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THE VALUE-ADDED TAX: REVENUE INFLATION
AND THE FOREIGN TRADE BALANCE

By

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International Monetary Fund

February 1987

Development Research Department
Economics and Research Staff
World Bank

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ABSTRACT

The paper discusses the revenue-increasing potential of the VAT, the potential impact on prices of both introducing a VAT and changing its rate structure once introduced and on the foreign trade balance. After examining the experience of some developing and industrialized countries, the conclusion is that there is nothing inherently revenue increasing or inflationary about the VAT, but it may alter the trade balance through a change in relative prices (though this effect is unlikely to be large). This paper was prepared for the Conference on Value Added Taxation in Developing Countries, sponsored by the Public Economics Division, Development Research Department, The World Bank.

THE VALUE-ADDED TAX: REVENUE, INFLATION,
AND THE FOREIGN TRADE BALANCE

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THE VALUE-ADDED TAX: REVENUE, INFLATION, AND THE FOREIGN TRADE BALANCE

I. Revenue

1. The Value-added Tax (VAT)

VAT is now used in 39 countries. In European countries it contributes from 13 percent (France and Luxembourg) of total tax revenue to 30 percent (Denmark), in Korea 25 percent, Morocco 29 percent, in Central America from 8 percent (Honduras) to 25 percent (Guatemala) and in South America up to 39 percent (Chile)--see Table 1.

Contrary to popular belief the VAT has not necessarily increased the share of tax revenue from general sales taxes. In fact, out of the 12 European countries shown in Table 1 only 4 now collect a higher proportion of revenue from their VAT than they did ten years earlier. Even "though VATs have increased as a percentage of GDP over the period, they have not been as important as income and social security taxes in financing the growth in government..." 1/ So while some, particularly in the United States, may view with alarm the potential of VAT to fund excessive government growth 2/ experience does not confirm this view; income and social security taxes seem to have been more important. However, in developing countries it is more generally true that VAT has increased its share of total tax revenue since 1973. In some contrast, VAT as a percent of GDP has maintained or increased its share in every European country except one (Norway) and in all other countries except one (Bolivia)--see Table 2.

In general VAT has established itself in every continent as a major innovation in sales taxation 3/ representing substantial and increasing proportions of GDP (typically 5-10 percent in Europe and more like 5 percent

Table 1. VAT AS A PERCENTAGE OF TOTAL TAX REVENUE^{1/}

Country	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Austria	*20.85	20.33	20.13	20.57	19.28	18.36	18.49	18.08	18.12	18.06	18.76	...
Belgium	18.79	19.24	16.65	18.25	17.82	17.96	16.69	17.70	18.64	17.82	17.89	...
Denmark	25.03	24.15	23.08	25.37	27.15	29.84	31.59	32.14	33.15	32.50	30.74	29.39
France	27.45	26.97	26.10	26.57	23.83	24.28	24.13	23.51	23.49	23.56	22.92	...
Germany	13.90	13.00	13.11	12.89	12.39	13.13	14.00	13.99	13.88	12.92	13.25	...
Ireland	*17.96	17.83	16.27	17.40	18.84	20.91	18.16	15.61	16.21	20.13	21.93	...
Italy	*17.78	18.28	15.24	15.82	16.47	14.95	14.50	16.18	15.95	15.41	14.64	14.75
Luxembourg	12.85	11.52	12.76	12.02	11.07	11.27	11.39	11.63	12.54	13.37	13.15	...
Netherlands	15.21	14.40	14.33	15.02	16.08	16.30	15.12	15.27	14.98	14.12	13.90	14.89
Norway	27.31	26.91	27.24	26.95	27.31	27.24	25.31	22.84	22.03	22.73	22.44	...
Sweden	21.41	20.26	17.96	16.84	17.17	19.77	20.30	19.86	20.22	20.01	19.89	18.46
United Kingdom	8.10	*10.07	10.07	9.94	9.64	10.35	11.97	16.38	14.32	15.25	15.81	...
Israel	14.48	14.16	15.29	20.12	*23.95	29.67	25.57	25.04	25.82	27.70	28.01	...
Korea	10.18	10.50	14.09	12.35	16.91	*22.66	22.51	24.95	24.51	24.55	25.07	24.41
Cote d'Ivoire	...	...	...	...	...	...	...	19.64	...	...	...	...
Madagascar	16.33	...	...	...	...	22.47	21.45	23.38	21.86	26.35	...	...
Morocco	23.80	24.31	21.11	27.12	25.82	25.01	24.08	24.30	24.17	27.83	29.20	...
Senegal	8.72	...	8.96	8.64	10.18	13.59	14.93	15.72	12.37	17.55	21.26	...
Costa Rica	10.91	9.86	*10.85	9.81	9.35	9.19	9.73	10.03	8.16	10.38	17.42	...
Guatemala	12.59	15.29	13.86	15.83	14.79	14.14	15.87	14.63	19.97	24.76	...	...
Honduras	7.12	6.73	6.64	*7.52	7.43	7.07	7.49	7.08	7.75	...	...	...
Mexico	20.32	20.36	19.25	19.45	17.72	17.13	18.16	*17.26	20.79	15.49	19.71	...
Nicaragua	8.59	10.56	*13.05	12.38	12.53	11.39	8.91	10.70	12.60	10.69	10.42	...
Panama	--	--	--	--	6.68	*9.37	9.35	8.92	8.92	9.08	...	...
Argentina	--	--	*7.69	10.34	10.73	11.15	11.41	12.48	21.73	23.69	14.89	...
Bolivia	5.33	*4.81	4.53	4.70	5.66	6.65	6.99	5.61	4.94	6.02	6.83	...
Brazil	--	--	--	--	...	...	...	...	...	...	28.74	...
Chile	23.42	26.09	23.07	*27.43	33.70	37.22	39.51	39.80	43.97	46.19	37.43	38.34
Colombia	9.48	11.11	*15.41	15.73	16.48	17.80	18.92	18.76	20.64	...	...	...
Ecuador	9.81	9.86	12.35	11.15	12.30	15.00	15.21	11.87	14.36	13.78	12.35	...
Peru	26.00	28.47	29.67	32.06	*30.67	30.48	32.40	30.02	33.35	32.13	...	...
Uruguay	16.06	18.93	23.81	22.83	21.20	20.85	22.18	27.01	27.57	27.78	23.49	26.30

^{1/} Where revenues are shown before the introduction of VAT they represent general sales taxes. Three dots represent data unavailable; two dashes represent data not relevant.

* First full year of VAT revenue if VAT introduced after 1972.

Source: Government Finance Statistics, International Monetary Fund, 1985.

