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Return on foreign investments in Croatia and peer countries

Andrijana Ćudina

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Abstract

This paper analyses income related to foreign investments and its effect on the current account and international investment position. The foreign investment income balance depends primarily on the amount of accumulated foreign financial assets owned by residents and the amount of their foreign liabilities. However, rates of return on various types of investments, which depend on economic conditions on the domestic and international markets, also play an important role. Their importance became particularly pronounced in the aftermath of the global financial crisis, which led to significant changes in the structure of international capital flows and financing conditions. While the crisis brought about an improvement in global financing conditions, at the same time it triggered large scale deleveraging across countries, leaving equity investments, which generally carry higher rates of return, relatively more important. For this reason, the lower interest rate environment was only partly reflected on foreign investment income balances of countries that are more reliant on equity investment. With the continued economic recovery on the global level, the rates of return on both equity and debt investments could grow further, having an even greater negative effect on the foreign investment income balance of countries highly dependent on foreign capital. This could also be the case for most CEE countries and particularly Croatia, given their already highly negative international investment position and high financing needs.

Keywords:

foreign income, return on foreign investments

JEL:

F21, F3

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1 Introduction

The growing trend of financial globalisation and integration present for almost two decades abruptly came to a halt towards the end of 2008 with the onset of the financial crisis. In the period that followed, international capital flows decreased considerably, particularly in the segment of bank debt financing, in contrast with equity investments that remained more stable (Lana and Milesi-Ferreti, 2017). These changes also affected the new member states of the European Union that had largely financed their fast economic growth before the crisis by foreign capital, accumulating as a result external imbalances. Capital flows were particularly large just before the first wave of EU enlargement in 2004, which provided an additional boost to the economic and financial integration of European countries. Despite postponed accession to the EU and restrictive central bank measures, Croatia witnessed even larger capital flows in the years before the crisis than most of the then new member states. Over time, most Central European countries managed to balance their current accounts and some even started generating balance of payment surpluses and very soon, in 2012, became capital exporters. However, this did not bring about a significant improvement in their net international investment position (IIP)¹.

As the new EU member states increased net foreign liabilities before the crisis, their foreign investment income balances deteriorated. Foreign investment income balance is the difference between income earned on foreign assets by residents and expenditures paid by residents on their foreign liabilities. Statistically, it is recorded in the primary income account of the balance of payments and includes profit that belongs to non-resident owners of shares in business entities, yields on debt securities and interest from credit relations between residents and non-residents. As regards foreign investments, it should be noted that in addition to the mentioned income stream, non-resident investors also realize capital gains; combined, these produce an overall return. Capital gain is not recorded in the current account but is statistically recorded as a part of the net international investment position since it is generated based on a change in the market value of financial assets and liabilities.

The analysis of foreign investment income balance usually does not go beyond looking at aggregate stocks of foreign assets and liabilities and their sectoral and portfolio structure. However, the income balance is determined not only by the level of accumulated foreign assets or liabilities but also by the rates of return on individual forms of capital used to finance the current account.

The rates of return on various forms of foreign financing have grown even more important since the crisis. As countries

achieved a very high degree of financial integration, they became more exposed and sensitive to changes in the prices of financial assets in other countries, depending on the size and the structure of their gross international financial flows. The structure of foreign assets and liabilities can differ greatly from country to country by source (debt and equity financing), currency structure, maturity, etc., and it will determine how the change in the relative prices of various forms of financing will affect the dynamics of the foreign income balance of individual countries. For example, a higher share of equity investments, usually associated with relatively higher rates of return, in financial assets may have a positive effect on the balance of foreign income, while their higher share on the liabilities side may have the opposite effect.

Despite the great importance of relative returns for countries with pronounced macroeconomic imbalances, this issue has only been partly investigated in the case of Central and Eastern European countries. With a view to further investigation of the effect of the structure of capital flows and relative returns, this paper decomposes their contributions to the dynamics of the foreign investment income balance, using the example of Croatia and selected new EU member states in an attempt to provide at least a partial answer to the question of whether investments made abroad earn satisfactory returns, what the relative cost of financing of liabilities is and how the expected changes in financing conditions related to different sources of capital in the future would affect external imbalances. The effects of changes in the market value of foreign assets and liabilities are also evaluated given that the large stocks of assets and liabilities are subject to stock-flow adjustments, which may have a big influence even when capital flows are small and accordingly they warrant further examination.

The paper is organised as follows: The introduction is followed by an overview of empirical literature and key conclusions. Chapter 3 analyses the international investment position and income related to foreign investments of Croatia and five peer Central and Eastern European countries. Chapter 4 provides methodological explanations and data descriptions, followed by a calculation of the rates of return on individual types of investments and their impact on the dynamics of investment income balance as well as the effect of stock-flow adjustments on international investment position. Finally, Chapter 5 summarises key findings. Appendix 1 shows the rates of return on various types of investments for analysed countries, with the calculated indicators for the euro area serving as benchmarks. Appendix 2 gives a detailed overview of structural decomposition of changes in income on foreign investments.

¹ International investment position (IIP) is the difference between accumulated stock of external financial assets and external financial liabilities. IIP results from financial account transactions (related to direct, portfolio and other investments as well as international reserves) during a certain period of time, whereas the accumulated stocks of assets and liabilities are adjusted for market value, exchange rate and other price changes (IMF, 2014).

2 Literature

Most of the available empirical literature dealing with the issue of relative returns on foreign investment has been prompted by the case of the US, which, despite the accumulated negative net investment position (net debt position) with the rest of the world, generates a positive net income on foreign investments. This plays an important role in the sustainability of its international investment position. The positive differential (spread) between the rate of return on foreign assets and the rate of return on foreign liabilities of the US is often in literature associated with the status of the dollar as the global reserve currency which provides the American economy with certain benefits (*privilege exorbitant*²). In empirical papers this differential has a relatively wide range due to different scope of data, methodological differences and the treatment of stock-flow adjustments but is always positive and statistically significant, particularly in case of equity investments (Forbes, 2010; Habib, 2010; Gourinchas et al. 2010; Curcuru et al., 2012, 2013). These findings can be attributed to the prudent investment policy of American investors and favourable sectoral and geographical distribution of their investments, as well as the role of the American dollar as the global reserve currency. In case of debt investments, this differential is not necessarily positive.

A similar situation can be observed in some other countries, such as Japan and Switzerland, in contrast with the absence of such positive differential in the euro area, despite the fact that since it came into existence in 1999, the euro has become a second global reserve currency (Lane and Milesi-Ferretti, 2005; Meissner and Taylor, 2006; Habib, 2010; Rogoff and Tashiro, 2015; Darvas and Hüttl, 2017). Of the euro area member states, only France, Spain and Germany have a positive differential and that from equity investments, although it is still much smaller than in the US, partly due to a large share of investments being made in advanced EU countries characterised by relatively low rates of return. The example of Germany has been researched in detail by Knetsch et al. (2016) who also concluded that the falling interest rates after the global crisis

had a negative impact on Germany as a net creditor but that Germany benefited from changes in the structure of international capital flows. Actually, while German investors abroad turned increasingly towards riskier and more lucrative investments after the crisis, foreign investors saw lower rates of return from their assets invested in Germany.

