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Japan's Liquidity Trap

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1. Introduction

The liquidity trap is an economic situation, first described in Keynesian Economics (Keynes, 1960), where a further increase in money supplies does not increase the rate of interest and income. Thus it fails to stimulate economic growth. The interest rate has already fallen so much that people prefer holding on to cash rather than investing in bonds (or other instruments) because the interest earned is very low. It is an extreme event that happens when people expect adverse events like wars, deflation, etc. Extremely low-interest rates and an increase in the money supply that does not transfer into an increase in the price level are two important features of a liquidity trap. Such a situation renders monetary policy ineffective.

In this report, we try to explore the case of Japan's liquidity trap. This is achieved by examining the different factors and parameters involved. Firstly we plan to examine the reasons behind why Japan fell into the trap. Secondly, we will analyze the effects of the trap on various facets of the Japanese economy. Going forward, we will also consider the various policy changes introduced by the Bank of Japan to combat this and its effects.

2. Background and Literature Review

A classic case of a liquidity trap is Japan from the mid-1990s. In the 1980s, Japan witnessed tremendous economic growth, with its average annual GDP being higher than the US. However, since then, Japan has experienced decades of a stagnated economy with near-zero interest rates and deflation (*Inflation, GDP Deflator (annual %) - Japan*, n.d.). The annualized real GDP growth rate of Japan dropped and remained very low (averaging 1.2% from 1995-2002) (*GDP Growth (annual %) - Japan*, n.d.; Horioka, 2006) between 1990 - 2010. The yield on the ten year Japanese Government Bond (JGB) has also remained very low (<2%) from the 1990s and has recently gone below zero as well.

To stimulate the economy, The Bank Of Japan eased the overnight call rate to 0.5% from the end of 1995 to 0% from the start of 1999. Several such policies, in addition to significant expansion of the monetary base, were introduced, but they have not been able to get Japan out of the liquidity trap.

Since the global financial crisis, the pattern of sluggish economic growth and low nominal interest rates has spread beyond Japan. Even-term interest rates in the United States, the United Kingdom, and Canada have stayed historically low long after the global financial crisis. Several European nations, including Germany, France, the Netherlands, Austria, and Finland, as well as a few non-euro zone countries, such as Sweden and Switzerland, have very low or even negative interest rates on government bonds throughout the yield curve. Japan's interest rates have lately fallen to negative levels.

In the 1980s and early 1990s, Japan saw rapid private-sector credit expansion. The country's business sector received a massive infusion of credit. The 1980s bubbles were powered by a combination of high credit expansion and speculation in real estate and financial assets. The cost of land and the cost of stock have both increased significantly.

Economic growth decreased dramatically once the bubble burst. In contrast to the robust increase in labor productivity from the early 1950s to the late 1980s, productivity growth in Japan has slowed significantly during the 1990s. Compared to most other advanced nations, notably the United States, labor productivity has slowed in Japan during the 1990s (Akram & Das, 2014; Hayashi & Prescott, 2002). Furthermore, in comparison to most other industrialized nations, notably the United States, labor force growth in Japan was substantially slower throughout the same time.

Data

We will consider the following data sources to obtain various facts and numbers pertaining to our study.

1) World Bank
2) Bank of Japan
3) International Monetary Fund
4) Ministry of Foreign Affairs of Japan
5) Asian Development Bank

3. Methodology

We will consider the following metrics to study the cause and effects of the liquidity trap in Japan from the 1990s.

1) Nominal and real GDP growth of Japan since the 1990s
2) Inflation and deflation as measured by implicit price deflators
3) Per capita real income growth comparison between Japan and the US and other Asian countries like Hong Kong, Singapore etc.
4) Fiscal deficits of the Japanese government since the 1990s
5) Exchange rate of Japanese Yen since 1990s

4. Analysis

i) Nominal and real GDP growth of Japan since the 1990s

Nominal gross domestic product (GDP) is a measure of economic production that does not take inflation into

account. GDP is a metric that quantifies all that is generated inside a country's boundaries by all of its citizens and businesses. One can think of it as an economist's way of producing a more accurate picture of a country's economic strength. Real GDP is the value of the gross domestic product (GDP) adjusted by removing the effects of price changes, that is it is adjusted for inflation.

As evident from *figure (1)*, Japan's real GDP growth rate has been very low (less than 2%) since the 1990s. This slowdown of the growth has continued since then and the economy has taken further hits from external factors (such as the The Global Financial crisis of 2008) and major natural disasters (Tohoku earthquake) as well.

