

Measuring the Effects of Belgian Budget Policies, 1955-65*

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The general purpose of this study is to measure the effects of various types of budget changes and evaluate their impact on the achievement of economic stability and balanced growth during the eleven-year period from 1955 through 1965. The basic data and methods used to estimate the effects of budget changes are the same as those developed for a recent OECD survey by Bent Hansen, which gives the institutional background to budgetary action and an analysis of the nature and effects of fiscal policy for each of seven member countries: Belgium, France, Germany, Italy, Sweden, the United Kingdom, and the United States ⁽¹⁾.

In 1955 Belgium had reached an economic situation which was different from most of the other countries in the Hansen study. France, Sweden and the United Kingdom (and the Netherlands, too) had virtually eliminated unemployment by the early 1950's, and during the period 1955-65 their major concern was maintaining a balanced economy which required, on the one hand, managing domestic demand within a narrow band of over-employment and the imbalances caused by an inflationary situation and, on the other, an undesirably high level of unemployment; Germany, however, did not reach this stage in its development until almost the end of the 1950's. The United States maintained a reasonably high level of employment fairly continuously after the end of World War II, except for two sharp but short lived recessions, but after 1955 economic policies allowed unemployment to become increasingly serious until special measures were taken in 1964-65 to regain full employment. Italy perhaps most closely resembles

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⁽¹⁾ Bent HANSEN, assisted by Wayne W. SNYDER, *Fiscal Policy in Seven Countries, 1955-65*, Paris: Organization for Economic Co-operation and Development, 1969.

Belgium as it is the only other country where an inflationary situation caused by excessive domestic demand was not encountered until the mid-1960's. Italy, however, presents a special case because its open unemployment, and considerable underemployment, were both related to regional differences between the industrialized northern and the more agricultural southern portions of the country. Thus, Belgium stands out as a particularly interesting case for which it is especially important to enquire to what extent budget policies helped or hindered the achievement of economic stability and balanced growth.

The Hansen study provided three measures to characterize the overall impact of budget changes: the average annual effect on domestic demand, the effect on the slope of this trend, and the short-term dampening effect on potential fluctuations in the actual GNP growth rate. The study did not attempt to weigh these three factors together in order to evaluate their combined effect on achieving economic stability and balanced growth. Partly, this was because there were no officially recognized criteria of what level of demand would have been desirable in order for each of the seven countries to maintain a high and balanced growth of demand and potential output.

This paper supplements the Hansen study for Belgium by providing more disaggregated data about the relative importance of various types of budget changes, and by assessing the degree to which their overall impact enhanced the achievement of a high level of economic stability and growth during the late 1950's and early 1960's. The latter requires using estimates of potential output, even though it is recognized that these are neither unique nor unambiguous, because they require assumptions about the rate of growth of the labor force and its productivity which are influenced by government policies affecting the distribution of output between consumption and investment. In spite of this limitation they provide a useful point of departure for evaluating budgetary performance and for discussing other major economic objectives, e.g., relative price stability and balance of payments equilibrium. But before presenting these evaluations, it is necessary to explain briefly the methods used to estimate the effects of budget changes.

I. The Measurement of Budget Effects ⁽²⁾

To determine the effect of the budget we must first estimate what would have occurred if there had been no change in the budget, i.e., if *all* expenditures and *all* revenues had remained constant from one

⁽²⁾ A more detailed explanation of measurement methods is given in the Appendix. For a complete description of the methods used, see HANSEN, *op. cit.*, Chapter 1.

period to the next. The difference between this estimate and the actual developments can be attributed to budget effects. When government expenditures and revenues change, the effect occurs in a several stage process. First, there is the *direct* impact of the increased (or decreased) spending occasioned by the initial budget change. The initial change later induces a series of indirect (multiplier) effects. The combination of all the direct and indirect effects, or the total effects of budget changes, are traditionally classified in two types : discretionary and automatic, built-in stabilizers⁽³⁾. This distinction is necessary for a discussion of intelligent budgetary policies because it divorces those effects which are due to specific new government actions from the effects which are produced by existing laws and regulations ; the difference between the two categories, however, is by no means unambiguous.

When changes in budget expenditures or revenues are clearly due to deliberate and explicit measures that are unrelated to previous legislation or budget authorizations, then it is certainly appropriate to classify them as discretionary. For example, the dampening effect caused by the increased revenue derived from a new tax law or *that part* due to a change in the tax rate can be called discretionary. While national accounts data do not break down total tax receipts between discretionary and automatic, the two parts can be separately estimated. For Belgium, estimates of the change in tax revenue due to discretionary measures were supplied by the Ministry of Finance. This study assumes that *all* changes in expenditures are discretionary. Strictly speaking this assumption can be justified, because most annual expenditures require new budget authorizations. But the true discretionary element may be substantially less, because many categories of expenditures can not be varied easily and not all expenditures require new approval. For example, expenditures for education are often related to the size and composition of a growing population which is a built-in-factor setting a minimum annual increase, and payments in agricultural subsidy programs are not always subject to new annual appropriations. Even changes in tax rates are sometimes legislated to occur at future dates, which makes it ambiguous whether to call their effects discretionary or automatic when they eventually occur

It is conventional to define as built-in stabilizers the automatic changes *under existing laws* of tax receipts and expenditures. In the

⁽³⁾ In general, the total effects of budget changes on domestic demand should also include the feed-back or « accelerator effects » which account for the impact that budget changes have on private investment (and in turn the additional household demand that this affects too) when demand is altered by the initial budget change. As will be explained later, however, the actual model used assumed that all changes in private investment were exogenously determined; hence, the measurement of budget effects is limited in this respect as well as by the others described further on.

absence of new taxes or rates, all changes in tax revenues are automatic and are caused by variations in private income and expenditures. The most important automatic changes in expenditures occur in the Social Security programs: health, pension, and unemployment benefits. Unfortunately it was not possible to obtain a breakdown of Belgium's Social Security expenditures and revenues, and so *all* changes are counted as automatic, even though discretionary changes were made nearly every year in both benefit and contribution rates⁽⁴⁾.

