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## Formation and reversal of the current account deficit 1998-2002<sup>2</sup>

*This article discusses the surging current account deficit over the period 1998-2000 and its rapid reversal in 2001 and 2002. The nature and causes of the deficit are explored, its sustainability considered from different perspectives and the reasons for its sudden reversal analysed.*

### I Introduction

The period 1998-2001 was characterised by great imbalances in the Icelandic economy. One of the symptoms of these imbalances was a surging current account deficit, peaking at one-tenth of GDP in 2000. The sharply widening deficit in 1998-2000 caused serious concerns. It was widely feared that it would culminate in a hard landing or even a financial crisis. Anxieties were compounded by the fact that the deficit was being financed with an enormous credit inflow – almost double the size of the current account deficit in 2000 – because at the same time

capital was flowing out of the country due to large-scale investment by residents in foreign securities and other foreign assets. These concerns turned out not to be entirely without reason. The aftermath included a weakening of the króna by roughly 30% from spring 2000 to November 2001, rising inflation which peaked at 9.4% in the beginning of 2002, and a contraction in national expenditure probably amounting to 6-7% in 2001-2002. Such traumatic events would hardly be described as a “soft landing” among developed countries, except possibly in Iceland. Yet in some respects the adjustment was softer than might have been expected, as a result of quite favourable external conditions. The deficit also vanished much faster than generally expected.

The swift formation and subsequent reversal of the current account deficit is interesting for a number of reasons, not least in light of considerable international debate of the nature and consequences of large current account deficits. Economists have held divergent views on this point and these have altered considerably in the course of time. The remainder of this article is divided into five sections. The first discusses the shifting views among economists concerning the nature of large current account deficits and recent research into their consequences. In the second section the formation of the current account deficit over the period 1998-2000 is analysed. An assessment is made as to which factors contributed more to the formation of the deficit: investment or public consumption, the public sector or the private sector, and

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2. A draft of part of this article was written as a contribution to work by a consultative team of economists from the Ministry of Finance, Central Bank and National Economic Institute in 2001. The idea was for the team to produce a report on the macroeconomic problem posed by the current account deficit. Before the team completed its task the National Economic Institute was disbanded and three of the five team members changed jobs. In the period since the team last met, economic conditions have changed markedly. Among other things, the current account deficit, which was reason for the work to begin with, has withered away. Consequently, the nature of the article had to change considerably from what was originally intended. In addition to the author, the team comprised Bolli Thór Bollason and Björn Rúnar Guðmundsson from the Ministry of Finance, Katrín Ólafsdóttir and Thórdur Fridjónsson from the National Economic Institute, and Már Guðmundsson from the Central Bank. The author thanks them all for their constructive suggestions, ideas and assistance, but is solely responsible for all errors that may remain. The author would also like to thank Thórarinn G. Pétursson for his assistance and the editorial board of *Monetary Bulletin* and others for their comments.

changes in national saving or capital formation. In the third section the driving forces behind the swift reversal in 2001 and 2002 are discussed, and why it created less strain on the domestic economy than could have been expected. In the fourth section, economic policy implications are discussed, and finally some concluding remarks are made.

## II Current account deficit: a symptom of disease or stage of development?

In his comprehensive review of the nature and consequences of current account deficits, Sebastian Edwards (2001) describes the evolving views of economists' towards this subject. Broadly speaking, says Edwards, the attitude changed from "the current account deficit matters" to "the current account deficit does not matter as long as the public sector is in balance", then to "the current account deficit matters" again, while the prevailing point of view appears to be "the current account deficit may matter". After the middle of last century the elasticity approach achieved prominence, focusing primarily on the relationship between relative prices and foreign trade. The economic policy spawned by this approach was to respond to a current account deficit that was considered excessive by adjusting the exchange rate.

In the 1970s increasing attention was paid to the inter-temporal properties of current account deficits. In terms of national accounting, the current account deficit is simply the difference between national saving and investment. Since both investment and saving are inherently inter-temporal phenomena, e.g. saving with respect to the lifetime of individuals and investment with respect to expected future return on investment, the current account must be so too. Thus Sachs (1981) emphasised that a current account deficit ought not to be a cause for concern insofar as it reflected new investment opportunities.<sup>3</sup> According to this approach, it can also be considered the most efficient response to external shocks to allow a current deficit to form unhindered and thereby smooth private consumption. However, the prob-

3. Obstfeld and Rogoff (1996) present an overview of current account models of this kind.

lem with models of this type is that the results do not conform particularly well with the real world, i.e. the debt and deficit generated by the models are much greater than observed.<sup>4</sup>

The focus on the inter-temporal properties of current account deficits led respected economists in the early 1980s to give policy advice which played down the problem stemming from excessive current account deficits among many developed countries.<sup>5</sup> The ink had hardly dried on these proposals before major crises struck many of these countries. Another variation on this view of the current account deficit as an inter-temporal phenomenon is the theory that it is harmless as long as the public sector remains in balance. This is often referred to as the Lawson Doctrine, after the British Chancellor of the Exchequer, Nigel Lawson.<sup>6</sup> This doctrine suffered a serious loss of credibility after a persistent current account deficit in the UK ended with a devaluation of the pound and Britain's exodus from ERM in 1992. The same arguments have surfaced occasionally since then, whenever countries have faced major current account deficits, e.g. in Mexico in the antecedent to the crisis in the mid 1990s, a number of Asian countries in the build-up to the crisis there a few years later, and Iceland in the build-up to the currency crisis, if that is the right term, in 2001.<sup>7</sup>

4. See Obstfeld and Rogoff (1996) and Blanchard (1983).

5. Thus Sachs (1981) played down the risk of the heavy current account deficits in Brazil and Mexico because they were supposed to reflect increased investment and had formed in a context of growing or stable national saving. At the same time Robischek (1981), an influential official with the IMF, did not see any grounds for concern about Chile's current account deficit amounting to 14% of GDP. Shortly afterwards Chile was struck by a major currency and financial crisis which led to a 14% contraction in GDP.

6. A number of respected economists had endorsed this viewpoint, e.g. Corden (1984), who claimed that a current account deficit originating in changes in private sector behaviour, increased investment or less saving should not be cause for concern.

7. Whether the term "currency crisis" is appropriate to describe the turmoil in Iceland's foreign exchange market in 2000-2001 is matter of definition. All such definitions are arbitrary, and have primarily served the purpose of distinguishing periods of stress from tranquil periods in empirical work searching for leading indicators of financial crises. Under some of the criteria that have been applied, Iceland's foreign exchange market turmoil would be classified as a currency crisis. Frankel and Rose (1996), for example, set their reference point as a weakening of the nominal exchange rate by at least 25% over a single year, or by 10% more than the preceding year. This is not what matters, however, but rather the fact that the changes in both the exchange

The inter-temporal approach to the current account deficit is apparently based on simple and obvious truths. It therefore comes as no surprise that the Lawson Doctrine should tend to resurface a few years after a currency crisis which can be linked to an excessive current account deficit has occurred. However, empirical evidence indicates that simple models of inter-temporal private sector decisions ignore some important causal relationships.

The currency and bank crises during the last two decades of the 20th century highlighted the part played by large current account deficits in the run-up to financial crises that struck several countries, some of which had long been regarded as models for sound macroeconomic policies. The concept of a sustainable current account deficit became an important theoretical and politico-economic issue. Also, current account deficits were increasingly viewed as a problem caused by capital inflows.<sup>8</sup> In particular it was pointed out in Mexico's case that the current account deficit was to a large extent financed with inflows of short-term capital, especially increased portfolio investment, which could quickly be reversed. In Thailand, attention focused on heavy demand for short-term borrowing abroad which was re-lent domestically for longer periods, e.g. for real estate purchases. In their comprehensive study, Corsetti, Pesenti and Roubini (1998) concluded that, on the whole, the countries hit hardest by currency crises were those which had persistent current account deficits throughout the 1990s. Although this was not

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rate and foreign reserve over the period 2000 to 2001 can be clearly distinguished from fluctuation that it is normal to expect in the Icelandic foreign exchange market. Although the króna was floated before it came under serious attack, the net foreign reserve was severely depleted in order to prevent excessive depreciation before and after the króna was floated in March 2001. Kaminsky and Reinhart (1999) use an index consisting of the weighted average of exchange rate changes and foreign reserve. A crisis is defined as taking place when this index diverges from the mean by more than three times the standard deviation. By this yardstick Iceland came close to a crisis in March 2001, i.e. the index approached the threshold but did not cross it (data for end of month). Eichengreen, Rose and Wyplosz (1995) define a crisis in terms the extreme values of a speculative pressure index which is a weighted average of exchange rate changes, changes in foreign reserve and interest rate differential towards a reference country (Germany). Sachs, Tornell and Velasco (1996) measured the "Tequila Effect", following the Mexican currency crisis, by an index composed of a weighted average of the decrease in exchange rate against the US dollar and percentage changes in the reserve.

8. See, e.g., Calvo et al. 1993; Edwards 1993.

a universal truth, it apparently became a consensus view afterwards that a current account deficit in excess of 5% of GDP generally represents a problem, especially if it is funded with short-term borrowing.

In order to estimate the maximum size of a sustainable current account deficit, various models have been proposed defining it as one which is consistent with solvency, which in turn entails that a stable debt-to-GDP ratio must be achieved. The scale of deficit that can be sustainable in this sense varies across countries and depends among other things on factors affecting demand for the respective country's debt and its prospective economic growth. Ades and Kaune (1997) attempted to assess the sustainability of the current account deficits of 25 countries.<sup>9</sup> According to their findings, a sustainable current account deficit lies normally in the range 2%-4½% of GDP. However, such assessments are subject to uncertainties, including long-term economic prospects and demand for debt instruments of the country in question. If demand changes, it is also likely to result in sharper short-run current account adjustment than is required in the long run, even if the impact of current account reversal on economic growth is ignored.

