

GENERAL INDIRECT TAXATION AS A MACROECONOMIC POLICY INSTRUMENT

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ABSTRACT

A survey of the growing significance of general indirect taxes to macroeconomic policy and an investigation of their properties within the context of a twelve-equation, macromodel. The author shows that, even under varying labor-market assumptions, general indirect taxes have contradictory effects on the aggregate level of prices and can only be relied upon to affect unemployment levels. An additional simulation study is conducted to show how general indirect taxation compares with government spending as a policy tool, illustrating once again how the former cannot be relied upon to function as an instrument of anti-inflationary fiscal policy.

INDIRECT taxes are probably the oldest and most reliable revenue source known to mankind. They account for a large and growing share of many countries' national product and they can affect aggregate output, resource allocation, and income distribution in many different ways. In some countries, such as the United Kingdom and Australia, they have been actively used as tools of fiscal policy and mostly for stabilization purposes;¹ in many other nations,

however, either because of a tax system in which indirect taxation is decentralized (as in the United States) or because of the permanent need for the steady revenue these taxes generate (as in most developing countries), indirect taxes do not appear to have been consciously used as such. This paper reviews the macroeconomics of indirect taxation and specifies the contribution which these important revenue tools can make to the attainment of the traditional full-employment and price-stability goals.

In many countries indirect taxes, which include those levied on the production and distribution of goods and services and on transactions generally, have become an increasingly important economic aggregate. Data for many countries in Europe and North America show that indirect taxes on households have grown to average between 10 and 20 per cent of the gross national product. (See Table 1.) The figures show that, with the exception of France and the Netherlands, in all other countries indirect tax revenues have come to account for a far greater portion of the national product than they did a decade-and-a-half ago; in some instances, as in the cases of Denmark, Sweden, and the United Kingdom, the increase is indeed impressive. At the same time, their importance as a component of total general government revenue has come to range from about 25 per cent in the Netherlands to over 60 per cent in Ireland (1968-69 averages), although for most of the countries listed in Table 1 indirect taxes accounted for some 35 to 45 per cent of total revenues.² These taxes are even more significant in the less developed countries, where reliance upon indirect taxation provides an average of 70 per cent of government revenues and, in some cases, up to

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¹For the case of the United Kingdom see, for example, J. C. R. Dow, *The Management of the British Economy, 1945-60*. Cambridge: Cambridge Univ. Press, 1964, 196-213; and C. D. Cohen, *British Economic Policy, 1960-1969*. London: Butterworths, 1971, 64-83. For the Australian experience see J. W. Neville, *Fiscal Policy in Australia: Theory and Practice*. Melbourne: Cheshire, 1970, 100-102; and N. Runice, ed., *Australian Monetary and Fiscal Policy: Selected*

Readings, vol. 1. Sidney: Univ. of London, 1971, 443-446.

²Computed from OECD, *National Accounts of OECD Countries, 1953-69*. Paris: OECD, n.d., various tables.

TABLE 1

TOTAL GOVERNMENT INDIRECT TAXES ON HOUSEHOLDS AS A PERCENTAGE OF GROSS NATIONAL PRODUCT AT MARKET PRICES, IN CURRENT PRICES

Country	1953	1957	1961	1965	1969
Austria	13.17	13.74	14.77	15.32	16.46
Canada	12.23	12.67	13.43	14.72	15.10*
Denmark	10.34	11.29	12.33	14.03	17.18
Finland	13.96	15.45	13.38	13.73	14.59
France	17.00	16.78	16.26	16.72	15.93
Ireland	15.24	16.71	16.11	16.78	19.50
Italy	11.32	12.54	12.53	12.27	12.50
Netherlands	11.51	10.06	10.05	9.96	10.54
Norway	13.68	14.14	14.79	15.12	16.02
Sweden	8.55	9.37	11.52	12.60	13.91*
United Kingdom	13.87	13.41	13.24	13.92	17.20
United States	8.20	8.54	9.30	9.24	9.26

* = 1968.

Source: Computed from OECD, *National Accounts of OECD Countries, 1953-69*. Paris: OECD, n.d., various tables.

