ECC1100 Group Assignment 1

Group 23

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1. Introduction

This report analyzes the macroeconomic performance of Japan, the world's fourth-largest economy, using data from the World Bank and other official sources. It applies key economic concepts and models from ECC1100 to understand Japan's economic trends and challenges.

The report is structured in three main sections. First, it examines historical data on GDP, inflation, unemployment, and international trade. Second, it uses the AD-AS model to identify whether Japan's economy is experiencing an output gap. Finally, based on this analysis, it provides a policy recommendation to address any identified economic imbalance.

Through this analysis, the report demonstrates how macroeconomic theory can be applied to real-world economic situations, using Japan as a case study. All data sources and tools used are properly acknowledged in accordance with academic integrity requirements.

2. Macroeconomic trends in Japan

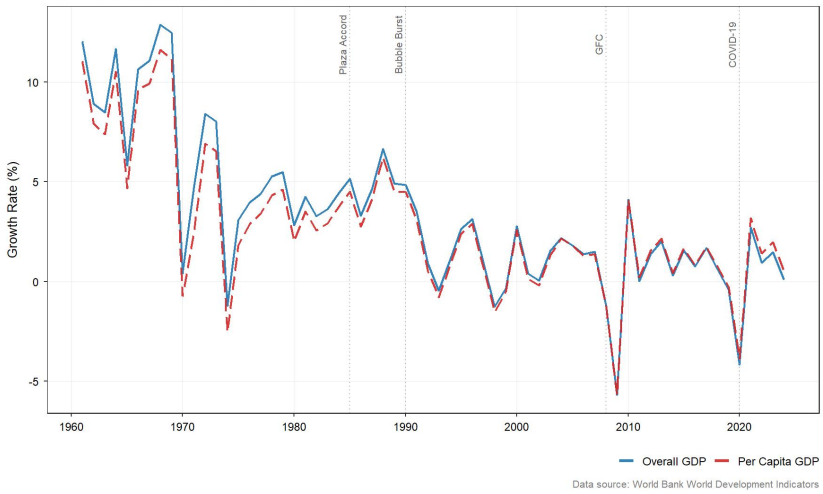
2.1 GDP Growth Trends

Gross Domestic Product (GDP) captures the total market value of goods and services produced within a country, providing a measure of overall economic scale, while GDP per capita reflects the average standard of living by adjusting output for population size. Figure 1 illustrates Japan’s post-war economic performance from 1960 to 2024, which can be divided into three broad phases: rapid catch-up growth, prolonged stagnation, and persistent exposure to external shocks.

During the 1960s-70s high-growth period, both aggregate GDP and per capita GDP growth consistently exceeded 5%, fueled by rapid industrialization, export-oriented expansion, and technological upgrading (Krugman, 1994). Growth decelerated following the twin oil shocks of the 1970s but rebounded in the late 1980s, when the Plaza Accord contributed to yen appreciation, capital inflows, and an asset-price bubble. However, the subsequent collapse of the bubble in the early 1990s triggered a negative growth spiral and ushered in the prolonged stagnation often referred to as Japan’s “Lost Decade” (Yoshikawa, 2002).

From the 2000s through the 2010s, GDP growth remained subdued, typically in the range of 0–2%. At times, per capita GDP growth outpaced overall GDP growth, primarily due to demographic shifts such as a shrinking labor force and population aging, which reduced aggregate output but raised per capita figures (Fukao, 2013). Most recently, the COVID-19 pandemic in 2020 precipitated Japan’s sharpest downturn in decades, with GDP contracting by around 5%, underscoring the economy’s ongoing vulnerability to global shocks.

Figure 1: Japan's Economic Growth Trends, 1960–2024
Annual GDP growth rate and per capita GDP growth rate



2.2 Inflation Trends

As shown in Figure 2 (Appendix), the evolution of Japan's inflation, as captured by annual changes in the Consumer Price Index (CPI) from 1960 to 2024, illustrates a complex interplay of external shocks, domestic policy choices, and deep-seated structural factors. This trajectory can be divided into five distinct phases, each closely aligned with the country's broader economic transformations.

