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### An Old Keynesian Counterattacks

James Tobin

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An Old Keynesian Counterattacks

by

James Tobin

March 1993

For Eastern Economic Journal

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AN OLD KEYNESIAN COUNTERATTACKS

James Tobin

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## ABSTRACT

Both New Classical and New Keynesian macroeconomic theorists misunderstand and distort old Keynesian economics, alleging that its diagnoses and prescriptions depend on the indefensible assumption that money wages and prices are "rigid." Here it is argued that all Keynesian macro requires is that labor and product markets are not instantaneously and continuously cleared by perfectly flexible prices. Assuming imperfect flexibility, not necessarily rigidity, suffices to open the door for involuntary unemployment. Moreover, once the economy is displaced from full employment, it is far from clear that economy-wide movements of money wages and prices will, in the absence of Keynesian demand policies, restore equilibrium. The real balance effect is too feeble, and may be overcome by debt burdens. The processes of deflation and disinflation can be inherently destabilizing. These problems, stressed by Irving Fisher as well as by Keynes and Keynesians, are ignored in "new" macroeconomics.

## THE CENTRAL MACROECONOMIC ISSUE

The crucial issue of macroeconomic theory today is the same as it was sixty years ago when John Maynard Keynes revolted against what he called the "classical" orthodoxy of his day. It is a shame that there are still "schools" of economic doctrine, but perhaps controversies are inevitable when the issues involve policy, politics, and ideology and elude decisive controlled experiments. As a lifelong Keynesian, I am quite dismayed by the prevalence in my profession today, in a particularly virulent form, of the macroeconomic doctrines against which I as a student enlisted in the Keynesian revolution. Their high priests call themselves New Classicals and refer to their explanation of fluctuations in economic activity as Real Business Cycle Theory. I guess "Real" is intended to mean "not monetary" rather than "not false," but maybe both.

I am going to discuss the issues of theory, Keynesian versus Classical, both then and now. Since the main purpose and preoccupation of macroeconomic theory is to guide fiscal and monetary policies, the theoretical differences imply important differences in policy. Moreover, prevailing doctrines seep gradually into the ways the world is viewed not only by economists but also by students, pundits, politicians, and the general public. It is in this sense but only in this sense that I shall be talking about current events.

The doctrinal differences stand out most clearly in opposing diagnoses of the fluctuations in output and employment to which democratic capitalist societies like our own are subject, and in what remedies, if any, are prescribed. Keynesian theory regards recessions as lapses from full employment equilibrium, massive economy-wide market failures resulting from shortages of aggregate demand for goods and services and for the labor to produce them. Modern "real business

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cycle theory" interprets fluctuations as moving equilibrium, individually and socially rational responses to unavoidable exogenous shocks. The Keynesian logic leads its adherents to advocate active fiscal and monetary policies to restore and maintain full employment. From real business cycle models, and other theories in the New Classical spirit, the logical implication is that no policy interventions are necessary or desirable.

Should we describe the macro-economy by two regimes or one? The old Keynesian view favors two regimes. In one, the Keynesian regime, aggregate economic activity is constrained by demand but not by supply. If there were additional effective demands for goods and services, they could be and would be satisfied. "Demand creates its own supply." The necessary inputs of labor, capital capacity, and other factors are available, ready to be employed at prices, wages, and rents that their productivity would earn. Only customers are missing.

The second regime, which Keynes called classical, is supply-constrained. Extra demand could not be satisfied at the economy's existing capacity to produce. The needed workers or other inputs are not available at affordable wages and rents. The supply limits bring about prices and incomes that restrict aggregate demand to capacity output. Should capacity increase, those prices and incomes will automatically generate just enough additional purchasing power to buy the extra output. "Supply creates its own demand."

Keynesians believe that the economy is sometimes in one regime, sometimes in the other. New Classics model the economy as always supply-constrained and in supply-equals-demand equilibrium. In their real business cycle models the shocks that move economic activity up and down are essentially supply shocks,

changes in technology and productivity or in the bounty of nature or in the costs and supplies of imported products. Although external forces of those kinds, for example weather, harvests, natural catastrophes, have been the main sources of fluctuating fortunes for most of human history, and although events continually remind us that they still occur, Keynesians do not agree that they are the main source of fluctuations in business activity in modern capitalist societies.

