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Did the devaluations of 1981 and 1982 induce a structural shift in the Swedish economy?

The primary purpose of the Swedish devaluations was to bring about a relative expansion of the sector exposed to foreign competition. However, in order to influence the economic structure, a nominal devaluation must be followed by a real one, so that the relative price of the products of the traded goods sector (T sector) rises. But this did not happen and the T sector did not thereby become relatively larger.

The main purpose of the Swedish devaluations totalling 25 per cent in the early 1980s was to correct a structural imbalance in the Swedish economy by bringing about a relative expansion of the sector exposed to foreign competition¹. In this article I shall try to answer three questions: Which factors are decisive for ensuring that a devaluation will lead to a structural change in the economy? To what extent did the devaluations attain this objective? Where they failed, what was the cause of the failure?

The devaluations succeeded in lowering Sweden's relative price and cost levels enduringly and thereby—according to the conventional view—in improving the international competitiveness of Swedish industry and trade for a long period. Yet, it is increasingly maintained that low relative costs are not a sufficient, and perhaps neither a decisive, condition for international competitiveness². Developments in Sweden certainly support this view since, despite a trendwise downturn in the relative cost level, industry has continued to lose market share abroad.

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Structure of the Swedish economy 1980-1988

In order to study the structure of the Swedish economy during the 1980s, the economy is divided into three sectors: one sector that is exposed to international competition, the T sector; and two sectors not exposed to international competition (sheltered)—one private, the private non-traded goods sector (PN sector), and the other public, the government non-traded goods sector (GN sector). The GN and PN sectors are together termed the non-traded sector (N sector).

Figure 1 shows how each sector's share of the total value added changed between 1980 and 1988³. Figure 2 shows the trend for the number of hours worked. In terms of employment, the GN sector increased up to 1984, and then decreased somewhat. The share now appears to have stabilized just under 30 per cent. The T sector's share of employment has fallen about 2 percentage points since 1980.

¹ The need for focusing the analysis on the effects of the devaluations on the structure of the economy has been emphasized earlier in the Swedish debate by Hörngren and Vredin (1985).

² Faxén *et al* (1988), Sölvell (1988), Erixon (1988) and Dahmén (1977).

³ The information reported concerning the trend for the T, PN and GN sectors is based on Statistic Sweden's EFO-grouped national accounts.

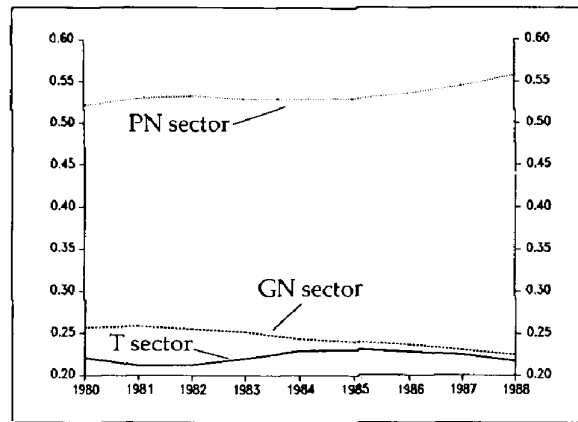
The downward trend was broken temporarily to some extent in 1984 and 1987.

Thus, it is not possible to note any significant shift in employment towards the T sector as a result of the devaluations of 1981 and 1982. Instead, the share now appears relatively stable at just over 20 per cent. The PN sector's share of employment has remained stable at somewhat more than 50 per cent, but with a slight upward tendency since 1984. This is seen more clearly in *Figure 3*, which depicts the T sector's share of total industrial output (T+ PN sector), expressed as a share of the value added, at constant and current prices, and as a share of the number of hours worked. The T sector's share of industrial employment has fallen by just over 2 percentage points since 1980 and the temporary shift in employment towards the T sector that occurred in 1984 was marginal.

