



Staff memo

Exchange rate and balance of pay- ments – a correla- tion that got lost?

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Staff Memo

A Staff Memo provides members of the Riksbank's staff with the opportunity to publish advanced analyses of relevant issues. It is a publication for civil servants that is free of policy conclusions and individual standpoints on current policy issues. Publication is approved by the appropriate Head of Department. The opinions expressed in staff memos are those of the authors and are not to be seen as the Riksbank's standpoint.

Summary¹

There is no clear picture of how the relationship between the exchange rate and the real and financial transactions between countries functions in practice. In this Staff Memo we present some economic assumptions that attempt to explain this relationship and analyse data for Sweden for the period 1993 onwards. Our study focuses on whether there is any co-variation between the Swedish krona exchange rate and data from the balance of payments statistics.

We observe in our analysis that the real exchange rate has weakened over the past 27 years. During the same period, the surplus on the current account rose constantly up to 2007, after which it declined until the end of 2018. Up to 2007, we highlight an increasing propensity to save among Swedish sectors as a factor that may have contributed to the positive covariation between the growing surplus and the krona depreciation. On the other hand, it is more difficult to explain the continued weakening of the krona after 2007, based on how savings develop. Nor have other empirical studies succeeded in providing any unequivocal answers regarding the causes behind the krona depreciation in the period 2008-2019. Of course, there are explanations for temporary depreciations of the krona, such as the tumult in connection with the financial crisis in 2008, and the financial market turmoil surrounding the debt crisis in 2013. But the weakening trend between 2008 and the ensuing ten-year period is more difficult to explain. We point to some flows in the financial account, such as foreign investors' holdings of Swedish government bonds and carry trade, which may have contributed to the krona depreciation in recent years.

Regardless of the causes of the depreciation, we think that it has probably also contributed to the large current account surplus during the entire period analysed.

Finally, we suggest that the relationship between the current account and the exchange rate may have weakened over time as a result of factors such as output in global value chains and pricing of goods and services in dominant currencies.

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1 Introduction

Sweden is a country with extensive international trade and large financial assets and liabilities in relation to other countries. Large real and financial exposures to other countries also mean that the Swedish krona is constantly being bought and sold on the international foreign exchange market. The Swedish current account has shown a surplus for the past 27 years. During the same period, the Swedish krona's exchange rate has shown a weakening trend in real terms, as shown in Figure 1. Traditional economic theory and later research do not provide a clear picture of how the correlation between surpluses or deficits in the current account and the exchange rate function in reality. Depending on what causes surpluses or deficits in the current account, the correlation with the exchange rate looks different. In addition to the real transactions in the current account, the exchange rate is also affected by the financial flows between Sweden and other countries through the demand and supply of currencies created here. In this Staff Memo we investigate whether the statistics support a covariation between the exchange rate and the real and financial flows in the balance of payments.

2 What is the balance of payments, and what is its relationship with the exchange rate in theory?

In this section we describe the account system on which the balance of payments is based and we highlight some economic theories that describe how different driving forces in the economy can have an impact on the exchange rate and the balance of payments.

2.1 Which transactions are registered in the balance of payments?

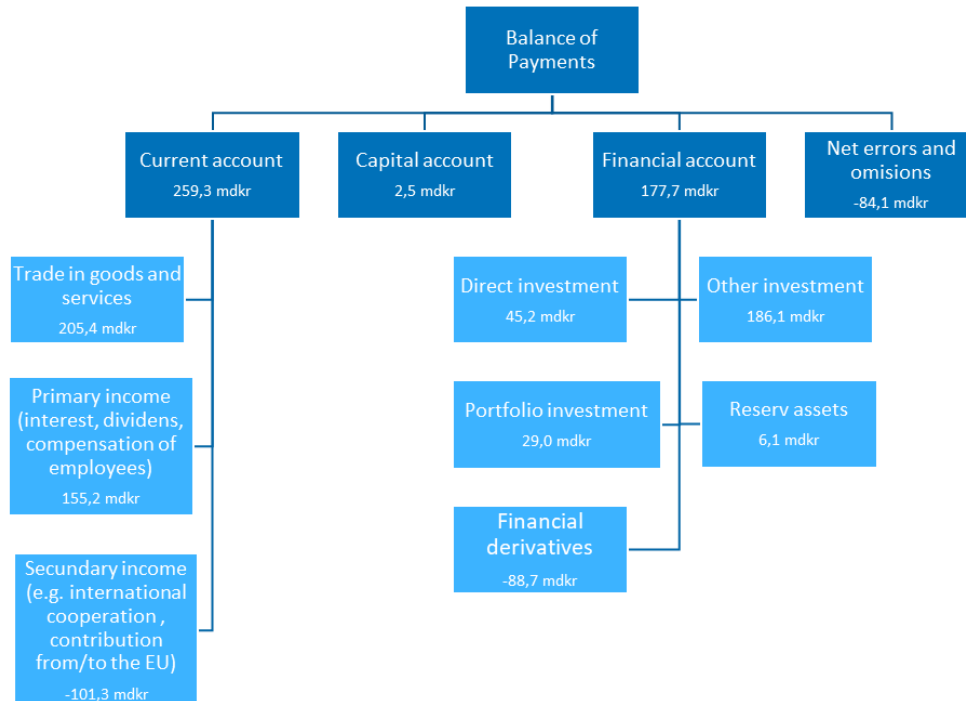
The balance of payments, a country's profit and loss account

The balance of payments can, put simply, be compared to a country's profit and loss account with regard to other countries. The statistical data on the balance of payments is reported in a closed account system with so-called double entry bookkeeping, where all economic transactions between domestic and foreign economic agents are registered. This account system consists of three parts: the current account, the capital account and the financial account. The figure below illustrates the structure of the system. The capital account, which includes capital transfers² and the transfer of property rights, has a modest scope in relation to the other two components of the balance of payments. It will therefore not be analysed further here and is assumed in several parts of this text to be equal to zero.

