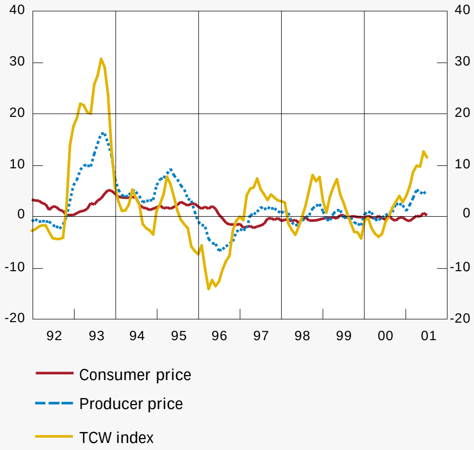
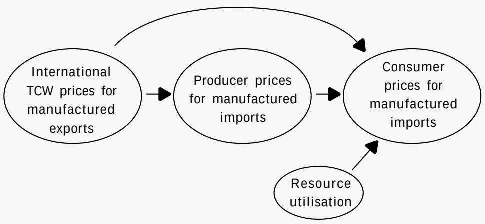
EXCHANGE RATE PASS-THROUGH

Figure B1. Exchange rate and producer and consumer prices for manufactured products. Percentage 12-month change



Source: The Riksbank.

Figure B2. Estimated relationship between exchange rate and consumer prices.



In the period since the move to a flexible exchange rate regime, the value of the Swedish krona has fluctuated markedly and in much of this period it has been low. Even so, the rate of price increases has been low and inflation expectations have been firmly anchored around the target.

Consumer prices for manufactured imports have been comparatively stable ever since 1990 (Fig. B1). There does not seem to be any clear relationship with the exchange rate. On the other hand, producer prices for manufactured products follow the exchange rate relatively closely.

An important question is how soon and to what extent an exchange rate movement shows up in prices. Another, considerably more difficult question is whether this pass-through has changed after the move to a flexible exchange rate. It is not just in Sweden that this question has been raised. Other countries, for example the United Kingdom, Finland, Canada, Brazil, New Zealand and Australia, also experienced a considerable depreciation of the exchange rate in the 1990s without consumer prices being affected as much as expected. A number of studies also provide some support for the notion of a decreased exchange rate pass-through in recent years.

The exchange rate affects inflation through a number of channels. The direct effect comes from import prices. The exchange rate also influences resource utilisation and inflation expectations, with an indirect impact on the rate of price increases.

ESTIMATIONS AT DIFFERENT STAGES

The pass-through from exchange rate movements is studied here with respect to producer and consumer prices. The direct pass-through to consumer prices is analysed first, then the exchange rate's pass-through to producer prices and the pass-through from there to consumer prices. Some general conclusions are then presented.

1. The direct pass-through to consumer prices

The exchange rate pass-through to consumer prices for manufactured products can be estimated directly. As indicated in Fig. B2, in such an estimation it is reasonable to include a measurement of domestic resource utilisation, for instance corporate sector unit labour costs.

The results indicate that in year 1, approximately 17 per cent of a change in the exchange rate shows up in consumer prices. Statistical tests do not support the occurrence a structural break in the relationship.[2]

2. Pass-through to producer prices

In the case of producer prices, the pass-through from the exchange rate and international export prices is larger because domestic costs for processing, storage, distribution and marketing contribute less than they do to consumer prices. About 40 per cent of an exchange rate movement shows up in producer prices in the short run and almost 80 per cent in the long term (Fig. B3). Neither has the relationship appear to have changed appreciably over time.

It follows that any change in the exchange rate pass-through to consumer prices is not a consequence of a decreased pass-through to import prices to producers.

3. Pass-through from producer to consumer prices

The next stage is an analysis of the pass-through from producer to consumer prices. The long-term effect of a change in producer prices has decreased from almost 70 per cent in the period 1981- 92 to just over 55 per cent in the period since then; the change is statistically significant. The short-run effect has, however, been unchanged at around 12 per cent. At the same time, the importance of unit labour costs for consumer prices has risen from about 20 per cent to about 50 per cent.

