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The Value-Added Tax in Sweden

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Sweden

IF MAJOR CHANGES in the tax structure of a country are unusual, then the past decade in Swedish fiscal history has been extraordinary. Taxes rose from 40.1 percent to 52.7 percent of gross national product, continuing a dramatic expansion in the role and cost of government services that has been going on since 1950. The composition of taxes changed in major ways with the introduction of the value-added tax, large increases in social security taxes, and basic changes in the structure of the personal income tax.

Because so much has been happening to Sweden's fiscal structure, it is difficult to sort out empirically the effect that the value-added tax has had on income distribution, prices, and other measures of economic performance. Nevertheless, some estimates have been made and are reported later in this paper. To facilitate understanding of the atmosphere within which decisions about the value-added tax were made, this paper first reviews the debates about taxation that led to the important changes in fiscal structure sketched above. Next it describes the value-added tax in Sweden, and presents such evidence as exists on the economic effects of the value-added tax. Finally, it briefly outlines reforms in the structure of value-added taxation now under consideration.

Fiscal Change

Between 1950 and 1970 the proportion of Swedish GNP captured by taxes doubled (see table 1). Roughly half of the increase was accounted for by growth in income taxes. The remainder was caused by growth of

Table 1. Selected Taxes as a Percentage of Gross National Product, 1950, 1960, 1970, and 1979

<i>Tax</i>	<i>Tax yield as percent of GNP (market prices)</i>			
	<i>1950</i>	<i>1960</i>	<i>1970</i>	<i>1979</i>
Personal income tax	9.9	12.7	18.6	22.7
Central government	4.8	6.4	8.2	7.4
Local government	5.1	6.3	10.4	15.3
Payroll taxes, including employers' contributions	0.4	3.7	8.6	15.8
Corporation income tax	3.0	2.4	1.8	1.5
Other direct taxes	0.9	0.8	0.7	0.6
Retail sales tax/value-added tax	...	1.5	4.2	7.0
Other indirect taxes	6.7	7.6	6.3	5.1
Total	20.9	28.7	40.2	52.7

Source: Statens Offentliga Utredningar (SOU), 1977:87 (Final Report by the Government Commission on Business Taxation). The 1979 figures are preliminary data from the Ministry of Budget Affairs.

payroll taxes and by the introduction of a retail sales tax in 1960 and its conversion to a value-added tax in 1969.

The Retail Sales Tax and the Value-Added Tax

Sweden experimented with a sales tax during the Second World War. Various committees consisting of members of parliament and of outside experts subsequently proposed different forms of indirect taxation. The parliament enacted a retail sales tax in 1959; it went into effect in 1960 at an initial rate of 4 percent. The base of the sales tax included not only consumption goods purchased by households, but also equipment purchased by businesses.

Only four years later a prestigious General Tax Commission proposed that the retail sales tax be replaced by a consumption-type value-added tax collected on the destination basis. The commission held that the value-added tax would be free of two flaws that marred the sales tax. Because the sales tax fell on business as well as household purchases, the commission argued, the incidence of the sales tax was unclear and the tax caused needless distortions in the allocation of resources. Because the ratio of investment to the value of final output varied among industries, the amount of tax borne by households would differ according to the types of goods they bought, and the changes in relative prices of these goods would cause wasteful reallocation of economic resources. While

the validity of the commission's conclusions is open to serious question in light of subsequent analysis of tax incidence, this reasoning influenced its recommendations.

The commission leaned toward the value-added tax for a third reason, its belief that the revenue potential of the retail sales tax was far more limited than that of the value-added tax. The commission feared that the risk of tax evasion under a sales tax collected at a single stage was greater than it would be under a value-added tax collected successively in smaller individual amounts through the production cycle. Finally, the commission believed that the administrative difficulty of distinguishing taxable and nontaxable materials would be reduced under a value-added tax.

The value-added tax was introduced in 1969, initially at a rate of 10 percent. Rates rose in three steps, to 15 percent in 1971, 17.1 percent in 1977, and 19 percent in 1980.