Emerging market economies, including the European post-transition countries mostly have higher rates of return on their liabilities than on their assets. Darvas and Hüttl (2017) have analysed 56 countries and have singled out European post-transition countries as examples of countries with very high negative differentials because foreign investors generate above-average return on equity investments, which they attribute to faster productivity growth in these countries than in advanced countries. With decreasing returns on equity investments after the crisis, the region became less attractive globally for equity investments. As regards debt investments, in contrast with the advanced euro area countries or the US, most countries of Central Europe benefited heavily from falling interest rates.

From a methodological perspective, the calculation of the rates of return in the mentioned papers is mostly based on known balance of payments identities, which makes it possible to determine the effect of capital flows and changes in the rates of return on the dynamics of income balance and net international investment position. Most authors are faced with the issue of data quality and availability and therefore employ different approaches to address the issue. Some authors also examine the determinants of rates of return, such as the level of debt or a country's investment risk. For example, using an econometric panel-analysis on a sample of 49 countries from 1981 to 2007, Habib (2010) fails to identify a significant positive relationship between financial leverage (debt to equity investment ratio) and positive differentials. Instead he concludes that real depreciation of the exchange rate increases return on investment through capital gain in proportion to the exposure in a foreign currency and that higher rates of return on investments are correlated with the country's investment rating.

3 International investment position and income on foreign investments

During the process of real convergence and strong capital inflows that followed, new EU member states accumulated pronounced external imbalances, some of them even excessive. The global financial crisis was followed by a very strong correction of these imbalances, which resulted in capital outflows.

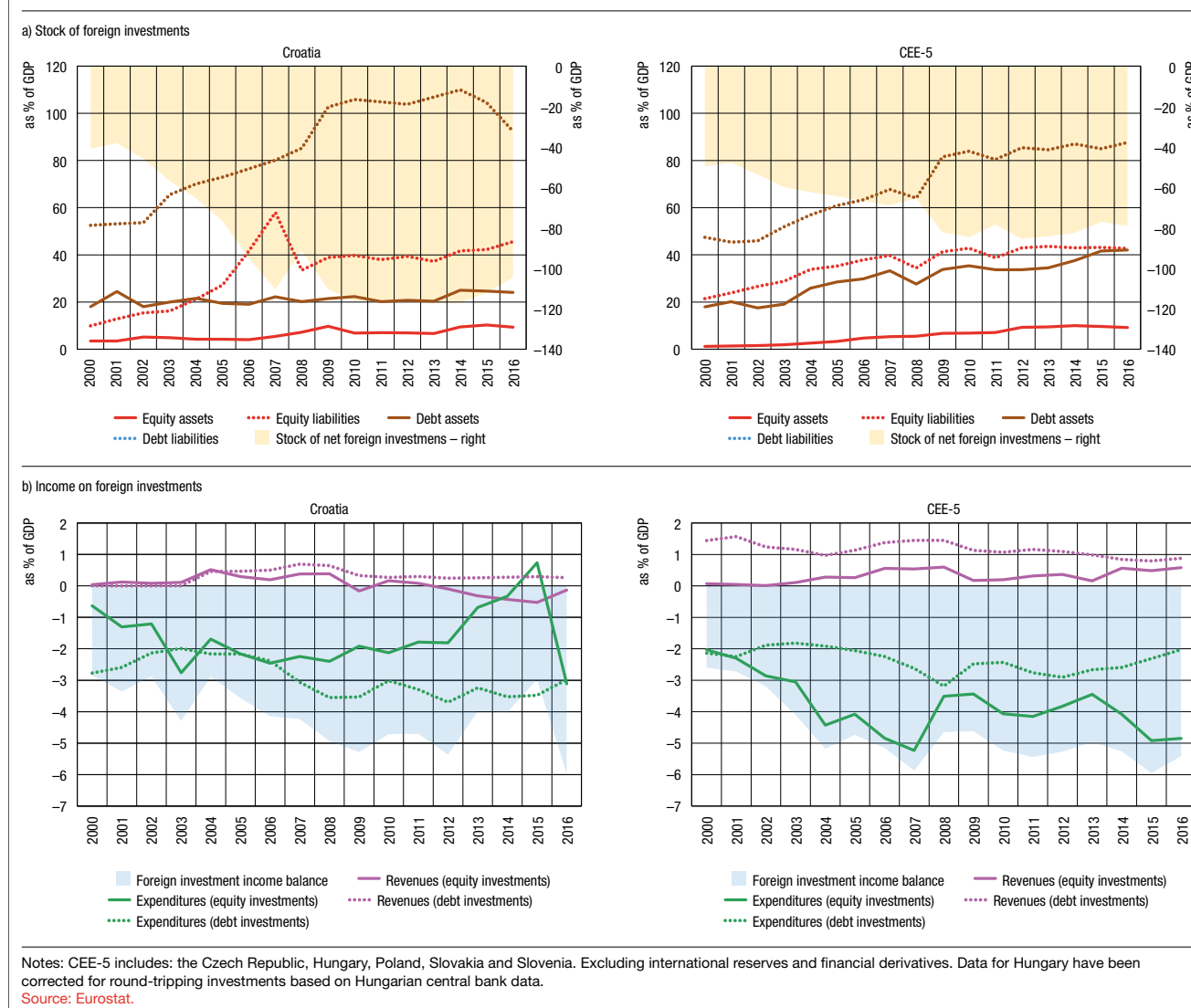
However, it is now evident that this trend has stabilised and that there are some signs of a reversal in the trend of capital inflows (e.g. the Czech Republic).

For almost two decades until 2013, Croatia continuously ran a current account deficit, financed by foreign savings. Between 2000 and 2016 Croatia increased its net foreign liabilities by two and a half times (from 40% of GDP to 105% of GDP³), and only saw a slight improvement in the last two years (Figure 1.a). The worsening of the relative indicators that marked the period up to 2014 reflects the increase in foreign liabilities, which more than doubled during that period

2 The term *privilege exorbitant du dollar* which translates as "excessive privileges" was first used by the French Finance Minister Valéry Giscard d'Estaing in 1965, referring to the privileges enjoyed by the US due to the fact that the country's currency is also the global reserve currency (and the dominant currency in international trade and on the international financial markets). Such a status provides the US greater flexibility in the pursuit of the domestic economic policy and more favourable financing of balance of payments deficits.

3 Excluding international reserves and financial derivatives.

Figure 1 International investment position and income on foreign investments



(from 62% of GDP to 138% of GDP), with a very fast growth in both equity and debt liabilities taking place until the outbreak of the crisis towards the end of 2008. After the crisis, the growth in equity liabilities stabilised, while debt liabilities even starting falling after 2014. By end-2016, the share of equity liabilities in total liabilities rose to one third (increasing twofold from 2000). By contrast, foreign assets rose modestly throughout the entire observed period (from 21% of GDP to 33% of GDP) while equity investments rose slightly faster, particularly in the pre-crisis period, and debt foreign assets of residents, mostly consisting of domestic banks' foreign assets, remained stable throughout most of that period.

