

Comparative Analysis of the Return on Foreign Investments of the United States, Germany and Japan

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Abstract This research paper aims to analyze the return on foreign outward and inward investments of the United States, Germany and Japan. For all of the three countries the cumulative inflows of the financial account from inward direct, portfolio and other investments significantly exceed the income outflow. At the same time, the amount of income received by the United States exceeds the amount of investment abroad. Due to the fact that the profitability of outward investments for the US, Japan and Germany exceeds the return on inward investments it can be concluded that participation of these countries in international investments has a positive effect on their balance of payments. In the countries that are partners of the United States, Japan and Germany the opposite effect is observed. The results of the study indicate that in 2020 due to the financial stimulation of the social-economic development in the conditions of the coronavirus pandemic the sharp increase of the level of public debt to GDP in the US, Japan and Germany has not yet affected significantly the yield of government securities. However, if the current expansionary fiscal policies of the United States and Japan are continued, countries may face substantial problems in servicing their public debt. In such a situation the Central Bank of Japan and the US Federal Reserve System will be forced to keep the discount rate at almost zero for a long time, fearing a sharp rise in the cost of servicing public debt.

Keywords: international capital flows, return on investment, public debt, yield of government securities.

JEL classification F21, F23, F65, G11, G15, O16, D25

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1. Introduction

In today's world, capital flows are an important aspect of the international monetary system, playing a significant role in the development of national economies. Investments affect absolutely all areas of the economy and opportunities for economic growth. The United States plays a unique role in the international financial system, as any changes in its economy can affect global capital flows. They have extremely favorable investment conditions – from a business-friendly environment to specific technologies, supply chains, infrastructure and manpower. At the same time, the United States is not only one of the largest exporters of capital, but also a country that attracts the world's largest volume of foreign investment. Japan, as the world's third largest economy, plays an important role in the international capital flows as well, and has a substantial impact on global trends in this field. The country is characterized by a surplus in financial account of the balance of payments, i.e., Japan is a net exporter of capital, and the largest in the world. Germany – the largest economy in the European Union – is among the ten countries that attracted the largest amount of foreign investment in 2019, because of a skilled workforce, ease of doing business and developed infrastructure. Given this, the analysis of the return on foreign investments in these countries is relevant in the view of the latest trends in the global economic environment.

2. Literature review

Capital flows are an important aspect of the international monetary system. The inflow of foreign capital helps increase domestic savings, promotes economic growth, risk sharing, deepening the domestic financial sector and productive resource allocation. However, significant capital inflows can stimulate inflation, increase of exchange rate in short-term period, and thus lead to financial instability according to A. Rashid (2019). Similarly, a large and sudden outflow of capital can also cause serious damage to the country's economy, cause a liquidity crisis.

Classical economists, such as A. Smith and D. Ricardo have studied the importance of investment in economic growth (I. Stubelj, 2014). Later, J. Keynes built a new paradigm for investment, in which they are the predominant factor in the national product. For post-Keynesians, investment is a very important factor in the economic system, as the exploitation of new technologies is possible only by attracting investment. According to the neoclassical approach, the flows of international investment are due to differences in productivity (P. Hotellerie-Fallois and P. Moreno, 2016). Capital flows have been estimated from a theoretical point of view using the standard Solow growth model. These models assume that flows will be determined by the productivity of capital as it flows from richer countries to poorer.

S. Yakubovskiy et al. (2020) analyzed the impact of the European Central Bank monetary policy on the financial indicators of Poland, Hungary and Czech Republic. The results of the analysis show that the European Central Bank monetary policy had overall positive influence on the balance of payments of East European countries. The excessive U.S. total income is studied by two main components: income from

foreign investments and capital gains from changes in prices of foreign and exchange rates (M. Habib, 2010).

There is also a large number of studies contributed to identifying the influence of different financial and social-economic factors on the return on foreign investments. Among them there are the studies of J. Hung and Y. Chang (2018), I. Podgorna (2020), O. Rogach (2019), F. Hünnekes et al. (2019).

3. Hypothesis, methodology and data

The main goal of the research is to conduct an economic analysis of the return on foreign inward and outward investments of the United States, Germany and Japan and compare the results.

