



OECD Economics Department Working Papers No. 560

Why has Swedish Inflation been Persistently Low?

Felix Hübner

<https://dx.doi.org/10.1787/173338505703>

Unclassified

ECO/WKP(2007)20



Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

11-Jun-2007

English text only

ECONOMICS DEPARTMENT

ECO/WKP(2007)20
Unclassified

WHY HAS SWEDISH INFLATION BEEN PERSISTENTLY LOW?

ECONOMICS DEPARTMENT WORKING PAPER No. 560

By Felix Hübner

All OECD Economics Department Working Papers are available on the OECD Internet website at
www.oecd.org/eco/working_papers

JT03228924

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

English text only

Abstract

Why has Swedish inflation been persistently low?

Average inflation in Sweden has been one of the lowest among European countries since the mid-1990s. Three supply-side factors help to explain this phenomenon, all related in some sense to increased global integration. First, a shift towards imports from low-cost producing countries has resulted in falling import prices. Second, deregulation and increased product market competition with foreign companies entering the market has led to price falls in some sectors, notably in retailing. Third, wage growth has lagged productivity and kept unit labour costs down. This paper reviews these factors and analyzes the policy options for the central bank.

This paper relates to the *OECD Economic Survey of Sweden 2007* (www.oecd.org/eco/surveys/sweden).

JEL classification: E31, E52

Key words: Inflation, Core Inflation, Sweden, Monetary Policy, Inflation Targeting, Riksbank

Résumé

Pourquoi l'inflation suédoise est-elle restée obstinément faible ?

Depuis le milieu des années 90, la Suède affiche un des taux moyens d'inflation les plus faibles d'Europe. Ce phénomène s'explique en partie par trois facteurs relevant de l'offre, tous liés d'une certaine manière à l'intégration croissante de l'économie mondiale. Premièrement, un glissement vers les importations des pays à bas coûts de production s'est traduit par une baisse des prix des importations. Deuxièmement, la déréglementation et le renforcement de la concurrence avec les entreprises étrangères sur les marchés de produits ont entraîné une diminution des prix dans certains secteurs, notamment dans le commerce de détail. Troisièmement, la croissance des salaires a été plus lente que celle de la productivité, ce qui a maintenu les coûts unitaires de main d'œuvre à un bas niveau. Ce document passe en revue ces facteurs et analyse les options politiques pour la banque centrale.

Ce document de travail se rapporte à l'*Étude économique de l'OCDE de la Suède 2007* (www.oecd.org/eco/etudes/suede).

JEL classification: E31, E52

Mots clés: inflation, socle d'inflation, Suède, politique monétaire, ciblage de l'inflation, Riksbank

Copyright, OECD, 2007

Application for permission to reproduce or translate all, or part of, this material should be made to: Head of Publications Service, OECD, 2 rue André-Pascal, 75775 Paris Cedex 16, France.

TABLE OF CONTENTS

WHY HAS SWEDISH INFLATION BEEN PERSISTENTLY LOW?	4
Inflation has been below target most of the time	4
The influence of increased competition and globalisation	5
Implications for monetary policy	13
Conclusion.....	17
Bibliography	18
<i>Annex</i> The Giavazzi – Mishkin report	20

Table

1. Relative price levels	9
--------------------------------	---

Figures

1. Inflation rates	5
2. Core inflation measures	6
3. The impact on consumer price inflation from removing the globalisation effect.....	8
4. Origin of Swedish imports	9
5. Unit labour costs in sectors	12
6. Inflation expectations.....	14

Boxes

1. Measures of underlying inflation	6
2. Globalisation and inflation	7
3. Monetary policy and asset prices	15
4. Publication of the preferred future interest rate path.....	16
5. Recommendations regarding inflation and monetary policy.....	17

WHY HAS SWEDISH INFLATION BEEN PERSISTENTLY LOW?

By Felix Hüfner¹

Inflation has been below target most of the time

Since the start of the inflation targeting regime, which was introduced following the breakdown of the fixed exchange rate system in 1993, Sweden has achieved a remarkable stability of prices. In contrast to the occasional double-digit price increases in the 1980s and early 1990s (average 1981-1993: 7.3%) and despite the sharp depreciation of the krona in 1993, inflation rates have remained very contained (average 1993-2006: 1.4%; Figure 1). The shift towards this low inflation environment has been a great success of the new monetary framework, benefiting consumers in terms of greater purchasing power and the economy at large by anchoring inflation expectations.

Consumer price inflation has also moderated considerably in all other OECD economies over the 1990s, coinciding with increased global integration and a broad-based shift of central banks towards price stability orientation and increased credibility of monetary policy. However, the impact on Swedish inflation has been stronger than for other countries, with Sweden consistently being below the OECD average and recording the lowest annual inflation rate among European countries during 6 of the years since 1995. Inflation has also been lower than the Riksbank's target (to keep consumer price inflation at 2% over the medium term with a tolerance band of +/-1%) for most of the time.

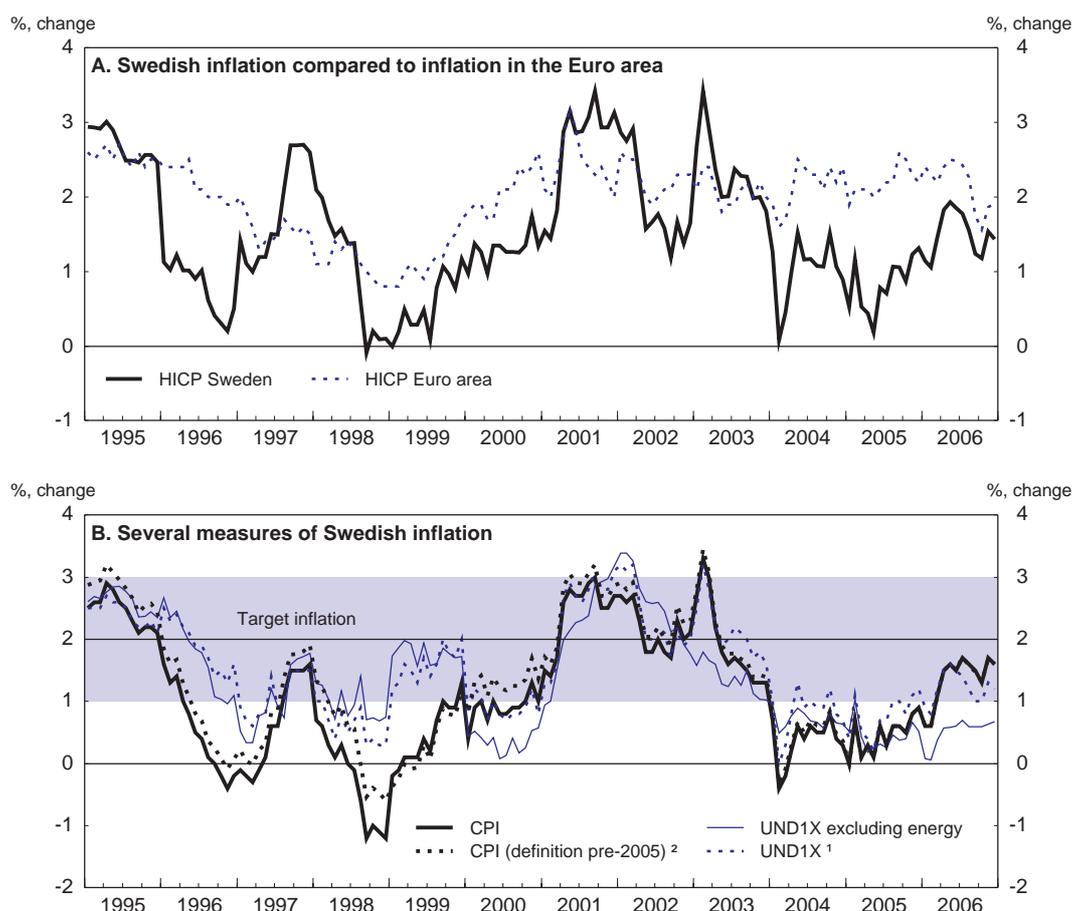
Two factors have to be taken into account when interpreting the low inflation rate. First, due to a technical change in the inflation calculations implemented in January 2005 by Statistics Sweden, the historical inflation series had been revised downward somewhat (as substitution effects from relative price changes were taken into account). Monetary policy decisions taken before 2005 were thus based on a somewhat higher inflation rate. However, even using the unrevised historical consumer price inflation data, the lower band of the 2% target was undershot in more than 40% of the time since 1995. Second, as the consumer price index includes mortgage interest expenditures of households, one reason for the lower inflation rate is the decrease of both long and short term interest rates since the mid-1990s. In order to compensate for this effect, the central bank also looks at the UNDI_X measure of inflation, which excludes this effect.² The UNDI_X measure of inflation has been below 2% in two-thirds of the time since 1995 and in one-third of the time below the lower bound of 1% (based on the unrevised UNDI_X inflation series, the

