Monetary stimulus during the Covid-19 pandemic

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Introduction

Disinflation, resilient global output growth, improving real incomes and rising labour supply illustrate the global economic situation in 2024 (OECD, 2024). Majority of countries worldwide, including Japan, are still recovering after the policy stimulus introduced during the pandemic. The Covid-19 pandemic was the most recent economic crisis that Japan had to deal with. In order to stabilize the economy, local government and central bank – BoJ (Bank of Japan) introduced fiscal and monetary stimulus policies. One of the industries affected by this was the real estate. Sector, critical to country's economy, experienced fluctuations during the pandemic. The aim of this paper is to explore how Japan's monetary stimulus during the Covid-19 pandemic influenced country's real estate industry and what consequences can follow in the future. Research objectives are listed below:

- Describe the macroeconomic environment in Japan during the pandemic using selected macroeconomic indicators – GDP, interest rate, quantity of money, debt to GDP of private sector, unemployment rate, real estate price.
- Provide a theoretical and logical explanation of the Covid-19 stimulus and its influence on the real estate industry by utilizing the IS-LM model.
- Analyze the specifics of pandemic monetary stimulus impact on Japan's real estate industry by focusing on the selected industry and its quantitative performance indicators correlation with the macroeconomic variables. Discuss growth prospects and present broader industry development.
- Offer an outlook on the near future of the country's real estate industry and its possible shifts due to changes in the macroeconomic environment.

Study that focuses on Japan's pandemic period highlights a possible relationship between monetary stimulus and fluctuations in the real estate sector. This helps to better understand stabilizing economic policies effect on an industry during a crisis. With the knowledge gained from this paper policymakers, industry stakeholders and business owners can prepare and more successfully deal with future macroeconomic shocks, manage recovering post-crisis economies, and companies.

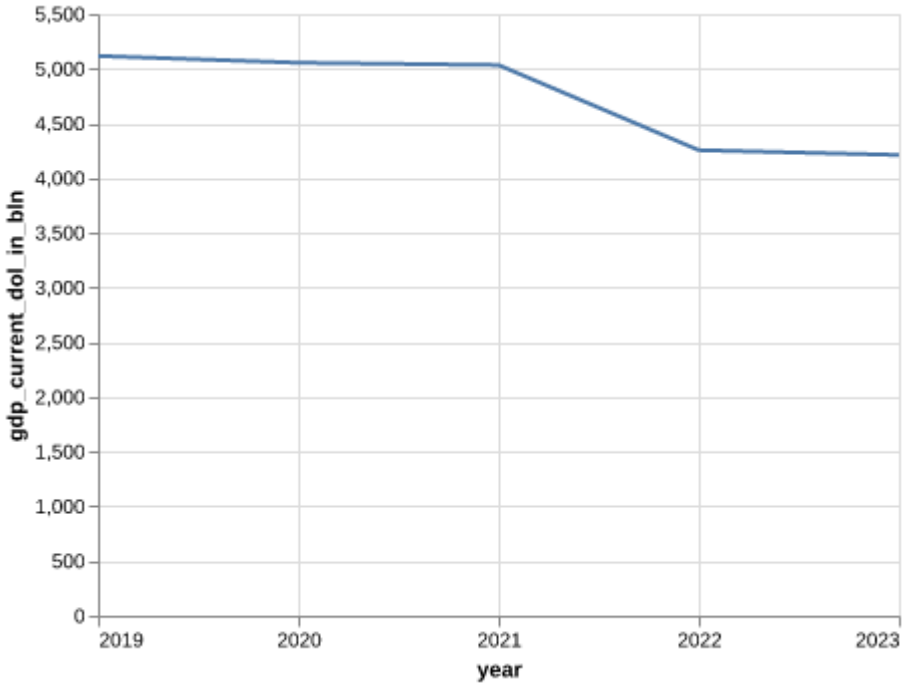
Macroeconomic overview

Covid-19 pandemic is an economic and humanitarian disaster that affected the whole world. The first case of the disease in Japan was confirmed on January 16th, 2020 (MHLW, 2020). The country avoided lockdowns instead opting for voluntary behavioural changes and targeted restrictions (Konishi, 2021). First nationwide state of emergency was declared on April 7, 2020, and lifted on May 25, 2020, while later emergency periods corresponded to waves of infection, such as in early 2021 (from 8 January until 7 February) and mid-2021 (Prime Minister's office of Japan, 2020). By mid-2022 the economic disruptions caused by Covid-19 began to disappear as Japan's economy started to move towards recovery (Smith, 2022).

First of all, besides pandemic problems Japan is facing another challenge – ageing population and growth potential. In 2020, at the beginning of pandemic country had 28.4% 65 years old population and a median age of 48.4 years. Compared with other major countries as India 6.7% 65 years old population and median age of 28.4 or the United States with 16.6% 65 years old population and median age of 38.5. These numbers highlight that the labour force is declining and will decline further significantly compared with others (OECD, 2022).

As presented in Figure 1 below, Japan's GDP had a sharp decline during the pandemic, from 2020 to 2021, followed by stabilization and slower decrease further. Major factors of the drop was restrictions, disrupted global supply chains and stopped tourism which accounted for 7,5% of GDP before COVID-19 (World Bank, 2022). Additionally to this, postponed Tokyo Olympics compounded economic losses. Fiscal stimulus packages of 2.2 trillion USD helped to stabilize GDP but issues as ageing population, declining labour force and deflationary pressures held Japan back from a quick rebound (IMF, 2022).