Table 2. VAT AS A PERCENTAGE OF GDP 1/

Country	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Austria	*5.95	5.91	5.93	6.04	5.80	5.93	5.94	5.84	6.01	5.78	5.97	...
Belgium	6.61	6.93	6.43	7.08	7.16	7.41	6.90	7.34	7.76	7.57	7.56	...
Denmark	7.70	7.48	6.50	7.55	8.02	9.15	9.85	10.09	10.37	9.95	9.79	9.76
France	8.65	9.04	8.70	9.31	8.36	8.53	8.86	8.93	8.96	9.18	9.06	...
Germany	3.51	3.27	3.33	3.34	3.26	3.44	3.64	3.85	3.87	3.63	3.66	...
Ireland	*5.02	5.06	4.64	5.46	5.65	6.13	5.32	5.03	5.45	7.18	8.16	...
Italy	*4.42	4.91	4.15	4.53	4.86	4.60	4.57	5.39	5.45	5.74	5.82	5.86
Luxembourg	3.94	3.61	4.60	4.30	4.28	4.41	4.27	4.45	4.88	5.02	...	...
Netherlands	6.63	6.34	6.58	6.80	7.08	7.18	6.75	6.90	6.68	6.35	6.47	6.69
Norway	9.41	9.12	9.19	9.33	9.66	9.52	8.86	8.53	8.54	8.62	8.48	...
Sweden	6.09	5.77	5.27	5.68	5.99	6.79	6.64	6.42	6.80	6.77	6.81	6.50
United Kingdom	2.23	*3.09	3.11	3.03	2.91	3.01	3.41	5.09	4.52	5.22	5.24	5.62
Israel	3.98	5.08	5.55	8.17	*9.25	10.76	9.34	8.71	9.03	10.48	7.57	...
Korea	1.10	1.28	1.94	1.88	2.52	3.49	3.49	3.89	3.86	3.96	4.29	4.03
Cote d'Ivoire	...	...	...	...	...	...	...	2.16	...	...	...	...
Madagascar	2.48	...	...	...	...	4.20	3.92	3.82	3.32	3.19	...	...
Morocco	4.11	4.01	4.43	4.97	5.45	5.17	5.13	5.22	5.26	6.04	6.35	...
Senegal	1.41	...	1.58	1.61	1.80	2.68	3.02	3.44	2.46	3.38	3.91	...
Costa Rica	1.58	1.64	*1.77	1.57	1.42	1.57	1.68	1.68	1.38	1.73	3.69	...
Guatemala	0.95	1.24	1.16	1.36	1.52	1.46	1.45	1.48	1.82	2.13	1.56	...
Honduras	0.79	0.79	0.80	*0.97	0.98	0.91	0.99	0.99	1.02	...	...	...
Mexico	1.85	2.01	2.18	2.22	2.19	2.25	2.47	*2.58	2.97	2.30	3.18	...
Nicaragua	1.10	1.26	*1.59	1.55	1.63	1.38	1.11	2.06	2.64	2.42	2.84	...
Panama	--	--	--	--	1.46	1.93	1.94	1.87	1.90	1.86	...	...
Argentina	--	--	*0.69	1.19	1.34	1.39	1.50	1.87	2.95	3.01	1.88	...
Bolivia	0.46	*0.46	0.47	0.49	0.53	0.59	0.51	0.40	0.37	0.26	0.28	...
Brazil	--	--	--	--	...	...	...	...	...	...	6.49	...
Chile	5.48	5.14	5.75	*6.22	7.84	8.61	9.54	10.19	11.14	10.66	8.12	8.76
Colombia	0.92	1.06	*1.73	1.72	1.75	1.93	1.93	1.93	2.03	...	...	...
Ecuador	1.21	1.14	1.31	1.09	1.16	1.45	1.43	1.45	1.53	1.52	1.33	...
Peru	3.42	3.83	4.29	4.24	4.25	4.77	5.19	5.66	5.43	5.35	...	...
Uruguay	3.08	3.56	4.21	4.91	4.62	4.43	4.43	5.68	6.10	5.40	4.55	4.58

1/ Where revenues are shown before the introduction of VAT they represent general sales taxes, usually replaced by VAT. Three dots represent data unavailable; two dashes represent data not relevant.

* First full year of VAT revenue if VAT introduced after 1972.

Source: Government Finance Statistics, and International Finance Statistics, International Monetary Fund, Washington, 1985.

elsewhere) whereas it has not generally been used to aggressively expand the share of tax revenue.⁴ One of the reasons for this pattern is that despite VAT's undoubted success as a buoyant general sales tax revenue source, there are anxieties about the potential impact on prices of both introducing a VAT and changing its rate structure once introduced. The main body of this paper discusses these concerns.

II. Inflation

1. The Problem

Probably the most controversial aspect of the introduction of a value-added tax (VAT) is its effect on retail prices. Whether the reference is to Belgium in 1971, where the initials TVA, standing for the taxe sur valeur ajoutee¹, were associated with the slogan tout va augmenter ("everything goes up") or to January 1980 in Mexico where reports were that "Mexican analysts believe the VAT will bring on acute inflation,"⁵ in all commentaries "an important question raised by opponents of a VAT is the possibility that the value-added tax will increase prices and aggravate the current inflation."⁶ Yet, "[we] tried to locate . . . studies by the government, experts in the academic community, business people or others who thought inflation (from VAT introduction) justified special study, but we were unable to locate any such studies."⁷

The major reason why there have been few studies of the effect of VAT introduction on retail prices is not through disinterest but because it appears too difficult (or even impossible) to disentangle the changes in prices attributable to VAT from other influences on prices. "How can we know the dancer from the dance?" This difficulty is most striking when some

massive change intervenes; the best example is 1973/74 when crude oil prices quadrupled and the effects of this on consumer price indices (CPIs) in most countries outweighed other influences (such as the introduction of the VAT in Britain in April 1973). Yet the introduction of the VAT is often clearly an important structural change and it should be possible to check its effect on prices both by looking at the statistics and by considering the context in which the change took place. There is a substantial amount of commentary on VAT introduction but it is usually fragmentary and scattered.

The approach followed here is to present four possible hypotheses about the price effects of VAT changes and check them against the data and other circumstantial evidences.

2. Four Hypotheses

a. The Shift Case

The clearest impact on the CPI of substituting a VAT for other taxes, or increasing the rates of VAT, will be seen when the tax change increases the revenue. Instead of the whole of the increased tax being reflected in increased prices traders may be able to pass the tax increase backward (depending on the state of both product and factor markets) and the direct influence on prices would be moderated. However, in VAT legislation it is often implied that traders are expected to pass the tax forward. Examples in government distributed literature have explained the VAT introduction and shown margins fixed with the VAT passed forward in the chain of production to end up in the price to the final consumer. This is not to say that traders will do this in practice, but if the authorities expect it and if the government acquiesces in an increase in the money supply to finance trade at

the higher prices, an increase in the CPI seems more probable than a decrease in factor rewards.

Such an increase in tax revenue through the introduction or increase in rates of a VAT will be seen as a shift in the CPI. The rate of change in the CPI should not alter as the tax increase is a once-and-for-all shift and the trend of the CPI will continue at a higher level. This effect should be seen by a shift in the intercept term of the CPI through time before and after the change but in an unchanged (or little changed) slope. We will call this possible outcome the "shift" case.

b. The Acceleration Case

Another possible development is if the VAT change (whether an equal yield or increased yield) alters the rate of change of the CPI. If inflation is defined as a continuing general increase in prices, the introduction of the VAT (whether equal yield or increased yield), which is a once-and-for-all tax change, cannot be inflationary in itself. But because of changes in relative tax burdens, uncertainty, and tax myopia, the VAT introduction could act as a trigger for an acceleration in the rate of change of the CPI. Consider each circumstance in turn.

Relative tax burdens change because of changes in tax rates, traders covered, and the goods and services taxed. A 4 percent cascade turnover tax, as in the Federal Republic of Germany before 1968, can be said, roughly, to be equivalent to a VAT at 2.5 times the cascade rate; so a 10 percent VAT should yield an equal amount to the 4 percent multi-stage tax. But the effect will be different for each industry depending on the number of stages of production -- the more taxable turnover in an industry the higher the cascade tax

liability and the more vertically integrated the industry the lower the cascade tax liability. Clearly the single-rate VAT cannot replace the cascade element in all industries equally. There will be differential price changes and, depending on the weights of the goods and services in the CPI, the index could well rise or fall even though the tax yield is unchanged.

Second, even if there is an equal yield tax substitution, the VAT may still involve effects on the CPI because the uncertainty of such a major tax change ("a gigantic management problem") 8/ creates further uncertainties in the minds of businessmen and consumers. Such uncertainty is reflected in the consumers' anticipation of (what they see as) inevitable price increases and in attempts by businessmen to use an across-the-board change in taxation to widen profit margins. The atmosphere of uncertainty is likely to be intensified, and the acquiescence of the consumer to price increases enhanced, if there is already a substantial underlying inflation in the economy. Even an equal yield VAT introduction may exacerbate inflation if price changes are already occurring.

Third, even with an equal yield replacement, the changeover can involve the abolition of many taxes (e.g., eight in Korea) or one tax with many rates (the U.K. purchase tax) and their replacement by a single-rate VAT or a multirate VAT which does not match the previous rates. Some goods bear a lower tax and others a higher tax after the substitution. The calculation of a zero effect on the CPI may include the assumption that the increased VAT passed forward in higher prices is symmetrically offset by lower tax burdens passed forward in other lower prices. In fact, businessmen tend to be tax myopic and while passing forward tax increases do not as readily pass forward tax decreases.