II. The Effects of Budget Changes in Belgium, 1955-65

Estimates of the effects of annual budget changes, expressed as a percentage of the previous year's GNP, and a breakdown of the effects for Central government into discretionary and automatic as well as for several important categories are given in Table 1. The first and most important conclusion from these figures is that the total effects for the entire public sector — general government plus the investment expenditures of public enterprises — contributed an average increase of only 0.5 per cent of GNP annually. Second, the average is fairly typical of the effects for individual years, although in a few instances the budget impact was substantially larger, sometimes positive and at other times it exerted a dampening influence. Third, the combined total effects were not the product of strong positive forces emanating from particular sub-sectors which were mostly offset by a dampening impact of other sectors, although, of course, the automatic increase in tax revenue diminished what would have been a larger overall expansionary effect. It should be noted that whereas the public sector's budget policies contributed little to increasing domestic demand and employment, other factors were more important (e.g., exports and private investment). These help explain why the average annual increase in GNP was 4 per cent in Belgium between 1955 and 1965 and thus was on a par with the growth rates for Sweden and the United States, and exceeded the 3 per cent for the United Kingdom, but is was less than the 5 per cent realized by France and Germany and the 6 per cent achieved by Italy.

Another important observation is that public enterprise investments accounted for very little of the total expansionary effects (0.1 per cent of GNP annually). This was not typical of most of the other European countries where such expenditures had a substantial impact on domestic

⁽⁴⁾ L. MORISSENS in an ongoing project to construct an economic policy model for Belgium has published an article analysing certain important aspects of the functioning of the Social Security system based on the regulations which existed in July, 1967. Unfortunately, these can not be used to distinguish between discretionary and automatic changes which occurred between 1955 and 1965. See, L. MORISSENS, « Estimations des fonctions de salaire-coût horaire et des cotisations personnelles de sécurité sociale », *Cahiers Economiques de Bruxelles*, No. 38-2^e trimestre 1968, pp. 289-301.

TABLE 1
Annual Effects of Budget Changes as a Percentage of GNP_{t-1}, 1955-65

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	Average
TOTAL EFFECTS OF PUBLIC SECTOR	-0.9	-0.1	-1.5	2.3	1.3	0.5	-0.7	0.5	2.3	0.0	1.6	0.5
Public enterprise investment	0.5	-0.1	-0.5	0.2	-0.1	0.0	0.4	-0.2	0.2	0.1	0.6	0.1
General government	-1.4	0.0	-1.0	2.1	1.4	0.5	-1.1	0.7	2.1	-0.1	1.0	0.4
Local government	0.5	-0.4	-0.5	0.9	0.2	-1.1	0.3	0.2	0.4	0.7	0.1	0.1
Social security	-0.4	0.1	-0.1	0.4	0.7	0.2	0.0	0.1	0.0	-0.6	0.6	0.1
Central government	-1.5	0.3	-0.4	0.8	0.5	1.4	-1.4	0.4	1.7	-0.2	0.3	0.2
Discretionary effects	-0.5	0.8	-0.3	0.1	0.7	1.1	-0.5	1.1	2.0	0.4	0.5	0.5
Investment expenditures	0.4	0.2	-0.3	-0.3	-0.2	0.2	0.1	0.3	0.3	0.6	-0.2	0.1
Employment (volume)	0.3	0.4	0.2	0.4	0.6	0.9	0.3	0.6	1.0	0.3	0.7	0.5
Other goods and services	-1.0	0.1	-0.3	0.2	0.5	0.2	-0.4	0.3	0.7	-0.5	0.0	0.0
Indirect taxes on households	-0.2	0.1	0.1	-0.2	-0.2	-0.2	-0.5	-0.1	0.0	0.0	0.0	-0.1
Direct taxes on households	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Automatic effects	-1.0	-0.5	-0.1	0.7	-0.2	0.3	-0.9	-0.7	-0.3	-0.6	-0.2	-0.3
Taxes	-1.0	-0.6	-0.3	0.6	-0.3	0.2	-0.9	-0.8	-0.4	-0.8	-0.4	-0.4
Price and wage changes	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.1

Source : OECD, *National Accounts*, and estimates of discretionary tax change by the Ministry of Finance.

demand, especially in France and Italy, but even in Sweden and the United Kingdom their effects alone were as large as the entire public sector in Belgium.

Consequently, most of the budget effects came from general government where for particular years the impact varied from a positive push of over 2 per cent of GNP in two years (1968 and 1963) to a dampening effect which amounted to 1 per cent or more in three years (1955, 1957 and 1961). Neither local government nor the Social Security system contributed much to the overall expansion. Both tended somewhat towards being anti-cyclical, especially the Social Security system which helped considerably to counteract the 1957-1958 recession and to dampen the excessive expansion during 1964.

The central government produced through its budget changes a small positive push which contributed an average 0.2 per cent of GNP annually, the result of a somewhat larger amount of positive discretionary effects (0.5 per cent annually) partially offset by the automatic dampening effects (—0.3 per cent annually). The small impact of central government has been attributed to « the hostility... to taxes, mainly direct taxes, as well as prejudices against increases of public debt and deficits in the budget, »⁽⁵⁾ although balancing the budget was rarely achieved in practice.