The net international investment position of the countries of Central and Eastern Europe (CEE) today is much less negative on average than that of Croatia. Since 2000, when they even had more net liabilities (60% of GDP, excluding international reserves and financial derivatives), they accumulated only 10% of GDP of additional net foreign liabilities, offsetting during that time the fast growing liabilities with even faster growing assets. Although foreign liabilities of CEE countries are currently equal to those of Croatia, their structure is more

favourable, with equity investments being predominant. Their foreign assets are on the other hand twice as big as those of Croatia, with Slovenia and Hungary standing out in particular as far as debt instruments and equity instruments, respectively, are concerned (even when significant round-tripping investments⁴ in the latter country are excluded), and their structure is also more favourable. At the end of 2016, Slovenia, the Czech Republic and Slovakia had the most favourable investment position and Hungary the worst, although after the crisis it saw the biggest deleveraging and consequently an improvement in international investment position.

The international investment position affects the current account through income on investments. Despite exceptions such as the US, net debt (net creditor) positions generally have a long-term negative (positive) impact on the current account. This can be also seen in the example of the countries of Central Europe. Thus, due to its net external debt position, Croatia had a negative foreign investment income balance between

4 Round-tripping investments increase gross capital flows but do not have real effects on income balance.

2000 and 2016, which at times reached almost EUR 2bn or 5% of GDP annually (Figure 1.b). The negative income balance on equity investments shrank temporarily only during the persistent recession in Croatia, which had a negative impact on the business results of entities owned by non-residents. The temporary decline was also due to the conversion of loans in Swiss francs, which had a negative effect on bank profit, with the year 2015 witnessing the lowest level of net expenditures on foreign investments for ten years. Such a dynamics of the foreign investment income balance is primarily determined by expenditures, which recovered after falling briefly in 2012-2015 period, and exceeded the pre-crisis level again by 2016. At the same time, the income of Croatian investors earned from their financial assets invested abroad is very modest and has been falling sharply since the escalation of the crisis, with

the segment of equity investments recording losses for several years. Although it recovered slightly in 2016, it has remained only modestly positive since.

Despite a lower level of accumulated net foreign liabilities, peer EU new member states recorded on average similar investment income balances as Croatia (around -5% of GDP annually). However, unlike Croatia, only a smaller share of their negative balance involved net expenditures on debt investments while the major share came from net expenditures on equity investments. In addition, in a large number of countries, in particular in Slovenia and Hungary, the total costs of net external debt financing have been falling in the past several years in contrast to the expenditures on equity investments, which have mostly been rising, with minor fluctuations.

4 Return on foreign investments

In view of the described structure of the international investment position of selected new EU member states and income earned from investments, the question arises as to what the relative cost of difference sources of foreign capital is and how it affects foreign income balance. Therefore, we first calculate the rates of return on different forms of investments coming from the income stream. In addition to that, we examine how capital gain earned by foreign investors through a change in the market value of their assets affects the net international position of the country in which they invest.

4.1 Methodology and data

Based on the known balance of payments identities, the overall return on foreign investments may be shown as follows:

$$R_t = i_t + CAP_t = \frac{INC_t}{A_{t-1}^*} + \frac{A_t - A_{t-1} - FLOW_t}{A_{t-1}}, \quad (1)$$

where R_t is the overall return on investments and is calculated as the sum of income-related return on different forms of investment i_t and capital gain CAP_t in period t .

The income-related rate of return on different forms of investment is calculated as the ratio of revenues/expenditures on each form of foreign investment in period t (INC_t) and the stock of the corresponding foreign assets/liabilities at the end of the previous period corrected for stock-flow adjustments⁵ (A_{t-1}^*). The weighted average of rates of return on individual

investment forms will determine relative profitability of total foreign assets, i.e. the relative cost of foreign liabilities. The difference between rates of return on foreign investments of residents and rates of return made by foreign investors in the domestic market gives a return differential.

Capital gain CAP_t may be shown as the difference between the changes in the stock of foreign assets/liabilities (A_t) between two points in time and capital flows $FLOW_t$ between the same two points. It mainly arises from the change in the value of equity holdings, i.e. their market price, but the stocks of assets (liabilities) are also influenced by other stock-flow adjustments⁶ which cannot be separated from value adjustments and therefore this indicator is to be interpreted as total revaluation gain and observed in the context of its impact on the total net international positions of the countries that are the subject of analysis.

Since revenues and expenditures on foreign investments may be viewed as the product of the stock of foreign assets and liabilities and their respective rates of return, a change in income balance may arise as the result of a change in the stock of foreign assets and liabilities (effect of capital flows) and/or as the result of a change in the rate of return on foreign assets/liabilities (the effect of a change in the rate of return).

A decomposition of the change in income balance may be shown using the following identity:

$$d(INCnet_t) = (i_t^A dA_{t-1}^* - i_t^L dL_{t-1}^*) + (di_t^A A_{t-1}^* - di_t^L L_{t-1}^*), \quad (2)$$

where: $INCnet_t$ is the investment income balance in period t (as percentage of GDP), i_t^A and i_t^L are rates of return on assets and liabilities, and A_{t-1}^* and L_{t-1}^* is the balance of assets and liabilities corrected for stock-flow adjustments (as percentage of GDP).

As regards data, to calculate the rates of return on foreign investments and income balance decomposition, the Eurostat annual balance of payments and international investment

5 The equation was partly taken from Curcuro et al. (2013), however, the calculation of the rate of return presented here excludes the effect of stock-flow adjustments by constructing stocks of foreign assets and liabilities at the end of period as the cumulative of the annual financial account flows, with the starting point of our series (year 2000) being taken from the IIP statistics. The advantage of the use of a series constructed in this way lies in its ability to enable the calculation of the rates of return in relation to the original amount of investment and not the later market value of that investment. Also, rates of return calculated on the basis of a time series so constructed are more stable, although they may be underestimated in the periods of positive stock-flow adjustments (economic expansion) or overestimated in the periods of negative stock-flow adjustments (recession).

6 Other adjustments include: exchange rate changes, data corrections, debt write-off, reclassification of instruments, etc.

position data (under the BPM6 methodology) for the 2000 to 2016 period were used. This means that, to calculate rates of return on investments, balance of payments data on primary income on investments and financial flows were used, while the statistics of the international investment position were the source of relevant data on the stock of international investments. Direct, portfolio and other investments were included and grouped into equity and debt investments⁷. International reserves and financial derivatives⁸ were not included in the analysis.

Data availability for some countries and earlier periods is rather limited and distribution by sectors is not available. There are also some methodological differences. For instance, until 2009, reinvested earnings in Croatia were recorded in the period in which the decision on the distribution of profit was adopted and were thus based on the previous year's profit, while after that year they were recorded in the period in which they were generated, in accordance with international standards (CNB, 2017). Also, the use of annual data may increase fluctuations of the calculated rates between years because investments in a certain year may generate income in the same year⁹. The exclusion of financial derivatives from the analysis leads to a certain bias in calculated rates of return, particularly in the case of countries with more assets and liabilities associated with financial derivatives¹⁰. Furthermore, the stock and structure of foreign assets and liabilities of a country, as well as a country's investment income balance, may be greatly influenced by the presence of multinational companies and banks that operate globally, which results in large net income on investments, as in Ireland or Luxembourg.

Membership in the monetary union may also be highly relevant for the calculation of rates of return. For instance, in Slovenia and Slovakia, members of the euro area, international reserves are a part of the portfolio and other investment account¹¹ and are therefore included in the calculation of rates of return on foreign assets and are possibly undervalued, knowing that reserves make much lower return than other type of foreign assets. Similarly, tax and regulatory arbitrage lead to a higher volume of the so called round-tripping investments that increase gross capital flows but do not have an actual impact

on income balance. Also to be taken into account are net errors and omissions in the balance of payments which may, among others, constitute unofficial/unregistered financial flows¹².