The distinction between the two views can be concretely illustrated by reference to Figures 1 and 2. Charts of this kind were originated by President Kennedy's Council of Economic Advisers in 1961. They were meant to depict a Keynesian view of the U.S. economy. In Figure 1 the wiggly track is the reported real (i.e. inflation corrected, measured in 1987 prices) Gross National Product (GNP). The smooth track is Potential GNP (PGNP), a hypothetical estimate of the growing capacity of the economy to produce goods and services. PGNP approximates the supply constraint on GNP. This cannot, of course, be taken literally. "Capacity" means what can be produced by the normal peacetime operations of a market economy, not what can be done in an emergency mobilization like that of World War II. Sometimes, Figure 1 shows, actual GNP exceeds PGNP. These are situations of unsustainably low unemployment and labor shortage; the economy is overheated and inflation is increasing.

Conceptually PGNP is meant to correspond to full employment, indicated by balance between unemployment and vacancies and by stable rates of change of money wages and prices. In practice, in Figure 1 the unemployment rates when GNP coincides with PGNP rise gradually from 4 to 5 1/2 percent. The proximate determinants of the growth of PGNP are the growth of employment -- which is, since the unemployment rate is held constant, essentially that of the labor force -- and the growth of the productivity of labor. Both of these growth rates slowed

Figure 1

# REAL GNP, ACTUAL & POTENTIAL 1950-1992

log scale, quarterly, '87 \$'s

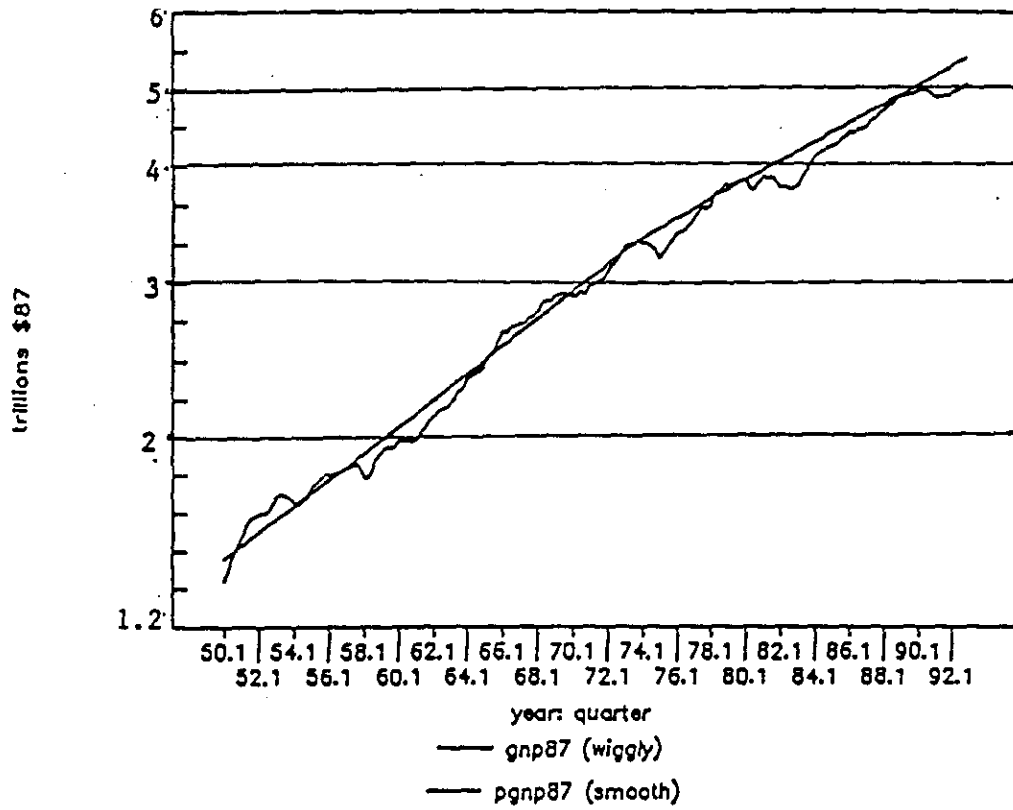
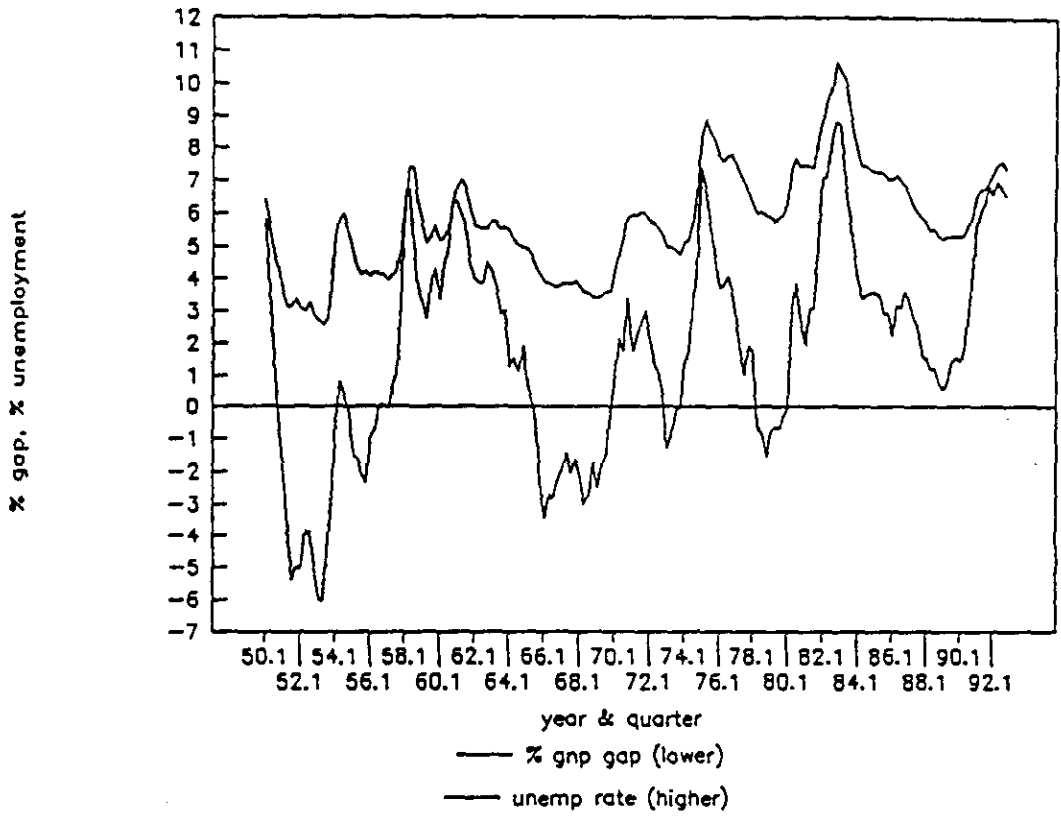