Empirical studies of the relationship between current account reversals and economic growth have not produced unequivocal results. The weak relationship between the reversal and growth, however, is probably due to ignoring its indirect impact through investment. One of the most comprehensive studies was made by Edwards (2001), who examined the statistical impact of a current account reversal on growth with a particular emphasis on analysing the lagged effect caused by lower investment. His finding was that a current account reversal, defined as a decline in deficit of 3% of GDP in one year, resulted on average in a 1.8 percentage point contraction in private sector investment. The relationship between current account deficits and financial crises was also examined and revealed that a large deficit amplifies the risk of a currency crisis.

Overall, Edwards (2001) concludes that there is strong evidence that a large current account deficit should be a cause of concern for economic policy.

9. The findings are presented in Edwards (2000).

Obviously this does not imply that a large deficit always leads to a crisis, nor that a crisis can only occur if a large current account deficit is present.

In an article on the current account deficit in *Monetary Bulletin* 2001/1, this author concluded on the basis of previous deficit periods in Iceland and abroad that in the aftermath of a period of large current account deficit, which then had recently peaked, there could be a much lower rate of economic growth than had been recently forecast and perhaps a contraction in domestic demand. This has since turned out to be the case. However, the financial system, so far at least, has escaped in better shape from the aftermath than could have been expected on the basis of historical comparisons. The current account reversal was one of the fastest that has been observed among advanced countries. If the present projection for 2002 holds good, there have only been two instances of a sharper current account reversal in an OECD country for at least three decades than Iceland experienced between 2000 and 2002. This point is addressed in more detail below. With the exception of Norway and Iceland, reversals on such a scale have been associated with serious currency, fiscal or financial crises. In Iceland's case this may be referred to as a currency crisis, as pointed out earlier, but hitherto the financial system has avoided serious consequences. Private consumption contracted much more in the cases of South Korea and Mexico, but by less in Norway's case. The relatively benign aftermath in Iceland warrants a closer examination of the mitigating factors that reduced the strain on the domestic economy during the adjustment compared to countries that experienced a reversal of a similar magnitude. This will be discussed in Section IV; the following section attempts to identify the source of the rising current account deficit over the period 1998-2000.

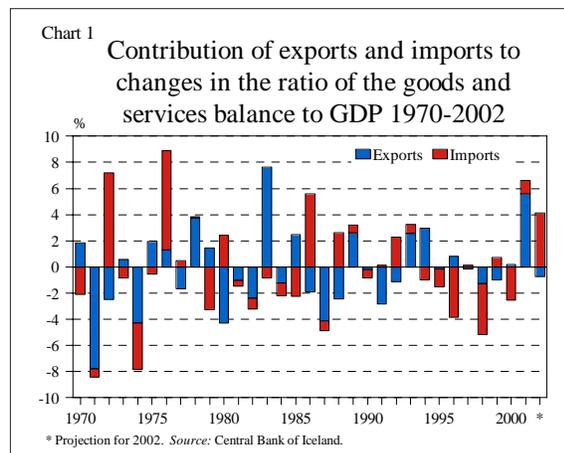
### III Roots of the current account deficit in 1998-2000

There is no single explanation for the origin of a current account deficit. Economic developments are invariably the result of a number of interacting factors which may pull the economy in various directions, or mostly or entirely in a single direction. Hereafter the rise in the current account deficit in

1997-2000 will be analysed from a number of perspectives. While these do not all lead to the same conclusion, they provide some insights into the economic forces that contributed to the rising current account deficit.

#### *Rising imports contributed more to the deficit than slow export growth*

A current account deficit can be formed either by a slowdown in export growth or an increase in import growth. When the current account deficit widened substantially during previous episodes of large deficits in Iceland, both factors were generally at work. Contraction in exports was the main cause of the deficits that emerged in 1967-1968, 1972, 1975 and 1988. The recent episode was unique insofar as the deficit could overwhelmingly be attributed to a sudden surge in imports, especially in 1998. This is clearly shown in Chart 1, where changes in the ratio of the goods and services balance to GDP are broken down into corresponding changes in the ratio of imports and exports. In 1996, 1998 and 2000 the deficit rose sharply, in all cases due to swelling imports.



From 1996 to 2000 imports increased by an average of almost 12% per year. Imports of consumer goods increased by an annual average of 10%, of which motor vehicle imports rose by 17%. By comparison, real disposable income grew by 5% per year over the same period. Imports of investment goods increased by 15½% annually and imports of intermediate goods by 8½%, of which imports for power-

Table 1 Balance on goods, services and income 1995-2002

<i>B.kr. at current prices</i>	1995	1996	1997	1998	1999	2000	2001	<i>Q1-Q3 2002</i>
Balance on goods.....	13,356	1,201	254	-25,019	-22,382	-37,480	-6,123	10,745
Balance on services .....	3,169	1,880	2,977	-822	-6,934	-9,525	2,275	2,739
Balance on income.....	-12,829	-11,317	-12,116	-12,647	-12,567	-19,353	-25,086	-12,540

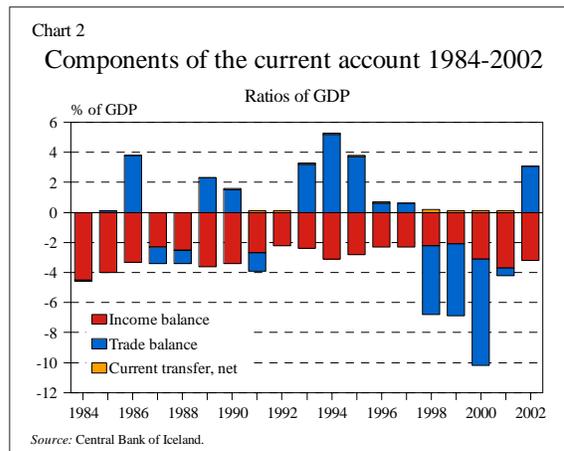
intensive industries rose by more than 14%. On average, exports of goods and services grew by 4.3% over the period, or roughly 1 percentage point in excess of the average growth rate for the preceding three decades. The export growth maintained from 1996 to 2000 can therefore be considered as acceptable from a historical point of view. However, export growth over the past several decades has been anaemic relative to the expansion of global trade.

*Merchandise trade was the principal contributor to the current account deficit but the deficit on the balance on income was the largest since the mid 1980s and the service account deficit the largest ever recorded*

The rise in the current account deficit over the period 1998-2000 can mostly be attributed to changes in merchandise trade, but the service and income accounts also made a sizeable contribution. As a proportion of GDP, the service deficit reached a record level in 1999 and 2000, when it was in the range 1-1½%. This reflects the rising share of services in the economy in general, at the same time as income from services to the US military in Iceland has been

declining.<sup>10</sup> It should be borne in mind that a substantial share of service trade is related to major investments, making it a fairly volatile aggregate. Nonetheless, an upswing in service expenditure has often coincided with an upswing in service income, partly due to business conducted by foreign contractors with domestic subcontractors.

The balance on income deficit, which amounted to 3% and 3.7% of GDP in 2000 and 2001 respectively, has sometimes been larger, however. Over the periods 1982-1986 and 1989-1990 the balance on income was negative by 3% of GDP on average, and peaked at 4½% in 1984. The net international investment position at these times was somewhat more favourable than in 2002; the heavy debt service burden is explained by higher foreign interest rates. In 2002, however, Iceland benefited from favourable interest rates abroad and businesses appear to have responded to take advantage of the particularly low short-term rates, i.e. by shortening the maturities of their outstanding debt. Contrary to what might have been expected, given the growing stock of debt, the service account deficit therefore declined as a proportion of GDP last year.<sup>11</sup>



*Consumption growth explains almost half of the increase in the trade deficit in 1998-2000*

If rising investment rather than an unsustainable upswing in consumption explains a large share of the increase in a current account deficit, the probability of a sharp slowdown in economic growth in the aftermath should be smaller. One way to assess the respective impact of investment and consumption is

10. Income from the US Defence Force amounted to some 8% of export revenue in the early 1980s, but 4½% in 2000.

11. The appreciation of the króna by 3% between the years on average, which reduced the value of the stock of foreign debt in króna terms, was only a minor contributing factor.

to break, in the same way as before, changes in the ratio of the balance on trade to GDP into changes in these aggregates relative to GDP. An appropriate benchmark is 1997, when the economy was broadly in balance, externally as well as internally. Demand was by and large in line with potential output, the trade balance was in slight surplus (0.6% of GDP), but a minor current account deficit reflected net interest payments to abroad. As a proportion of GDP, investment then was probably not far from the level necessary to sustain a satisfactory rate of long-term growth. In 1997, total consumption (public and private) and investment were equivalent to more than 99% of GDP, while the average over 1998-2000 was more than 105%, i.e. the share of national expenditure grew by 6 percentage points over and above GDP, roughly corresponding to the change in the trade deficit.

Table 2 Estimated share of expenditure items in gross national product

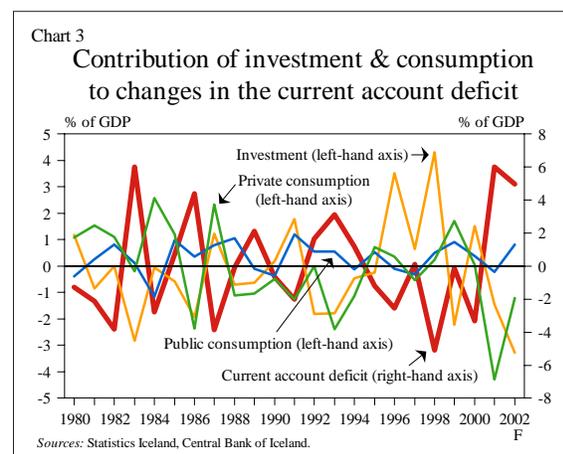
Percent of GDP	1997	1998-2000	Change
Investment .....	20.2	23.5	3.3
Consumption .....	79.2	81.8	2.6
Private consumption .....	57.2	58.6	1.4
Public consumption .....	22.0	23.2	1.3
Total .....	99.3	105.3	6.0

Using 1997 as a benchmark, increasing investment accounts for more than half of the change in the trade deficit over the period 1998-2000, and consumption growth just under half. The contributions made by private and public consumption were about equal. However, if the 1998-2000 episode is compared with the period 1992-1996, when there was external balance on average, increased investment emerges as the most important contributor to the trade deficit by far. Since the results are obviously sensitive to the choice of reference period, conclusions should be drawn cautiously. However, the period 1992-96 is in many respects much less suitable as a benchmark than 1997, due to the protracted economic weakness during the period and abnormally low level of investment. Be that as it may, if the study is confined to economic events after 1997, it can be concluded that private consumption growth in excess

of GDP played a considerable part, which may suggest that the current account deficit posed a substantial risk.