This is especially true if the VAT replaces direct taxes on enterprises. Even though the tax substitution yields the same, traders may not view the removal of direct taxes as a benefit to be passed on in lower prices. Eventually, household incomes will rise (because either net income from capital increases or wages rise) to offset the retail prices increased by VAT. However two differences remain, households affected by the VAT increase are not necessarily the same as those gaining from the increased incomes, and they are most unlikely to gain relatively the same amounts. Second, personal income tax may reduce the household income below the amount needed to offset fully the price changes from VAT.

So even with an equal yield VAT introduction some impact on the CPI may be likely from changes in relative tax burdens, uncertainty, and tax myopia. This would be reflected in an accelerated rate of change in the CPI after the tax change and is referred to, in this paper, as the "acceleration case."

c. The Shift Plus Acceleration Case

If the acceleration occurs and is combined with a shift in the CPI it is referred to as the "shift plus acceleration case."

In either the "shift case" or the "acceleration case" the change in prices could be increased if the initial change in the CPI caused labor to try to maintain its real wage in the face of the VAT induced rise in the cost of living. Such price-wage relationships may be institutionalized (index linking), suppressed by incomes policies, or checked by price controls. To model these effects would need a highly articulated model for each economy, which is beyond the scope of this brief discussion. Instead, the evidence for

each country of the circumstances at the time of the VAT introduction has been examined. The evidence for the effect of the VAT on the CPI is discussed using that background information.

d. Little or No Effect Case

The fourth set of countries could be those where the VAT introduction had no effect. Presumably, if there is no discernible effect of the VAT introduction on the CPI this will be because either the tax substitution has been perfect and had no effect or because the authorities have been able to negate those influences just discussed. That is, even though the coverage of the tax may have increased relative price changes might be expected to affect some income groups adversely, the authorities may have taken offsetting action by reducing other taxes or by increased transfers. Uncertainty may be reduced by frank public discussion, advertising, and monitoring price changes. Profiteering might be countered by price control.

III. Categorizing Country VAT Experience of Inflation

1. Using Data

There are 39 countries using a VAT. It is implausible to attempt to "model" any causation in such a mixed group of countries; quite apart from the availability and quality of data, the richness of the mix of policies makes more precise or more formal tests impossible. The data for 31 countries were checked for two years before and after the introduction of the VAT (see Table 3). (Four countries had introduced VAT too recently to use the data and four other countries had insufficient data). Only one country introduced VAT as a

**Table 3: DATA ON FITTING PRICE TREND LINES TO CONSUMER PRICE INDICES
QUARTER IN WHICH VAT INTRODUCED OR RATE CHANGED**

Country	Intercept			Slope Coefficient		R ²	
	Before	After	Difference	Before	After	Before	After
Before and After Introduction of the Value-Added Tax							
Argentina	78.43	-189.34	267.77	3.79	250.97	0.87	0.92
Austria	97.36	98.81	1.45	1.45	2.40	0.99	0.99
Belgium	98.90	99.57	0.67	0.98	1.52	0.87	0.99
Bolivia	84.13	120.35	36.22	3.69	5.12	0.87	0.65
Brazil	92.58	99.55	6.97	6.04	6.23	0.99	0.99
Chile	56.58	24.44	32.14	9.07	114.20	0.88	0.97
Colombia	93.13	97.32	4.18	4.21	5.97	0.99	0.96
Denmark	93.96	100.60	6.64	1.26	1.05	0.99	0.94
Ecuador	97.08	100.66	3.58	1.04	2.02	0.89	0.97
France	98.24	99.39	1.15	0.66	1.54	0.98	0.99
Germany, Fed. Republic of	98.96	99.45	0.49	0.37	0.50	0.86	0.86
Guatemala	101.78	98.18	3.60	0.70	3.20	-0.10	0.89
Haiti	100.26	102.87	2.61	1.89	2.06	0.91	0.91
Honduras	99.50	99.00	0.50	1.52	2.02	0.89	0.96
Indonesia /a	99.65	100.40	0.75	0.59	0.14	0.91	0.31
Ireland	98.24	98.24	0.00	1.93	4.33	1.00	0.97
Israel	91.35	91.40	0.05	5.18	12.89	0.97	0.96
Italy	96.31	96.51	0.20	1.31	5.21	0.96	0.96
Korea	96.47	97.10	0.63	2.31	4.60	1.00	0.97
Luxembourg	97.63	99.68	2.05	0.52	1.17	0.99	0.99
Madagascar	96.80	99.30	2.49	0.27	0.64	0.43	0.59
Mexico	91.11	96.36	5.25	3.24	8.28	0.99	0.97
Morocco	96.12	99.01	2.89	0.38	1.24	0.32	0.89
Netherlands	95.63	99.49	3.86	0.85	1.10	1.00	0.93
Norway	93.78	100.00	6.22	0.70	1.66	0.99	0.99
Panama	96.36	99.72	3.36	0.57	1.12	0.85	0.97
Peru	84.27	87.86	3.59	3.96	13.89	0.99	0.91
Sweden	99.23	98.54	0.69	0.47	1.83	0.95	0.95
Turkey /a	91.51	103.18	11.67	2.13	1.26	0.96	0.55
United Kingdom	96.43	95.80	0.62	1.54	5.23	0.98	0.94
Uruguay	63.79	110.84	47.05	6.48	6.56	0.88	0.91
Before and After Rate Changes							
Denmark	95.18	98.26	3.08	2.31	2.42	0.99	0.94
Ireland	92.20	97.42	5.22	2.76	5.32	0.98	0.99
Belgium	98.09	100.23	2.14	1.91	1.58	0.99	0.99
Netherlands							
1971	97.23	100.06	2.83	0.87	2.01	0.94	0.99
1973	98.10	99.37	1.27	1.72	2.53	0.99	0.99
1976	98.11	100.28	2.17	2.00	1.16	1.00	0.98

a/ Because of recent introduction monthly data used.

Source: See text. (Data for Costa Rica, Cote d'Ivoire, Nicaragua, and Senegal were insufficient to include these countries in this table.)

completely new tax (Ecuador) and even in that case other taxes (on mining) were reduced; all other ones involve the replacement of other taxes.

The discussion in the previous section would suggest that if trend lines were fitted to the CPI indices before and after the VAT introduction, then, for the pure "shift" cases, the slope should be approximately the same before and after the VAT introduction but that the intercepts of the trend lines with the vertical axis at the quarter when VAT started should differ substantially. Chart 1, Figures 1-4 show examples of this behavior. Seven pure shift cases can be identified (Denmark, Uruguay, Netherlands, Ecuador, Bolivia, Honduras, and Norway).

Honduras and Norway are shift cases that also have clearly accelerating rates of price change. The Norwegian experience is a clear "shift" case but at the same time the slope coefficient changed from 0.6 to 1.1 for the trends. On balance it seems better to put Norway in the "shift plus acceleration" category (see Table 4).

The dummy variable identified Honduras as a shift case anticipating the VAT. The slope coefficient increased (from 1.5 to 2.1) and while Honduras could be categorized as either a simple "shift" case or as a "shift plus acceleration" it was decided to leave it in the latter.