The concept of return on investment assets as a factor in international capital movements can be studied either from the point of view of individual investors or from the point of view of the countries that accept these investments (T. Rodionova et al., 2019, S. Yakubovskiy et al., 2019, 2020). Investment income flows are becoming increasingly important as elements of smoothing intermediate consumption between emerging markets and developed countries. The cost of servicing these investments plays an important role in assessing the priorities for attracting one or another form of foreign investment.

In order to compare the scale of repatriation of profits of foreign investors and the corresponding received investment flows for a certain period of time, the concept of «coverage ratio of foreign investment» was introduced and developed by T. Rodionova.

$$CoverInw^x = \frac{\sum INCd_t^x}{\sum L_t^x} \quad (1)$$

where *CoverInw* – coefficient of coverage of inward foreign investments of type *x* (direct, portfolio and other investments) for a specific time period.

According to the formula 1, the return on foreign investment attracted to the United States, Germany and Japan is calculated as the ratio of investment income payments by the country (*INCd^x* - debit of the current account income on liabilities of type *X* - direct, portfolio or other investments) to the accumulation of external liabilities (*L*) of type *X*.

To determine the coverage ratios and profitability of outflow foreign investments the following formula is used:

$$CoverOutfl^x = \frac{\sum INCc_t^x}{\sum A_t^x} \quad (2)$$

where *CoverOutfl* – coefficient of coverage of outward foreign investments of type *x* (direct, portfolio and other investments) for a specific time period.

According to the formula 2, the return on outward foreign investment from the United States, Germany and Japan is calculated as the ratio of investment income payments received by the home country (*INCc^x* - credit of the current account income on assets of type *X* - direct, portfolio or other investments) to the accumulation of external assets (*A*) of type *X*.

To calculate the coverage ratio of foreign inward and outward investments the yearly data from 1999 to 2019 is used, taken from the Balance of Payments Statistics of the International Monetary Fund.

4. Results and discussion

Based on the data on attracting foreign investment in the United States, Germany and Japan, calculations were made to build the database with the structure of investment income outflow. The analysis of the received data showed that in the United States from 1999 to 2019 the share of foreign direct investments in the total outflow of foreign investors' income is equal to 27.4% (\$ 3 063.1 billion), the share of other investment – 12.5% (\$ 1 380.8 billion), so in the United States income payments on portfolio investments prevail, accounting for 59.6% (\$ 6 569.1 billion) of total revenue outflows.

It should be noted, that the United States remained the largest recipient of FDI, attracting \$251 billion in inflows in 2019 (UNCTAD, 2020). In Germany for the same period the share of foreign direct investment in total outflow of foreign investors' income is equal 26.1% (\$ 851.1 billion), the share of portfolio investment income – 46.1% (\$ 1 502.5 billion), other investment income – 27.8% (\$ 903.8 billion), i.e. in Germany also prevails the payment of income on portfolio investments, which account for almost half of total income of foreign investors. In Japan for the same period the share of foreign direct investment in the total outflow of income is equal to 27% (\$ 320.4 billion), the share of other investment income – 22.2% (\$ 263.7 billion), i.e. in Japan, as in the United States and Germany, income payments on portfolio investments prevail, accounting for 50.8% (\$ 602.4 billion) of total revenue outflows.

The results of calculation of the average value of the return on inward investments for the United States, Germany and Japan are presented in table 1.

Table 1. Average value of the return on inward investments from 1999 to 2019, %

Country	FDI	Portfolio	Long-Term Government Bond	Other
United States	3.33	3.28	3.54	1.92
Germany	3.77	3.27	2.69	2.49
Japan	9.72	1.59	0.98	1.02

Source: authors' calculations, IMF (2020).

Based on the obtained calculations, the highest return on inward investment for the period 1999-2019 was obtained by foreign investors on direct investment in Japan. The rate of return on direct investment in Japan was 9.72%, which is the highest value. The return on direct and portfolio investment in the United States is almost at the same level. Foreign investors received the lowest returns from other investments in Japan, the figure

was 1.02%. Thus, it should be noted that foreign investors have the highest return in the studied countries on foreign direct investment, the lowest return – on other investments. All countries have indicators of return on investment within the optimal values, i.e. investment risks for foreign investors are not high. It can also be noted that the average values of profitability in the U.S. and Germany are almost at the same level.

Nominally, the United States for the period 1999-2019 received foreign capital in the amount of \$ 21.8 trillion. At the same time, the ratio of the amount of foreign investment income outflow to the total investment inflow was 50.49% (Tabl. 2).

