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# Has Macro-Theory Failed Economic Policy?\*

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"In the interest of economic expansion, we need to have some combination of increased taxes and reduced government spending." Some such statement as that would encapsulate a good deal of the advice being pressed upon government in the contemporary scene. And those of an earlier era such as Alvin Hansen, listening from "up there" to this urgently proffered advice, might well be wondering if the celestial telephone network is producing cross talk. What they hear would tempt at least some of them to invoke the New Yorker magazine's department of: "How's that again?"

For an intelligent and thoughtful laiety, who seem to remember that we applauded the tax reduction of 1964 as a means of stimulating output and employment, and that economists regularly include in papers or speeches increases in government outlays as a plus factor in evaluating prospects for economic conditions, it is all a bit confusing. It raises the question of whether economic principles provide a solid foundation for decisions that managers of economic policy must make. And that is a matter that I suggest we ponder a bit.

#### I. Economists in the Establishment

As we survey the last three or four decades, roughly the years since World War II, we do find ourselves looking at a period during which the theory of macro-economic policy emerged as an explicit part of our discipline, which was also a period during which the role of economists and economic analysis was established at the senior levels of government. There are some of us, though our numbers are small and shrinking, who like to assume that we are still active practioners of the profession, and who nevertheless have not even had a course with the label Macro-economic Theory. The textbooks we used as students in Elementary Economics had no neat division at the mid-point between micro-theory and macro-theory. For those of us in that admittedly somewhat geriatric group, this is dramatic proof of how recently what has been taken for granted came into being. (For the rest of you this may simply be dramatic proof of how far back into the mists of the discipline's primitive history we greybeards go.) Even so, many of us during these decades have made a

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reasonably comfortable living teaching and writing about macro-economics, and some of us have had the opportunity to try to put macro-theory to work in the arena of policy.

Moreover, government has been remarkably responsive to these developments in our discipline by providing the structures. As early as 1946, before the substantial percentage of those here this evening remember things economic, the Employment Act of 1946 established the Council of Economic Advisers in the Executive Office of the President reporting directly to the President, and at the other end of Pennsylvania Avenue, the Joint Economic Committee of the Congress (originally the Joint Committee on the Economic Report). This is not a legislative committee, but the so-called JEC has generally been given high marks over the years for the quality of its hearings and its role in educating both members of the Congress and the public generally about economic developments and their policy implications.

With these new structures came also the two major declarations about the objectives of the nation's management of economic policy. Section 2 of the Employment Act is a carefully crafted long sentence which, you may recall, properly bows in several directions: "The Congress hereby declares that it is the continuing policy and responsibility of the Federal Government to use all practicable means consistent with its needs and obligations and other essential considerations of national policy... to promote maximum employment, production, and purchasing power." In 1978 the Humphrey-Hawkins Full Employment and Balanced Growth Act established quite explicit goals for economic policy. The Act, for example, decreed that in the first Economic Report published pursuant to the Act the goal for the consumer price index was set at a rise of only 3 percent for 1983, and the goal by 1983 was 4 percent for the unemployment rate for members of the work force 16 years of age and older. We still have six weeks in 1983, but finding the curve in Professor Phillip's quiver that will give us this point for the year now seems to be rather doubtful.

While it would be easy to dismiss this legislation and government machinery as of little significance, representing the usual posturing of Government to pretend that actions and declarations are progress and solutions, it would be wrong to dismiss this all as of no significance. The logic of economics has thereby been introduced more explicitly and more regularly at senior levels of government. The Council of Economic Advisers, and particularly the Chairman, must tread a narrow and sometimes indistinct path between being considered by the President as a member of the team and also retaining his professional credentials, but during most of the nearly four decades of this agency's history it has stayed reasonably on that path. While the Joint Economic Committee is not itself a legislative committee, a tour of duty as a member of the JEC has been an educational process for numerous senior members and chairman of important legislative committees in the Congress.

While this is not the place for any extended review of experience with these two Acts (The Employment Act of 1946, and The Humphrey-Hawkins Full Employment and Balanced Growth Act), history does suggest the wisdom of not embedding into such legislation objectives with a high degree of numerical specificity. Once proposed in the political arena, they must be made to look ambitious and courageous. If a 4 percent unemployment rate is proposed on one side of the aisle, why not show even more compassion and bid 3 percent (which is in fact, the Humphrey-Hawkins Act's stipulated 1983 objective for those in the work force 20 years ago or older). Because of over-reaching for

ambitious numerical targets specified in this Act, it has not had anything like the influence on managing economic policy that the earlier Act has had, and Humphrey-Hawkins is now largely ignored.