Figure 2

# GNP GAP & UNEMPLOYMENT RATE

Quarterly 1950-1992



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down around 1973: in Figure 1 the slope of PGNP on logarithmic scale is reduced from 3.5 to 2.5 percent in that year.

The sources of PGNP growth are supply phenomena. They are the consequences of demographic and technological trends, which by their very nature change slowly. Actual GNP wanders around PGNP. The Keynesian interpretation of the volatile gap between the two series is that it reflects fluctuations in demand. Spending can and does go up and down more quickly than capacity. When actual GNP falls below PGNP, the economy is in the Keynesian demand-constrained regime. When it is above or equal -- or even, say, 1 or 2 percent below -- PGNP, the economy could be viewed as supply-constrained.

Figure 2 charts the percentage GAP between PGNP and GNP, together with the overall unemployment rate. Clearly the two series go up and down synchronously. However, the amplitude of GAP is much the greater. A one point increase or decrease in the unemployment rate is associated with a 2 1/2 or 3 percent change in the same direction in actual GNP and thus in the GAP. This phenomenon is one of the most important and reliable empirical regularities of macroeconomics. It is known to economists as Okun's Law, because the late Arthur Okun quantified the GAP and its relationship to unemployment for the Council of Economic Advisers to President Kennedy in 1961. The Council wanted to demonstrate to the President and Congress that the economic payoffs of fiscal and monetary stimuli to reduce unemployment went far beyond the direct benefits to the unemployed themselves.

It may seem paradoxical that a one percentage point reduction of unemployment, which might be expected to mean approximately a one percent increase in employment, would raise output by more than one percent, indeed a great deal more. The answer is that the same spending that reduces unemployment

rates raises labor inputs to production in other ways: increased hours of work, movement of discouraged workers into the labor force, and more efficient use of overhead workers and of other redundant workers kept on payrolls in hard times.