1. The author is economist in the OECD Economics Department. This paper was originally prepared for the *OECD Economic Survey of Sweden 2007* published in February 2007 on the responsibility of the Economic and Development Review Committee. The author is grateful to OECD colleagues, in particular Andrew Dean, Jorgen Elmeskov, Val Koromzay, Jens, Lundsgaard and Andreas Wörgötter for helpful comments as well as to the Swedish Riksbank for helpful discussions. Béatrice Guérard provided excellent research assistance.

2. In addition, UNDI_X also excludes direct effects of changes in indirect taxes and subsidies.

lower bound has been undershot in 20% of the time). If, in addition, one excludes energy from UND1X, one has a picture of a core inflation index (Figure 1) which remains at very low levels. This is supported by alternative measures of underlying inflation which exclude components with large temporary price changes and do not yield a higher trend of inflation (Box 1).

Figure 1. Inflation rates
Year-on-year percentage change



1. CPI excluding interest costs for owner-occupied houses and adjusted for changes in indirect taxes and subsidies.
2. CPI according to definition used before 2005.

Source: Statistics Sweden and Eurostat.

The influence of increased competition and globalisation

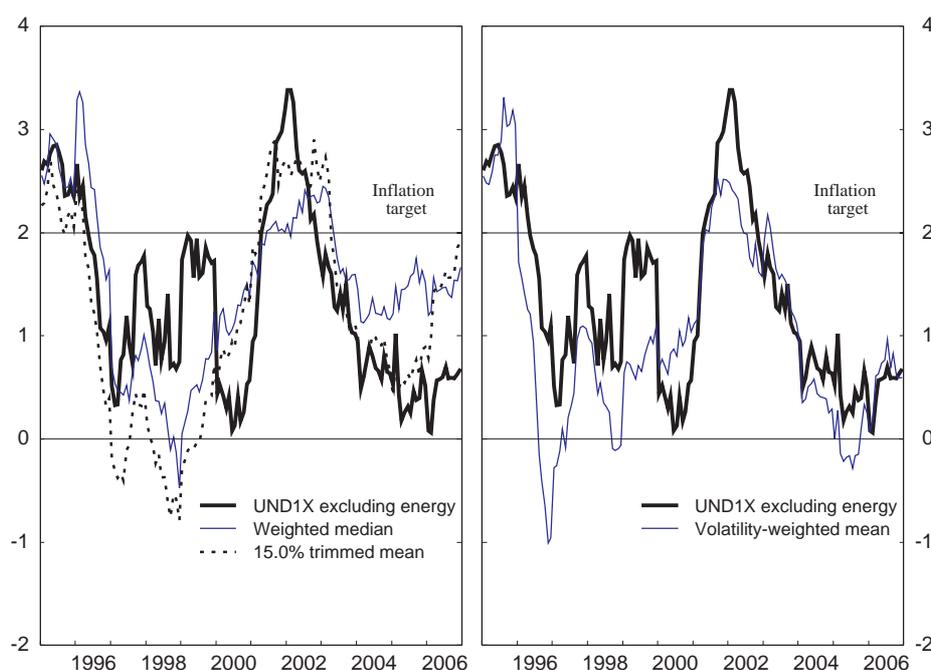
Looking at the consumer price index subcomponents shows that the low inflation is driven by goods prices rather than by services prices (which have remained close to 2% on average over the past years) – as one would expect in an open economy where a large share of the goods sector is exposed to foreign competition (Rosenberg, 2005). Within the goods price component, it is foremost the price increases of

Box 1. Measures of underlying inflation

Measures of core inflation are usually constructed by permanently excluding particular components from the headline inflation index such as food and energy. The rationale is to prevent price changes that are more likely to reflect supply shocks rather than aggregate demand from affecting the inflation measure. Such one-off price changes should normally fade out over time without requiring a monetary reaction.¹ However, it is increasingly argued that leaving out commodity components neglects the fact that their increases are at least partly driven by demand from fast-growing emerging markets, which simultaneously supply cheap imported goods. Thus, the traditional core measure might understate the true extent of prevailing inflationary pressures.

An alternative method of detecting the underlying inflation trend is to exclude different components on a period-by-period basis, such as neglecting the items with the largest price changes (positive or negative) when they occur.² Indicators based on this method are *trimmed means*, which exclude a certain percentage of items from the top and the bottom end of the price change distribution. The 15% trimmed mean, for example, excludes 15% of total CPI weights from each side of the price change distribution. As a special case, the *weighted median* corresponds to a trimming percentage of 50% excluded from each side. A third method is to re-weight the CPI components according to their volatility (*volatility weighted mean*) (with the weight being inversely proportional to their standard deviation relative to the overall index)

Figure 2. Core inflation measures
Year-on-year percentage change



Source: Statistics Sweden and OECD calculations.

It can be seen that the underlying measures that exclude components on a period-by-period basis, although being somewhat less volatile, paint a picture that is very similar to the headline and traditional core measures regarding both the cyclical movements and the low average level of inflation (Figure 2.2). This suggests that the low inflation environment indeed reflects a trend in the underlying rate, rather than being driven by temporary factors.

1. Of course, monetary policy needs to react in case the price changes affect prices in other parts of the economy, for example through second-round effects on wages, or alter the longer-run inflation expectations of the public.
2. See Catte and Slok, 2005.

imported goods that have been low and even negative over long periods in the last ten years; even so, prices of domestically produced goods also exhibited low increases. As goods inflation has remained low on average across past business cycles, this suggests that there is a structural aspect to it. In this respect, several studies find that Sweden is particularly exposed to the disinflationary forces of globalisation (BIS, 2006; Pain, 2006), which have become more pronounced since the 1990s (Box 2).