*Investment explained increasing deficit in the beginning of the upswing, but growing consumption at the end*

It is worth examining more closely how changes in consumption and investment have contributed to the current account structure on a year-by-year basis. Chart 3 shows, as before, the annual change in the current account deficit as a proportion of GDP, broken into corresponding changes in the ratios of private consumption, investment and public consumption. It clearly shows how the current account deficit initially increased in the context of rising investment in 1996 and 1998. In 1999 investment contracted, but private consumption growth sustained the current account deficit and was the main contributing factor in 2000.



*Three-fifths of the increase in current account deficit in 1998-2000 can be attributed to a decline in national saving*

Yet another perspective on the formation of the current account deficit can be gained by attributing changes in the deficit to changes in national saving and investment. National saving is defined as the sum of investment and the current account balance. If a sharp decrease in national saving has contributed a great deal to the current account deficit, the more likely it is to herald a sudden slowdown in GDP growth later on. In 1998 national saving amounted to

18½% of GDP, but by 2000 it had dropped to 13½%, or by 5 percentage points of GDP.<sup>12</sup> Of the proportional increase in the current account deficit from 1997 to the period 1998-2000, some three-fifths may be attributed to less national saving, and just over two-fifths to greater investment and inventories.<sup>13</sup> Deficit formation between 1995 and 1998, however, is entirely explained by increased investment.

Chart 4 shows the effect of changes in national saving and investment on the current account deficit over the past two decades. During this period changes in national saving were generally the decisive factor in determining the current account deficit, but 1996 and 1998 stand out for being driven by investment growth. One has to go as far back as 1971 to find an example of an upswing in investment which contributed as much to changes in the current account balance as that in 1996 and 1998.

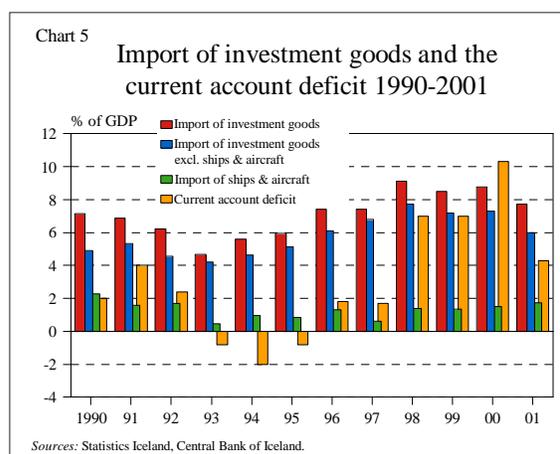
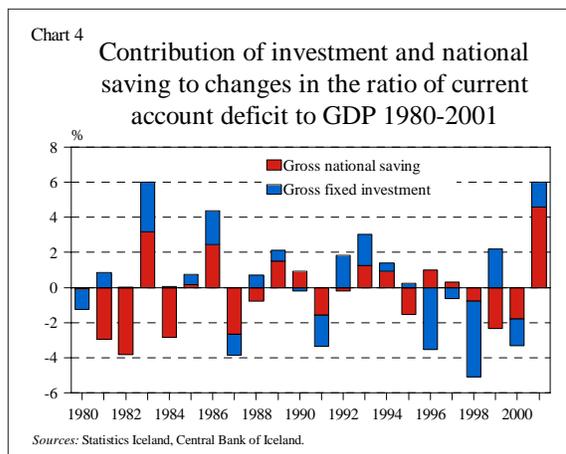
In both cases, investment grew exceptionally rapidly in the wake of a low in investment: in 1971 fol-

lowing the collapse of the herring stocks in 1970. Indeed, if external balance had been achieved solely through a decline in investment, it would have dropped to a historical low.

*The current account deficit in 2000 exceeded total imports of investment goods*

A current account deficit which is formed largely as a result of an upswing in investment can be expected to reverse once imports of investment goods return to normal. Comparing the size of imports of investment goods and the current account deficit gives a hint as to what extent such a benign development is likely. As Chart 5 shows, the year 2000 was exceptional. Over the entire period for which comparable data on imports of investment goods are available, this was the first time that the current account deficit outstripped total imports of investment goods.

In 2000 a deficit amounting to 1.7% of GDP would have remained even if imports of investment



lowing a recession triggered by the collapse of the herring stock, and in the latter period after a persistent weakness in the first half of the 1990s. The difference between the two periods, however, is that when investment as a proportion of GDP peaked in 1998, it reached roughly the same level as in the

goods had come to a total halt, or 6.3% if they had gone down to the low of 1993. This indicates that the likelihood of a smooth adjustment of the current account deficit in 2000 was rather small.

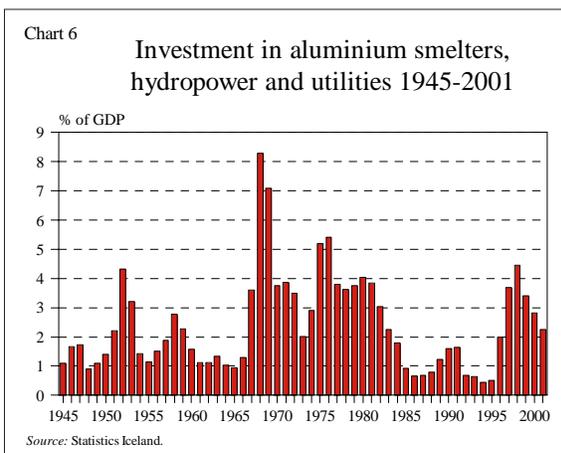
*Large-scale investment projects in the aluminium sector had a considerable impact, but less than at certain times in the past*

One of the events which sparked off an upswing in investment in recent years was the construction of a new aluminium smelter, the enlargement of an existing one and the accompanying hydropower facilities.

12. It should be pointed out that national saving not only dropped relative to GDP. Over the period 1997-2000 it shrank by 10 b.kr. at respective prices for the years.

13. The contribution made by national saving is somewhat less if 1996 is used as the reference year.

Such projects are highly capital-intensive, call for large-scale imports of investment goods during the construction period and have a sizeable transitory impact on domestic demand. Hence, it is interesting to estimate the share of imports of investment goods accounted for by these investment projects. Accurate data on the imports accompanying these projects is hard to get, since they are largely handled by a plethora of subcontractors. However, a rough assessment of their scope can be made by assuming that imported goods account for 40-50% of the investment on average. On this assumption, imports of investment goods for the construction of aluminium smelters, hydropower and utilities probably amounted to 2% of GDP in 1998 and 1% in 2000. This is a sizeable impact, but far less than on some occasions when such projects were in progress in the past, as Chart 6 shows. In 1968, for example, the proportion of investment of this kind exceeded 8% of GDP and it was also very high in 1975 and 1976, when the current account deficit was very large as well.



*Businesses with no export revenues probably accounted for an unusually large share of imports of investment goods*

A current account deficit which is largely attributed to rising investment is more likely to abate without abrupt adjustment than if consumption is the determining factor. However, the proportion of investment by itself is not a sufficient criterion. Investment in the non-traded goods sector does not increase the economy's future export revenues, and is likely to be

primarily linked to an expansion of domestic demand, which may be unsustainable. Hence, such investment is more likely to culminate in abrupt adjustment than if the rise in investment is mostly confined to the export sectors. Data on the distribution of investment between the traded and non-traded goods sectors are scarce. However, the amount of investment in commercial and office premises, which appears to have been close to the historical peak in 1999-2001, does provide some hint. This may nonetheless to some extent be explained by the exceptionally deep and protracted slump in such investment in the early 1990s.<sup>14</sup> The presumably high ratio of investment in the non-traded goods sector increases the risk posed by a large deficit, especially since in 2000 a considerable share of the investment by businesses without export revenues was financed by foreign currency-denominated loans. For example, the proportion of foreign currency-denominated debt in the retail sector rose from 20% of total debt in 1997 to 41% in 2000.<sup>15</sup>

*A surge in the imports of investment goods and consumer durables played a large part in creating the current account deficit, but in 2000 more than three-fifths of it originated from other sources*

Just as business investment involves as rise in the stock of capital which is consumed over a long period and generates a stream of future income to service higher debt, households expecting a rise in their future stream of income may raise their stock of durables but spread their consumption over long periods after their importation and payment. If the real exchange rate of the domestic currency is quite volatile, it can actually be optimal to time purchases of consumer durables at the peak of an upswing, when the domestic currency is strong and the relative price of imports low, although their consumption is dispersed over a longer period. For a better picture of the inter-temporal properties of a current account deficit, the contribution of stock adjustment in con-

14. It is also conceivable that the need for office space has grown among emerging export industries such as software, so it cannot be taken for granted that such an investment does not generate future export revenues.

15. Even private individuals borrowed considerable amounts abroad in 2000, or 17 b.kr. In the beginning of 1998, this was virtually unheard-of.

sumption of durables as well as investment ought to be examined.

As a small country, Iceland imports the lion's share of its investment goods and virtually all consumer durables. Since both investment and purchases of consumer durables are sensitive to the business cycle, current account deficits of small open economies tend to be more volatile than those of larger economies, widening during an upswing in investment and private consumption and shrinking rapidly during a downturn.

