

**PATTERNS OF GOVERNMENT
REVENUE AND EXPENDITURE
IN DEVELOPING COUNTRIES
AND THEIR RELEVANCE
TO POLICY**

By

PANAYIOTIS C. AFXENTIΟΥ

ATHENS 1979

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Printed in Greece

«Graphical Arts» George Papanicolaou

58 Hippocratous Str. — Athens 144 — Tel. 3624728 - 3627413

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CENTER OF PLANNING AND ECONOMIC RESEARCH

The Center of Planning and Economic Research (KEPE) was founded in 1961 as an autonomous Public Organisation, under the title "Center of Economic Research", its basic objective being research into the problems of the operation, structure and development of the Greek economy. Another of its objectives was the training of young Greek economists in modern methods of economic analysis and research. For the establishment and operation of the Center considerable financial aid was provided by foreign foundations.

During 1964, the Center of Economic Research was reorganised into its present form, as the Center of Planning and Economic Research. In addition to its function as a Research and Training Institute, the Center, in its new form, was assigned the following tasks by the State: (1) the preparation of economic development plans at the national and regional level, (2) the evaluation of public investment programmes, and (3) the study of short-term developments in the Greek economy and advising on current problems of economic policy.

For the realisation of these aims, the KEPE, during its first years of operation (1961-1966), collaborated with foreign scientists and foundations. The latter helped in the selection of foreign economists who joined the Center, to carry out scientific research into the problems of the Greek economy and in the organisation of an exchange programme, including the post-graduate training of young Greek economists at universities abroad.

The Center has also developed a broad programme of scholarships for post-graduate studies in economics. Thus, in collaboration with foreign universities and international organisations, a number of young economists from Greece are sent abroad each year to specialize in the various fields of economics. In addition, the KEPE organises a series of training seminars and lectures, frequently given by distinguished foreign scholars invited for that purpose to Greece.

In addition to the above, the KEPE maintains contact with similar institutions abroad, and exchanges publications and information concerning developments in methods of economic research, thus contributing to the promotion of the science of economics in the country.

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PATTERNS OF GOVERNMENT REVENUE AND EXPENDITURE IN DEVELOPING COUNTRIES AND THEIR RELEVANCE TO POLICY*

Interest in government revenue and expenditure and more generally in public finance followed a discernible downward trend from the golden age of political economy until the advent of Keynesianism. This trend was the natural outcome of the highly normative orientation of public finance, which concerned itself mostly with the elusive concept of equity in taxation that culminated in the voluntary exchange theory rather than with the development of substantive positive hypotheses. Even today public finance is basically engaged in drawing the normative boundaries between the public and the private sector and in introducing the voting mechanism as the democratic method of translating private desires into public goods, rather than in developing positive theories about the public sector.

Keynesianism has brought the field of public

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finance from the periphery back into the mainstream of economics¹ and assigned to government various responsibilities that are truly unorthodox by the standards of classical economic thought, but as a theory of the short run it has demonstrated little concern with long term tendencies of the public sector or with the public sector *per se* whose behavior in the macroeconomic context is no longer judged in isolation but always in conjunction with the behavior of the private sector and the pursuit of the several policy objectives. In the Keynesian system, in addition to the provision of public goods, government largely becomes the chief regulator of the system and mainly responds to the behavior of the private sector. To predict therefore the behavior or the size of the public sector it is necessary in the first place to be able to predict the behavior of the private sector. Since, however, no theories exist that predict the trends in the private sector it follows that the behavior of the public sector cannot yet be studied scientifically, unless there is a change in the present responsibilities of government that will make this feasible. In referring to state intervention in response to

1. P. J. Strayer, "Appraisal of Current Fiscal Policy," *American Economic Review, Papers and Proceedings*, Vol. 42, May 1952, p. 139.

the unpredictable behavior of the private sector it is assumed that the state has the ability to intervene and is not hampered by revenue or borrowing constraints. This assumption is more likely to hold in developed than in developing countries.

Successful government policies depend upon reliable predictions of developments in the private sector, but as predictions are not yet always sufficiently dependable, decision makers tend to choose those policy packages which they believe to be the most suitable for the problem at hand and may be presented in such a way as to reflect their personal political philosophy, tastes and preferences. These subjective ingredients in policy making can neither be quantified nor their impact on the public sector accurately estimated. And the more obvious their presence is, and the more volatile they are, the more difficult is the task of disentangling them from one another as well as from other forces more amenable to measurement that affect the size of the public sector. This assortment of forces is present in different combinations and degrees of intensity in both developed and developing countries. Moreover the heterogeneity in economic structures between the two groups of countries, the existence of a vigorous private sector in developed countries

that promptly responds to incentives and is the primary force in economic growth, the presence of a backward private sector in developing countries that has proved incapable of generating self-sustained economic growth and has made direct government involvement in economic development indispensable, are some additional difficulties which must be overcome satisfactorily in the process of building a general theory of the public sector.

How have scholars faced these difficulties and what theories exist with regard to government expenditure and revenue?

The explanation of government expenditure is dominated by two general hypotheses. The first, known as Wagner's "Law" and named after Adolph Wagner, its original expositor, concentrates on government expenditure and plays down the importance of revenue as a constraint on government spending, whereas the second, known as the "Displacement-Effect," introduced by Allan T. Peacock and Jack Wiseman, regards government expenditure as being closely determined by government revenue. Both Wagner's "Law" and the "Displacement-Effect" have been twisted statistically in different ways in various efforts to identify separately the determinants of government expenditure and revenue.

Wagner's "Law"

The opinions of Adolph Wagner when published in Germany late in the 19th century appear to have been rather imprecisely stated, and not surprisingly they generated in the literature a certain amount of confusion, which apparently now seems to be cleared. In present-day terminology Wagner has envisaged a relative expansion of state activity during the process of industrialization caused: (a) by the multiple complexities of the emerging industrial life which combined with increases in population density and urbanization would require an expansion of the administrative and protective functions of the state; (b) by cultural and welfare expenditures that have an income elasticity larger than unity; and (c) by market failure resulting from a trend toward monopolies that would call for a regulation of monopolies or for nationalization.²

From a strict methodological point of view Wagner's ideas are loose rather than concrete, and stated in such general terms that it is hard to identify precisely their empirical counterpart

2. Richard M. Bird, "Wagner's 'Law' of Expanding State Activity," *Public Finance*, Vol. 26, No. 1, 1974, pp. 2-3.

and through testing to judge their predictive value. They are evolutionary in nature without specifying the government share at different levels of development, or the ultimate government share, or the time needed for the attainment of this share.

Wagner's scheme is characterized by grand philosophizing about historical developments and is imbued with speculative teleological ingredients, in which the share of government increases by an inevitable process as per capita income increases. In this scheme the state is not perceived as a completely organic entity³ with a will, tastes and preferences that are quite different from those of the individuals that compose it, but rather as strongly organic. This is seen from the fact that Wagner accepted that expenditures might often be constrained by the availability of revenues, but the inevitability of interactions between the state and individuals led him to believe that "in the long run the desire for development of a progressive people will always overcome these financial difficulties."⁴ Thus instead of considering the state

3. R. M. Bird, "Wagner's 'Law' of Expanding State Activity," op. cit., p. 3, supports the completely organic entity thesis.

4. See excerpts from Wagner in R. A. Musgrave and A. T. Peacock (Eds.), *Classics in the Theory of Public Finance*, (London: MacMillan and Co. Ltd., 1958), p. 8.

as an entirely organic entity, Wagner foresees that in the long run the will, tastes and preferences of the state and those of individuals will coincide rather than being different or independent.

Despite its several methodological weaknesses, which erode its status to an almost empty proposition, or probably because of them, Wagner's "Law" has been tested extensively against the experience of various countries. Whether it is disproven or not seems to depend frequently on the selection of the periods covered or on the degree of aggregation of government expenditures, or on the way the "Law" is being formulated.