The discretionary effects (i.e., changes in expenditures and in tax rates) were positive during most of the years. The impact on domestic demand by changes in the direct investment expenditures of the central government was practically nil (0.1 per cent annually), although small deviations from this average occurred in individual years. It is worth noting that their impact was *negative* during each year of the 1957-58 recession when anti-cyclical considerations required expansionary policies. It has been suggested elsewhere that Keynesian theories and their accompanying policy implications designed to counteract fluctuations in employment were slower to be accepted in Belgium than in some countries⁽⁶⁾. Increases in the number of government employees, including the expansion of the Armed Forces but excluding wage increments, were the largest single positive factor and added about 0.5 per cent to the growth rate annually. Purchases of other goods and services were nil on balance, but annual variations did occur. Discretionary changes in taxes of any significance were generally rare and on average had virtually no effect on the growth rate. Changes in indirect taxes were more frequent and larger on the average than

⁽⁵⁾ See, L. MORISSENS, « Economic Policy in Belgium, 1949-61 » in *Economic Policy in our Time*, by E.S. KIRSCHEN and associates, Vol. III, Amsterdam : North-Holland Publishing Co., 1964 and Chicago : Rand Mc NALLY & Co., 1964, p. 8.

⁽⁶⁾ *Ibid.*, p. 4.

changes in direct taxes, although for the period as a whole their average effects were not substantially different from those for changes in direct taxes. Generally, it must be said that tax changes were not used as an important instrument of stabilization policy during the period.

The automatic effects were of two kinds, which operated in opposite directions. Because the overall income elasticity of the Belgian tax system is greater than unity, tax revenue grew faster than income creating a dampening effect which averaged 0.4 per cent of GNP annually. Given that unemployment was higher than desirable throughout the period and that output could have increased more rapidly than it actually did without creating serious price or balance of payments problems (with the notable exception of 1964), this dampening effect was potentially harmful. It was, however, partially offset by the discretionary effects of the changes in the central government budget mentioned previously, accompanied by some very modest expansionary effects of Social Security, local government and the investments of the public enterprises. The tax system functions rather well from an anti-cyclical point of view, producing moderately large dampening effects when expansion is particularly rapid as in years like 1955 and 1964, and creating a fairly strong positive effect during the recession years like in 1958 (see Table 1). The other type of automatic effect arises from the price increases of goods and services, principally wage and salary increments, which add to the expansionary effects of changes in government expenditure. In the first instance these changes do not have a direct effect on domestic demand, but by adding purchasing power to household incomes, they eventually create indirect or multiplier effects⁽⁷⁾. It is questionable whether to call these effects automatic or discretionary, because the government can directly influence some prices and can effect the timing of salary negotiations with its employees. But incomes policies were not practiced during this period and prices were generally determined by market factors rather than the discretionary policy of the government, and for this reason the effects of price and wage salary increases are included as automatic effects⁽⁸⁾. In any case this category of effects had little impact on domestic demand until a high level of employment was reached. Then in 1964 and 1965 rising prices in the central government sector accounted for 0.2 per cent of the increase in GNP, hardly an important factor but nevertheless a forewarning of increasing weight that this element of demand will acquire as the Belgian economy moves to a position more similar to its neighbors who already for several years have had to

(7) See the Appendix for a more complete discussion.

(8) See, L. MORISSENS, « Economic Policy in Belgium, 1949-61, » *op. cit.*, for details about direct price controls used in the period through 1961 and HANSEN, *op. cit.* for a general discussion of policies during the 1955-65 period.

deal with the delicate problem of managing demand within a narrow band of over-and under-full employment.

III. Evaluating Economic Stability and Balanced Growth

The objectives of economic policy are everywhere numerous, and the instruments used to achieve them are even more so ; nevertheless, four goals predominate, although others may temporarily replace some of them from time to time. These four are of primary concern to all governments : growth, employment, prices, and balance of payments⁽⁹⁾. Changing budgetary expenditures and tax rates are only some of the means by which economic policies influence the economy generally and the level of demand, particularly its composition. Monetary policies, direct controls, and changes in the institutional framework are other important categories of instruments at the disposal of governments in their attempt to achieve an appropriate balance among the desired objectives. It is not the purpose of the Hansen study or of this article to evaluate the total complex of all government policies. Rather the subject is more limited : given whatever influence other economic policies have had on the level of domestic demand, what have been the total effects of budget changes — automatic and discretionary — in helping or hindering the economy in achieving economic stability and growth ?

Two approaches are possible : (1) a detailed examination of the conjunctural scene for the review period with a comparison and evaluation of the effects of budgetary policies as they relate to the desired objectives, to the extent that these are in fact known (this was generally the method adopted in the Hansen study) ; or (2) taking an approximation that there did exist a known path of development which if consistently followed would have been optimum with respect to the economic goals desired. The second approach is employed in this study.

L. Morissens has suggested that « the price inflations which Belgium experienced from 1944 to 1948 left a very vivid memory in the country and explain the importance given by every Government to price stability ⁽¹⁰⁾. Probably the United States most closely resembles Belgium in this respect where high priority is also given to maintaining relatively stable prices, and undoubtedly explains why both countries were slow to take adequate measures to reduce excessive unemployment during the late 1950's and throughout the early years of the 1960's. Belgium

⁽⁹⁾ One study lists eight major conjunctural and structural objectives and four minor targets; and the same study enumerates no fewer than 65 instruments available to achieve them. E.S. KIRSCHEN et al., : *Economic Policy in Our Time*, Amsterdam : North-Holland Publishing Company, 1964, pp. 4-15 and 148-149.

⁽¹⁰⁾ L. MORISSENS, « Economic Policy in Belgium, 1949-61, » *op. cit.*, p. 4.

had no serious balance of payments problems, in spite of a continued trade deficit, and the overall balance was generally favorable enough so that between 1955 and 1965 reserves of official gold and foreign exchange more than doubled⁽¹¹⁾.