Apostles of New Classical Macroeconomics and Real Business Cycle Theory reject the Keynesian interpretation. For them, there is no PGNP path distinct from actual GNP. The fluctuations of actual GNP are also fluctuations of PGNP, caused by shocks to the economy's productive capacity. One could of course draw a trend, a moving average, through the GNP path. But it would be purely descriptive. It would have no macroeconomic significance. There is only one regime. The economy is always against its supply constraint. It is never demand-constrained in the sense that demand falls short of the normal capacity of a market economy. The economy is continuously at full employment, but the unemployment rate corresponding to full employment fluctuates from one quarter to the next.

Keynesians interpret the quarter-to-quarter and year-to-year fluctuations of unemployment as largely involuntary: Workers whose marginal productivities are no less than existing real wages are willing to take such jobs, but the jobs don't exist. New Classics, in contrast, regard all unemployment as voluntary; workers choose to withdraw from or enter or re-enter the labor force as the advantages of employment change relative to other uses of time. The supply shocks that drive the economy also change those advantages and those choices.

Practical people -- forecasters of business conditions, business managers, politicians, workers, even bankers and central bankers -- are instinctively Keynesians, especially during recessions. They realize that companies lay off workers and even shut down when their sales fall off. They blame cutbacks in defense for unemployment in Groton, Connecticut, where submarines are built, and

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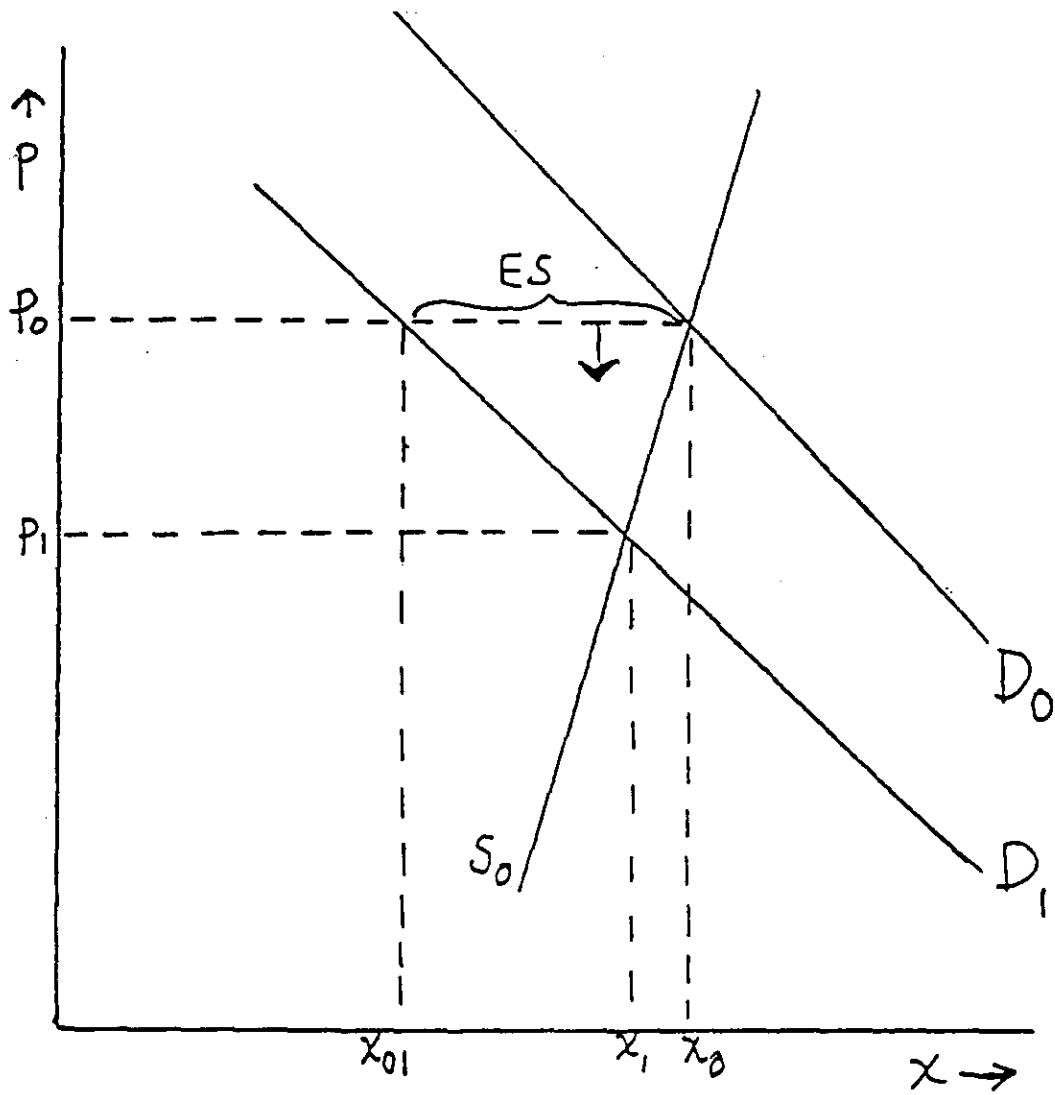
blame declines in air travel for hard times in St. Louis and Seattle, where aircraft are made. But the dominant theory in academic macroeconomics today has no room for economy-wide demand shocks and demand-side recessions.