Both time series and cross-section studies have been conducted.⁵ Only the former really reflect Wagner's spirit of expected changes in government spending over the long process of continuous income growth, whereas the latter approximate his spirit through comparisons of the experience of countries over at least two

5. Such time series studies conducted with respect to developed countries are: R. M. Bird, *The Growth of Government Spending in Canada*, (Toronto: Canadian Tax Foundation, 1970); S. P. Gupta, "Public Expenditure and Economic Growth: A Time-Series Analysis," *Public Finance*, Vol. 22, No. 4, 1967, pp. 423-461; Richard A. Musgrave, *Fiscal Systems*, (New Haven: Yale University Press, 1969); Leif Johansen, *Public Economics*, (Chicago: Rand MacNally and Co., 1968). Cross-section studies which generally cover both developed and developing countries will be covered later.

different short periods that are separated by a significant time span. The importance of the time horizon over which Wagner's "Law" is tested becomes clear when viewed in association with the various formulations into which Wagner's propositions have been put.⁶ If R. A. Musgrave's formulation is adopted, according to which Wagner foresaw an elasticity of public expenditures as a share of gross national product with respect to national product per capita larger than unity,⁷ it is mathematically certain that eventually the entire GNP will be absorbed by the public sector, as long as per capita income continues to increase. After this absolute nationalization of production is attained the "Law" will no longer hold. Therefore to establish whether it holds or not, it is necessary to choose a time period prior to this absolute nationalization of production. And such a time period cannot be anything but arbitrary and may or may not disprove Wagner's "Law" depending on the objective of the researcher. How little light such arbitrariness sheds, particularly on matters of policy, is not difficult to see.

6. For the various formulations of Wagner's "Law" see Ved P. Gandhi, "Wagner's 'Law' of Public Expenditure: Do Recent Cross-Section Studies Confirm It?" *Public Finance*, Vol. 26, No. 1, 1971, pp. 44-56.

7. R. A. Musgrave, *Fiscal Systems*, op. cit., pp. 73-74.

As an historically oriented philosophical design Wagner's "Law" is more general than specific in its treatment of government expenditures, which can be classified in more than one way. But depending on the classification used or the degree of aggregation, divergent conclusions as to the validity of Wagner's "Law" can, and indeed have been produced.⁸ Obviously such contradictions do little to further real respect for the "Law."

Displacement-Effect

After examining the trend in government revenues and expenditures A. T. Peacock and J. Wiseman have stated that

in settled times, notions about taxation are likely to be more influential than ideas about desirable increases in expenditure in deciding the size and rate of growth of the public sector. *There may thus be a persistent divergence between ideas about desirable public spending and ideas about the limits of taxation. This divergence may be narrowed by large-scale social disturbances, such as major wars. Such distur-*

8. The studies cited in footnote 5 indicate that in general Wagner's "Law" holds in aggregate terms for most of the periods covered. But Frederic L. Pryor in his *Public Expenditures in Communist and Capitalist Nations*, (London: George Allen and Unwin Ltd., 1968), p. 63, found out that in the time series for 1950 through 1962 the share of public consumption expenditures in the GNP appeared to be declining, contrary to Wagner's "Law."

bances may create a displacement effect, shifting public revenues and expenditures to new levels. After the disturbance is over new ideas of tolerable tax levels emerge, and a new plateau of expenditure may be reached, with public expenditures again taking a broadly constant share of gross national product, though a different share from the former one.⁹

From this quotation the "displacement-effect" appears as the outcome of the interplay of three forces, namely (a) of a perpetual disequilibrium in the public sector, (b) of a limit of taxation, and (c) of government expenditures being determined by tax revenues.

The disequilibrium in the public sector that crops out of the displacement-effect is not genuine, but the result of the known conflict between the tangible sacrifice sustained by taxpayers and the frequent indivisible benefits which accrue to them from government spending. In these circumstances, and in the absence of coercion, the taxpayers would pursue that strategy which would get them something for nothing. This strategy, though perfectly compatible with self-interest, is nevertheless irrelevant to equilibrium analysis. Taxpayers always

9. Alan T. Peacock and Jack Wiseman, *The Growth of Public Expenditure in the United Kingdom*, Revised Edition, (London: George Allen and Unwin, 1967), p. xxxiv, emphasis added.

emerge from the above passage as slightly irresponsible with the degree of their irresponsibility being reduced in periods of large-scale social disturbances, during which the divergence between desirable public spending and taxes is narrowed, but not eliminated. The authors therefore seem to believe in an inescapable tendency toward a larger public sector whose evolution is simply triggered by major social disturbances. The basic mechanism of their system is however extremely weak consisting of the unwillingness of taxpayers to undertake heavier tax burdens in order to finance additional government spending from which they will undoubtedly receive some benefits. This unwillingness clearly indicates that the marginal benefits from government spending are seen by taxpayers as smaller than the marginal sacrifice from tax increases. In this case it cannot be said that taxpayers have reached their taxation limit, but rather that they are not prepared to throw their money away. In Marshallian equilibrium terms, given the size of the public sector, the demand price of government spending is not higher than the supply price of tax payments to generate an expansion of the public sector. In other words, there is no clear indication that the public sector is out of equilibrium.

The theoretical structure of the displacement-

effect is even weaker than that of Wagner's "Law." Despite their vagueness, the main concepts of the latter (i.e., that the market failure increases with economic advance and that public goods are luxuries) are theoretically sound, though admittedly their testing is subject to serious difficulties. By contrast the former is based on a questionable disequilibrium, in the Marshallian sense, which even if it existed, it would be even harder, if not impossible, to test empirically.

A further weakness of the displacement-effect results from the central position it accords to the concept of large-scale social disturbances that may be interpreted differently by different researchers. S. P. Gupta applied it exclusively to the two world wars,¹⁰ J. M. Bonin, B. W. Finch and J. B. Waters included the great depression as an additional displacement,¹¹ whereas R. A. Musgrave and A. J. Mann used it in a much broader context to refer correspondingly to anything that affects people's attitudes toward the public sector¹² or toward economic development.¹³ This freedom of interpretation

10. S. P. Gupta, *op. cit.*

11. J. M. Bonin, B. W. Finch and J. B. Waters, "Alternative Tests of the 'Displacement Effect' Hypothesis," *Public Finance*, Vol. 24, No. 4, 1969, pp. 441-452.

12. Richard A. Musgrave, *Fiscal Systems*, *op. cit.*, p. 72.

13. Arthur J. Mann, "Public Expenditure Patterns in the Domin-

lessens the theoretical value of the displacement-effect and reduces its empirical testing to an exercise in definition. Further to the disagreement over how to define a social upheaval, researchers arrive at conflicting results because they either use different data or consider different time periods or they hold different views as to whether a "displacement" is econometrically represented by a shift of the government expenditure function or by a change in its slope.

The analysis of Peacock and Wiseman stresses the importance of government revenue as a determinant of government expenditure and the idea that government perceive the taxpayers as having a definite view of what level of taxation is tolerable. By drawing attention to the supply side and without neglecting the significance of the demand side, it highlights the political rather than the economic basis of budgetary decisions. Colin Clark has referred to the limits of taxation too; originally he explained the limit to taxation in terms of a political equilibrium reached in a society between two power groups, the one interested in a stable or increasing value of money and the

ican Republic and Puerto Rico, 1930-1970," *Social and Economic Studies*, Vol. 24, No. 1, March 1975, p. 65. Given this broad interpretation the author found that an upward displacement occurred in both countries during the 1940's.

other supporting an increase in prices,¹⁴ but later he stressed the harmful effects of high tax rates on productive incentives and the weakening of employers' resistance to high wage demands;¹⁵ his reference to political analysis gradually gave way to a purely economic analysis of the limit to taxation. By contrast the emphasis on the political basis of fiscal decision-making by Peacock and Wiseman brings their approach near to the economic theories of democracy in which the activities of politicians are determined by tax-expenditure trade-offs.¹⁶

In a world in which the quantification mania reigns supreme, the strategic role of political elements in fiscal matters complicates the analysis of the public sector, which operates in a highly imperfect market where goods cannot be priced, costs and benefits are difficult to calculate, and where the information required for

14. Colin Clark, "Public Finance and Changes in the Value of Money," *Economic Journal*, Vol. 55, Dec. 1945, pp. 371-389.