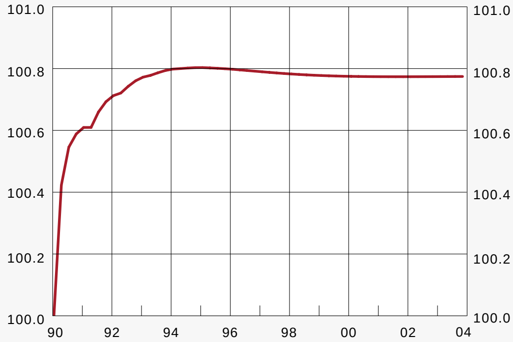
CONCLUSIONS

An altered pass-through from the exchange rate to producer prices for imported goods could not be demonstrated. But the pass-through from producer to consumer prices does seem to have decreased. Although the measurement problems are considerable, this suggests that the exchange rate pass-through to consumer prices is now somewhat lower than in the period with a fixed exchange rate.

One explanation for the decreased pass-through may be the economic policy realignment. A comparison of the exchange rate pass-through in five countries (Sweden, New Zealand, Canada, the United Kingdom and Australia) that have adopted an inflation target with the situation in countries that also have a flexible exchange rate but do not target inflation explicitly (e.g. Germany, Norway, Switzerland and the United States) suggests that the pass-through can be affected by the

2 Estimations done on quarterly data from 1977- 2001 for producer prices and from 1980- 2001 for consumer prices.

Figure B3. Effect on the level of import prices to producers from a transitory 1 per cent depreciation of the krona in 1990 Q2.



Source: The Riksbank.

direction of economic policy.[3] There are some indications that price fluctuations have decreased relatively more in the countries that target inflation and that this has helped to reduce the exchange rate pass-through.[4]

There are arguments to the effect that the economic policy realignment for low inflation can have reduced the exchange rate pass-through. Due to price rigidities, there is a time lag before firms pass on changes in marginal costs; if the changes are temporary, the pass-through will then be small when low inflation has been established. And as price setting is also dependent on expectations of competitors' behaviour, more stable inflation expectations make firms more hesitant about passing exchange rate effects on.[5]

Another argument in favour of a reduced pass-through is that increased exchange rate fluctuations may of themselves induce firms to adjust profit margins rather than prices.[6] With a flexible exchange rate, exporters and importers may perceive upward and downward movements as relatively transitory, whereupon they may adjust their margins pending a return to what they regard as a more normal level. It is also conceivable that the international markets for goods and services are segmented, so that producers adjust their prices to the demand situation in each national market. A foreign firm would accordingly absorb a temporary dip in profits in Sweden, for example out of consideration for market share, dealers and customer relations.[7] This phenomenon has been observed in Sweden, particularly in connection with the devaluations in the 1970s and 1980s.

Consumer prices for imported products may also have been restrained in the 1990s for other reasons. EU membership and the common market have probably contributed to price convergence for products in international trade. The Swedish price level's downward shift towards the EU average for such items as furniture, clothing and footwear may have countered the exchange rate pass-through. Another contributory factor may be the deregulations and changes in the structure of wholesale and retail trade. Moreover, the composition

3 *Gagnon, J.E. & Ihrig, J. (2001), Monetary policy and exchange rate pass through*, International Finance Discussion Paper, 704, Board of Governors of the Federal Reserve System, Washington, D.C.

4 Cf. the two boxes on pp. 17- 24.

5 Taylor, J. (2000), Low inflation pass-through and pricing power of firms, *European Economic Review*, 44:7, pp. 1389- 1408.

6 Mann, C. (1986), Prices, profit margins and exchange rates, *Federal Reserve Bulletin*, 72, pp. 366- 379.

7 Krugman, P. (1987), Pricing to market when the exchange rate changes, in Arndt, S.W. & Richardson, J.D, *Real-financial linkages among open economies*, MIT press.

of imports has changed markedly in recent years. Importers may have chosen to cope with a stronger euro and dollar by relying more on imports from other countries with currencies that have not appreciated as much against the krona.

A number of these factors that may have tended to reduce the exchange rate pass-through - for example price convergence, increased international competition and structural changes in wholesale and retail trade - may be rather temporary. One cannot count on the exchange rate pass-through to consumer prices being stable in the future.