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Measuring Economic Stabilization: 1955-65

by

WAYNE W. SNYDER

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By WAYNE W. SNYDER*

A recent study by Bent Hansen (1969) gives the institutional background to budgetary action and an analysis of the nature and effect of fiscal policy for each of seven OECD countries: Belgium, France. Germany, Italy, Sweden, the United Kingdom, and the United States. The Hansen study uses three measures to characterize the impact of budget changes: the average annual effect on domestic demand, the effect on the secular rate of GNP growth, and the short-term stabilization around the trend of actual GNP. The study did not measure their effects in relation to potential (i.e., full employment) GNP. Partly, this was because there were no officially recognized estimates of the level of domestic demand appropriate to maintain full employment growth for each country. For three of these countries-Sweden, the United Kingdom, and the United States—estimates of potential output now exist, and my purpose is to supplement the Hansen study by comparing the total impact of budget changes with these optimum levels of GNP.

I. Measuring the Impact of Budget Changes¹

This study measures the combined

* Center for Research on Economic Development, University of Michigan. This article was suggested by J. C. R. Dow, who first pushed for an OECD evaluation of fiscal policies. More fundamentally, however, I am indebited to Bent Hansen for the two very rewarding years that I assisted him on the study. The final version benefitted from their comments on an earlier draft, and from many useful suggestions of my colleagues Harold Shapiro and Lester Taylor, a referee, and the editor. Janet Eckstein helped by proposing several editorial changes.

¹ For a complete description of the methods used to measure budgetary effects, see Hansen 1969, ch. 1.

budgetary impact on domestic demand of both automatic and discretionary effects of budget changes.2 This includes the direct impact brought about by the initial budget change as well as the subsequent indirect or "multiplier" effect.3 The definitions and methods employed to estimate the total effect are the ones developed by Hansen and are based on earlier contributions of E. Cary Brown, Bent Hansen (1959), Assar Lindbeck (1956), and Richard Musgrave. Although the Hansen model is small compared with the large econometric models which have been developed for some countries, it is adequate to measure the relative importance of budget changes between countries. Due to the lack of quarterly data for all seven countries, the model uses only year-toyear changes, and there are no lags.4 The model assumes that private investment and exports are exogenously determined. Imports are endogenous and for some countries, e.g., Sweden, represent the

¹ In a growing economy where the "fiscal drag" from automatic tax increases can be important, albeit compensated to varying degrees by built-in expenditure programs with expansionary effects, narrowly defined discretionary effects may be the appropriate measure if short-term stabilization is the primary interest. The Hansen study does, in fact, provide separate estimates for both automatic and discretionary effects, but my concern here is with the budget's total impact on achieving balanced growth.

* An "accelerator" effect should be included too, but (as will be explained later) the actual model assumed that all changes in private investment were exogenously determined; hence the measurement of the budgetary impact is limited in this respect as well as by the others described further on.

⁴ A review of several big models suggests that three-fourths or more of the budget effect generally occurs during the first year, hence the absence of explicit lags is not critical. See Hansen (1969, pp. 20–22) for a discussion of this subject.

principal leakage of potential budget effects.

The Hansen methodology for estimating automatic and discretionary budget effects separately, does include automatic tax response rates but these are not necessary to calculate the combined budgetary impact, or the "total effect" of budget changes. Hansen's formula for this is based on a truncated version of his model and allows for all changes in revenue which are not credit transactions and for all purchases of goods and services, except direct government imports which are excluded because they do not affect domestic demand. Thus, the only formula used in this study is the following:

Total Effect =
$$\frac{1}{1 - \alpha(1 - \mu)} \left[(dg + ds) + \alpha(1 - \mu)(gdp_g + sdp_s) - (1 - \mu)dT_i - \alpha(1 - \mu)dT_d \right]$$

where α is the marginal propensity to consume; μ is the marginal propensity to import with respect to GNP; dg and ds are annual changes in the volume of goods and services, respectively, purchased by government; gdp_a and sdp_s are changes in the value of goods and services due to price or wage changes; dT_i and dT_d are annual changes in indirect and direct personal taxes. The multipliers for the various types of budget changes differ of course between countries because of differences in the leakage coefficients—the marginal propensity to consume and, especially, the marginal propensity to import. Leakage coefficients and multipliers are given in Table 1.