During Japan's high-growth period, inflation remained moderate at around 5%. This stability was shattered by the 1973 oil shock, which drove inflation above 20% and ushered in a period of stagflation—prompting tighter monetary policy and structural reforms.

The "Great Moderation" from the mid-1980s to early 1990s saw low consumer price inflation. However, the Plaza Accord and financial liberalization led to a sharp yen appreciation and massive asset bubbles, demonstrating that price stability could coexist with dangerous financial imbalances (Ueda, 2012).

Subsequently, Japan entered nearly two decades of persistent deflation, with CPI growth hovering near zero. The aftermath of the asset bubble collapse entrenched deflationary expectations and constrained monetary policy at the zero lower bound. Japan's experience became a critical case study for central banks worldwide (Bernanke, 2016).

A major policy shift occurred with the introduction of Abenomics in 2013. Aggressive monetary and fiscal easing pushed inflation to an average of about 1.6% between 2013 and 2019—still short of the Bank of Japan's 2% target.

Since the pandemic, Japan has experienced a structural break in inflation, with rates averaging above 2.5%, driven by global supply disruptions and a weaker yen. This represents the first sustained period above the central bank's target in decades, suggesting a possible exit from the deflationary era (Wakatabe, 2023).

In summary, Japan's inflation history illustrates how external shocks, asset cycles, and demographic trends have interacted with policy choices to shape price dynamics. It underscores both the challenges of overcoming entrenched deflation and the difficulty of anchoring inflation expectations in an aging, post-industrial economy.

2.3 Unemployment and Labor Force Participation in Japan (1991 – 2024)

Japan's labor market between 1991 and 2024 exhibited a pattern of structural adaptation amid prolonged economic stagnation. As shown in Figure 3, the unemployment rate remained exceptionally stable, fluctuating within a narrow band of 2.5% to 5.5%, while the labor force participation rate for the population aged 15–64 followed a pronounced U-shaped trajectory—falling from 77% in the early 1990s to around 70% by 2012, before recovering to 77% again by 2024 (World Bank, 2025).

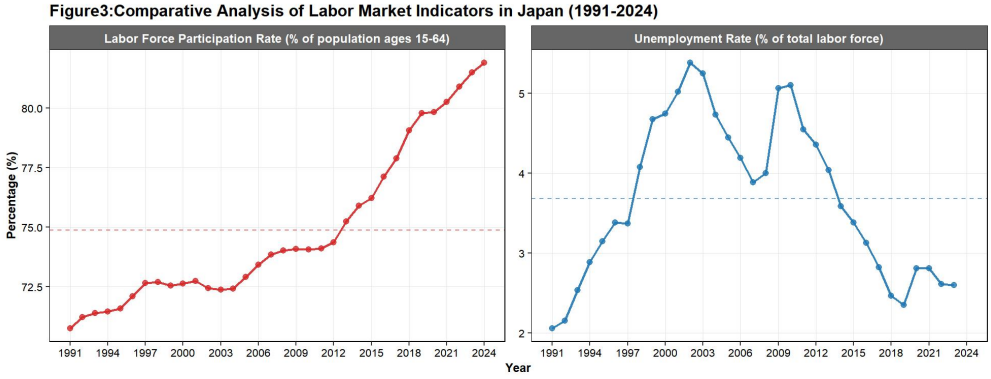
This stability in unemployment reflects the persistence of Japan's distinctive employment practices. The widespread labor hoarding by major firms, rooted in lifetime employment traditions, helped cushion the labor market during downturns (Krugman, 1998). At the same time, the share of non-regular employment expanded significantly—from 20% to over 37% of the workforce—creating a flexible buffer that absorbed economic shocks while also contributing to wage stagnation and labor market segmentation (Kato, 2001).