Figure 3 also shows that the devaluations did not lead to a lasting increase in the T sector's share of industrial production. After the devaluations of 1981 and 1982 the share increased initially by about 2 percentage points, irrespective of the measure used. However, the peak was attained as early as 1984/85, and in 1988 the T sector's share of industrial output, measured at current prices, had dropped below the low 1982 level. This is not due solely to the rapid growth of the sheltered service sector. As shown by Vinell (1990), this is also true *within* the manufacturing sector. From 1985 the sheltered section of the manufacturing sector has grown much faster than that exposed to foreign competition.

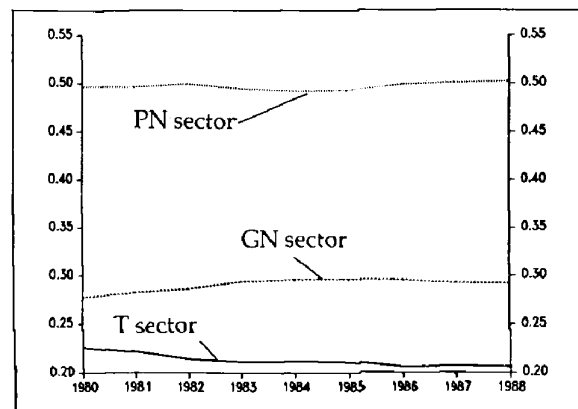
In summary, the devaluations thus failed to bring about a lasting increase in the T sector's share of both production and employment. A certain limited increase in the share occurred immediately after the devaluations, but quite soon the T sector started to decrease again relative to the rest of the economy. It is true that the GN sector diminished somewhat after the devaluations in 1981 and 1982, yet the T sector expanded no more than temporarily on account of the fact that the PN sector started to expand very strongly from 1984/85.

Figure 1. Value added 1980-1988, by sector. Current prices



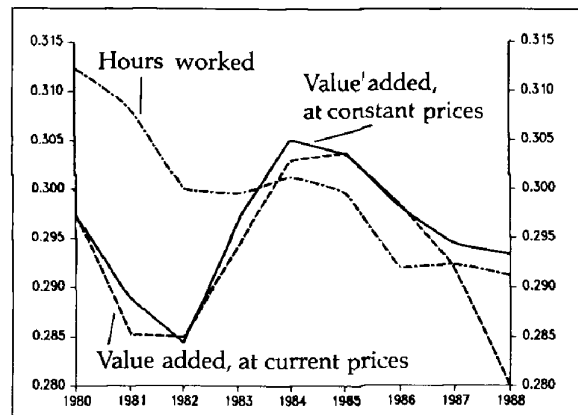
Source: Statistics Sweden

Figure 2. Number of hours worked 1980-1988, by sector.



Source: Statistics Sweden

Figure 3. T sector's share of total industrial (non-governmental) output 1980-1988.



Note: In calculating value added at constant prices, 1980-1985 has been expressed in 1980 prices, and 1986-1988 in 1985 prices.

Source: Statistics Sweden

Economic theory and devaluation

The model that has traditionally been used for analysing the effects of devaluation is the elasticities approach⁴. In the basic model featuring two countries it is assumed that one's own country is entirely specialized in the production of an exported good, while the other country produces a good that is imported. The purpose of devaluation is then to influence the relative price—the terms of trade—between these two goods. In the simplest formulation of this approach, the supply is assumed to be completely elastic, i.e., there are no restrictions on production. According to the so-called Marshall-Lerner condition, if the current-account balance is initially zero, a devaluation leads to an improvement in the current account as long as the sum of the import and export price elasticities is greater than unity.

According to empirical estimations of Swedish price elasticities (see Goldstein and Khan, 1985) it is generally found that the long-term export price elasticity is of the order of 1.5-2, while the import elasticity is about 0.8. These studies thus indicate that a devaluation—a deterioration in the terms of trade—has good prospects of improving the current account, given an elastic supply of export goods.