...on import prices

The most direct effect of globalisation on inflation is through foreign trade and here Sweden benefits from its significant market openness (OECD, 2007a). Import price inflation as measured by the UNDIMPX (excluding energy) has exhibited a negative trend and on average has been slightly negative since 1995. Exchange rate fluctuations might have reinforced this trend during certain periods of krona appreciation, in particular during the period 2001 to 2004. Overall, however, structural changes also underlie the longer-run trend according to recent studies (Riksbank, 2005). First of all, foreign trade has become more important over time, with the import share of GDP rising from around 20% at the beginning of the 1990s to close to 30% recently. Also the import content of domestic demand has increased. Second, the composition of imports has changed as imports from low-cost producing countries have gained in importance with greater integration of the world economy. The share of China and Poland in total Swedish imports has more than doubled since 1998 (Figure 4) and is now as high as the United States and some euro area countries. Estimates by the Riksbank indicate that the shift in market shares towards low-cost countries (substitution effect) has brought down import prices in every year since the mid-1990s. The effect increases over time, reaching over two percentage points per year recently (Riksbank, 2005).³ Regarding the impact on consumer prices, Pain (2006) estimate that imports of non-commodity goods and services have reduced the growth of the private consumption deflator by between 0.23 and 0.45 percentage points per year since 2000 (Figure 3).

...on domestic prices

Apart from lower imported goods prices, there is also an indirect domestic perspective linked to increased integration and globalisation. By enhancing competition, the power of domestic monopolies and labour unions is weakened. In Sweden, major efforts to strengthen competition in the 1990s were undertaken with the accession to the European Union in 1995.⁴ Apart from exercising a price level effect, product market competition can also lead to reduced average inflation rates over a prolonged period of time (Przybyla and Roma, 2005). The 2004 OECD *Economic Survey of Sweden* had identified several areas in which product market competition could still be enhanced, among them retailing, construction, and electricity (OECD, 2004). Adjustment has been taking place since around 2000 with Swedish price levels in some sectors converging downward towards the European level. Communications prices, in particular, have benefited from deregulation as Sweden was one of the first countries to liberalise the telecoms and postal sectors (Table 1). Telephone charges in Sweden are now among the lowest of all OECD countries (OECD, 2004).

3. Due to measurement problems of the trading-partner countries' export prices and due to the fact that a share of imports from non-EU countries reaches Sweden via another EU country, the effect of the import switch is probably even underestimated.

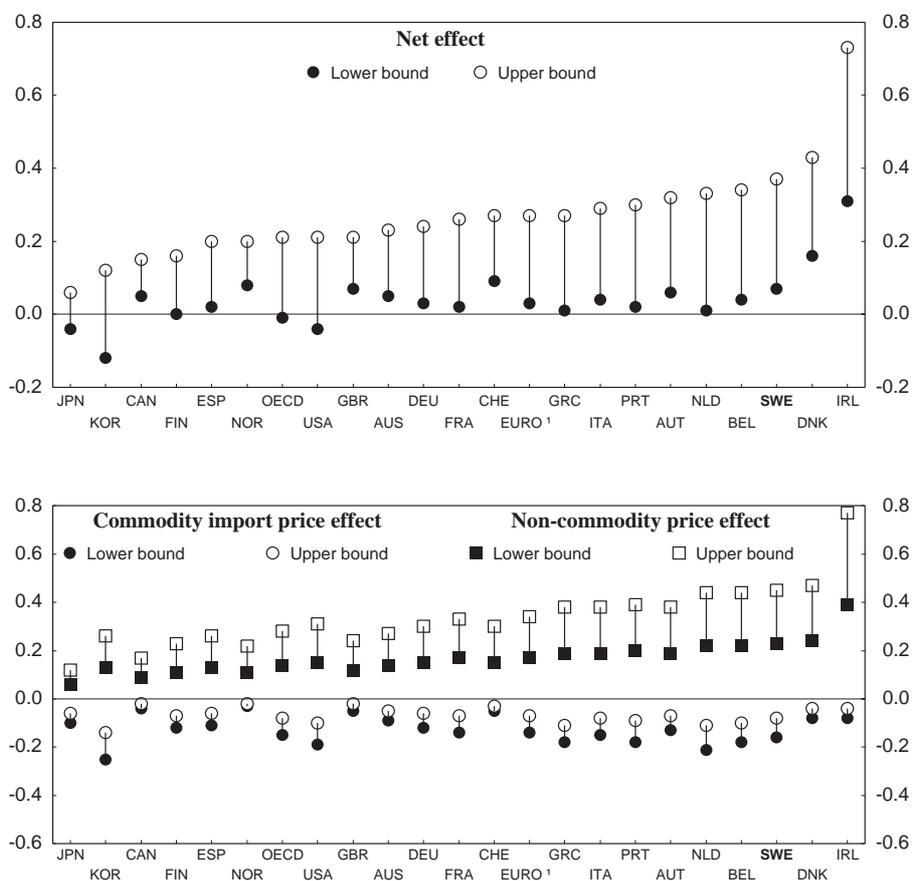
4. Examples of deregulation in the 1990s include the deregulation of rail transport, taxis, domestic air travel, postal and telecom markets and electricity generation and distribution. Furthermore, a new competition law had been introduced in 1993 and regulations were harmonised with EU rules.

Box 2. Globalisation and inflation

Implications from increased globalisation for inflation are multi-faceted. First, besides a general increase in the share of imports in domestic demand, enhanced trade integration with low-cost producing countries dampens import prices in the importing countries. Second, the integration of fast-growing countries like China and India in the world economy is likely to have been one factor behind the rise in commodity prices, thus providing a counterbalance to the disinflationary pressures from globalisation.

Pain *et al.* (2006) provide estimates of the impact of globalisation on consumer prices for OECD economies via these trade channels, taking into account both the increasing effect from higher commodity prices as well as the decline in non-commodity import price inflation. For most countries, globalisation is estimated to have been associated with a decline in consumer price inflation of between 0 and ¼ percentage point per annum since 2000 (Figure 3). For Sweden, the effect could be as high as 0.4 percentage point, about twice as large as for the average OECD country.

Figure 3. The impact on consumer price inflation from removing the globalisation effect 2000-05, percentage point per year



1. Euro area.

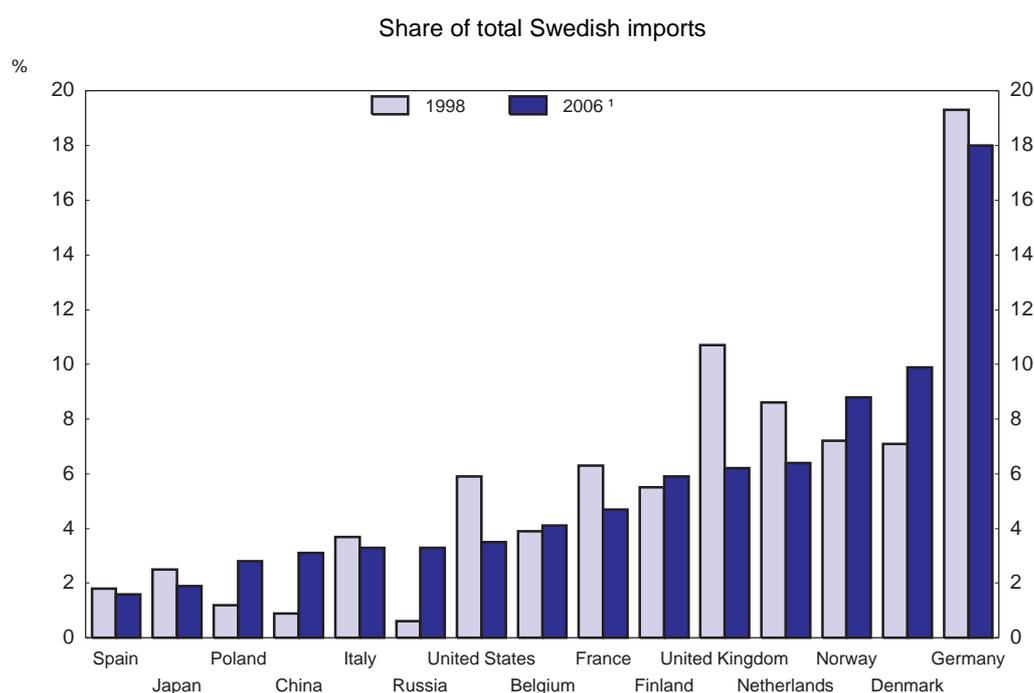
Source: Pain *et al.* (2006).