If the consumption coefficients seem small, this is because α is the ratio of changes in personal consumption to changes in *total* private income minus only direct household taxes, a definition required because the model does not include an explicit corporate sector.⁵ The expendi-

TABLE 1-LEAKAGE COEFFICIENTS AND MULTIPLIERS

	Leakage Coefficients		Multipliers for Total Effects		
	α	μ	dg +ds	$\begin{array}{c} gdp \\ + sdp_{\bullet} \\ \text{and } dT_d \end{array}$	dT_i
Sweden United Kingdom United States	0.80 0.68 0.75		1.92 1.96 3.48	0.92 0.96 2.48	1.15 1.41 3.30

Source: Hansen (1969, pp. 46-47).

ture multipliers may seem large, but it should be noted that they refer to budget effects excluding tax leakages which are accounted for by explicitly including dT_{i} and dT_d (scaled by their appropriate multipliers, too). The corresponding multipliers which include tax leakage coefficients (instead of dT_i and dT_d) are substantially lower; for example, the multiplier for changes in the volume of government purchases of domestically produced goods and services in the United States is 3.48 without tax leakages but only 2.12 after allowing for normal tax increases. While the multipliers cannot be accepted as being exact or applicable for every budget change, they are, nevertheless, sufficiently representative to indicate relative orders of magnitude and the range of differences between countries.

The choice of which governmental sector's budget changes to include (i.e., central, state-local, social security, public enterprise investment) was based on the budget policies that seemed to be substantially influenced by the central government. On this basis, budget changes

no exception. In this respect, perhaps the most conspicuous features are that private investment is treated as an exogenous variable and that the corporate sector is not made explicit. The first can be explained by the inadequate knowledge about investment functions, especially for European countries; the second was necessary to maintain comparability among the original seven countries, because the national accounts do not all give corporate profits and taxes separate from personal income and taxes, notably Sweden for which business savings contain an important error item.

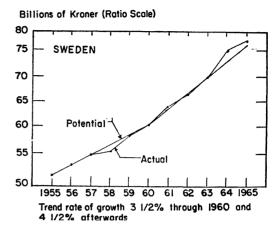
⁵ All models have their deficiencies, and Hansen's is

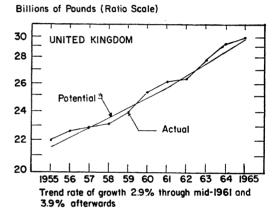
include the general government plus the investments of public enterprises for Sweden and the United Kingdom, but only the federal government (including the federally financed portion of the social security sector) for the United States.

II. Evaluating Economic Stability and Growth

The key quantities considered in this study are actual and potential GNP, and the total effect of budget changes. Figure 1 shows for each country how actual GNP (in constant 1958 prices) developed between 1955 and 1965 in relation to potential output. Official estimates of potential GNP are available for two countries: W. A. H. Godley and J. R. Shepherd's estimates are used for the United Kingdom, and those made by the Council of Economic Advisors (Jan. 1970) are used for the United States. Erick Lundberg's estimates are used for Sweden. Estimates of potential output are, of course, somewhat problematic because they are not independent of economic policy; government policy affects the distribution of output between consumption and investment, and this clearly influences the rate of growth of the labor force and productivity. But in spite of these limitations, they provide a useful basis for evaluating budgetary performance if they are discussed in relation to other policy objectives and instruments.

The total effect of budget changes should not be directly compared with actual and potential GNP because actual GNP is itself influenced by budget changes. We can, however, construct a hypothetical series of GNP by subtracting from actual GNP the total effect for each year. This derived series is called the "pure cycle," because it attempts to estimate what GNP would have been each year without the budgetary impact. The pure cycle still incorporates the effects of other govern-





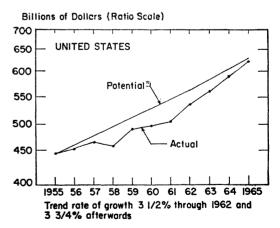


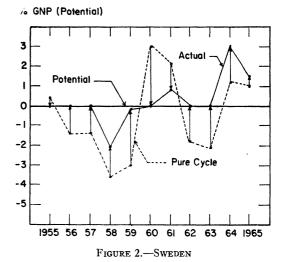
FIGURE 1.—GROSS NATIONAL PRODUCT: ACTUAL AND POTENTIAL (Constant 1958 Prices)

ment policies (e.g., monetary and direct controls) and autonomous forces (e.g., private investment and exports). Hence, the pure cycle is not so pure, but nevertheless it is a useful analytical construct.