Other Tax Developments

The increase in the value-added tax in 1971 was accompanied by major structural changes in the personal income tax. These changes included a shift from joint taxation of husbands and wives as a single taxable unit to individual taxation of spouses. This change is credited with encouraging a large increase in the labor force participation of married women.¹

At the same time, the deductibility of local income taxes under the national income tax was repealed, and the overall progressivity of the income tax system was sharply increased. The former change meant that increases in local income taxes would no longer cause reductions in national tax collections. It also meant that increases in local income taxes would take an increased bite out of after-tax income, particularly for persons subject to relatively high marginal rates. Table 2 depicts the situation of an average industrial worker in 1968, before these changes were made, and in 1978, after they had been in effect for several years.

It is apparent that although an average worker's income tax rate (line 8) did not increase over the decade, his marginal rate (line 9) rose sig-

1. This is further discussed in Bertil Holmlund, "Perspektiv på arbetskraftsutbudets utveckling" (Perspectives on the Development of Labor Supply), in B. Axell and others, *Utrikeshandel, inflation och arbetsmarknad* (Foreign Trade, Inflation and the Labor Market) (Stockholm: Industrial Institute for Economic and Social Research, 1979).

Table 2. The Tax Situation for an Average Industrial Worker in 1968 and 1978^a
Kronor unless otherwise specified

<i>Item</i>	<i>1968</i>	<i>1978</i>
1. Employers' cost	25,886	78,570
2. Payroll taxes	2,309	19,211
3. Income taxes	8,561	21,627
4. Average tax rate (percent) (rows 2 and 3 divided by row 1)	42.0	52.0
5. Marginal tax rate (percent) (corresponding to row 4)	55.9	72.0
6. Elasticity of income after tax (computed from rows 4 and 5) ^b	0.76	0.58
7. Paid-out wages (row 1 less row 2)	23,577	59,359
8. Average income tax rate (percent) (row 3 divided by row 7)	36.3	36.4
9. Marginal income tax rate (percent) (corresponding to row 8)	52.9	60.1
10. Elasticity of income after tax (computed from rows 8 and 9) ^b	0.74	0.63
11. Labor income after taxes (row 7 less row 3)	15,016	37,732
12. Indirect taxes ^c	1,802	8,287
13. Total taxes as a percent of employers' cost	50.0	62.5
14. Overall marginal tax rate (payroll, income, and indirect taxes as percent of employers' cost)	61.0	78.0

Source: Author's calculations with the Swedish TAX model. An early version of this model is described in Ulf Jakobsson and Göran Normann, "A Model of the Swedish System for Personal Income Taxation," *European Economic Review*, vol. 3, no. 4 (1972), pp. 451-67.

a. Adult, male, and working full time.

b. This elasticity shows the percentage change in income after tax when income before tax increases by 1 percent.

c. A rough estimate of general and specific consumption taxes.

nificantly; furthermore, the average total tax burden (line 13) increased even more, in part because of increases in payroll taxes and in part because of increases in indirect taxes (first the retail sales tax and then the value-added tax).

During the interval from 1972 to 1977 value-added tax rates were unchanged, but payroll tax rates were increased. In these years of especially active tax policy, the measures taken were frequently part of the wage bargaining process. The measures were preceded by negotiations between the ruling Social Democratic party, parts of the political opposition, and centralized unions. Concentration on payroll tax rates and wage

rates permitted the negotiators to calculate with precision and negotiate over *after-tax* compensation. Partly because value-added taxes vary across families according to the proportion of income saved, they did not lend themselves to the bargaining process as it was carried out during this period. Annual agreements stipulated how much wages and payroll taxes would increase; these agreements included some reductions in personal income taxes imposed by the central government. It should be added that, because of wage drift, the actual wage change during the period usually deviated significantly from what was negotiated.

The Value-Added Tax

The Swedish value-added tax adheres broadly to the same principles as those of other European countries. Along with other Scandinavian countries, however, Sweden has avoided the highly differentiated rate structure that has complicated administration in other nations.

Structure

The value-added tax covers two-thirds of private consumption. The tax rate is nominally uniform, but partial or total exemptions and zero rating cause some differentiation in effective rates. For example, housing expenditures are exempt, but 60 percent of the value of newly built units is subject to tax. Only 20 percent of the value of roads, bridges, harbors, railways, playgrounds, and certain other commodities is subject to tax; the nearly complete exemption of this class of goods is intended to preserve the capacity of private contractors to compete with construction by public agencies and organizations.