A major influence on policy from these Acts and the machinery they established has simply been that government must annually describe its strategy for economic policy and how it is working out. Government must annually state its case. While most of the pages of the publication called the Economic Report of the President are the Annual Report of the Council of Economic Advisors, it is still the Administration speaking. The Joint Economic Committee must also make its report, and members who dissent from the majority view must state their case. Moreover, macro-theory has provided an analytical framework—sometimes quite explicit, sometimes quite vague—for thinking about our problems and even, on occasion, thinking about solutions to them.

This is all important. Articulation makes policy. The fact that the Administration must annually state its case keeps economic policy issues higher on the national agenda than would be apt otherwise to occur.

The point of these comments is to remind ourselves that government has been unusually cooperative in providing structures to assure that economic analysis will be a part of the policy-making process. While political leaders must take into account more than just the economic dimension of policy, we as practitioners of our discipline cannot complain that economic analysis has never made it through the door into the policy arena.

# II. A Disappointing Result

During the last few decades, then, there have been well-developed advances in the theory of economic policy. These have spawned extensive additions to our statistical information system, and some major additional machinery has been put in place by the government. One might reasonably assume, therefore, that the performance of the economy would be vastly improved from that of the troglodytic era when the course was called "Business Cycles," acronymic exercises might have been pre-occupied with RCA or NBC but certainly not GNP, and the closest the President got to an annual economic report were some paragraphs in his state of the union address.

What does the record show?

This question can never be answered conclusively, of course, because we can never be sure what might have been. Moreover, a simple comparison of the 35 years after 1948 (when the economy got going after World War II) with the 35 years before 1948 would obviously tell us little. The record of the years leading up to 1948 would have been dominated by World Wars I and II and the Great Depression—when the management of policy (particularly from 1929 to 1933) did not give expression to even the more limited information and analytical tools then available.

The question is, however, an important one. Just how have we been doing? Even Americans, with their notable disinclination to read the minutes of earlier meetings, can on occasion usefully examine history. Suppose, therefore, that we examine some of these earlier minutes. If we do, we find to our discomfiture that the performance of the economy has not been all that much better in the age of enlightenment than it was when the forces of darkness and ignorance were presumably in firm control. From 1948 to 1981 per capita

	1896-1929	1948-1981	
Unemployment rate	5.6%	5.3%	
Real GNP per capita*	2.1	2.1	
Consumer Price Index*	2.2	4.1	

Source: For 1896-1929 [4, 126-35, 211; 6, 167-68]. For 1948-1981 [1, 164-196, 221].

GNP in real terms rose at the average annual rate of 2.1 percent per year. (These years are chosen to minimize any cyclical tilt, since they are in each case peak years before a recession.) For a comparison period suppose that we take a span of time of comparable length ending with 1929 (since, to repeat, the next two decades were distorted by the Great Depression and two major wars). During that period of 33 years, as illustrated in Table I, real GNP per capita rose at an average annual rate of 2.1 percent per year—precisely the same as for the years from 1948 to 1981. We could, of course, argue around the edges of these simple computations, but it is doubtful if we would arrive at any other conclusion than that the modern era has seen a growth in output per capita at about the same rate as in the primordial period prior to 1929.

The pattern is similar for unemployment rate. The period from 1948 to 1981 saw an average unemployment rate of 5.3 percent. This average is pushed up a bit by the higher rates of the 1970s, of course, and the average for 1948 to 1965 was only 4.9 percent. How about unemployment rates during our earlier comparison period? It may come as a surprise, but the average unemployment rate from 1896 to 1929 was 5.6 percent. If we were to omit the years 1896 to 1899, when rates were high because of quite depressed business conditions in the 1890s, the average for the remaining 30 years was 4.7 percent (slightly better than even for 1948-65).

Section 2 of the Employment Act alludes to "other essential considerations of national policy," and high on that list of other considerations would presumably be the behavior of the price level. Once again it will come as no surprise to you that the ancients delivered a better performance than the generation operating with the advantages of macro-theory and the more explicit machinery within government. From 1896 to 1929 the consumer price index rose at the compounded rate of 2.2 percent per year. If the years 1917 to 1921 are excluded, which would be roughly the permanent rise in the price level produced by the War, the price level rose at just over 1 percent annually. That is, of course, considerably better than our performance since 1948. From 1948 to 1981 the consumer price index rose 4.1 percent per year, though from 1948 to 1965 (when Vietnam began to influence the economy) the annual rate was only 1.6 percent.