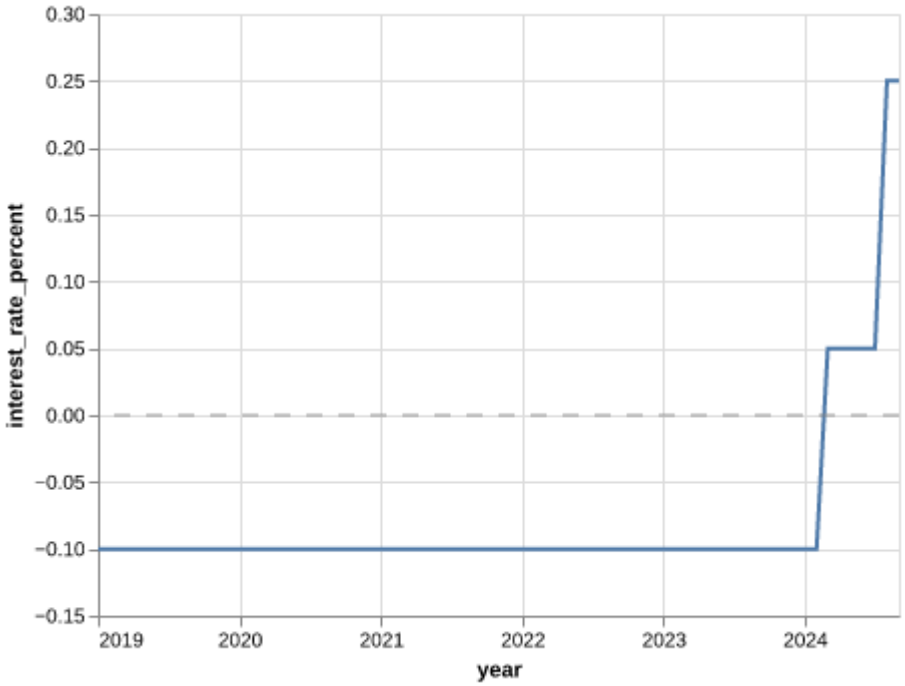
Figure 1. Japan's GDP during 2019 - 2023 in billion dollars.



Note: Data was retrieved from https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=JP.

Figure 2 suggests that to support economic stability and encourage people and businesses to borrow money, Bank of Japan kept -0,1% interest rate which was announced in 2016 (Bank of Japan, 2021). Additionally, the Bank of Japan continued its yield curve control policy to keep 10 year bond yield around 0% to ensure low long-term interest rates (Kuroda, 2022). To complete this task BoJ, increased asset purchases of exchange traded funds and corporate bonds. This commitment shows how bank tried to support recovery and economic stability in the country.

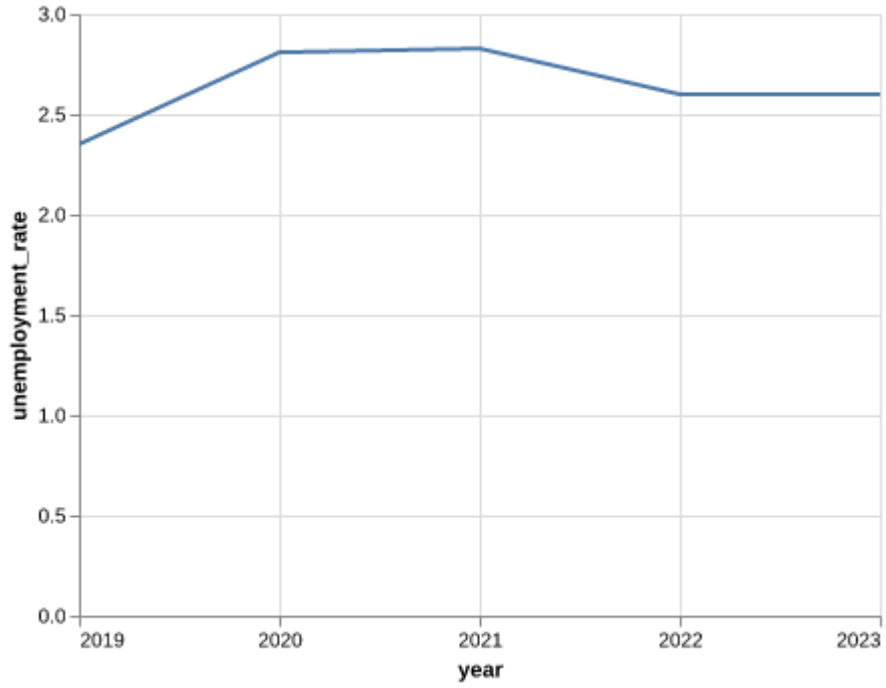
Figure 2. Japan's interest rate during 2019 - 2024 in percentage.



Note: Data was retrieved from https://data.imf.org/.

As per Figure 3, Japan had an increase in unemployment from 2020 to 2021 during the peak of pandemic, in 2022 rate returned to pre-pandemic level. Unemployment rose from 2,4% to 2,8% in the first 11 months of pandemic. Comparing with other countries, Japan had a relatively low increase due to employment cultural practice and long-term agreements between employee and employer. Additionally to this, Government with BoJ supported companies during pandemic crisis to maintain labour market and stability in the economy (Takashi, 2022).