15. Colin Clark, "The Danger Point in Taxes," *Harper's Magazine*, Vol. 201, Dec. 1950, pp. 67-69. See also the major criticisms of Clark's work in J. A. Pechman and T. Mayer, "Mr. Colin Clark on the Limits of Taxation," *Review of Economics and Statistics*, Vol. 34, August 1952, esp. pp. 241-2; R. Goode, "An Economic Limit on Taxes: Some Recent Discussions," *National Tax Journal*, Vol. 5, No. 2, 1952, esp. pp. 228-9.

16. See A. Downs, *An Economic Theory of Democracy*, (New York: Harper Row, 1957); J. M. Buchanan and G. Tullock, *The Calculus of Consent*, (Ann Arbor: University of Michigan Press, 1962).

optimal action is generally unavailable. The environment of fiscal policy is not only complex, but occasionally unstable being subject to large-scale social upheavals which transform its basic structure. And the essence of the displacement-effect according to J. Diamond is its emphasis on structural changes represented by variations in those very parameters that are covered by the *ceteris paribus* assumption in empirical research.¹⁷ His own model applied to U.K. data pertaining to different time periods produced evidence of parametric instability. But the discovery of such instability is only the first diagnostic step in the arduous process of demonstrating the correctness of the choice of time periods, of social upheavals and the theorizing of how and why these social upheavals account for the presence of displacements.¹⁸

Compared to rather sophisticated statistical techniques employed by later researchers, Peacock and Wiseman simply plotted the growth

17. J. Diamond, "Econometric Testing of the 'Displacement Effect': A Reconsideration," *Finanzarchiv*, N. F. Band 35, 1976, pp. 387-404.

18. A good example of simple theorizing was offered by R. M. Bird, "The 'Displacement Effect': A Critical Note," *Finanzarchiv*, N. F. Band 30, 1972, pp. 454-463, who used J. Duesenberry's "ratchet effect" to explain the "displacement-effect." Bird, however, did not test his model; this was done by J. Diamond, *ibid.*, pp. 392-395, who found no evidence from U. K. data that a ratchet effect had operated on public spending.

of public expenditure *in toto* as well as adjusted for its war-related and defense components and GNP, all measured in constant prices, against time, and attributed the relative growth of public expenditure to an awakening of social awareness caused by war and its aftermath. The same method was applied to other countries and produced equally favorable results for the displacement hypothesis.¹⁹ But when tests more rigorous than crude geometrical graphs were employed most of the support provided to the hypothesis had vanished.²⁰ Methodologically the Peacock-Wiseman approach tends to consider upward jumps in aggregate government spending, or in some of its functional classes, adjusted or unadjusted, as tantamount to displace-

19. S. Andic and J. Veverka, "The Growth in Government Expenditure in Germany since the Unification," *Finanzarchiv*, N. F. Band 23, 1963/4, pp.169-278; E. Hook, "The Expansion of the Public Sector—A Study of the Development of Public Civilian Expenditures in Sweden during the Years 1912-1958," *Public Finance*, Vol. 17, No. 3, 1962, pp. 289-312; M. O. Donoghue and A. A. Tait, *The Growth of Public Revenue and Expenditure in Ireland*, (Dublin: Institute of Public Administration, 1968); K. Emi, *Government Fiscal Activity and Economic Growth in Japan, 1868-1960*, (Tokyo: Kinokuniya Bookstore Co., 1963); T. Van Waadijk, *Public Expenditure in South Africa*, (Johannesburg: Witwatersrand University Press, 1964).

20. For example see Barry D. Rosenfeld, "The Displacement-Effect in the Growth of Canadian Government Expenditures," *Public Finance*, Vol. 28, No. 3-4, 1973, pp.301-314, who found no displacement-effect in the trend for total government spending and that the effect of wars simply led to temporary peaks, but not to shifts, in the trend.

ments. It would indeed be strange, if in the long history of countries such jumps did not occur, and it would similarly be equally strange if these jumps did not result from the deliberate effort of governments to tackle urgently major social problems whose solution frequently presupposes the expansion of the public sector. Each country tends to define uniquely its own major social problems, and the definitions adopted would certainly vary not only from country to country, but also within each country, reflecting the social and philosophical climate of the times, and the responsiveness of government to pressing social issues and its ability to act. Seen in this context the displacement-effect is nothing more than an explanation of the obvious.

A salient feature of the displacement-effect is the ability of government to raise the tolerable limit of taxation, without which increases in government spending would not be feasible. Peacock and Wiseman suggest that tax revenues constrain government spending and that variations in expenditures do not affect significantly variations in revenues. But a close association of tax revenues and expenditures is commonly found in the fiscal systems of developing rather than in the fiscal systems of developed countries.²¹ In contrast to the former countries, the

21. See Joergen R. Lotz, "Patterns of Government Spending in

latter endowed with sophisticated money markets are able to break the dependence of expenditure on tax revenue, to finance their deficits through public borrowing and generally to use compensatory fiscal policies whenever needed. Theoretically the developing countries appear as better candidates for testing the validity of the displacement-effect than the developed countries in which testing is to a certain extent conditioned on the term "tolerable tax limit," which is intrinsically vague and difficult to quantify.

An Historian's View of Government Expenditures

According to Henri Pirenne, in the history of Europe, the long-run cycles of increasing and decreasing government expenditure correspond respectively to periods of public control forced by wars and to periods of *laissez-faire*.²² Pirenne's hypothesis has been tested by R. W. Crowley²³ and by W. L. Marr,²⁴ who

Developing Countries," *Manchester School of Economic and Social Studies*, Vol. 38, No. 2, June 1970, pp. 119-144, esp. pp. 130-131.

22. Henri Pirenne, *Economic and Social History of Medieval Europe*, (New York, 1937), pp. 216-19.

23. Ronald W. Crowley, "Long Swings in the Role of Government: An Analysis of Wars and Government Expenditures in Western Europe since the Eleventh Century," *Public Finance*, Vol. 26, No. 1, 1971, pp. 27-43.

24. William L. Marr, "The Expanding Role of Government and

used Crowley's data to examine the cyclical behavior of the series and estimate the dates of downtrends and uptrends of all cycles from the year 1000 to 1959. The statistical manipulations produced results that proved to be in agreement with Pirenne's generalizations.

Even if the heroic assumption that except for war periods the entire history of Europe was one of laissez-faire is accepted, the unreliability of data is enough to cast doubts on verification attempts of such a general scheme. Moreover, by definition the role of government is limited in a system of laissez-faire, which is encapsulated by the motto "the less government, the better," whereas during periods of war, defense, which represents the classical example of a public want that is never left to the private sector but is undertaken by governments for the common survival, requires large transfers of resources to the public sector that result in a concomitant increase of its relative size. Thus Pirenne's views are definitional in nature and they most certainly do not qualify as a scientifically testable hypothesis.

Wars: A Further Elaboration," *Public Finance*, Vol. 29, No. 3-4, 1974, pp. 416-21.

International Studies

Comparisons have always had a special appeal to the social scientist as demonstration of erudition, as opportunities whereby the scholar displays facts in a seemingly detached manner yet sometimes without paying adequate attention to the methods of data collection and the questionable nature of the information presented, or as fitting occasions to deduce from the comparative studies lessons which are offered as blueprints for action to national or international policy-makers.²⁵ Lack of data over long periods in developing countries has forced research into cross-section studies rather than into time-series that seem appropriate for testing the prevalent hypotheses on government expenditure.