How come? It all has to do with market-clearing, specifically the role of prices in clearing markets, that is, in equating demand and supply. The favorite assumption of orthodox economic theory, classical or neoclassical or new classical, is that the price in any market is determined by the condition that supply equal demand. That is pictured in economists' favorite diagram for beginning students, and it is the unquestioned assumption of Ph.Ds. Figure 3 is such a diagram, for a single commodity and its market. If the demand curve is  $D_0$  and the supply curve is  $S_0$ , the price is  $p_0$  and the quantity is  $x_0$ . Should demand shift to  $D_1$  while supply remains at  $S_0$ , price moves to clear the market at  $p_1, x_1$ .

Does such a price adjustment occur instantaneously, so that there is no real time during which the markets fail to clear? Is there no real time during which price stays at  $p_0$  and sellers are able to sell only  $x_{0i}$  even though they would like to sell  $x_0$ , so that there is excess supply of ES? The arrow pointing downward reflects what we tell our introductory students. If there is excess supply in a market, the price falls. The question is "How fast?" Should we model the whole economy as if all markets, labor markets as well as product markets, are cleared by price adjustments at every moment of time? If so we are altogether ruling out excess demands and excess supplies -- in particular, involuntary unemployment -- and assuming that all the prices and quantities we observe reflect demand/supply equalities, in other words that no non-price rationing of sales among buyers or sellers occurs. This is the essence of the Keynesian-New Classical dispute.

Figure 3

SUPPLY, DEMAND, MARKET-CLEARING



## DEJA VU: THE SAME MACROECONOMIC CONTROVERSY SIXTY YEARS AGO

It's nothing new. The same controversy occurred in the 1930s. It was pretty hard to maintain classical orthodoxy during the Great Depression. But in the absence of any intellectually respectable alternative, the classical supply-constrained, market-clearing model was used by economists in diagnosing, misdiagnosing, the depression and by policy-makers in resisting demand-creating remedies. What came to be known as the "Treasury View" in Britain was echoed in the United States, by the Hoover Administration, the Federal Reserve, and initially by the Roosevelt Administration too, and in Germany by the Bruening government, the last government of the Weimar Republic before Hitler.

John Maynard Keynes started revolting against orthodox theories and policies in 1925, when the depression was beginning in Britain. But it was not until he wrote The General Theory of Employment, Interest and Money (1936) that he could present a coherent theoretical alternative. The intention of the word "General" in the title was precisely to distinguish his theory from the "classical" supply-constrained market-clearing model. He did so by arguing that economies like those of the U.K., Western Europe, and the U.S. are usually in demand-constrained regimes. In the next 20 or 25 years, the Keynesian Revolution swept the profession and became generally accepted mainstream wisdom. Twenty years later a classical counter-revolution had reopened the debate of the 1930s and put Keynesian economics on the defensive.

According to the synthesis of classical and Keynesian macroeconomics reached by 1960, Keynesian macroeconomics is short-run. It does not pretend to apply to long-run growth and development. It does not tell poor countries how to lift themselves out of poverty or rich countries how to be richer fifty years

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hence. In the long run -- perhaps with the help of Keynesian policies -- markets will somehow clear, new workers will get jobs, and the fruits of technological progress will be realized.