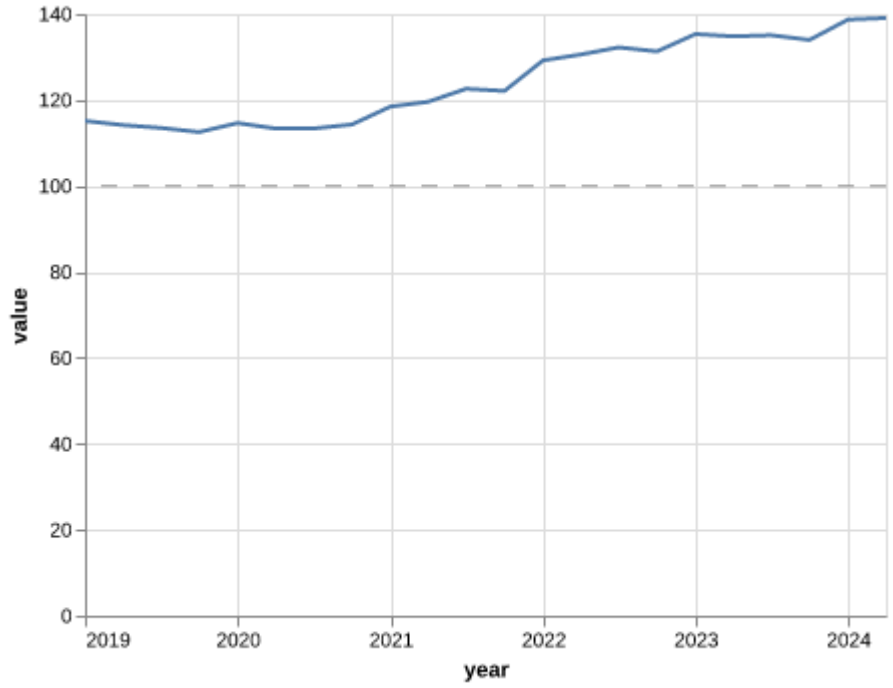
Figure 3. Japan's unemployment rate during 2019 - 2023 in percentage.



Note: Data was retrieved from https://data.worldbank.org/indicator/SL.UEM.TOTL.NE.ZS?locations=JP.

Figure 4 shows that pandemic had no negative influence on real estate prices. Main reasons are low interest rates (-0,1%), governmental housing subsidies and tax advantages. Additionally, due to restrictions and remote work, demand for larger homes and suburban areas kept the real estate price increasing (LaSalle, 2022).

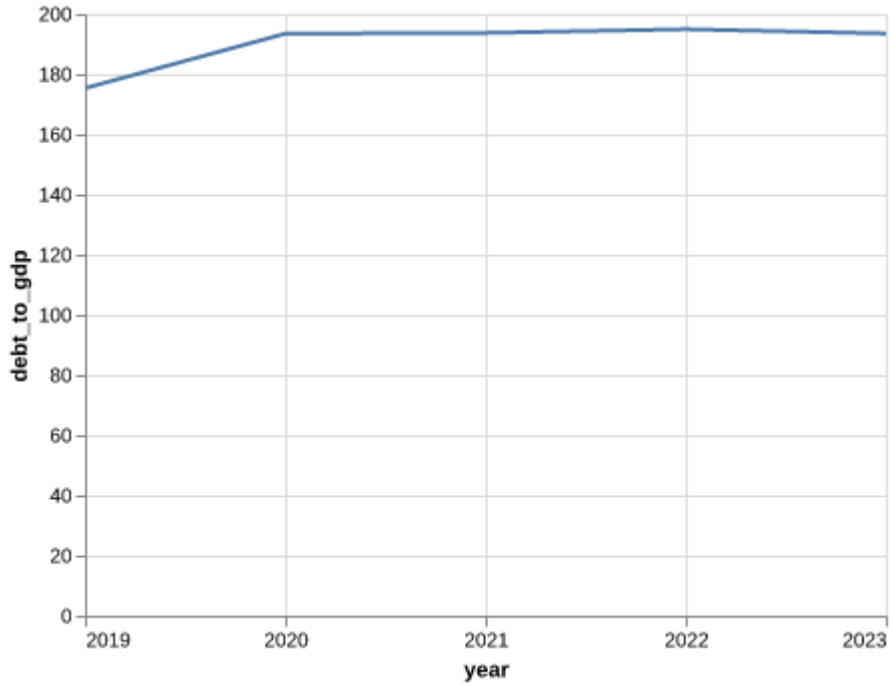
Figure 4. Japan's real estate price index during 2019 – 2024.



Note: Data was retrieved from https://fred.stlouisfed.org/series/QJPN628BIS. Base value of 100 was at 2010.

In Figure 5 we can see the debt to GDP of the private sector ratio was rising from 180% to almost 200% between 2019 and 2021. Public debt was increasing significantly and mainly due to two factors - the government was releasing housing and renting subsidies for business and people, additionally BoJ kept interest rate of -0.1%. As demand for real estate was increasing together with debt, it raises concerns about fiscal sustainability, as these factors directly support increasing real estate prices (Bank of Japan, 2021).

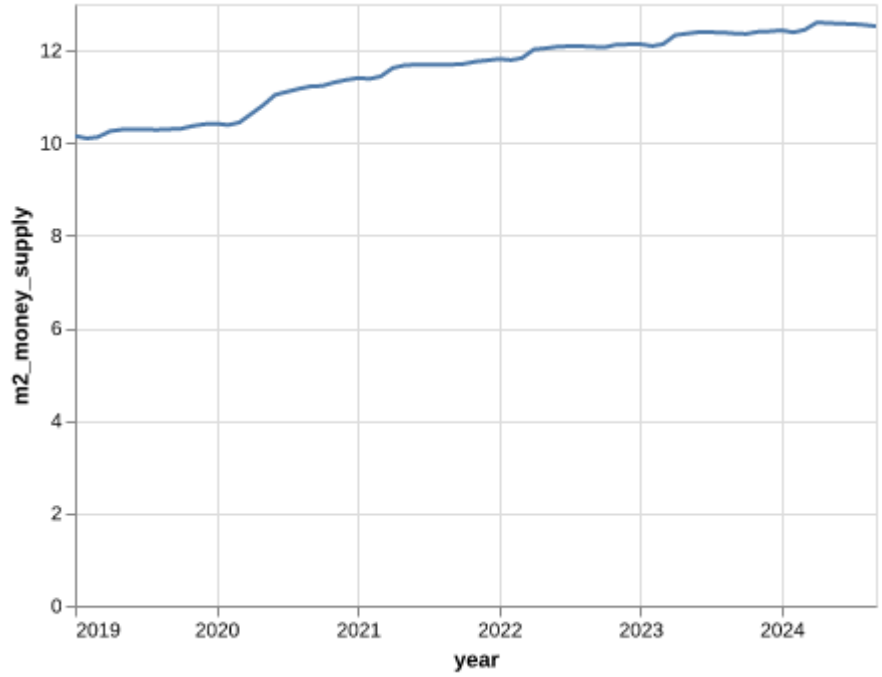
Figure 5. Domestic credit to the private sector (% of GDP) - Japan 2019 – 2023.



