

Macroeconomic Developments
in Japan and Switzerland:
A Comparative Analysis

Analysis of the Japanese Economy: Report Winter Term 2025

at the

**Graduate School of Economics
of the Waseda University**

lectured by

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Submission date: 31.12.2025

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1 Data and Descriptive Statistics

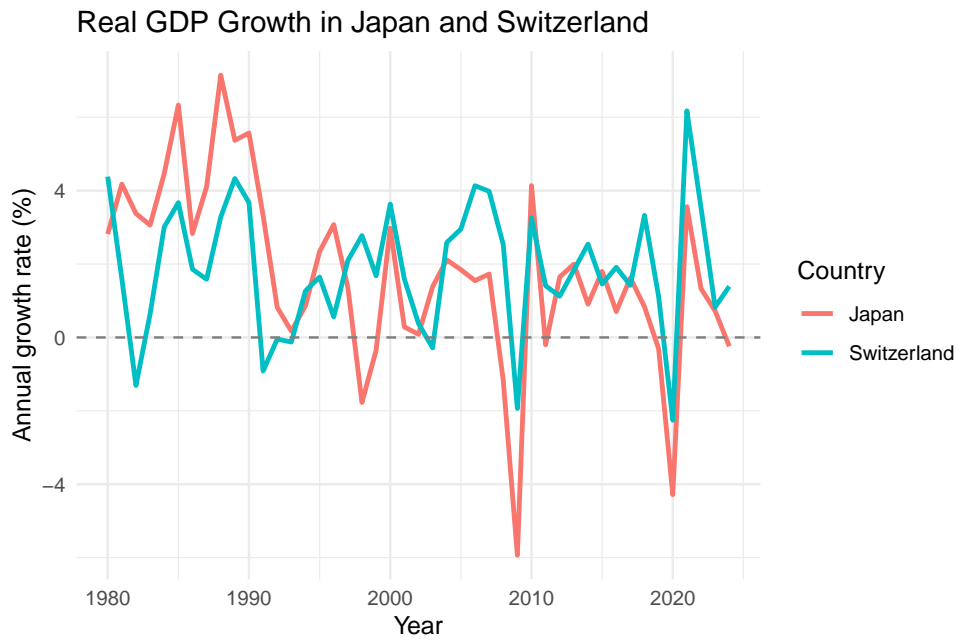


Figure 1: Real GDP Growth in Japan and Switzerland from 1980-2024. Source: Organisation for Economic Co-operation and Development (2025)

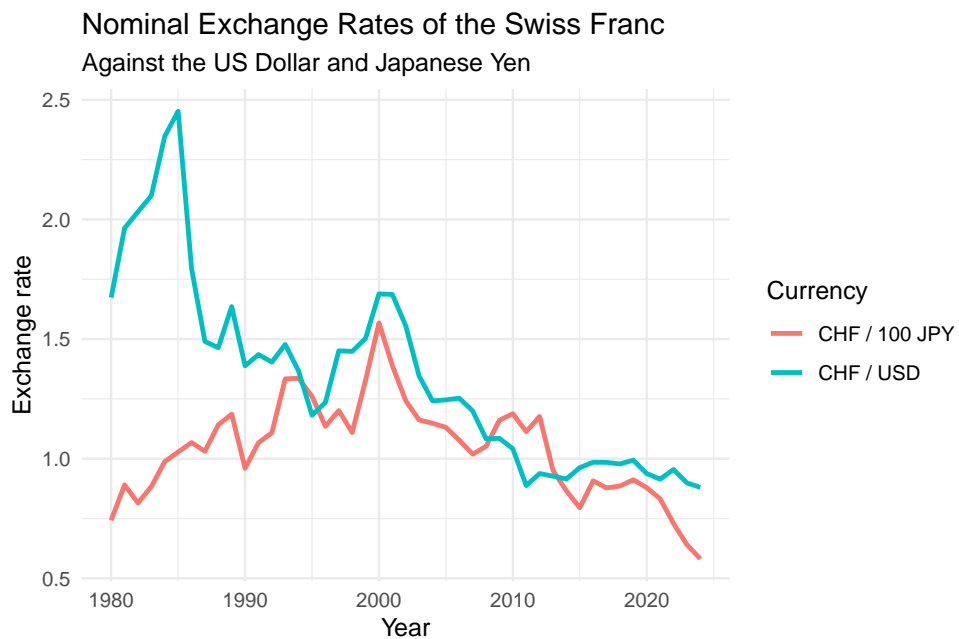


Figure 2: Exchange Rate of Swiss Franc against the American Dollar and Japanese Yen from 1980-2024. Source: Swiss National Bank (2025)