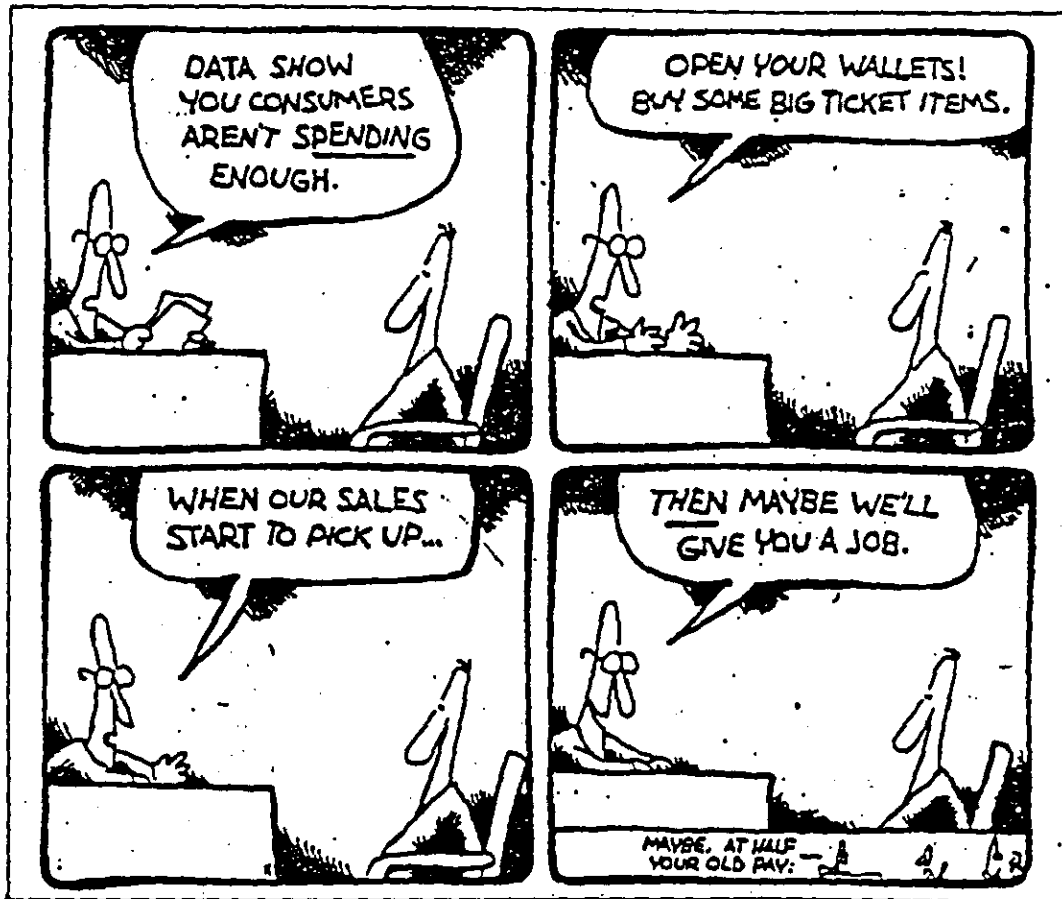
In the 1930s Keynes suspected that involuntary unemployment was not just a transient cyclical phenomenon but a chronic defect of advanced capitalism. In New England's Cambridge Alvin Hansen (1938) warned of secular stagnation. Those views were natural enough in the 1930s. Both Keynes and Hansen were depicting outcomes to be feared in the absence of the remedial policies and institutions of demand stabilization they were recommending. It can be argued that habitual application of those remedies after World War II, reinforced by the expectation that they would be used, moderated the severity of cyclical departures from the full employment path.

The most important innovation of the General Theory, according to its author, is what he called the principle of effective demand. This is his term for the demand constraint I described above. The word "effective" captures the idea that workers can spend on goods and services only the wages they actually earn from employment, not the amounts they would spend if they had all the jobs they would like to have at existing wages. Likewise, employers can hire workers only to the extent they are needed to produce the goods and services they can sell. During the recent recession this impasse was nicely captured by a cartoonist with economic intuition. (Figure 4).