One further point—and one which may be the source of some discomfiture for those laboring in the vineyard of macro-economic policies—if members of this Association were asked to name the U.S. President in this century least sophisticated about matters of economic policy, a name which would probably appear with considerable frequency in the tabulation (and might even win the plebescite) would be Calvin Coolidge. Yet Silent Cal "up there" could reasonably ask: How did the economy do while I was in the White House? The answer would have to be: "Pretty well." From 1922, when the economy stabilized after the war, to 1929 the price level rose 0.3 percent per year, output per capita

<sup>\*</sup>Average annual increase

rose 3.2 percent annually, and the unemployment rate averaged 3.7 percent. If whoever wins next November could leave the White House with that kind of record he would probably get, and certainly deserve, some benign paragraphs in the history books—after perhaps an initial panning, in order that historians could do their usual 180 degree turnabout a few decades later.

Finally, any review of how we are doing with the management of external economic policy must have something of the flavor of a jeremiad. A review of history during the last two centuries or so suggests that two major moves toward international economic integration were interrupted and for a time reversed [3]. Three sets of developments seemed to have been associated with these reversals. One was a substantial surge of imports into the "developed" world ("developed" always being a relative term) that tended to exert heavy pressures focused on limited segments of the domestic economies. The surge of grain imports in the nineteenth century into Europe from the newer producers such as Australia, Argentina, and North America would come to mind here.

A second force for international economic disintegration has been, of course, a significant deterioration in domestic economic conditions. Again the nineteenth century retreat from a liberal international economic order is illustrative. The 1870s were not a good period for the U.S. economy [7, 201–3]. Industrial output in 1877 was about the same as in 1872. During the 1870s the U.K. economy's output grew about one-third as rapidly as in the following decade. Somewhat the same pattern characterized the French economy, and to a lesser but not trivial extent it was also true for Germany.

Finally, a shift from one hegemonic economy to another (or to some combination of others) has tended to produce an interlude of wobbliness and uncertainty. Whether the stability of the international system prior to World War I was the result of the gold standard or the result of the system's being organized around London is a matter for debate, but the hegemonic role of sterling clearly played a role in the orderly performance of the world economy in that earlier era. The passing of the baton after the war from a U.K. no longer able to run the course to a U.S. not at all anxious to receive it contributed to the inter-war instability of the international economy.

While we are reflecting on the somber domestic economic landscape of recent years, it is not amiss for us to note that we face now all of these destabilizing forces. All three are now present in varying degrees. Obviously there have been surges of exports from Southeast Asia and Japan to Europe and North America that have put heavy pressures on these home industries. Clearly the hegemonic power and role of the U.S. economy and the dollar have faded with the rapid growth of economic activity in particularly Southeast Asia and Japan, and we are in transition to an era probably of multiple currency reserves involving at least the yen and the Deutschemark, whose governments are no more enthusiastic about it than was the U.S. over a half-century ago. Also, domestic economies in the industrial world have not been doing well.

Indeed, we have witnessed international economic disintegration in the literal sense of a more drastic reduction in world trade than in world output. The proportion of world output moving across national boundaries on its way to market has declined. Is it possible that the third great movement toward international economic integration, under way for almost four decades, is now coming to an end?

## III. Major Short Falls Minimized

Now obviously the purpose of this recital was not to produce an exhaustive and sophisticated quantitative evaluation of how we did before the advent of macro-theory as an explicit element in our discipline relative to how we have done with it. Perhaps, as suggested earlier, we would have done even worse without these tools. Moreover, some additional matters would have to be taken into account before making much out of these comparative figures. Unemployment rates ought at least to be corrected for shifts in the composition of the work force. We know that income maintenance programs enable some now to wait out the interlude of unemployment and others to take longer to search for alternative jobs. These programs, in a manner of speaking, thus have as their objective an increase in the duration of unemployment, and the average duration of the span of unemployment and the level of the unemployment rate are obviously closely correlated. In that sense a higher unemployment rate may reflect success on the part of a compassionate society rather than the failure of a malfunctioning economy.