The sellers of some commodities are exempt from taxation, but they are denied the right to claim refunds for taxes paid by their suppliers. The commodities in this category include residential rent, banking and insurance services, professional services, teaching, passenger transport, and entertainment, sports, and theatrical performances. Other exempt commodities include certain periodicals, works of art sold by the artist, and inventories transferred when a business is merged with another or sold.

A much larger class of goods is zero rated. This category includes boats and aircraft for professional use, munitions, prescription medicines, newspapers, electric power and other fuel (including that for automobiles), and all exports.

Services are taxable if the law explicitly lists them, but otherwise they are exempt (no refunds of taxes on suppliers are permitted). The main category of taxable services is that connected with taxable goods. Thus advertising, acquisition costs, storage, assembly, repair, maintenance, and alteration of commodities are all subject to tax. For similar reasons services connected with real property, such as work on grounds, forests, and buildings, are taxable.

Since September 8, 1980, the value-added tax rate has been 19 percent of the gross sales value of covered goods and services. Because the tax is included in the base, the rate defined net of tax is actually higher, 23.5 percent.²

Administration

Eligible taxpayers must submit tax returns every two months unless annual gross sales are less than 200,000 Swedish kronor (about \$46,500 at late 1980 exchange rates), in which case they may file annually if they wish. Businesses with sales of less than 10,000 kronor (about \$2,300) need not file returns at all, but this exemption is so low that even small farmers are included in the system. Sweden does not use the system employed by some members of the European Economic Community for excluding farmers from the value-added tax. The tax return is simple, requiring fourteen entries at most, and is filed through the post office.

The value-added tax yielded just under 30 billion kronor (after rebates) from 400,000 taxpayers in 1979 (see table 3); of this sum, somewhat less than 2 percent came from taxes imposed on purchases made by governments.³ Most of the revenue is collected from a small minority of taxpayers; in fact, 3 percent of the taxpayers accounted for half of all revenue, and one-third of the taxpayers accounted for 95 percent of the revenue. Three agencies share responsibility for administering the value-added tax: the national tax board and two separate divisions of county administration.

For some time administration of the value-added tax has been subject to criticism. The parliament's standing committee on taxation declared in 1977 that much of the problem grew out of an underestimation of the

2. The tax as a percentage of the base excluding tax is $0.19 / (1.0 - 0.19) = 0.2346$.

3. Author's estimate for 1975, using disaggregated national accounts data.

Table 3. Collection of the Value-Added Tax, 1969–79

Millions of kronor

<i>Year</i>	<i>Swedish customs</i>	<i>County administration</i>	<i>Total collected</i>	<i>VAT refunded</i>	<i>Net revenue</i>
1969	2,917	6,095	9,012	2,399	6,613
1970	3,545	6,260	9,805	2,872	6,933
1971	5,777	9,840	15,617	4,648	10,969
1972	6,375	11,276	17,651	5,136	12,315
1973	7,305	12,202	19,507	5,807	13,701
1974	9,198	12,959	22,157	7,828	14,329
1975	11,699	16,181	27,880	10,803	17,077
1976	13,162	18,624	31,786	11,013	20,773
1977	15,454	21,516	36,970	13,435	23,535
1978	16,748	25,488	42,236	15,084	27,152
1979	20,491	27,497	47,988	18,191	29,797

Source: National Tax Board, *Report 1*, MOMSORG Project (NTB, 1980).

problems of control when the transition from retail sales to value-added taxation occurred. Two committees are now working on proposals to improve administration, including extended use of automated data processing and better coordination among the agencies responsible for administering the tax.

Economic Effects: Prices

The Swedish National Bureau of Economic Research (Konjunkturinstitutet) has presented rough estimates of the contribution of various factors to inflation.⁴ Table 4 shows the results of these estimates.