Clearly, the importance of other economic objectives especially relative price stability and a strong balance of payments position, must be considered in any evaluation of budget policies, but as a first approximation Belgian budget performance can be evaluated with an estimate of potential full employment output. This concept was introduced in President Kennedy's first Economic Report to the Congress of the United States⁽¹²⁾. It was designed to highlight how far actual performance had fallen short of the full economic potential of the United States since 1955 and to illustrate why special government policies were required to achieve a high level of employment. Undeniably the need for generally more expansive budget policies was real because between 1955 and 1965 the unemployment rate continually exceeded 4 per cent and surpassed 7 per cent during the 1958 and 1961 recessions. By the standards of most European countries these rates would be totally unacceptable, but the United States is relatively more concerned with rising prices than most European countries, although not as much due to the need to remain competitive in the international markets as in response to popular demand : Americans like Belgians apparently abhor rising prices *per se*, relative or not⁽¹³⁾. Eventually direct tax rates for individuals and corporations were substantially reduced and laws were passed which would eliminate most Federal indirect taxes in the United States. The effects of these discretionary measures during 1964 and 1965 finally helped boost the American economy back to a high level of employment (i.e., 4 per cent unemployment), but during the eleven years which had passed (since it had passed) since it had last operated at an optimum level, the accumulated gap between *actual* and *potential* GNP amounted to nearly 50 per cent of a typical year's potential full-employment output (measured at constant 1958 prices).

No similar estimates have been officially published for Belgium, but Professor Lundberg in a recent study of the problems of economic instability faced by the major countries of Western Europe and the United States in the post-war period provides the required figures. He defines potential or full employment output to be the combination of an unemployment rate of 2 per cent, which he considers to be « the mini-

⁽¹¹⁾ OECD, *Statistics of Balance of Payments and Main Economic Indicators*.

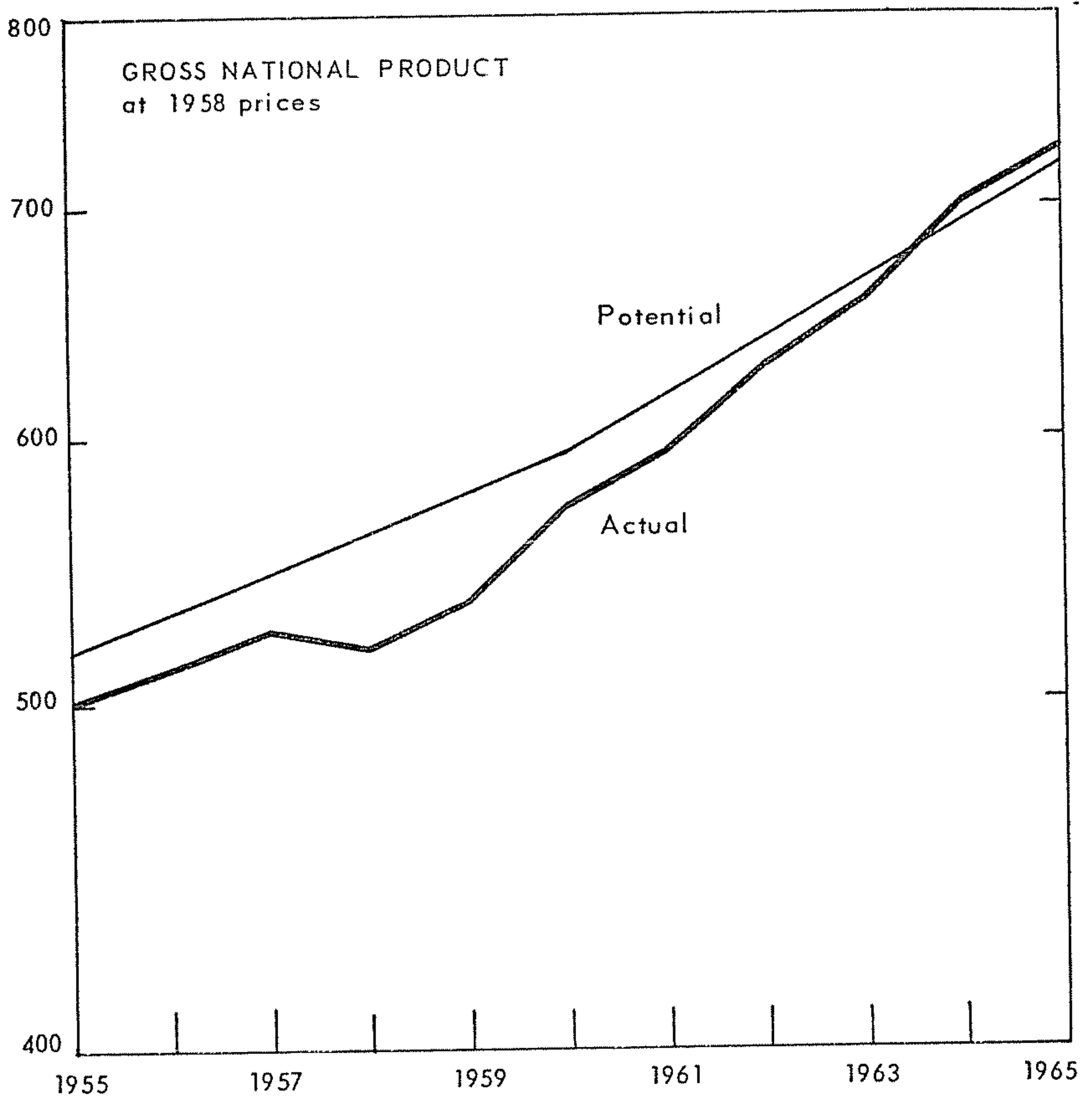
⁽¹²⁾ *Economic Report of the President*, U.S. Government Printing Office, Washington, D.C., 1962, p. 52.

⁽¹³⁾ Between 1955 and 1965 the average annual increase in consumer prices was only 1.8 per cent in both Belgium and the United States as compared with an average of over 3.5 per cent for the other five countries in the HANSEN study.