The U-shaped trend in labor force participation reveals the interplay of demographic forces and policy interventions. The initial decline was driven largely by population aging, whereas the recovery after 2012 stemmed from proactive government measures. Policies promoting female and elderly employment—notably under the "Womenomics" agenda—helped raise

women's participation from 66% to over 77% and extended working lives, partly offsetting demographic pressures (Brinton, 1993; Estévez-Abe, 2008).

As illustrated in Figures 4A (Appendix) and 4B (Appendix), Japan's labor market has decoupled from conventional business-cycle dynamics. The weak correlation between unemployment and GDP growth represents a departure from Okun's Law (Okun, 1962), while participation rates have responded more to structural reforms than to cyclical fluctuations. These trends suggest that future improvements in labor market conditions will depend less on macroeconomic stimulus and more on continued structural reforms aimed at improving job quality and fostering inclusive participation in an aging society.

Figure3:Comparative Analysis of Labor Market Indicators in Japan (1991-2024)



Data source: World Bank World Development Indicators

2.4 Balance of payments and exchange rate

As shown in Figure 5(Appendix) and Figure 6 (Appendix), An analysis of Japan's Balance of Payments (BoP) and exchange rate from the post-war era to the present reveals a clear narrative of its transformation from a rebuilding economy into a global financial powerhouse. In the early 1960s, Japan's current account occasionally recorded deficits, but following the first oil shock of the 1970s, it shifted to a persistent and widening surplus. This turning point marked Japan's emergence as a leading net exporter, with surpluses expanding significantly during the 1980s—often exceeding 2–3% of GDP and peaking at over US$87 billion in 1986 (BoP, current US$) (Krugman, 1991).

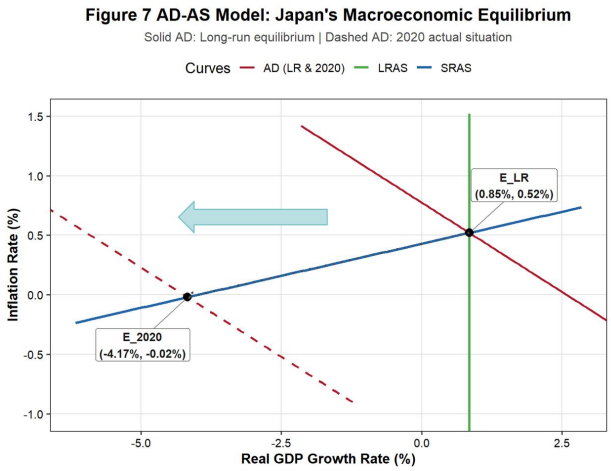
Japan's current account surpluses were mirrored by financial account deficits, recycling export earnings into foreign assets. In the 1980s, this meant large-scale capital outflows, as Japanese institutions built up substantial holdings of overseas bonds and assets, establishing Japan as the world's top creditor (McKinnon & Ohno, 1997). This inverse relationship illustrates how trade surpluses fueled Japan's integration into global finance.

The exchange rate regime underpinning these developments evolved just as dramatically. Between 1949 and 1971, the yen was fixed at ¥360 per US dollar under the Bretton Woods system, providing stability that supported Japan's export-oriented industrialization. After the system's collapse, the yen adopted a managed float and began a long-term appreciation. A watershed moment came with the 1985 Plaza Accord, a coordinated G5 effort to depreciate the US dollar, which triggered a rapid and sustained rise in the yen's value—from an average of ¥238/USD in 1985 to ¥128/USD by 1988 (Frankel, 1984). The strong-yen trend that followed, often bringing the exchange rate below ¥100/USD, continued to constrain export competitiveness and encouraged the offshoring of Japanese production.