Japans' Nominal GDP (*figure 2*) has also experienced a similar trend. After the rapid increase in the 80s, it has been stagnant since the 1990s.

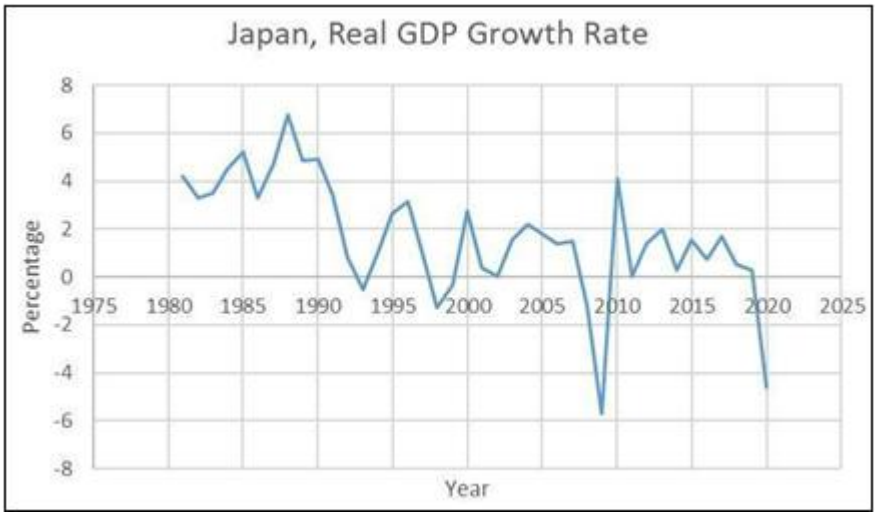

Figure 1: (*Source: World Bank)*

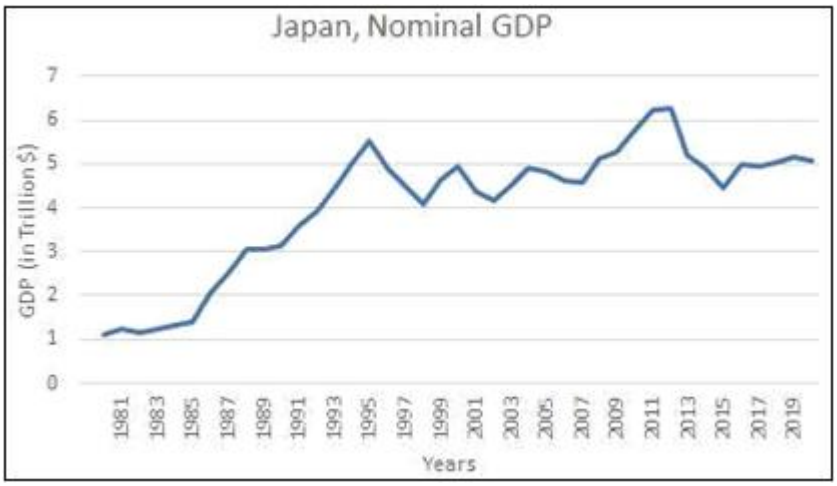

Figure 2: (Source: World Bank)

ii) Inflation and deflation as measured by implicit price deflators

Since the mid-1990s, Japan's industrial production has been extraordinarily low (Sommer, 2009). During the 1990s and early 2000s economic downturns, industrial production fell. Industrial production increased moderately after the 2001 recession, but it plummeted during the global financial crisis. The decrease in industrial production in Japan was especially severe, with the advanced manufacturing, automobile manufacturing, and electronics industries all suffering significant losses (Sommer, 2009). The Tohoku earthquake in 2011 disrupted industrial production and exports, causing them to plummet. Since then, the recovery in industrial production has been slow.

For decades, the lack of effective demand has resulted in chronically low inflation and deflationary trends (*figure 3*). As a result, since mid-1994, the price level has dropped significantly.