FIGURE 1

Actual and Potential GNP, 1955-65

Billions of francs (ratio scale)



imum feasible unemployment rate to be applied uniformly for calculating the potential or full employment labor forces, » and the long-run trend of labor productivity⁽¹⁴⁾. His estimates for Belgium imply that both the total labor force and labor productivity increased at roughly constant rates through 1960 which together provided for an average increase of somewhat less than 3 per cent annually. Afterwards, the postwar « baby boom » affected the number of persons entering the labor market, which together with an increased rate of growth of labor productivity, caused potential output to increase at a higher rate of about 4 per cent annually.

Figure 1 compares Professor Lundberg's estimates of potential output with the actual growth of GNP from 1955 to 1965 (at constant 1958 prices). This presentation helps highlight the fact that a substantial gap between potential and actual GNP prevailed throughout most of the eleven year period, and that it was only from 1964 that Belgium began to face the difficult and delicate problems of maintaining demand at the right level without causing excessive price increases or balance of payments deficits that many other European countries had already been dealing with since the early 1950's.

Part II of this study explained how the total effects of budget changes for the public sector contributed an average upwards push of 0.5 per cent of GNP annually. Thus, *actual* GNP as shown in Figure 1 includes both discretionary and automatic effects of budget changes. It is relevant to inquire about the extent of these effects on the achievement of economic stability and balanced growth. This can be assessed by constructing a hypothetical series of GNP as it would have developed *without* the total effects of annual budget changes by subtracting them from actual GNP for each year. We will call this hypothetical series the « pure cycle, » because it attempts to estimate what the GNP would have been if there had been no change in the budget, i.e., if neither expenditures nor revenues had changed from one year to the next. The pure cycle is useful for comparison with both actual and potential GNP in order to evaluate the degree to which budget policies were a positive or negative contribution to economic stability and balanced growth.

The pure cycle attempts to eliminate only the effects of budget changes and still includes the effects of other government policies (monetary and direct controls) as well as autonomous forces (e.g., private investment and exports) allowing for endogenous mechanisms (e.g., leakages through private savings and imports)⁽¹⁵⁾. Hence the pure cycle is not so pure, but it is nevertheless a useful analytical tool.

⁽¹⁴⁾ ERIK LUNDBERG, *Instability and Economic Growth* New Haven : Yale University Press, 1968, pp. 96-114.

⁽¹⁵⁾ See the Appendix for further details.

Figure 2 gives actual GNP and the pure cycle expressed as deviations from potential output, which is shown for convenience as a horizontal line. The vertical difference between the actual GNP and the pure cycle is equivalent to the total effects of budget changes as given in Table 1. The arrows indicate the direction of the total effects and point from the pure cycle to the actual GNP. Arrows which point towards potential GNP indicate budget effects which helped achieve economic stability and balanced growth, and those pointing away indicate years when the effects of budget changes were destabilizing.

In 1955 Belgium was in the second year of recovery from the post-Korean recession of 1952-53, and unemployment had declined to its lowest point since the end of World War II, about 3.8 per cent of the labor force⁽¹⁶⁾. Unemployment continued to decline, but it took the 1958-59 recession to convince the government that full-employment could not be achieved without special measures. These were undertaken from 1959-61 and included *inter alia*, the creation of an Economic Planning Board, a mixed committee to advise on the government investments as proposed in a 15 year plan of public works, and a variety of schemes to promote private investments⁽¹⁷⁾. Undoubtedly, these alone are not enough to explain the difference, but from 1959-63 the average effects of the public sector amounted to 0.8 per cent of GNP annually as compared with virtually no impact on the average during the years from 1955 to 1958 (see Table 1).