The estimates are rather mechanical, as they assume without proof the very issue to be resolved: that increases in value-added taxes are fully shifted forward in higher prices. Because roughly 60 percent of the consumption basket is subject to tax, a one percentage point increase in the value-added tax raises consumer prices about 0.6 percentage point. These estimates not only ignore the possibility that shifting may be incomplete, a possible upward bias in the estimates, but they also ignore

4. See *Konjunkturlaget* (The Swedish Economy), selected issues.

Table 4. Contribution of Indirect Taxes to Total Consumer Price Increase, 1969–80

<i>Item</i>	<i>1969</i>	<i>1970</i>	<i>1971</i>	<i>1972</i>	<i>1973</i>	<i>1974</i>	<i>1975</i>	<i>1976</i>	<i>1977</i>	<i>1978</i>	<i>1979</i>	<i>1980</i>
Total consumer price increase	4.8	7.0	7.5	5.7	7.6	10.5	10.1	9.4	12.8	7.5	9.7	14.0
Contribution of discretionary changes												
In the value-added tax	0.1	1.5	3.2	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1.5
In other indirect taxes		0.0	0.0	-0.1	0.9	0.3	0.9	0.0	1.2	0.5	0.7	2.2
Contribution of automatic effect of the value-added tax	...	0.3	0.3	0.5	0.6	0.8	1.0	0.9	1.2	0.8	0.8	1.1
Share of the commodity basket covered by the value-added tax (percent) ^a	...	...	...	...	...	...	66.2	66.3	65.7	64.7	63.8	62.5

Source: Based on data supplied by Konjunkturinstitutet (Swedish National Institute of Economic Research).

a. These shares correspond to the weights used in calculations of the consumer price index and therefore refer to the situation in December, year $t - 1$.

possible indirect effects through market interactions and effects on wage settlements. A recent econometric study suggests that the value-added tax is fully translated into higher prices within one quarter; if correct, these findings indicate that the first source of bias is unimportant.⁵

The full effects on prices of increases in the value-added tax depend not only on the initial impact, but also on market interactions, the stage of the business cycle, and other policy measures. Simulations on a multi-equation econometric model suggest that an increase in the value-added tax in 1971 from 15 percent to 20 percent would have resulted in an increase in the implicit consumption deflator of roughly 2.5 percent after two years relative to what prices would have been if taxes had not been increased and all other policies were the same.⁶ While these results are suggestive, the model on which they are based does not incorporate the institutional characteristics of the Swedish economy necessary for taking into account "cost-push" factors, such as labor supply adjustment and

5. Ingemar Hansson has estimated a price equation in which the quarterly percentage change in prices, \dot{P} , is a function of three seasonal dummy variables (S_2 , S_3 , and S_4), the rate of change of the value-added tax or of the retail sales tax ($CTAX$), capacity utilization ($MUTIL$), the rate of change of labor costs in nominal terms ($CNLC$), the average rate of change in real labor costs in the two preceding quarters ($CRLC_{12}$), average consumer price inflation in West Germany and the United States ($INTP$), and expected inflation determined by inflation rates in the ten preceding quarters (P_{-i} , $i = 1, \dots, 10$). The estimated relation preferred by Hansson is as follows (standard errors are in parentheses):

$$\begin{aligned} \dot{P} = & -0.689 - 0.752 S_2 - 0.280 S_3 - 0.354 S_4 + 0.921 CTAX + 3.078 MUTIL \\ & (0.444) \quad (0.225) \quad (0.252) \quad (0.234) \quad (0.168) \quad (3.070) \\ & + 1.978 MUTIL_{-1} + 0.091 CNLC + 0.072 CRLC_{12} + 0.578 INTP + \sum_{i=1}^{10} a_i P_{-i} \\ & (3.128) \quad (0.039) \quad (0.103) \quad (0.239) \\ & \sum a_i = 0.713; \text{ standard error} = 0.551; \bar{R}^2 = 0.736 \\ & (0.202) \end{aligned}$$

See Ingemar Hansson, "Inflation in Sweden and the Effects of Price Controls," working paper (University of Lund, Department of Economics, 1980). The equation was estimated for the period from the first quarter of 1958 to the fourth quarter of 1976. An Almon lag structure was used. The coefficient of the value-added tax variable ranged from 1.020 to 0.90 in the five equations presented by Hansson.

