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ITRN 503: Macroeconomic Policy in the Global Economy

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Japan: A Developed Economy with Challenges Ahead

Japan is a 145,937 square mile island-nation off the coast of Asia with a significant role in world history and the global economy (World Data, 2020). It is a member of both G7 and G20, which are coalitions of influential global powers for the purpose of focusing on economic issues and stability (European Commission, nd.). As of February 2022, its foreign reserves – or central bank assets in foreign currencies – totaled 1.38 trillion, which is second in the world behind only China (Ministry of Finance, 2022). Japan's Gross National Income (GNI) per capita at purchasing power parity (PPP) is $43,130 for its 125.84 million citizens, and Gross Domestic Product (GDP) stands at 5,057.76 billion in current US dollars (World Data, 2020).

All of these metrics indicate that Japan has a strong global influence and a bustling economy. However, while highly developed and innovative, this country is not immune to macroeconomic troubles that threaten its growth and sustainability. This paper explores the varied issues affecting Japan and will help form a comprehensive picture of the country as well as shed light on its position in the future.

Recent Macroeconomic History

In 1991, Japan experienced an asset price bubble collapse that has since been referred to as "the Lost Decade" (Corbett, 2012). This subsequent ten-year period was characterized by low and sometimes negative growth rates, asset price drops, and "falling corporate capital investment" (pg. 101). While economic recessions could have many causes, the Lost Decade is attributed to the Bank of Japan's attempts to address excess lending and inflation. To rein in speculation, the BOJ raised lending interest rates to a substantial degree. It had the intended effect of bursting the bubble but did so in an abrupt manner: the Japanese stock market crashed, kicking off ten years of stagflation and significant debt (Hirotsugu, 2020). Reversing the high-interest policy by eventually lowering the interest rate to zero did not ameliorate the consequences, and Japan is still recovering from the stagnation that characterized this period.

Some economists do not even consider the Lost Decade to be over. As of January 2020, the Japanese market was 39% lower than its December 1989 high (Otani, 2020). Recovery was likely hampered by historic events that afflicted the country immediately after GDP started to initially rise. The first, Japan's 2008 crisis, was not marked by the United State's mortgage problem, yet the country experienced a drop in GDP that exceeded the US' during the same time period (Saito, 2018). This can be attributed to a decline in US imports of Japanese intermediate goods, an appreciation of the yen that "discouraged exports", and limited trading in international markets (n.p.). Considering that 17% of Japan's 2008 exports were motor vehicles, which Americans postponed purchasing during the recession, it becomes clear how a shock in one powerful global economy affects others.

Natural disasters also have a similar shocking effect on economies. The Great East Japan Earthquake and Tsunami of March 11, 2011 impacted the Japanese economy not only by reducing production and destroying infrastructure but through resultant supply chain disruptions (Kawasaki et al., 2016). Carvalho et al. reported that real GDP was reduced in .47% in 2012 as a result from the damage: however, though less than what it would have been barring the disaster, there was no substantial decline in GDP that is graphically evident in *Fig. 1, Japan GDP (billions)* below (2020). The disaster also served to increase Japanese debt, which was already high at the time: the World Bank estimated that the country would incur $235 billion in costs (Kim, 2011).