Alexander (1952) was the first who clearly showed the weaknesses of the elasticities approach. His starting-point was the well-known national accounts identity:

$$B = Y - A$$

where B denotes the current-account balance, Y is the national income, and A the total expenditure on goods and services, the absorption. The effect of a devaluation on the current account depends on the way in which it affects real income and the marginal propensity to import, and on its direct effect on absorption. Alexander's most important contribution was to show that a devaluation, even if it leads (only) to higher prices, affects the current account through its direct effect on absorption. Such an effect may arise, for example, through money illusion, income distribution to groups with a higher propensity to save, a nominal

progressive tax system and a negative real balance effect.

Devaluation intended to induce a structural shift in the economy

But in order to evaluate the effect of devaluations that are intended primarily to influence the economic structure, i.e., the relative sizes of the N sector and T sector, the theoretical framework must focus explicitly on the distinction between T goods and N goods (tradables and non-tradables). Such a model was introduced originally by the Australian economist Salter (1959). The model came to be known as the "dependent economy model" in order to emphasize the assumption that the country's terms of trade are given in the world market.

In the model it is assumed that the total capital stock is fixed and immobile between the sectors in the short term. The labour supply is also constant, but mobile between the sectors. With a fixed capital stock (declining return on capital), demand for labour is a function only of the real product wage in each sector. If, for example, the relative price of T goods rises and the nominal wage, W, is the same in the sectors, the product wage W/P_T falls and employment is stimulated in the T sector. The assumptions lead to the result that the supply in each sector is determined by the relative price $p = P_T/P_N$.

Equilibrium in the N sector means that the economy is in *internal* balance, and equilibrium in the current balance means that the economy is in *external* balance.⁵ The main problem in the Swedish economy has been the external imbalance at the prevailing relative price. In order to induce a structural shift in the economy, so that the production of T goods increases relatively, the relative price is required to shift in favour of the T sector. *To induce this relative shift in favour of the T sector is the primary aim of a devaluation intended to influence the structure of the economy.*

A relative price shift lowers the real product wage cost in the T sector, W/P_T , and raises that in the N sector, W/P_N . This stimulates a trans-

⁴Krueger (1983) and Dornbusch (1975).

⁵However, this is an unnecessarily strict definition of external balance. A long-term definition of external balance is that the discounted sum of all future current-account balances is zero, which means that a country cannot be a net borrower in perpetuity.

fer of resources to the T sector. At the same time, demand shifts from T goods to N goods when the latter have become relatively cheaper. However, it must be emphasized that the fundamental lesson learnt from the absorption approach is still valid: in order for a current-account deficit to be eliminated, total absorption is required to decrease sufficiently so that it is no longer higher than total income.

Thus, in the structural model it is the *internal* relative price P_T/P_N that is of interest, not the external as in the model with one imported good and one exported good. The relative price between T and N goods is defined in modern theory as the *real* exchange rate, e , thereby summarizing the incentives that govern resource allocation between the T and N sectors. An increased e makes the production of T goods relatively more profitable and stimulates transfer of resources from the N to the T sector.

If absorption alone decreases, e.g., after a tightening of economic policy, without affecting the internal relative price, it is true that a current-account deficit can always be eliminated, but no relative shift of production towards T goods is attained. Through a combination of a policy of restraint and a relative priceshift (e.g., by means of a devaluation), the economy can *simultaneously* attain current-account equilibrium and a structural shift. When the economy subsequently grows, the main objective of a devaluation intended to influence the economic structure is the growth of T goods.

Alternative measures of competitiveness

Thus, the most important measure of whether a devaluation has succeeded is whether it has led to a relative price shift between T and N goods—a *real* devaluation. The Swedish devaluations have seldom or never been motivated in these terms. Instead, the declared aim has generally been the reduction of Sweden's relative cost level—weakening the terms of trade. Based on this view, the success of a devaluation is assessed by means of such measures as terms of trade, relative unit labour cost (RULC), the hourly wage measured in common currency and the trend of the domestic price level in relation to the price level abroad.