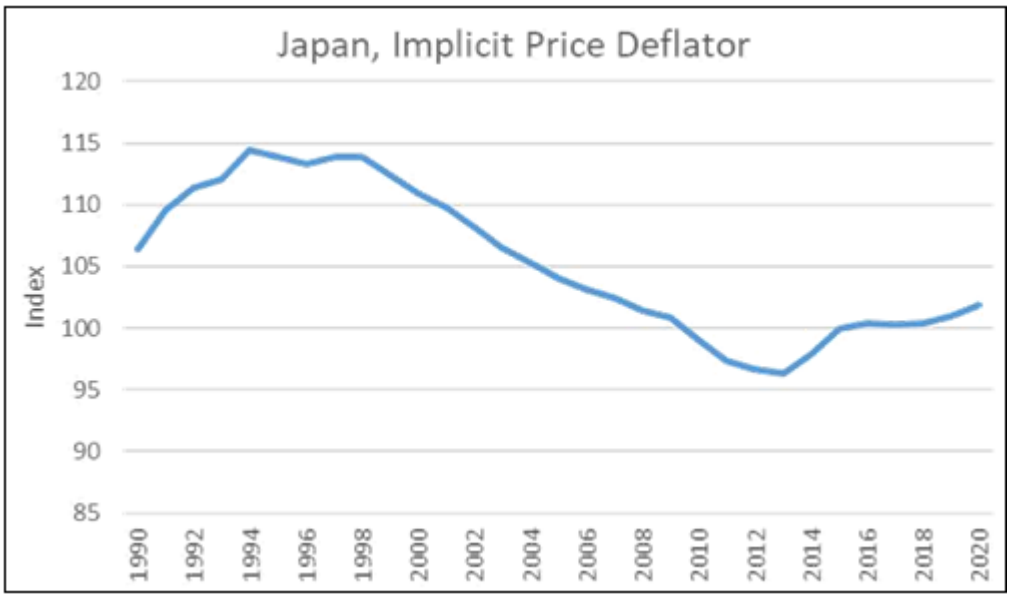

Figure 3: (Source: World Bank, Bank Of Japan)

iii) Per capita real income growth comparison between Japan and the US and other Asian countries.

Real Gross Domestic Product (GDP) per capita is a financial metric which defines the economic prosperity of a nation and is calculated by dividing GDP at constant prices by the population of a country. The stagnation of Japan's economy has harmed real income growth and the country's relative standard of life. Per capita real income growth (measured on a purchasing power parity basis) has been sluggish due to prolonged economic stagnation. The difference between the US and Japan in terms of per capita real income has widened (*figure 4*). While Japan's per capita real income was about 85% of that of the United States in the early 1990s, by 2014 it had dropped below 65% *(figure 5*). In the late 1980s, Japan had the greatest per capita real income in Asia, but it is now behind some of its Asian neighbors, including South Korea, Singapore and Hong Kong (*figure 6*).