Note: The figure shows how much higher consumer price inflation had been in the absence of globalisation-related import price effects. The lower (upper) bound of the total impact of globalisation is calculated assuming that non-commodity import price inflation was 1 percentage point (2 percentage points) per annum above baseline and that commodity import prices reflect a 20% (40%) lower oil price (the metals price effect is 10% in both cases). The effects are calculated with regard to the private consumption deflator.

A further channel through which globalisation affects inflation is that competition increases with greater

integration, as barriers to market entry by foreign producers are lowered, thereby reducing the mark-ups of domestic producers and affecting domestic wages and costs (Kohn, 2006a; IMF, 2006). As workers have less scope to negotiate higher wages when faced with potential off-shoring or use of migrants, the effect of higher activity on labour costs is diminishing (Bean, 2006). Related to this, global capacity measures might have become more important - and domestic measures of slack less so - for determining domestic inflation compared to previous periods. Indeed, estimates of traditional Phillips curves relating inflation to domestic capacity measures suggest a significant flattening across countries, *i.e.* the relationship between the domestic output gap and inflation has weakened. BIS (2006) find that the relationship has weakened more in Sweden than in any other country in their sample of advanced OECD economies.

Figure 4. **Origin of Swedish imports**



1. Average over January-October 2006.

Source: Statistics Sweden.

A further example of an increase in competition is the retail sector, as large-scale shopping malls as well as foreign supermarket chains have entered the market. While in 1999 only 20% of the food retailing sector was exposed to competition (compared with 50% in the European Union), this picture has changed with the emergence of discount chains. The Danish chain Netto and the German Lidl entered the market in 2002-03; by 2004 they already had 134 shops and sales of SEK 3.3 billion (McKinsey, 2006) and they are rapidly gaining market share.⁵ This has contributed to a downward adjustment of Swedish food prices, which were still considerably higher than in Germany or the Netherlands in 2004 (Table 2.1; Konkurrensverket, 2004). There is further scope for adjustment across goods prices: the price level for

Table 1. Relative price levels in Sweden compared with EU15

5. Netto and Lidl both more than doubled their market shares from 2004 to 2006 with each of them having a share now of around 2% (Linnhag, 2006).

	Cumulative change in the price level relative to EU15, %	Average annual change in the price level relative to EU15, %		2005 price level (EU15 = 100)
	1996-2005	1996-2000	2001-2005	
Actual individual consumption	-3.1	0.5	-1.0	114
Food and non-alcoholic beverages	-6.9	0.4	-1.7	112
Clothing and footwear	3.6	2.3	-1.3	110
Housing, water, electricity, gas and other fuels	-14.6	-0.1	-2.9	110
Household furnishings, equipment and maintenance	4.7	0.5	0.8	113
Health	7.4	0.6	1.3	122
Transport	2.1	-0.5	1.0	117
Communication	-36.3	3.5	-8.5	76
Recreation and culture	-0.7	1.1	-1.0	114
Education	-0.1	1.6	-1.5	107
Restaurants and hotels	0.9	0.0	0.8	119
Miscellaneous goods and services	7.3	1.6	0.0	119

Source: Eurostat.

private consumption was 14% higher in Sweden than in the EU15 in 2005. The Swedish Competition Authority calculates, that if this difference were only to be halved, a Swedish family with children would save around SEK 30 000 per year (Konkurrensverket, 2005). Supermarket arrival coincided with the more flexible granting of building permits by municipalities for such purposes – something the Competition Authority had long been advocating (Konkurrensverket, 2005).⁶ As there has not been a formal change in legislation, this seems to reflect increased integration and the associated higher competitive pressures from abroad.

Going forward, the momentum coming from international competitive pressure should be used for further efforts to enhance the competition environment within Sweden, in particular in the legal framework and the capacities of the competition authority. The *2004 OECD Economic Survey of Sweden* has a number of recommendations in this regard which have not been followed up so far (OECD, 2004).

6. The Planning Act traditionally gives municipalities the right to regulate the use of available space for agricultural, industrial, business and recreational purposes. Municipalities thereby play a crucial role in the establishment of local businesses, arguably contributing to the highly oligopolised structure in the retail grocery trade in Sweden (OECD, 1999).

...on wages

Another indirect channel from increased integration and globalisation to domestic inflation is through the wage-setting process. Wage-setting could be directly affected through foreign workers coming to the country willing to work at lower wages, as has recently happened when Latvian construction workers came to Sweden (Bank of England, 2006, and OECD, 2007). But there might also be indirect effects, namely that already just the possibility of foreign workers coming into the country (or of a Swedish company outsourcing its activities abroad) dampens wage pressures. According to Posen and Gould (2006) the increase of wage restraint (defined as wage growth lagging productivity growth) in Sweden over the past decade has been among the highest among EU countries.⁷

There has indeed been evidence that wage setting behaviour has changed over time. A simple estimated wage equation, relating nominal hourly earnings growth in manufacturing to inflation and a survey-based measure of labour shortages (lagged one year as a proxy for the strength of the bargaining power of labour), would have overstated actual wage growth since 2000 by an annual average of 1.5%.⁸ While the underlying reasons for this change are difficult to pin down, it is likely that the wage formation agreement (*Industriavtalet*) in 1997 is an important explanatory factor (OECD, 2007b). The agreement explicitly emphasized the importance of maintaining the competitiveness of the manufacturing sector in times of increased competition (and the manufacturing sector wage agreements serve as a benchmark for other sectors). One example for why competitiveness has become a more important element of wage setting is the increasing internationalisation of the Swedish automobile industry in the 1990s with the purchase of Saab and Volvo by General Motors and Ford, respectively. In the most recent past the trend of muted wage growth has been further reinforced with the increased inflow of immigrants from non-Nordic countries coming to Sweden for work and the entry of new member states to the European Union in 2004 (OECD, 2007b).⁹ While the absolute inflow of such immigrant workers is still quite low, amounting to only a little more than 0.1% annually of the labour force in 2005, it is increasing strongly. As this is a fairly recent phenomenon, the effects of globalisation on wages are still discussed controversially and solid empirical evidence remains scarce. On the one hand, Dumont *et al.* (2006) find that globalisation has a negative impact on union bargaining power in large EU countries, with potentially restraining effects on labour costs. On the other hand, Ball (2006) suggests that muted wage developments might simply be related to lower trend inflation as well as increased central bank credibility (anchoring inflation expectations) which has reduced the frequency of nominal price adjustments.