3. Macroeconomic analysis for Japan based on AD-AS model

3.1 Estimation of Long-Run Equilibrium

As shown in Figure 7, Japan's long-run equilibrium is estimated using 2015-2019 averages, excluding pandemic distortions. The calculated potential real GDP growth rate is 0.85% with 0.52% equilibrium inflation, defining point E_LR where LRAS, SRAS and AD intersect.



3.2 Recessionary Gap Identification

Figure 7 reveals a severe recessionary gap in 2020, with actual GDP growth (-4.17%) falling approximately 5 percentage points below potential. This substantial output shortfall, coupled with deflationary pressure (-0.02% inflation), indicates significant economic under performance and resource under utilization.

3.3 Analysis of Aggregate Demand Shift and Its Causes

The movement from the long-run equilibrium point (E_LR) to the 2020 position (E_2020) represents a clear leftward shift of Japan's Aggregate Demand (AD) curve. This shift reflects a sharp contraction in total spending, primarily caused by the COVID-19 pandemic, which simultaneously hit consumption, investment, and external trade.

Private consumption declined drastically as lockdowns and mobility restrictions limited spending on services. The Cabinet Office (2020) reported an 8.5% year-on-year drop in household consumption in Q2 2020, highlighting the pandemic's immediate impact on domestic demand.

Business investment also fell sharply, with heightened uncertainty causing firms to delay capital projects. Non-residential investment contracted by 9.4% in 2020, indicating deteriorating business confidence (METI, 2021).

Finally, net exports weakened substantially as global supply chains fractured and foreign demand collapsed. Japan’s exports dropped by 18.2% in Q2 2020, the steepest fall since the global financial crisis (Ministry of Finance, 2020).

Collectively, these factors illustrate a classic aggregate demand shock, where simultaneous declines in consumption, investment, and external demand transmitted the pandemic’s impact throughout the Japanese economy (OECD, 2021; IMF, 2021).

4. Current Macroeconomic policy and recommendations for Japan

4.1 Summary of Current Fiscal Policy

Japan′s fiscal position in FY2025 remains heavily constrained by structural imbalances. Although the General Account Budget is nominally balanced at ¥115.2 trillion, only about two-thirds of expenditures are covered by revenues, leaving nearly 25% financed through new government bonds. As a result, total public debt is projected to reach ¥1,330 trillion — approximately 211% of GDP, the highest among advanced economies.

The roots of this imbalance lie in Japan′s rigid fiscal composition. Social security spending consumes one-third of the budget, while debt servicing and local grants absorb most of the

remainder. This leaves minimal fiscal flexibility for discretionary or counter-cyclical spending. On the revenue side, a shrinking labor force and stagnant productivity have eroded the tax base, limiting the government′s capacity for fiscal consolidation.

In summary, Japan′s fiscal stance remains expansionary by necessity rather than choice—prioritizing social stability and economic support despite a structurally unsustainable debt path. The government faces a long-term trade-off between sustaining demand and restoring fiscal discipline.

4.2 Summary of Current Monetary Policy

At its September 2025 meeting, the Bank of Japan (BOJ) decided to maintain the policy rate at 0.5%, reflecting cautious optimism about moderate recovery but recognizing that inflation remains below the 2% target. The BOJ's stance remains broadly accommodative, supported by gradual balance sheet normalization through reduced ETF and J-REIT purchases.

While two board members advocated for an early rate hike in response to rising wage and price pressures, the majority emphasized uncertainty—especially from global trade tensions—and opted to sustain supportive conditions for now.

Overall, the BOJ's current monetary policy reflects a balancing act: maintaining sufficient support to consolidate recovery while preparing for a gradual exit from ultra-loose conditions. Its "wait-and-see" strategy underscores data dependency and coordination with fiscal policy, aiming to avoid derailing growth before inflation becomes firmly anchored.

4.3 Policy Recommendation

To effectively address Japan's substantial output gap of -4.17%, driven by a sharp decline in aggregate demand, We recommend implementing an expansionary fiscal strategy focused on immediate and targeted demand-side stimulus.