Table 2. The ratio of foreign investment income outflow in the relevant cumulative receipts of the financial account (foreign investment coverage ratio), 1999-2019

Country	FDI	Portfolio	Other	Total revenue outflow, billion dollars	Cumulative financial account receipts, billion dollars	The ratio of income outflow to the total investment inflow
United States	52.71%	54.99%	34.04%	11 013.1	21 810.7	50.49%
Germany	54.10%	96.12%	58.96%	3 257.4	4 669.2	69.76%
Japan	112.8%	26.24%	23.03%	1 186.6	3 725.1	31.85%

Source: authors' calculations, IMF (2020).

Analyzing certain categories of investments, it can be noted that in the United States, income on portfolio investments dominate. It accounts for 54.99% of the received capital. Income on direct investments has a slightly lower percentage – 52.71% of the received capital. Investment payments on other investments for the same period amount to 34.04%. Thus, it is possible to conclude that in the U.S. financial account receipts exceed the repatriation of investment income.

Income from foreign investments worth \$ 3.2 trillion was repatriated from Germany for the period from 1999 to 2019. At the same time, the country received \$ 4.6 trillion over the same period, i.e. the coverage ratio was 69.76%. Payments on direct investments account for 54.10% of the received capital. Payments on portfolio investments dominate and amount to 96.12% of the received capital. Investment payments on other investments make up 58.96% of the received capital. Thus, in Germany, amount of the investment inflow exceeds the repatriation of investment income. In Japan, the ratio of total income, taken out by foreign investors to the relevant cumulative receipts of the financial account, was 31.85% – total outflow amounted to almost \$ 1.2 trillion, the cumulative receipts of the financial account amounted to \$ 3.7 trillion. It can be noted that the ratio of payments

on direct investments is the largest – 112.8%. Payments on portfolio investments account for 26.24% of the received capital. The lowest percentage is by investment payments on other investments – 23.03% of the received capital.

To determine the coverage ratios and profitability of outflow foreign investments a structure of investment income inflow was explored. Analysis of the data showed that in the United States from 1999 to 2019, the share of foreign direct investment in total income inflow was 55.2%, equivalent to \$ 7 707.5 billion, the share of portfolio investment was 32.6% (\$4 556.6 billion), the share of other investment was 11.4% (\$ 1 666.6 billion), i.e. in the United States, income payments on foreign direct investment prevail. Income from outward other investments is the lowest. In Germany, from 1999 to 2019, the share of foreign direct investment in total income inflow was 37.2%, equivalent to \$ 1 585.9 billion, the share of portfolio investment was 36.0% (\$ 1 534.7 billion), the share of other investment was 26.7% (\$ 1 136.6 billion), i.e. in Germany, as well as in the United States, income payments on foreign direct investment prevail. Income from outward other investments is the lowest. In Japan, from 1999 to 2019, the share of portfolio investment in total income inflow dominates and was 59.4% (\$ 2 417.5 billion), foreign direct investment – 30.8% (\$ 1 252.35 billion). Revenues from outward other investments are the lowest – 9.7% (\$ 395.1 billion) in total income inflow.

For a more detailed analysis, the return on outward investments was calculated. The calculation is made as the ratio of received payments of investment income from abroad (credit of the current account income item for type X assets - direct, portfolio or other investments) to the accumulation of external assets of type X. The results are represented in table 3.

Table 3. The average value of the return on outflow investments 1999-2019, %

Country	FDI	Portfolio	Other
United States	7.28	3.46	2.55
Germany	5.05	3.63	2.43
Japan	7.44	4.57	1.48

Source: authors' calculations, IMF (2020).

Thus, based on the obtained calculations, the highest return on foreign investment for the period 1999-2019 was obtained by Japan from outward direct investments. The rate of return on direct investment from the United States was 7.28%, which is the highest value. Next are portfolio investments, for which the return for the studied period was 3.46%. In the United States and Germany, the return on portfolio and other investments was almost at the same level. The lowest return was received by Japanese investors from other investments abroad, it was 1.48%. Thus, it should be noted that in these countries the returns on foreign outward direct investments are the highest.