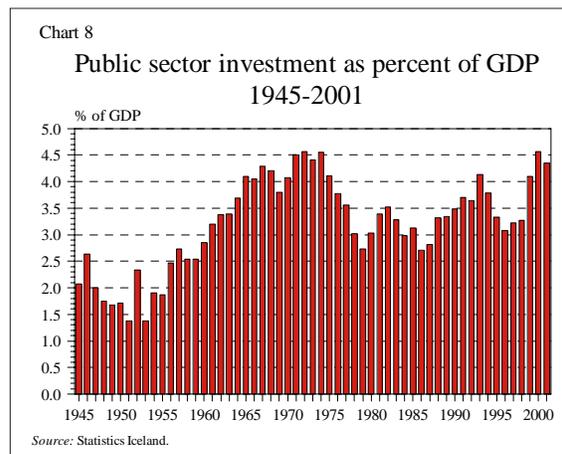
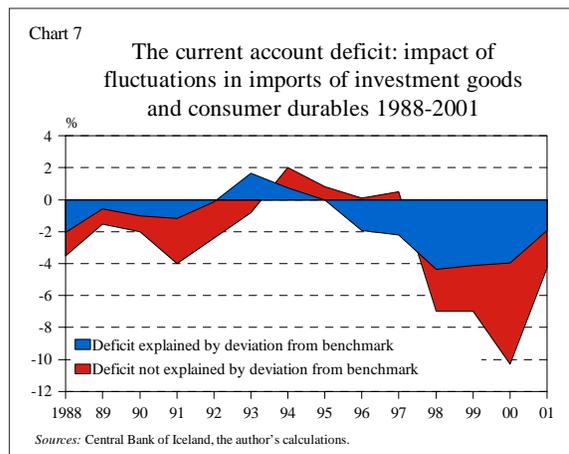
Chart 7 illustrates the impact of imports of investment goods and consumer durables on the current account balance. Imports of these items in 1995, when foreign trade was broadly in balance, are used as a benchmark and the deviation from that position is calculated as a proportion of GDP. The difference between this figure and the size of the current account deficit can then be interpreted as an indication of the share of the deficit which is not caused by the inter-temporal decision-making of households and businesses, and may thus indicate the size of an unsustainable deficit. Fluctuations in imports of investment goods and consumer durables clearly played a major part in the formation of the deficit in 1998-2000. A sizeable portion of it, amounting to more than 6% of GDP in 2000, cannot be explained in these terms, however. On the other hand, it should be noted that swings in investment may have had a greater effect on the current account deficit than is shown in the chart. A considerable amount of transitory services are generally bought from foreign con-

tractors and experts in connection with major investment projects. Contractors also import a substantial amount of intermediate goods during the construction period. However, it is difficult to assess the net contribution of the trade in services and intermediate goods to the current account deficit, since foreign contractors may in turn buy services from domestic subcontractors, thus increasing cross-border revenue and expenditure on services simultaneously.

*The public sector's direct impact was probably positive*

Public sector activity can have both direct and indirect effects on the current account deficit. Construction projects by the public sector may require imports of investment goods, thereby exerting a direct influence on the deficit. At the same time, public sector activities affect total demand in the economy, and an increase in them can also have some psychological effect.

The direct impact is difficult to ascertain, since it is not known how large a share of investment good imports is accounted for by public sector projects. Assuming that the imported share of total investment is relatively stable, however, the direct public sector impact is likely to have been positive (i.e. it stimulated the current account deficit). At best, public sector activity can be described as not overly pro-cyclical. As a proportion of GDP, public sector investment grew considerably from 1996, but that partly reflects a rising share of wages in GDP. In any case, public sector investment policy does not seem to have been



counter-cyclical; if anything, the opposite is true. Public sector investment increased by roughly 14% per year in real terms from 1997 to 2000, while average growth over the preceding three decades was less than 3%. This suggests that public expenditure policy could have been used in a more counter-cyclical way.

*The public sector's structural balance had a negative impact on demand in 1998-2000, but the effect of overheating on the fiscal balance may be underestimated*

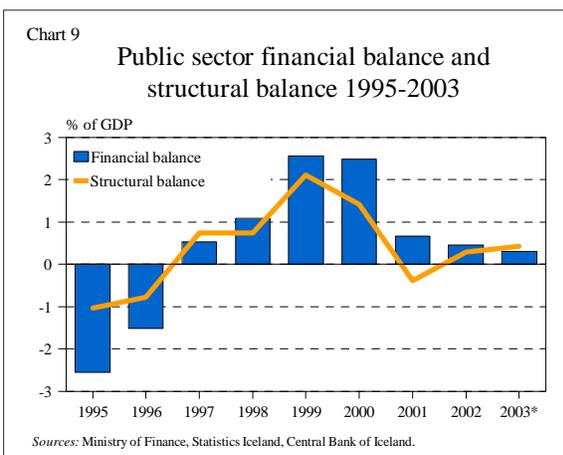
A measure of the structural fiscal balance, i.e. the public sector surplus or deficit which would remain when output is close to potential, is often used to assess the fiscal stance. For each percentage point that GDP grows in excess of output capacity, revenues are thought to increase by approximately 1.1%. Measured in these terms, the overall fiscal stance tightened somewhat in the second half of the 1990s. This applies in particular to the treasury, which showed a structural surplus in 1999 and 2000 equivalent to more than 2% of GDP. On the other hand, the cyclical impact on treasury revenues is probably underestimated using conventional methodologies, since they are extremely sensitive to import volatility, which was the chief cause of the current account deficit.

The fiscal stance can also be assessed by comparing growth in state or public sector outlays, net of increases in population and the inflation rate, with the increase in revenue over and above nominal GDP

growth. By this yardstick, the fiscal stance was relatively neutral during the period of overheating.<sup>16</sup>

The conclusions of the above may be summarised as follows:

- Unlike many previous deficit periods, the current account deficit in 1998-2000 was primarily explained by import growth rather than a contraction or slow growth of exports.
- Almost half the deficit can be explained by a higher proportion of (private and public) consumption, which must arouse serious suspicions about its sustainability. An upswing in investment was the main contributing factor at first, but growth in private consumption became the dominant factor at later stages.
- Changes in national saving had considerably more effect than investment on the formation of the deficit – yet another sign that it was unsustainable.
- A further indication of how perilous the deficit had become was that in 2000 it was, for the first time on record, considerably larger than total imports of investment goods.
- Large-scale investment projects played a considerable part, although less than often before.
- Investment by businesses which have no foreign currency revenues probably contributed to an unusually large share of the increase in the external deficit, compared to previous waves of investment.
- The direct impact of the public sector was probably negative, and the share of public sector investment in GDP grew over the period.
- The indirect impact of the fiscal stance through domestic demand was apparently negative, but conventional cyclical adjustment probably underestimates the cyclical impact of an upswing on treasury revenues.



16. Yet another perspective can be obtained by comparing public and private sectors balances. From this point of view, increased private expenditure accounted for more than the entire current account deficit. The estimated total public sector surplus from 1998-2001 amounted to 37 b.kr. at the same time as the private sector deficit was several times greater, after having been in balance in 1996.

#### IV The current account reversal 2001-2002

##### *The current account reversal in Iceland 2001-2002 was the third largest within the OECD for three decades*

Iceland's current account is projected to have been roughly in balance last year, or slightly in surplus. The deficit has therefore shrunk by more than one-tenth of GDP over a period of two years. A reversal on such a scale is rare among developed countries. During the past three decades there have only been two instances within the OECD of faster current account reversals over a two-year period. South Korea's trade account swung from a 4.4% deficit in 1996 to a 12.8% surplus in 1998 and Norway's from a 14% deficit in 1977 to a 2.2% deficit in 1979. Close behind come Ireland 1981-1983, Turkey 2000-2001 and Mexico 1994-1996. Other examples include New Zealand 1986-1988 and Finland 1991-1993. Various other countries outside the OECD could be cited, such as Thailand and Russia, which have been through very sharp reversals in recent years. Both South Korea and Mexico experienced a financial crisis shortly after joining OECD.

A common feature of the four most dramatic reversals in the history of OECD is a sharp contraction in domestic demand, after a period of rapid growth, and a substantial increase in exports during the adjustment period. In other respects they differ in many ways. Norway's position, for example, is distinguished by the fact that output growth remained strong during the adjustment period – because oil exports soared following a period of investment in the oil industry, which was the root of the deficit, at the same time as imports of investment goods contracted. In comparison with the other countries there was relatively little decline in private consumption, or 1.2% over two years. GDP growth in Iceland appears to have been close to zero last year, while in Mexico and South Korea it shrank by 6-7% following a sharp depreciation of their currencies. The sharp decline in GDP in these countries was primarily the result of a larger contraction in private consumption than in Iceland and Norway.

It should not come as a surprise that both these countries had to tackle difficult bank crises as well as a currency crisis. Of the four countries, domestic demand contracted least in Iceland, or by just over

6% in 2001 and (according to forecast) 2002. The investment boom in Iceland was not as great as in Norway when the development of the oil industry was at its peak, and it contracted by correspondingly less. The decline in private consumption, on the other hand, was larger in Iceland than in Norway. Unlike South Korea and Mexico, Iceland's financial system emerged in a fairly strong position from the downswing, at least in the short run, explaining the milder contraction in domestic demand in Iceland compared to these two countries.

In comparison with earlier current account reversals in Iceland, the reversal during the period 2000-2002 was the sharpest over two years, along with the one in 1947-1948. However, since it occurred in a single year, the reversal following World War II can be considered even sharper. In 1968-1970 there was also a reversal of roughly the same magnitude, during a period of adjustment to the collapse of the herring stock, helped by improving terms of trade in the second year. Other periods of sharp reversals on a scale close to those two were in 1975-1976 (8.7% in a single year), when the terms of trade improved and exports rallied after a downturn, in 1960-1962 (7.7%) for the same reason, and in 1982-1983 (6%), when exports grew at the same time as imports shrank in the wake of a devaluation.