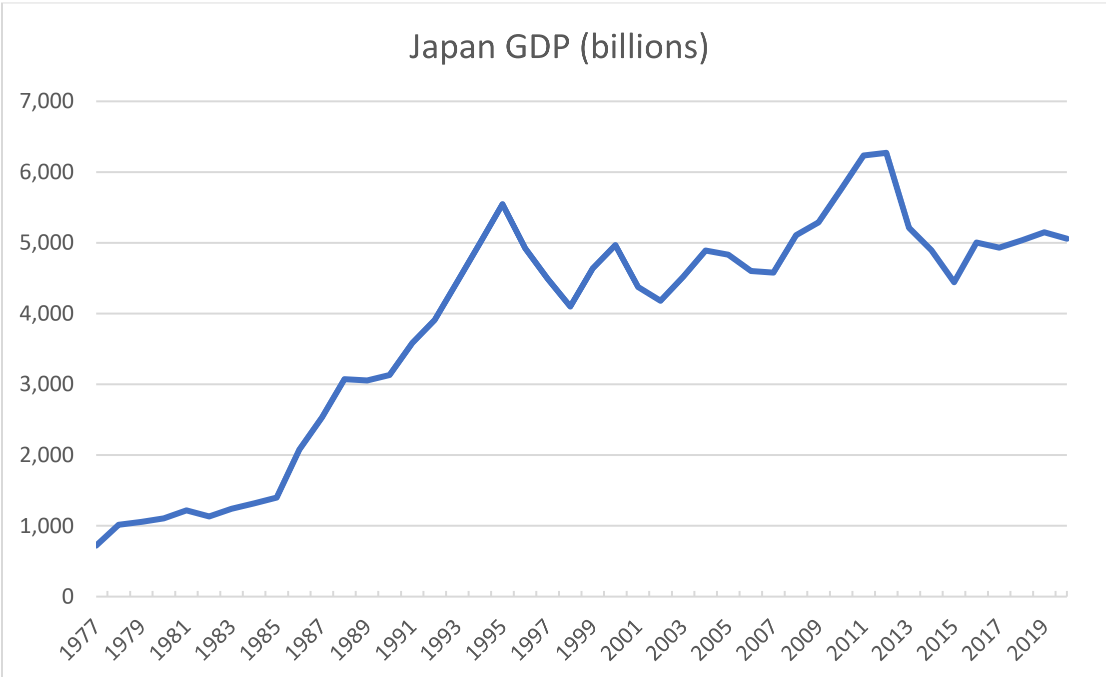

Fig. 1: Japan GDP (billion). Source: International Monetary Fund (IMF-a, 2022).

Much like with the 2008 US mortgage crises, impacts were not limited to just Japan: other countries that relied on Japanese imports were affected by the disaster. The Congressional Research Service addressed the economic effects and implications of the disaster on the United States' economy in a report which concluded that while not as profound as the impact on Japan, there was an impact on "world trade and financial markets" (Redacted, 2011, pg. 2). Processing plants that made 25% of the global silicon wafer supply were closed; automakers produced four-hundred thousand fewer vehicles than what would be typically expected; and hundreds of factories across industries were either destroyed or closed. The US was also focused on the resultant Fukushima disaster: it banned milk and vegetable imports from the damaged reactor area for fear of radioactive contamination. Such damage to electricity generation impacted the production of electronic and automotive parts that provided crucial components to supply chains that utilized product lines from many different countries. Fifteen Japanese ports were destroyed, which slowed US imports and exports from and to Japan. The disaster added further uncertainty to the US economy, and though the yen was low as a result of the disaster, the report notes that yen appreciation would make US exports more competitive.

Exchange Rate Regime and Management

A floating exchange rate is one in which countries let the exchange rate of their currency fluctuate in response to macroeconomic markets. As with many countries, Japan had a fixed exchange rate regime under the Bretton Woods system, but it switched to a floating exchange rate regime in February 1973 after the system broke down (Schnabl, 2017). The yen floated freely against the German mark and the US dollar during this time. Discontent brew in the 80s, however, when Americans felt threatened by the influx of

Japanese imports their country was receiving, and the flexible exchange rate led to many talks about how to reduce the trade imbalance. Five world powers including Japan signed the Plaza Agreement on September 1985, where it was decided that the best way to solve trade imbalance would be through appreciating the yen against the US dollar.

In Japan, the Plaza Agreement resulted in one-way bets on the yen appreciation, which then led to capital inflows (Schnabl, 2017). Over the next two years the yen appreciated more than 50% against the dollar, contributing to the bubble economy that resulted in the Lost Decade when it popped. Under the protocol of the Plaza Agreement, interest rates were set below market interest rates, resulting in yen undervaluation.

Paradigms shifted in February 1987 during the Louvre Accord when the five Plaza Agreement countries decided the problem of the depreciating dollar should be solved by increasing domestic demand using expansionary policies, both monetary and fiscal (Schnabl, 2017). Japan's current account surplus remained, however, and most foreign assets stayed denominated in the US dollar. Schnabl implies that Japanese investors keep their assets denominated in foreign currency only if they expect a higher return, and that the yen never challenged the US dollar because of the exchange rate risk. The yen only recently started to substantially depreciate against the dollar with the 2012 expansionary monetary policies dubbed "Abenomics", to be further discussed under the Monetary Policy section of this paper.