80 per cent (e.g., Ecuador, Guatemala, Pakistan, Somalia and Thailand).³

Much macroeconomic analysis of indirect taxation appears to be lacking, perhaps because excise taxes affect relative prices, employment, and output. Yet the impact of general sales, turnover, and value-added taxes can be more properly and easily analyzed in an aggregate context because their broader applicability makes them comparatively more neutral with respect to resource allocation yet significant to the determination of the level of prices and employment throughout an economy. During 1970, for instance, and for the countries appearing in Table 1, general taxes on goods and services accounted for a varying proportion of total revenues: from a low of about 6 per cent in the United States to a high of 36 per cent in Denmark, although most European nations were in the 10-20 per cent range.⁴ The interesting fact is that throughout Europe and in many developing countries there seems to be a trend away from allocation-distorting taxation and in favor of general-sales taxation. This is exemplified by the increasing adoption of value-

added taxes, which have become common in Europe and appear to be spreading rapidly elsewhere, as a replacement of or in addition to other indirect taxes.⁵ Their large-scale acceptance and growing importance cannot but draw the attention of economists and policy-makers, since this on-going reform of revenue systems places in their hands another potential policy instrument.

Traditionally, policy-makers and tax specialists have tended to regard indirect taxes as revenue sources which help prevent inflationary financing rather than as important ingredients of broad employment and anti-inflationary policies. And when, as has recently been the case, general sales taxes are manipulated to affect the overall course of an economy, *ad hoc* measures are applied with apparent confusion as to how and to what extent indirect taxes can affect the level of aggregate economic activity. Three examples are worth citing. Italy increased its turnover tax by 20 per cent in mid-1964 and imposed higher indirect taxes in mid-1970 as specific curbs on consumption and what was deemed to be inflationary spending. Yet France reduced the rates of its value-added tax during December of 1972

³R. J. Chelliah, "Trends in Taxation in Developing Countries," *IMF Staff Papers*, XVIII, #2 (July 1971), 270-271.

⁴Computed from OECD, *Revenue Statistics of OECD Member Countries, 1968-70*. Paris: OECD, 1972, various tables.

⁵R. W. Lindholm, "The Value Added Tax: A Short Review of the Literature," *Journal of Economic Literature*, VII, #4 (December 1970), 1178-1189.

as an explicit component of its anti-inflation struggle. Finally, during the late 1960's Finland formally and repeatedly abstained from implementing any material direct and indirect tax increases as part of a prices-and-incomes policy agreement with labor unions and, at the end of 1971, Finnish authorities abandoned a supplementary sales tax as part of a move to please labor and thus tone down wage demands.

Can these conflicting policy outcomes be compatible with anti-inflationary fiscal policy? With what confidence can indirect tax rates be manipulated within the context of stabilization policies? These questions are the subject of the present inquiry.

A Model of General Indirect Taxation

Several economic models have been built to explain the role of indirect taxation in macroeconomic and fiscal-policy analysis. Bent Hansen discussed, as far back as 1958, the possibility of using changes in the rates of direct and indirect taxation as compensating policy measures. For this purpose he constructed a model which sought to explain how, in an economy operating with two production sectors, a tax on consumer goods can be used to establish a desirable equilibrium in the labor market while the income tax is used to influence the commodity market.⁶ In 1959 John F. Due summarized the anti-inflationary role of excise and sales taxes, and warned of their comparative inferiority with respect to direct taxes on the basis of equity, inflation control, and economic development considerations.⁷ In his well-known text, Leif Johansen considered a very simple model of direct and indirect taxation; he concluded that in order to obtain a certain fall in the level of prices while maintaining constant employment, it is necessary to reduce the sales tax rate and to increase the rate of direct taxation.⁸ Alan T. Peacock and John Williamson

showed how an increase in the tax on consumption goods causes their prices to rise and in turn generates larger wage increases; hence, consumption tax hikes were deemed comparatively more inflationary than income tax increases, at least in the short-run, while always leading to a higher price level in the long-run.⁹ Finally, D. A. L. Brennan and G. Auld have explained the Australian experience with indirect tax rate cuts as anti-inflationary measures, and elaborated on the possibility that higher sales taxation can lead to an inflationary, cumulative-shifting spiral where the tax increase is shifted forward by firms to consumers through higher prices, while the latter eventually shift it back to businessmen through higher wage claims.¹⁰