This approach is justified by the limited effectiveness of monetary policy under a low interest rate environment, while fiscal policy can directly inject purchasing power into the economy and swiftly boost aggregate demand.Given weak household and business confidence, direct fiscal support is essential to break the vicious cycle of falling demand and reduced income.

First, implement direct cash transfers to households.By providing one or more rounds of fixed-amount cash payments to low- and middle-income families, disposable income would rise immediately, stimulating spending—especially on essential and non-durable goods.Since private consumption accounts for the largest share of aggregate demand, its recovery represents the most direct and effective channel for narrowing the output gap.

Second, establish a targeted subsidy framework for small and medium-sized enterprises (SMEs).This should include:(1) Wage subsidies to cover part of labor costs and prevent layoffs;(2) Operational cost support for key utilities and rent;(3) Temporary investment tax incentives to encourage productivity-enhancing investments.These measures together would maintain business cash flow, protect employment relationships, and prevent long-term supply-side damage—laying the foundation for a faster rebound once demand recovers.

This fiscal expansion should be financed through government bonds and coordinated with the Bank of Japan's accommodative policy (0.5% rate). Clear communication that measures are temporary and targeted will help maintain fiscal credibility and anchor expectations. By boosting consumption and stabilizing firms, this policy would shift the AD curve rightward, close the output gap, and support a smooth, sustainable recovery.

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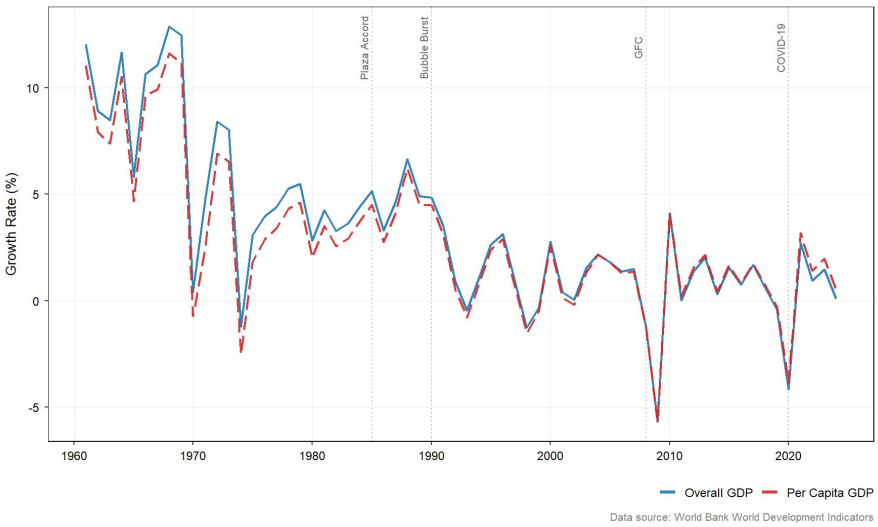
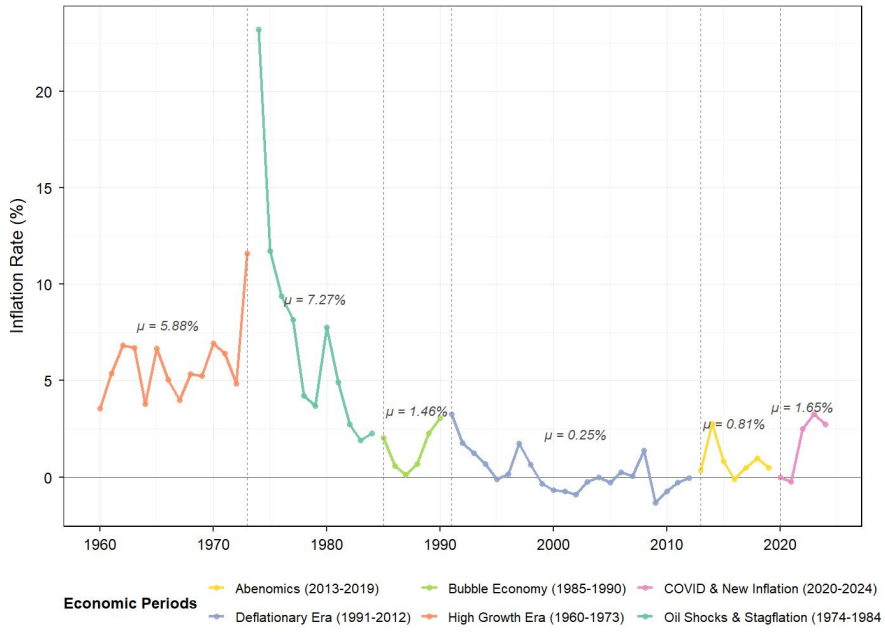
Appendix