In Figures 2 (Sweden), 3 (United Kingdom), and 4 (United States), actual GNP and the pure cycle are expressed as percentage deviations from potential output, shown for convenience as a horizontal line. The vertical difference between actual GNP and the pure cycle for each year is equivalent to the estimated total effect of budget changes. The arrows indicate the direction of the total effect and point from the pure cycle to the actual GNP.

The GNP development given in Figure 2 for Sweden is different than for the two other countries because in seven out of the eleven years, actual GNP was virtually identical with potential output, and this required dampening as well as expansionary budget policies, with annual total effects which amounted to 2 and 3 percent of potential GNP. Perhaps this is not surprising, since for several decades fiscal policies have been accepted and employed to manage the Swedish economy, for which Lindbeck (1968) points out that the first "...deliberate counter-cyclical fiscal policies [were] introduced as early as 1933" (p. 33).

The extraordinary flexibility and power of fiscal policy when properly employed is illustrated by the Swedish experience of 1959 and 1960. Following the worldwide recession in 1958 which budget policies helped partially eliminate, the total effect of budget changes gave an expansionary push of 3 percent which helped carry demand up to potential output. As the recovery progressed, the budget policies were reversed. For 1960, the budget switched to a dampening of 3 percent—just the amount needed to keep the economy at virtually its full potential for both 1959 and 1960. The only mistakes occurred



in 1964 and 1965, when expansionary policies fueled an already overheated economy, which was brought back into balance only after 1965.

As for the other main economic objectives, Sweden did not have any serious problems concerning the balance of payments equilibrium, but this was not true of relative price stability. Current account difficulties occasionally required some minor adjustments of domestic policies, but over the period as a whole Sweden ran a sufficiently large surplus on its basic account to permit doubling its international reserves between 1955 and 1965. Prices increased on average more in Sweden than in either the United Kingdom or the United States, but not as much as for some other European countries. Lundberg suggests that "... a serious criticism of the type of stabilization policy pursued in Sweden is that during most of the time it involved a combination of inflationary pressure and extensive controls of the credit and capital markets" (p. 199) while at the same time "... there has been no effort by the Swedish government to carry out an 'income policy' or interfere with the bargaining process on the labor market" (p. 248). If these considerations should

have received higher priority, then clearly greater slack in the labor market should have prevailed, which means that potential output would have been lower. But even if a somewhat higher level of unemployment was used to calculate potential GNP, the stabilization achieved would still remain impressive. Furthermore, Sweden used a very sophisticated and effective method to provide investment funds to firms in a countercyclical manner; if quantitative estimates of these policies were made, the picture of Sweden's already impressive budgetary performance would be further improved.6 In sum, Sweden during all but the last two years of the period between 1955 and 1965 presents a remarkable picture of the effectiveness of using budgetary policies to achieve economic stability and growth.

The United Kingdom's budgetary performance is striking by comparison with Sweden's. The requirements for domestic demand management were similar in both countries, but U.K. policymakers did very little to alter the course of events. Except for the years 1955 and 1965, the total effect of budget changes never greatly exceeded 1 percent of potential output; thus, in spite of its "stop/go" policies, budget changes had little influence on the underlying pattern of cyclical fluctuations. It is particularly important, however, to recall the lack of purity in the pure cycle, which includes the effects of monetary policies; for example, variations in down-payments and the length of maturity requirements for consumer credit on durable goods were especially important at various times.

Unlike the other six countries in the Hansen study, the United Kingdom accentuated rather than reduced the gap between potential and actual *GNP* during the 1958 recession. Prices had been rising sharply for several quarters, and policies

were designed partly to counteract this and partly to discourage further speculation against sterling, such as the short-lived crisis of 1957. The result was, a reduction in domestic demand at a time when unemployment was already rising to what in England was considered an intolerable level.⁷

This experience is typical of the problems that plagued the United Kingdom throughout this period. The definitive analysis of the British postwar experience, the low rate of growth (lowest among the seven countries in the Hansen study), how much higher a rate might have been attained if policies had been different, the many balance of payments crises, and the problems with rising prices, is still to be written. Until this is done, J. C. R. Dow's study will remain the most complete analysis, in which he asserts that "... the major fluctuations in the rate of growth of demand in the years after 1952 were thus chiefly due to government policy" (p. 384). And he also concludes that: "If the pressure of demand had been somewhat lower and the margin of capacity somewhat larger . . . the pressure of demand could have had a marked effect on the rise of prices (p. 361) ... and would probably have reduced fluctuation in the balance of payments . . . " (p. 392).