Looking across sectors in Sweden, firms more exposed to international competition (measured either as a higher average export share of production or higher import penetration) tend to have higher productivity growth and lower growth of unit labour costs.¹⁰ Compared with other countries, unit labour costs in Swedish manufacturing, in particular, have undershot those of various competitors (apart from

7. Posen and Gould (2006) compute the difference in average wage restraint between the periods 1991-98 and 1999-2004.

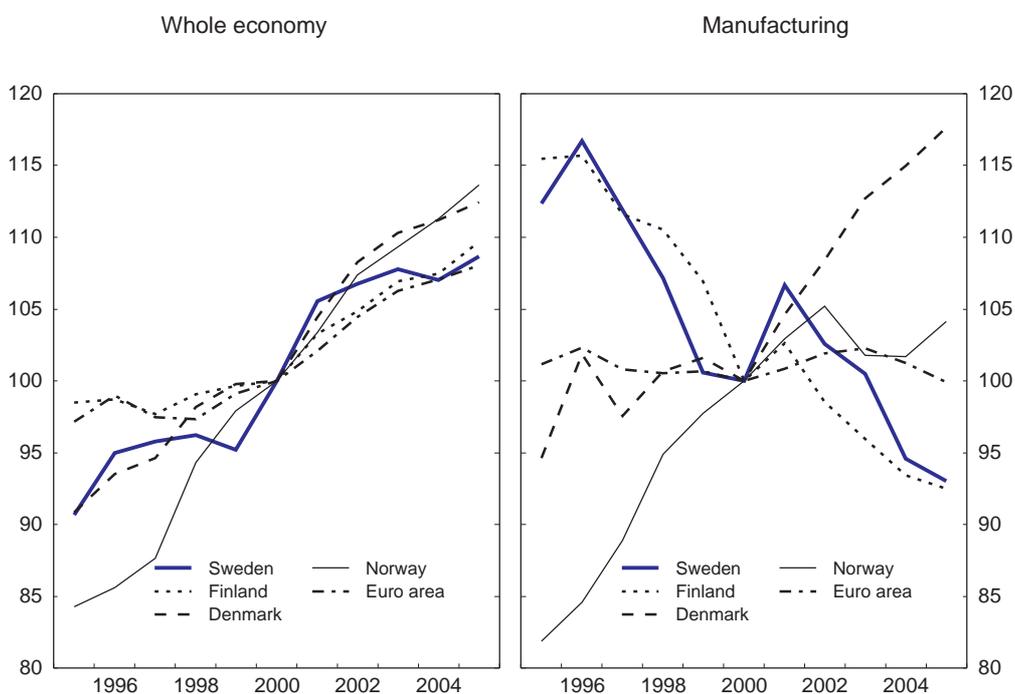
8. The equation is estimated over the period 1975Q1 to 2000Q1 using the labour shortage data for the manufacturing sector from the National Institute of Economic Research's Business Survey results, annual consumer price inflation and data on nominal hourly earnings growth in manufacturing from the OECD Main Economic Indicator Database. From 2000Q2 onwards a simulation is performed, using the estimated coefficients from the model and actual values for inflation and labour shortages.

9. This is being helped by the fact that Sweden has no special restrictions on worker mobility from the new EU member states.

10. Based on data from the OECD STAN database over the period 1996-2002. IMF (2006) presents evidence for a negative relationship between growth in openness and producer price inflation across countries and sectors.

Finland), as a result of muted wage growth and strong productivity developments. As wage negotiations in other sectors broadly follow the results in manufacturing, this is to some extent translated into the economy as a whole (Figure 5). Some of this wage restraint is related to the specific sectoral composition of Swedish manufacturing, with a high share of IT which is usually characterized by a strong productivity performance. When compared with other countries, it is indeed visible that productivity performance is strong in Swedish manufacturing with average annual productivity growth of 5.9% (1999-2003), higher than in the other Nordics and more than twice as high as in Canada. Apart from the automobile sector, the importance of the IT-sector is one of the main explanations. On the other hand, IT products decline in price over time and therefore labour costs cannot fully compensate for the strong productivity gains. This is one factor behind the relatively favourable development of unit labour costs in IT-producing countries such as Sweden and Finland.

Figure 5. Unit labour costs in sectors
Indices 2000 = 100



Source: OECD Main Economic Indicators database.

The rise of the IT sector might also have wider implications for the assessment of inflationary pressures from a more cyclical perspective. If potential growth estimates do not adequately take into account the structural change towards IT contributing to a more permanent productivity growth, they are likely to underestimate the true growth potential of the economy (OECD, 2007b). Strong actual GDP growth rates might then be wrongly interpreted as being above potential, thereby creating the expectation of emerging inflationary pressures. However, determining the cyclical and structural components of productivity growth is far from being an easy task, in particular if the economy underwent a structural change like Sweden in the 1990s.

In sum, the evidence suggests that supply shocks associated with globalisation have had quite some impact on inflation. The quantitative assessment available shows that the trade effect as estimated by Pain *et al.* (2006) has reduced inflation by between 0.1 and 0.4 percentage points since 2000. Convergence of consumer prices relative to the euro area made up 1 percentage point on average per year (up to 2005). Both estimates might to some extent be driven by the same factors. Relating these quantitative estimates to the fact that average monthly inflation rates have been 0.6 percentage point below the 2% target and around ½ percentage point below euro area inflation since 2000 shows that inflation would probably have been closer to target without such globalisation related effects.

Implications for monetary policy

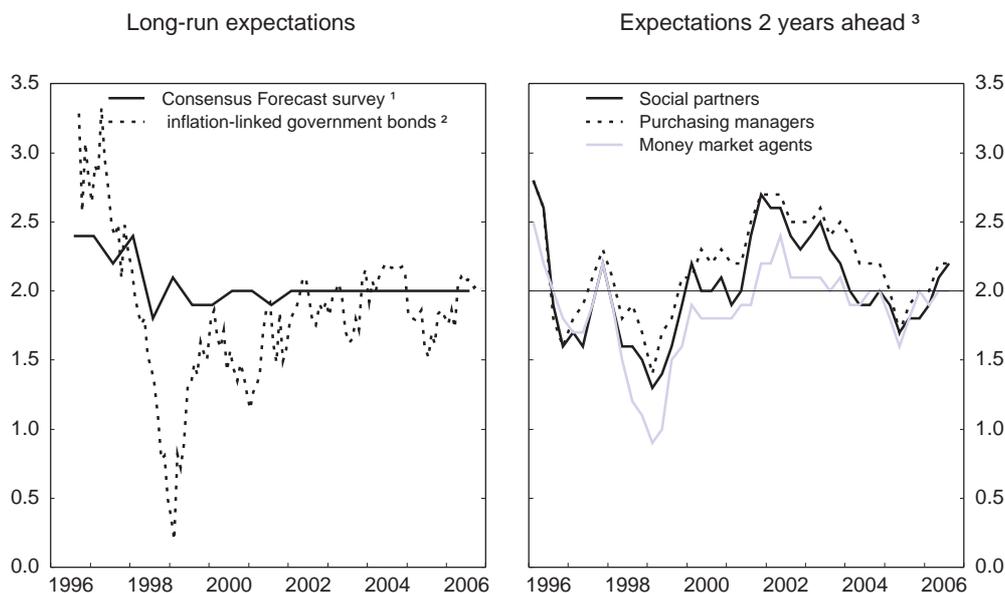
Globalisation affects relative prices, but not necessarily the aggregate price level: lower or even falling import prices can be compensated by higher domestic prices.¹¹ The general price level thus depends on the preferences and actions of the monetary policy authority and an inflation-targeting central bank can always stabilize domestic inflation at a desired level in the medium- to long-term (Bean, 2006). However, whether to fully accommodate the supply shock coming from globalisation (thus allowing prolonged deviations from the inflation target) or to offset it remains a key issue for domestic monetary policy. Part of the globalisation impact, in particular the effect coming from import prices and deregulation, is likely to be a one-off price level effect (although it nevertheless can be persistent as it is likely diffused over time). The monetary policy reaction to it should depend on whether price setters in the economy perceive the effect to be permanent and change their inflation expectations. The other part of the globalisation impact, namely the reduced sensitivity of wages to domestic labour market slack is likely to have a more lasting impact on inflation dynamics and implies that the traditional transmission channel from monetary policy to prices via interest rates and domestic demand components is now weaker. This would require larger shifts in the policy stance to achieve a given effect on inflation.