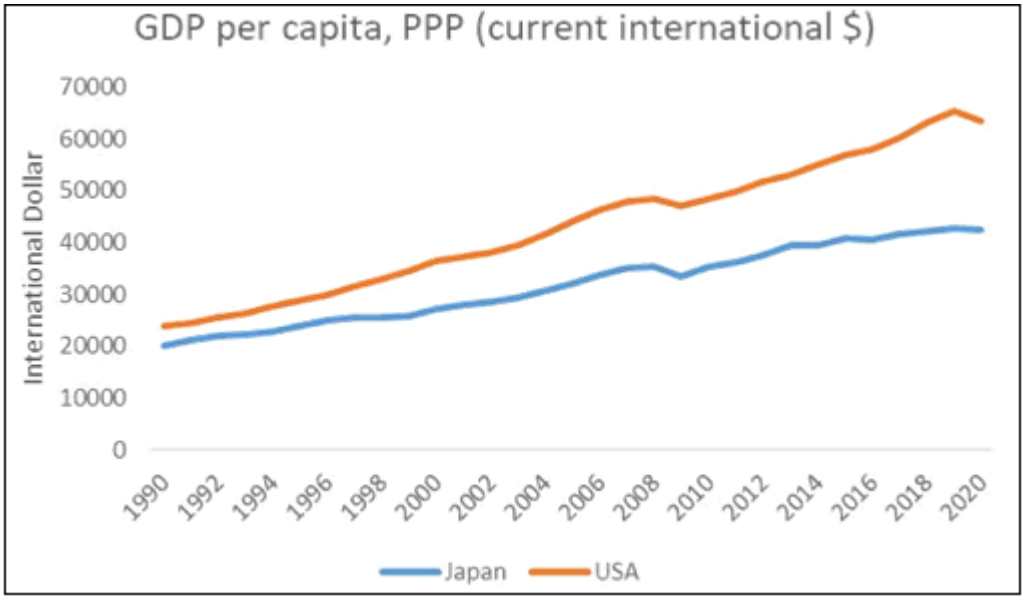

Figure 4: (*Source: World Bank)*

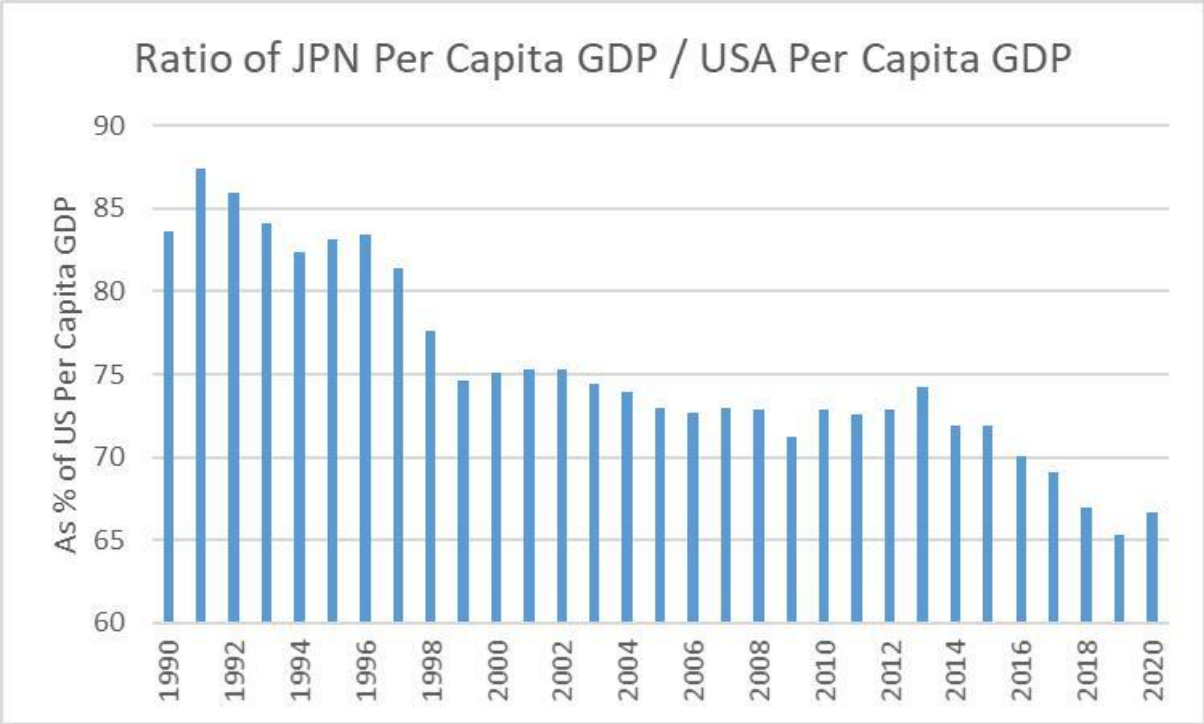

Figure 5: (*Source: World Bank)*

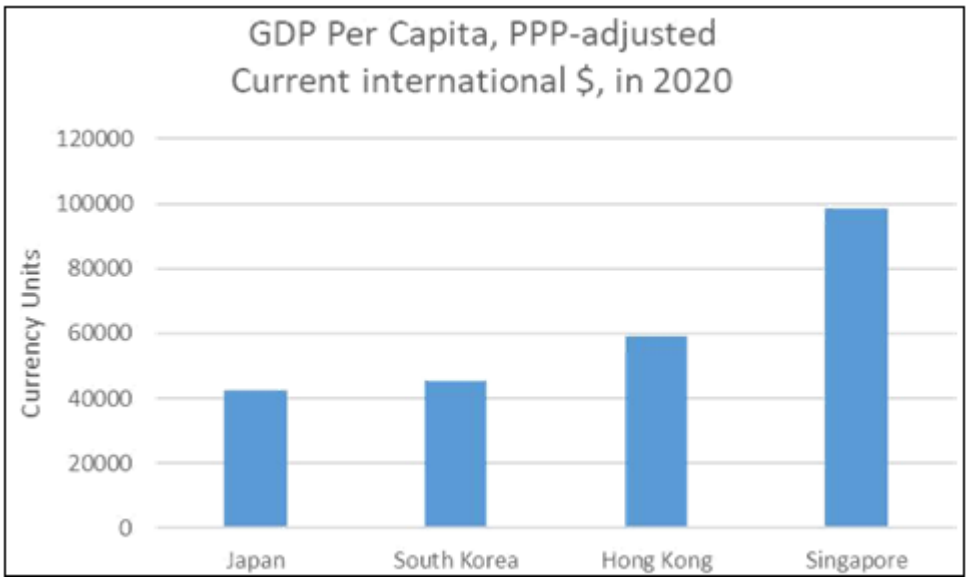

Figure 6: (*Source: World Bank, Asian Development Bank)*

iv) Fiscal deficits of the Japanese government since the 1990s

Net lending (+) / borrowing (-) is the difference of revenue and expenditure and defines if the government is providing to (net lending) or borrowing financial resources from(net borrowing) other sectors. Fiscal deficit as a percentage of GDP is a shortfall in a government's income compared with its spending. Since the mid-1990s, Japan's government has been running chronically substantial fiscal deficits (net borrowing) as a percentage of nominal GDP (*figure 6*). The country has had large fiscal deficits because tax revenues have been weak due to stagnant nominal GDP and stagnant real income (Akram, 2016). Automatic stabilizers and increasing transfers have raised spending, which includes social security and medical costs associated with the population's aging. The Japanese government has frequently increased funds in the economy in reaction to slowing activity in order to provide stimulation to the economy, while at other times raising taxes in an attempt to implement budgetary discipline, but both attempts have shown to be ineffective. In general, Japan's economy has been stabilized by high fiscal deficits, which have averted economic downturn and crisis(Koo, 2011). Government spending, taxation, and transfers have also helped Japan preserve its high standard of living, social stability, and avoid a rapid increase in after-tax income disparity. It has also allowed for reasonable aggregate business earnings and the stability of corporate profits as a percentage of national income. However, there are concerns in Japan concerning the effectiveness and efficiency of government expenditure, fiscal stimulus, and transfer programmes. Frequently, public funds have been spent on initiatives and activities that provide only marginal social benefit to the general public.