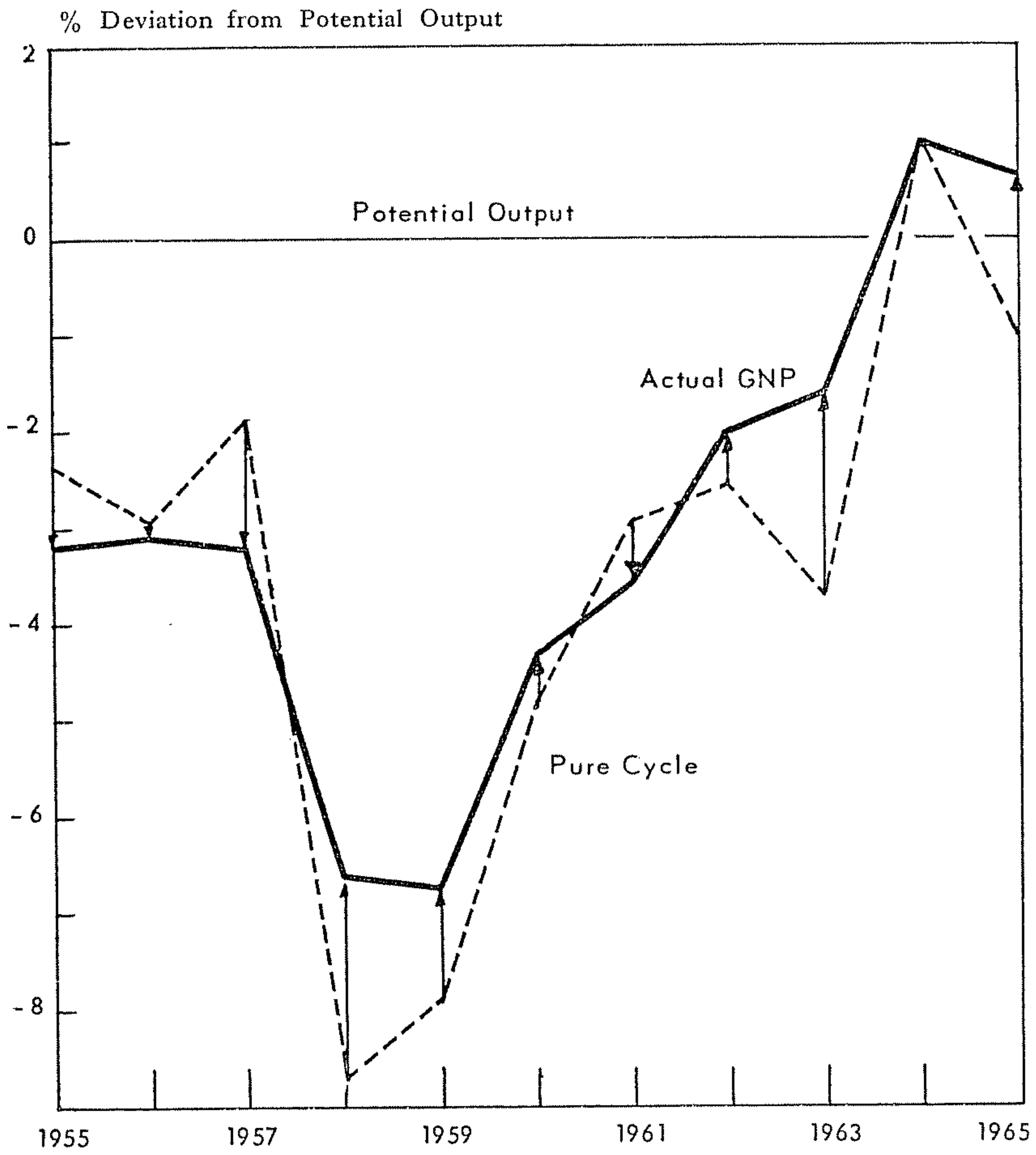
From 1955 through 1957 the budget impact was destabilizing and contributed to the external conditions (i.e., the stagnation of export demand) which created the 1957-58 recession. In 1958 and 1959 the budget effects helped moderate the recession ; in the former year mostly due to the automatic anticyclical functioning of the tax system, and in the latter year due to increased central government expenditures, including substantially higher Social Security benefits unmatched by new contribution rates. For the next years, 1960-62, in spite of explicit plans to attack unemployment, the net impact hardly affected closing the gap between potential and actual GNP, but in 1963 larger government expenditures across a wide front of activities brought the economy closer to full employment than it had ever before been. In 1964 there was even some excess demand which led the government to declare its intention to deflate some, but the net impact was positive in 1965, and Belgium had definitely entered a new era : how to main-

⁽¹⁶⁾ *Manpower Statistics, 1954-64*, Paris : Organization for Economic Cooperation and Development, 1965, p. 59.

⁽¹⁷⁾ See, L. MORISSENS, « Economic Policy in Belgium, 1949-61, » *op. cit.*, pp. 46-47 and *passim* for a discussion of these special measures.

FIGURE 2

Deviations of Actual GNP and the Pure Cycle from Potential Output



tain full employment without creating excess demand and economic instability.

A summary of the effects of the budget changes for the entire eleven-year period is given in Table 2. From Figure 2 it is not self-evident that the budget impact was either stabilizing or destabilizing with respect to helping achieve potential output over the period as a whole. The pure cycle remained below potential output during all but one year during the period from 1955 through 1965. The total divergence of the pure cycle below potential output amounted to about 40 per cent of a typical year's potential output. The sum of the stabilizing effects amounted to only 7.4 per cent, and of this 3.6 per cent were offset by destabilizing effects. Hence, the net stabilizing effects were reduced to a mere 3.8 per cent, or less than 10 per cent of the potential amount of stabilization that would have been required if Belgium had managed to maintain GNP at exactly full employment throughout the period 1955-65.

TABLE 2
Total Effects and Economic Stabilization, 1955-65
 (expressed as a percentage of potential GNP)

	<i>Per Cent</i>
1. Total (absolute) divergence between pure cycle and potential GNP	39.9
a. Above potential	1.0
b. Below potential	38.9
2. Sum of stabilizing effects.....	7.4
a. Above potential	0.0
b. Below potential	7.4
3. Sum of destabilizing effects.....	3.6
a. Above potential	0.7
b. Below potential	2.9
4. Net stabilizing effects (2 minus 3)	3.8
a. Above potential	-0.7 ^(a)
b. Below potential	4.5
5. Total divergence between actual and potential GNP (1 minus 4).....	36.1
a. Above potential	1.7
b. Below potential	34.4
6. Net stabilization achieved (4 : 1)	9.5

^(a) Minus indicates destabilizing effects.

Calculated on a similar basis, the amount of stabilization in France was 29 per cent, Italy 21 per cent, the United Kingdom 29 per cent, the United States 17 per cent, and Sweden a remarkable 64 per cent. Thus, the economic stabilizing effects of Belgian budget policies was definitely less than for any of the other six countries included in the Hansen study.

IV. Summary and Conclusion

The general conclusion must be that on average the net impact of budget changes was a positive factor in achieving economic stability and balanced growth, but the amount of stabilization achieved was very small in relation to the potential necessary. It must be noted, however, that the amount of net stabilization achieved after the 1957-58 recession was considerably larger than before, but other qualifications are necessary too.

The concept of potential output based on a constant 2 per cent rate of unemployment ignores the particular constellation of conjunctural objectives being simultaneously sought at any particular time, and the 2 per cent rate may itself be questioned as not being compatible with relative price stability and an adequate balance of payments position. Although the period of serious inflation (before 1964) occurred during the Korean boom of 1950-51, caused by both excessive domestic demand relative to the then existing actual output and by the increasing cost of imports, all Belgian governments have given high priority to maintaining stable prices. Exports are nearly half as large as GNP itself and any deterioration of their international competitiveness would seriously affect exports and imports as well. Thus, giving a high priority to price stability relative to employment must be assessed with this in mind. Nevertheless, greater efforts to achieve Belgium's full potential output could have been undertaken earlier without creating inflationary pressures.