Note: Data was retrieved from https://data.worldbank.org/indicator/FS.AST.PRVT.GD.ZS?locations=JP.

In Figure 6, we can see that M2 money supply increased from more than 1,000 trillion yen to approximately 1,200 trillion yen between 2019 and 2022. Main reasons for such almost 20% growth were monetary easing policies such as corporate financing, subsidies for business and personal uses. These measures were tactical to help keep the economy of the country healthy (Bank of Japan, 2021).

Figure 6. Japan's money supply 2019 - 2024 in quadrillion yen.



Note: Data was retrieved from https://www.stat-search.boj.or.jp/index_en.html.

Theoretical analysis

IS-LM introduction

In this analysis only the monetary stimulus part will be explored. Since shifts in IS relation are caused by fiscal decisions, in this paper it will be kept constant. Now, having clarified the path of analysis, variables that affect general output of the economy should be determined. Main formula that is derived from LM relation and that reflects how monetary policy changes affect the output of the economy is given as follows:

$$M/P = L(i, Y)$$

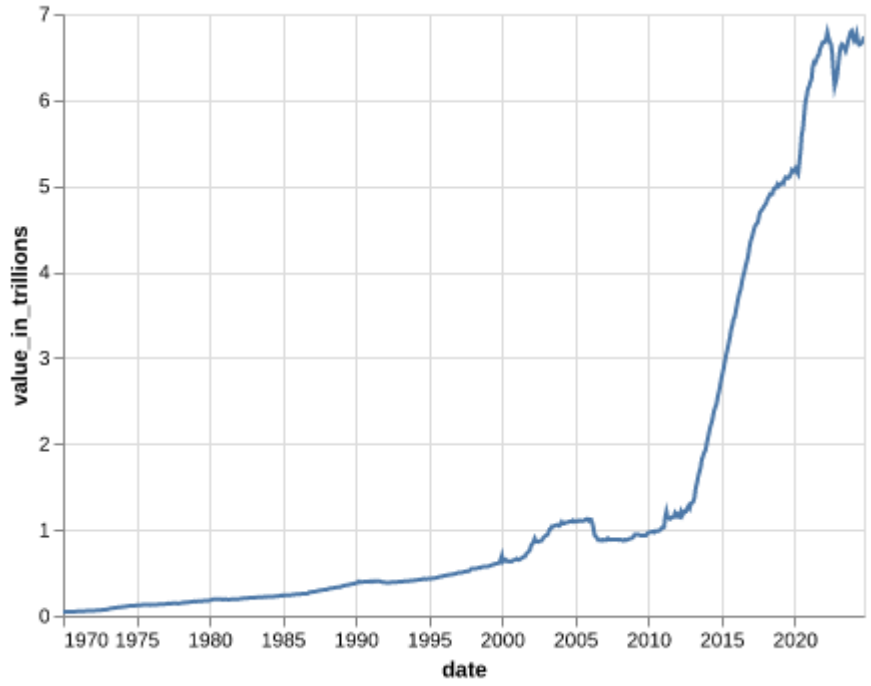
Generally this means that real money supply must always be equal to real money demand. Using monetary policy, central banks want to control both Y (real aggregate output) and P (price level) of the country. Overheating and high inflation environments can lead to vast recessions while deflationary and slow economies tend to lack growth in real wages and

overall purchasing power. Central banks guide economies to optimal growth path using monetary expansion or contraction policies.

The monetary policy background of Japan is quite unique as it must use unconventional methods to fight deflationary forces. It is one of a few countries that have ever implemented a negative interest rate in 2016 and only in 2024 increased it by 0.2% back up into the positive of 0.1%. It must be highlighted that interest rates did not change during the period of analysis. Therefore, monetary stimulus was conducted only via open market operations that we will explore next.