Nominally, the United States invested \$ 12.06 trillion between 1999 and 2019 (Tabl. 4). At the same time, the ratio of the amount of foreign investment income

inflow to the total investment outflow was 115.48%

Table 4. The ratio of total income inflow to the corresponding cumulative costs of the financial account (foreign investment coverage ratio), for the period 1999-2019

Country	FDI	Portfolio	Other	Total inflow of revenues, billion dollars	Cumulative outflow of all investments, billion dollars	The ratio of income inflow to the total investment outflow
United States	130.24%	95.34%	122.0%	13 948.9	12 062.7	115.48%
Germany	72.17%	53.26%	43.66%	4 262.8	7 681.5	55.49%
Japan	60.01%	77.64%	72.38%	4 064.9	5 745.8	70.74%

Source: authors' calculations, IMF (2020).

It can be noted that in the United States income payments on foreign direct investment dominate – 130.24% of the capital, invested abroad. Income payments to American investors on portfolio investments have a slightly lower percentage – 95.34% of the invested capital. Income payments on other investments for the same period amount to 122.0%. Thus, it is possible to conclude that in the United States the repatriation of investment income exceeds outward investments. In the period from 1999 to 2019, a total of \$ 4.2 trillion of foreign investment income was received by German investors. At the same time, \$ 7.6 trillion of outward investment was observed during the same period, i.e. the coverage ratio was 55.49%. Payments to German investors for direct investment account for the largest percentage – 72.17%. Payments on portfolio investments account for 53.26% of the invested capital. The lowest ratio is observed for income payments on other investments – 43.66% of the invested capital. Thus, in Germany there is a high share of foreign direct investment in the structure of foreign assets income.

Nominally, Japan invested \$ 5.7 trillion for the period 1999-2019. At the same time, the ratio of income inflow to the total investment outflow was 70.74%. Payments to Japanese investors for direct investment account for 60.01%. Payments on portfolio investments account for the largest percentage – 77.64% of the invested capital. Investment payments on other investments account for 72.38% of the invested capital. Thus, in Japan, in contrast to the United States and Germany, there is a high share of portfolio investment income in the structure of external assets returns.

In view of the above, special attention should be paid to the problem of public debt in the countries. In Germany, the public debt-to-GDP ratio in 2019 was 59.8%, down one percent from the previous year (Trading Economics, 2020). In general, during the period 1999-2019, the debt tends to decrease, which is the result of government measures

to achieve a debt-to-GDP ratio of 60% in accordance with the Maastricht Treaty. Falling debt levels in Germany show that the government has the ability to repay debt instruments when they fall due. This usually increases the value of government bonds and allows the government to charge a lower interest rate when issuing new bonds. In Japan, debt fell slightly to 236.6% of GDP in 2019, but remains the largest in the world. At the same time, the government is financed by the central bank at an ultra-low interest rate, which makes the debt situation more resilient. Debt in the United States increased to 106.9% in 2019 due to tax cuts and increased government spending.

Comparison of the yield on government bonds with the yield on portfolio investments of countries (Tabl. 1) showed that, on average, long-term government bonds have higher yields in the United States, while portfolio investments have higher yields in Germany and Japan (FRED Economic Data, 2020). Long-term government bond yields worldwide hit one of the lowest levels in recent years (The New York Times, 2019). The yield on the U.S. government long-term bonds in 2019 fell to 2.14%. First of all, this was the result of a sharp decline in the target range for the federal funds rate by the Federal Reserve System, which led to a sharp decline in the U.S. bond yields (Federal Reserve, 2020). The situation was also influenced by the growing budget deficit, which entailed the attraction of new borrowings. A large part of the supply of new government bonds was bought by the Federal Reserve System, which also lowered government bond yields despite soaring debt and deficits (The New York Times, 2020). In addition, tensions in economic relations between the United States and China were affecting the yield on the U.S. government bonds. The yield on German government long-term bonds fell to -0.25% in 2019. This was the result of their deficits, where the supply has been low in recent years due to the budget surplus, along with the purchase of the ECB for quantitative easing. Weak economic data, prospects for new rate cut and additional stimulus reinforce this trend (Reuters, 2019). Japan's government long-term bond yields declined to -0.11% in 2019, despite persistently large primary/fiscal deficits ratios and elevated government debt ratios. The actions of the Bank of Japan were the main factor determining the long-term interest rate on the JGB. The Bank of Japan has been advisedly keeping JGB's nominal yield low through a combination of low interest rates, direct long-term interest rate targeting, and other loose monetary policy measures (T. Akram and H. Li, 2019).