It is worth noting that Japan's exchange rate regime is not truly "floating" because it has engaged in select foreign exchange market intervention (Bank of Japan, 2018). The Bank of Japan is determined to be an agent of the Minister of Finance and is thus authorized to collaborate with foreign monetary authorities regarding any interventions that "buy and sell foreign exchange…to stabilize the exchange rate", interventions in overseas markets using Japanese funds, or use foreign funds. The Bank of Japan gathers information on the current state of affairs before deciding on an intervention, after which it creates the terms of an intervention agreement and carries them out over telephone or SWIFT, a massive financial messaging service. Yen are then bought or sold as per the agreed-upon terms.

Balance of Payments Issues

While many concerns regarding supply chain issues arose from the Great East-Japan Earthquake and Tsunami of 2011, there were also concerns regarding capital flows. The United States in particular was worried that Japanese investors would pull their $908 billion in US Treasury securities in order to finance Japan's rebuilding, which would increase US interest rates when it came to its national debt (Redacted, 2011). However, the authors of the CRS report believed that investors would continue to hold these securities despite the crisis since the United States holds much foreign investment in Japan. These redacted authors explained that most individual Japanese homeowners did not have earthquake or flood insurance, so rebuilding came out of household savings rather than government savings. The impact of the natural disaster can still be seen via the 2011-2013 current account (CUR), capital account (CAP), financial account (FIN), and official reserves balance (ORB) in *Fig 2: Japan Balance of Payments, in 2022 US$ (billions)* on the next page.

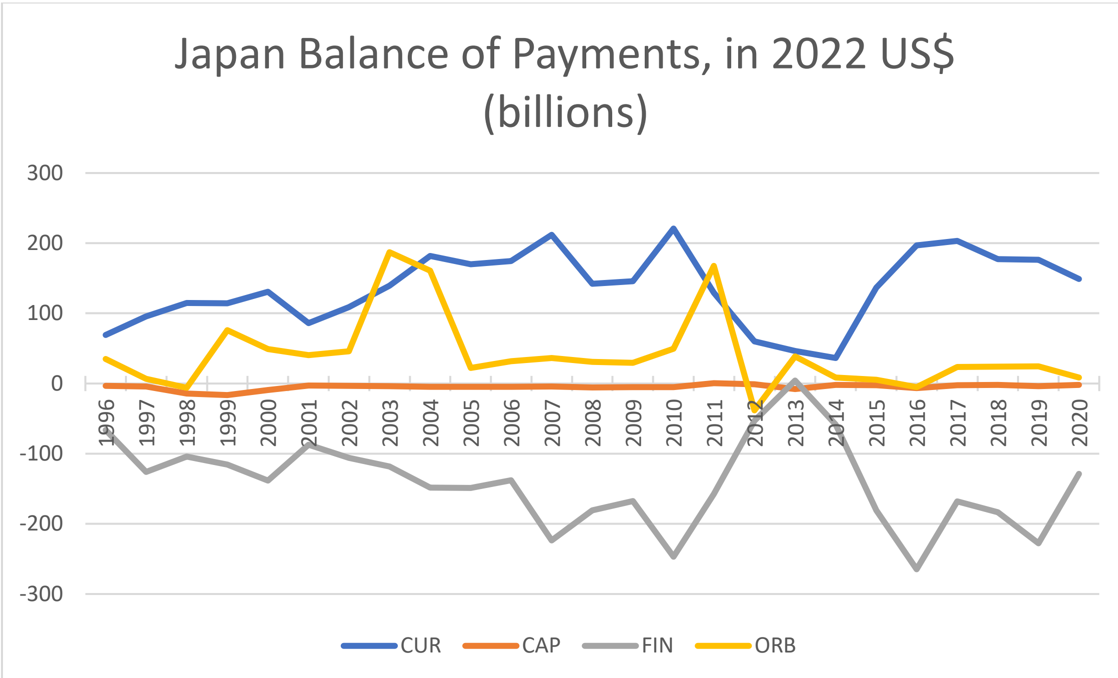

Fig 2: Japan Balance of Payments. Source: International Monetary Fund (IMF-b, 2022).

From 2001 to 2005, the Bank of Japan increased its current account balance from 5 trillion yen to 35 trillion yen (Matousek et al., 2019). The 2008 global recession, which occurred at a point when Japan was still trying to stabilize itself from the Lost Decade, caused Bank of Japan to increase current account from 40 trillion yen to 50 trillion. In 2011, it went up to 55 trillion, and then to 70 trillion in 2013, and 80 trillion in October 2014.