When rough comparisons of public expenditure patterns among developed and developing countries are made, it is implicitly and unrealistically assumed that governments pursue with equal vigor the same policy objectives under relatively similar constraints. How unfortunate this implicit assumption is can be shown

25. For a list of objectives supposedly served by comparative studies see Richard M. Bird, "Assessing Tax Performance in Developing Countries: A Critical Review of the Literature," *Finanzarchiv*, N. F. Band 34, 1976, esp. pp. 245-250.

in the case of economic growth, which in developed countries is primarily pursued by the private sector which is partly assisted by fiscal and monetary incentives provided by the state, while in developing countries the picture is reversed with the primary responsibility for economic development being undertaken by the state owing to the failure of the free market forces to generate growth, and to the limited responsiveness of the private sector to fiscal or monetary incentives. In an era of rising expectations in developing countries the inability of the private sector to foster growth by itself has forced governments to expand their economic role largely through a relative increase in expenditure. In carrying out these inflated responsibilities and due to low propensities to save of poor countries and to the primitive money markets found in them that neither render feasible nor facilitate the multi-faceted development needs through borrowing, and in view of the fact that only a marginal contribution can in this respect be expected from foreign aid which must eventually be repaid and it basically only changes the time pattern of resources used for development, governments have no other option but to depend on domestic resources and more particularly on taxation.²⁶ This very dependence

26. For an overall discussion of government's role during develop-

of government expenditure on government revenue makes the study of the latter equally interesting as that of the former and it is not surprising that several studies have concentrated on the subject of tax performance in developing countries.

Empirical studies shifted away from testing Wagner's "Law" and the "displacement-effect" toward explaining statistically either government expenditure or revenue by means of a number of variables and building shaky theoretical structures upon regression analysis. A strong impetus to empirical work was given by a study of Solomon Fabricant in which he explained 72 percent of the variation in the level of per capita total expenditures among U.S. states and from 29 percent to 85 percent of the variation in state and local government spending by function using three classic, albeit highly correlated, factors, i.e. per capita income, population density, and the degree of urbanization measured by the proportion of population living in urban areas.²⁷ A large number of studies followed that can be considered as

ment see P. C. Afrentiou, "Underdevelopment and Government Intervention," *Rivista Internazionale di Scienze Economiche e Commerciali*, Vol. 19, No. 10, 1972, pp. 954-970.

27. Solomon Fabricant, *The Trend of Government Activity in the United States since 1900*, (New York: National Bureau of Economic Research, 1952).

statistical variations on the theme by S. Fabricant. It is not our purpose to review these studies but simply to mention a few and refer to their methodology which by and large has been used subsequently in international comparative studies. For example G. W. Fisher by using economic, demographic and sociopolitical variables explained 65 percent of the variation in per capita operating and capital outlay expenditures by various functions;²⁸ S. Sacks and R. Harris by introducing state and federal aid as independent variables produced a coefficient of multiple determination equal to 0.869 for per capita operating and capital outlay expenditures; they also improved on Fisher's results when they applied the federal aid variable to certain functional classifications;²⁹ R. W. Bahl, Jr. and R. J. Saunders examined the determinants of changes in expenditures and using five explanatory variables, the three used by Fabricant plus federal grants and public school enrolment, all expressed in a change form, established

28. G. W. Fisher, "Interstate Variation in State and Local Government Expenditure," *National Tax Journal*, Vol. 17, No. 1, March 1964, pp. 57-74.

29. S. Sacks and R. Harris, "The Determinants of State and Local Government Expenditures and Intergovernmental Flows of Funds," *National Tax Journal*, Vol. 14, No. 1, March 1964, pp. 75-85.

federal aid as most important variable;³⁰ Otto A. Davis and George H. Haines, Jr., applied A. Downs' political approach to municipal expenditures prompted by the limited and clearly demarcated services offered by municipalities with relatively satisfactory results, though occasionally some of the coefficients ended up with the wrong sign;³¹ I. Sharkansky found that the current level of state expenditures in U.S. is best explained by previous state government expenditures;³² the incorporation of previous expenditures as an explanatory variable of current expenditure by Sharkansky may be permissible for purposes of prediction, but does not assist in understanding the differences in spending among states and is therefore methodologically unacceptable.³³

What transpires from this small sample of studies on state expenditure in U.S. is the

30. R. W. Bahl, Jr., and R. J. Saunders, "Determinants of Changes in State and Local Government Expenditures," *National Tax Journal*, Vol. 18, No. 1, March 1965, pp. 50-57.

31. O. A. Davis and G. H. Haines, Jr., "A Political Approach to a Theory of Public Expenditure: The Case of Municipalities," *National Tax Journal*, Vol. 19, No. 3, Sept. 1966, pp. 259-275.

32. I. Sharkansky, "Some more Thoughts about the Determinants of Government Expenditures," *National Tax Journal*, Vol. 20, No. 2, June 1967, pp. 171-179.

33. Elliot R. Morss, "Some Thoughts on the Determinants of State and Local Expenditures," *National Tax Journal*, Vol. 19, No. 1, March 1966, pp. 95-103.

variety of approaches employed that sometimes utilize even non-quantifiable variables in an effort to attain the best statistical fit. The attainment of this objective, in which variables are added to, or dropped from, the various single equation models, is accompanied by theoretical reasoning that is as varied as the approaches on which it depends. This variety of approaches is also observed among international comparative studies which are characterized by an uneven level of analytical sophistication and theoretical content.

A. M. Martin and W. Arthur Lewis set for themselves the ambitious task of discovering what patterns of public revenue and expenditure are appropriate to different levels of development.³⁴ From a 1953-54 sample of 16 developed and developing countries, the latter being mainly former British colonies, they inferred that countries which make a serious development effort must be expected to spend between 19 to 22 percent of their GNP. They further stressed the importance of ideology as a determinant of government expenditure,³⁵ and predicted an

34. A. M. Martin and W. Arthur Lewis, "Patterns of Public Revenue and Expenditure," *The Manchester School of Economic and Social Studies*, Vol. 24, No. 3, Sept. 1956, pp. 203-232.

35. *Ibid.*, p. 206, where the authors state: "The main reason why these countries now spend relatively more on their public services

inevitable increase in the relative size of the public sector because its productivity is generally lower than the productivity of the private sector.³⁶

H. T. Oshima concentrated his attention on government receipts which he regarded as constituting the major constraint on total government activity and as being independent of government expenditures. Without pursuing any formal statistical analysis he attributed the larger government share of the 20 more advanced countries included in his sample of 32 countries for 1948-54 to their higher productivity that results in a relatively larger margin of income above physical subsistence and thus raises their potential taxable capacity above that of less developed countries.³⁷

J. G. Williamson included in his sample for 1950-57 30 or more countries that were so chosen as to eliminate the bias from which the study by Martin and Lewis suffered due to

than they did a hundred years ago is not that they are richer, but that they have a different conception of the duties of the state."

36. This productivity lag has also been used to explain the crises of cities by W. J. Baumol, "Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis," *American Economic Review*, Vol. 57, June 1969, pp. 415-29; see also R. M. Bird, *The Growth of Government Spending in Canada*, op. cit., p. 101.

37. Harry T. Oshima, "The Share of Government in Gross National Product for Various Countries," *American Economic Review*, Vol. 47, June 1957, pp. 381-390.

the fact that their sample mainly consisted of welfare states. The upward trend of government expenditure was found to be associated with industrialization and urbanization and was partly attributed to the relative unproductive nature of increased public services. Williamson was the first to resort extensively to statistical analysis and by means of a double logarithmic function he established that the government share was best associated with per capita income with the share increasing when moving from low to middle income countries and its rate of change decreasing when moving to high income countries. He further found evidence of a shift from indirect to direct taxes as per capita income increases.³⁸

Wagner's Law and the Peacock-Wiseman Displacement-Effect were considered by I. J. Goffman and D. J. Mahar with respect to six Caribbean countries, but neither explained adequately the pattern of behavior of aggregate public expenditures. The authors reckoned that income does not determine public expenditures in a straightforward manner and that such special factors as the demonstration effect emanating from the economic policies of devel-

38. J. G. Williamson, "Public Expenditure and Revenue: An International Comparison," *The Manchester School of Economic and Social Studies*, Vol. 29, No. 1, January 1961, pp. 43-56.

oped nations and the influence of ideology as exemplified by rapid changes in domestic political philosophy appear to be important determinants of public spending in developing countries.³⁹

Cyril Enweze investigated the trends in public expenditures of a sample of 15 developing countries over a period of approximately a decade. His main concern was not to examine the determinants of total expenditures which exhibited an income elasticity greater than unity in all countries except two, but rather to analyze changes over time in the major components of the expenditure ratio in each country. This study, which can be considered more as an interesting exercise in classification than an hypothesis-furthering analysis, revealed through comparisons of estimated mean elasticities that the countries covered exhibited a tendency to increase their expenditure on administration, defense and education relative to total expenditure. A test of whether high rates of growth of real income were associated with high rates of growth of real aggregate expenditure per