These pioneering efforts can now be brought together within the framework of more conventional macroeconomic models. In order to study the effects on employment and the price level of indirect tax-rate changes a twelve-equation, closed-economy model was constructed and which integrates the commodity, money, and labor markets. The exogenous (policy) variables are the indirect tax rate (ϕ), direct tax revenue net of transfers (T_d), government purchases of goods and services (G), and the money supply (M_s). It is assumed, then, that it is possible to speak of a single indirect tax rate such as the one corresponding to a unified value-added or general-sales tax rate. Aggregate nominal income (Y) is, by definition, equal to the wage bill (WN), profits (Π), and indirect tax revenues (T_n), as shown in Equation 1; it is also (Equation 4) the addition of nominal consumption (C), nominal investment (I), and nominal government purchases (G) and, finally (Equation 9), it can also be expressed by the definition output (X) times the price level (P). By Equation 2 we define indirect tax revenues (T_n) as the product of nominal income (Y) and the indirect tax rate (ϕ). Nominal con-

⁶B. Hansen, *The Economic Theory of Fiscal Policy*. London: Allen & Unwin, 1958, 229-259.

⁷J. F. Due, "Excise and Sales Taxes as Anti-inflationary Measures," *The Annals of the American Academy of Political and Social Science*, CCCXXVI (November 1959), 79-84.

⁸L. Johansen, *Public Economics*. Amsterdam: North Holland, 1965, 88-94.

⁹A. T. Peacock and J. Williamson, "Consumption Taxes and Compensatory Finance," *Economic Journal*, LXXVII, #305 (March 1967), 27-47.

¹⁰D. A. L. Brennan and G. Auld, "The Tax Cut as an Anti-Inflationary Measure," *Economic Record*, XLIV, #108 (December 1968), 520-525.

sumption (C) is an increasing function of nominal disposable income (DY) (Equation 5), and nominal investment (I) is a decreasing function of the interest rate (i) (Equation 6). Disposable income (DY), in turn, is defined as the wage bill (WN), profits (Π) times the dividend rate (v) minus direct taxes (Td) (Equation 3). Equations 7 and 8 express monetary equilibrium, the demand for nominal money balances being a function of nominal income (Y) and the interest rate (i). Since this is a short-run model, output is assumed to be a function of labor input exclusively, with a positive though diminishing marginal product (Equation 10).

On the aggregate supply side and in its labor market, the quantity of labor demanded is determined by the profit-maximizing condition that the marginal product of labor [$\lambda(X/N)$] times the price of output net of indirect taxes [$P(1 - \phi)$] must be equal to the nominal wage (W) (Equation 11). Finally, the supply of labor (N) is assumed to be a function of nominal wages (W) and the price level (P) (Equation 12). Hence, it is assumed that business decisions on the amount of labor to hire are based on the price of output which the producers actually obtain for what they sell and, of course, on the productivity of labor. Workers, on the other hand, are assumed to take indirect taxes as part of their cost of living. Therefore, they base their decision to supply man-hours to industry on the basis of the nominal wage and the consumer price index gross of indirect taxes. This key assumption, then, reflects the existence of a labor market distortion brought about by indirect taxes and which causes a divergence between the price of commodities as viewed by workers and the unit price of output actually earned by businessmen.

The model, with twelve endogenous and four exogenous variables, is summarized as follows:

$$Y = WN + \Pi + T_n \quad (1)$$

$$T_n = \phi Y \quad (2)$$

$$DY = WN + v\Pi - T_d \quad (3)$$

$$Y = C + I + G \quad (4)$$

$$C = aP + bDY \quad (5)$$

$$I = eP - fiP \quad (6)$$

$$Md = gP + hY - kiP \quad (7)$$

$$Md = Ms \quad (8)$$

$$Y = PX \quad (9)$$

$$X = uN\lambda \quad (10)$$

$$W = [P(1 - \phi)]\lambda(X/N) \quad (11)$$

$$N = qW^\alpha P^\beta \quad (12)$$

In order to discover the properties of the model it was first reduced to three equations by performing the following substitutions: Equation 2 in Equation 1, 1 into 3, 3 into 5, 8 into 7, 7 into 6, and 5, 6, 9, and 10 into Equation 4. The resulting equations (4, 11, and 12) were then differentiated to obtain the solution:

$$\begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix} \cdot \begin{bmatrix} dN \\ dP \\ dW \end{bmatrix} = \begin{bmatrix} b_{11}dMs + b_{12}dG + b_{13}dT_d + b_{14}d\phi \\ 0 \\ + b_{14}d\phi \end{bmatrix}$$

where,

$$a_{11} = \lambda(X/N)P(1 - bv + b_{31}d\phi - bW(1 - v) + fh\lambda Y/kN$$

$$a_{12} = X(1 - bv + bv\phi) - (a + e) + fg/k + fhX/k$$

$$a_{13} = -bN(1 - v)$$

$$a_{21} = -1$$

$$a_{22} = \beta(N/P)$$

$$a_{23} = \alpha(N/W)$$

$$a_{31} = \lambda(1 - \phi)(X/N)$$

$$a_{32} = \lambda(\lambda - 1)(X/N^2)P(1 - \phi)$$

$$a_{33} = -1$$

$$b_{11} = f/k$$

$$b_{12} = 1$$

$$b_{13} = -b$$

$$b_{14} = -bvXP$$

$$\text{and } b_{31} = \lambda P(X/N)$$

This model permits investigation of the macroeconomics of indirect taxation under extreme and simplistic versions of "Classical" and "Keynesian" labor supply assumptions, as well as in a host of intermediate cases. This is done by assuming different

values for α and β , which are the coefficients intended to measure the extent to which workers suffer from money illusion. When $\alpha = 1$ and $\beta = -1$ it means that the supply of labor is a function of the real wage; we are, then, in the pure "Classical" world. Alternatively, when $\alpha = 1$ and $\beta = 0$ it means that workers have complete money illusion, i.e., we are operating in an extreme (and oversimplified) "Keynesian" world.

Solving the model for $dN/d\phi$ and $dP/d\phi$ to discover the consequences on employment and the price level of a unit change in the indirect tax rate, it is possible to obtain three general properties. First, within the postulated range of parameter values (see Table 2), the determinant of this

matrix is always negative. Second, the employment effect is always negative, regardless of whether the "Classical" or "Keynesian" worlds are operative.¹¹ Third, the price-level effect can be either positive or negative depending on the values assigned to the parameters.¹² In general, the greater the relative weight of the autonomous components of aggregate demand and the smaller the coefficients which determine the magnitude of aggregate spending effects, the higher the probability that the price-level effect will be positive. For example, as the marginal propensity to consume (b) and the dividend rate (v) approach zero, the price-level effect is increasingly likely to become positive; similarly, as the indirect tax rate (ϕ) grows progressively larger, so do the chances that the level of prices will ultimately rise. The economic "common sense" of this result is the following: higher indirect tax rates cause (1) an immediate and initial commodity-prices increase and, as a result, (2) an initially smaller real money supply, (3) reduced real consumer expenditures, (4) lowered real output, and (5) a wage adjustment on the part of workers. Some of these effects tend to lower the overall level of prices (e.g., reduced consumer spending) while others tend to increase it (e.g., a smaller aggregate output). The final outcome depends on the magnitude of each change and on the assumption about the extent of workers' wage adjustment.

Two numerical examples are now given to illustrate the workings of this model, and both are applied to a labor market ruled by "Classical" and "Keynesian" behavior, respectively. (See Table 2.) In Example 1, consumption, disposable income, the wage rate, profits, the marginal

TABLE 2

INITIAL VALUES AND RANGES OF VARIABLES AND COEFFICIENTS

Range	Value	
	Example 1	Example 2
<i>Endogenous:</i>		
Y > 0	100.0	100.0
C > 0	75.0	50.0
I > 0	15.0	25.0
X > 0	100.0	100.0
DY > 0	74.25	60.0
W > 0	1.35	1.2
N > 0	50.0	50.0
Π > 0	22.5	20.0
Tm ≥ 0	10.0	20.0
i > 0	5.0	5.0
Md > 0	40.0	40.0
P > 0	1.0	1.0
<i>Exogenous:</i>		
G > 0	10.0	25.0
φ ≥ 0	0.1	0.2
Td ≥ 0	0.0	0.0
Ms > 0	40.0	40.0
<i>Coefficients:</i>		
a > 0	8.175	20.0
0 < b < 1	0.9	0.5
c > 0	25.0	35.0
f > 0	2.0	2.0
g > 0	22.5	22.5
h > 0	0.25	0.25
k > 0	1.5	1.5
q > 0	37.037	41.667
u > 0	5.3183	5.3183
0 < v < 1	0.3	0.0
0 < α < 1	1.0	1.0
-1 < β < 1	0.0 and -1	0.0 and -1
0 < λ < 1	0.75	0.75

¹¹The employment effect is given by:

$$dN/d\phi = (b_{14}/\Delta) (a_{22}a_{33} - a_{32}a_{23}) + (b_{31}/\Delta) (a_{12}a_{23} - a_{22}a_{13})$$

which turns out to be negative. (Δ is the determinant of the matrix.)