The Monetary Policy section will further describe Japan's two main expansionary monetary policies in response to financial crises, yet even after these 2001 and 2012 initiatives, Japan's net capital outflows and positive current account balance remained high (Schnabl, 2017). Japan's Foreign Direct Investment and portfolio investment, both components of the capital account, were focused primarily on the United States and China. It is not shown due to a lack of data, but Japan's Balance of Payments were inflated by stock and bond purchasing programs after the Lost Decade began (Schnabl, 2017).

Today, Japan's current account balance stands at 149 billion US$ (IMF-b 2022). This balance includes a net factor income of 179.08 billion US$, which is substantially high. This balance measures the difference between a country's GDP and GNI: in this case, it shows that many Japanese citizens work in foreign countries, own a wealth of physical investments including land overseas, or both. Japan has a capital account balance of -2 billion US$ and a financial account of -128.6 billion, which reflects outflows of government assets including debt finance and Foreign Direct Investment (FDI). In 2020, Japan received 8.6 billion US$ as inflows for its Official Reserve Transactions balance, indicating that the country was building up its reserves.

Unemployment Issues

While Japan has a host of unique issues, raging unemployment is not one of them. Even during the 2008 recession, when Japan lost more GDP than the United States, unemployment remained low: the US rate was at 5% in January 2007 and increased to 10% in October 2009, while Japan's rate was 3.9% in 2008 and 5.5% in October 2009 (Saito, 2018). Japan has the lowest unemployment in the G7 and the highest employment rate for its working-age population. According to *Fig 3: Japan Unemployment, % of Total Labor Force (national estimate)*, unemployment has been in steady decline and even remained just under 3% during the covid-19 pandemic.

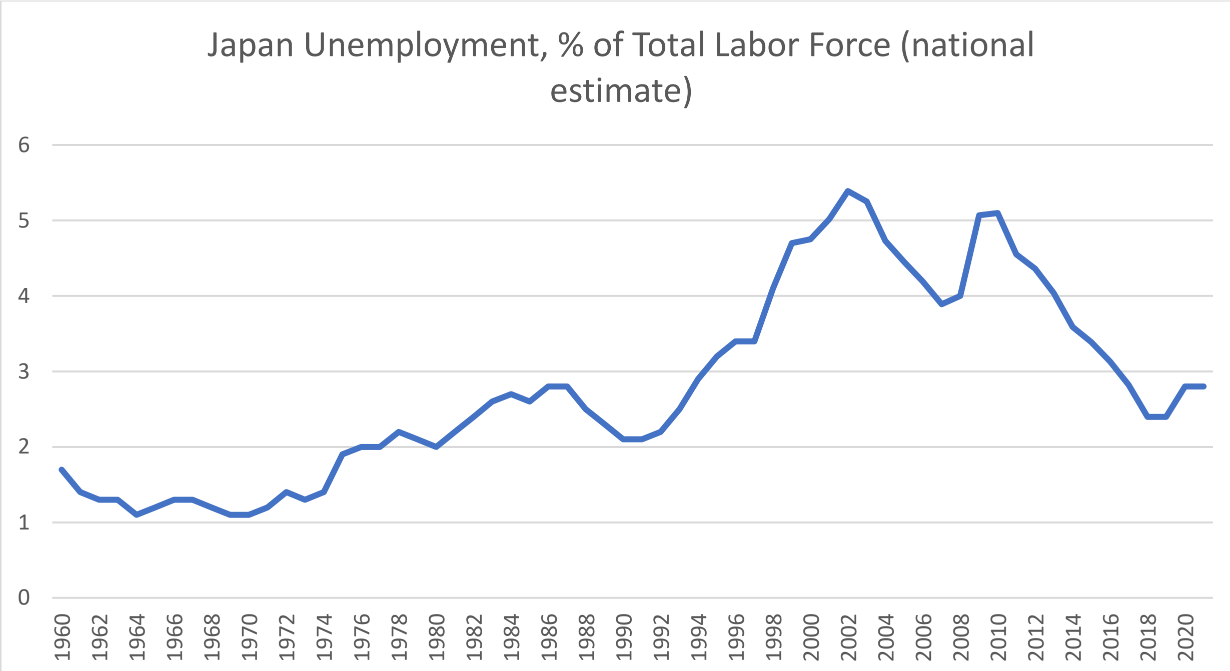

Fig 3: Japan Unemployment, % of Total Labor Force (national estimate). Source: International Monetary Fund (IMF-c, 2022).