6. This calculation is based on a model developed by the Econometric Research Unit at the Economic Research Institute of the Stockholm School of Economics. The model is described by Franz A. Ettlín, Johan A. Lybeck, Ingemar Erikson, Svante Johansson, and Björn Jarnhall, "The STEP 1 Quarterly Econometric Model of Sweden" (Stockholm: Economic Research Institute, Stockholm School of Economics, 1979). The estimate reported in the text is previously unpublished.

labor market negotiations in terms of real wages after taxes.⁷ These factors are among the main issues in Swedish tax policy today.

Study of the impact of taxes on the rate of increase in wages is at an early stage. Sargan formulated the testable hypothesis that, if the rate of increase of real wages falls below a historically established norm, wage earners will try to increase money wages during the next negotiation to compensate for this.⁸ Other British economists have explored this hypothesis further by formulating it in terms of after-tax real wages; they found that for the United Kingdom there is strong empirical evidence in support of the latter hypothesis.⁹ The results of current research on related questions on Swedish data are so far somewhat inconclusive.¹⁰ There are, however, some tentative results indicating that, as in the United

7. For a discussion of these factors, see D. A. L. Auld and Clive Southey, "The Simple Analytics of Tax Induced Inflation," *Public Finance*, vol. 32, no. 1 (1977), pp. 37–47; and Thorvaldur Gylfason and Assar Lindbeck, "Inflation and Macroeconomic Theory," seminar paper 133 (University of Stockholm, Institute for International Economic Studies, 1979).

8. See J. D. Sargan, "Wages and Prices in the United Kingdom: A Study in Econometric Methodology," in P. E. Hart, G. Mills, and J. K. Whitaker, eds., *Econometric Analysis for National Income Planning* (London: Butterworth, 1964), pp. 25–55.

9. S. G. B. Henry, M. C. Sawyer, and P. Smith, "Models of Inflation in the United Kingdom: An Evaluation," *National Institute Economic Review*, no. 77 (August 1976), pp. 60–71; and David Vines, "An Econometric Investigation of Annual Earnings Inflation in the United Kingdom, 1954–1975," Cambridge Growth Project Working Paper GDP 454 (Cambridge University, Department of Applied Economics, January 1978).

10. Among the equations fitted to annual Swedish data is the one given below (standard errors are in parentheses). The method of estimation is ordinary least squares; the time period is 1952–77:

$$\dot{W} = 397.8 + 0.840 t + 2.98 1/u^2 + 0.514 \dot{P}_{-1} - 0.419 \dot{r} - 46.1 \log RNE_{-1}.$$

(0.275) (2.63) (0.138) (0.209) (16.0)

$$\bar{R}^2 = 0.66; \text{ Durbin-Watson} = 1.69; \text{ standard error} = 2.28$$

Here \dot{W} is the rate of change in wage per hour for a male adult industrial worker, t is a time trend, u is open unemployment, \dot{P} is the rate of change of the GNP deflator, \dot{r} is the rate of change of the retention ratio (defined as 1 minus the income tax rate), and RNE is real wage income after taxes.

All coefficients have the expected sign, but the labor market variable is not significant. Some experimentation with this equation for various subperiods has shown that its stability cannot be judged satisfactory. Therefore, some additional work is necessary before firm conclusions are drawn on Swedish conditions. Preliminary results from this project, which was carried out with the assistance of Karl Gustav Hansson, are reported in Göran Normann, "Skatter och inflation" (Taxes and Inflation), working paper (Industrial Institute for Economic and Social Research, 1980).

Kingdom, expectations of decreases in the retention ratio may increase the rate of wage inflation. Furthermore, the results indicate that a bad performance of real income after taxes may affect the wage change positively. These results therefore seem to imply that increases in the value-added tax and other taxes may well lead to increased wages and thus induce more inflation because of pressure from the cost side.

Economic Effects: Distribution

One empirical study has estimated the distributional effects of the value-added and other taxes in Sweden.¹¹ This study calculated the effects on the incomes of families of varying size and composition at different positions in the income distribution of replacing various taxes with possible alternatives. The change in real income for each family was measured by the sum of the change in net wages and gross prices paid for goods attributable to the change in taxes. The lump-sum transfer that would just permit families after the tax change to buy the same goods and services with the same amount of work as they could buy before the change is the measure of the effect of the tax change. No effect of tax changes on capital formation or saving is recognized, and the value-added tax is assumed to be fully reflected in consumer prices.