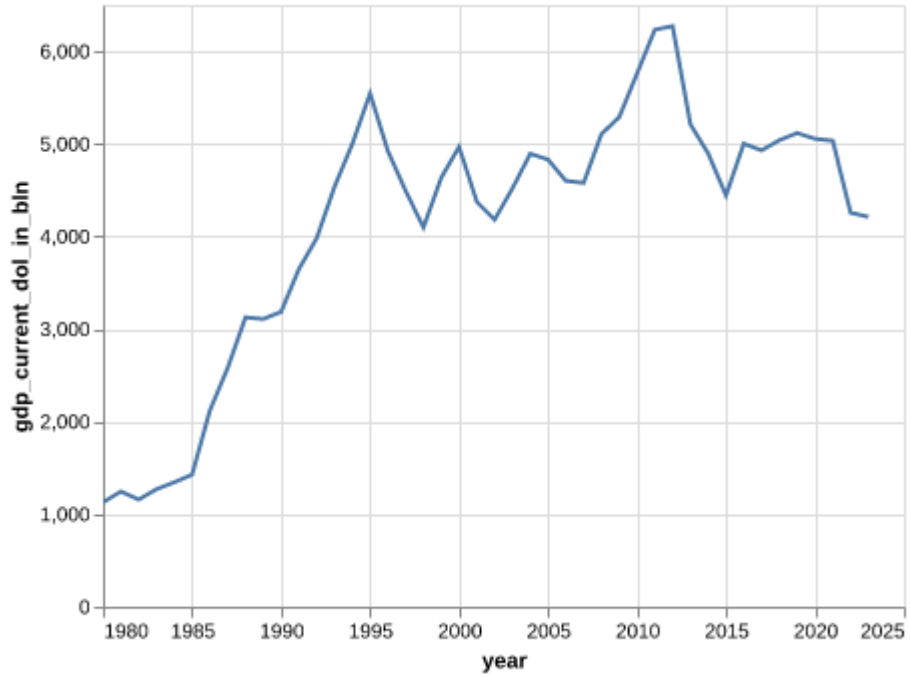
Theory states that if an economy has deflation and near zero interest rates for a long time, it is most likely experiencing a liquidity trap. In fact, even low nominal interest rates and accommodative monetary policy has little to no effect on the growth of Japan's economy (Akram, 2016). Furthermore, the liquidity trap situation in IS-LM means that the LM curve at $i = 0$ becomes horizontal and at that point the economy will not react to increase in money supply. In this scenario, people would still not spend excess money and businesses would not invest. This might happen because people anticipate deflationary equilibrium or economic burst, in the case of Japan, it is most likely to be the former. Japanese people have not experienced inflation higher than 4% for more than 40 years, consequently the prices of core goods have remained more or less priced at the same level. Both safety from inflation and risk of being in financial markets should affect the continuation of the liquidity trap. Empirical proof of liquidity trap can be seen in the monetary base (see Figure 7) and GDP (see Figure 8) data. During the 2010-2022 major increase in monetary base, GDP decreased from 5.75 trl. ¥ to 4.26 trl. ¥, showing ineffectiveness.

Figure 7. Japan's monetary base 1970 – 2024 in trillion yen.



Note: Data was retrieved from https://www.boj.or.jp/en/statistics/boj/other/mb/index.htm.

Figure 8. Japan's GDP during 1980 - 2023 in billion dollars.



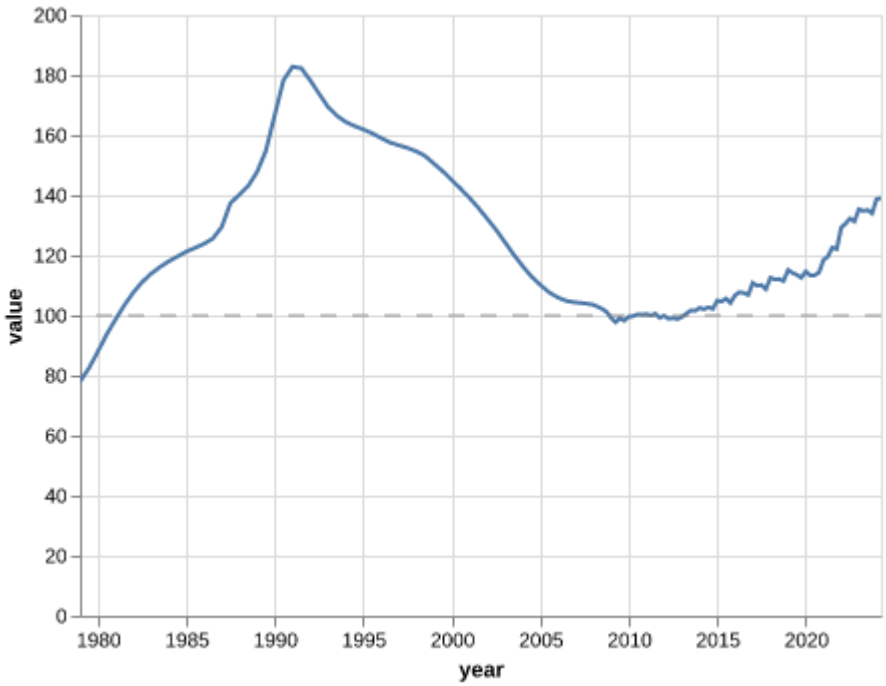
Note: Data was retrieved from https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=JP.

Getting out of the liquidity trap is a hard task, especially when facing major deflationary forces mentioned earlier. John Maynard Keynes in his book The General Theory of Employment, Interest, and Money (1936) was the first to provide a theoretical solution to the liquidity trap. Since then, theory provides two approaches: focusing on accommodative monetary policy and other on fiscal stimulus and job creation (Akram, 2016). Although J. M. Keynes in his work was leaning more on fiscal stimulus as the solution, he also emphasized the importance of keeping low interest rates and reduction in interest rate volatility. BoJ introduced this policy, known as yield curve control (YCC), in 2016 after a period of previously unsuccessful ways to fight stagnation. To be precise, BoJ pledged to keep the 10 year government bond yield at 0%. This, in theory, should lower the interest rate of debt and other financial instruments that have interest pegged with mentioned bond yield. Consequently, this should lead to an increase in demand and growth of the economy. This shift in monetary policy should influence mainly borrowing costs and investment decisions, while previous policies focused on money insertion into the economy.

Covid-19 stimulus impact on real estate industry.

Before Covid-19, BoJ had already been conducting strong monetary stimulus. Economy was relatively not responsive to QE policy and interest rates were at the effective lower bound, leaving no room for further lowering. Thus, Covid-19 stimulus mainly came from the government. To get the general picture of Japan's real estate industry and whether Covid-19 stimulus made any impact we will separate the analysis into two parts. One being general responsiveness of the real estate industry to unconventional monetary policy and other being particularly about demand changes after Covid-19 fiscal stimulus.

Figure 9. Japan's real estate price index during 1979 – 2024.



Note: Data was retrieved from https://fred.stlouisfed.org/series/QJPN628BIS. Base value of 100 was at 2010.