² Examples of capital transfers include gifts given to enable the recipient to make a real investment, such as foreign aid to finance the building of a dam, transfer of financial assets without reciprocity, and inheritance.

Figure 1. The balance of payments' account system including outcomes for 2020³

SEK billions



Source: Statistics Sweden

A country's total exports and imports of goods and services, primary incomes and secondary incomes are registered in the current account. A surplus on the current account means that a country has larger incomes than expenditure. The surplus thus becomes a positive financial account that can be used either for investments abroad or amortisation of foreign debts.

The financial account in its turn shows purchases and sales of financial assets and liabilities in relation to other countries. This and the current account can be regarded as two side of the same coin and their total should in theory be zero. That is, a surplus on the current account must have a corresponding capital outflow in the financial account. The double entry bookkeeping means that each transaction in the balance of payments is entered into at least two different accounts – one as a debit and the other as a credit. In practice, however, a residual item arises in the statistics, which is often of a considerable size. This is mainly because the sources of the statistics are not

³ Reporting of the balance of payments usually follows this equation: Current account + Capital account - Financial account + Residual item = Zero.

entirely comprehensive and more sub-items need to be estimated using statistical methods.⁴

Finally, we would like to emphasise that the balance of payments statistics are supplemented with information on the so-called international investment position to provide a picture of what can be regarded as a country's balance sheet. The international investment position thus provides information on the country's financial assets and liabilities in relation to other countries, broken down into financial instruments in the same way as the transactions in the financial account.

2.2 Multi-faceted correlation between the balance of payments and the exchange rate

The correlation between the balance of payments and the exchange rate is not unequivocal and is affected by the time perspective and developments in other real economic variables, for instance. We describe below some reasonable assumptions that can help us interpret and understand the correlation.

The daily gross flows in the financial account are much larger than those in the current account. They are also more volatile than the more sluggish payment flows that follow from real transactions in the current account. In the very short term, therefore, the current account can be regarded as constant and changes (flows) in the financial account must be counteracted by other changes in the financial account to manage demand and supply regarding Swedish kronor. One often talks in this context about autonomous flows that need to be balanced by accommodating flows.⁵ One example of this can be when a foreign investor buys Swedish securities. In this case, the investor buys Swedish kronor with foreign currency to be able to buy the Swedish securities. This means that a supply of foreign currency arises. To ensure a corresponding demand for the foreign currency arises, that is, to bring about an exchange of the currencies, the price of the currency must be accommodated. In this case, the price of the foreign currency is reduced, that is to say the krona is strengthened, and after this the foreign investor can make its purchase of Swedish securities.

In the longer run, it is reasonable to assume that it is real economic factors that determine the current account and thereby the financial account and exchange rate. Households and the public sector choose the desired level for their financial saving according to income, preferences and demographic developments. One example is if Swedish households want to increase their savings prior to retirement, for instance, as a result of an unusually large amount being in that age group. This means, via various different channels, lower interest rates in Sweden and increased demand for foreign securities. An increased outflow arises in the financial account, at the same time

⁴ See Statistics Sweden (2015).

⁵ The balance of payments can be divided up into autonomous and accommodating flows. Autonomous flows occur independently of other flows in the balance of payments and arise as a consequence of changes in expectations, structural factors and so on. According to this reasoning, it is the autonomous flows that have an impact on the exchange rate. Accommodating flows, on the other hand, only arise because the autonomous flows need to be balanced.

as the krona is weakened and net exports consequently rise. In this example, a stronger current account thus goes hand in hand with a weaker krona. A surplus on the current account means that Swedish holdings of foreign financial assets will rise and in the very long run the surplus on the current account will probably decline and the exchange rate will then strengthen. However, the simultaneous correlation between the current account and the (real) exchange rate is positive - a stronger current account means a weaker exchange rate - if it is changed financial saving that is driving this development.

However, there are other real economic factors that give rise to the opposite correlation. If demand and the price of Swedish goods rise on the world market, net exports increase and the current account is strengthened. The demand for kronor rises, which reinforces the exchange rate. In this example, a strengthening of the current account entails a stronger krona, which is the reverse correlation to the previous example.