We also know that relatively more economic resources in recent years have been devoted to producing output that improves the environment. Some of this, of course, shows up as measured output—as, for example, safety and pollution equipment embedded in an automobile, which is more car per car. Some, however, is unmeasured output—as, for example, more stringent environmental rules which increase the company's cost of producing a product which itself has not changed. The extent of this diversion of productive resources to unmeasured output is probably not great. Plant and equipment expenditures by businesses for pollution abatement, for example, apparently accounted for only 2.7 percent of their total outlays on fixed facilities and equipment in 1982 [10, 24-26]. Additional amounts would, of course, be accounted for by such other outlays as for occupational safety. For historical comparability we thus should probably add a basis point or so to the increases in real GNP per capita in recent years.

As for the price level during the 1970s, it was subjected to some extra-economic shocks. We moved into the decade with an accelerating rise in the price level from the fiscal and monetary policies of the middle and late 1960s, and during the decade there were two energy price explosions. The role that energy prices played in inflation during the last decade has, however, been exaggerated. These prices have a weight of only 12 percent in the consumer price index. We need to remember that during the 1970s, the price level performance of Japan and the Federal Republic of Germany (for whom oil imports were more important than for the United States) was far better than here.

We should, however, restrain any tendency toward hand wringing. The fact is that our economic performance has been better since the emergence of macro-theory and the almost parallel creation of government structures to take more explicit account of economic analysis in policy decisions. The trend performance of the economy is not better than earlier, but there has been less violent instability around the trend., The most severe departure of the economy from its basic path was the Great Depression when the unemployment rate was 25 percent in 1933, and it was still 15 percent for the year before we became involved in World War II. At the beginning of the comparison period in the 1890s the unemployment rate was in the 12-15 percent range, and in six of the years during that decade it was well above 10 percent. We have had nothing approaching the 1890s or the 1930s in recent decades, and in fact there has been no year since 1940 when the

unemployment rate was of double digit size. Three years, however, escaped by a narrow margin — 1941, 1982, and probably 1983.

By contrast the comparison period 1896 to 1929 had four years with unemployment rates in excess of 10 percent, the highest being 14.5 percent in 1896. The highest five years in this earlier period had an average unemployment rate of 12.2 percent, compared with only 7.6 percent for the highest five years from 1948 to 1981. Some would, of course, argue that this is being prematurely sanguine. Are we once again doing a toe dance along the edge of the cliff, courting the risk of another financial debacle with uncomfortable similarities to that of the Great Collapse from 1931 to 1933? We cannot rule out the possibility that we may be as incapable of rising to the needs of such a crisis as were those who failed in the management of economic policy just a half century ago.

Even so, the economy has clearly been less unstable, more capable of avoiding those major departures from the basic path that occurred not only in the 1930s but also with some frequency at other earlier periods. What economic policy apparently has been unable to do is to alter significantly those forces determining the economy's basic trend or path through time. And that is probably what we would expect. These are forces deeply embedded in the Weltanschauung of a society. And macro-theory could never pretend, except in the formal sense, to say much about how these forces could be altered.

## IV. The Remaining Agenda

While we can be grateful for some evidence of progress in apparently reducing the instability of the economy, there are good reasons for us to be modest about our accomplishments. The international economic mosaic today suggests that major disorder could still emerge. The over-extension of bank loans internationally, which now gives us a debt problem hanging like the Sword of Damocles above the economy, was caused fundamentally not by some metaphysical change in our Weltanschauung, or by bankers suddenly having gone stupid, but by overly expansive monetary policies in the 1970s. That is a dereliction of macro-policies, which it occurred after the renaissance of money in macro-theory. We have actually lost ground relative to our history and relative to the Federal Republic of Germany and Japan in our price level performance. There is some though inconclusive evidence that the capability of the economy to deliver gains in real income and output may have weakened. It is not amiss for us, therefore, to ask ourselves what some implications of these developments may be for economic analysis, theory, and policy.

As we review our experience during recent decades, there are some problems managers of economic policy could reasonably say were caused by our discipline. For one thing, the discipline of economics must assume some of the responsibility for our price level problems of the last decade or so. It was heavily responsible for the fact that a 4 percent rate of unemployment came into the national lexicon as par for the economic course. The evidence of history provided little support for this. If one figure or digit had to be chosen, history would have suggested something closer to 5 percent, and this figure would have required further modification to allow for factors ranging from changes in the composition of the work force to social programs which increased the duration of unemployment. Bogeys influence policy, and economics misled the management of policy by giving credence to a bogey for the unemployment rate whose analytical under-pinning was weak.