These limitations call for caution in the interpretation of the calculated rates of return on investments described in chapters 4.2 – 4.4 and presented in detail for each country in Appendix 3. Also, direct comparison between countries is compounded by the fact that the structure of investments in terms of destination countries and sectors, and thus risks, too, may differ considerably among countries. Equity investments in two countries may be more or less risky, depending on the economic sector of investment, and investments in the same sector may carry different risks depending on the country of investment. Even though risk-adjusted rates may prove more appropriate for comparison, unfortunately, the available data do not enable the calculation of rates of return adjusted for all the aspects of investment risk.

4.2 Return on foreign equity investments

This section analyses the rates of return on equity investments. They should reflect economic trends in the country of investment but they also depend on the sectoral allocation of capital and the relative profitability of enterprises owned by non-residents and predominantly domestically-owned enterprises. The calculation in Figure 2 shows that the rates of return on equity liabilities of Central and Eastern European countries are much higher than in the euro area, which is not surprising since these are transition countries. Rates of return were the highest in those countries that witnessed higher economic growth rates during the transition (see Figure 1 of Appendix 1), such as for instance the Czech Republic and Poland. Drawing the same conclusions, Darvas and Hüttl (2017) explained that foreign equity investments in the Czech Republic and Poland in the period from 2000 to 2016 generated an average annual return of over 10%. Croatia is singled out in the paper, together with Slovenia, as the country with the lowest rate generated by non-residents from their equity investments. The average rate of return on equity investments in Croatia thus stood at 7% annually between 2000 and 2016, 4 percentage points lower than those generated in other Central and Eastern European countries.

If we compare the two periods, it is evident that the rates of return on foreign investments in Central and Eastern Europe were much lower than before the crisis, which is expected given the slowdown in the process of real convergence and generally slower productivity growth in the years following the crisis. Croatia witnessed an even more pronounced trend of decline in rates of return, partly as a result of specific developments in some sectors, particularly banking. For example, in 2015, rates of return on foreign investment in Croatia were negative because of the mentioned effect of conversion of loans in Swiss francs on bank profit. Foreign investors also witnessed

7 Foreign equity assets and liabilities include direct and portfolio equity holdings of (non)-residents and reinvested earnings on foreign investments, while debt assets and liabilities include debt financial instruments (debt securities, loans, trade credits, cash and deposits), from debt relations between residents and non-residents, including affiliated residents and non-residents.

8 International reserves are not included in the analysis due to different principles applied in the policy for the management of this portfolio than in other financial instruments. Financial derivatives have been excluded because transactions associated with them in the balance of payments are recorded on a net basis and not separately by assets and liabilities.

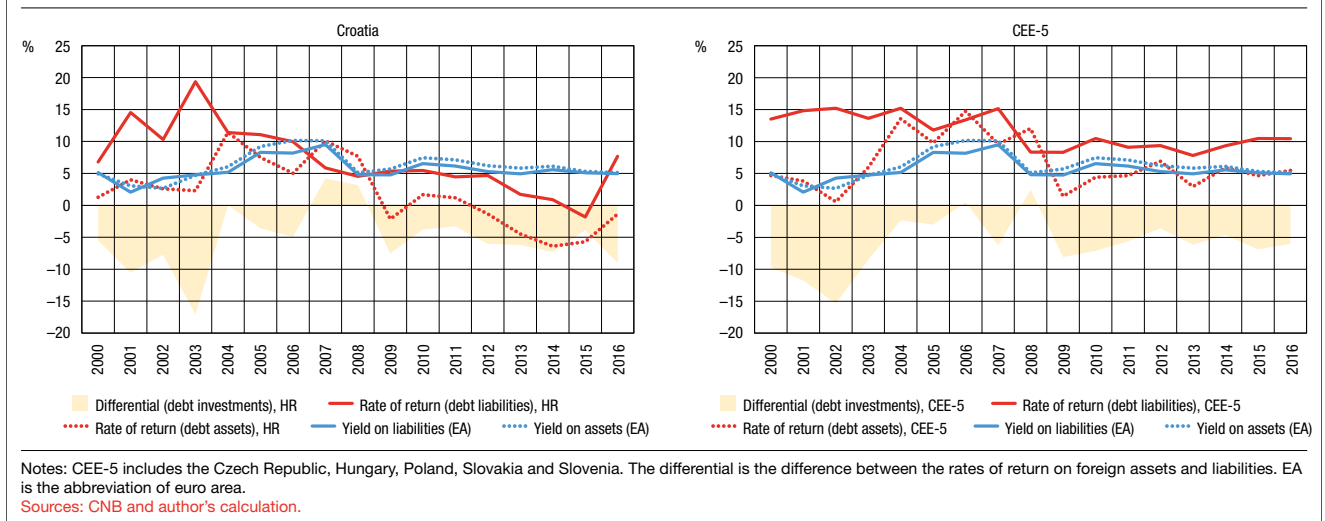
9 Payouts of previous period profits do not affect the calculation as under BPM6 they are not recorded in the primary income account but are recorded as a decline in equity investments.

10 Gains/losses arising from the change in the market conditions of assets/liabilities associated with financial derivatives are recorded separately from the underlying instrument, in the financial derivatives account and will thus not be covered by the calculated indicators.

11 After the entry of Slovenia and Slovakia in the EMU in 2007 and 2009, respectively, central bank claims on euro area residents (denominated in euro and other currencies) and euro claims on non-residents are no longer included in international reserves. Instead, these transactions and positions are shown in relevant categories of the financial account (portfolio and other investment) of the balance of payments or relevant instrument in the international investment position statistics.

12 The negative amount of net errors and omissions present in most of the countries analysed in this paper and particularly in Croatia and Slovakia, may be an indicator that the registered value of income (expenditures) in the current and capital account of the balance of payments is potentially too large (too small) and/or that the net increase in foreign assets (liabilities) in the financial account of the balance of payments is potentially too small (too large).

Figure 2 Rates of return on foreign equity assets and liabilities



very low rates of return in the oil industry, construction, tourism and service activities, particularly after the crisis (rates by activities are shown in Appendix 2). Of the peer countries, Slovenia was the only other country that witnessed negative rates, which were due to the banking crisis that hit this country in 2012.

Looking from the perspective of the Central and Eastern European countries investing in foreign markets, it is evident that their investments are slightly less profitable than investments of non-residents in their countries. Nevertheless, the rates of return on their equity assets reached two-digit levels in the period before the crisis, and were the highest for the Czech Republic and Slovakia, but they fell considerably for all the countries in the period that followed. Croatian investors generated on average much smaller returns than peer countries, falling to negative values after the financial crisis. The major contributor to this trend was the oil industry due to significant losses related to value adjustments of their assets held in countries hit by war or political instability. Even though data do not enable direct comparison by sectors, the obvious differences in rates of return suggest that allocation of capital of Croatian investors by sectors and geography in foreign markets is less favourable than that of investors from other Central and Eastern European countries. A factor that certainly plays a role in this lies in the stronger financial (and trade) integration of the countries of Central and Eastern Europe as it enables risk sharing and relatively higher rates of return from investments within the common market.