¹²The price-level effect is given by:

$$dP/d\phi = (b_{14}/\Delta) [-(a_{21}a_{33} - a_{31}a_{23}) + (b_{31}/\Delta) [-(a_{11}a_{23} - a_{21}a_{13})]]$$

which can be either positive or negative.

TABLE 3
SIMULATION RESULTS FOR A FIFTY PER CENT INCREASE IN ϕ^*

Variable	Classical Case ($\beta = -1$)		Keynesian Case ($\beta = 0$)	
	Example 1	Example 2	Example 1	Example 2
dP	-0.02	+0.06	-0.01	+0.03
dN	-2.24	-5.07	-2.73	-3.87
dX	-3.37	-7.70	-4.11	-5.86
dII	-2.39	-2.86	-2.38	-2.97
dY	+4.19	+9.38	+4.20	+9.18
dTm	-5.39	-2.09	-5.35	-2.72
dC	-7.28	-3.08	-7.19	-3.79
dI	+1.90	+1.00	+1.85	+1.08
dMd	0.00	0.00	0.00	0.00
dW	-0.09	-0.06	-0.07	-0.09
dDY	-7.90	-8.59	-7.87	-8.93
di	-1.13	+0.25	-1.03	-0.12

* = In Example 1 ϕ was increased from .1 to .15 ($d\phi = .05$); in Example 2 ϕ was increased from .2 to .3 ($d\phi = .1$).

propensity to consume, and the profit rate are given comparatively larger values than in Example 2; in the latter, the importance of autonomous components is emphasized and spending effects in general are diminished through, for instance, a higher initial rate of indirect taxation. This simulation exercise was carried out applying a computer program capable of solving this kind of simultaneous-equation system through successive iterations, and the hypothetical data of Examples 1 and 2 were used. Both "Classical" and "Keynesian" labor market conditions were postulated by setting the value of β equal to -1 and 0 , respectively. The effect of a fifty per cent increase in the indirect tax rate under each of these numerical examples and labor-market conditions is illustrated in Table 3, where the resulting final-equilibrium solutions for the changes in the twelve endogenous variables are listed.

The following three observations can be made. First, positive or negative price-level results were obtained as a consequence of the previously-mentioned parameter manipulations, thus illustrating the possibility of contradictory price-level effects of indirect tax rate changes when there is no prior knowledge as to the value of many key coefficients. The reason for this has already been mentioned above. Second, the employment effect of an indirect tax-rate change is foreseeable, and for every increase

in indirect taxation there corresponds a fall in the level of employment. Indeed, higher indirect taxation causes an initial rise in consumer prices and thus dampens consumer expenditures; lower spending causes inventories to grow and forces firms to cut down on output, hence creating unemployment. It is worth noting that even in the "Classical" wage adjustment world some unemployment is created by the tax increase. This unusual result is due to the special assumption we made about the demand for and supply of labor; namely, that the former is a function of the price-level net of indirect taxes while the latter is a function of the price level inclusive of sales or value-added taxation.¹³ Third, the price-level effects were always stronger under "Classical" labor-market conditions, whether in a downward or upward direction. This follows from the fact that, as ϕ changes, our model generates an upward-

¹³Traditionally, as a component of aggregate demand changes and, as a result, the price level does too, the demand for and supply of labor functions are affected in opposite ways and such that their effect on employment and output cancel each other out. This gives rise to the familiar vertical aggregate supply curve. In this instance, however, the changes in the demand for and supply of labor do not outweigh each other and, as a result, whenever the indirect tax rate changes both employment and output are affected in a manner such that an upward-sloping aggregate supply curve is generated.