A change in the composition of savings can also lead to capital flows within the financial account, which in the short term only affects the exchange rate but in the slightly longer term also affects the current account. One example of this type of capital flow is if the interest from Swedish investors in buying foreign shares relative to Swedish shares rises, which would entail an increased demand for foreign currency. If nothing else happens, the value of the krona declines. So far, the financial account is not affected in total, but its composition is affected. However, in the slightly longer run the weaker krona means that the net export of goods and services increases and the current account is strengthened. So far, an increase in the demand for foreign shares leads to a weakening of the krona and a stronger current account, that is, the same correlation as in the example with increased saving above. But, a stronger current account entails, all else being equal, a higher GDP and resource utilisation. Together with the direct effect of the weaker krona rate on import prices, this will in the even longer run increase inflation, which would normally mean that the Riksbank raises the repo rate. The return on interest-bearing assets in Sweden will then rise, and there will be an inflow into the financial account when investors seek assets in Swedish currency with a higher return. The exchange rate should then appreciate and the initial depreciation in the krona should thus be counteracted.

We have highlighted financial saving among domestic sectors, demand for Swedish products on the world market and changed preferences for capital investments as factors that can play a role in the analysis of covariation between the exchange rate and the balance of payments' different types of real and financial flows. However, there are many other factors besides the balance of payments that can also affect the development of the exchange rate. Some examples are the differences in inflation between countries, the terms of trade, or the prospects for economic growth. But in the remainder of this Staff Memo we will not explicitly examine the impact of these factors on the exchange rate.

3 What do the statistics say?

So far, we have described some theoretical approaches on which our analysis of the correlation between the balance of payments and the exchange rate is based. In this section we will investigate how actual data relate to the theories.

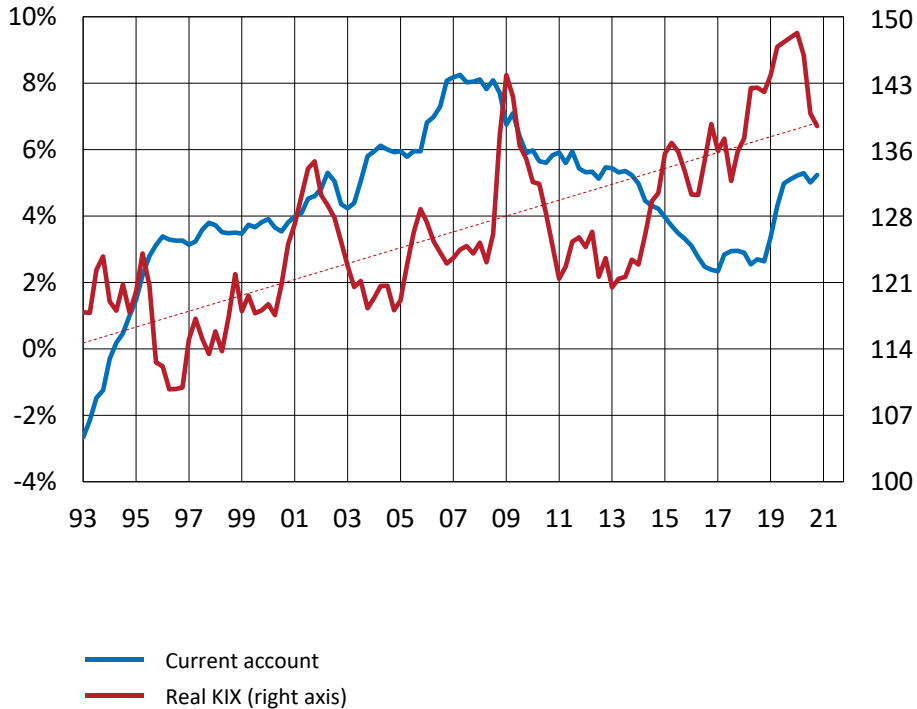
3.1 Lasting current account surplus and weakening krona

Our analysis begins with the year 1993 – the first year that Sweden had a floating exchange rate⁶. The focus of the analysis is on medium and long-term trends. For instance, we choose to be very cautious in drawing any conclusions from the statistical outcomes in 2020, as both the balance of payments flows and the exchange rate have been impacted by the coronavirus pandemic, even though we report data for the whole year 2020 in table and diagram form. In Figure 1 below we can see from the blue line that Sweden has had a current account surplus since the mid-1990s. At its highest, this corresponded to more than 8 per cent of GDP, which was remarkable even in an international perspective. There was a downward turn in connection with the financial crisis in 2008, and the surplus then declined constantly until the middle of 2018, when it corresponded to around 2 per cent of GDP. At the end of 2018, it began to increase again.

⁶ The krona was allowed to float on 19 November 1992.

Diagram 1. Current account and real exchange rate (KIX), 1993-2020

Per cent of GDP, total over 4 quarters, and index 18 November 1992=100



Sources: The Riksbank and Statistics Sweden

Figure 1 also shows the real exchange rate⁷ from 1993 and up to the end of December 2020 in the red line. The measure used for the exchange rate is the trade-weighted KIX index⁸. The dotted red line shows the long-term trend for the exchange rate and the krona depreciation during the period analysed is clearly visible here⁹. Up to 2008, the surplus showed an increase trend and the krona weakened. The positive covariation between the current account surplus and the krona depreciation during this period could be explained by the propensity to save shown by Swedish sectors, and which is connected to demographic aspects, the pension system reform and so on. During the 1990s, it was primarily the public sector that increased its financial saving and since 2006, household saving has shown a trend increase, see Figure 2. In total, financial saving increased up to 2008.