39. I. J. Goffman and D. J. Mahar, "The Growth of Public Expenditures in Selected Developing Nations: Six Caribbean Countries, 1940-65," *Public Finance*, Vol. 26, No. 1, 1971, pp. 57-72; see also A. J. Mann, "The Growth of Public Expenditures in Selected Developing Nations: Six Caribbean Countries, 1940-65: A Comment," *Public Finance*, Vol. 27, No. 3, 1972, pp. 386-9.

capita gave a relatively low rank correlation coefficient indicating that factors other than real income were also responsible for the behavior of expenditure.⁴⁰

The essential theme of the previous studies is that the size of the public sector in rich countries is larger than in poor countries, that due to the productivity lag the relative size of the public sector should be expected to rise, and that forces other than income, like external influences and ideological leanings, are likely to affect seriously the size and role of the public sector, yet not in a manner that can be easily quantified. Such a theme may have some intellectual value, but can hardly be regarded as revolutionary or of great value to policy-makers. Probably the aspiration to become useful to policy-makers as well as the relative sterility of studies on government spending have prompted economists to turn to the study of government revenue and to the investigation of taxable capacity.

That the collection of revenue by government depends upon the country's taxable capacity is self-evident. What is not self-evident is the precise statistical relationship between revenue

40. Cyril Enweze, "Structure of Public Expenditures in Selected Developing Countries: A Time Series Study," *The Manchester School of Economic and Social Studies*, Vol. 41, No. 4, Dec. 1973, pp. 430-63.

and taxable capacity, a relation that normally varies from country to country, and within a country from time to time,⁴¹ a fact that greatly complicates efforts to find proxy variables for taxable capacity and makes meaningful international comparisons in this field highly unsatisfactory and very unconvincing. These inherent problems have not however stifled research designed to estimate the aforementioned relationship nor have they deterred economists from offering their results as tentative guidelines for action to policy-makers.

Stephen R. Lewis Jr. studied a sample of 41 countries for the period 1954-60 and found indirect taxes, which were defined as import and export duties plus exchange profits and profits of state-operated marketing boards, being negatively related with per capita income.⁴² For a group of 18 countries with per capita

41. For an early and comprehensive treatment of taxable capacity, see Sir Josiah Stamp, *Wealth and Taxable Capacity*, (London: P. S. King and Son Ltd., 1922), especially Chapter 4.

42. Stephen R. Lewis, Jr., "Government Revenue from Foreign Trade: An International Comparison," *The Manchester School of Economic and Social Studies*, Vol. 31, No. 1, Jan. 1963, pp. 39-45. The negative relationship between indirect taxes and per capita income was also reported by J. G. Williamson, op. cit., though this finding was rejected by Douglas Dosser, "Indirect Taxation and Economic Development," in A. T. Peacock and G. Hauser (Eds.), *Government Finance and Economic Development*, (Paris: OECD, 1965), pp. 129-30, who used a different sample and a different time period.

income below \$275, foreign trade taxes as a share of total government revenues were highly correlated with openness, defined as imports plus exports as a percentage of GNP, while per capita income was not. The latter finding and more specifically the importance of openness as a proxy for taxable capacity received a lot of attention in later studies.

H. H. Hinrichs found a significant relationship between government revenue shares of GNP and per capita income for 60 countries, 20 developed and 40 developing, taken together during 1957-60. However for the two groups taken separately the relationship was not found statistically significant. For less developed countries classified in groups of per capita GNP below \$150, \$300, \$500 and \$750, openness, defined as the import ratio, not per capita GNP, was found the key determinant of government revenue shares, but its statistical significance was declining with increases in per capita GNP.⁴³ These findings were at the center of a larger study which aimed at establishing, although unsuccessfully, taxation norms for countries during economic development.⁴⁴ They

43. Harley H. Hinrichs, "Determinants of Government Shares among less Developed Countries," *Economic Journal*, Vol. 75, Sept. 1965, pp. 546-556.

44. H. H. Hinrichs, *A General Theory of Tax Structure Change during Economic Development*, (Cambridge: Harvard Law School,

have been challenged by V. Tanzi and C. McCuistion, who pointed out that it is not methodologically permissible to combine developing countries that statistically belong to different populations, and who found by using Hinrichs' data that openness was an explanatory factor only for countries with less than \$150 per capita GNP while for the other groups taken separately openness could not be confirmed statistically except when they were combined with the less than \$150 per capita GNP group.⁴⁵ What therefore transpires from Hinrichs' study is that openness is the main determinant of revenue shares in the world's poorest countries, a result which was also corroborated by A. R. Roe who added 10 more African countries with less than \$150 per capita income to Hinrichs' sample of poor countries.⁴⁶ However the hypothesis, when tested with time series for

1966). A similar objective was pursued by R. Musgrave, *Fiscal Systems*, op. cit., Chaps. 5 and 6. For a critique of both works see Vito Tanzi, "The Theory of Tax Structure Change during Economic Development: A Critical Survey," *Rivista de Diritto Finanziario e Scienza delle Finanze*, Vol. 32, No. 2, 1973, pp. 199-208.

45. V. Tanzi and C. McCuistion, "Determinants of Government Shares among less Developed Countries: A Comment," *Economic Journal*, Vol. 77, June 1967, pp. 403-5.

46. Alan R. Roe, "The Government-Revenue Share in Poorer African Countries: A Comment," *Economic Journal*, Vol. 78, 1968, pp. 479-81.

Sudan, failed to be confirmed.⁴⁷ Even if it is assumed that time series in all poor countries other than Sudan support Hinrichs' hypothesis, its additional statistical support would simply indicate that direct taxes do not contribute substantially to revenues in countries where the overwhelming majority of people live in abject poverty. This is common knowledge. But more astonishing is its implication that if policy-makers are interested in raising more revenue they must allow more imports into the country, rather than raise import duties, a policy that will certainly be disastrous to the balance of payments of those countries which experience external disequilibrium and restrict imports through various administrative measures, and in those of the poorest which may miraculously experience external equilibrium such a policy will be totally ineffective as the level of imports is not affected by government wishful thinking but by real economic forces.

R. S. Thorn's study of the public sector of 52 countries during economic development emphasized the importance of socio-political factors in shaping both expenditure and revenue shares. His logarithmic equation incorporated these

47. M. A. R. Ali, "Determinants of Government Revenue Shares in Developing Countries: A Note," *Public Finance*, Vol. 27, No. 2, 1974, pp. 221-3.

factors in the form of two dummy variables, one for former British dependencies and another for highly decentralized governments, and also included per capita income which due to its high correlation with socio-economic variables stood as a quasi-index of them. During the period 1952-1962 government expenditure shares were statistically associated with all three variables and exhibited a GNP elasticity equal to 1.30, while social expenditure shares had an even higher GNP elasticity of 1.65 indicating that unless controlled or unless the revenue structure is also highly elastic stable economic development would be difficult to sustain. Without claiming causality Thorn used the same explanatory variables and found that the revenue shares had a GNP elasticity of 1.35 while the use of the import ratio as an additional explanatory variable proved to be statistically non-significant contrary to what might be expected from Hinrichs' hypothesis. The two dummy variables suggested a tendency for a larger revenue share in former British dependencies and a smaller share in highly decentralized governments. Such tendency, which is a product of tradition and long established cultural styles that are not easily transferable among countries, is obviously of limited value to policy-makers interested in raising their

country's revenue shares, as was readily admitted by the author.⁴⁸

A proliferation of dummy variables whose use in regression analysis is generally designed to improve the statistical fit rather than to illuminate the real issues is observed in S. J. Weiss' study of 66 countries. The addition of dummy variables for political, cultural and social factors to per capita income and the import ratio showed that revenue shares were positively affected by the representative nature of the political system and by the character of cultural homogeneity. As expected, the replacement of per capita income in the revenue share equation by factors with which it is highly correlated such as literacy rate, urbanization, percentage of employment in agriculture, and an index of mass communication did not affect significantly the goodness of fit. It was further found that a geographical bias operated on revenue shares through a demonstration effect.⁴⁹

J. R. Lotz and E. R. Morss cross-section study of a sample of 52 developing countries

48. Richard S. Thorn, "The Evolution of Public Finances during Economic Development," *The Manchester School of Economic and Social Studies*, Vol. 35, No. 1, Jan. 1967, pp. 19-51.