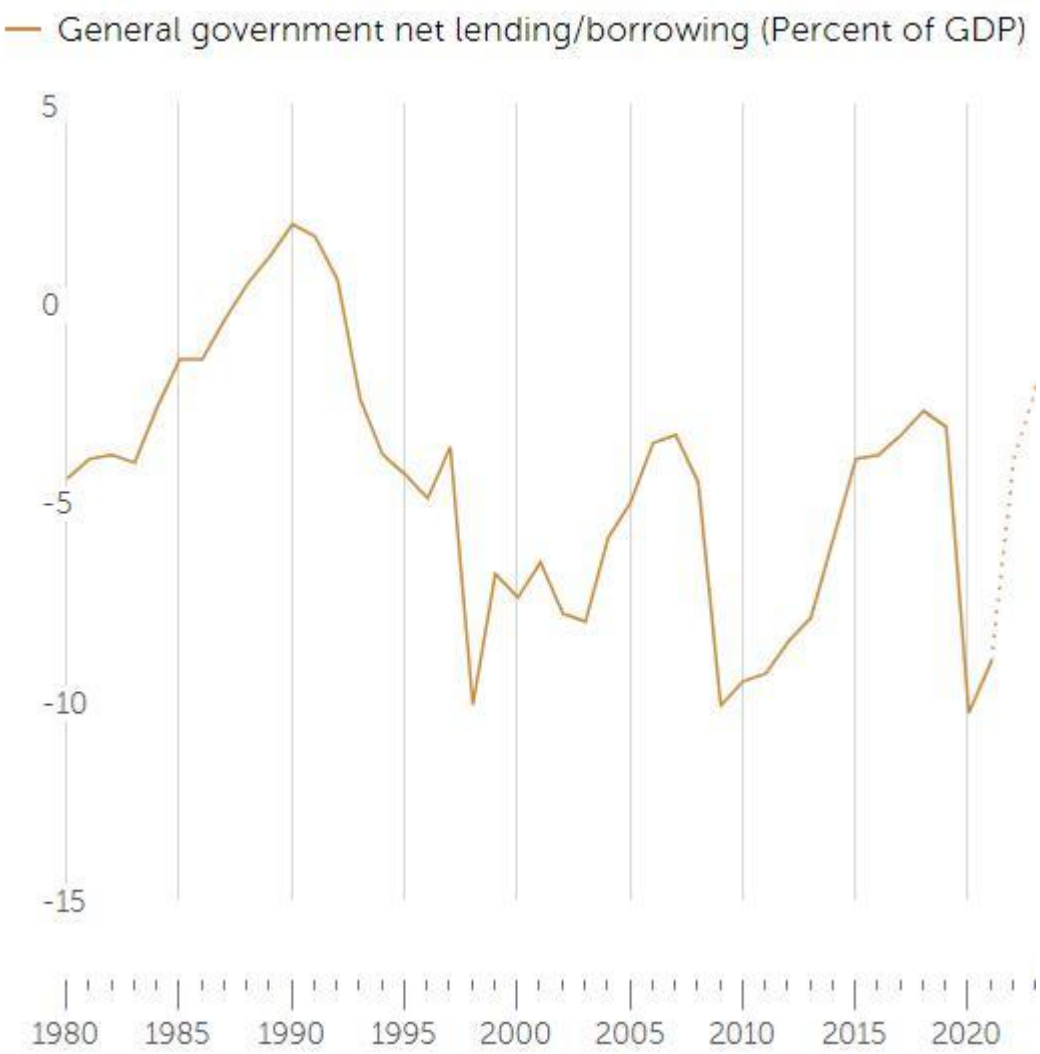

Figure 7: (*Source: IMF)*

v) Exchange rate of Japanese Yen since 1990s

The currency exchange rate, along with interest rates and inflation, is one of the most important predictors of a country's relative economic health. In foreign markets, a higher-valued currency makes imports cheaper and exports more expensive.

Since the 1990s, the Japanese yen has appreciated significantly (*figure 8*). After the 1980s the Yen appreciated by around 35% by the 1990s and continued to appreciate till the 2000s. This prolonged period of an overvalued yen had negatively affected exports. Several economists have suggested currency depreciation as a part of the solution to a liquidity trap situation (Svensson & Others, 2006). Expectations of a higher price level would be reflected in the yen's present decline. The lack of such a devaluation shows that the Bank of Japan's quantitative easing is unlikely to be permanent, and that the central bank has been unsuccessful in creating expectations of rising prices.

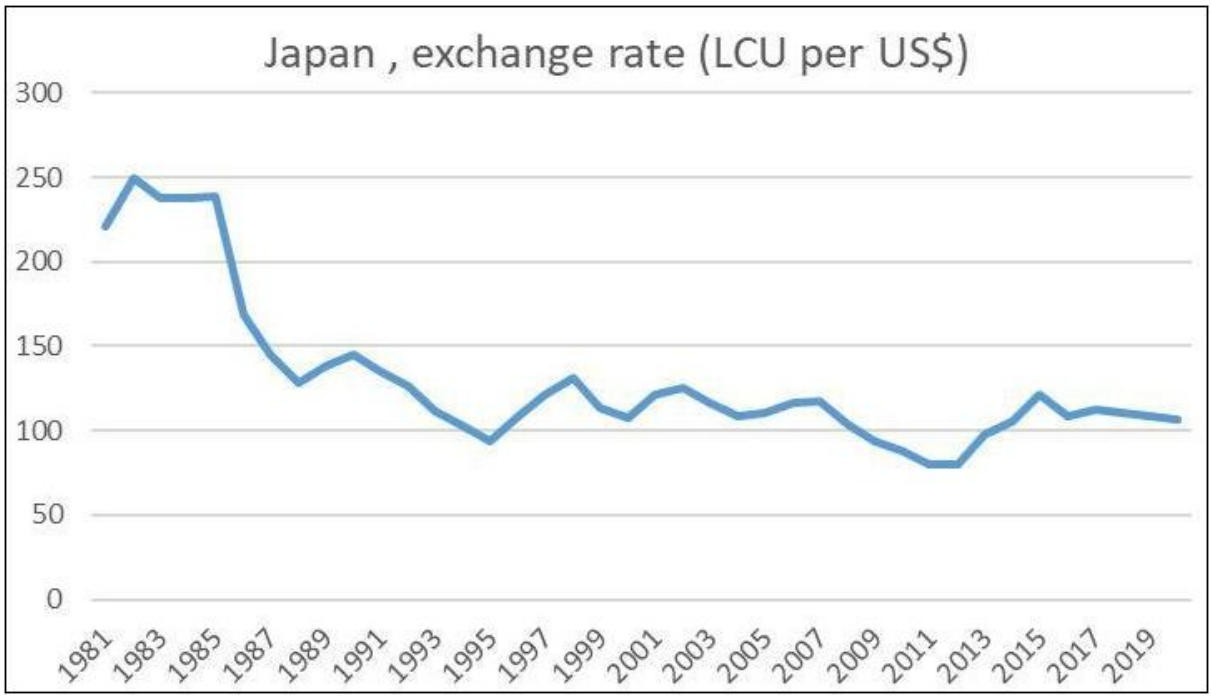

Figure 8: *(Source: World Bank, Ministry of Foreign Affairs of Japan)*

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