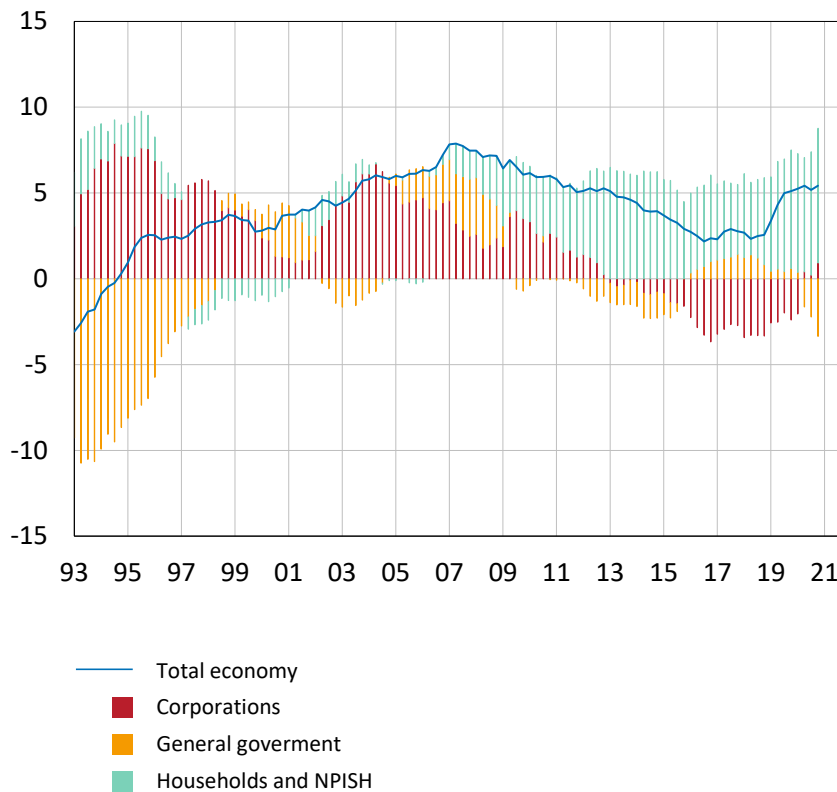
⁷ The analysis uses two variables expressed in real terms: the current account in relation to GDP and the real exchange rate. The real exchange rate is defined as the nominal exchange rate multiplied by the ratio between the foreign price index and the domestic price index.

⁸ KIX, the krona index, is a weighted geometric chain index, where the weights are based on total flows of processed goods and commodities for just over 30 countries. The weights are updated each year, and are based on data with a time lag of several years.

⁹ The weakening trend in the Swedish krona in real terms began back in the 1970s, see for instance Belfrage, Corbo and Ingves (2019).

Diagram 2. Sweden's financial saving broken down by sectors 1993 - 2020

Per cent of GDP



Source: Statistics Sweden

Describing the mechanisms that follow on from a high and lasting propensity to save in the economy is relatively complicated. But in brief an increased propensity to save means that the share of income used for consumption of goods and services declines in relative terms. A decline in demand for goods and services should put downward pressure on prices, or at least reduce the rate of increase in them. A lastingly high level of saving thus puts downward pressure on prices, resulting in the domestic interest rate also falling, partly through more expansionary monetary policy. Lower interest rates in turn mean that the yield on domestic assets falls and that savers to a higher extent wish to invest their savings in foreign assets to seek a higher return. Ultimately, this then creates a supply of krona that are exchanged for foreign currency, which pushes the exchange rate to depreciate. As long as the high propensity to save remains, the downward pressure on the krona will continue, which will also entail a continuing large and lasting current account surplus. For a more thorough and detailed review of this mechanism we recommend, for instance, the National Institute of Economic Research's wage formation report from 2011¹⁰.

Other factors that affect the current account and the exchange rate can give rise to other correlations, however. Lower relative national income as a result of either

¹⁰ See National Institute of Economic Research (2011).

weaker relative productivity growth or poorer terms of trade weaken the real exchange rate at the same time as the current account may also weaken. To distinguish these different covarying mechanisms, one needs to study the correlation with econometric methods. Several different essays have attempted to explain the weakened real exchange rate up to around 2005 with reference to the increased savings/current account surplus and poorer terms of trade.¹¹ The continued weakening after 2010 has been more difficult to explain using these macroeconomic factors.¹²

3.2 Can the financial flows explain the krona exchange rate in recent years?

We have observed that the weakening trend in the krona over the past 27 years has shown a positive correlation with a growing current account surplus up to 2008, which can reasonably be explained by the Swedes' high propensity to save, among other things. However, during the period 2008-2018, the current account surplus declined without any apparent break in the weakening trend for the real exchange rate. Nor can the development of other real economic factors, such as relative GDP and terms of trade completely explain developments. There are thus also other, more short-term factors that have probably contributed to the long-lasting surplus on the current account going hand in hand with a weaker trend in the krona.

It is common that smaller currencies like the krona weaken in relation to the large global currencies in times of financial unease, such as in the "dotcom" crash 2000, the financial crisis 2008 or the European debt crisis 2013. However, the Swedish krona weakened more than comparable currencies during, for instance, 2018 and 2019, which was a period of relatively stable economic activity and relatively stable financial markets.