Part of the reason for such low unemployment during a global recession might be attributed to Japan's conscious response to retain jobs. When the recession took hold, Japan quickly implemented a work subsidy program that covered 3.8% of its working population in July of 2009 (Nakane & Steinberg, 2011). The recipients were primarily the manufacturing and the service industries in which 87% of all recession-driven job losses occurred. Japan increased its work subsidy program budget by .1% of its 2009 GDP which was 5.29 trillion: the budget increase would have thus been roughly 52.9 billion dollars. Japan's flexible wage system – where firms would rather cut wages than cut workers – also contributed to a low unemployment rate.

This indicator of low unemployment does not, however, mean that Japan has no employment issues. Japan is facing a population bust that is characterized by a shrinking workforce, a low birth rate, and low immigration rates (Saito, 2018). Japan is currently stalling the inevitable by requiring workers to be in the labor force for longer, but its national population is undeniably shrinking: it became an "aged country" in 1994 when citizens aged 65 or older totaled 14.1% of the population, and then made up 20.8% in 2006 (Higo, 2006). It is now classified as a "super-aging country" where the life expectancy has increased 20.75 years from what it was in 1950 (82.02) and fertility has declined from 4.6 to 1.32 children per woman in this same time period (pg. 152). Such a demographic dilemma means that the Japanese population is quickly aging, which leads to reduced output growth and challenges economic welfare (Faruqee, 2003). Fiscal supports will become increasingly strained due to increased spending on pensions and healthcare for the older population: this is even more of a problem considering Japan's monumental government debt. On the demand side, the labor supply is threatened by shifting demographics, while these changes impact aggregate consumption, savings, and investment on the demand side.

Assets owned by Japan's social security system account for 50% of GDP, which cannot be supported by a declining population considering that Baby Boomers are currently the largest generation in Japan's history at seven million (Faruqee, 2003) (Higo, 2006). It is true that older workers tend to save more than workers just entering the workforce, but the elderly do not have the capacity to save as much as "mature" workers (2003). Aging thus leads to a rise in interest rates because savings and investment decline, and lower employment yields a GDP that has lowered .5% per year until 2050.

Monetary Policy

There are two significant modern monetary policy initiatives that have shaped Japan's economy today. While there was limited monetary tightening after the September 1985 Plaza Agreement, the driving events were the post-bubble "quantitative easing" efforts and the 2012 advent of "Abenomics" (Schnabl, 2017).

Japan decided on an unprecedented monetary policy to address the recession of the Lost Decade (Kurihara, 2006). This policy of quantitative easing, where the Bank of Japan increased Japan's money stock by purchasing bonds, began in 2001. This policy was implemented to reverse deflation and the liquidity trap that Japan found itself in as a result of more competition between commercial banks in the eighties due to smaller profit margins, who then tried to lend money to "real estate and construction companies and non-bank financial institutions" (Matousek et al., 2019, pg. 2). There was also an informal network between banks and the Ministry of Finance, especially since people that retired from the Ministry of Finance were often on the boards of these same banks. At the time, the bank of Japan had existing policies that targeted money markets, while the Ministry of Finance prioritized affecting the capital market: this discrepancy in priorities also contributed to the rise of the Lost Decade.

Matousek et al. examined the effectiveness of Japan's quantitative easing in practice and found that small regional banks experienced the most positive effects from quantitative easing: GDP as well as inflation significantly improved (2019). This positive effect on real GDP and aggregate price level – inflation – culminated after only three financial periods. The authors concluded that future quantitative policies should focus on small banks and those with many non-performing loans.

It is important to note that shortly before the first attempt at quantitative easing began, Fujiki et al. published a paper in which they wrote that "under the zero interest rate policy," which was Japan's current economic environment at the time of the paper's publication, that "quantitative easing by conducting short-term government securities operations is not effective" (Fujiki et al., 2001, pg. 98). However, the authors say in a footnote that "despite this situation, there have been efforts to shorten the time lag between the central bank's short-term financial asset operation and the date of settlement. In this context, the effectiveness of operations could be improving." It appears that, as with many aspects of economic strategy, a country must not write off any new policy approach nor decide to use just one in all applications. Japan's ability to change its mind and embark on a radical yet temporary approach helped lift itself out of crises and improve its GDP.