##### *External conditions were favourable during the adjustment period*

Changes in external conditions, such as the terms of trade, can bring about or have a substantial impact on the speed of adjustment in the external balance of the economy. Thus it is interesting to compare the development of external conditions during the recent and previous periods of reversal in Iceland and other countries. In 1997-1998 Iceland's terms of trade improved considerably, but deteriorated somewhat with rising oil prices in 1999 and 2000, which added to the deficit in the latter year. On the other hand, in 2001 and 2002, when the reversal was in full swing, the terms of trade were relatively favourable, apart from aluminium prices, which were low.<sup>17</sup> This was caused by rising prices of marine products from mid

17. Since the price of imported raw materials for aluminium production tends to change in pace with aluminium commodity prices, however, the impact on the terms of trade is less than otherwise.

Table 3 Comparison of the six largest two-year current account reversals within the OECD since 1973

%	Percentage of GDP			Maximum contraction or minimum growth in domestic demand and output in one or two years				Change over two-year adjustment period	
	Current account, at peak	Current account, 2 years later	Size of reversal	Aggregate domestic demand	Gross fixed investment	Private consumption	GDP	Export growth	Import growth
	South Korea 1996-1998 .....	-4.4	12.8	17.2	-20.4	-22.9	-11.7	-6.7	38.5
Norway 1977-1979.....	-14.0	-2.2	11.8	-9.2	-22.6	-1.2	4.7	30.5	-6.7
Iceland 2000-2002.....	-10.3	0.0	10.3	-6.2	-17.8	-4.5	0.0	13.7	-12.0
Ireland 1981-1983 .....	-13.4	-5.9	7.5	-4.7	-12.7	-7.1	-0.2	16.6	-3.1
Turkey 2000-2001 <sup>1</sup> .....	-4.9	2.3	7.2	-18.4	-31.7	-9.0	-7.4	7.4 <sup>1</sup>	-24.8 <sup>1</sup>
Mexico 1994-1996 .....	-7.1	-0.7	6.4	-14.0	-29.0	-9.5	-6.2	53.9	4.5

1. One year. Turkey's exports grew by one-fifth in 2000, the same year that the current account deficit peaked, but imports by one-quarter.

2000 to autumn 2002 and a decline in oil prices in 2001. The fish catch was also strong, with a good harvest of pelagics last year. In 2001 exports rose by almost 8% in volume terms, and export revenues, i.e. the purchasing power of exports relative to imports, by a similar amount.<sup>18</sup> It is difficult to distinguish between, on the one hand, the impacts of the fish catch and increasing value added which may be attributed to technological advances and marketing activities in previous years, and, on the other hand, the reaction of the fisheries to the depreciation of the króna. Increased aluminium exports are the result of investment in preceding years. Growing aluminium exports accounted for approximately one-fifth of the contraction in the current account deficit in 2001. On the whole, however, it seems fair to conclude that relatively favourable of external conditions significantly accelerated the shrinking of the current account deficit in 2001 and 2002.

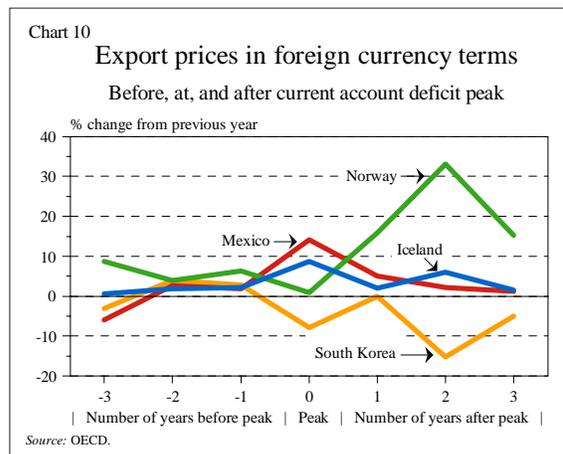
The contribution of favourable external conditions to reducing the trade deficit is reflected in the large share attributed to exports in 2001 and imports in 2002 in Chart 1 above. Favourable export prices, high levels of exports and the depreciation of the króna had the combined effect in 2001 of boosting

exports by 31% in nominal terms, at the same time as nominal growth of imports was less than that of GDP, which increased by 13%. The following year saw a decrease in volume of imports combined with lower import prices. Exports, however, rose somewhat in 2002, but prices (particularly of aluminium) declined and export growth lagged behind GDP.

External conditions in Norway during its current account reversal in the late seventies were even more favourable than in Iceland recently. Export prices soared in 1979-1981, when oil prices rose at the same time as Norwegian oil production rose rapidly. In this light, Norway's relatively painless adjustment is not surprising. In South Korea, which experienced the sharpest reversal, conditions were less favourable. Prices of exports from South Korea and other emerging market economies in Asia plunged in 1996 and again two years afterwards (see Chart 10). Deteriorating terms of trade, combined with other factors, weakened the economies of many Asian countries severely enough to cause a costly currency and banking crisis, while a contagious effect amplified the crisis even further. Mexico, on the other hand, resembled Iceland in the sense that external conditions remained relatively favourable during the current account reversal. The sharper slump in domestic demand in Mexico than in Iceland can be explained in terms of the massive flight of short-term capital once foreign investors who had recklessly invested in high-yield Mexican bonds became con-

18. Around one-quarter of export growth during the year is attributable to greater aluminium production, but this is offset by increased imports of raw materials for it.

vinced that the exchange rate of the peso was too high and could not be defended. Negligible amount of Icelandic bonds were held by foreign investors, which limited the risk of capital flight compared to countries that experienced a surge of inward portfolio investment prior to a period of current account reversal.



Low international interest rates also contributed to favourable external conditions of the Icelandic economy during the adjustment period. It significantly reduced the burden of servicing the foreign debt in 2002. In the first three quarters of 2002 net interest payments to abroad were only 23.8 b.kr., compared with 32.5 b.kr. during the corresponding period the previous year.<sup>19</sup> This is noteworthy given the considerable accumulation of foreign debt in recent years. Besides favourable interest rates, especially short-term, which borrowers took advantage of by shortening the maturities of their outstanding debt, net interest payments were also affected by the appreciation of the króna and the depreciation of the US dollar against other currencies.<sup>20</sup>

*Decreasing imports of investment goods and consumer durables explain less than half of the reversal in the current account in 2001*

While imports of investment goods and consumer

durables decreased markedly in 2001, the share of the current account deficit not accounted for by these changes shrank even faster (see Chart 10 above). Of the 6% of GDP reduction in the current account deficit in 2001, around 2% can be attributed to decreasing imports of investment goods and consumer durables, and 4% to other factors.

The large part played by swings in imports of consumer durables and investment goods in the expansion and contraction of current account deficits in Iceland is in some ways an advantage. If the economy were more closed and self-sufficient in consumer durables and investment goods, such swings would be reflected in domestic demand. Labour demand would be more affected and unemployment would probably be higher on average. Swings in imports and the current account deficit indeed serve to cushion the business cycle in Iceland and are to a certain extent desirable. But when they become excessive, as happened in 1998-2000, they are also a symptom of underlying stress and a potential source of economic instability.

*Interaction of debt dynamics and the exchange rate expedited the reversal of the deficit*

There is little doubt that exchange rate adjustment played a key role in the current account deficit reversal over the past two years. On average, the nominal exchange rate of the króna was 17% lower in 2001 than the year before, and 13% lower in real terms (relative to prices). This was the largest depreciation in the exchange rate since 1989, but inflation was much higher then and the resulting decline of the real exchange rate smaller. One has to go back to 1975 to find a period of an equally large or a larger drop in relative consumer prices, while the decline in relative unit wage cost was similar in 1983 and 1989. The depreciation of the króna affects the current account balance through various channels:

- Firstly, a weaker exchange rate affects aggregate demand. It unleashes rises in import prices and prices of domestically competing goods. Real wages decrease, or increase more slowly than otherwise, affecting private consumption correspondingly. A substantial depreciation is also likely to have a negative effect on individuals' expectations about their future real wages.

19. The exchange rate was approximately the same in both periods.

20. The share of the US dollar in Iceland's external debt is probably close to 2/5, but it weighs under 1/4 in the official exchange rate index.

Bleaker expectations affect demand, especially for consumer durables, because these are consumed and paid for over a long period and are therefore more susceptible to changes in expectations about future earnings, and are also easy to postpone when the outlook worsens. The impact of a weaker exchange rate on business investment is less obvious, since opposing forces are at work. The price of imported investment goods rises when the exchange rate of the domestic currency weakens, reducing the return on import-intensive investments. If business indebtedness is largely foreign currency-denominated, as is the case in Iceland, the weakening of the domestic currency has a negative effect on the debt service burden of businesses, reducing their profitability and capacity for further investment. If prospects for growth in private consumption deteriorate this can also be expected to discourage investment by businesses which primarily sell in the domestic market. On the other hand, a depreciation increases gross profits of exporters, and foreign borrowing should become particularly favourable during a period of a weak domestic currency. In the short run, however, the negative impact on corporate investment of a sudden large depreciation is likely to dominate, since this is invariably associated with a poorer growth outlook.

- Secondly, exchange rate changes have an impact on relative prices of imports and exports. Imports become relatively more expensive than domestic goods. Since competition with domestic substitutes is often limited or lacking, the pass-through of exchange rate changes is fairly quick, but by the same token needs to be quite large in order to affect imports significantly. The small size of the domestic market also limits the response of exports to exchange rate changes. The domestic market accounts for only a small share of the revenues earned by most major exporters, which are in the fisheries and aluminium sectors. Thus their scope or need for responding to exchange rate changes by channelling supply from the domestic market into foreign ones is probably less than if the domestic market were more important. The effect of a currency depreciation on exports is likely to be felt more in terms of enhanced business profitability than as a direct result of export

markets becoming more attractive than the domestic one in terms of prices. Furthermore, the existence of fishing quotas and the long gestation period of investments in the aluminium industry further limits the adjustment of exports to variations in the exchange rate. Tourism, however, should be fairly sensitive to lasting changes in the real exchange rate.