The minimum that needs to be said regarding these propositions is that *if* the potential output used is considered to have been too optimistic as regards price and balance-of-payments developments, given

⁶ See Lundberg (pp. 225–32) and Gunnar Eliasson for descriptions and evaluations of this scheme.

⁷ Samuel Brittain has described the relation between employment and the balance of payment restraint prior to 1965 in the following way:

If unemployment (after allowing for the purely seasonal element) is down to 1.5% the balance of payments will usually be given priority; and the Treasury would not be deterred from depressing home demand by the thought of unemployment rising to say 1.8%. But if the number out of work is much higher than this at the time of the Budget, risks may sometimes be taken with the balance of payments for the sake of domestic expansion. [p. 105]

actual budgetary policies, then lowering it would make the policies even less appropriate. And this conclusion is not affected by the exclusion of variations in corporate taxes and the various investment allowance schemes which were used throughout the period. Corporate tax payments lag as much as two years behind the time that profits are being earned, and hence tend to produce pro rather than counter cyclical effects, and when discretionary changes in corporate tax rates and changes in the system of investment allowances are combined, they produce an even greater destabilizing impact on domestic demand.

If differences between Sweden and the United Kingdom as illustrated in Figures 2 and 3 are striking, the United States presents yet another situation. The problem of economic management was not the fine tuning of demand at full employment which characterized both Sweden and the United Kingdom, but rather dealing with the increasing tendency of demand to diverge from potential output after 1955. The annual budget impacts unquestionably helped to dampen fluctuations of actual GNP, but they did relatively little to assist the economy to regain full employment. Figure 4 makes it clear that the counter cyclical effects of budget changes



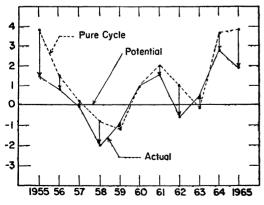


FIGURE 3.—UNITED KINGDOM

% GNP (Potential)

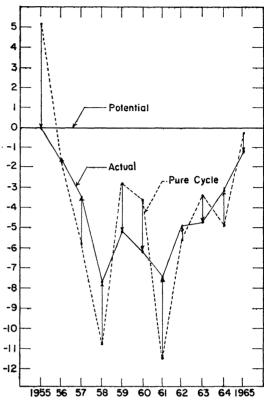


FIGURE 4.—UNITED STATES

were particularly—and substantially—inappropriate during 1959 and 1960; the same is true for 1963 and 1965, albeit to a lesser degree. Only in 1955 were the effects entirely adequate. The destabilizing effects in years of post-recession recovery are mainly due to the strong automatic stabilizers, as noted by Wilfred Lewis; although they greatly help to limit the severity of recessions, they reverse direction quickly after the trough is passed and hinder recovery to full employment.

Balance-of-payments equilibrium and relative price stability are other objectives which need to be considered in discussing economic stability and growth, but neither is as important for the United States as for the United Kingdom. Toward the end of

the 1950's the *U.S.* policymakers became increasingly concerned about the continual balance of payments deficits, but no specific budget policies for these purposes were adopted at any time during the period from 1955 through 1965, although some monetary policies were directed to the objective of improving the balance of payments. In presenting the 1963 tax reduction proposals, it was even suggested that the subsequent expansion toward full employment might eventually help the balance of payments by encouraging American companies to invest less overseas and more at home.⁸

Price considerations did, however, play a more important role but to a large extent they are inseparable from the assumption that a 4 percent level of unemployment is compatible with potential output and with little or no inflationary pressure. While the Eisenhower administration did not specify what trade off it thought existed between price stability and unemployment, clearly it recognized a linkage and was more concerned about the rising consumer prices from 1955 until 1959, which were fairly large by American standards (on average about 2 percent annually), than it was about reducing the level of unemployment to 4 percent. The Kennedy administration did make explicit its goals and did believe that it was possible to reduce unemployment to at least 4 percent while maintaining relative price stability. Perhaps it would be more reasonable to propose a potential GNP corresponding closer to 5 percent unemployment for the years prior to 1961. If this were done the amount of divergence between the pure cycle and potential GNP would be smaller and consequently the amount of stabilization achieved would be somewhat greater. The importance of this should not, however, be overemphasized; even with such an adjustment, the U.S. economy functioned

well below its potential throughout most of the period.