The fact that inflation has remained below target on average since 1995 suggests that the Riksbank has accommodated the supply effects on inflation, explicitly allowing for deviations. This claim is supported by recent statements. While admitting that inflation had been overestimated (and the supply shocks underestimated), in particular in the recent past, the Riksbank argues that even with more accurate forecasts it remained unclear if policy should have been more expansionary (Riksbank, 2006a). The main explanation given is that strong house price rises and household debt increases needed to be taken into account, warranting a cautious policy. Furthermore, in a recent memorandum, the Riksbank specified that in certain circumstances of large deviations of inflation from its target, policy may allow inflation to return to target only beyond the usual two-year horizon (Riksbank, 2006b). However, as the central bank also stresses, it is essential that this more flexible interpretation of the strategy does not undermine confidence in monetary policy and that the inflation target remains firmly anchored. Figure 6 displays long-run inflation expectations, taken from surveys and bond market prices which can be taken as a measure for the credibility of the inflation target. Some volatility in the second half of the 1990s notwithstanding, long-run expectations are very close to the 2% target. The same holds for expectations at the two-year horizon, even although fluctuations are somewhat larger. In sum, there is no evidence so far that faith in the central bank's ability to achieve the inflation target has been reduced and that the inflation target does not remain highly credible.¹²

11. Rogoff (2006) states that, seen from this perspective, emerging markets are even exporting inflation (rather than deflation) to the other sectors in the global economy.

12. This is in line with Gurkaynak (2005), who analyze global long-run inflation expectations in more detail and find that they remain more firmly anchored and react less to temporary shocks in countries where the central bank has an explicit inflation target, such as Sweden and the UK.

Figure 6. Inflation expectations
Year-on-year percentage change



1. Based on semi-annual survey of inflation expectations 6-10 years ahead among Swedish commercial banks and research institutes.
2. Calculated as the difference between nominal and inflation-indexed Swedish government bond yields for 10 year maturity. This measure also includes liquidity and inflation risk premia and thus should be interpreted with caution.
3. Based on quarterly survey by Prospera Research AB.

Source: Consensus Forecast, Datastream and Prospera Research AB.

Whether the Riksbank has responded appropriately to the low inflation environment is controversially discussed in a recent evaluation report on Swedish monetary policy between 1995 and 2005 (commissioned by the Swedish Riksdag Committee on Finance and prepared by Frederic Mishkin and Francesco Giavazzi). While acknowledging that the Riksbank “compares favourably with the best central banks in the world”, it gives a number of suggestions for improvement (Annex). Given the persistent undershooting of the inflation target in recent years, it is criticized that monetary policy had been too restrictive with hindsight. While the report admits that some of the policy mistakes have to do with the forecast errors that the Riksbank (and almost all other forecasters) had made, two more substantive issues are raised:

- First, the increased focus on the role of house prices in policy-making over and above their immediate impact on inflation is viewed critically as it has prevented a more expansionary policy in recent years.
- Second, more focus should be put on inflation targeting being flexible in the sense of reducing both inflation and output (employment) fluctuations. This means, for example, that after a negative supply shock such as an oil price increase, inflation should be allowed to return gradually to target (rather than be forced back within the target horizon). The report also suggests that in order to compensate for a period of inflation being below target, inflation should be allowed to remain above target for some time, so as to take price level effects into account. However, communicating such a policy will not be easy and it should therefore be considered with prudence.

The role of house prices

With respect to house prices, it is an open issue whether in hindsight the Riksbank acted rightly by taking them into account (the role of the Riksbank in preventing a house price crash would probably never be visible). Above all, the academic discussion about whether monetary policy should consider house prices over and above their immediate impact on inflation is still ongoing (Box 3). In particular, the issue surrounds the longer-term implications for price stability related to the risk of the build-up of an asset price boom-bust cycle which might have deflationary consequences beyond the usual time horizon for achieving the inflation target. Such a scenario is difficult to include in the usual inflation target as it has a low probability but could have larger consequences and the Riksbank states that it tends to let asset price developments affect the timing of their interest rate changes somewhat (for example by starting a tightening cycle earlier than would be justified by conventional forecasts of inflation and real economic developments alone).¹³

Box 3. Monetary policy and asset prices

How central banks should deal with asset prices is controversially debated. While asset prices are not usually part of the consumer price index, asset price boom-bust-cycles can well have negative effects for price stability over the long run. For example, a fall in asset prices reduces the wealth of consumers and might negatively impact their spending plans. In addition, excessive household indebtedness might also lead to cutbacks in consumption if an asset price bubble bursts. Such falls in demand can lead to deflationary trends and risks to price stability, which the central bank might want to take into account when setting policy rates. In this context, should central banks try to prevent bubbles from inflating or should they instead deal with the consequences once a bubble bursts?

The Federal Reserve is pursuing the latter strategy, on the grounds of three arguments (Kohn, 2006b): First, recognizing bubbles in a timely fashion is inherently difficult. Second, it remains unclear to what extent a modestly tighter interest rate policy can effectively prevent the built-up of bubbles. Third, the economic gains from preventing the bubble must outweigh the losses that a higher interest rate will generate in other parts of the economy.

Proponents of a strategy of leaning against the build-up of asset price bubbles argue on the contrary that the uncertainty regarding the existence of a bubble is no different from other uncertainties a central bank has to face. Insuring against potential negative effects of a boom-bust-cycle requires a somewhat tighter monetary policy than would be justified in a macroeconomic environment without an inflating bubble (ECB, 2005). The European Central Bank broadly follows this line, arguing in addition that an asymmetric approach to asset price bubbles would risk creating moral hazard problems as investors know in advance that they will be bailed out in an asset price bust.

In any case, it is important that the costs and benefits of such a policy are weighed against each other and communicated. But more importantly, the Riksbank should provide more evidence on the empirical assessment of the sustainability of house prices and household indebtedness, the channels through which they impact price stability as well as of the effects that monetary policy can have in countering it. OECD calculations suggest that house prices have only recently surpassed their fundamentally justified value and the undervaluation has turned into a slight, albeit growing, overvaluation (OECD, 2007b). Similarly, while household debt levels have reached very high levels, the debt service burden remains fairly low. Public understanding of the Riksbank's chosen way to deal with asset prices and indebtedness would benefit from a more thorough analysis of the issues involved. In addition, misunderstandings would be avoided by repeatedly clarifying that asset prices are not an independent target for monetary policy.

13. While recognizing that the theoretical discussion surrounding an optimal policy approach is ongoing, Ingves (2006) argues that this should not prevent the Riksbank from ignoring the risks of an asset price bubble to future inflation and economic activity.

The case for flexible inflation targeting

There is broad agreement today that best-practice inflation targeting has to be flexible by caring about both inflation and output fluctuations.¹⁴ This interpretation becomes particularly important in the face of supply shocks which move both measures in opposite directions. The Riksbank's decision to vary the time horizon over which inflation will be brought back to target is one way to introduce more flexibility and also to gain more insight in the inflation/output relationship under uncertainty. In the presence of a temporary supply shock this might be a suitable way to avoid output fluctuations resulting from forcing inflation back to target within two years, provided it is applied symmetrically, *i.e.* also when inflation overshoots. However, given that there is considerable uncertainty about the persistence of the supply shocks stemming from globalisation, such an approach at the moment bears the risk of output losses due to an overly strict policy stance. Therefore, it might be advisable in certain circumstances to lean towards a more expansionary policy in case of prolonged undershooting, also to get more insight into how inflation behaves in the new environment.¹⁵ This kind of "constrained discretion" about the horizon over which inflation will be brought back to target after a shock is one of the strengths of the inflation targeting strategy (King, 2005). At the same time, it has to be acknowledged that the current situation with double-digit growth of real estate prices, the scaling back of housing taxation by the government and the rapid credit growth is special. Given this, a more cautious monetary policy might therefore be required currently.