In the following section, we therefore take a shorter perspective in the analysis by examining the financial flows in the balance of payments and the correlation between these and the exchange rate. Could it have been temporary financial factors that weakened the krona in recent years, and that have also interacted over time so that the krona rate has weakened in the long term, too? This would mean that over the past years, more or less temporary financial shocks that have arisen or conditions that have coincided have led to the krona weakening over time. Below we touch on some of the financial flows in recent years and examine whether there is a correlation between these and developments in the exchange rate.

Interest rate spreads and financial flows

One factor that is often highlighted is that interest rate spreads between countries in the shorter term drive the exchange rate much more than, for instance, the surplus on the current account and an otherwise stable domestic economy. The figure below

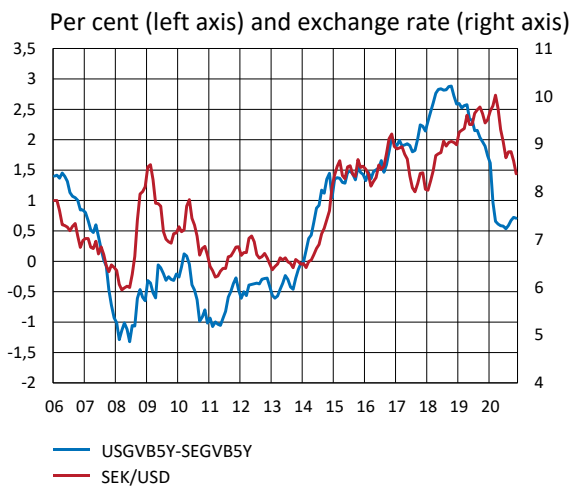
¹¹ See, for instance, Bergvall (2004), Nilsson (2004) Lane (2006), Sellin (2007), and Lagervall and Nessén (2009).

¹² See Sveriges Riksbank (2018), Bachetta and Chikhani (2021), and Belfrage et al (2020).

shows the spread between the Swedish five-year government bond yield and the corresponding yields for some important countries and the bilateral exchange rates between the countries. We note that the yields in the United States and the United Kingdom have been higher than that in Sweden since 2014, and this difference shows a high correlation with the development of the Swedish krona against these countries' currencies. The correlation with Germany (which can represent the euro area here) and Japan is somewhat weaker, but there the spread has rather been negative or close to zero in recent years.

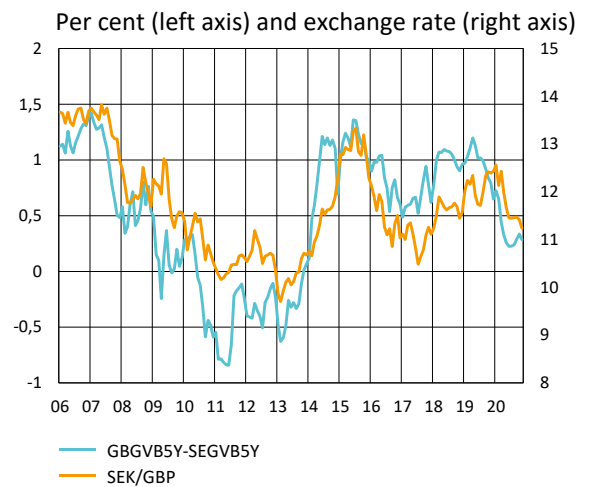
One question one might then ask is whether the financial flows in the balance of payments can provide further support to the theory that spreads have affected the exchange rate. This could then be reflected, for instance, in that foreign investors would have reduced their investments in Swedish krona bonds or that Swedish investors were to a greater extent buying foreign bonds denominated in, for instance, USD or GBP.

Diagram 3. Spread for 5-year government bonds between Sweden and the USA and exchange rate SEK-USD



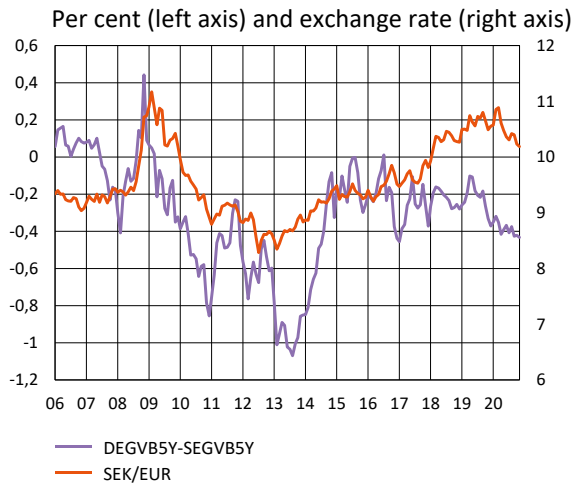
Source: The Riksbank.