Assessment of the relative impact of the exchange rate on the current account balance is further complicated by the simultaneous impact of other cyclical factors, including debt dynamics, which can affect demand irrespective of exchange rate fluctuations.

- Firstly, insofar as an upswing in current demand reflects expectations about higher future income, spending on consumer durables and investment goods may revert to its former level after an initial stock adjustment.
- Closely related is the dynamics of debt and asset accumulation followed by a consolidation, which may also affect asset prices – both these factors affect demand.
- Furthermore, changes in external conditions can either speed up or slow down the pace of the reversal.

Which of these factors was most decisive in the current account reversal of 2000-2002 is uncertain, but presumably it was the product of several factors operating simultaneously. The upswing was probably faltering because the stock of capital and consumer durables had been brought in line with (or in view of the equity bubble, perhaps beyond) its desired level. At the same time households and businesses were adjusting their consumption and investment to a growing payments burden following a period of rapid debt and asset accumulation – and then the króna started to depreciate. The depreciation and resulting inflation slowed down real income growth and simultaneously caused the debt service burden to increase. Consequently, income which households had left for their disposal after taxes and net debt service payments declined in real terms. Private consumption then contracted as a result, which amplified the inevitable decline in investment. The interaction of the business cycle and exchange rate cycle can easily produce an impact which is greater than the

sum of its parts. This is particularly true if a sharp adjustment leads to a financial crisis, as happened in three of the six OECD countries that have experienced the greatest current account reversals in the past three decades.

It is interesting to speculate on the course of the adjustment if the króna had not depreciated. A depreciation is not a precondition for adjustment. Regional imbalances in large currency areas seek new equilibrium through relative price changes, which affect competitiveness, employment, and debt dynamics. However, as the most flexible of all relative prices in the economy, exchange rate changes speed up the rate of the adjustment. This is often emphasised by advocates of flexible exchange rate policy, of whom Milton Friedman is probably the best known. The dive of the króna in 2000-2001, however, invites the question of whether the pace of adjustment was excessive: whether excessive depreciation led to an unnecessarily large contraction of domestic demand, and to inflation and household and corporate bankruptcies. Favourable external conditions, however, softened the resulting recession and new large-scale investment projects may prevent a protracted slump. Had the terms of trade deteriorated at the same time as adjustment of domestic demand occurred in the wake of overheating, as in fact happened in South Korea, a spiral of capital flight and currency depreciation could have created a deep crisis. In this context the autonomous contribution of capital flows to the current account reversal in 2001 and 2002 is worth considering.

*Outflows of portfolio capital were not a major force in the depreciation of the króna after it was floated in 2001*

The current account is generally regarded as being determined by fundamentals, while its counterpart, the capital account, is often viewed, in pure accounting terms, as basically “passive” financing of the current account. Financial and currency crises over the past decade give grounds for questioning this view of the capital account. For example, a large inflow of indirect investment may be regarded as having fuelled the formation of a current account deficit in Mexico in the early 1990s and its subsequent flight played a major part in the 1994-1996 current account reversal. Thus swings in the current

account may to some extent be regarded as resulting from swings in the capital account.

The capital market has certainly been volatile in recent years. Nonetheless, it is difficult to conclude that speculative portfolio investment has had a decisive impact on the formation or disappearance of Iceland's current account deficit over this period. From 1998-2000, when the trade deficit was rising, a large-scale outflow of portfolio capital took place, particularly as a result of purchases of foreign securities by domestic pension funds. All things being equal this capital outflow contributed to higher domestic interest rates than otherwise, and therefore served to counter the upswing rather than contribute to it. The purchase of foreign securities by residents peaked in the first half of 2000, just ahead of the current account deficit, and therefore contributed to the weakening of the króna that began in the spring of that year. Towards the end of the year, however, the outflow dropped sharply, but picked up again in the beginning of 2001, in the antecedent to the floating of the króna. When the króna fell sharply after the exchange rate target was abolished, however, the demand for foreign securities was quite limited. In fact, sizeable portfolio investment outflow did not resume until the króna had started to recover last year. On the whole, it is hard to see that capital flight played a major part in forcing the current account reversal in 2001 and 2002, even though outflow of portfolio capital contributed to the depreciation of the króna in spring 2000.<sup>21</sup>

It is quite remarkable that substantial capital flight did not break out, given the vulnerability of the economy in 2001. To some degree this was due to the fact that the stock of domestic securities owned by foreign investors was and still is small. As mentioned earlier, foreign investors have often led the herd when a capital flight has begun.<sup>22</sup> But more factors are at work. The bulk of investment by residents was

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21. The outflow on indirect foreign investment began on a fairly large scale in 1997, after pension funds were permitted to invest in foreign securities with a currency exposure amounting to up to 40% of their net assets. Currency risk authorisation was extended again in 2000, to up to 50% of a pension fund's net assets. Until 1999, the outflow can probably be seen as one element in structural changes of the funds' portfolios, i.e. a means of spreading portfolio risk between foreign and domestic assets, but the greater flow in 2000 presumably reflects to some extent investor anxiety about the exchange rate of the króna.

in foreign equities, while bond investments were fairly limited (see Chart 16). At the same time as the króna began to weaken and the unsustainability of the current account deficit became evident, foreign equity prices were plummeting. Pension funds and others held back on further investments, despite the negative domestic outlook. They could have taken defensive action by stepping up purchases of foreign bonds, in order to reap the simultaneous benefits of the falling króna and falling short-term interest rates in foreign markets. Most investors, however, appear to have seriously underestimated the protracted slump in foreign equity prices, the pressure that the current account deficit put on the króna when growth started to decline, and the inflation that came as a result of the depreciation. Furthermore, Icelandic investors probably overestimated the probability of a quick recovery among major trading partners, which would have cut short the period of declining interest rates. Investors' underestimation of the weak foundation of the króna, which can be inferred from an inflation premium on bonds much lower than the actual rate of inflation, prevented an even sharper decline, which would have resulted in a correspondingly faster reversal of the current account deficit. In addition, the outflow over the period from 1998 to spring 2000 presumably weighed against the appreciation of the króna at that time. Otherwise, the existing exchange rate regime would have required the Central Bank to buy large amounts of foreign currency. The cumulative outflow of portfolio investment by residents from the first quarter of 1997 to the first quarter of 2000 amounted to 86 b.kr., which gives a rough idea of the net inflow that the Central Bank would conceivably have needed to deal with in the absence of this outflow.

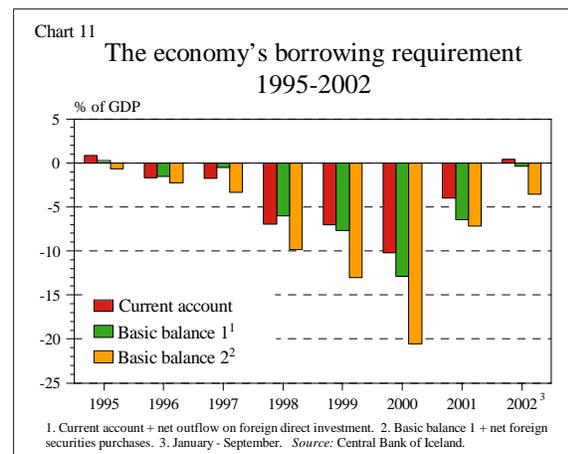
The foreign direct investment balance, which was continuously quite negative from mid 2000 to the

same time in 2001, may have had a more detrimental effect on the exchange rate of the króna. It should be remembered, however, that foreign direct investment by residents abroad tends to a significant extent to be financed with foreign borrowing. Hence, such transactions may not affect the currency market significantly.

### *Enormous credit requirement in 2000 posed a risk of a hard landing*

Financing a current account deficit in the range 7-10% of GDP is generally a challenge in its own right. However, the simultaneous existence of large-scale outflow of direct investment and portfolio capital in 1998-2000 and an exceptionally large current account deficit makes Iceland's experience probably unparalleled. The combined borrowing requirement to finance the deficit and outflow of other capital was equivalent to roughly one-fifth of GDP in 2000.

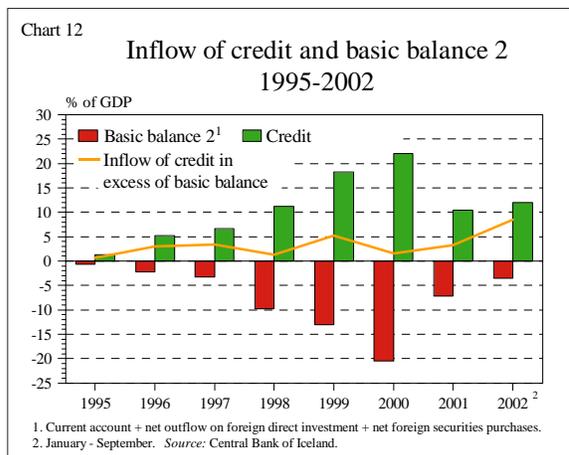
Chart 11 shows three criteria for measuring the economy's borrowing requirement. First is the current account, which calls for a corresponding surplus on the capital account. Second is basic balance 1, which comprises the current account deficit and net outflow on foreign direct investment. The third yardstick, basic balance 2, adds net purchases by residents of foreign securities.



In addition to this, in 2000 residents bought domestic equities from foreign parties for almost 8 b.kr. (more than 1% of GDP), which were not included in basic balance 2 but also added to the borrowing requirement.

22. A conceivable explanation for foreign investors' tendency to be the first to withdraw when a fixed exchange regime comes under stress, as happened in the Nordic countries in the 1980s and Mexico just over a decade later, could be that the bulk of their liabilities is most likely denominated in other currencies, especially their home currency, exposing them to more risk than domestic investors (e.g. pension funds) whose liabilities are mainly denominated in the domestic currency. It is also conceivable that they have more limited information than local investors and are therefore prone to self-fulfilling panic when negative news is announced.

Chart 12 shows how the credit requirement as measured by basic balance 2 was broadly met, i.e. with bond issues abroad and direct borrowing. More than the entire credit requirement as defined above was met in this way. However, it should be borne in mind that, after taking into account domestic purchases of foreign-owned domestic equities, this credit inflow was insufficient to cover basic balance 2.