As a result, the return differential between foreign equity assets and liabilities was mostly negative in the observed countries and averaged around 5 percentage points. A positive differential was witnessed only briefly at the onset of the crisis as returns on foreign liabilities plummeted. However, after the crisis, the differential became negative again, and although non-residents' returns from equity investments fell sharply in Croatia, this differential continued to be higher than in peer countries, due to very low returns on foreign equity assets.

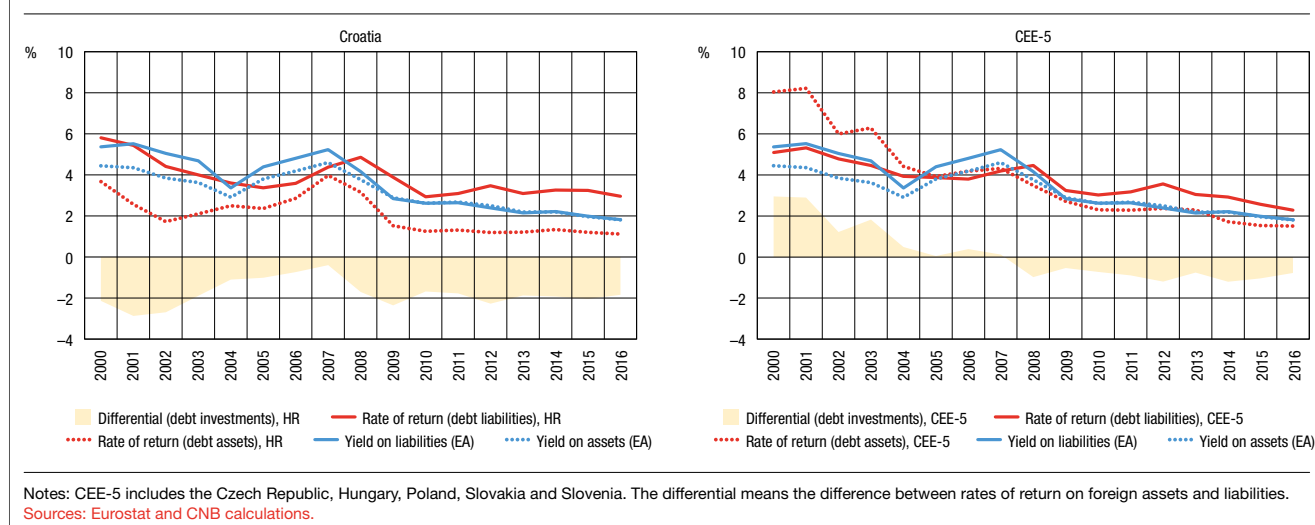
4.3 Return on debt investments

When returns on debt investments are observed, their dynamics differs considerably from those in equity investments. In addition to reflecting the character of monetary policy in a country or its environment, the price of debt financing also reflects risks specific to a country (see Figure 2, Appendix 1). Owing to a highly accommodative monetary policy and despite investors' increasing risk aversion, the countries of Central and Eastern Europe have witnessed for almost a decade a period of relatively low interest rates in the financial markets, as seen in decreased expenditures for borrowed capital but also in revenues made from lending to other countries.

The relative cost of borrowing of new EU member states in the period before the crisis was only slightly higher than that of the euro area average (Figure 3) and even lower in the case of Poland and Slovenia. However, the period after the crisis was marked by a large interest rate correction globally, which led to a fall in implicit yields on foreign debt liabilities. However, this fall was much smaller than that in the euro area countries, with the Central and Eastern European countries paying for debt liabilities an approximately 1 percentage point higher rate than countries of the euro area. The only exceptions were two members of the monetary union, Slovenia and Slovakia, which had witnessed a trend of fall in the costs of financing similar to that in the euro area.

In Croatia, the fall in relative costs of borrowing was much less pronounced than in peer countries and only slightly followed the trends in the euro area. The difference was particularly evident in portfolio investments. While non-residents' yields on bonds issued by most countries of Central and Eastern Europe have been falling since the crisis, yields on bonds of Croatian debtors have risen. One portion of that increase refers to the government sector but the growth of yields on bonds of the domestic corporate sector was even more pronounced, exceeding 8% annually from 2008. Croatia also makes a lower return on its debt assets than peer countries and the euro area average. By contrast, Central European transition countries greatly outperformed investors from the euro area in the period before the crisis. This was particularly true for

Figure 3 Rates of return on foreign debt assets and liabilities



the Czech Republic and Hungary.

When, ultimately, differentials in rates of return on debt investments are observed, it is evident that even before the crisis Croatia was one of the few countries that had a negative yield differential. In some years, the spread exceeded 2 percentage points, mainly due to a below average return on debt assets. By contrast, the peer new EU member states reaped significant benefits from the financing conditions on the international market at the time. The positive differential in debt financing averaged approximately 1 percentage point and was the highest in Hungary and the Czech Republic (3 percentage points and 1 percentage point, respectively) while the differential was only slightly negative in Poland. The positive differential gradually waned after the crisis and has remained negative until present day in all the countries. In 2016 it averaged approximately 1 percentage point and was the highest in Hungary which witnessed a much bigger yield correction after the crisis on the assets than on the liabilities side. However, the last two years saw a noticeable fall in the negative differential due to the prolonged duration of highly accommodative conditions on the financial markets and low interest rates, which pushed down the relative costs of financing of the liabilities of the Central and Eastern European countries, mostly involving those to creditors in the euro area. By contrast, the fall in yields on debt assets, present since the crisis, has stabilised and these yields have begun to grow in some countries such as Slovakia and Hungary.

4.4 Structural decomposition of changes in income on foreign investments

Contributions to changes in the foreign investment income balance for Croatia and Central and Eastern European countries were calculated based on equation (2) while individual calculations are shown in Appendix 4. A summary overview of these calculations for the whole group of countries, divided into two periods, before and after the crisis, is given in Table 1. It is evident that before the global financial crisis the effect of capital flows was the dominant factor in the deterioration

of the foreign income balance in Croatia (capital inflow in the period before the crisis increased expenditures on investments by 5.1% of GDP, of which 2.7% of GDP came from equity investments and 2.4% of GDP from debt investments). However, this was partly mitigated by an increase in revenues from equity (0.2% of GDP) and debt investments abroad (0.5% of GDP). The effect of capital flows on foreign expenditures was at that time almost equally as pronounced in Central and Eastern European countries as in Croatia (5% of GDP annually), however, the bulk of it can be attributed to the effect of equity investments, while the negative effect of net inflows of debt capital was smaller than in Croatia. At the same time, the growth in income earned from holding foreign assets had a bigger mitigating effect on investment income balance of the Central and Eastern European countries (1.1% of GDP). The effect of capital flows on investment income balance remained negative even after the crisis, although it waned considerably with a decrease in capital flows.

As regards the effect of changes in rates of return on the foreign investment income balance, it is different for debt and equity investments. The fall in the cost of external debt mostly had a positive effect in Croatia, while the countries of Central and Eastern Europe did not see this positive effect until after the crisis. Although the relative interest expenses were lower than in Croatia, they were also relatively more stable throughout the period, having less impact on the change in investment income balance. On the other hand, the lower cost of debt financing had a positive impact on income balance in all the countries, in spite of its pronounced negative impact on the profitability of their debt assets invested abroad.