TABLE 4

THE COMPARATIVE ADVANTAGES OF INDIRECT TAX AND EXPENDITURE POLICIES AS SHOWN IN SIMULATION RESULTS

Case	Indirect Tax Rate Increased by 50%		Government Expenditures Decreased by 50%	
	dP	dN	dP	dN
<i>Classical:</i>				
Example 1*	-0.021	-2.235	-0.079	0.000
Example 2**	+0.061	-5.066	-0.160	0.000
<i>Keynesian:</i>				
Example 1*	-0.013	-2.726	-0.048	-1.900
Example 2**	+0.033	-3.869	-0.086	-3.428

* = ϕ was increased from .1 to .15 and G was decreased from 10 to 5.

** = ϕ was increased from .2 to .3 and G was decreased from 25 to 12.5.

sloping aggregate supply curve which in the "Classical" case is steeper (but not entirely vertical) than in the "Keynesian" case. Hence, every change in aggregate spending causes a much greater price-level effect. In essence, the larger the extent of wage adjustment on the part of workers, the more important those price-level effects become.

The Comparative Advantage of Indirect Tax Policy

In analyzing the macroeconomics of indirect taxation through the construction and solution of a simple model it has been noted that changes in the rate of indirect taxation can in the longer-run increase or decrease the aggregate level of prices depending on the value of several important economic parameters. Policy-makers can, however, confidently use changes in the rate of general indirect taxation to achieve employment targets, although they must be ready and willing to maintain price stability by applying other policy instruments.

A similar analysis to the one which has been undertaken here can also be applied to other policy instruments in order to discover whether or not their use affects the level of prices in a consistent manner.¹⁴

¹⁴Changes in direct taxation have been analyzed elsewhere, and it appears that there are labor-market conditions under which a direct tax increase leads to higher prices. See, for example, A. S. Blinder, "Can Income Tax Increases Be Inflationary? An Expository Note," *National Tax*

For illustration purposes we have used our model to simulate the effect on prices and employment of a fifty per cent decrease in government purchases (G). As is shown in Table 4, the price-level effect of a fall in government spending is always negative and, as was to be expected from conventional macroeconomic theory, larger in the "Classical" than in the "Keynesian" case. Similarly, the employment effect of higher government purchases is either zero (in the extreme "Classical" case) or negative.

As one compares the various properties of these two policy tools, namely, indirect taxation and government spending, one is reminded of Robert A. Mundell's concept of "comparative advantage" as applied to policy instruments.¹⁵ In this instance, indirect taxation as a policy instrument clearly emerges as possessing a comparative advan-

Journal, XXVI, #2 (June 1973), 295-301; T. F. Dernburg, "The Macroeconomic Implications of Wage Adjustment in Response to Income Taxation," unpublished manuscript, 1973; J. H. Hotson, "Adverse Effects of Tax and Interest Hikes as Strengthening the Case for Income Policies—Or a Part of the Elephant," *Canadian Journal of Economics*, IV, #2 (May 1971), 164-181; and E. Shapiro, "The Surtax, Labor Supply Reaction, and the Rate of Inflation," *Nebraska Journal of Economics and Business*, XI, #3 (Summer 1972), 49-56.

¹⁵R. A. Mundell, "The Monetary Dynamics of International Adjustment Under Fixed and Flexible Exchange Rates," *Quarterly Journal of Economics*, LXXIV, #2 (May 1960), 227-257; and also "The Appropriate Use of Monetary and Fiscal Policy for Internal and External Stability," *IMF Staff Papers*, IX, #1 (March 1962), 70-79.

tage in achieving employment targets and affecting the level of aggregate employment generally.¹⁶ At the same time, macroeconomic policy through changes in the level of government purchases should obviously be aimed at controlling the level of prices and, in a more dynamic context, the rate of inflation.

The recognition that at a point in time any one instrument of policy may be comparatively better at achieving a given eco-

nomie target than any other does not seem to have gained the attention of policy-makers. This is indeed unfortunate, since the complexity of modern economic societies and the growth in policy targets to be achieved call for a certain degree of sophistication in the application of economic-policy remedies. Hence, economists need to provide policy-makers with as many policy instruments as possible while specifying the applicability and comparative advantage of each one. It is within this framework that the emergence of indirect taxation as a macroeconomic policy instrument needs to be understood.

¹⁶This contradicts Johansen's suggestion that indirect taxes be used to affect the level of prices while direct taxes attain employment objectives.