Keynes's "classical" opponents in the 1930s were much more moderate than their descendants today. In the General Theory Keynes's foil was his long-time friend and Cambridge colleague, Professor A.C. Pigou. Neither Pigou nor other orthodox economists of the day were arguing that a model in which prices cleared

Figure 4

KEYNES'S MACROECONOMIC IMPASSE  
The Principle of Effective Demand



**Tom Toles**  
The Buffalo News  
Universal Press Syndicate

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all markets at every instant of time was a reliable approximation to actual economies or a practical guide to government policies. The debate was about the efficacy and speed of the economy's natural recuperative mechanisms. If shocks occur that bring about unemployment, will they set in motion corrective adjustments that restore full employment equilibrium? Specifically, will deflation (or disinflation), the wage and price declines that naturally result from excess supplies (like ES in Figure 3), do the job? Will they do it without help from countercyclical fiscal and monetary policies? Keynes said "No, or anyway not always, and if ever, not soon enough." Pigou said "Yes, surely yes, eventually anyway." As a theorist, his main concern was to deny that Keynes's demand-constrained outcomes deserved the status of equilibria in the sense that they would repeat themselves indefinitely in the absence of external shocks. Pigou resented that word General. But as a practical matter he agreed with Keynes on public works spending as a means of reducing unemployment.

In contrast, New Classical theorists today do not allow excess supplies or demands ever to arise in the first place. Thus they finesse the Keynes-Pigou issue, the speed and efficacy of natural adjustment mechanisms in eliminating discrepancies between demand and supply.

#### THE PRICE FLEXIBILITY CONTROVERSY

What young theorists today describe as Keynesian economics is a caricature of the true thing. Here is a description by authors who, by labeling themselves New Keynesians evidently intend to convey sympathy.

"According to the Keynesian view, fluctuations in output arise largely from fluctuations in nominal aggregate demand. These fluctuations have real effects because nominal wages and prices are rigid...[T]he crucial nominal rigidities were assumed rather than explained. [although] it was clearly in the interests of agents to

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eliminate the rigidities they were assumed to create...Thus the 1970s saw many economists turn away from Keynesian theories and toward new classical models with flexible wages and prices." [My emphasis] [Ball, Mankiw, and Romer 1988, 1]

Those new classical models are market-clearing models, and they have not just flexible prices but perfectly and instantaneously flexible prices, an assumption that is surely more extreme, more arbitrary, and more devoid of foundations in individual rational behavior than the imperfect flexibility assumed in Keynesian models. There is a great deal of semantic double-talk in the assertion that the macroeconomic market failures described by Keynesian models vanish if money wages and prices are assumed flexible rather than rigid.

Price flexibility is not a yes-or-no circumstance. Consider instead a spectrum of the degree of price flexibility, from complete flexibility at one extreme to complete rigidity at the other. Complete flexibility means instantaneous adjustment, so that prices are always clearing markets, jumping sufficiently to absorb all demand or supply shocks. Complete rigidity means that nominal prices do not change at all during the period of analysis. In between are various speeds of price adjustment, various lengths of time during which markets are not clearing.

Who owns the middle ground? We Keynesians do, despite common beliefs to the contrary. Keynes and Keynesian economists did not assume complete rigidity, nor did they need to. It is not true that only an arbitrary and gratuitous assumption of complete rigidity, converting nominal demand shocks into real demand shocks, brings into play Keynes's multipliers and other demand-determining processes (including the IS/LM curves taught to generations of college students). Any degree of stickiness that prevents complete instantaneous price adjustment has

the same qualitative implications.

In the quotation above, "nominal aggregate demand," means aggregate dollar spending on goods and services. This is not what Keynes meant by "effective demand." He was referring to demands for quantities of goods and services, measured in constant prices, not in current dollars. He stressed changes in these real demands, not mindless changes in total dollar spending irrespective of what dollars could buy, as the sources of depressions and prosperities. Only people who formed their opinions of Keynesian economics without reading Keynes could make this mistake.

What is true is that Keynes stressed that we live in a monetary economy, as opposed to a frictionless market-clearing barter economy. Prices, including wages and salaries, are quoted in dollars. It is dollar prices that initially respond to excess supplies and demands, not real or relative prices, which value each commodity or service in terms of other commodities. In insisting on this fact, Keynes was deviating from a cherished principle of classical theory, the proposition that "money is a veil" behind which everything works out as it would in a miraculously efficient barter economy. Money is neutral. It affects nominal prices but not real variables. According to this proposition, which Don Patinkin (1956) called "the classical dichotomy," people do not value money for its own sake and therefore behave in ways that produce the same real outcomes regardless of how much money is circulating. Real prices, the terms of trade between commodities, are the same whether dollar prices are high or low and whether they are inflating, deflating, or stable. Dudley Dillard (1988) called this the "barter illusion" of classical economics.