As found in the previous section, large increase in the monetary base should lower borrowing cost and generally increase demand for real estate. As we can see in the movement of the residential property price index of Japan (see Figure 9), from 2013, disregarding seasonal fluctuations, prices constantly increased. To check that this is not a coincidence, we should compare the movement in price to inflation. As shown in Table 1, on average, residential property value increased by 1.81% adjusted to inflation. This results indicates expansionary monetary policy's likely positive effect on real estate prices, because in most developed economies real estate tends to have a bit higher returns than inflation, although in the case of Japan's population decrease and GDP decrease, resulting performance is extraordinary.

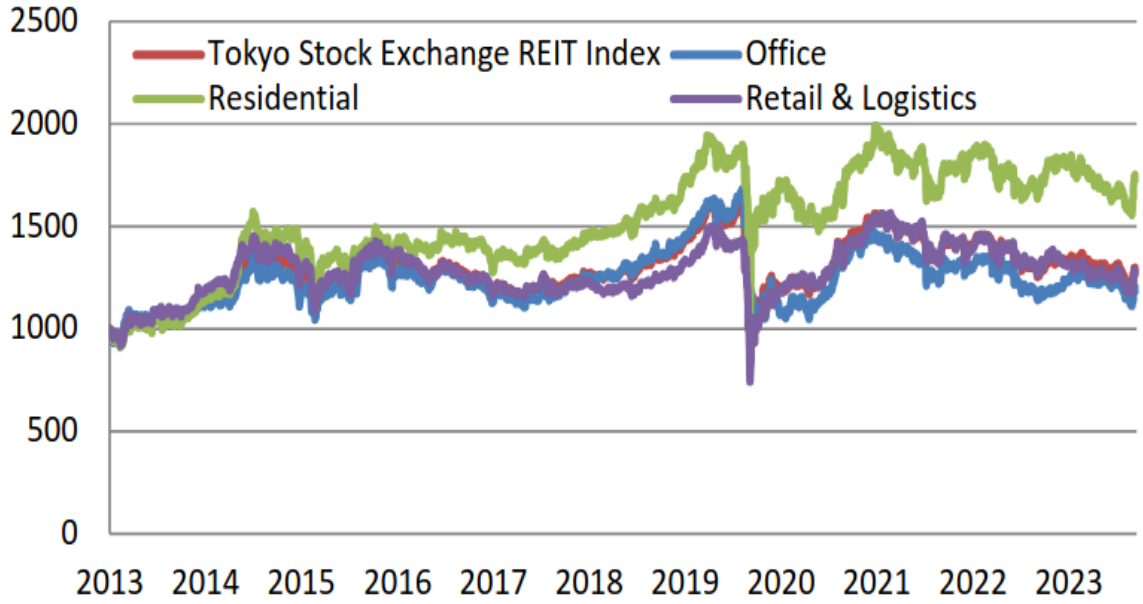
Table 1. Residential property price index performance vs. inflation.

Year	Price	Price change, YoY	Inflation, YoY	Difference
2012	99.94	-	-	-
2013	99.48	-0,47 %	0,34 %	-0,81 %
2014	102.54	3,08 %	2,76 %	0,32 %
2015	104.75	2,37 %	0,80 %	1,57 %
2016	106.68	1,62 %	-0,13 %	1,75 %
2017	110.84	3,91 %	0,48 %	3,43 %
2018	112.54	1,53 %	0,99 %	0,54 %
2019	115.14	2,31 %	0,47 %	1,84 %
2020	114.64	-0,43 %	-0,03 %	-0,40 %
2021	118.48	3,34 %	-0,23 %	3,57 %
2022	129.21	9,06 %	2,50 %	6,56 %
2023	135.34	4,75 %	3,27 %	1,48 %
		2,83 %	**1,02 %**	**1,81 %**

Note: Inflation data was retrieved from https://www.macrotrends.net/global-metrics/countries/jpn/japan/inflation-rate-cpi.

To weaken the demand shock during Covid-19, Japan's government gave a stimulus check of 900 000 ¥ (approx. 950 USD) to every resident (Kaneda et al., 2021). Although some of the money was spent right away as Kaneda et al. (2021) research shows, other part was saved. Businesses also got stimulus packages that were more targeted to cover costs for businesses who lost revenue due to demand shock. In fact, business side stimulus should not put any upwards pressure on office, retail and logistics real estate demand, unlike stimulus payments received by residents on residential real estate. Fiscal stimulus effect can be seen in Figure 10, where spread among residential and other Tokyo Stock Exchange REIT indexes got bigger after the summer of 2020, when stimulus to residents was distributed.

Figure 10. Performance of different Tokyo Stock Exchange REIT indexes.



Note: Chart was retrieved from
https://www.jpx.co.jp/english/markets/indices/line-up/files/e_fac2_7_reit.pdf

Macroeconomic Impact on the Industry/Firm

During Covid-19 pandemic, the Japanese economy was in recession and the majority of key economic empirical indicators reflect a decline. That causes substantial damage for the private sector and consumers in the economic future of the country. Firstly, the monetary policy of the Japanese government aimed to mitigate the damage by protecting small businesses and the health sector. Of course, due to Covid-19 pandemic, exports such as semiconductors, steel, automobiles and their parts were really impacted in a negative way. On the other hand, imports have benefited from the drop in oil prices, which is widely known to be Japan's main import, including liquified natural gas. Even though Japan's economy is built on the principles of capitalism, the Bank of Japan takes significant control over the economy and interest rates, which remain low according to the monetary policy.

Table 2. Main indicators of the economy of Japan

Economic Statistical Indicators	Rates/Amount	Month of 2020
GDP Growth Annualized (%)	-2.2	March
Unemployment Rate (%)	2.6	April
Inflation Rate (%)	0.1	April
Interest Rate (%)	-0.1	June
Balance of Trade (JPY Billion)	−833	May
Current Account (JPY Billion)	263	April

Note: Data was retrieved from https://tradingeconomics.com/.