Figure 1: Japan's Economic Growth Trends, 1960–2024
Annual GDP growth rate and per capita GDP growth rate



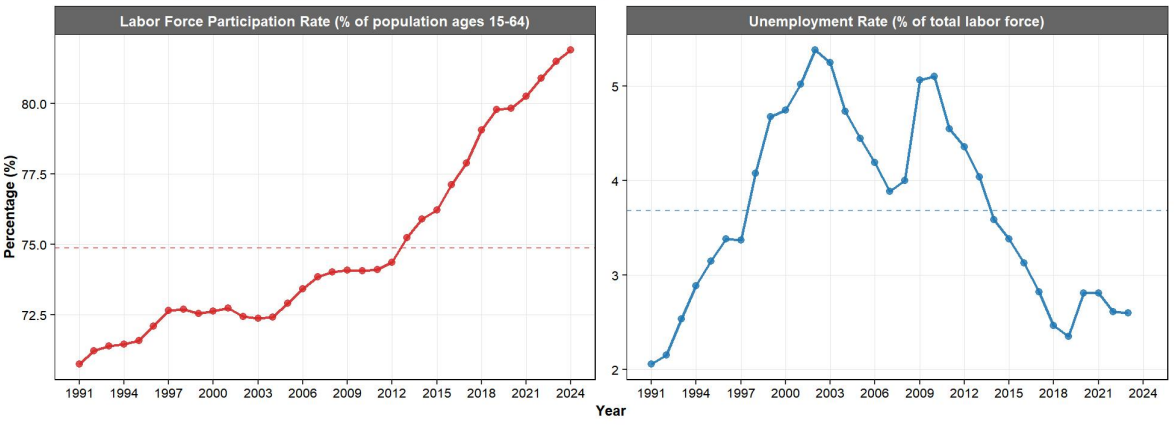
Data source: World Bank World Development Indicators

Figure 2: Japan's Inflation Dynamics by Economic Periods, 1960-2024
Annual consumer price inflation rate with period averages



Data source: World Bank World Development Indicators. Vertical lines mark period transitions.

Figure3:Comparative Analysis of Labor Market Indicators in Japan (1991-2024)