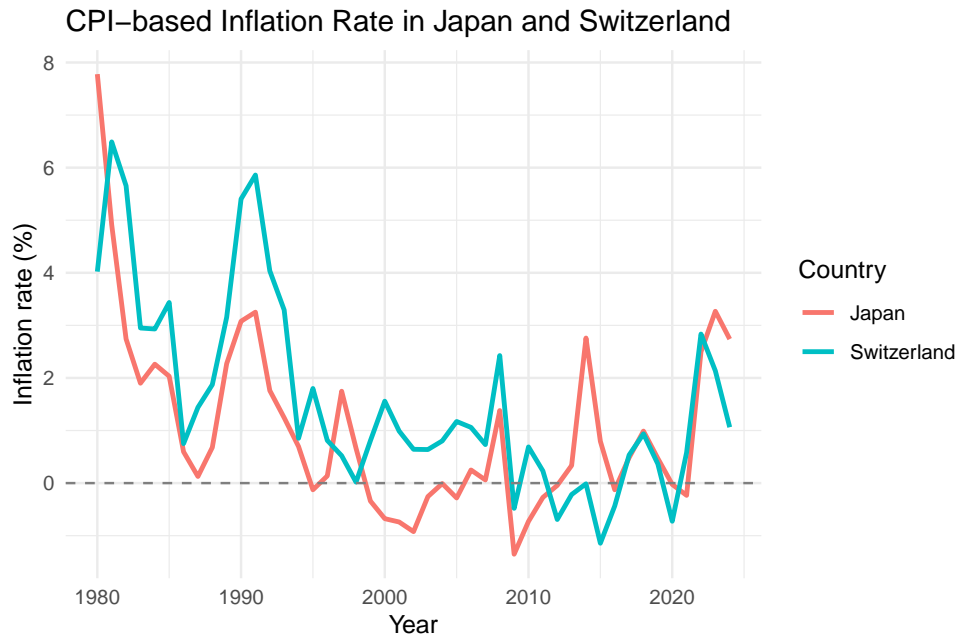


Figure 3: Inflation (CPI) in Japan and Switzerland from 1980-2024. Source: World Bank (2025)

Variable	Mean	Standard Deviation
GDP Growth Japan	1.74	2.45
GDP Growth Switzerland	1.87	1.75
Inflation Japan	1.06	1.72
Inflation Switzerland	1.60	1.84
Exchange Rate CHF / USD	1.34	0.40
Exchange Rate CHF / 100 JPY	1.04	0.20

Table 1: Mean and Standard Deviation for GDP Growth, Inflation and Exchange Rates in Japan and Switzerland

	GDP_JPN	GDP_CHE	Inflation_CHE	Inflation_JPN	FX_CHF_100JPY	FX_CHF_USD
GDP_JPN	1.00	0.51	0.50	0.32	-0.01	0.48
GDP_CHE	0.51	1.00	0.02	0.14	-0.04	0.04
Inflation_CHE	0.50	0.02	1.00	0.70	-0.13	0.58
Inflation_JPN	0.32	0.14	0.70	1.00	-0.55	0.31
FX_CHF_100JPY	-0.01	-0.04	-0.13	-0.55	1.00	0.23
FX_CHF_USD	0.48	0.04	0.58	0.31	0.23	1.00

Table 2: Correlation Matrix of Macroeconomic Variables

2 Conclusion

This report compares Switzerland and Japan with respect to real GDP growth, CPI-based inflation, and the nominal exchange rates of the Swiss franc against the Japanese yen and the US dollar. Average real GDP growth has been positive but relatively low in both countries over the sample period. The pronounced declines in GDP growth during the global financial crisis and the COVID-19 pandemic highlight that both economies are highly integrated into the global economy and strongly exposed to global shocks. These episodes are clearly visible in the time-series plots and suggest a high degree of dependence on international economic conditions.

The Swiss franc has exhibited a long-run appreciation against both the yen and the US dollar, particularly since the early 2000s, with temporary reversals during periods of heightened global uncertainty. These movements are consistent with the Swiss franc's role as a safe-haven currency. Inflation in both countries has remained low on average, typically around 1–2%, and has occasionally fallen below zero during crisis periods, especially in Japan. This pattern is reflected in both the inflation plots and the summary statistics, indicating persistent low-inflation environments and limited price pressures despite fluctuations in real economic activity.

The correlation analysis reinforces these descriptive findings. Real GDP growth in Japan and Switzerland is moderately positively correlated, indicating that global business-cycle forces play an important role in shaping output dynamics in both economies. In contrast, correlations between GDP growth and inflation are relatively weak, suggesting that changes in real activity have not translated strongly into price pressures. Inflation rates in the two countries are positively but only modestly correlated, implying that while global inflationary factors matter, country-specific institutions and policy frameworks remain important. Exchange rates are more strongly correlated with inflation than with GDP growth, suggesting price pass-through effects but a weak link to real activity.

References

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World Bank, “Inflation, Consumer Prices (Annual Percent),” 2025. Available at: <https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG> (Clicking on DataBank and then filtering for Japan & Switzerland and Inflation, consumer prices (annual %) from 1980-2024) Accessed December 31 2025.

Disclaimer

Use of AI tools. All content and substantive analysis in this document were produced by the author. ChatGPT was used solely for support with grammar correction, stylistic refinement, and structural organization. In addition, ChatGPT assisted with refreshing the author’s knowledge of R syntax and workflow (e.g., reading and cleaning CSV data, creating summary tables, and exporting outputs to \LaTeX). ChatGPT also helped refine the written interpretation of the correlation matrix; however, all ideas, interpretations, and conclusions remain primarily the author’s own.

Prompts used.

- “It’s been a long time since I’ve used R. I know how to code in R, but can you help me refresh how to use the commands and code as efficiently as possible?”
- “How can I turn this filtered data in tabular text (CSV) into a dataframe in R?”
- “Help me clean up this dataframe.”
- “How can I make a table out of this dataframe?”
- “Make a ggplot out of this data for me.”
- “Get the summary table of mean and correlation.”
- “How can I export the table to Overleaf / \LaTeX ?”
- “How do I read this CSV correctly?”
- “Help me further improve my interpretation regarding the correlation matrix.”
- “Check my text for grammar and improve it academically if necessary.”