Based on the table above, the Japanese economy shrank by 2.2 percent in the first quarter of 2020. Also, the unemployment rate reached 2.6 percent because of Covid-19 factors. That means decreased demand for commercial real estate, where some businesses reduce their operations or shut down, resulting in the country's unemployment rate to rise. Many firms moved to remote work, leading to less need for office spaces. While the inflation rate stays low it is worth highlighting that consumption would decrease, potentially causing the rate to turn in a negative way. During the pandemic, all people in the world, including Japanese, have reduced their spending, avoiding unnecessary purchases and prioritizing savings to protect themselves from an economic crisis. As mentioned before, the Bank of Japan's strategy was to maintain interest rates near zero percent to support long-term loans. Mostly these new policies have been dedicated to small firms to ensure the economy is stable (Alexandra et al., 2021).

The influence of monetary stimulus during COVID-19 on Japan's real estate industry can be mostly observed by three major real estate quantitative indicators such as real estate prices, transactions volumes and rental market performance. By relating them to macroeconomic data (inflation, GDP growth and interest rates) we can conclude that the monetary stimulus of BoJ helped to stabilize Japan's real estate market during the COVID-19 pandemic.

During the Covid-19 pandemic, the real estate industry remained as an attractive investment basically due monetary stimulus of the Bank of Japan’s, whose objective was to keep borrowing cost low. Consequently, Japan’s property prices showed resilience during that period. In 2023 (after the pandemic) residential land prices rose by 0.7% and commercial land prices increased by 1.5%. This stability was also impacted by low inflation rate, which helped sustain demand for real estate in Japan and make it a steady asset in the uncertain environment (see Table 1). According to this, we can conclude that real estate acted as a hedge against future inflation risks with the help of the monetary stimulus of BoJ making borrowing affordable during the crisis (Plaza Homes Ltd, 2023).

The beginning phase of the pandemic showed the decline in Japan’s real estate transactions as GDP growth contracted about 7.5 percent during Covid-19 pandemic (see Figure 1). This happened because people reduced overall spending including the real estate industry. However, monetary stimulus measures of BoJ such as yield curve control (YCC) and fiscal support programs kept Japanese government bond yields near to zero and provided liquidity to small and medium-sized enterprises, indirectly supporting real estate by maintaining commercial leasing activity. Which ensured mortgage rates and long-term borrowing cost at the low and affordable level during the crisis. Rising GDP in 2021 boosted transactions as the economy improved. After that followed Japan’s overall economic recovery, highlighting the connection between macroeconomic stabilization and real estate demand.

The rental market experienced mixed trends. Residential rental demand, especially in urban areas, recovered as foreign investors entered the market and restrictions eased. However, commercial office spaces faced challenges as a result of the shift to remote work. The Bank of Japan's low interest rates (-0.1%) policy supported the rental sector by making long-term loans for property owners and construction companies affordable. However, this policy could not fully overact structural changes in demand, especially in the commercial sector where working from home and reduced business needs caused a modest increase in commercial rents. This was a consequence of the YCC policy mentioned before, which maintained low interest rates to become more attractive to investors. Additionally, the higher demand for logistics and industrial spaces boosted e-commerce and helped offset weaker office markets.

Overall, monetary stimulus during Covid-19 had a steady influence on Japan's real estate market. Low inflation and stabilized GDP helped maintain property price and stimulate transactions. However, with low interest rates the rental market still struggled due to Covid-19 factors. These indicators and macroeconomic data showed how monetary policies protected the industry from major shocks while supporting a slow recovery.

After Covid-19 pandemic, Japan's real estate market experienced significant growth. Foreign investment reached $10.2 billion in 2023, and Tokyo property prices are expected to grow by 8% annually. Japan's real estate market is considered one of the safest markets in Asia attracting both domestic and international investors to its consistency and development possibilities. As fiscal (relaxed restrictions and tax incentives) and monetary policies had created real estate market with low barriers to entry, property investments have delivered a solid return. Yields range from 3% in Tokyo's Ginza to 8% in Osaka by offering low-risk options to invest.

Table 3. Foreign Investment in Japanese Real Estate

City	**Yield Range**
Ginza, Tokyo	3% or less
Tokyo	3.5% to 5.5%
Osaka	3.8% to 8%

Note: Data was retrieved from https://e-housing.jp/post/japan-residential-real-estate-market-analysis-2024.

Sequentially, the US, Canada, and UAE became the top investors, highlighting an increasing global interest in Japanese real estate. The apartment prices rose 30% in five years, showing the growth of demand for urban living. The price index for residential properties is valued positively and indicates a healthy market. Moreover, the low-interest environment continues to play a key role in the Japanese housing market during the crisis by helping buyers afford mortgages more easily. However, Japan’s economy impacts the real estate market, with GDP growth staying under 3% for decades and public debt over 200% of GDP. Despite promising opportunities, it is important to evaluate all factors including

macroeconomic ones, which could influence the results of making an investment into the real estate market in Japan (Japan Residential Real Estate Market Analysis 2024).

Future Outlook

New opportunities for growth have emerged as the Japanese real estate industry is recovering from the pandemic. The population trends for hybrid lifestyle and larger homes have bolstered the development in residential market (Kaneda et al., 2021). Simultaneously, the commercial segment is transforming to decrease office vacancy rates by repurposing spaces (Ueno, 2023). The expansion of e-commerce and labour law developments that aim to improve supply chain management are indicators that the logistics market will see new opportunities in the near future. The tourism and hospitality industry are expected to benefit from an increase in tourism and environmentally friendly travel preferences (Ueno, 2023). Low interest rate combined with government subsidies creates an opportunity for investments but on a long run the issues such as ageing population and possible deflation are challenges facing the economy. The recent struggles have demonstrated the strength of the Japanese real estate market's ability to change and evolve which fosters growth in the future.