As short- to medium-run inflation becomes more uncertain and deviations from target more persistent, long-run inflation expectations should be closely watched as more flexibility is introduced into the policy making process. Besides clarifying the policy approach in speeches and in publications, public understanding of the factors that underlie the forecasts as well as of the weight of inflation and output in its policy decisions is likely to be helped by the Riksbank's recently announced plan to base the forecasts for inflation on its own assessment of the future policy rate (Box 4). This may also improve guidance of the public regarding the future policy stance, thereby potentially increasing the effects of monetary policy. In addition, devoting more resources into analysing whether the forces driving inflation have changed over the past is an important challenge for the future, which would improve the basis for forecasting. In this regard, communicating more clearly whether inflation has been affected by domestic or foreign factors might help motivating policy steps better.

Box 4. Publication of the preferred future interest rate path

The interest rate assumption used as an input for the Riksbank's inflation forecasts has evolved over time. Up to the autumn of 2005 the main forecasting scenario was based on the assumption of a constant repo rate over the forecasting horizon. While this procedure was easy to communicate to the public, it was seen as rather unrealistic and gave no clear guidance regarding future policy rate developments. Therefore, starting with the Inflation Report in 2005 Q3, inflation forecasts were based on financial market expectations for future interest rates, as implied in the yield curve. By indicating to the public whether it deemed this path reasonable or not, the Riksbank aimed at guiding expectations of future policy moves. A step towards even more clarity was taken in February 2007, when the Riksbank started to publish its own forecast path for the repo rate in order to base its inflation forecast on it. Besides reducing uncertainty by being clearer about the envisaged future interest rate developments, this should also help the public to better understand the reasoning behind monetary policy decisions (Riksbank, 2007). Practical experience with such a measure is still limited so far as only two other inflation targeting central banks – the Norges Bank and the Reserve Bank of New Zealand – communicate an explicit policy path.

14 Bank of England governor Mervin King described central banks that are only concerned with inflation, thereby not taking output considerations into account, as "inflation nutters".

15 King (2005) describes monetary policy in practice as "a continuous process of learning embedded" (p. 8).

The benefits of publishing an explicit policy path are seen as increasing transparency and accountability of the central bank, thereby contributing to anchor long-run inflation expectations (Kahn, 2007). In addition, publishing a policy path may allow the central bank to exert a larger influence on the medium- to long-run interest rates, which normally have a greater influence on economic activity and inflation than short-term interest rates. Arguments against the publication of a policy path, on the other hand, mainly relate to implementation problems. Rather than agreeing on one interest rate decision at a time, policymakers would have to find a consensus on the whole future path – which is arguably more difficult (in particular in larger committees). Also, the public could mistakenly view the policy path as an unconditional commitment and the central bank could tend to refrain from changing the path too often in order not to undermine the public's confidence. To deal with this issue and avoid the impression that the policy path represents an unconditional commitment the Riksbank has explicitly pointed out that the policy path is surrounded by uncertainty and dependent on future developments (Riksbank, 2007).

Conclusion

The effects of globalisation on inflation are changing character and are still surrounded by uncertainty, in particular regarding their persistence. How monetary policy reacts will be important for Sweden's macroeconomic performance and will be serving as an example for other countries confronted by similar inflation dynamics. This also holds for the Riksbank's recent decision to publish its preferred path for future interest rates, which was a key recommendation during the preparation of the *OECD Economic Survey of Sweden 2007*. Remaining recommendations are summarized in Box 5.

Box 5. Recommendations regarding inflation and monetary policy

- The downward adjustment of the price level in certain sectors following increased competition and deregulation is to the benefit of Swedish consumers and should be welcomed. Regulatory reform should continue, in particular to promote competition in the construction and in the electricity sectors, where price levels are significantly above the European average.
- The central bank's decision to sometimes lengthen the time horizon for achieving the inflation target is sensible if indeed the positive supply shocks are temporary, but it will be costly if the rise in productivity growth proves to be lasting. With short- to medium-run inflation becoming more uncertain, long-run inflation expectations should be closely watched, to ensure that these remain well anchored.
- Given the apparent persistence with which globalisation, increased competition and productivity growth have kept actual inflation outcomes below projections, more resources should be devoted to analysing these underlying mechanisms of inflation developments, thereby improving the basis for forecasting.
- In speeches and publications, the Riksbank has clarified that it considers house prices only in so far as they can be expected to impact on future consumer price stability, but these clarifications could need repetition to ensure that they are well understood by the public. The Riksbank's policy could be supported by a more thorough empirical assessment of the sustainability of house prices and household indebtedness, the channels through which they impact on price stability as well as of the effects that monetary policy can have in countering it.

Bibliography

- Ball, L. (2006), "Has Globalization Changed Inflation?", *NBER Working Paper* 12687.
- Bank of England (2006), "The Macroeconomic Impact of Migration (Box)", *Inflation Report*, November.
- BIS (2006), *76th Annual Report*, Basle.
- Bean, C. (2006), "Comment on Ken Rogoff: 'Impact of Globalisation on Monetary Policy'", Federal Reserve Bank of Kansas City, Annual Economic Symposium 2006.
- Catte, P. and T. Slok (2005), "Assessing the Value of Indicators of Underlying Inflation for Monetary Policy", *OECD Economics Department Working Paper* 461, OECD, Paris.
- Dumont, M., G. Rayp, P. Willemé (2006), "Does Internationalization Affect Union Power? An Empirical Study for Five EU Countries", *Oxford Economic Papers*, Vol. 58, pp. 77-102.
- ECB (2005), "Asset Price Bubbles and Monetary Policy", *Monthly Bulletin*, April 2005.
- Giavazzi, F., F.S. Mishkin (2006), An Evaluation of Swedish Monetary Policy 1995-2005, *Reports from the Riksdag* 2006/07:RFR 1, Committee on Finance, Stockholm.
- Gurkaynak, R., A.T. Levin, E.T. Swanson (2006), "Does Inflation Targeting Anchor Long-Run Inflation Expectations? Evidence from Long-Term Bond Yields in the U.S., U.K., and Sweden", *Federal Reserve Bank of San Francisco Working Paper* No. 9.
- IMF (2006), *World Economic Outlook*, May.
- Ingves, S. (2006), "The Inflation Target and Monetary Policy", Speech at the Swedish Economics Association, 4 April.
- Kahn, G.A. (2007), "Communicating a Policy Path: The Next Frontier in Central Bank Transparency?", *Federal Reserve Bank of Kansas City Economic Review*, 2007:01, pp. 25-51.
- King, M. (2005), "Monetary Policy: Practice Ahead of Theory", Mais Lecture, London, 17 May.
- Kohn, D. (2006a), "Reflections on Globalisation and Policies", Speech at the European Economics and Financial Centre Seminar, London, 6 July.
- Kohn, D. (2006b), "Monetary Policy and Asset Prices", Speech at the colloquium "Monetary Policy: A Journey from Theory to Practice", Frankfurt, March 16.
- Konkurrensverket (2004), *Competition in Sweden 2004*, Stockholm.
- Konkurrensverket (2005), *Competition in Sweden 2005*, Stockholm.