Despite being relatively high, rates of return on equity investments in Central European countries had a smaller impact on income balance than returns on debt investments, due to their generally smaller changes over the period. Their impact was slightly less favourable in the period after the crisis due to a more pronounced fall in the rates of return on foreign equity assets than liabilities. Croatia also witnessed a small but positive effect of change in the rates of return on equity investments, since the fall in rates had a bigger impact on expenditures than on income, particularly in the period after the crisis.

Table 1 Structural decomposition of changes in income on foreign investments before and after the crisis

as % of GDP	2000-2008			2009-2016		
	HR	CEE-5	EA	HR	CEE-5	EA
A) change in revenues from investments	0.5	0.5	2.6	0.0	0.2	-0.8
(1) contribution of capital flows						
equity assets	0.2	0.5	1.6	-0.2	0.2	1.4
debt assets	0.5	0.6	2.5	0.1	0.3	0.1
2) contribution of change in rates of return						
equity assets	0.2	-0.1	0.0	-0.5	-0.3	-0.1
debt assets	-0.1	-0.4	0.3	-0.5	-1.0	-2.9
3) contribution of change in GDP	-0.4	-0.1	-1.7	1.2	1.1	0.6
B) change in expenditures on investment	2.5	2.6	2.2	0.6	1.0	-1.1
(1) contribution of capital flows						
equity liabilities	2.7	3.7	1.2	0.8	1.8	1.0
debt liabilities	2.4	1.8	3.0	0.6	1.1	0.1
2) contribution of change in rates of return						
equity liabilities	-0.2	-0.1	0.0	-0.5	0.0	0.1
debt liabilities	-0.3	0.6	-0.3	-1.6	-2.3	-3.4
3) contribution of change in GDP	-2.0	-3.5	-1.7	1.3	0.4	1.1
C) change in investment income balance (A – B)	-2.1	-2.0	0.5	-0.7	-0.8	0.3
(1) contribution of capital flows						
equity investments	-2.5	-3.2	0.3	-1.0	-1.6	0.4
debt investments	-1.9	-1.2	-0.6	-0.6	-0.9	0.0
2) contribution of change in rates of return						
equity investments	0.4	0.0	0.0	0.0	-0.3	-0.2
debt investments	0.2	-1.1	0.7	1.0	1.3	0.6
3) contribution of change in GDP	1.6	3.4	0.0	-0.2	0.7	-0.6

Notes: Positive (negative) values represent the contribution to the growth (fall) in revenues and expenditures associated with foreign investments. For easier comparability among countries, contributions are normalised by share in GDP. CEE-5 includes the Czech Republic, Hungary, Poland, Slovakia and Slovenia. EA (euro area) does not include Ireland and Luxembourg.

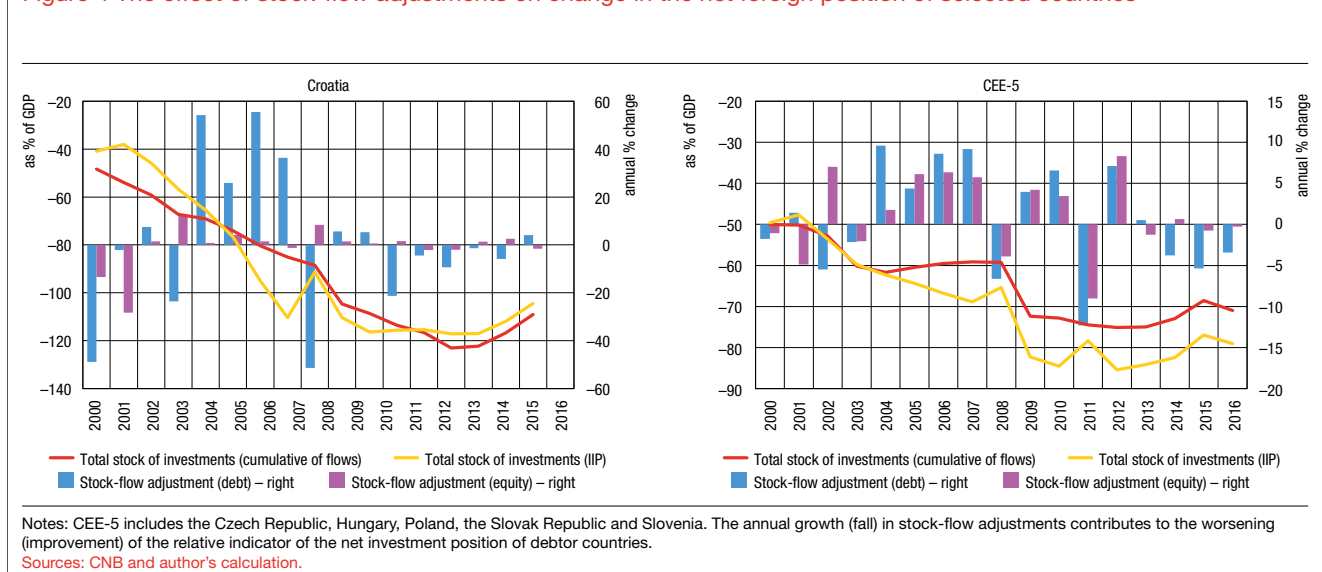
Sources: CNB and author's calculation.

It should also be noted that the relatively fast growth of nominal GDP in new EU member states, particularly before the crisis, had a mitigating effect on the worsening of the relative indicators of the investment income balance, even more than the change in rates of return. The same held true for Croatia; however, after the crisis, this positive effect vanished due to the prolonged recession and the relatively slow recovery in the gross domestic product.

4.5 Stock-flow adjustments

As noted previously, total return on investments does not reflect only the described income stream but also the changes in the market value of equity holdings (capital gain) and other adjustments. Information on these changes are contained in the data on the stock of foreign investments compiled according to the market value of instruments of investment.¹³ In

Figure 4 The effect of stock-flow adjustments on change in the net foreign position of selected countries



¹³ As regards equity holdings, if market prices are not available, the book values of enterprises owned by non-residents are used (CNB, 2017).

addition to information on the changes in the market value of equity holdings, the information on the stock of foreign investments also contains other stock-flow adjustments such as exchange rate changes, methodological changes, data reclassification, etc., which cannot be separated due to data shortage.

Thus, shown below are total stock-flow adjustments which represent the difference between the stock of foreign assets / liabilities under the international investment position statistics and the financial flows (lending, borrowing) under the balance of payments statistics. Unsurprisingly, the calculation in Figure 4 shows that stock-flow adjustments generally increased the stock of net foreign liabilities in the period before the global crisis. It can be assumed that this mostly mirrors the growth in market value of equity holdings of non-residents in Central and Eastern European countries during that period. For example, in Croatia before the crisis, stock-flow adjustments

worsened the net international position by almost 5% of GDP each year. This effect was much smaller in other Central and Eastern European countries due to a similar growth in the market value of equity assets invested abroad, which mitigated the worsening of their international investment position.

However, much of the price effect waned after the crisis with the corrections of the market values of non-residents' equity holdings, which, in the case of Croatia, cancelled out most of the deterioration seen in the previous period. A big correction was first recorded in 2008 and was followed by a lesser one during recession in Croatia. However, the crisis correction of the market values was much smaller in Central and Eastern European countries, which saw a more pronounced positive correction later, in 2011, at the height of the European debt crisis.