Conclusions

The real estate industry in Japan was greatly affected by the Covid-19 pandemic, leading to policy measures that would avert any future downturns. Housing market was bolstered by the adverse interest rates and yield curve control by the BoJ, as well as other measures such as provision of stimulus checks to residents. Those endorsements enabled stability in housing demand, as the citizens adapted to new housing and lifestyle patterns that encouraged working from home (Kaneda et al., 2021; Akram, 2016).

However, there were challenges in the commercial real estate market. With less business activity due to nationwide restrictions and offices switching to work from home arrangements, the surplus in office space and rising vacancy rates indicated the need for adaptive reuse and innovation in the market. Government directed strategic subsidies were the key in preserving numerous businesses during the crisis and ensuring that there were no major collapses of companies (Akram, 2016).

Long-term trends in Japan continue to be influenced by two major factors: its ageing population and low inflation rates. Despite structural issues, prompt measures by the Japanese government and central bank helped consolidate the economy and steer it in the path of recovery (Kaneda et al., 2021; Ueno, 2023). The case highlights the fact that timely policy action is critical in averting shocks and enhancing resilience in critical sectors like real estate.

Application of generative AI

Introduction + Macroeconomic overview: generative AI was used to improve the quality of written English, including grammar and style. Also, AI tools were used for source suggestions and paper structure suggestions.

Theoretical analysis: generative AI helped to understand general connections among various events on economic factors.

Macroeconomic Impact on the Industry/Firm: generative AI assisted in analyzing empirical economic data and trends by understanding the impact of monetary stimulus during Covid-19 on the real estate market. Also, it was used to expand the vocabulary.

Future outlook + Conclusions: AI was generally used to improve vocabulary and find general insights from the internet. It was not directly used in writing.

Beyond that, AI was used to check the overall logic and suggest ways for improvement.

References

Alvarado, Maria & Jeong, Ji-Young & Publish Article In the United States, American Journals Publishing Center. (2021). Monetary Policy and Inflation Dynamics Strategies for Japan. 9.

Akram, T. (2016). Japan's Liquidity Trap. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2753107

Bank of Japan. (2021). Monetary Policy during and after the COVID-19 Era. Retrieved from https://www.boj.or.jp/en/announcements/press/koen_2021/data/ko210308a1.pdf

The Impact of Quantitative and Qualitative Easing and Yield Curve Control on the Functioning of the Japanese Government Bond Market: 日本銀行 Bank of Japan. (2024). Bank of Japan. https://www.boj.or.jp/en/research/wps_rev/wps_2024/wp24e09.htm

[COVID-19] Government Responses on the Coronavirus Disease 2019 (Ongoing Topics) | Prime Minister of Japan and His Cabinet. (2019). Kantei.go.jp. https://japan.kantei.go.jp/ongoingtopics/_00013.html

International Monetary Fund (2022). World Economic Outlook: Pandemic and Structural Issues. Retrieved from https://www.imf.org/

Japan Residential Real Estate Market Analysis 2024 | E-Housing. (2024). E-Housing.jp. https://e-housing.jp/post/japan-residential-real-estate-market-analysis-2024

Jones Lang LaSalle. (2022). Japan Real Estate Market Outlook. Retrieved from https://www.jll.com/

Kaneda, M., Kubota, S., & Tanaka, S. (2021). Who spent their COVID-19 stimulus payment? Evidence from personal finance software in Japan. The Japanese Economic Review. https://doi.org/10.1007/s42973-021-00080-0

Keynes, J. M. (1936). General Theory of Employment, Interest, and Money. Palgrave Macmillan.

Konishi, T. (2021). Effect of control measures on the pattern of COVID-19 Epidemics in Japan. PeerJ, 9, e12215. https://doi.org/10.7717/peerj.12215

Kuroda, H. (2022). The Bank of Japan's Thinking on Monetary Policy. Retrieved from https://www.bis.org/review/r220607c.pdf

OECD. (2022). OECD Economic Surveys: Japan 2022. Organisation for Economic Co-operation and Development. Retrieved from https://www.oecd.org/

OECD Economic Outlook, Interim Report September 2024. (2024). OECD. https://www.oecd.org/en/publications/oecd-economic-outlook-interim-report-september-2024_1517c196-en/full-report.html

Outbreak of pneumonia related to the new coronavirus (1st case). (2020). Ministry of Health, Labour and Welfare of Japan. https://www.mhlw.go.jp/stf/newpage_08906.html

Plaza Homes Ltd. (2023). Standard Land Price for Tokyo in 2023 – 4.5% Rise in the Commercial Areas, increase in rise in the Residential Areas - PLAZA HOMES. PLAZA HOMES. https://www.realestate-tokyo.com/news/standard-land-prices-tokyo-2023/

Smith, S. A. (2022, March 18). Japan Has Weathered COVID-19 Better Than Many, but Problems Persist. Council on Foreign Relations. https://www.cfr.org/in-brief/japan-covid-19-pandemic-response-restrictions-two-years

Takahashi, K. (2022). COVID-19's impact on labor market and policy responses in Japan. Japan Labor Issues, 6(40), 4–17. https://www.jil.go.jp/english/jli/documents/2022/40-01.pdf

Ueno, K. (2023). The Effect of COVID-19 on Cities and the Outlook for the Future. Economics Today, 44(2). https://www.dbj.jp/ricf/pdf/research/DBJ_EconomicsToday_44_02_en.pdf

World Bank (2022). Japan Economic Indicators 2020-2022. World Bank Group. Retrieved from https://data.worldbank.org/country/japan