The purpose of this article has been to measure economic stabilization, not to explain why a greater amount was not achieved, but two factors are crucial in understanding why full employment policies were not adopted sooner. First, as one author has said « up to 1958, the governments were mainly preoccupied with non-economic problems⁽¹⁸⁾ ». Second, there are institutional restraints built into the budget process which seriously limit using the budget as a major tool of economic policy⁽¹⁹⁾. What remains clear is that by 1964 Belgium had

⁽¹⁸⁾ L. MORRISSENS : *op. cit.*, p. 3 and *passim*.

⁽¹⁹⁾ For a discussion of the institutional framework within which budget policies are formulated and executed, see HANSEN, *op. cit.*, pp. 124-138.

successfully put behind its long history of undesirably high unemployment and had entered a new phase of its economic growth. The need for flexible budget policies is even greater now that a high level of employment prevails. In order to achieve a satisfactory combination of economic stability and balanced growth, in the future the budget must be capable of being subjected to the fine tuning required to maintain the economy within the narrow band of overfull and full employment which today is a major economic preoccupation of most Western countries.

APPENDIX

The basic methods used to estimate the impact of budget changes can be illustrated by reference to a very simple Keynesian model, where Y is GNP, I is private investment, C is private consumption, G is government purchases of goods and services, T is tax revenue, α is the marginal propensity to consume out of disposable income and t is the marginal tax rate :

$$(1) \quad \begin{aligned} Y &= I + C + G \\ C &= \alpha (Y - T) \\ T &= tY \end{aligned}$$

Changes in Y can be expressed by differentiating (1) which gives two equally good « reduced form » equations, where d indicates change (i.e., $Ydt =$ change in tax revenue due to a discretionary change in the tax rate) :

$$(2) \quad dY = \frac{1}{1 - \alpha(1 - t)} (dI + dG - \alpha Ydt)$$

or (3)
$$dY = \frac{1}{1 - \alpha} (dI + dG - \alpha dT)$$

Either (2) or (3) is equally good for explaining changes in Y , but (3) requires knowing only the amount of *total* change in taxes (dT) while (2) requires knowing the amount of *discretionary* change in taxes (Ydt).

The discretionary effects of budget changes, $E_{discr.}$, are defined as the difference between the actual change in Y and the change which would have occurred if there had been no discretionary change in the budget from one year to the next (i.e., if dG and Ydt are both equal to zero), but allowing for leakages into private savings and automatic tax changes; then from (2) :

$$(4) \quad \begin{aligned} E_{discr.} &= dY - \frac{1}{1 - \alpha(1 - t)} dI \\ &= \frac{1}{1 - \alpha(1 - t)} (dG - \alpha Ydt) \end{aligned}$$

The total effects of budget changes, E_{total} , are defined as the difference between the actual change in Y and the change which would have occurred if no budget change *at all* had occurred, which means that the marginal rate of taxes would have to be zero as in (3) :

$$(5) \quad E_{\text{total}} = dY - \frac{1}{1 - \alpha} dI$$

$$= \frac{1}{1 - \alpha} (dG - \alpha dT)$$

An explicit expression for the automatic effects of budget changes, E_{auto} , can be derived, but as the total effects of budget changes are the sum of both automatic and discretionary changes, it is easier to define them simply as the difference between the total and the discretionary effects :

$$(6) \quad E_{\text{auto}} = E_{\text{total}} - E_{\text{discr.}}$$

The definitions and methods actually employed to estimate the impact of budget changes are based on the previous contributions of Brown, Hansen, Lindbeck, and Musgrave ⁽¹⁾. Compared with the large econometric models which have been developed for some countries, the one in the Hansen study is admittedly primitive, partly because of the desire to use a common analysis for each of the seven countries. For the same reason year-to-year changes are used and no lags are introduced ⁽²⁾. The model assumes that private investment, exports, and prices (except those caused by discretionary changes in indirect tax rates) are exogenously determined. Imports are endogenous and for some countries represent the principal leakage of the potential budget effects. Government expenditures distinguish between volume and price changes, the latter necessitated by the differentiation of direct from indirect taxes.

The two reduced form equations, comparable to those of the simple Keynesian model above, for estimating the budget effects are :

$$(7) \quad E_{\text{total}} = \frac{1}{1 - \alpha (1 - \mu)} \left\{ \begin{array}{l} + (dg^d + dI) \\ + (dgp_g + idw) [\alpha (1 - \mu)] \\ - dT_i (1 - \mu) \\ - dT_d \alpha (1 - \mu) \end{array} \right.$$

⁽¹⁾ E. CARY BROWN, « Fiscal Policy in the Thirties : A Reappraisal. » *American Economic Review* 46 (December 1956) : 857-79; Bent HANSEN, « Statsbudgetens verkningar, » *Ekonomisk Tidskrift* (1959 : 3); Assar LINDBECK, « Statsbudgetens vervingar pa konjunkturuveckliagen, » *SOU* (1956 : 48); and RICHARD A. MUSGRAVE, « On Measuring Fiscal Performance, » *Review of Economics and Statistics* 66 (May 1964) 213-20.