- Linnhag, A. (2006), *Konkurrensen inom dagligvaruhandeln (Competition in Retail Trade)*, mimeo Sveriges Rigsdag.
- McKinsey (2006), *Sweden's Economic Performance: Recent Development, Current Priorities*, Stockholm.
- OECD (1999), *OECD Economic Survey of Sweden*, OECD, Paris.
- OECD (2004), *OECD Economic Survey of Sweden*, OECD, Paris.
- OECD (2007a), *Regulatory Reform in Sweden: Achieving Results for Sustained Growth*, OECD, Paris, forthcoming.
- OECD (2007b), *OECD Economic Survey of Sweden*, OECD, Paris.
- Pain, N., I. Koske and M. Sollie (2006), "Globalisation and Inflation in the OECD Economies", *OECD Economics Department Working Paper 524*, OECD, Paris.
- Posen, A. and D.P. Gould (2006), "Has EMU had any Impact on the Degree of Wage Restraint?", *CEifo Working Paper No. 1783*.
- Przybyla, M. and M. Roma (2005), "Does Product Market Competition Reduce Inflation? Evidence from EU Countries and Sectors", *ECB Working Paper No. 453*.
- Riksbank (2005), "Why are Swedish import prices so low?", *Inflation Report 2005:2*, Riksbank, Stockholm.
- Riksbank (2006a), *Monetary Policy in Sweden*, Riksbank, Stockholm.
- Riksbank (2006b), "Material for Assessing Monetary Policy 2003-2005", *Inflation Report 2006:1*, Riksbank, Stockholm.
- Riksbank (2007), *Monetary Policy Report 2007:01*, Riksbank, Stockholm.
- Rogoff, K. (2006), "Impact of Globalisation on Monetary Policy", Federal Reserve Bank of Kansas City, Annual Economic Symposium 2006.
- Rosenberg, I. (2005), "Why is Swedish inflation so low?", Speech on 13 April, Stockholm.

THE GIAVAZZI – MISHKIN REPORT

The following recommendations were made in the report “An Evaluation of Swedish Monetary Policy between 1995 and 2005” by F. Giavazzi and F.S. Mishkin.

The Conduct of Monetary Policy

1. The Riksbank should more clearly explain that flexibility in its inflation targeting regime implies that the conduct of monetary policy should try to reduce both inflation and employment (output) fluctuations.
2. The Riksbank should clarify that asset prices (housing prices, stock prices and exchange rates) are not independent targets for monetary policy.
3. Persistent undershooting of the inflation target suggests that monetary policy should lean towards more expansionary policy (while persistent overshooting should bias monetary policy to be relatively more contractionary).
4. The Riksbank should provide more information on the future path of policy rates that are used in producing its forecasts of inflation and the economy, but should make clear the uncertainty surrounding such a path.
5. The inflation target should be defined in terms of a price index that is not directly affected by the costs of housing.
6. There is no compelling reason to change the level of the inflation target from the 2% number. But further study of the appropriate level of the inflation target could be beneficial if it is conducted by technical experts.

Governance of Monetary Policy

7. The dialogue between the Sveriges Riksdag and the Riksbank needs to be enhanced by separating the release of the *Inflation Report* from its discussion in the Finance Committee.
8. A main venue for public debates on monetary policy is in the parliament.
9. Individuals who are nominated to the Executive Board of the Riksbank should be asked to appear in parliamentary hearings before they are appointed.

WORKING PAPERS

The full series of Economics Department Working Papers can be consulted at www.oecd.org/eco/Working_Papers/

559. *The Swedish housing market - Better allocation via less regulation*
(June 2007) Felix Hüfner and Jens Lundsgaard
558. *Linkages between performance and institutions in the primary and secondary education sector*
(June 2007) Douglas Sutherland and Robert Price
557. *Toward a more efficient taxation system in New Zealand*
(June 2007) Annabelle Mourougane
556. *Income inequality, poverty and social spending in Japan*
(June 2007) Randall Jones
555. *Improving the efficiency of health care spending: selected evidence on hospital performance*
(May 2007) Espen Erlandsen
554. *Cross-country analysis of efficiency in OECD health care sectors: options for research*
(May 2007) Unto Häkkinen and Isabelle Joumard
553. *What promotes fiscal consolidation: OECD country experience*
(May 2007) Stéphanie Guichard, Mike Kennedy, Eckhard Wurzel and Christophe André
552. *Globalisation and the macroeconomic policy environment*
(April 2007) Karine Hervé, Isabell Koske, Nigel Pain, Franck Sédillot
551. *Why has core inflation remained so muted in the face of the oil shock?*
(April 2007) Paul van den Noord and Christophe André
550. *Housing markets and adjustments in monetary union*
(April 2007) Peter Hoeller and David Rae
549. *Financial markets in Iceland*
(March 2007) Peter Tulip
548. *The political economy of delaying fiscal consolidation*
(March 2007) Boris Cournède
547. *The impact on growth of higher efficiency of public spending on schools*
(March 2007) Frédéric Gonand
546. *Performance indicators for public spending efficiency in primary and secondary education*
(February 2007) Douglas Sutherland, Robert Price, Isabelle Joumard and Chantal Nicq
545. *Monetary policy and macroeconomic stability in Latin America: the cases of Brazil, Chile, Colombia and Mexico*
(February 2007) Luiz de Mello and Diego Moccero
544. *The Brazilian “tax war”: the case of value-added tax competition among the states*
(February 2007) Luiz de Mello
543. *Public spending efficiency: institutional indicators in primary and secondary education*
(January 2007) Frédéric Gonand, Isabelle Joumard and Robert Price

542. *Enhancing turkey's growth prospects by improving formal sector business conditions*
(January 2007) Rauf Gönenç, Willi Leibfritz, Gökhan Yilmaz
541. *Fiscal relations across levels of government in Australia*
(January 2007) Vassiliki Koutsogeorgopoulou
540. *Russian manufacturing and the threat of 'Dutch Disease': A comparison of competitiveness developments in Russia and Ukrainian industry*
(January 2007) Rudiger Ahrend, Donato de Rosa and William Tompson
539. *Stimulating innovation in Russia: The role of institutions and policies*
(January 2007) Christian Gianella and William Tompson
538. *Healthcare reform in Russia: problems and prospects*
(January 2007) William Tompson
537. *A golden rule for Russia? How a rule-based fiscal policy can allow a smooth adjustment to the new terms of trade*
(January 2007) Christian Gianella
536. *From "clientelism" to a "client-centred orientation"? The challenge of public administration reform in Russia*
(January 2007) William Tompson
535. *Has the rise in debt made households more vulnerable?*
(December 2006) Nathalie Girouard, Mike Kennedy and Christophe André
534. *Social security reform in Brazil: Achievements and remaining challenges*
(December 2006) Fabio Giambiagi and Luiz de Mello
533. *Improving labour utilisation in Brazil*
(December 2006) Luiz de Mello, Naércio Menezes Filho and Luiz G. Scorzafave
532. *Boosting innovation performance in Brazil*
(December 2006) Carlos H. de Brito Cruz and Luiz de Mello
531. *Consolidating macroeconomic adjustment in Brazil*
(December 2006) Luiz de Mello and Diego Moccero
530. *Product market regulation in the non-manufacturing sectors of OECD countries: Measurement and highlights*
(December 2006) Paul Conway and Giuseppe Nicoletti
529. *The Turkish pension system: further reforms to help solve the informality problem*
(November 2006) Anne-Marie Brook and Edward Whitehouse
528. *Policies to improve Turkey's resilience to financial market shocks*
(November 2006) Anne-Marie Brook
527. *Upgrading Japan's innovation system to sustain economic growth*
(November 2006) Randall S. Jones and Tadashi Yokoyama
526. *Strengthening the integration of Japan in the world economy to benefit more fully from globalisation*
(November 2006) Randall S. Jones and Taesik Yoon