49. Steven J. Weiss, "Factors Affecting the Government Revenue Share in less Developed Countries," *Social and Economic Studies*, Vol. 18, 1969, pp. 348-64.

with per capita income of \$800 or less in which three-year averages were used indicated that openness was best represented by the export ratio and in addition to openness the tax ratio was effected by per capita income, monetization which was measured in terms of notes and coins per capita, by an index of government decentralization which stood for tax collections by lower levels of government, and by the value of the three largest exports as a percentage of total exports.⁵⁰ Despite the addition of variables which the authors were at pains to justify as legitimate tax bases, more than half of the variations of tax ratios remain unexplained, and the conclusion that tax levels in developing countries are kept down by the limited availability of taxable bases is at best intuitively reached rather than proven.⁵¹

Tax ratio studies with a simple manipulation have been transformed to studies on tax effort which is defined as the quotient of actual taxes divided by estimated tax collections derived from a stochastic single-equation model of government revenue shares. The first tax effort comparison was attempted by J. R. Lotz and

50. J. R. Lotz and E. R. Morss, "A Theory of Tax Level Determinants for Developing Countries," *Economic Development and Cultural Change*, Vol. 18, No. 3, April 1970, pp. 328-41.

51. *Ibid.*, p. 338.

E. R. Morss with reference to 72 countries, of which 52 were developing countries with per capita income \$800 or less.⁵² For the sample as a whole openness, measured by imports plus exports as a percentage of GNP, and per capita income were positively associated with the tax ratio. However for the 20 high-income countries the two independent variables lost their statistical significance, but retained it for the 52 developing countries though explaining less than one-fifth of the variations of tax ratios. The very low R^2 obtained plus the inclusion of only two of the several factors that influence tax performance, reduce the merit of the study to the status of an exploratory statistical exercise that contributes to the understanding of taxation issues.

K. Shin used the Lotz-Morss tax data and added three additional explanatory variables to openness and per capita income used by them, namely, the ratio of agricultural income to GNP that in the process of development is inversely related to taxable surplus, the rate of growth of population, and the rate of growth of prices.⁵³ Data limitations forced him to

52. J. R. Lotz and E. R. Morss, "Measuring 'Tax Effort' in Developing Countries," *IMF Staff Papers*, Vol. 14, No. 3, Nov. 1967, pp. 478-499.

53. Kilman Shin, "International Difference in Tax Ratio," *The Review of Economics and Statistics*, Vol. 51, 1969, pp. 213-20.

reduce the number of countries in the sample to 47 countries, 31 of which had an income per capita less than \$800. Per capita income was found significant as an explanatory variable of the tax ratios when both high-income and low-income countries were treated as a unit, but lost its significance when the two groups were examined separately. For low-income countries only the rate of growth of population and the rate of increase in the consumer price index were found to be significant, but both variables cannot be accepted on strict a priori grounds as true proxies for taxable capacity. This theoretical weakness of the basic estimation model is transmitted to the calculation of tax effort indices whose comparisons thus become misleading, if not absolutely meaningless.

In connection with his search for taxation trends in developing countries R. J. Chelliah built a government revenue share stochastic model and used it to compute their tax effort.⁵⁴ A sample of 30 developing countries was compared between two three-year periods and found that from 1953-55 to 1966-68 the average tax ratio of the entire group measured by the ratio of tax revenue to GNP increased from

54. Raja J. Chelliah, "Trends in Taxation in Developing Countries," *IMF Staff Papers*, Vol. 18, July 1971, pp. 254-331.

11.3 percent to 13.8 percent and that production and income taxes in the majority of countries rose while export taxes declined. Using data for 50 countries during 1966-68 he found a positive relationship between per capita income and the share of direct taxes, but this relationship did not hold for countries with per capita income below \$200. He further developed a stochastic model relating the tax ratio to three major factors hypothesized to affect taxable capacity, to wit, the nonmineral export ratio representing openness, the mining share representing the economic structure or the composition of GNP, and per capita nonexport income, which though short of statistical significance was retained in the equation because of a priori reasoning. The countries were ranked according to their tax effort, but Chelliah warned that since different equations are likely to change the ranking of countries, importance to the tax effort index should only be attached when it is appreciably above or below unity. In addition to the static index of tax effort that represents the degree of use of taxable capacity, Chelliah also computed the dynamic index of income elasticity of tax revenue that embodies past efforts to increase tax revenues, and on the basis of both he concluded that "governments in the developing countries can

raise the ratio of taxes to total income when they are determined to do so."⁵⁵

Chelliah believes that an increase in the tax ratio is needed for raising domestic saving and mobilizing it through fiscal policy to attain rapid economic and social development under conditions of stability. Development economists share Chelliah's view that increased taxes raise national saving, but Stanley Please recently challenged this view by pointing out that there is a tendency for current government expenditure to rise concomitantly with increases in tax revenue and that unless measures are introduced to check this tendency the positive impact on national saving is unlikely to be substantial.⁵⁶ Nevertheless his challenge has not been convincing enough to shake the prevailing

55. Ibid., p. 312.

56. Stanley Please, "Saving through Taxation—Reality or Mirage?" *Finance and Development*, Vol. 4, March 1967, pp. 24-32. Support for this interpretation known as the weak version of the "Please Effect" was found by S. K. Singh, "The Determinants of Aggregate Savings," International Bank for Reconstruction and Development, Economic Staff Working Paper No. 127, March 1972, pp. 33-4. Singh found no support for the strong version of the "Please Effect" according to which increased taxation may lead to reduced national saving. See also Stanley Please, "The 'Please Effect' Revisited," International Bank for Reconstruction and Development, Economics Department Working Paper No. 82, July 1970; also R. Mikesell and J. E. Zisner, "The Nature of the Savings Function in Developing Countries: A Survey of the Theoretical and Empirical Literature," *Journal of Economic Literature*, Vol. 11, March 1973, pp. 15-17.

confidence in the need for an expansion of government activity during economic development and in resorting to careful tax effort comparisons to facilitate such expansion.

In a subsequent paper designed to update the 1966-68 cross-sectional study and using a sample of 47 developing countries during 1969-71, Chelliah, Baas and Kelly noticed that the regression coefficients of their model in both periods did not differ significantly, that the ranking of countries with respect to tax effort remained virtually unchanged, and that the average tax ratio which for the former period was found to be 13.6 percent continued its upward trend and reached the level of 15.1 percent in the latter period.⁵⁷ It is hardly surprising that the use of identical methodological and estimation processes confirmed the findings of the previous study. As expected within three years the finances of a large sample of countries cannot be revolutionized. What is surprising is the authors' claim that the results obtained increased the credibility of their analysis.⁵⁸

The goodness-of-fit criterion supported by a priori reasoning was the basis of R. W. Bahl's

57. R. J. Chelliah, H. J. Baas and M. R. Kelly, "Tax Ratios and Tax Effort in Developing Countries, 1969-71," *IMF Staff Papers*, Vol. 22, March 1975, pp. 187-205.

58. *Ibid.*, p. 188.

study of 49 developing countries in which averages for the three-year period 1966-68 were used.⁵⁹ Taxable capacity was hypothesized to be negatively related to the agricultural share of income which stood for the stage of development, positively related to the mining share which stood for the sectoral composition of income, and positively related to the export share which stood for the size of the foreign trade sector. Because of collinearity between the mining share and the export share, the latter was found statistically nonsignificant and was dropped from the estimating equation, which thus ended up showing taxable capacity as dependent solely on two variables. The ranking of countries based on the tax effort index exhibited a significant regional bias and was found statistically different from the ranking based on the simple tax ratio. It is most disconcerting that the agricultural and mining shares, which are known to be often subject to erratic exogenous disturbances, appear as the only explanatory variables of taxable capacity. The inherently erratic nature of the explanatory variables undermines the structure of the model and ruins its predictive power. Owing to these

59. Roy W. Bahl, "A Regression Approach to Tax Effort and Tax Ratio Analysis," *IMF Staff Papers*, Vol. 18, Nov. 1971, pp. 570-608.

defects Bahl's model does not qualify even remotely as operational neither does it provide real assistance to policy-makers. The apparent soundness of its statistical derivation is no substitute for its striking operational deficiency.