Credit institutions were behind the bulk of foreign borrowing in 1998-2000, but other legal entities (non-financial corporations, including the Landsvirkjun national power company and individuals) substantially increased their borrowing abroad in 1998-1999, as Chart 13 shows. In 1999 and 2000, net foreign borrowing by these parties was equivalent to

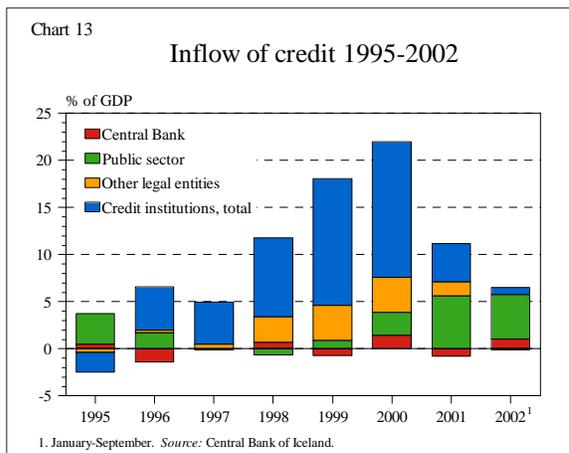
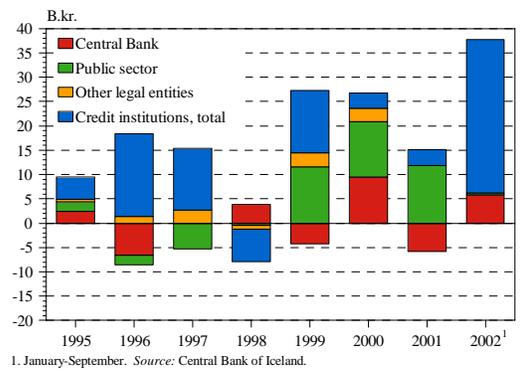


Chart 14

**Inflow of short-term credit 1995-2002**



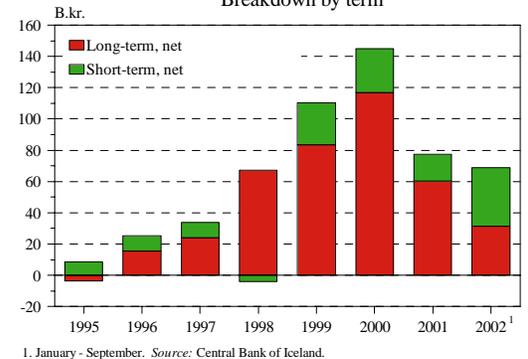
more than 3.6% of GDP. Borrowing by private entities totalled almost 17% of GDP 1999 and rose even further the following year, to almost 18%. It is safe to say that foreign borrowing by private entities had never run so high. The public sector was behind more foreign borrowing in 2001 and 2002 than in the preceding years, corresponding to 2.4% of GDP, although this was a lower proportion than, for example, in 1995.

The credit inflow was largely in the form of long-term loans. Over the past two years, however, there has been quite a large inflow of short-term lending. Last year this was mostly accounted for by short-term borrowing by the Central Bank and public sector, while in 1999 the credit institutions and public sector were the main borrowers.

Chart 15

**Inflow of credit 1995-2002**

**Breakdown by term**



*Household and corporate debt accumulation forced an adjustment of demand and reversal of the current account deficit*

It was mentioned earlier that household and corporate debt accumulation in recent years was one of the factors which would unavoidably have forced a reversal of the current account deficit in the course of time, regardless of changes in the exchange rate. These two factors, indebtedness and the exchange rate, are in fact not independent but interlinked parameters.

As frequently pointed out in Central Bank publications, households and businesses in Iceland rank with the most indebted in the world, and their debt ratios continue to break new records. From the end of 1997 to the end of 2001, household indebtedness grew from 72% of GDP to roughly 91%, and corporate indebtedness from around 80% to 120%. The exceptionally rapid increase in both household and corporate debt over this period is the counterpart to the current account deficit. As demonstrated in an article in *Monetary Bulletin* in May 2002, a continuation of strong growth in private consumption is conditional on the willingness or ability of households to keep borrowing in excess of amortisation.<sup>23</sup> The contraction of private consumption in 2001 and 2002, notwithstanding some growth in disposable income in real terms, can be explained by a contraction in the disposable income left after interest payments and amortisation. This has forced households to increase their saving significantly, although not sufficiently to begin bringing their debt level back down. One has to go as far back as 1993 to find a similar episode of declining private consumption despite disposable income growth.

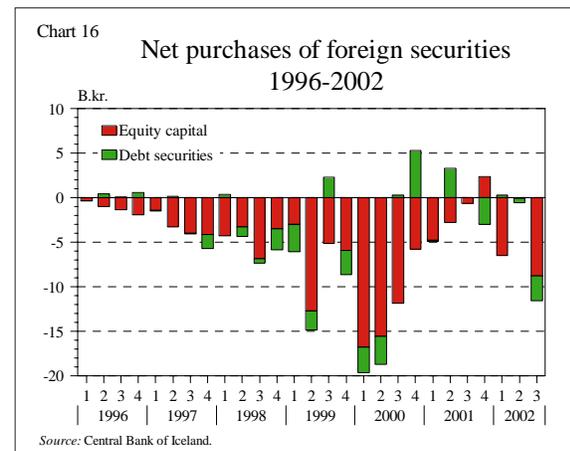
Projections made on the basis of macroeconomic models can give a very misleading picture of the dynamics involved. The National Economic Institute's long-term scenario from March 2000, for example, foresaw a soft landing, with the current account deficit forecast to stay near 8% of GDP until 2005. Such a scenario could never have materialised, in fact, because of the implications for private sector indebtedness. It would have entailed a deterioration in the net external position by tens of b.kr. The entire

23. *Monetary Bulletin* 2002/2 p. 45.

additional debt, and more, would presumably be assumed by businesses and households, since with the economy remaining strong the Treasury would presumably continue to run a surplus. The available macroeconomic models are simply unable to forecast turning points produced by the dynamics of debt and growth.

*Repatriation of foreign investment gave a limited support to the króna*

Against the accumulation of foreign debt there was a considerable build-up of foreign asset, which began in 1997 and intensified in 2000 and before the floating of the króna in March 2001. In light of the substantial accumulation of foreign assets in recent years, the reversal of capital flows might have been expected to help stabilise the króna when it had fallen below a level that the market considered compatible with long-term macroeconomic balance.<sup>24</sup> The further the real exchange rate falls below its long-term equilibrium, the greater is the likelihood of a sizeable recovery in the real exchange rate (either



24. This should particularly have applied to pension funds that were approaching the permissible limit on foreign currency exposure (50% of their net assets). Several funds were probably close to this limit for a while, although the extent that their foreign exposures were hedged is unclear. Since a depreciation of the króna entails an automatic increase in the share of foreign assets in their portfolios, a drop in its value could force pension funds to sell foreign securities, which would strengthen the króna. However, the drop in foreign equity prices weighed against the impact of a rise in the value of foreign currencies in 2000 and 2001, so such an effect never materialised. Moreover, the currency risk of most pension funds was always well within the limits.

through a rise in the domestic price level or the nominal exchange rate). The risk posed by having a large share of a portfolio tied up in foreign currency-denominated assets increases correspondingly. Under such conditions, it should be attractive to reduce the weight of foreign securities in investors' portfolios. The reasons that this did not happen are possibly to be seen on Chart 16. After pension funds were allowed to buy foreign securities, the bulk of their foreign investments has been in equities or equity funds. Since foreign stock prices had collapsed at the same time as the króna, investors probably did not find it an attractive option to sell their stock of foreign equities at prices they probably regarded as low.

*The depreciation of the króna was forced by fundamentals, and speculation had relatively little effect on the course of events*

Pressure on exchange rates often becomes most intense one or two quarters after the current account deficit begins to decline. This was the case in 2000 and 2001.<sup>25</sup> The current account deficit peaked in the final quarter of 2000, but the decline of the króna was most intense two quarters afterwards. There is no single obvious explanation for this course of events. At least two explanations are possible: Firstly, that the króna began to weaken when domestic investment and the associated capital inflow started to decline. In that sense the strength and weakness of the króna were basically determined by the business cycle. Secondly, confidence in the króna may have turned negative when the deficit had reached a dangerous level towards the end of 2000, which had a negative effect on further borrowing abroad and encouraged capital outflow. Both factors were probably at work, but as pointed out above, investors in fact proved incredibly nonchalant about the risk posed by the current account deficit. Three-fifths of the capital outflow in the second quarter of 2001, when the króna was falling fastest, comprised foreign direct investment, which would hardly have been speculative, although exchange rate developments may have had some effect on the timing.

The conclusions of this section may be summarised as follows:

- A current account reversal of the magnitude that occurred in 2001-2002 is rare. The reversal in the current account in the space of two years was the third-fastest among OECD countries for at least three decades, although periods of adjustment of similar magnitude are known from Icelandic economic history.
- Favourable external conditions during the period of adjustment, relating to both the terms of trade and interest rates, made a significant contribution to the speed at which the current account shrank. In countries where the contraction was associated with external shocks, the consequences were much more serious.
- Although a drop in imports of investment goods and consumer durables after the upswing played a sizeable role in the contraction of the deficit, a large part of it appears to have occurred for other reasons.
- A mounting debt service burden following a period of rapid debt accumulation would have induced a sharp adjustment in domestic demand and current account reversal, regardless of the depreciation of the króna.
- The sharp decline of the króna, however, amplified the looming adjustment in domestic demand. Yet it is not obvious that the lower exchange rate stimulated exports on a large scale, since relatively good export performance is also explained by other factors.
- An inevitable decline in the demand for foreign credit inflow in 2000 appears to have forced the depreciation of the króna in 2001, rather than speculative attacks. The depreciation was therefore not an overshooting in the sense of being purely speculative or based on a misreading of the fundamental strength of the króna by market participants, as has sometimes been implied. However, it was an overshooting in the sense that the more rapid adjustment in financial markets than goods markets forced a considerably larger depreciation of the króna than was compatible with long-term macroeconomic balance.