Prime Minister Shinzo Abe – also known as Abe II – was the prime minister of Japan from December 2012 to September 2020, and this lengthy tenure allowed him to enact economic policies that were planned out and executed over a longer period of time (Ito, 2021). He thus implemented an aggressive economic approach dubbed "Abenomics" and was characterized by three "arrows", the first of which was monetary policy. His strategy was to purchase more government bonds, length the maturity of said bonds under the Bank of Japan, and buy real estate investment trusts as well as exchange traded funds. Japanese markets did not expect purchases of the scale that Abe II's administration announced: stocks rose in anticipation of policy changes and the yen further depreciated. The policy was unanimously approved regardless of this, and inflation improved during the first three quarters. The Bank of Japan later increased its purchased asset amount and caused some yen depreciation, yet not enough to undo previous progress Abenomics had already achieved.

The goal of Abenomics was to reduce deflation that Japan had experienced for a decade and a half following the bubble pop of 1989 (Ito, 2021). While the economy came out of deflation, it did not meet the 2% inflation goal, yet Abenomics is still considered a success because it balanced its inflation target as well as maintaining realistic maximum employment and economic growth. By raising inflation expectations, the policy helped lower the real interest rate and pressured the rise of the nominal wage. When compared to other Prime Ministers since the onset of the Lost Decade, Prime Minister Shinzo Abe effectively pulled the Japanese economy out of its deflation. It would not be fitting to include data from the COVID-19 pandemic seeing as this was an unprecedented occurrence that Abe II's predecessors did not experience. Considering Japan's aging demographics and large elderly population, it is also more fitting to adjust GDP growth for the working-age population.

Inflation Issues

Japan's inflation issues – or, more aptly put, deflation issues – were touched upon in many sections of this paper, but it is important to emphasize how such a pervasive problem came about. Japan's 1980's bubble economy developed partly because the credit being lent to the private sector led the market to incorrectly believe that households were saving and set wrong expectations about future compensation (Schnabl, 2017). Much like in the United States before the 2008 recession, Japanese banks lent indiscriminately. The Japanese economy heavily relied on exports at this time, and the yen appreciation caused the Bank of Japan to cut the interest rate from 8% to 3.3%, which was low for its history. In 1988 the Bank of Japan started increasing interest rates to end speculation boom, which burst in 1989. The Bank of Japan kept interest rates high through 1991 after which it cut rates gradually: once these cuts were not making the desired changes, the Bank of Japan began to cut interest rates even faster, but investment still remained low. It was only after the 2012 Abenomics monetary policy initiative that Japan finally broke free of its deflation.

Researchers have attempted to find alternative explanations for Japan's recovery from this unbeneficial deflation. The authors of ADBI's working paper attribute inflation to rising energy prices due to shifting aggregate supply curves when "crude oil, natural gas, coal" become more expensive (Yoshino & Taghizadeh-Hesary, 2014, pg. 9). They then argue that a more localized way to introduce financial stability and thus a more stable aggregate price level is by implementing more hometown investment trust funds (HITs). The 2011 Great East Japan Earthquake and Tsunami made citizens realize how badly they wanted to assist with recovery efforts, and HITs would be a way to connect people with money to the towns they originate from. This would lead to balanced information and shared risk; introduce a new form of capital; and be driven by projects rather than futures or bonds. Time will only tell whether HITs become pervasive enough to be considered substantial enough to merit their own classification in economic policy: the lack of Deposit Insurance Corporation guarantees suggest that HITs may not be the embraced solutions the authors hope for.

Conclusion

While Japan has unique challenges and it should be noted that successful practices in one economy would not necessarily work in another, Japan's struggles and successes serve as an example for the rest of the world. In the years ahead Japan must continue making inflation gains without having them become rampant, as is currently the case in the United States. Its shrinking population and aging demographics necessitate developing a method to attract new citizens beyond streamlined immigration laws. The rising fossil fuel energy prices that are postulated to influence aggregate price level means that policy may be significantly impacted by the changing nature of the world's energy production landscape. Even the nature of tourism, work, and investment may change in the wake of an increasingly-online paradigm shift, further influencing Japan’s already-high net factor income balance in the Balance of Payments.

The COVID-19 pandemic underscored just how interconnected global markets are. The supply chain disruptions that occurred after the Great East Japan Earthquake and Tsunami of 2011 were relived to a lesser extent by a wide selection of countries during the pandemic. The Bank of Japan and Ministry of Finance currently make their policy decisions after conducting thorough research and analysis: while not everything can be predicted, it can be agreed that having a wide arsenal of different policy tools helps countries weather any unprecedented challenges that might arise in the years to come.

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