The objective of a devaluation *cannot* be to worsen the terms of trade for the goods that are sold on auction markets, such as paper pulp, steel, iron ore, etc. On the other hand, the export volume may be influenced favourably since companies can move up along their own supply curves. The same may also apply to more differentiated products. But, in this case, companies can choose to utilize a devaluation in various ways: they can increase prices by the entire devaluation percentage and use the increased margin to boost demand for their own products by means of marketing measures and product development. Or they can raise prices in kronor, but not by the entire devaluation percentage. The way in which companies choose to act depends on a number of factors, e.g., the international economic situation, the companies' overall price strategy and the length of the period for which the cost advantages generated by the devaluation are expected to last.⁶ Anyhow, it is not at all certain that a devaluation has miscarried if it is not followed by a fall in the relative prices of differentiated products.

The criticism levelled at the relative price of T goods naturally applies also to the competitive measure RULC and the hourly wage measured in a common currency. In the long term, the wage share is constant on the whole, and RULC and the relative price will thereby measure the same thing in principle. However, even here the central aim of a devaluation may be to raise the profit share in industry since RULC will fall more than the relative price. It is then considered that the raised profits will lead to increased investment in industrial plants, R&D, marketing, etc. The hourly wage measured in a common currency is naturally even less of a relevant measure since no account is taken of changes in productivity.

Devaluations and the economic structure

The devaluations have done no more than possibly succeeded in the short term in putting a brake on the relative shrinking of the T sec-

⁶The importance of the length of the period for which the companies expect the cost advantage to last is discussed in greater detail in Henrekson (1985).

tor. This has been the outcome despite the fact that several of the traditional measures show that the devaluations have been successful in many respects.

In *Figure 4* we see how the devaluations of 1981 and 1982 brought both RULC and the relative prices down to a very low level. RULC was brought down to a level somewhat more than 20 per cent lower than that prevailing in the early 1970s. On the other hand, the effect on the relative price level was much less—a decrease of about 8 per cent. At the same time, despite lower RULC and relative price, market share⁷ has been regained to a surprisingly low extent. The improvement in 1983 and 1984 ceased abruptly and turned into a renewed decline long before the cost and price advantages generated by the devaluations were exhausted. The heavy losses in market share after 1984 are most remarkable.

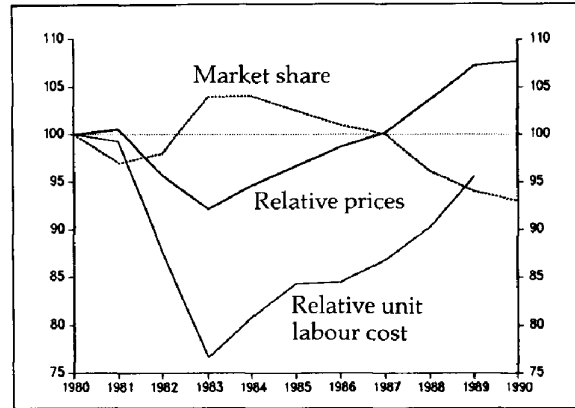
The fact that, following the devaluations of 1981 and 1982, the relative price appeared to have fallen by approximately one-third of the devaluation has often been criticized and interpreted in the sense that companies chose to raise their profits rather than attempt to increase their sales volume by lowering their prices in foreign currency. But if an excessively high price and cost level is not the basic problem at the time of the devaluation, there is no reason to expect that, in the first place, companies will lower their prices after the devaluation. This tendency may be expected to be particularly marked in a favourable economic situation.

The analysis points to a recurring, principal problem: Swedish industry expanded only for a short period after the devaluations despite the fact that the price and cost advantages gained lasted long enough to enable Swedish industry to regain satisfactory market share and lead to a state of long-term equilibrium in the current account.

After the devaluations, the T sector was helped by an improved international economic situation. Since capacity utilization was low

Figure 4. Sweden's relative prices and market share for exports of processed goods, as well as relative unit labour cost in common currency, 1980-1990.