In another paper Bahl built a representative tax model by applying to four tax bases the arithmetic mean of tax rates of those countries with reliable data from a sample of 49 developing countries during the period 1966-68. The equation thus derived represented the average tax effort of the entire sample and was compared to actual tax collections to arrive at the ranking index of each country.⁶⁰ Those rankings were not statistically different from rankings obtained in other studies that estimated taxable capacity stochastically. Due to data limitations, to the crude selection of tax bases and the rather questionable assumptions of non-substitutability among them, this study which is marked more by its practical approach than by its theoretical soundness must be judged as a contribution to methodical classification rather than to meaningful empiricism.

Two explanatory variables that regularly appear in international studies as positively related

60. Roy W. Bahl, "A Representative Tax System Approach to Measuring Tax Effort in Developing Countries," *IMF Staff Papers*, Vol. 19, March 1972, pp. 87-112.

with revenue shares are per capita income and openness. While the assumption that the higher the per capita income the higher the taxable capacity is roughly correct as a general statement, nevertheless taxable capacity is neither transformed automatically into tax collections nor is every dollar of per capita income taxed uniformly. The common definition of taxable capacity of economies organized on the principle of private enterprise "as the capacity to raise revenues without extreme interference with productive activity and the operation of the economy"⁶¹ is indicative of the complexity of the concept and of the need to unravel the relatively unknown secrets of distributive and allocative effects of taxes before arguing in favor of a stable relationship between taxable surplus and taxes collected. And these effects, which are not independent of government expenditure, and tend to differ from country to country and from one tax to another, suggest that the aggregative approach of international comparative studies is rather inappropriate and the studies themselves of limited credibility. The treatment of all GNP as taxable surplus is similarly inappropriate and highly unrealistic

61. Lewis H. Kimmel, *Taxes and Incentives*, (Washington: The Brookings Institution, 1950), p. 5.

when particularly applied to very poor countries in which per capita incomes represent levels of subsistence rather than ability to pay taxes. As incomes increase substantially above subsistence, all GNP may be roughly considered as taxable surplus, but as development advances the number of tax bases increases and governments choose freely among them and thus the tax structure comes to depend more on social or political forces rather than on considerations that are designed to utilize fully tax potential. This extensive freedom of choice enjoyed by developed countries in shaping their tax structure breaks up the likelihood of an accurately measured stable statistical relation between taxable surplus and tax collections and puts an end to the role of per capita income as a determinant of revenue shares.⁶² Per capita income in the very poor countries hardly exceeds the level of subsistence and therefore does not qualify as a proxy for taxable capacity. For these countries the level of subsistence, which is difficult to measure due to its dependence on both biological and cultural factors that vary from country to country, should be subtracted from per capita income before the latter is regressed on revenue shares. In its

62. R. A. Musgrave, *Fiscal Systems*, op. cit., Chaps. 5 and 6.

unadjusted form per capita income could not, except by chance, be verified statistically as representative of taxable capacity, and as shown by Hinrichs and others its place was taken by openness.

The three different forms in which openness has been used empirically, i.e., as the ratio of imports to GNP, or as the ratio of exports to GNP, or as the ratio of imports plus exports to GNP, seem to have been dictated by the criterion of goodness of fit. Knowing that the ability to import depends on the ability to export and the fact that in developing countries exports are converted almost immediately into imports,⁶³ ordinarily it would make no difference whether either the export or the import ratio were used in regression models. That occasionally the one gives a better fit than the other is due to different periods covered by cross-section studies and to the fact that imports do not coincide exactly with exports. And the summation of both is nothing but a statistical convenience that compromises this lack of exact coincidence. The dependence of imports on exports strengthens slightly the preference for the latter as an explanatory variable as well

63. Jonathan Levin, "Import Cycle and Fiscal Policy in Colombia," *Public Finance*, Vol. 21, No. 3, 1968, pp. 312-25.

as the fact that sometimes in poor countries total imports do not truly represent taxable capacity in those cases where part of them consisting mainly of capital goods and financed through concessionary loans from rich countries or international organizations is exempted from import duties.⁶⁴ Repayment of these obligations is done from export earnings which thus become a relatively superior representative of taxable capacity compared to imports. It may also be argued that the poorest countries are basically subsistence economies organized on the principles of self-sufficiency and that their exports indicate the beginning of transition from subsistence to economic development and an ability to pay taxes. In conjunction with the uncomplicated administrative machinery needed to collect export or import taxes and the almost synchronous metamorphosis of exports into imports, notwithstanding the marginal superiority of exports, both exports and imports are equally admissible as proxies for taxable capacity in poor countries. By contrast in developed

64. The same argument applies *ipso facto* to grants which are often given in emergencies or as military aid and cannot therefore be said to represent taxable capacity. Grants are classified as unrequited transfers in the balance of payments and as such they are not included in imports. But at times due to improper statistical reporting in developing countries, they may find their way into imports proper.

countries which do not rely at all on export duties and only to a limited extent on import duties to raise revenue, as displayed by the gradual reduction of tariffs negotiated through GATT, openness is much less convincing as a proxy for taxable capacity.

What is inferred from the previous short discussion is that the appropriateness of per capita income and openness in comparative studies is partial and generally depends upon the structure and the level of development of each country. Other variables also face similar problems and their credibility even when rationalized intelligently and reinforced statistically is eroded by their failure to explain a large proportion of the variance of the dependent variable and to provide meaningful assistance to policy decisions. Conducted at extremely high levels of aggregation that more often than not conceal the real forces that may be revealed at a disaggregated level and ignore possible substitution effects and the divergent effects on the economy and on income distribution international comparisons tend to become misleading experiments in regression analysis.⁶⁵ In

65. For a discussion of the analytical deficiencies of aggregation see C. E. Forget, *International Tax Comparisons*, Studies of the Royal Commission on Taxation, No. 14, Queen's Printer, 1966, pp. 10-22; also Frederic L. Pryor, *Public Expenditures in Communist and Capitalist Nations*, op. cit., pp. 62-64.

the brief evaluation of the several studies it was repeatedly stressed that they cannot be considered as significant contributions to policy-making by any stretch of imagination.⁶⁶ The failure of international comparisons to become instrumental in policy decisions puts them practically on a par with mathematical abstract models which parade numerous independent variables that are assumed to affect the expenditure or revenue ratios. The difference between them is traced to the fact that whereas such models are interested in presenting a general outline of consistent interrelationships, empirical studies proceed one step further and test the statistical significance of these interrelationships without dropping the generality of their framework. And the more pronounced such generality the emptier it becomes.