5 Conclusion

The rates of return on foreign equity and debt investments in Central and Eastern European countries, including Croatia, are a poorly investigated subject. Thus, these countries' significant macroeconomic imbalances and the related high exposure to external shocks warrant a detailed analysis and prompted this research.

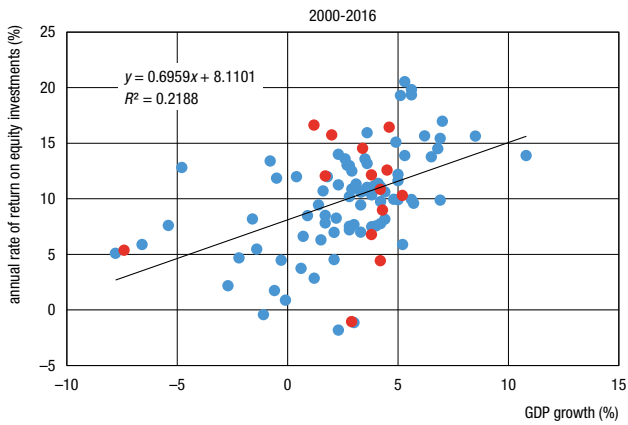
The findings of the analysis conducted confirm that the new EU member states have benefited in the past few years from highly accommodative monetary conditions in the external environment and the accompanying downward trend in interest rates. However, this positive assessment notwithstanding, the full potential of improved financing conditions has not been fully exploited, as the fall in relative costs of borrowing for the Central and Eastern European countries was much less pronounced than for the euro area member states, which can be mostly attributed to their increased risk premiums. The rates of return on equity investments also declined after the crisis but their effect on income balance was negative in most of the new EU member states due to their having had a bigger impact on revenues from foreign equity assets than on expenditures on foreign equity liabilities. Croatia was an exception, having witnessed a somewhat more pronounced fall in expenditures due to a long and deep recession and the one-off effects of the conversion of loans in Swiss

francs on banking sector profit in 2015.

Taking into account the structure of accumulated foreign assets and liabilities of the new EU member states, the developments in their foreign income balance in the future will be determined by macroeconomic and monetary conditions. Gradual monetary policy normalisation in creditor euro area countries would result in a deterioration of the foreign income balance stemming from debt flows, particularly in countries such as Croatia that have a higher level of accumulated foreign debt and a somewhat bigger negative differential between rates of return on their assets and liabilities. Since the rates of return on equity investments are positively correlated with economic growth, the latter's acceleration would create additional pressure on foreign income balance. If equity investments which generally carry a higher rate of return were to be dominant in the structure of future capital inflows, worsening of the foreign income balance might become an increasingly important factor in any deterioration of the current account balance. The potential negative effects on the balance of payments of Central and Eastern European countries might be mitigated to an extent only by improved investment policies and better structure of foreign assets, an important message for economic policy makers in these countries.

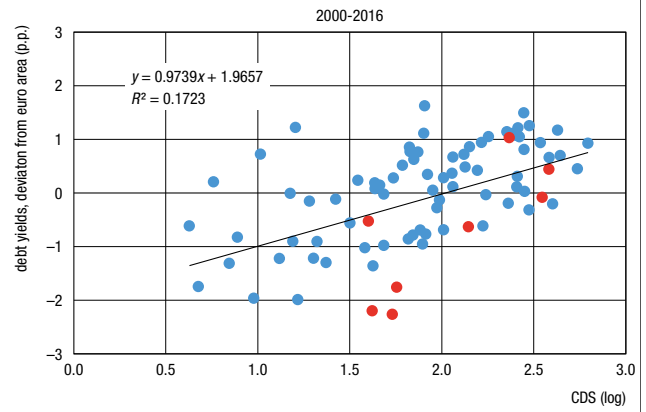
Appendix 1 Selected determinants of the return on foreign investments

Figure 1 Return on equity investments and economic growth



Note: Includes the Czech Republic, Poland, Hungary, Slovakia, Slovenia and Croatia (red).
Sources: Eurostat, Bloomberg, and author's calculation.

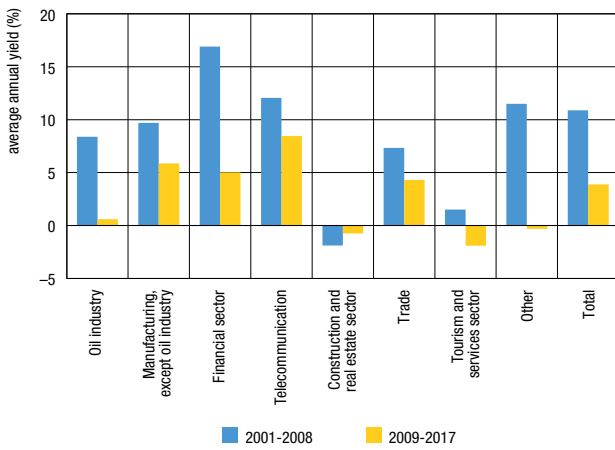
Figure 2 Cost of external borrowing and country risk



Notes: Includes the Czech Republic, Poland, Hungary, Slovakia, Slovenia and Croatia (red). CDS (Credit Default Swap) is insurance against credit risk.
Sources: Eurostat, Bloomberg, and author's calculation.

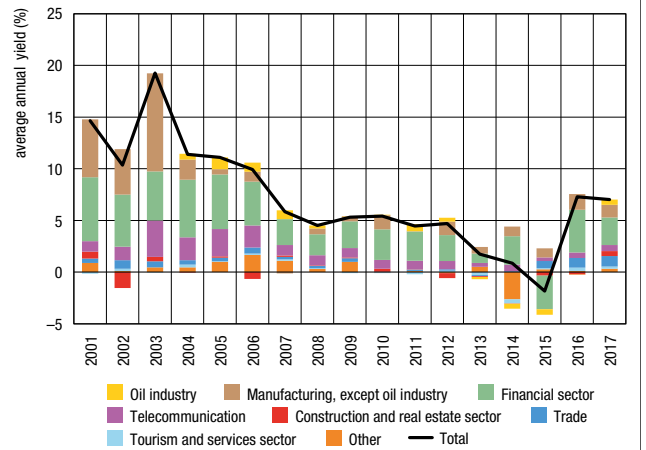
Appendix 2 Return on foreign investments in Croatia

Figure 1 Average annual rates of return on equity investments of non-residents in Croatia, by NCA activities