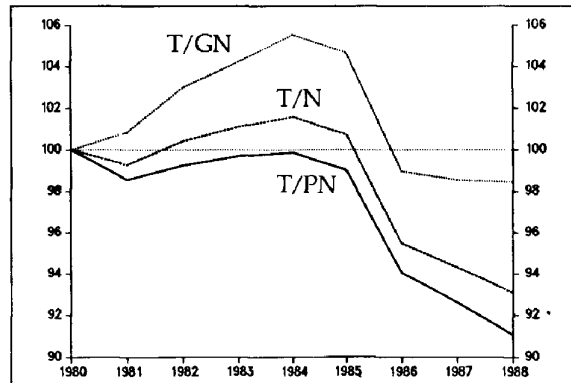
Index 1980 = 100



Source: Ministry of Finance

Figure 5. T sector's relative price vis-à-vis N, PN and GN sectors 1980-1988.

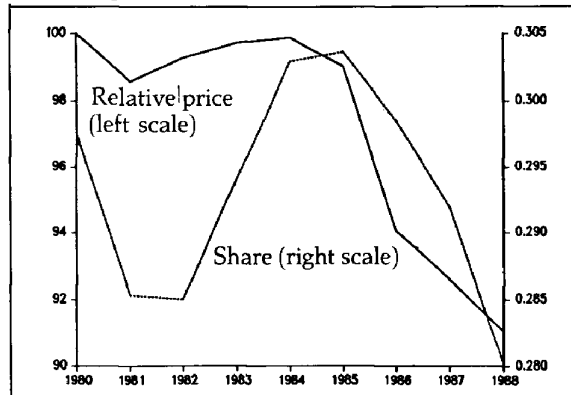
Index 1980 = 100



Source: Statistics Sweden

Figure 6. T sector's share of total industrial output at current prices and relative price of T/PN sector 1980-1988.

Relative price, 1980=100



Source: Statistics Sweden

⁷ A certain trendwise decline in Swedish market share is natural since new industrial countries have appeared in the world market. However, an important consideration for the analysis is that the actual decline was much greater than explainable on the basis of the appearance of new competitors.

initially, it was easy to raise production with existing capital and labour. Once the capacity limit is reached, resources are required to be moved from the N sector to the T sector. As we have seen, this requires a shift in the relative price in favour of the T sector, i.e., a *real* devaluation.

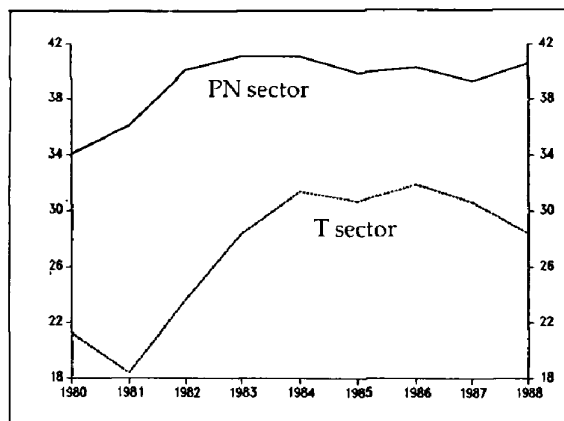
Figure 5 shows the trend to the relative price for the T sector vis-à-vis the total N sector and vis-à-vis the PN and GN sectors.⁸ The shift in relative price following the devaluations was very small. The improvement between 1981 and 1984 was limited to a bare 3 per cent and it declined from 1985. The relative price for the T sector rose somewhat more than 8 per cent between 1984 and 1988. In particular, the price trend for the T sector relative to the PN sector was unfavourable and, despite the two large devaluations, the 1980 level was never attained again.

Figure 6 focuses on the structure and relative price in industry. It is striking how closely the relative price and share trends follow each other, irrespective of whether the share is measured at current or constant prices. The devaluations resulted initially in a certain shift of the relative production, but the effect was both limited and brief. After 1985 the trend turned steeply downwards and, in 1988, both the T sector's share of industrial output and its relative price were at a lower level than before the 1981 devaluation. In other words, the devaluations appear to have failed completely in achieving the main objective — to influence the economic structure. The trend appears to be particularly serious from 1985 onwards. Since we were then in a situation of full, or overfull, employment, it was impossible for the T sector to attract resources from the PN or GN sectors when its relative price developed unfavourably.