Data source: World Bank World Development Indicators

Figure 4 A: Unemployment Rate vs GDP Growth in Japan, 1991-2024

Scatter plot with linear regression and 95% confidence interval

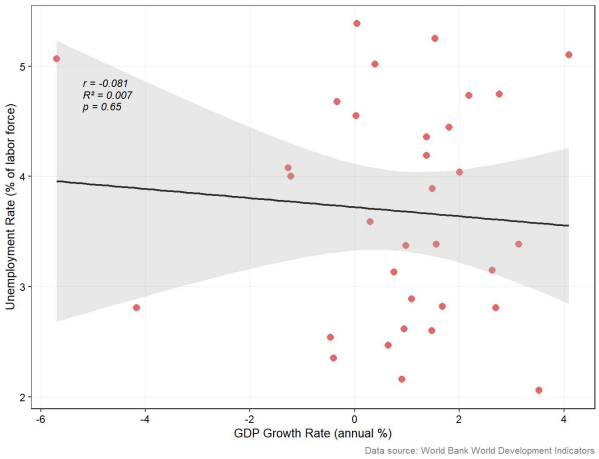


Figure 4 B: Labor Force Participation vs GDP Growth in Japan, 1991-2024

Scatter plot with linear regression and 95% confidence interval

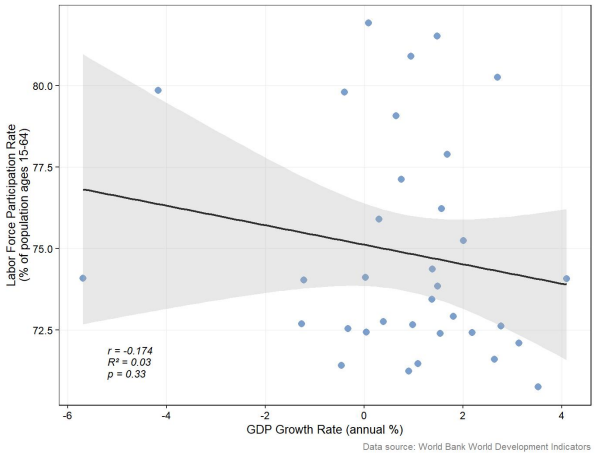
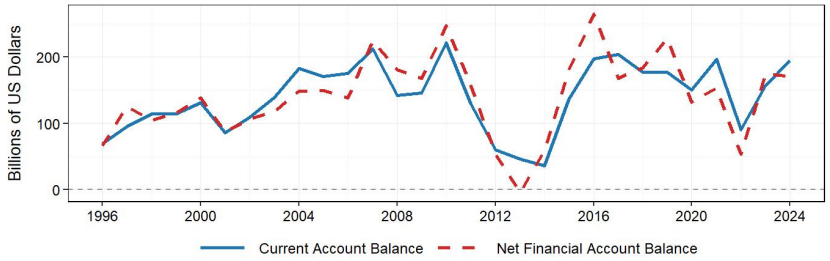


Figure 5: Japan's Balance of Payments Components, 1996-2024

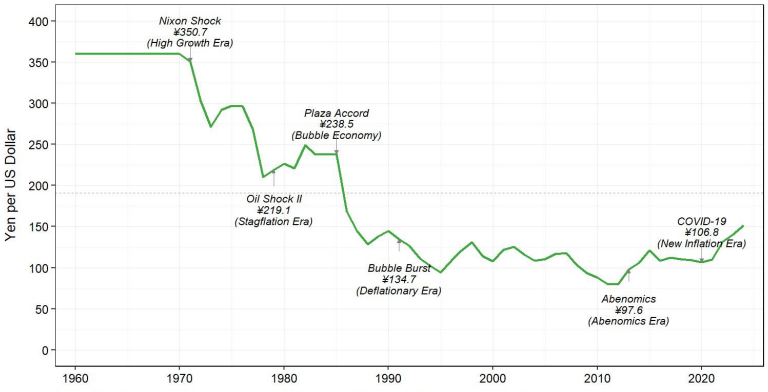
Current Account Balance and Net Financial Account Balance (Billions of US Dollars)



Data Source: World Development Indicators, World Bank

Figure 6: Evolution of Japan's Exchange Rate, 1960-2024

Nominal exchange rate (Japanese yen per US dollar, period average) with key economic events



Data source: World Bank World Development Indicators. Period average: ¥191.1, Range: ¥79.8-360.0

Figure 7 AD-AS Model: Japan's Macroeconomic Equilibrium

Solid AD: Long-run equilibrium | Dashed AD: 2020 actual situation