A related problem for the management of economic policy was the advice from a considerable proportion of the members of our profession that since output, real income, and employment are the measures of economic welfare, we should accept yet a little more inflation in order to achieve yet a little lower level of unemployment or in order to avoid or postpone higher levels. In retrospect it became clear that thus persistently giving ground before the pressures of inflation was not the route to lower unemployment rates on a sustained basis, and in fact we found that this path led to higher levels of unemployment and inflation by the end of the last decade.

Why were economists excessively sanguine about the benignity of accepting yet a little more inflation? Part of the problem may have been that we did not (and do not) really have a good theory of inflation, and limited diagnostic capability correspondingly limited our capability to prescribe. Perhaps, however, there is another source of our problems. Macrotheory was launched when the need was economic expansion on a large scale. What was then needed was, therefore, also popular. Could it be that when the time came for us to resume our more traditional role of reminding people of something not so popular, a role which has always vexed the poets, we were reluctant to give up our popularity and prescribe what people never really want to hear—namely, that life poses hard choices? "They have," observed the wise and prophetic D. H. Robertson almost a half century ago, "brought the rain from the skies—can they ever afford to admit that their magic powers are even temporarily in abeyance?" [9,27].

Clearly those who must make decisions about economic policy would be in order to suggest that the discipline do some further work on the theoretical foundations of what came to be the center piece of policy—namely fiscal policy. The view that the fiscal operations of government should deliberately be used to compensate for or counter cyclical swings in the economy was a great exercise in intellectual liberation. It gave us the hope, at a time of low hopes and high unemployment, that we had instruments for controlling our own economic destiny. We had an analytical rationale for not doing what the old fiscal mores seemed to decree—namely, that in a recession tax rates should be raised and outlays reduced to exorcise budgetary red ink. And, of course, at the top of the cycle tax rates should be reduced since the Treasury did not need so much money. That the old fiscal orthodoxy logically tended to exacerbate economic instability seemed clear enough—and the emergence of compensatory fiscal policy a few decades ago freed us from this hiatus.

Once again the theory of fiscal policy is in a state of flux. Indeed, all of the canons of budget theory seem far less immutable today than only a few years ago. The combination of relaxed fiscal discipline and more militantly focused interest groups tends to produce a greater collective consumption and investment than what would reflect the true citizen preferences. While achieving a more equal distribution of income seems self-evidently to be a proper objective of the government's fiscal operations, the theoretical underpinnings even here are wobbly [2; 8]. For the practical operation of fiscal policy, we did not clearly see that with the jettisoning of the then old fiscal orthodoxy (that the proper objective for the budget was to balance it) an important baby was being thrown out with the bath water—namely, fiscal discipline. However anomalous the always-balanced budget mores may have been for contra-cyclical policy, a cost-benefit discipline was thereby imposed on the fiscal process. If government proposes to increase spending, which governments are inclined to do, it must impose taxes, which governments are reluctant to do. Crude as this cost-benefit calculus may appear to be, our history suggests that it was not ineffective.

From 1789 to 1929 (excluding major wars) black-ink years out-numbered red-ink years for the budget about three to one. By contrast since 1948 there have been 7 fiscal years with a surplus and 29 with a deficit—this even though the economy's average operating rate in this recent period was apparently not greatly different from that of earlier years.

Indeed, the practical operation of compensatory fiscal theory actually built in a stair step process. Increased expenditures have tended to be used to counter recessions, and increased tax rates to restrain economic conditions during overheated periods. This alternating process has played a role in the persistent and in some cases rapid increases in the share of national income and output absorbed by the public sector that we see in many countries of the industrial world.

We also see, though somewhat belatedly, some analytical problems for economic stabilization. Without the deficits that we have had through the years the levels of income and employment would not *ipso facto* have been lower. At least our \$200 billion deficits have taught us that, with given monetary policy, if the Treasury borrows more, less is left in credit markets for other borrowers, and the net change in the level (in contrast to the composition) of economic activity is less clear.

This leads to a final point here. While in the formal sense external transactions are in our models, current experience reminds us that a nominally expansive budget pressing against monetary policy may leave us, at the least, uncertain about whether the effect on the economy is plus or minus because of effects on trade. High interest rates have drawn funds from abroad, which have produced a 25 percent rise in the dollar's trade-weighted, effective exchange trade since 1980, which has resulted in a sharp deterioration in our external trade position. (Large flows of so-called "safe-haven" funds into the United States have, of course, further contributed to the sharp rise in the exchange rate of the dollar.) For manufactured products the swing has been from a trade surplus of \$18 billion in 1980 to a deficit that this year will be in the \$25-30 billion zone. With this rise in the effective exchange rate for the dollar, no metaphysical change in our economy requiring some sort of new industrial policy is needed to explain what has happened.