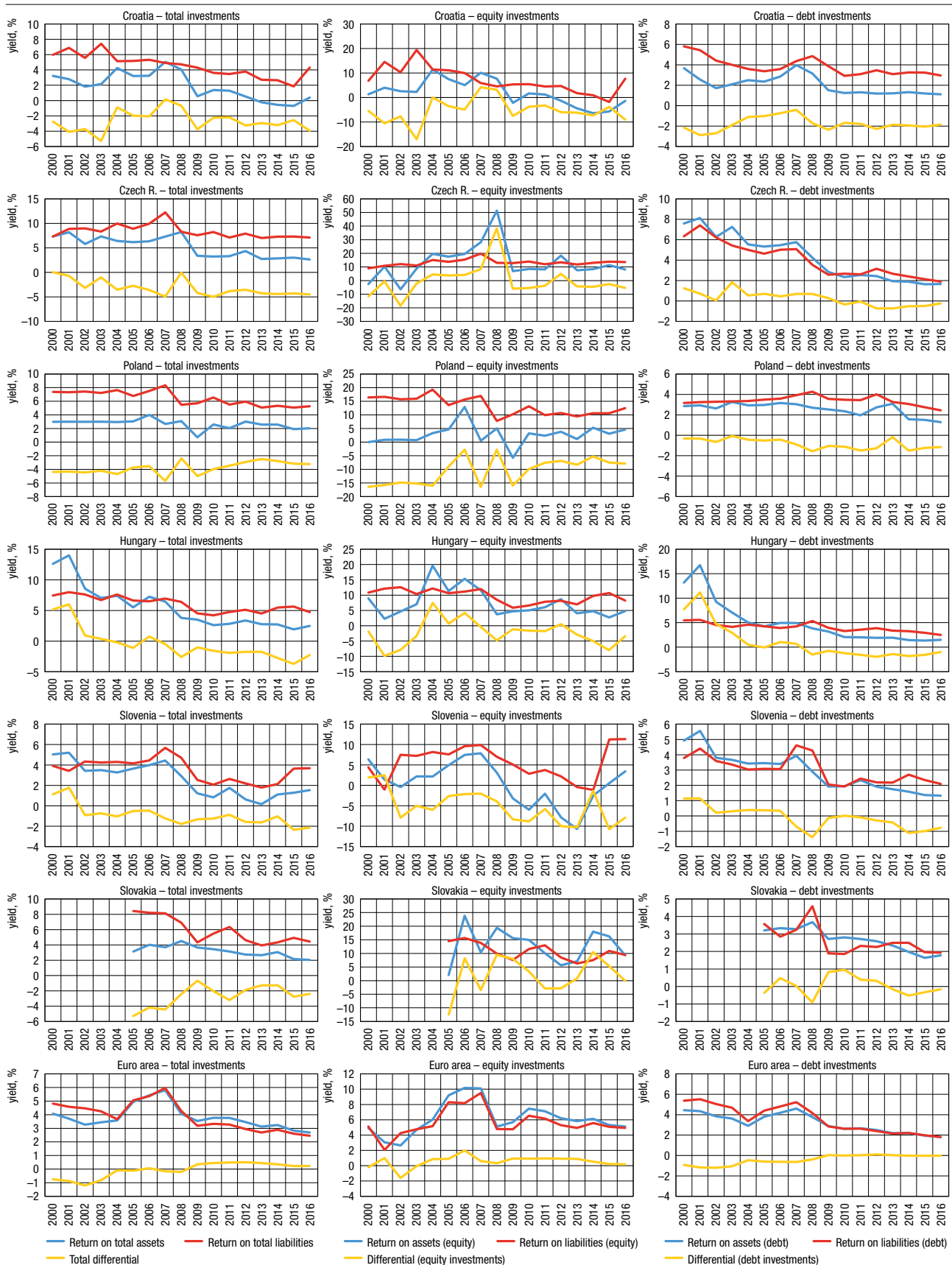
Sources: CNB and author's calculation.

Figure 2 Contributions of individual NCA activities to total rate of return on equity investments of non-residents in Croatia



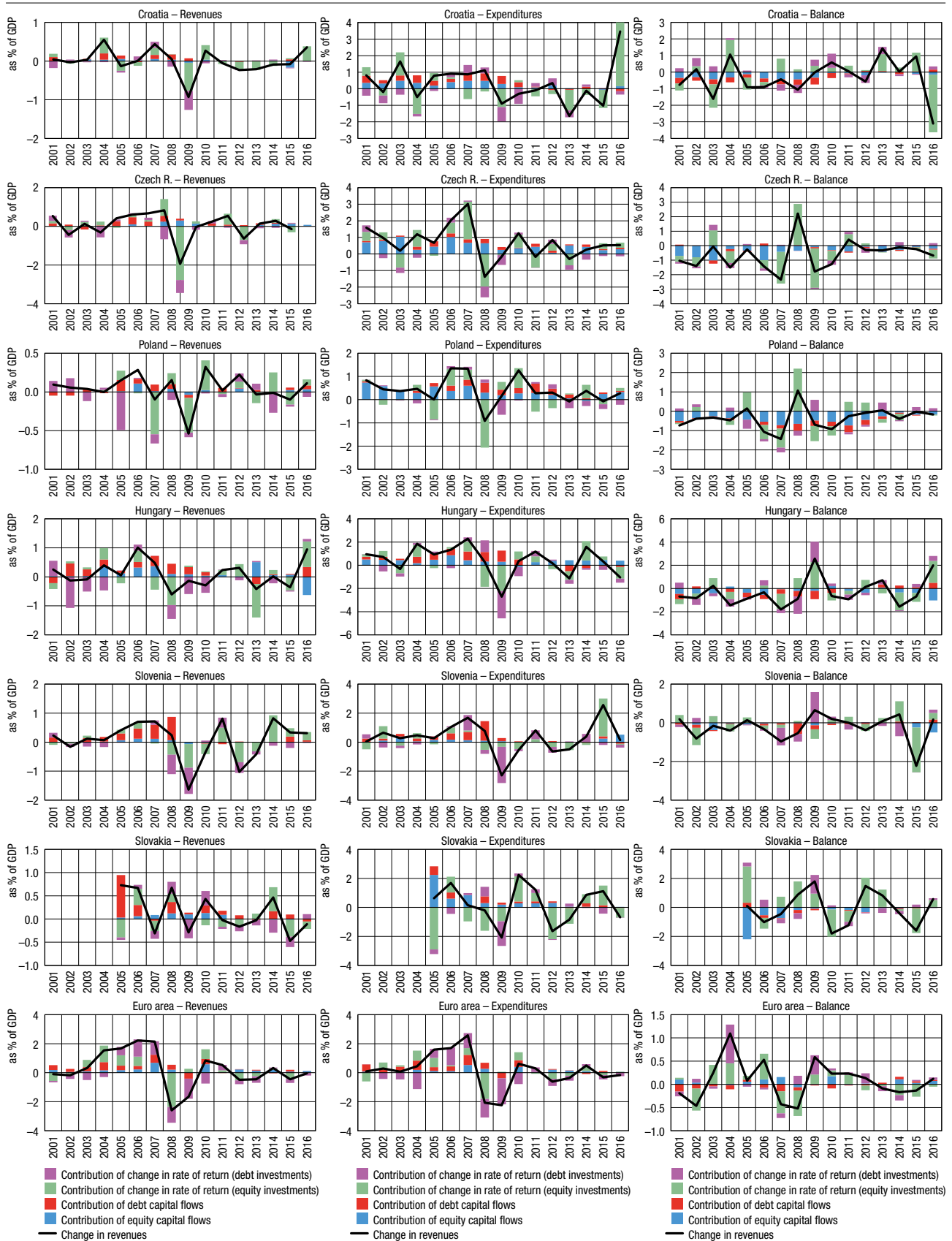
Source: CNB.

Appendix 3 Return on foreign investments in selected countries



Note: Euro area excluding Ireland and Luxembourg.
Sources: CNB and author's calculation.

Appendix 4 Structural decomposition of changes in income on foreign investments



Notes: Positive (negative) values represent the contribution to growth (fall) in income and expenditures, i.e. an improvement (worsening) of the investment income balance. Euro area excluding Ireland and Luxembourg.
Sources: CNB and author's calculation.

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