan.

The main conclusions can be summarized in the following three points.

1. Although the shift toward a service-based economy has progressed, the statistical influence of fluctuations in manufacturing output on the macroeconomy has not diminished. Therefore, the current framework for business cycle indices, centered on manufacturing, remains valid.
2. No clear statistical evidence (such as changes in the parameters of Okun's Law) was found to suggest that the labor market has become more flexible or responsive in the manner seen in the United States. Japan's employment and unemployment rates continue to follow the same stable and gradual adjustment mechanism as in the past.
3. As liquidity constraints have eased due to the accumulation of household financial assets, the dependence of consumer spending on current disposable income (the marginal propensity to consume) has effectively disappeared, approaching zero. Consumption is no longer merely a buffer against macroeconomic shocks but has evolved into the starting point of economic fluctuations, determined independently by future expectations.

These facts provide a structural basis for the decline in the macroeconomic multiplier effect and present grounds for a major shift in policy focus from temporary demand creation to the creation of long-term permanent income and expectations.

Future Research Topics

While this paper has demonstrated that macro-level consumption has become decoupled from income and autonomous, there has not yet been sufficient modeling to elucidate the specific determinants of consumption expenditure—namely, the question of “What specific factors (e.g., stock prices and the wealth effect, the spread of macro-psychology via social media, news of social security reforms, or nonlinear changes in precautionary saving motives) most strongly determine the future expectations and autonomous fluctuations in consumption of modern Japanese households?” Sufficient modeling has not yet been conducted to elucidate the specific determinants of consumer spending. Going forward, we intend to prioritize empirical analyses using both micro- and macro-level data on household expectation-formation mechanisms, distinct from income statistics.

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