The remaining countries should fall into either the "acceleration" or "no effect" categories. From Table 3, ten countries can be considered acceleration cases; they are listed in Table 4 in the order in which they adopted VAT. The slope coefficients for the remaining nine countries in Tables 3 and 4 show there was little change in the trend of price changes before or after the VAT and they clearly belong in the "little or no effect" category in Table 4. In Cote d'Ivoire, Senegal, and Nicaragua the data are

CHART 1

FIGURE 1
DENMARK

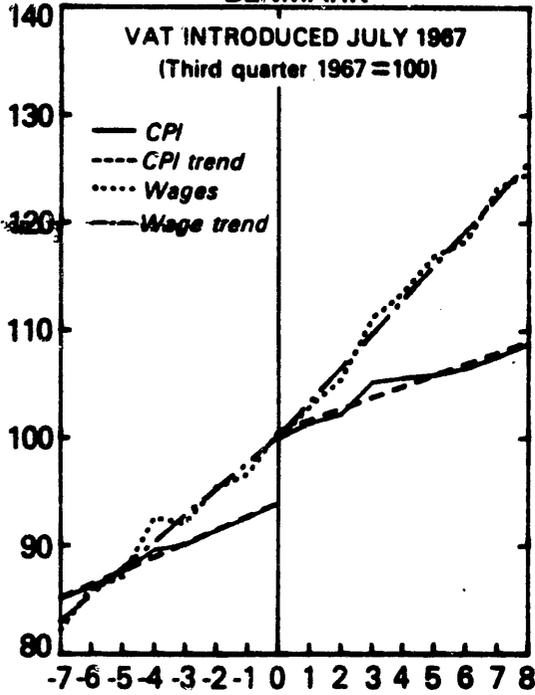


FIGURE 2
URUGUAY

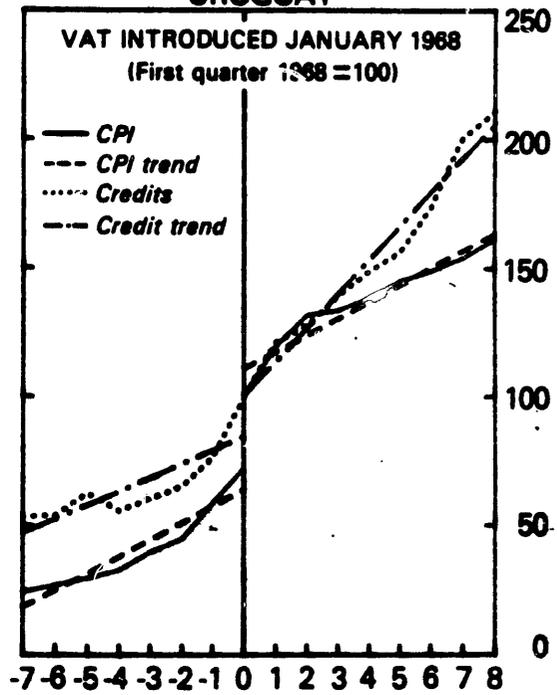


FIGURE 3
NETHERLANDS

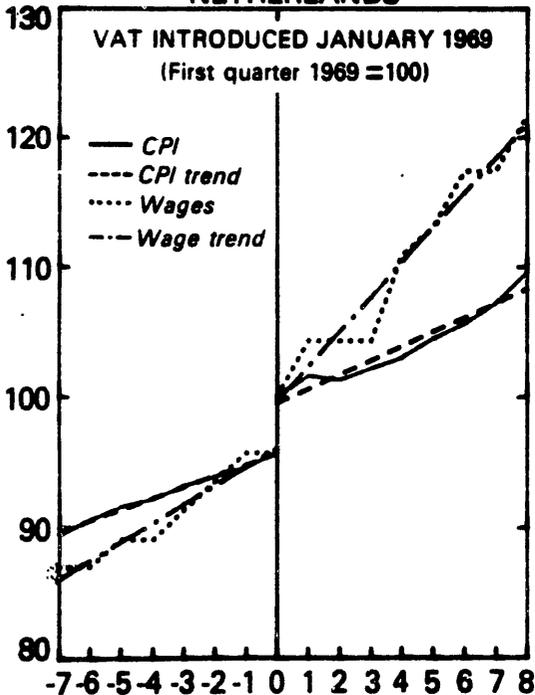
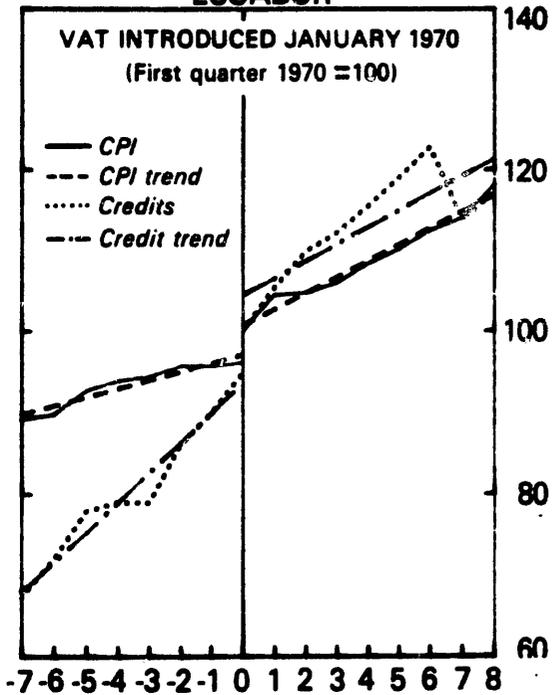


FIGURE 4
ECUADOR



**Table 4: COUNTRIES ALLOCATED TO CATEGORIES FOR EFFECT
ON CONSUMER PRICE INDEX**

Cases	Introduction of VAT		Changes in VAT Rates	
	<u>On data alone</u> A	<u>Considering all circumstances</u> B	<u>On data alone</u> C	<u>Considering all circumstances</u> D
Shift	Denmark Uruguay Netherlands Ecuador Bolivia Panama Haiti Turkey	Denmark Uruguay Netherlands Ecuador Panama Turkey Haiti	Denmark	Denmark
Acceleration	Morocco France Sweden Ireland Italy Guatemala United Kingdom Chile Argentina Israel Peru Mexico	Italy Guatemala Israel Peru Mexico	Netherlands 71	
Shift plus acceleration	Norway Honduras	Norway	Ireland	Ireland
Little or no effect	Cote d'Ivoire Senegal Brazil Germany, Fed. Rep, Madagascar Luxembourg Belgium Austria Colombia Costa Rica Nicaragua Korea Indonesia	Cote d'Ivoire Senegal Morocco Brazil France Germany, Fed. Rep. Madagascar Sweden Luxembourg Belgium Ireland Austria United Kingdom Bolivia Argentina Colombia Costa Rica Nicaragua Chile Honduras Korea Indonesia	Belgium Netherlands 73 Netherlands 76	Belgium Netherlands 71 Netherlands 73 Netherlands 76

Source: See text.

insufficient to be sure but the effect of VAT introduction on the rate of price change appears to have been negligible.

To flesh out the background of each case and to evaluate whether the results shown in Table 4, column A, were, for instance, a genuine effect of the VAT on the CPI or due instead to other concurrent circumstances, a more detailed examination of each country's case was made. This evaluation suggests a reallocation of the countries and this is shown in Table 4, column B.

Finally, Indonesia and Turkey introduced VAT in January 1985 and there is insufficient data to carry out the same exercise as for the other countries. However, using monthly data instead of quarterly (to get sufficient observations) Turkey appears to have experienced a pronounced shift in the CPI (despite a large increase in credit) and Indonesia a slight deceleration in the CPI.

2. Evidence in Addition to Data

Space does not permit a country by country evaluation ^{9/} but an example of the discussion is given for each of the four categories to illustrate how any reallocation was made.

a. Shift Effect

(1) Denmark

Denmark is a clear case. Figure 1 and data show how the CPI rose from a trend of 90, 91, 92, 93 in the four quarters preceding the introduction of VAT in July 1967 to 100 in the quarter in which the VAT was introduced and thereafter resumed its pre-VAT trend. The slope coefficients before and after were 1.3 and 1.1 (see Table 3).

The VAT introduced at 10 percent in Denmark was designed to have a wider coverage than the 12.5 percent wholesale turnover tax it replaced and to yield about DKr 2.1 billion more in a full fiscal year. However, the complete tax changeover was more complex than just the introduction of the VAT; higher tax free allowances for wage and salary earners, higher tax thresholds for lower incomes, increased children's allowances, and transfer payments to those not liable for income tax were all attempts to compensate for the anticipated increase in the CPI. These offsetting measures were reckoned to cost about DKr 1 billion in revenue foregone, so the net revenue increase was still over DKr 1 billion. The outturn for the fiscal year 1967/68 showed that this increase in sales tax revenue was equivalent to 6.2 percent of total tax revenue. Revenue from all taxes on goods and services rose sharply from 21.9 percent of public consumption before the VAT to 26.1 percent, and this was all attributable to the domestic taxes as the revenue from taxes on international trade actually declined over the same period.