An important precondition for attracting resources to the T sector is that its relative profit level be improved. Figure 7 shows the operating surplus as a share of the value added in each the sectors T and PN. The series must be interpreted with some caution. The profit-

Figure 7. Operating surplus as share of value added in T and PN sectors 1980-1988.

Percentage share



Note: Operating surplus including consumption of fixed capital, corrected for work performed by self-employed
Source: Statistics Sweden

ability of the T sector is much lower than that of the PN sector. The devaluations certainly appears to have raised the T sector's relative profitability over a period of some years, but from 1985/86 the profit level in the T sector started developing unfavourably in relation to the N sector.

Economic policy

As regards the devaluations in the 1980s, we have seen how 1985 stands out as the year when the positive structural effects on the economy turned in the opposite direction. The T sector's relative price and its share of the economy fell rapidly and, in 1988, were at their lowest levels in the entire post-World War II period. Parallel with this, the current account showed a sharp deterioration.

Table 1 gives a comparative breakdown of total GDP growth into its various components for the periods 1981-1984 and 1985-1988. During the former period, private consumption showed practically no increase and public consumption grew more slowly than GDP. Growth was predominantly export-led: nearly two-thirds of GDP growth consisted of increased net exports. On the other hand, gross investments did not increase faster than GDP. Especially striking was the negligible share of GDP growth which was channelled into investments in the manufacturing and extractive industries.

⁸ The relative price between the respective sectors has been calculated as the growth of the respective sectors' implicit price deflators for the value added.

Table 1. Breakdown of total GDP growth during 1981-1984 and 1985-1988 (1985 prices).

	1981—84 (%)	1985—88 (%)
Private consumption	0.7	83.5
Public consumption	16.8	18.4
Gross investments	19.7	43.9
Net exports	62.8	-45.8
Total	100	100
Gross investments		
SNR-REV 2000—3000	0.6	14.1
Gross investments in industry, exkl. SNR-REV 2000—3000	16.2	28.2

Source: National accounts. author's own calculations

This indicates that the T sector's increased share of value added during the period is attributable *not* to a relative expansion of the sector but to rising capacity utilization and employment.

From 1985 the increase in GDP was entirely consumption- and investment-led. Net exports fell sharply and their contribution to GDP growth was -46 per cent during the period 1985-1988. The increase in private and public consumption was more than 100 per cent of the increase in GDP. Investments also rose very sharply, but the fact remains that the predominant part of industrial investment took place in the sheltered sector. It is true that investments in the T sector rose to such an extent that the increase in gross investments was equal to 14 per cent of GDP growth; but, taken over the whole period, the increase in the sector's investments corresponds only to somewhat more than 8 per cent of GDP growth. As we saw, this was not enough to prevent a relative downturn.

While 77 per cent of the GDP increase in 1981-1984 flowed into capital formation (investments and improved net exports) and 17 per cent into consumption, 102 per cent was channelled into consumption in 1985-1988. Thus, devaluation policy was not focused long enough or persistently enough to expand production capacity. Naturally, this applies to the T sector in particular.

In its bill 82/83:50, the government writes: "However, the devaluation now being implemented is only the first phase of an overall crisis

plan, and it will be followed by a number of supplementary measures. These, together in a second phase, will ensure that the devaluation produces the desired effects" (page 20). Apart from a more rigorous economic policy, restructuring of the economy would probably have been facilitated if this second phase had comprised measures intended to remove a number of well-known growth-inhibiting mechanisms, particularly in the area of taxation, as well as in a number of regulated sectors that form a large part of the economy.⁹ In this connection it is of particular importance that devaluation was not promptly followed by measures to prevent large groups from benefiting by high inflation.