Based on these assumptions, replacement of the 10 percent value-added tax in effect in 1970 with a proportional income tax would *increase* real income for single, childless persons with incomes below 15,000 kronor and for single persons with children and married persons with incomes below 40,000 kronor, all in 1970 prices. It is apparent that value-added tax burdens are regressively distributed relative to burdens of a proportional income tax.¹²

11. Thomas Franzen, Kerstin Lövgren, and Irma Rosenberg, "Redistributional Effects of Taxes and Public Expenditures in Sweden," *Swedish Journal of Economics*, vol. 77, no. 1 (1975), pp. 31–55.

12. Franzen, Lövgren, and Rosenberg, *ibid.*, also estimated the effects of replacing payroll taxes, existing income taxes, and all taxes with a proportional income tax. They found that an income tax would fall less heavily than payroll taxes on the middle ranges of the income distribution but would tax more heavily those at the bottom and top of the distribution. A proportional income tax would substantially increase tax burdens at the bottom and lower middle ranges of the distribution over those under the prevailing income taxes and would substantially reduce tax burdens on upper middle and upper income brackets. The effect of replacing all taxes with a proportional income tax was similar to that of replacing existing income taxes, but the effects were less pronounced. See also Thomas Franzen, Kerstin Lövgren, and Irma Rosenberg, *Skatters och offentliga utgifters effekter pa inkomstfordelningen*, vols. 1 and 2 (Stockholm: Gotab, 1976).

Current Issues

The Social Democratic party, now in opposition, and dominant elements of the trade unions are supporting a modification in the value-added tax to broaden the base from consumption to net national product. It is alleged that including investment would offset the failure to include capital income under the payroll tax and that the broader base would increase the usefulness of the value-added tax as an automatic stabilizer during business cycles. If this change should be adopted, some believe a shift from the destination to the origin principle would be desirable to encourage declines in factor prices. A government commission is examining the practicability and the probable effects of such a change.

Two aspects of the shift in the value-added tax base are dubious. First, the shift from the destination to the origin principle would not necessarily convert increases in prices to decreases in factor payments. The evidence cited above suggests that workers key their demands for increases in money wages to changes in real after-tax incomes. If this finding is correct, their behavior would not be affected by the particular rule adopted for administering the value-added tax. On the other hand, if negotiations can induce workers to accept payroll tax increases and reduce their wage demands in exchange for cuts in income taxes (as the history of the 1970s is interpreted by some), it is unclear why workers could not also be induced to accept an increase in a consumption-based value-added tax instead of an increase in payroll taxes. Second, the argument that the workers necessarily will be spared tax burdens if investment goods are included in the base is shaky. To the extent that any increase in tax collections is reflected in prices, the burden should be much the same as that under a consumption-based tax. However, it is more likely that in a small open economy like that of Sweden a tax on investment goods or capital income will eventually be borne by labor.¹³

In September 1980 the value-added tax was increased from 17.1 percent to 19 percent to try to curb consumption at a time of acute deterioration in the balance of payments. One aspect of this tax increase sheds light on the political pitfalls of making tax policy. It was widely agreed that restrictive action was necessary; the only question was how to impose the restraints. There was some support for reducing the rate at which

13. These arguments are further explored in Göran Normann, "Om behovet av en allmän produktions factorskatt" (On the Need for a General Tax on Production Factors), *Skattentytt*, vol. 29, no. 3 (1979), pp. 90–99.

food is taxed, possibly to zero, but this proposal was rejected, as it had been many times by previous government commissions. Although the need for some restrictive action was apparent and the Swedish constitution empowers two standing committees to increase taxes when the parliament is not in session (subject to later confirmation by the whole parliament), action was deferred. Instead, a special session of parliament had to be called. This happened as a result of the highly unstable political situation in which a three-party coalition in government had a one-vote majority in parliament. Enactment of the tax increase was thus delayed for several weeks, during which there was a rush to buy consumer durable goods.

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