The effect of the VAT introduction on relative prices was complicated further as food and services were to be taxed, whereas previously they had borne little tax.

Large wage increases, just before the introduction of the VAT, helped to compensate labor for the anticipated price increases. Generally, the "study conducted by the Monopoly Board of Denmark concluded that, with few exceptions, businesses changed prices by amounts close to the tax differential and did not use the VAT introduction as an opportunity for unwarranted price increases."^{10/} The CPI rose by 8 percent between April and October 1967 and the wage regulation index (which excluded taxes) by 3.1 percent; thus, the VAT

was regarded as probably responsible for a rise of almost 5 percent in the CPI.

The rate of change for wages before and after the July 1967 VAT introduction increased from 2.3 to 3.8 percent a quarter so, despite the same trend of the CPI before and after the VAT introduction, the shift in the CPI acted as a trigger for wage increases and credit was expanded to accommodate this (see Figure 1).

The Danish introduction of the VAT falls indisputably into the category where the changeover was designed to increase revenue and did so dramatically (taxation on private consumption was 19 percent higher the year after the VAT than before); however, the once-and-for-all shift in the CPI acted as a trigger to increase wages by more than an amount to compensate for the CPI increase. Nevertheless, the Danish authorities were successful in containing the potential for explosive price increases immediately following the VAT introduction. This success should probably be attributed to those offsetting adjustments in income taxation which, combined with substantial wage increases (continuing a previous trend), compensated labor for the VAT induced price shift.

(2) Bolivia

In October 1973 the Bolivian authorities changed from a ring system at 5 percent (instituted in 1971) to a credit mechanism and transformed the system into a VAT. This was certainly associated with an extremely large and swift rise in the CPI. However, at the same time, the authorities established luxury rates of the VAT at 10 percent, 15 percent, and 20 percent, levied higher stamp duties and taxes on credit, unified taxes on beer, and shifted taxes on alcohol from a 25 percent wholesale tax to a 70 percent producer

tax. Changes were also made in taxes on income and property, export taxes, and customs tariffs. With so many changes it is impossible to ascribe any particular effect to the VAT, although the new luxury rates might have contributed something to the increase in the CPI (actually VAT based revenue was to fall from 4.8 percent of tax revenue in 1974 to 4.6 percent in 1975 and domestic taxes on private consumption almost doubled). At the same time gasoline prices were increasing rapidly. It does not seem that the VAT was the principal disturbing feature in the rapid increase of the CPI after 1973 and it makes more sense to transfer Bolivia to the category "no effect" in Table 4.

b. Shift and Acceleration

In the previous countries the continuing inflationary effect of the VAT introduction as a trigger may have been modified by direct government intervention. In Norway and Honduras, not only was there the shift but also a marked increase in the slope of the trend of the CPI.

(1) Norway

The Norwegian VAT introduction involved a deliberate switch from the taxation of income to the taxation of expenditure. Taxes on domestic goods and services rose from 24.5 percent of private consumption to 28.6 percent. Although offsetting adjustments reduced income tax rates, lowered personal property and corporate taxes, and increased transfers, these did not fully compensate for a new VAT at 20 percent covering about 72 percent of consumption replacing a sales tax at 13.64 percent covering only 65 percent of consumption expenditure. The CPI was forecast to rise by 5.8 percent.

Interestingly enough, the rate of the CPI change before and after the shift caused by the anticipatory purchases (see Table 3) steepened from 0.7 to 1.7 but the expansionary wage and credit policies, both apparently triggered by the VAT introduction, were more likely the cause of the sustained steeper rise in the CPI than the VAT itself. The Norwegian VAT introduction is different from that in Denmark and the Netherlands in that the shift fed a price-wage increase more than in the other countries which, in turn, led to greater increases in the CPI after the VAT than before it. The reason for this reaction appears to have been the anticipation of the public that the tax change was going to increase prices and that the adjustments in income taxation would be insufficient compensation. Monetary policy appeared accommodating.

(2) Honduras

In Honduras a general ring tax was replaced by a VAT in January 1976. The revenue from domestic sales taxation as a percentage of private consumption increased by 12 percent but the effect on the CPI was relatively minor. The rate of the VAT was only 3 percent (as was the ring tax) and the increased revenue must be ascribed to better tax administration checking evasion. The rate of increase of the CPI accelerated but this was trivial and is more appropriately attributed to the accelerating credit expansion than to the introduction of the VAT. Honduras is transferred to the "little or no effect" category.

c. Apparent Accelerated Inflation Effect

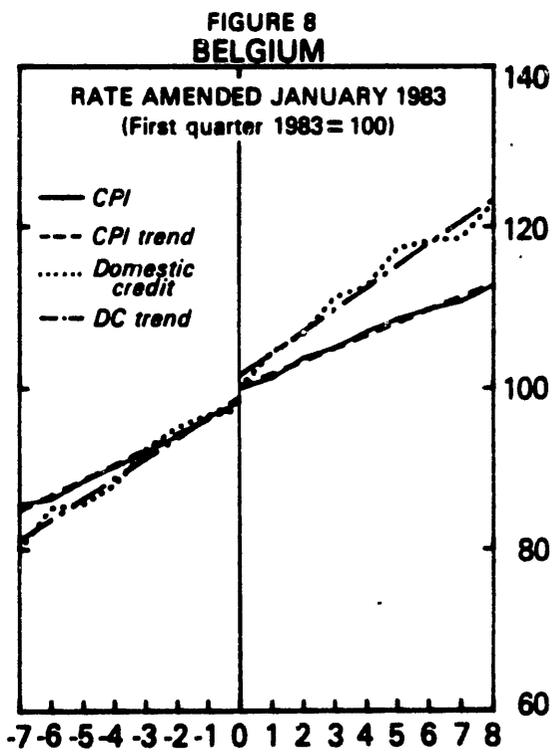
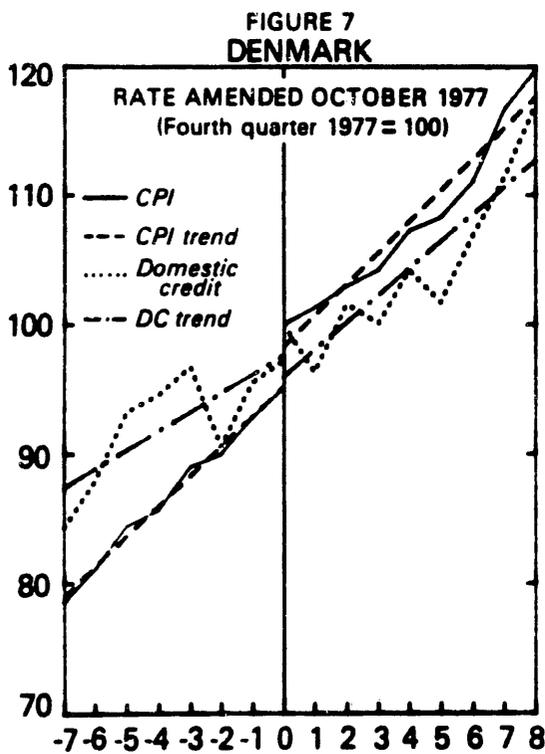
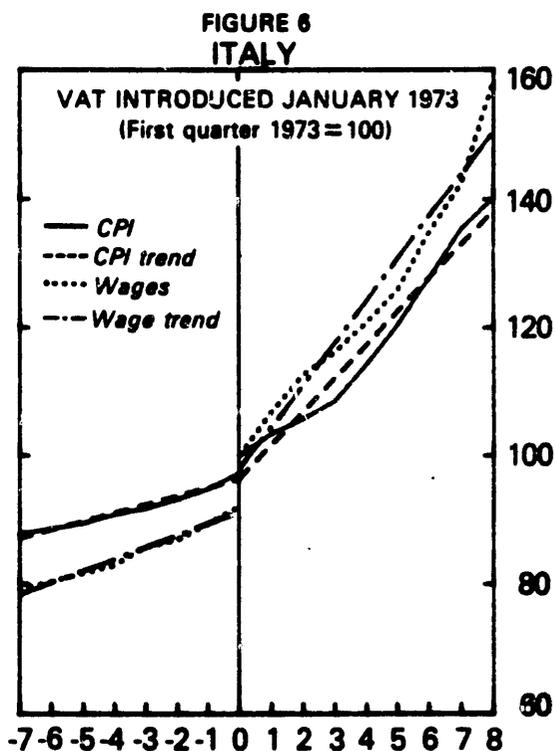
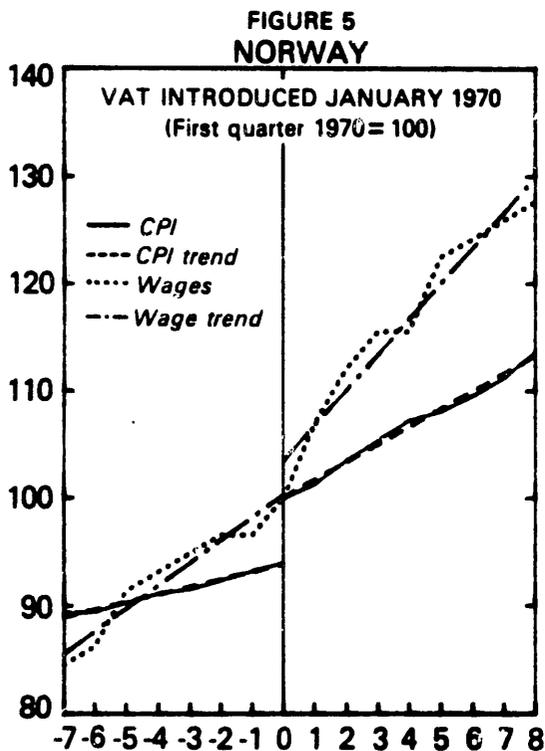
The next set of cases (see Table 4) involves those countries where the VAT introduction has been associated not with a shift but with an acceleration in the rate of change of the CPI. An example of this effect is