An important reason for the swing in 1985 is probably the deregulation of the credit market. The fact that the tax system was not adapted to the increased supply of credit contributed strongly to the rise in consumption and the general overheating that started in 1985. Under these circumstances, the task of nevertheless maintaining the positive effects of the devaluations of 1981 and 1982 imposed exceptionally high demands on fiscal policy.¹⁰

Bringing about the desired restructuring of the economy would have required a much more austere economic policy, which would have dampened the demand for labour in the GN and PN sectors as well as the profit level in the PN sector. Thereby, by becoming both wage- and profit-leading, the T sector would have been able to attract production factors from the rest of the economy and possibly also from other countries through higher foreign direct investment in Sweden. A desired effect would also have been to raise total savings. Now, this was not possible.

As a result of the excessively expansive economic policy pursued from 1985 onwards, we obtained no relative shift in the wage structure, and it is likely that profits in the PN sector were also higher. See *Figure 7*. High interest rates and a rapid credit expansion resulted in a high return on financial placements. Norman (1990) finds, for example, that for the 20 T-sector

⁹ See, for example, Agell (1990), Lindbeck (1984), Jakobsson (1984), Ems and Öhman (1988), and the 1990 Medium-Term Survey (LU 90).

¹⁰ This is discussed more fully in Franzén and Hörngren (1990).

companies he investigated, profitability in 1985 and 1988 was 40 per cent higher on financial capital than on working capital.

It has often been maintained that, in many respects, Sweden has been fortunate in the way that other countries have developed. The world economy showed a sharp upturn at the end of 1982, which was not foreseen at the time of the devaluations. The dollar started to fall in 1985 and its double weight in the currency basket resulted in an effective depreciation of the krona against the currencies of our most important competitor countries. Oil prices fell steeply during 1986, creating substantial scope for greater private consumption.¹¹ As regards the effect of the devaluation policy on the economic structure, these circumstances appear *ex post* rather unfortunate. These factors, in combination with the government's weak parliamentary base, made it even more difficult to carry out a consistent economic-policy follow-up of the devaluations for the purpose of effecting a shift in the economic structure.

Conclusions

During the past two decades, the difficulty of simultaneously maintaining both an internal and external balance has been a recurring problem in the Swedish economy. In addition, the trend of real income has been very weak in an international perspective. An important conclusion from this has been that it is necessary to influence the structure of the economy by bringing about a relative expansion of the sector exposed to foreign competition. This has been a principal aim of the devaluations undertaken.

The 1981 and 1982 devaluations of the Swedish krona lowered Sweden's relative cost level sharply. On the other hand, the devaluations did not lead to any relative expansion of the T sector, which is now smaller than ever before in the entire post-World War II period.

In this article, I have tried to show that *if a nominal devaluation is to influence the economic structure, a requirement is that it lead to*

a real devaluation, i.e., a rise in the relative price of the T sector's products. This real devaluation has not taken place and it is therefore logical that no relative expansion of the T sector has occurred.

In the 1970s, the GN sector in particular was allowed to grow. In the 1980s, the PN sector expanded. The T sector showed increasing expansion abroad, especially after 1985.

The most important lesson to be learnt from the analysis is that it is highly risky for a country, by means of a strong undervaluation of its own currency, to try to effect a structural shift in the economy. For one thing, there is a great risk that, as in Sweden, general overheating will occur and that the N sector will become price- and wage-leading; and, for another, that the rate of structural transformation *within* the T sector will slow down, with an adverse effect on the trend of real income.¹²

When the international cost level is satisfactory, the *internal* competitiveness—the price of T goods in terms of N goods—determines the T sector's potential for growth. In that case it also becomes much easier to understand why Sweden has succeeded to such small extent in regaining market share that was lost as a result of an excessively high cost level in relation to other countries, despite the fact that our cost level since 1981 has been much below the 1970 level.

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¹¹The positive terms-of-trade effect on national income is calculated in the national accounts at about SEK 20 billion annually, at 1985 prices, for the years 1986–1988.

¹²Lindbeck (1988), Erixon (1988) and Sölvell (1988).

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