⁽²⁾ A review of several big models suggests that 3/4 or more of the budget effects generally occur during the first year, so the absence of explicit lags is not critical; see HANSEN, *op. cit.*, pp. 20-22, for a detailed discussion of this subject.

$$(8) E_{\text{discr.}} = \frac{1}{1 + t_i - \alpha(1 - \mu)(1 - t_d)} \begin{cases} + (dg^d + d1)(1 + T_i) \\ - cdt_i(1 - \mu) \\ - ydt_d \alpha(1 - \mu) \end{cases}$$

Equation (7) estimates the total effects of budget changes, specifically allowing for the following factors :

- (a) Changes in the *volume* of government purchases of goods (dg^d) and services ($d1$) are distinguished from their respective *price* changes ($dg^p_g + 1 dw$).
- (b) Only *domestic* purchases are included; direct government expenditures abroad were an important component of annual changes for some countries during the period studied (military payments in particular) and are excluded because they do not affect domestic demand.
- (c) Changes in indirect taxes on households (dT_i).
- (d) Changes in direct taxes on households (dT_d).
- (e) Leakages via the marginal propensity to consume (α) and via the marginal propensity to import (μ). The model contains no explicit corporate business sector; consequently α measures the ratio between changes in personal consumption and changes in *total* private income minus only direct taxes on households. This implies an assumption of a constant relationship of gross corporate profits to income which is unaffected by changes in corporate income taxes.
- (f) The weighting allows for changes in domestic expenditures ($dg^d + d1$) to have their full multiplier effects (i.e., direct plus indirect), while the other items have only indirect or second-round-and-after effects (e.g., increased wages to government employees or reduced household taxes both raise private income, some of which is saved and only afterwards begins to effect domestic demand).

Equation (8) estimates the discretionary effects of budget changes, specifically allowing for the following factors :

- (a) Changes in the *volume* of government domestic purchases of goods and services ($dg^d + d1$).
- (b) Discretionary changes in the value of indirect taxes on households (cdt_i).
- (c) Discretionary changes in the value of direct taxes on households (ydt_d).
- (d) Marginal rate of indirect (d_i) and direct (t_d) taxes on households.

The above suggest several important implications :

- (a) *All* changes in the volume of government domestic purchases are counted as discretionary, whereas in reality some expenditures are tied to legislated norms and programs (e.g., education standards in some countries).
- (b) *All* budget effects from changes in prices and salary rates paid by the government are considered to be automatic, although governments do have varying degrees of control over some prices (e.g., goods and services produced by public enterprises, and commodity price support programs) and when and by how much government wages are increased.
- (c) Neither tax changes nor price and wage changes are deflated. This is because the model assumed that prices, before indirect taxes, are exogenously determined and are only influenced by discretionary changes in direct taxes. Other authors sometimes deflated both ⁽³⁾, but to do so would have introduced an inconsistency between equations (7) and (8), given the model's assumption about price determination.
- (d) The weighting system implies that a unit of discretionary change in government purchases will have a greater effect than a unit change in taxes, and among the latter the discretionary effects of a unit change in indirect taxes has a larger effect than a similar change in direct taxes. These results are well known from the literature about the « balanced budget multiplier » and are generally consistent with the implicit multipliers of the « big models. »

A NOTE ON THE STATISTICAL METHODS : Most data were derived from adjustments to the national accounts statistics published by the OECD ⁽⁴⁾. Individual countries furnished supplementary information on government imports and the estimated amount of discretionary changes in direct (ydt_d) and indirect (cdt_i) taxes on households (i.e., the difference between the actual and what would have occurred in the absence of any change in the tax rates). The estimates of the budget effects obtained from equations (7) and (8) are expressed in terms of the previous year's prices. In order to compare the effects of one year with another, they were normalized by expressing them as a percentage of the previous year's GNP. The estimates of the various budget effects given in Table 1 were obtained in this manner. For the data used in Figure 2, however, it was necessary to use the appropriate GNP deflators in order to express all the budget effects in constant 1958 prices.

⁽³⁾ E. CARY BROWN, *op. cit.*

⁽⁴⁾ For methods and definitions see *A Standard System of National Accounts*, Paris : Organization for Economic Co-operation and Development, 1964.

Equations (7) and (8) used to estimate total and discretionary effects of budget changes imply multipliers which depend on various leakage coefficients; these are given in Table A-1. The marginal rates of taxation refer to general government not central government alone. If the consumption coefficient seems small, it must be remembered that α is the ratio between changes in personal consumption and changes in *total* private income minus only direct taxes. Using this definition, Belgium's marginal propensity to consume (75 per cent) is average among the seven countries where similar coefficients varied from 70 to 80 per cent. Belgium's marginal rate of direct taxes on households was 10 per cent which was slightly higher than France and Italy ⁽⁵⁾ where the rate was only 8 per cent, but considerably lower than Sweden where the marginal rate averaged 30 per cent between 1955 and 1965. The marginal rate of indirect taxes was about 15 per cent which was similar to rates which prevailed in both Germany and Italy, somewhat higher than in Sweden, the United Kingdom and the United States where it averaged

Table A-1
Leakage Coefficients and Multipliers

Leakage Coefficients	
Marginal rate of direct taxes on households (t_d)	0.10
Marginal rate of indirect taxes on households (t_i)	0.15
Marginal rate of consumption (α)	0.75
Marginal rate of imports (μ)	0.50
Multipliers for discretionary effects	
Changes in the volume of government domestic purchases ($dg^d + d1$)	1.42
Changes in rates of direct taxes on households (ydt_d)	0.46
Changes in rates of indirect taxes on households (cdt_i)	0.62
Multipliers for total effects	
Changes in the volume of government domestic purchases ($dg^d + d1$)	1.60
Changes in the value of government domestic purchases due to wage-price changes ($gdp_g + 1dw$) and changes in total direct taxes on households (dT_d)	0.60
Changes in total indirect taxes on households (dT_i)	0.80

Source : HANSEN, *op. cit.*, pp. 31-32.

⁽⁵⁾ For Italy the marginal direct tax rate includes corporations as well as households and is not strictly comparable with rates for other countries which refer to household taxes only.

approximately 10 per cent, but less than France's 21 per cent. The multipliers for Belgium (along with those for Sweden) are the lowest among the seven countries. This is essentially because the marginal propensity to import (50 per cent) is the highest recorded among these countries, and the size of the multiplier is more sensitive to the factor than to differences in their other leakage coefficients at least over the ranges involved. This means that, *ceteris paribus*, a unit change in the budget in Belgium has a smaller effect on domestic demand than elsewhere.