shown for Italy in Figure 6. Table 3 shows how in each country the rate of change of the CPI accelerated, and this was accompanied by accelerated rates of increase in the index of wages and credit increases (where the information is available).

(1) France

The French VAT is, of course, the original from which all others evolved. The modern form of the French VAT is usually identified with the tax changes of January 1968. The new VAT was a direct revenue replacement for the old (domestic taxes on private consumption represented 20.4 percent compared with 21.1 percent before VAT) but it did involve an extension of the tax to most wholesale and retail transactions. At the same time, the introduction of the new VAT was used as a convenient vehicle for simplifying exemptions, many of which were abolished leaving only about ten under the new tax. Various anomalies and forms of double taxation, for example, on buildings and furniture, were removed. Under the new law the number of tax rates was reduced from seven to four. Moreover, there was a major change in the financing of local authorities, the changeover abolished the main taxes earmarked for the local authorities and substituted the revenue from the employers' payroll tax and this caused a net loss in revenue to the Central Government. Although the overall sales tax revenue involved an equal yield substitution, adjustments (partly to compensate for anticipated price changes) in the lower and middle-income brackets also cost the revenue F 700 million. The cleaning and dyeing industries predicted increases of 5 percent; construction industries 10 percent; food products as follows --bread 5 percent, dairy products 2 percent, and fruit and vegetables 3 percent; and

CHART 2



varying increases for meat, clothing, automobiles, construction, champagne, and mineral waters.

Prices rose somewhat faster after the tax changeover (0.7 gradient increased to 1.6, see Table 3) but wages and credit increased sharply. The picture is distorted by direct intervention later in the year. The increased rate of price change and the sharply higher rate of wage increases persuaded the authorities to reinforce price controls through program contracts covering industrial prices, supervision of wholesale and retail trade margins, and a price freeze for services. At the same time (November 2, 1968) rates of the VAT were increased.

So the 1968 French VAT reform might be characterized as one which, while nominally an equal yield change, involved changes in coverage and rates with offsetting adjustments in other parts of the system. The direct effect of the VAT on the CPI was probably less than 1 percent; however, the uncertainty induced by the tax changeover may have accelerated the rate of increase of the CPI. Wages increased sharply but the vicious circle of wage-price increases trigerring each other was contained (only partially) by price controls. The VAT itself does not seem to have caused the increased inflation, but rather wage and credit increases and further increases in rates of VAT. The French exmaple should probably be transferred to the "little or no effect" category in Table 4.

d. Little or No Effect

From the data for 13 countries, the introduction of VAT appeared to have no (or very little) effect on the rate of change of the CPI as shown in column A of Table 4. From the examination of the circumstances in each case exemplified by the discussions above we have added a further nine countries to

the "little or no effect" category, making 22 in all. To complete this review of country case studies there follow two examples of the discussion surrounding the introduction of VAT where little or no effect occurred. 11/

(1) Germany

The Federal Republic of Germany is the country most frequently referred to when commentators wish to show that the introduction of a VAT need not affect the CPI. 12/ The changeover in January 1968 from a 4 percent cascade turnover tax (which extended to the retail level) to an equal yield 10 percent VAT (and a 5 percent rate on foodstuffs and agricultural products) was estimated at the time to increase prices by 0.5 to 1.5 percent. Even this increase was anticipated only because those sectors where prices could be expected to fall might prove more reluctant to pass forward tax changes than those where tax liabilities rose and because some services were taxed at higher rates. As it turned out, the CPI rose by only 1.5 percent over the whole of 1968 and of this no more than 0.4 to 0.6 percentage points were ascribed to the VAT. The largest price increases were in the services sector, namely, hotels (4 percent), public transport (5.2 percent), handicrafts (5.3 percent), electricity (6.3 percent), cinemas (6.4 percent), and gas (9.9 percent). The rate of change of the CPI for the two years before and the two years after the VAT introduction was only from 0.4 to 0.45. Taxes on goods and services as a percent of private consumption fell after the VAT substitution.

The moderate impact of the VAT introduction in the Federal Republic is widely ascribed to the timing of the tax changeover. The rate of German expansion has slowed and firms were reluctant to raise prices. The Lander operated a price monitoring system and no further control on prices was deemed

necessary. The Germans stopped businesses increasing prices not so much by design but because the introduction of the VAT happened to coincide with a minor recession. It is interesting to note that an 11 percent tax was levied on business assets to ensure that the VAT substitution did not suddenly favor capital goods.

(2) Belgium

The Belgian VAT was introduced in January 1971. Originally, it was intended to introduce the new tax in January 1970; this change from a cascade turnover tax was supposed to be an equal yield substitution.

Previously Belgium had a complicated form of cascade tax at 7 percent up to and including the wholesale stage. However, this was modified for some industries by using a single rate purporting to be equivalent to the total amount which would have been payable under the cascade rates. Basic foodstuffs were exempt, there was an additional 0.7 invoice tax on all turnovers, and capital equipment was taxable. The VAT exempted exports, investment, and stocks and this narrower domestic base required higher rates of tax to produce the same revenue. The proposed rates were a 20 percent general rate, with a 25 percent luxury rate and lower rates of 6 percent and 15 percent. Estimates suggested that the CPI might rise by 5-8 percent. To counteract this the authorities reduced the two middle rates to 14 percent and 18 percent and some goods and services were moved to lower rates. Even with this change it was clear, as the date for implementation in 1970 approached and with the economy working at full capacity, that traders would probably attempt to increase prices and this could trigger off a price-wage spiral. The authorities decided to postpone the introduction for a year until January 1, 1971.

Some persons were caught by this decision having purchased consumer durables in the full expectation that the VAT would be introduced in January 1970. For instance, sales of cars were 12 percent lower in the first nine months of 1970 than in the same period of 1969, when there had been massive speculative purchases in anticipation of the original date for introducing the VAT.

When finally introduced (at the lower rates) the revenue shortfall was made up by not allowing all new investment or inventories to be tax free at once by taxing exports for one year at 1.75 percent, and spreading the refund for the transaction tax paid on stocks over a full year. Wholesalers and shops closed between Christmas and the New Year to take inventories, and stocks were generally reduced. Consumer credit in the last quarter of 1970 was kept extremely tight to reduce the surge of speculative purchases in anticipation of the introduction of the VAT in January.