Diagram 4. Spread for 5-year government bonds between Sweden and the UK and exchange rate SEK-GBP



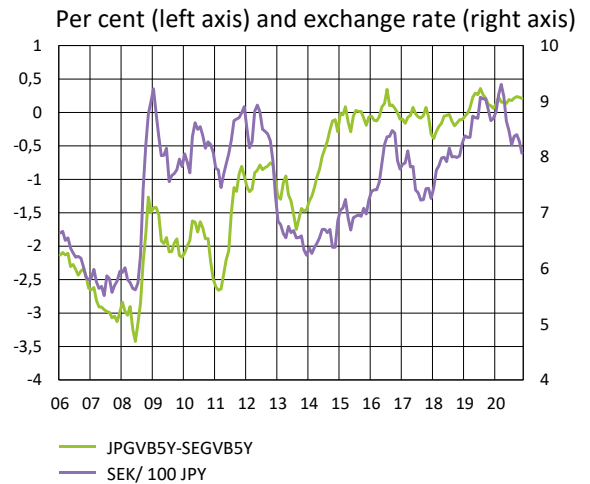
Source: The Riksbank.

Diagram 5. Spread for 5-year government bonds between Sweden and Germany and exchange rate SEK-EUR



Source: The Riksbank.

Diagram 6. Spread for 5-year government bonds between Sweden and Japan and exchange rate SEK-JPY



Source: The Riksbank.

The dark-blue area of the columns in Figure 7 below shows that foreign investors reduced their holdings of Swedish government bonds by SEK 218 billion between 2014 and 2019. This supports the theory that the spread between Swedish government bond yields and the corresponding foreign bond yields is an important explanation as to why the krona depreciated during this period. Of course, one can also explain the reduced foreign holding as a consequence of the Riksbank's decision in 2015 to buy government bonds to reinforce the expansionary monetary policy. These purchases have since gradually continued, with the natural consequence that foreign investors have reduced their holdings of government bonds. The coronavirus pandemic has a major impact on the outcome for 2020, and as mentioned above, our analysis primarily concerns the pre-coronavirus period.

Asymmetric impact from capital flows on krona exchange rate?

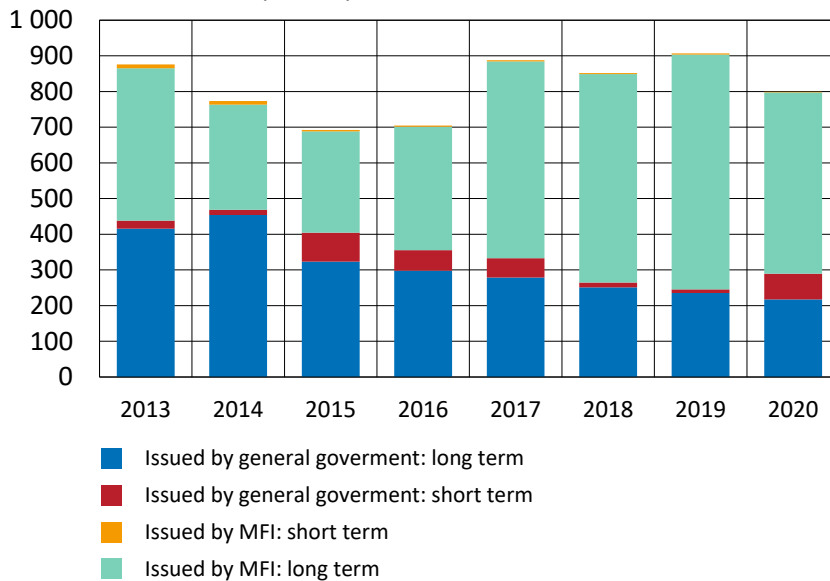
The light-blue area of the columns in Figure 7 also shows that during the same period that investors abroad sold Swedish government bonds, they have purchased covered bonds in SEK issued by Swedish banks and mortgage institutions. However, these purchases do not appear to have had the corresponding effect in strengthening the exchange rate. It is therefore problematic to claim that when foreign investors sell government bonds, this tends to weaken the krona, but when the corresponding purchases of covered housing bonds are made, it has no strengthening effect on the krona. However, this does not mean there cannot be an asymmetry as to which types of capital flow affect the exchange rate and which do not, see Blanchard, Chamon, Gosh and Ostry (2015), and Gardberg (2018)¹³. In the case of Sweden, it appears as

¹³ Gardberg (2018) points out that the sensitivity of the exchange rate in countries with large foreign debt financing tends to vary more if the debts consist of bonds and bank loans than in countries where the debts are financed via equity.

though it is not just a question of different types of financial instrument affecting the sensitivity of the currency, but it is the same instrument, namely bonds in Swedish krona, but with different issuers: the state and banks and mortgage institutions respectively.

Diagram 7. Foreign investors' holdings of Swedish interest-bearing instruments in SEK. 2013 to 2020

Balance sheet values at respective year-end, SEK billions



Source: Statistics Sweden

Foreign investors borrow SEK to buy foreign assets – “carry trade”

Another financial transaction that is often raised with regard to the krona depreciation is so-called carry trade¹⁴. The low interest rates in Sweden over the past seven years have been an incentive for both domestic and foreign investors to take out loans in Swedish krona to then exchange them for foreign currency and invest the money in foreign assets at a higher interest rate. This currency exchange puts downward pressure on the krona. Information on Swedish Monetary Financial Institutions' (MFI) lending in Swedish krona to foreign parties appears to confirm at least the first part, that is that the banks lending in Swedish krona to foreign parties has increased by around SEK 180 billion from the end of 2013 to the end of 2019. We can see this development in Figure 8 below. The increase intensified in 2018 and 2019, which may have contributed to the depreciation of the krona during this period. During 2020 this lending to foreign parties was halved, and at the same time the krona rate appreciated. Once again, it is important to point out that any conclusions drawn during the pandemic year should be treated with considerable caution.