Thus our external transactions are now imposing a heavy domestic price on the exercise of an aggressive and independent fiscal policy. The large increase in the proportion of our production and demand moving in international trade (the proportion of our production of products being exported having doubled during the last decade) and the growing internationalization of activity for the world economy generally are correspondingly limiting the elbow room for managing national budget policies.

To state all this is to invite the response that macro-models have not ignored these matters. External trade variables are there, as also financial equations. Yet it is also true that the advice about policy has, at least until the advent of \$200 billion deficits, implied a greater autonomy for budget policy than really existed—and an autonomy that during recent years has been diminishing rapidly further.

While it is, of course, true that those in government at both ends of Pennsylvania Avenue, and perhaps on Constitution Avenue also, could make wiser decisions with a better understanding of economic principles, the good of the cause would also be well-served if economists would deepen their understanding of the institutions of policy. This is no diatribe against theory or mathematics. The most fundamental step forward for our discipline during the last three or four decades has unquestionably been the greater use of mathematical tools and the greater competence of economists in the use of these tools. The

rigor of both theoretical work and quantitative analyses has thereby moved a step-function higher.

In the process, however, the study and understanding of institutions through which economic forces and economic policies work themselves out have been given inadequate attention. The result is that the discipline is in danger of being too wooden, too mechanistic, too unaware of things ranging from what in government has to happen if the parameters of our policy functions are to be changed to even the basic philosophical presuppositions underpinning our economic system.

One area where clearly more work needs to be done is how our institutions and procedures need now to be modified to re-establish discipline in the fiscal process. The Congressional Budget and Impoundment Act of 1974 took a step both ways. The new budget machinery and processes thereby set up in the Congress have been helpful. Removal of the President's power to impound moved toward further relaxing this discipline. The President should once again have some power to impound. Indeed, the President should have the power of item veto. Members of Congress should even favor this because they could then have the best of both worlds. Members could get the credit for trying to load the budget with special interest items, and the President would have the power to do the cleansing necessary for a sane and responsible budget.

On this matter there is a question that economists need to face explicitly. Is the task of restoring fiscal discipline so Olympian that the time has come for some sort of constitutional balanced-budget amendment? Economists have something to offer here—if they will not be too proud to study the seemingly prosaic institutional dimensions of the issues. My own answer is that the time has not yet come for such a draconian approach. It might even be counter-productive, as pressures would mount for imaginative financing end runs around the budget. Moreover, embedding almost numerical specifications into the Constitution would be troublesome certainly, and pernicious probably—just as excessively numerical objectives have largely vitiated the effectiveness of the Humphrey-Hawkins Full Employment and Balanced Growth Act. Such proposals are, however, addressing an important question. How can fiscal discipline be strengthened?

Finally, I offer the kind of comment that you might expect from an elder in the profession. We need to emphasize more of the larger understanding, the larger wisdom. Metaphorically one can envision that today's practitioner might produce a volume with the title "Business Cycles: A Statistical Model of the Capitalistic Process," but "Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalistic Process" requires a range of understanding, wisdom, and interests for which today's graduate studies would not lay down a strong foundation, and such work by young faculty members might not even lead to tenure. Too much of our effort today is art for art's sake — not the use of our mathematical tools to serve economic analysis, but the use of economic phenomena to play with mathematical tools. Harry Johnson, who himself could wield a pretty good equation, expressed somewhat this same concern in his Richard T. Ely lecture to the American Economic Association when he commented on the trend "toward larger and yet larger models of the economic system . . . demanding large sums of scarce research money available only to senior economists and . . . turning young economists into intellectual mechanics whose function was to tighten one bolt only on a vast statistical assembly line, the end product of which would contain nothing that could be visibly identified as their own work" [5, 9]. While we need competence in mathematical tools we also need capability to handle the philosophical underpinnings of the economic system. The great names that would come to mind here would be those such as J. A. Schumpeter, D. H. Robertson, Sumner Slichter, Frank H. Knight, or Gotfried Haberler. The list of great names in any generation will never be long, but a little more attention to these matters by those of us made out of more common clay would be in order. At least it would help to redress an imbalance that has become increasingly troublesome for the theory and management of economic policy.

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