Some restraint on the ability to increase prices because of uncertainty about the VAT might have been made through the obligation to notify any price increases 21 days before they were actually applied; this period was extended to five months in 1971 and this need to justify price increases to the Minister for Economic Affairs may have contained mischievous increases in prices.

In the event, prices did not increase markedly faster than the underlying rate of inflation, the rate of increase of wages far outstripped both the rate of increase in industrial production and price increases. Taxes on goods and services as a percentage of private consumption were more or less unaltered before and after the VAT.

Table 5: CHANGES IN VAT RATES

Country	Date	Change
Denmark	October 3, 1977	Standard rate from 15 percent to 18 percent
Ireland	May 1, 1980	Standard rate from 20 percent to 25 percent with no change in other rates.
Belgium	January 1, 1983	Standard rate increased from 17 percent to 19 percent and to 25 percent for many consumer durables.
Netherlands	January 1, 1971	Standard rate increased from 12 percent to 14 percent with no change in other rates.
	January 1, 1973	Standard rate increased from 14 percent to 16 percent with no change in other rates.
	October 1, 1976	Standard rate increased from 16 percent to 18 percent with no change in other rates.

Source: Domestic legislation.

3. Relative Price Effects

The examination of the circumstances in each country shows that frequently it is the changes in relative prices that may be more important than the general price change. Some changes from existing sales taxes to VAT have involved complex substitutions with substantial changes in relative tax rates (e.g., the United Kingdom and Korea). Such changes are frequently asymmetrical (traders will increase prices when tax rates rise but not reduce prices by the full amount of a tax reduction) and may have more fundamental effects on the distribution of the tax change over household income groups than that revealed by the change in general prices. Nevertheless, as far as inflation is concerned the evidence does not seem to support the contention that the introduction of VAT is inflationary.

IV. Evidence of Inflation from VAT Rate Changes

Apart from the introduction of the VAT, once the VAT is in operation, changes in rates might reveal whether the tax can be associated directly with inflation. Six rate changes were selected (see Table 5) primarily on grounds that the changes were significant (at least 2 percentage points) and principally confined to a rate change with little or no alteration in the base.

The Danish 1977 case is a perfect example showing that the rate of change of the CPI was unaffected (see results in Table 3) although there was a marked shift (see Figure 7). Revenue from VAT was to increase by DKr 1.4 billion but selective partial compensation by dairy subsidies and increased social security and pension payments reduced the expected net yield to DKr 1.1 billion. This net revenue increase is revealed in the shift (see Figure 7)

but there is little change in the rate of inflation. In Table 4 this case falls under the "shift" category.

The more substantial change in the Irish standard rate, by 5 percentage points, undoubtedly was associated with both a shift in the CPI and in an acceleration of the rate of inflation, despite a determined effort by the authorities to contain credit expansion. However, the acceleration in inflation was by no means attributable only to the large increase in VAT. Excises on petroleum, alcohol, and tobacco contributed to an increase in the price of these goods which was more than double the rate of inflation. Domestic credit expansion continued to finance the increasing rate of price increases. Although many influences as well as the VAT rate increases contributed to an acceleration of inflation this case has been left in the "shift and acceleration" case in Table 4.

The Belgian example is more akin to that of Denmark (see Table 3) and the authorities actually achieved a reduction in the rate of inflation following the substantial value-added tax alterations (see Figure 8).

The reason for this outcome was that price effects were (temporarily) pre-empted by widespread purchases successfully leading the well debated increases in VAT rates. The cautionary note in this case might relate to the difficulties countries face when their budget proposals are introduced several months before implementation. However, though revenue was less than anticipated the effect on prices was also tempered.

These examples might persuade us that the effect of the VAT changes on inflation depends more on the underlying uncertainty and acceptance of rapidly changing prices than the VAT rates themselves. In Denmark and Belgium the VAT rate changes were reflected in a once-and-for-all shift but in

Ireland, where both the CPI and credit expansion were already changing at a higher rate of increase, the VAT changes were rapidly reflected in increased and increasing price changes. It is not so much the VAT rate changes as the inflationary environment that seems to be at fault.

The three VAT rate changes in the Netherlands are interesting because all are for the same absolute amount (2 percent in each case) with no other rate changes. In 1971 the change is reflected in a small acceleration, in 1973 in almost no acceleration, and in 1976 in a deceleration of the rate of inflation (see Table 3). This differing pattern is not explained by changes in the rate of increase of credit which is, in fact, counter intuitive, accelerating by the greatest amount in 1976 when inflation, around the quarters when the VAT was increased was decelerating. If anything, it is the rate of change of wages which appears to mirror the decelerating change in the CPI in 1976 and the accelerating changes in 1971 and especially in 1973 when wages rose by some 15 percent instead of the 9 percent forecast.

Basically these examples from the Netherlands point to causes other than the VAT as influences on prices, to increased wages, increased other taxes (1971 on cars and petroleum), and the exchange rate changes (in 1976) when the price deceleration was closely aligned to an appreciation of the guilder. In terms of Table 4, the VAT changes could not be said to be a significant influence on inflation.

V. Effects on the Foreign Trade Balance

As VAT is fully rebated on exports, but some other sales taxes and direct taxes are not, it is often suggested that substituting VAT for such

taxes could improve the balance of payments on current account. The substitution for sales taxes is discussed first and then the case of direct taxes.

1. A VAT Substituted for Other Sales Taxes

Of course, retail sales taxes and most wholesale and manufacturing single-stage taxes do not apply to exports and therefore their substitution by a VAT would not alter the tax position of exports, except for those goods bought by tourists which, under most VAT schemes, with varying degrees of inconvenience, can have their VAT content rebated.

Where the existing sales tax is cascaded, the tax content of any good depends on the number of cascades and can be different for identical goods or the same for different goods; the point is that the sales tax content cannot be determined exactly. This has led to the various tax offsets on exports which characterized, for instance, the Italian system before VAT, and which could be considered as inadequate compensation for the cascade tax element, exact compensation, or partly as a net subsidy. The substitution of the VAT replaces an uncertain tax content by a transparent and known tax liability. Depending on the previous sales tax, tax offset, and subsidy regimes, exports could improve or worsen under the VAT. Equally, imports that are liable to the same VAT as domestic goods, could be less favorably treated (if previously the cascade had discriminated against domestic goods). 13/

The exact determination of the relative impact on the trade balance derived from introducing VAT needs an estimate of the existing tax content by products or principal trade sectors and usually this can be obtained (for cascaded sales taxes or direct taxes) only where an input-output table exists. In addition to the usual disadvantages of using input-output tables

(infrequent updatings, inconvenient sectoral breakdown) tax incidence faces the additional difficulty that a transformation has to be made from the I-0 sectors to the trade categories and for normal statistical and tax purposes or to typical household consumption categories. This usually demands some heroic assumptions. When this transformation is made and potential price changes are assigned to goods (and services), the foreign trade assessment needs to use elasticities of supply for exports and elasticities of demand for imports.

The magnitude of the trade benefit from the changeover to VAT depends on (a) the positive response of producers to the shift in the ratio of producer prices (inclusive of any previous export rebates or subsidies and the VAT rebate) of exports to producer prices of domestic sales, (b) the response of consumers of the exports to the price change, and (c) the negative response of domestic consumers to market prices of imports relative to market prices of domestically produced goods. The outcome of all this depends on each country's individual circumstances and may vary considerably one sector compared with another, but overall the net change is unlikely to be large./14

2. A VAT Substituted for Direct Taxes

The most stark statement would be that a VAT is rebated on exports and corporate income taxes are not, therefore, replacing the profits tax by an equal yield VAT must help exporters. /15 This depends on at least six assumptions. The first is that corporate income taxes are reflected in higher export prices that are reduced if the profits tax is reduced. This is not necessarily so; some evidence suggests a "myopic" attitude to taxes by businesses; when taxes rise they are passed on, when they fall they are not.