¹⁴ Carry trade is an investment strategy that in brief entails borrowing money in one currency at a low interest rate and exchanging it for another currency that pays a higher interest rate and earning money on the difference.

Diagram 8. Swedish MFIs' lending to foreign parties, 2013 to 2020

Stocks in Balance sheet values at respective year-end, SEK billions



Source: Statistics Sweden

4 Krona exchange rate and current account

In earlier sections we highlighted some factors that have probably contributed to the depreciation trend in the krona over the past 27 years. In this section, we analyse how the krona depreciation may have affected the current account. Finally, we go through some events that may cause this relationship to weaken over time.

4.1 The krona exchange rate has probably favoured the current account surplus

In Section 2, we have seen that there are several factors that have contributed to the krona depreciation during this period. This has probably contributed to the surplus on the current account during the whole of the period we have analysed. When the krona weakens against various trading partners' currencies, it becomes cheaper for Swedish exporters to sell their goods and services abroad. The foreign demand for these products will thus become higher and lead to larger export volumes. At the

same time, it will become more expensive for national importers to purchase foreign products, which in turn leads to lower import volumes. The effects that a depreciation has on both exports and imports thus improves the current account in terms of volume. At the same time, the weaker exchange rate affects prices of both imports and exports, which affects net exports and the current account, which are measured in current prices. Normally, import prices are affected more than export prices in the short term, which reduces net export before it becomes higher in the longer run. This sequence for net export and the current account is known as the J curve in many textbooks.¹⁵

The fact that larger surpluses on the current account have been combined with a weaker exchange rate is not unique to Sweden. Figure 2 below shows developments in both the current account as a percentage of GDP on the X axis and the real exchange rate on the Y axis between two eleven-year periods (1995 to 2006 and 2007 to 2018) in a number of countries¹⁶. In this figure, a higher value for the exchange rate entails a stronger national currency. Although the correlation is not so strong¹⁷, countries with an exchange rate that has weakened tend to show a stronger current account during the period and vice versa – countries with a reinforced currency tend to show a weakened current account.

¹⁵ See, for example, Blanchard et al. (2015).

¹⁶ This period has been chosen as on the basis of the sources (the BIS and the OECD), it should cover the most of the period we have analysed in the Staff memo, at the same time as including as many countries as possible.

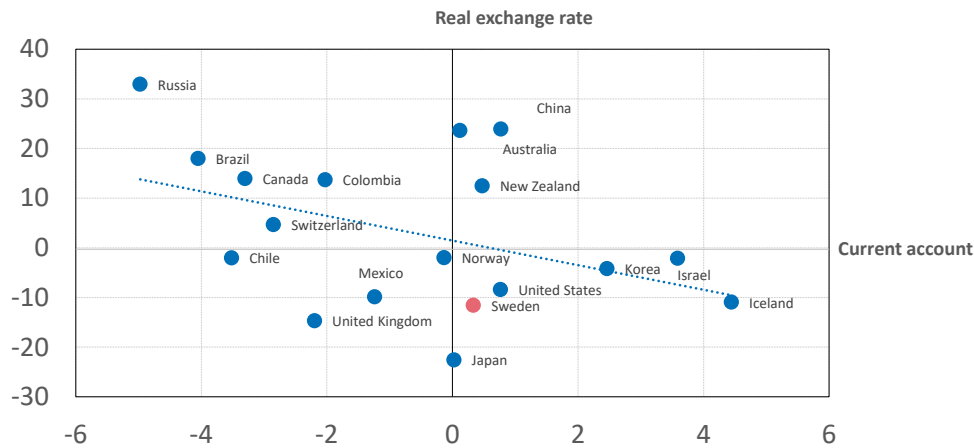
¹⁷ The correlation between the development of the current account and the real exchange rate in the figure is -0.42 .

Figure 9. Developments in the current account and real exchange rate between two eleven-year periods, 1995-2006 and 2007-2018

Real exchange rate: CPI-based, percentage change in average real exchange rate between the periods, increase entails appreciation

Current account: difference in percentage points for the average current account as a percentage of GDP between the periods

The broken blue line shows the correlation calculated using the method of least squares.



Source: The BIS and the OECD

4.2 Factors that can weaken the correlation between the exchange rate and the current account

Finally, we want to raise three factors that can weaken the correlation between the exchange rate and the current account: dominant currencies, global value chains and re-exports. These are connected to the increased complexity of international trade, which has most probably contributed to the elasticity between the current account and the exchange rate declining over time. The first two factors – dominant currencies and global value chains – have been discussed internationally¹⁸ in recent years and are considered relevant to Sweden. The third – re-export – is a phenomenon that requires a larger statistical base to be able to understand its scope and potential impact on the exchange rate.