25. See Eichengreen et al. (1995).

## V The current account deficit as an economic policy challenge

*The current account serves as an important indicator for economic policy implementation, but should not be its direct target*

The current account deficit in 1998-2000 served as an important indicator of serious imbalance in the economy, which led to a damaging rise in inflation and ultimately a recession.<sup>26</sup> One has to ask whether economic policy to some extent kindled overheating, or could have been implemented in a more counter-cyclical fashion. Targeting the current account deficit, as proposed in a recent publication by the University of Iceland Institute for Economic Research,<sup>27</sup> is not realistic, however. That would be tantamount to attacking the symptoms rather than the cause. Monetary measures targeted at the origin of an excessive current account deficit could, for example, amplify it in the short run. Furthermore, there can be different reasons for a current account deficit, as pointed out earlier, making it difficult to set general benchmarks. All things being equal, however, a current account deficit equivalent to one-tenth of GDP sends a clear message that some counter-cyclical measures may be required.

*Monetary policy did not contribute much to the current account deficit – but a more timely tightening might have helped*

It has sometimes been claimed that the Central Bank contributed to the current account deficit with its tight monetary stance. There are two sides to this question. A tight monetary stance discourages domestic demand and hence contributes to a smaller current account deficit over the medium term, not a larger one, and probably has no impact at all in the final analysis. If tight monetary policy causes the interest rate differential with abroad to widen, on the other hand, it can contribute to a larger deficit in the short-term by inducing an appreciation of the real exchange rate, which weakens the competitive position of businesses in both domestic and export mar-

kets and spurs import growth. If the increase in the current account deficit originates in excessive growth of domestic demand, however, this side-effect cannot be avoided if the long-term goal of stable prices is to be attained. Most earlier periods of an excessive current account deficit were accompanied by a sizeable real appreciation. Tight monetary stance had little to do with it. The real appreciation occurred because prices and wages – not the nominal exchange rate – rose by more than among trading partner countries whereas the exchange rate of the króna was kept steady. The scope for tightening the stance via indirect monetary policy measures was limited.

The contribution of monetary policy to short-term current account movements can be assessed by evaluating i) the relation between interest rates and the real exchange rate, and ii) the relation between the real exchange rate and current account deficit. According to an assessment made by the Central Bank of Iceland, the effect that its interest rate hikes had towards raising the real exchange rate over the period 1996-2000 amounted to 2-2½%, or a maximum of 5½%.<sup>28</sup> A simple model of the relation between the real exchange rate and current account balance indicates that the deterioration tends to occur mostly in the year following a real appreciation. When the impact of the Central Bank's policy interest rate rises peaked, according to this study, it probably amounted to ½-1% of GDP. The National Economic Institute's macroeconomic model produced similar results, but the impact over a longer period was larger, or up to 3½% after five years, if the real exchange rate appreciation is reversed after three years. Given that the real appreciation of the króna in 1999-2000 proved short-lived, the short-term impact of a tight monetary stance on the current account deficit should no be overstated.

At the start of the upswing that has now come to an end, the authorities were in a better position in various respects. Foreign exchange and financial markets, which belong to the required framework of modern monetary policy, were reaching maturity and inflation was at a similar level to that among trading partner countries. But were the instruments that the

26. Excessive credit growth, inflation and wage changes provided similar indications.

27. See Sigurdsson, Gústaf, Gylfi Zoëga, Marta G. Skúladóttir and Tryggvi Þór Herbertsson (2000).

28. See Pétursson, Þórarinn G., Mat á hlut vaxtahækkana Seðlabankans í auknum viðskiptahalla, Central Bank of Iceland, unpublished memo from January 24, 2001.

Central Bank had at its disposal applied with sufficient foresight, or was the monetary policy framework perhaps an obstacle to an active forward-looking monetary policy?

Iceland's experience in recent years is not unparalleled. A number of countries have been through periods of overheating and current account deficits in the wake of the deregulation of cross-boarder capital movements over the past two decades. These include the Nordic and other European countries in 1992-1993 and a series of episodes since then: in Mexico, many parts of Asia, Russia, Brazil, Turkey and Argentina, to name some of the major events. In all these cases government attempts to maintain a stable exchange rate were eventually overwhelmed. In retrospect such a hard landing could conceivably have been cushioned had monetary policy not been obliged to maintain a steady exchange rate. This, however, is uncertain.

In retrospect, there seems to be a case for having made a more timely tightening of monetary policy in order to prevent overheating, especially in light of the fact that long-term interest rates, largely on price-indexed debt, are fairly insensitive to changes in short-term interest rates. Two points need to be taken into consideration, however. Firstly, the Central Bank was tied to the goal of a stable exchange rate. Admittedly the formal target band allowed a 6% deviation in either direction from the central value of the index, possibly giving an effective flexibility in the range 3-4%. The band was widened to 9% in February 2000. However, this came too late and the króna began to weaken soon afterwards. Secondly, monetary policy decisions were based on information and forecasts which, it later transpired, underestimated the force of the upswing. What seems obvious in retrospect was not quite as certain at the time when the decisions had to be made.

A typical argument for the need for a more flexible exchange rate policy at an earlier stage (or even abolishing the exchange rate band entirely) would be that greater flexibility would have enabled the Central Bank to raise its interest rates earlier and more rapidly. The result would have been a stronger exchange rate, lower business profitability and investment, and smothering of inflation. A higher and more flexible exchange rate would in turn have increased uncertainty about the króna, thereby dis-

couraging demand for foreign credit. Domestic demand would probably have adjusted earlier, requiring less adjustment later on. Whether the adjustment process would have been fundamentally different, however, is highly uncertain.

#### *Fiscal policy could also have been tighter*

The treasury balance was strong during the overheating. After taking into account the strong effect of rising imports on the fiscal balance, the fiscal stance was probably close to neutral. Nonetheless, the public sector's share of GDP continued to grow in 1998-2000. Wage rises in excess of inflation played some part, but the increasing ratio of public sector investment to rapidly growing GDP (see Chart 8) suggests that fiscal policy could have been applied more actively, e.g. by postponing public sector construction projects.

#### *Adjustment vis-à-vis contraction in domestic demand or an exchange rate depreciation – did the government have any choice?*

Under certain circumstances, authorities may have some choice as to whether the adjustment following a period of overheating takes the form of a contraction in domestic demand or an exchange rate depreciation. Towards the end of 2000, however, it was obvious that the options in this respect had become severely restricted. Market forces had already forced the hand of the authorities to some extent by then, as often happens when very large imbalances need to be corrected. It was almost inevitable that the króna would weaken excessively from the viewpoint of price stability. The Central Bank could hardly have avoided the depreciation except with exorbitant interest rates and massive interventions in the foreign exchange market, both of which would probably have resulted in an even sharper contraction than turned out to be the case. Even such measures sometimes prove inadequate if confidence in a country's currency and economy is seriously tarnished. What would have happened if the monetary stance had been much tighter or more lax than actually was the case is highly uncertain. A moderate depreciation can serve as an overall stimulus to the economy. Massive overshooting, on the other hand, can exaggerate the contraction, by making consumer and investment goods (and not only imports) more expensive and

undermining confidence in future economic growth. A large depreciation can seriously hit indebted businesses and households, and in a worst-case scenario the financial system, even more than high interest rates. If domestic demand is bound to contract in any case, there is a strong case for economic policies that counteract the depreciation.

## VI Conclusion

As discussed by this author in an previous article in *Monetary Bulletin* two years ago, previous periods of large current account deficits both in Iceland and abroad suggested that a fairly hard landing could be expected in the wake of a current account deficit on the scale experienced in 1998-2000.<sup>29</sup> This turned out to be the case, although the full impact may not have been fully felt. Indeed, the planned large-scale investment projects will act as an eye-opener to cure the hangover left by a relentless fiesta lasting many years. Compared with countries which have been through a current account reversal on similar a scale in the past few decades, Iceland's economy can be said to have escaped in good shape. In at least three of the six OECD countries that underwent a similar turnaround, a financial crisis was involved. Norway and Iceland escaped such setbacks. In both countries, favourable external conditions during a period of adjustment in the wake of overheating served to soften the aftermath. High prices in export markets and strong exports had the most impact in 2001, while the following year a decline in both the volume and prices of imports was the main factor at work, in addition to favourable foreign interest rate and exchange rate developments.

In part, the swift current account reversal can be explained by the fact that it was to a significant extent driven by a sharp decline in imports of consumer and investment goods, after a period of (excessive) stock adjustment. Other factors played a larger part in the reversal, however. The preceding overheating had simply run out of steam. When the credit inflow that had sustained abnormally high domestic demand turned sluggish, the króna depreciated and amplified the contraction in domestic demand that was bound to follow when private sector saving returned to a more normal level. The depreciation was apparently driven by a need for fundamental adjustment rather than by speculation or panic, although the króna fell well below the rate required to restore balance over the medium term.

Compared with many previous periods of large current account deficits and reversals, economic policy does not seem to have played a decisive role, while various aspects of it may be criticised. The monetary policy framework certainly limited the room for manoeuvre of monetary policy. However, it is less certain that the outcome would have been fundamentally different even if the current framework had been in place. The quality of economic policy measures greatly depends on the government's ability to foresee the consequences of events which individually do not seem likely to cause a major disruption to economic balance, but may in combination produce large and unforeseeable volatility. Although the Central Bank had long warned against the signs of overheating that were obvious as early as 1998, neither the Bank nor anyone else foresaw the extremes that characterised the year 2000. This is worth considering, now that we face one of the largest construction projects in Icelandic history.

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29. Sighvatsson, Arnór, "The current account deficit in an international and historical context", *Monetary Bulletin* 2001/1.

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