Most international comparisons are based on cross-section analysis which is structurally unsuitable to provide a reliable guide to past trends or a reliable base for tenable projections into the future. Its various inadequacies with respect to the sample that must be representative of the countries covered, with respect to

66. Lamenting the primitive state of theories of public expenditures Frederic L. Pryor emphasizes the importance which such theories could make to effective policy. See his article "Elements of a Positive Theory of Public Expenditures," *Finanzarchiv*, Vol. 26, 1967, pp. 405-429.

the period covered so that the data used are not only accurate but also do not contain too large short term disturbances that tend to distort secular trends, with respect to the correct specification of the regression function, so that, for example, linear functions are not specified when the true functions are non-linear and the difficulties of measuring satisfactorily the impact of innovations and changes in tastes, have all been examined by Simon Kuznets in the context of the search of patterns in the industrial composition of the gross national products of countries.⁶⁷ Kuznets' methodological criticisms with his particular emphasis on innovations and changes in tastes have been adapted and used by V. Tanzi with reference to tax effort studies and the objective of structuring tax systems in order to make them harmonious with the stage of economic development of each country.⁶⁸ Tanzi is convinced of the futility of such studies and characteristically finds as totally unacceptable their method of averaging the numerous distortions of the tax systems of the sampled countries and presenting the result as a norm against which the tax structure of each country is

67. Simon Kuznets, *Modern Economic Growth*, (New Haven: Yale University Press, 1966), pp. 431-437.

68. Vito Tanzi, *op. cit.*, pp. 203-208.

evaluated. The unsuitability of cross-section studies as bases for developing long term theories of public expenditures is also upheld by Ved P. Gandhi, who follows Kuznets' line of reasoning and argues that "time" is a variable in its own right whose omission by cross-section studies proves detrimental to the many historical forces which through political, geographical, social, economic, cultural, religious, demographic and technological changes influence both the level and the structure of government spending.⁶⁹ Even if these changes could be adequately captured by time series studies we would still be far away from developing a comprehensive theory of public expenditures because (a) we do not yet have a theory of tax effort which together with a theory of public expenditure would explain the overall behavior of government and determine the optimal level of expenditure and revenue; (b) the difference between the "pure" public goods characterized by indivisibility, nonexcludability and joint consumability that governments are expected to provide at all times and the goods they do actually provide does not

69. Ved P. Gandhi, "Trends in Public Consumption and Investment: A Review of Issues and Evidence," paper presented at the 32nd Congress of the International Institute of Public Finance in Edinburgh in September 1976.

follow any well behaved pattern that might enable the development of a theory of public intervention; and (c) the various policy objectives are pursued by using expenditures in different combinations with the other instruments available to governments, and there is no reason why these combinations should follow the same pattern at all times.

Cross-section studies unveil those variables that are significant in many countries at one point of time. However the same information may usually be obtained from time series analyses pertaining to individual countries. Sometimes variables which appear important in individual countries may fail the significance test in cross-section studies and vice versa.⁷⁰ A severe limitation of cross-section studies is their concentration on a number of current relationships that hold among a highly diversified universe and their neglect of the historical-innovational changes which occur through time that enrich the analysis and help in the understanding of the evolution of public finance in each country.

That fiscal history repeats itself and that as countries move from their traditional setup to

70. See Elliott R. Morss, "Some Thoughts on the Determinants of State and Local Expenditures," *National Tax Journal*, Vol. 19, No. 1, March 1966, esp. pp. 101-3.

the age of high mass consumption they should have similar fiscal patterns seems to be implicit in international comparative studies. It is by now common knowledge that W. W. Rostow's stages of growth are grand simplifications of the history of production without any operational significance.⁷¹ Probably the authors of cross-section studies have not yet been convinced by S. Kuznets' arguments and give the impression that they see in methodologically muddled waters fiscal history behaving linearly and all countries passing through the same fiscal stages.

Tax effort studies of developing countries seem to suggest that the higher the ranking of a country, the better, thus giving the impression that economic development is positively related to the size of the public sector. Development economists generally view the expansion of government activity as a prerequisite for the successful pursuit of economic and social betterment. However their views are expressed within the confines of consistent theoretical frameworks in which development is

71. See Simon Kuznets, "Notes on the Take-off," paper presented at the International Economic Association's Conference at Konstanz in September 1960, part of which is reprinted in G. M. Meir (ed.), *Leading Issues in Development Economics*, (New York: Oxford University Press, 1964), pp. 25-33.

logically derived as the inevitable outcome of a system of rigorously defined interrelationships. Such a framework is absent from tax effort studies and unless they are attached to someone, like the theory of the big push or of balanced growth, they stand as peculiarly conceived exercises in regression analysis.

Empirical studies are particularly vulnerable to criticism because they seem to attribute considerable significance to the estimation of a "representative model" which is derived by averaging the multifarious dissimilarities of diverse economic entities. Had economics reached scientific perfection and fiscal policy been able to account for all factors that influence decision making and been carried out according to a unique scientifically optimal fashion, the "representative model" could be looked upon as a yardstick for measuring compliance with scientific standards. But had economics reached this state it would be unnecessary to develop such a "representative model" as the fiscal behavior of every country adapted to its own conditions would represent an optimal model, which other countries could not possibly duplicate without loss to their fiscal efficiency. Under such circumstances deviations from the "representative model" would reflect differences in local conditions that would be no secret to

policy-makers, who would therefore not be enlightened at all by the model. The policy-maker remains equally unenlightened by present-day models which by averaging several sub-optimal fiscal systems produce statistical deformities rather than norms against which countries could evaluate their fiscal performance. The fiscal record of each country could have surely been evaluated accurately if there indeed existed universally accepted criteria for judging fiscal performance. What appears as a substitute for such criteria is the extent to which each country attains its policy objectives. And as each country sets different targets and faces different constraints, it makes no sense whatsoever to evaluate its performance against a meaningless model that averages fiscal magnitudes of a heterogeneous group of countries.⁷²

To sum up: cross-section studies in this area of economics stand on methodologically weak foundations and their results should therefore be viewed with extreme scepticism and considered tentative at best; they are not gener-

72. Referring to this issue R. M. Bird, "Optimal Tax Policy for a Developing Country: The Case of Colombia," *Finanzarchiv*, Vol. 29, 1970, p. 31, recommends that "one must design a tax system for the economic, political, and administrative conditions which one finds in a particular country, and not for some average abstract hybrid of all countries."

ally based on any respectable theory but instead appear as rationalizations of diverse facts which happen to obey the rules of regression analysis; their common theoretical emptiness reduces their status to that of statistical manipulations which provide no constructive assistance to policy-makers; more promising results are likely to follow from studies of fiscal performance of individual countries, and that fiscal patterns thus derived should normally be expected to differ from country to country reflecting the proposition that fiscal history does not necessarily repeat itself.

Conclusions

Compared to the time of classical economists when government suspected of inefficiency and of diverting resources from productive private employment was not to be trusted, nowadays it is expected to become the chief architect of economic policy and the efficient regulator of the economic system. According to classical economists government expenditures ought to be restricted as far as possible and once determined the distribution of tax burdens was undertaken with the purpose of maintaining a balanced budget. There existed a general agree-

ment as to the undesirability of deficits, but when incurred classical economists had different ideas as to the way they should be financed and the way public debt should be withdrawn.⁷³

Marginalism with its intellectually sharp tools was applied later to public finance to conceptualize the distribution of tax burdens and the allocation of government expenditure in the context of a balanced budget. However by failing to solve the problem of measurement of utilities and disutilities marginalism can merely be regarded as an analytical improvement in the history of classical thought rather than as a contributor to the understanding of long term behavior of government revenue and expenditure.

The advent of Keynesianism has rendered anachronistic the notion of balanced budgets, and the evolution of modern functional finance has subjected the budget to the needs of the economy. The issue nowadays is not why government expenditure and revenue have reached a certain absolute level, but whether their level is compatible with the pursuit of the various policy objectives. In other words, expenditure

73. See Jesse Burkhead, "The Balanced Budget," in the American Economic Association Series, *Readings in Fiscal Policy*, (London: George Allen and Unwin, 1955), pp. 3-27, reprinted from the *Quarterly Journal of Economics*, May 1954.

and revenue are not examined as ends in themselves but as means to various ends, and the spotlight is more on the ends than on the means. Or expressed differently, the relevant issue is no longer the behavior of government expenditure and revenue *per se*, but the behavior of the entire economy.

The various theories and empirical studies continue to neglect the relationship between the private and the public sector and by concentrating exclusively on the behavior of the latter they tend to degenerate into irrelevant exercises. Their irrelevance is attested by their uselessness as guides to policy-making. From the expenditure side Wagner's "Law" and the Displacement-Effect are too grand in conception and more likely to interest the economic historian than the economic planner. Similarly the empirical studies that aim to identify the determinants of expenditure and, from the revenue side, the determinants of taxable capacity, a notion that defies accurate measurement, are too aggregate and formulated in ways that leave no room for manoeuvrability to policy-makers. Less aggregate studies of particular problems in particular countries are likely to be methodologically sounder and stand a better chance to prove more useful to policy formation.

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