Second, even if corporate taxes are passed on they may not be passed on to export prices; cross-subsidization may occur. "The position might be summed up by saying that under the profits tax you can have a negative tax liability (losses); under a sales tax you cannot have negative sales. With the VAT, the tax liability on exports is zero, but that is still not as good as a negative tax liability to offset against domestic tax liabilities." /16

Third, it is the position of the country relative to others that matters. If all countries acted in a similar fashion by substituting VAT for direct taxes in the same way there is no net advantage to anyone. Fourth, the elasticities of supply and demand have to be such as to yield a worthwhile advantage. Fifth, unless exchange rates were fixed an expansion of exports and containment of imports might be expected to cause a currency appreciation.

Finally, and possibly most important, if there is a budget constraint then the government revenue foregone, substituting VAT for nonrelated direct taxes, must be replaced by raising other taxes. Such increases will reduce, one way or another, real household income and are likely to spark claims for wage increases which, eventually, will increase manufacturing costs and erode the competitive advantage gained for exports through the original tax substitution. The advantage of the VAT substituted for the direct taxes would be temporary depending on the speed with which other taxes fed through into final prices, the lags in response in the labor market, and the extent to which traders passed forward the increased domestic costs in export prices. However, as the advantage from the tax substitution was predicated on full forward shifting it would be capricious to assume anything different for the general equilibrium outcome.

It should be mentioned that, quite apart from these assumptions about shifting, there are two other possible positive influences. There is the possibility that the substitution of the VAT for profits tax could unleash hitherto contained productivity in industry which could improve the balance of payments. /17 Secondly, there is the response of savers as the cost of savings falls relative to the cost of consumption. The substitution of a VAT for income taxes would reduce the "excess cost of capital inputs relative to labor inputs resulting from the income tax. With border tax adjustments, the cost of both labor and capital inputs used in production for exports would fall compared with their cost under the income tax and compared with their cost when used in production of goods for domestic markets." /18 Thus the profitability of a given volume of exports should increase and improve the balance of trade.

When all this is taken into account it is usual to estimate the immediate short-run effects of the foreign trade balance while emphasizing the temporary nature of any such gain. Moreover, one suspects that the larger the short-run gain (and some have been estimated as quite large), the more brief the short-term advantage.

VI. Summary

1. VAT, in one form or another, is used in 39 countries.
2. In Europe, VAT contributes from 13-30 percent of tax revenue and in developing countries 8-38 percent.
3. VAT has not been an important agent in the growth of the public

sector; revenue from income tax and social security contributions has grown faster and has been the more important influence financing the growth of public expenditure.

4. VAT represents 5-10 percent of GDP in Europe and about 5 percent elsewhere.

5. After considering the data and circumstances in each country in detail, in 22 of the 35 cases where the effects of introducing a VAT on the CPI were evaluated, no major impact could be identified. That is, in 63 percent of the countries the introduction of the VAT can be said to have had little or no effect on the CPI.

6. In a further eight cases (23 percent of the total) the introduction of the VAT is associated with a highly defined once-and-for-all shift in the CPI, but in only one of these cases could this be said to contribute to an acceleration in the rate of increase of the CPI. In the other seven cases, although the shift was permanent there was no acceleration of the rate of change in prices.

7. Therefore, in 29 cases (22 and 7) -- 83 percent -- the introduction of the VAT did not alter the rate of price change.

8. In six countries, the VAT could have contributed to an acceleration in the rate of inflation although this was associated in each case with expansionary wage and credit policies.

9. Clearly it is possible to introduce a VAT (sometimes even to increase the yield) and not to shift, or to increase the rate of change of, the CPI. There is no necessary corollary between introducing a VAT and increasing inflation; if anything, the assumption should be that an equal yield VAT substitution will have little or no effect on the rate of change of the CPI

and that even if an increased yield is desired and the CPI is shifted it will not necessarily have a continuing effect on the rate of inflation.

10. Price controls were used effectively to dampen the potential price-wage acceleration of inflation after the VAT introduction in Austria, the Netherlands, France, Norway, and Korea.

11. After examining six examples of rate changes in existing VAT systems, only one case was associated with an acceleration of inflation, one with a shift in the CPI, and the other four had little or no effect.

12. Perhaps the most important conclusion is that there seems to be nothing inherently inflationary about the use of the VAT. In 33 out of 41 cases reviewed -- over 80 percent -- (the "shift" cases and the "little or no effect" cases) the VAT was not a contributory factor to inflation. Government policies to inform the public and traders about the expected effect of the VAT on prices, the use of price controls, offsetting adjustments in other taxes, the correct timing of the tax changeover, and generous provisions to ensure full credit for previously paid taxes on business assets and inventories are a few of the more important government decisions which help to contain any potential inflationary effect the introduction of the VAT may have.

13. The net effect of substituting a VAT for other sales taxes on the foreign trade balance may vary considerably from one sector to another, but overall, for an equal revenue change, the net advantage or disadvantage is unlikely to be large.

14. Substituting a VAT for direct taxes may provide quite substantial short-term balance of trade advantages but these are unlikely to be sustained for long.

NOTES

1. Tax Reform for Fairness, Simplicity and Economic Growth, The Treasury Department Report to the President, Vol. 3, The Value-Added Tax, Office of the Secretary, Department of the Treasury, November 1984, p. 26.
2. Ibid, p. 23.
3. As Carl Shoup says "so rapid a growth is unique" in the history of public finance.
4. See Table 1 in Alan A. Tait, "The Value Added Tax: Why and How". 1984 Conference Report of the Thirty Sixth Tax Conference, Canadian Tax Foundation (Toronto, 1985), pp. 488-89.
5. Alan Robinson, "Implementation of VAT is Seen Ill-Planned; Critics Fear More Inflation will Result," Journal of Commerce (January 14, 1980).
6. Arthur Andersen & Co., VAT in Other Countries (Chicago, Illinois), 1980, p. 16.
7. Ibid., p. 18 (author's insertion in parentheses).
8. Dorothy Johnstone, A Tax Shall be Charged, Civil Service Studies No. 1 (London, Her Majesty's Stationery Office, 1975), p. 124.
9. More detailed information is available from the author.
10. Dan Throop Smith, James B. Webber, and Carol M. Cerf, What You Should Know about the Value Added Tax (Illinois, Dow Jones Irwin, 1973), p. 35.
11. For a summary table showing the taxes replaced by VAT see Alan At. Tait, "The Value Added Tax: Why and How," 1984 Conference Report, Canadian Tax Foundation, 1985, pp. 488-490.
12. Dan Throop Smith, James B. Webber, and Carol M. Cerf, op.cit., pp. 35-36, and Alan A. Tait, The Value Added Tax (London, McGraw-Hill, 1972).
13. In practice imports are subject to numerous different accounting treatments with suspended tax liabilities for raw materials for exports, transit goods, services connected with imports, samples, and VAT free zones, and so on. For examples, see Sijbren Cnossen, "The Netherlands," in The Value Added Tax: Lessons from Europe, (Henry J. Aaron, ed.), The Brookings Institution, Washington, 1981, pp. 50-51; "European Communities: Imposition of VAT," in European Taxation, March 1985, International Bureau of Fiscal Documentation, pp. 72-75; or "EC: Draft VAT Directive on Temporary Importation of Goods," (17th Directive) in Intertax 1985/3, pp. 74-83.

14. As was indicated for the introduction of the VAT in the United Kingdom -- see Richard Hemming and John A. Kay "The United Kingdom," in the Value Added Tax: Lessons from Europe, The Brookings Institution, Washington, 1981, p. 82.
15. Or "Some exported services did bear the selective employment tax, while under the VAT some export services were zero rated, but the effect of this change was expected to be minor. All in all, exports were expected to increase by about 0.25 percent from the tax switch," *ibid*, p. 82.
16. Alan A. Tait, Value Added Tax, McGraw-Hill, 1972, p. 104.
17. See comment in Tax Reform for Fairness, Simplicity and Economic Growth, The Treasury Department Report to the President, Vol. 3, The Value-Added Tax, November 1984, p. 23.
18. Michael A. Schuyler, Consumption Taxes: Promises and Problems, Fiscal Issues No. 4, Institute for Research on the Economics of Taxation, Washington, 1984.

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