Pricing in dominant currencies

The dominant role played by certain currencies to some extent challenges the economic theories. In the standard case, that is, when prices are set in the producing country's own currency, a weakening of the currency leads to higher import prices, and in the slightly longer run, a decline in demand for imports. Export prices expressed in foreign currency at the same time become lower, which leads to a larger

¹⁸ See, for instance, the IMF (2019), Goldberg and Tille (2008) and Gopinath (2015).

demand for the country's export goods. The increased exports and the decline in imports thus lead to an improvement in the current account. On the other hand, when prices are set in a so-called dominant currency, such as US dollars and euros, the effect on net exports of an equally large weakening of the currency will be less. The IMF has examined this on the basis of data from several countries and shown that the impact on export volumes becomes weaker the larger the share that is invoiced in a dominant currency in relation to that invoiced in the producing country's currency. Import volumes, on the other hand, do not appear to be significantly affected by the extent to which invoicing is in global currencies¹⁹. This result is probably not so surprising, as a weakening of the national currency against several currencies often has the same effect on import prices, regardless of whether invoicing is in global currencies or the producing country's currency.

The IMF has also produced data on several countries' foreign trade broken down by currency and trading partner, and found that both exports and imports invoiced in US dollars are greater than the actual exports to, and imports from, the United States. This applies to Sweden and many other countries²⁰. It is not completely unreasonable to assume that it will look the same for the euro and that invoicing of Swedish exports and imports in euro is greater than trading with euro area countries. All in all, this means that invoicing in global currencies among Swedish companies can to an increasing extent weaken the impact of exchange rate movements on the Swedish current account.

Global value chains

Global value chains mean that countries are to an increasing extent finding themselves in an international goods production chain, where input goods are imported into one country, processed, refined, and then exported to the next stage of the production process. This process, where one buys, processes and then exports foreign materials, is becoming larger and means that export incomes and import costs often vary in the same direction when the exchange rate varies. This can lead to the current account net balance being less sensitive to exchange rate fluctuations²¹. In the year 2016, the foreign value added share of total exports was around 20 per cent²². Moreover, the data thus indicate that production in global value chains is common in the Swedish manufacturing industry, and has also most probably contributed to weakening the correlation between exchange rate movements and the current account.

Re-export

Another phenomenon that probably contributes to exports and imports becoming more insensitive to exchange rate movements is re-exports. Re-exports involve imports of goods to Sweden that are then exported abroad without any further processing. For instance, Swedish trading companies may have stocks in Sweden for im-

¹⁹See the IMF (2019), page 48.

²⁰ See the IMF (2019), page 45.

²¹ See Frohm (2018).

²² See the OECD (2018).

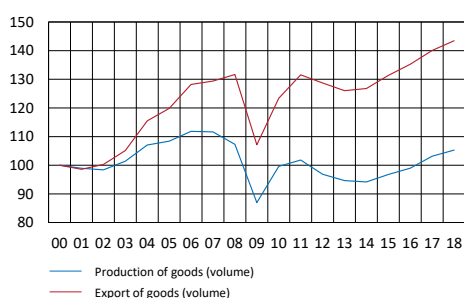
ported goods that are then sent abroad to be sold on. But this can also refer to foreign companies that acquire a VAT registration number in Sweden to receive goods produced in countries outside of the EU. After the product has arrived in Sweden, it can move freely within the customs union. It can also be a question of companies that have outsourced their manufacturing to other countries and then import their own products to Sweden before selling them to customers in a third country. Re-exports can lead to a weaker correlation between the exchange rate and the current account for various reasons. For instance, some types of company involved in re-exports have very limited or no physical operations in Sweden. They therefore have few or no employees and very low costs in Sweden and thus little need or incentive to exchange money for Swedish krona. At the same time, other companies with physical operations in Sweden, and which also are involved in re-export, are often less affected by exchange rate movements, as these affect their costs for imports and income from exports in the same direction. This reduces the elasticity between the exchange rate and foreign trade flows.

The scope of re-exports is difficult to measure, but in Figure 10 we can see a comparison between developments in goods production and goods exports that gives a clear indication that it may be a growing phenomenon. The figure shows how exports of goods have increased in volume by more than 43 per cent in Sweden between 2000 and 2018. At the same time, good production has only increased by 5 per cent. Although there may have been some redistribution between production for home and export markets, it is probably growing re-exports that have contributed most to the differences.

Re-export is more common for certain types of goods. For instance, Sweden exported clothes for more than SEK 32 billion, while the production of clothes amounted to not quite SEK 13 billion in 2018. We can see the difference in Figure 11 below. This also shows that mobile phones are an even clearer example. In 2018, Sweden produced mobile phones to a value of SEK 31 million, while exports amounted to a good SEK 22 billion. In principle, all of the exports thus consisted of imported mobile phones.

Diagram 9. Development of goods production and goods exports volumes in Sweden 2000-2018

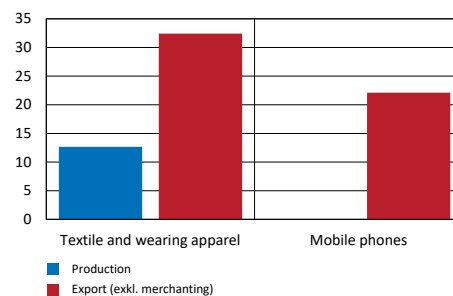
Index 2000=100



Source: Statistics Sweden

Diagram 10. Production and export of textiles and clothing and mobile phones 2018

SEK billion



Source: Statistics Sweden

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