It is not a major purpose of this study to explain why policies were inadequate but it can be noted that throughout the Eisenhower administration there was a general feeling that the economy would reach an appropriately high level of economic activity without the discretionary use of government policies. And as late as January 1962 the new Kennedy administration believed that the economy could achieve a 4 percent level of unemployment by mid-1963 without any major discretionary policies beyond the investment credit scheme and accelerated depreciation allowances which it proposed to increase investment and productivity.9 Eventually, of course, the substantial tax cuts of 1964 and 1965 were required in order to boost the economy toward potential GNP, and not until 1966 did expenditures related to the Vietnam war finally raise the economy to its full potential, after a decade of inadequate demand.

III. Comparing Relative Stabilization

Although important issues of methodology and interpretation which cannot be neglected are raised in this section, a tentative and quantitative evaluation of the relative degree of stabilization achieved by the three countries seems appropriate. First some definitions, and then the conceptual problems are discussed.

The absolute difference between the pure cycle and potential GNP is defined as potential stabilization. Budget effects are counted as stabilizing if they diminish the difference and destabilizing if they increase it. The total effects whose arrows in Figures 2, 3, and 4 point towards potential GNP are counted as helping to achieve economic stability, and in those years when they point away the budgetary impact is counted as being destabilizing.

⁸ See Council of Economic Advisors (Jan. 1963, p. 103).

⁹ See Council of Economic Advisors (Jan. 1962, p. 66 and p. 132).

Budget policies are nowhere uniquely designed for the management of domestic demand; other objectives sometimes override stabilization considerations, nor are budget policies the only means by which objectives can be attained. 10 Consider for example an extreme situation where the budgetary impact is always in the wrong direction, i.e., causing demand to diverge from potential GNP. If, however, the budget effects are precisely forecast and if other government policies are used to eliminate exactly whatever difference would exist, ceteris paribus, between the pure cycle and potential output, then the economy would always be at its full potential but all the stabilizing effects would be attributed to the budgetary impact rather then the other policies which were the real reason for maintaining full employment.11 Such possibilities cannot be denied but their importance must be viewed in light of individual experience. In the United States during ten of the eleven years from 1955 through 1965, actual GNP remained below—often substantially below—potential output, the cumulated shortfall amounting to nearly 50 percent of a typical year's potential GNP (measured in 1958 prices). On the other hand, throughout this period domestic demand in both Sweden and the United Kindgom fluctuated within a narrow band between nearly full and (more often) overfull employment. In these cases the possibility does exist that some stabilizing effects which are attributed to the budgetary impact properly belong to the counter-balancing effects of other government policies. While this study makes no attempt to evaluate the effects of other government policies, it is worth mentioning that Sweden and the United Kingdom used monetary policy mainly for balanceof-payments purposes which had, if anything, adverse rather than stabilizing effects on the appropriate management of domestic demand.

This does not exhaust all the conceptual problems; at least one more should be discussed. In cases where the budgetary impact is in the right direction but exceeds the amount necessary to reach potential output, how should the total effect be calculated? It seemed sensible to divide the impact into two components: the part that was stabilizing, and the other which overshot and had destabilizing effects. In fact, such situations were rare, never occurring in either Sweden or the United States; the only clear case occurred in the United Kindgom in 1962 when the total effect was about twice as strong as necessary to dampen the overheated economy and created some undesirable unemployment.

With these definitions and caveats in mind, we can make the following evaluation of the budgetary impact and its contribution to achieving economic stability in the three countries. Table 2 summarizes the pertinent relationships on a cumulated basis for the eleven-year period.

First, the cumulated amount of potential stabilization (Item 1) for Sweden and the United Kingdom amounted to about 20 percent (of a typical year potential output), while for the United States it amounted to 55 percent. Second, one-third of Sweden's desirable stabilization and most of the United Kingdom's would have required a dampening budget impact whereas for the United States—except for the year 1955—stabilization required expansionary policies.

There were notable differences among the three countries concerning the stabilizing impact of budget changes (Item 2). In Sweden the cumulated impact had a sizeable stabilizing effect, and it occurred when the pure cycle was above potential *GNP* as well as when it was below it.

In the United Kingdom the stabilizing

¹⁰ E. S. Kirshen's study lists eight major conjunctural and structural objectives and four minor targets; and the same study enumerates no fewer than sixty-five instruments available to achieve them.

¹¹ The referee pointed out the ambiguity caused by this conceptual problem.