In 2020, due to the coronavirus epidemic, the situation with the ratio of government debt to GDP has changed substantially. In particular, according to the IMF forecast in 2020, the overall fiscal balance in percentage to GDP for the United States will be -23.8%, for Germany -10.7%, for Japan -14.7%. As a result, at the end of 2020 the ratio of public debt to GDP will increase in the US to 141.4%, in Germany - to 77.2, in Japan - to 268.0% (IMF, 2020).

At the same time, the sharp increase in the ratio of public debt to GDP did not lead to a substantial increase in the yield of government bonds. In particular, on October 2, 2020, the yield on 10-year government bonds of Germany was negative -0.54% (it increased over the year by only 0.04%); the yield on 10-year government bonds of

Japan was 0.02% (it increased over the year by 0.247%); and in the US, the yield on 10-year government bonds generally fell over the year by 0.847% to 0.70% (Trading Economics, 2020).

Thus, it can be stated that the yield of government securities of the United States, Japan and Germany weakly correlates with the growth of the ratio of government debt to GDP, and depends, first of all, on government policy to support the low yield of national government securities.

Moreover, the expansionary financial and budgetary policy of the USA, Japan, Germany did not lead to substantial mitigation of the negative consequences of the COVID-19 pandemic (in the second quarter of 2020, the decline in Japan's GDP was 7.9%; the decline of Germany's GDP – 9.7%; the decline of the US GDP – 31.4%;), but led to an increase in stock indices. In particular, despite the economic downturn, as of October 10, 2020 the Germany DAX 30 Stock Market Index increased by 7.29% in annual comparison; the US Dow Jones Industrial Average increased by 7.89% and the Japan NIKKEI 225 Stock Market Index increased by 8.35% (Trading Economics, 2020).

Thus, it was the financial sector of the US, Japan and Germany that accumulated most of the financial resources issued to combat the economic consequences of the coronavirus epidemic.

5. Conclusion

An analysis of the structure of investment income outflow showed that over the past twenty years, foreign investors in US, Japan and Germany have the highest returns on foreign direct investment, the lowest return – on other investments. At the same time, direct investors in Japan received the highest returns, which compensate the difficulties that foreign investors face when doing business in Japan.

The analysis of the coverage ratio of attracted investments showed that in all three countries the amount of the cumulative investment inflow of the financial account significantly exceed the income outflow from foreign investments.

An analysis of the structure of investment income inflow has shown that over the past twenty years, income payments on direct investments have prevailed in the United States and Germany, and on portfolio investments in Japan. The analysis of the return on exported investments showed that the highest return on foreign investment for the period 1999-2019 was obtained by Japanese and American investors on direct investment. Japanese investors received the lowest returns from other investments. Average yields in the U.S. and Germany are almost at the same level. In general, national investors have the highest return on foreign direct investment, the lowest return on other investment. The analysis of the ratio of outflow investments showed that in the United States the amount of income received exceeds the amount of investment abroad, which is due to the longer presence of the U.S. investment abroad. The opposite situation is observed in Germany and Japan. In the United States and Germany, investment payments received on foreign direct investment prevail.

Due to the fact that the profitability of outward investments for the US, Japan and Germany exceeds the return on inward investments it can be concluded that

participation of these countries in international investment activities has a positive effect on their balance of payments. In countries that are partners of the United States, Japan and Germany the opposite effect is observed. However, this study considered only financial flows included in the financial accounts of countries and the income of foreign investors, and did not take into account the export-import operations, which have a significant impact on export-oriented and import-dependent countries.

The results of the study indicate that in 2020 due to the financial stimulation of the social-economic development in the conditions of the coronavirus pandemic the sharp increase in the US, Japan and Germany of the level of public debt to GDP has not yet affected the yield of government securities. However, if the current expansionary fiscal policies of the United States and Japan are continued, countries may face substantial problems in servicing their public debt. In such a situation, the Central Bank of Japan and the US Federal Reserve System will be forced to keep the base interest rate at almost zero, fearing a sharp rise in the cost of servicing the public debt.

The consequence of this situation is overheating of the stock market, which, with a sharp drop in stock indices, can lead to a new financial crisis, to overcome which regulators in the United States and Japan will have to provide huge new direct financial support to financial institutions to prevent their bankruptcies.

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