TABLE 2—TOTAL EFFECTS AND ECONOMIC STABILIZATION (expressed as a percentage and cumulated for 1955-65)^a

		United			
		Swe-	King-	United	
		den	dom	States	
1.	Total (absolute) divergence be-				
	tween pure cycle and potential				
	GNP	21.0	18.6	55.4	
	a) Above potential	7.7	16.6	5.1	
	b) Below potential	13.3	2.0	50.3	
2.	Sum of stabilizing effects	15.7	7.3	16.9	
	a) Above potential	4.7	7.1	5.1	
	b) Below potential	11.0	0.2	11.8	
3.	Sum of destabilizing effects	2.3	2.3	7.3	
	a) Above potential	2.3	0.5	0.0	
	b) Below potential	0.0	1.8	7.3	
4.	Net stabilizing effects				
	(2 minus 3)	13.4			
	a) Above potential		6.6		
	b) Below potential	11.0	-1.6^{b}	4.5	
5.	Total divergence between ac-				
	tual and potential GNP				
	(1 minus 4)	7.6			
	a) Above potential	5.3			
	b) Below potential	2.3	3.6	45.8	
6.	Net stabilization achieved				
	$(4 \div 1)$	63.8	26.9	17.3	

^a Budgetary effects were measured for general government plus the investments of public enterprises for Sweden and the United Kingdom, but only for the federal government of the United States; the choice was based on what budget policies were substantially influenced by the central government.

effects were not very large and were concentrated almost entirely in dampening the potentially overheated economy. In the United States the expansionary effects were about as large as in Sweden, but since the cumulated shortfall of the pure cycle below potential GNP was so much greater (50 percent for the United States as compared with only 13 percent for Sweden), the relative amount of stabilization achieved was substantially less.

No country escaped having destabilizing effects in some years, but they were rela-

tively small for both Sweden and the United Kindgom and somewhat larger for the United States (Item 3). All of Sweden's destabilizing effects contributed to pushing actual GNP above its potential. In the United States the situation was exactly reversed, as the destabilizing impact of budget changes contributed to increasing the gap between potential and actual GNP. The "stop/go" policies of the United Kingdom are reflected in the destabilizing effects, which sometimes caused overheating and sometimes contributed to depressing GNP below its potential level.

When the stabilizing and destabilizing effects are combined to obtain the net effects (Item 4), and when these are compared with the potential stabilization which could have been achieved (Item 1), there are striking differences between the three countries. For Sweden, the potential stabilization which could have been achieved was not very large to begin with, but 64 percent of it was accomplished; a remarkable achievement by itself but particularly important when compared with the mediocre performance of the other two countries. The potential stabilization which could have been achieved in the United Kingdom was smallest among the three countries, and in fact the effects of budget changes were no larger than those of Sweden; the net result was that 27 percent of the potential stabilization was achieved. The United States had two and one-half to three times as much potential stabilization to be achieved, but the net stabilizing effects of its budget changes were relatively small—only 17 percent.

The cumulated divergence between actual and potential *GNP* for the entire eleven-year period (Item 5) was smallest for Sweden (only 7.6 percent), somewhat larger for the United Kingdom (13.6 percent), and much larger for the United States (45.8 percent). For both Sweden and the United Kingdom, most of the divergence arose from an overheated econ-

^b Minus sign indicates destabilizing effects.

omy where actual GNP exceeded potential output, although for each country some short-falls did occur. For the United States, however, the entire amount represented the short-fall of actual below potential GNP.

IV. Conclusion

An important finding of the Hansen 1969 study was that if short-run stabilization is measured with respect to the actual trend rate of GNP growth, then the degree of stabilization achieved in the United States was substantially larger than for any other country during the eleven years from 1955 through 1965 and was modestly important for Sweden, while in the United Kingdom the impact of budget changes was actually destabilizing and created greater fluctuations in the rate of GNP growth than would have occurred if the budget had been neutral from year to year.

If potential instead of actual GNP is used, the results are strikingly different. The total impact of budget changes in Sweden eliminated nearly two-thirds of the gap between the pure cycle and potential GNP and helped create a level of demand that was virtually identical with potential output during a majority of the years. The United Kingdom's performance also is improved, from a generally destabilizing pattern to one where about onequarter of the potential stabilization was achieved. The change in the United States' performance is less surprising because it is already widely recognized that while the budgetary impact—mainly the automatic built-in stabilizers—helped dampen shortrun fluctuations, during the period from 1955 through 1965 the economy slipped below 95 percent of its full employment potential during half of the years. Consequently, the amount of stabilization achieved by this more relevant criteria was only 17 percent.

The reader must, however, interpret

these conclusions with caution, keeping in mind the other main economic objectives besides achieving a high level of employment and growth, principally relative price stability and balance of payments equilibrium.

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