In any single small market of a large economy, the distinction between money price and real price may be negligible. If a fall in the demand for bagels

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leads to a decline in their prices in dollars, that is also a decline relative to prices of gasoline, videotapes, plumbers, and everything else. If Figure 3 applies to bagels, we would not have to specify whether the price on the vertical axis is cents per bagel or fractions of a standard shopping-cart package per bagel, and we could assume that the demand and supply curves stay in place as the bagel price moves.

In attacking the classical assumption that markets are continuously cleared by price adjustments, Keynes stressed labor markets in particular, asserting that wages do not move fast enough to avoid excess supplies of labor -- involuntary unemployment -- at prevailing wages. The difference between money price and real price, negligible for a local bagels market, is crucial for an economy-wide labor market. It is the real wage -- the value of wages in goods produced and consumed -- that should equate employers' demands for labor with workers' willing supplies. When shocks throw this market out of equilibrium, these real-wage demand and supply schedules may well stay put as wages and other prices adjust. But if in Figure 3 the money wage is the price on the vertical axis, we cannot assume that the demand and supply schedules stay in place as the money wage declines. The demand for labor will certainly depend on the wages that the workers are paid and spend on the products they themselves make, as the intuitive cartoonist-economist understood.

Therefore, if an economy-wide excess supply of labor arises and leads to a fall in money wages throughout the economy, it is by no means obvious that real wages fall as much -- or at all. Quite possibly, employers just reduce proportionately the dollar prices of the goods they produce. Keynes argued that workers could be quite willing to take jobs at lower real wages but have no way

to communicate this willingness.

The question boils down to whether proportionate deflation of all nominal prices, both money wages and product prices, will or will not increase aggregate effective real demand. This is a complicated matter, and I cannot do it justice here. Two issues in this debate need to be distinguished. The first concerns the relation of real aggregate demand to the nominal price level. The second concerns its relation to the expected rate of change of nominal prices.

Keynes in Book I of The General Theory denied that real aggregate demand was related at all to the price and money wage level. In effect, he turned the classical neutrality proposition against the classicals. If all money wages and prices are lowered in the same proportion, how can real quantities demanded be any different? Thus, if real demand is deficient, how can a purely nominal price adjustment undo the damage?

Actually Keynes himself provided an answer in a later chapter. If the nominal quantity of money remains the same, its real quantity increases, interest rates fall, and real demand increases. This mechanism would fail if demand for money became perfectly elastic with respect to interest rates -- the "liquidity trap" -- or if demand for goods for consumption and investment were perfectly inelastic.

Pigou [1943, 1947], Patinkin [1948], and other authors provided another scenario, the "Pigou effect" or "real balance effect," which alleges a direct positive effect on spending resulting from households' increased wealth, in the case at hand taking the form of the increased real value of their holdings of dollar-denominated assets. This effect does not depend on reduction of interest rates.

To an astonishing degree, the theoretical fraternity has taken the real

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balance effect to be a conclusive refutation of Keynes. Yet this effect is of dubious strength, and even of uncertain sign. Most nominal assets in a modern economy are "inside" assets, that is the debts of private agents to other private agents. They wash out in accounting aggregation, leaving only the government's nominal debt to the private sector as net wealth. Some, though probably not all, of the interest-bearing debt is internalized by taxpayers who feel poorer because of the taxes they expect they or their heirs to have to pay to finance the interest payments. The base of the real balance effect is therefore quite small relative to the economy. In the United States today the monetary base, the non-interest-bearing federal debt, is only 6 percent of GNP.

While Don Patinkin [1948] stressed the theoretical importance of the real balance effect, he disclaimed belief in its practical significance. In the Great Depression, he pointed out, the real value of net private balances rose 46 percent from 1929 to 1932, but real national income fell 40 percent.

That inside assets and debts wash out in accounting aggregation does not mean that the consequences of price changes on their real values wash out. Price declines make creditors better off and debtors poorer. Their marginal propensities to spend from wealth need not be the same. Common sense suggests that debtors have the higher spending propensities -- that is why they are in debt! Even a small differential could easily swamp the Pigou effect -- gross dollar-denominated assets are 200 percent of United States GNP.

Irving Fisher [1933] emphasized the increased burden of debt resulting from unanticipated deflation as a major factor in depressions in general and in the Great Depression in particular. Fisher's wealth redistribution effect is quite possibly stronger than the Pigou and Keynes effects combined, particularly when

output and employment are low relative to capacity. This may be one reason for the weakness of demand in world economies the past four years.

An even more important argument refers to rates of change of nominal prices. The process of change works on aggregate demand in just the wrong direction. Greater expected deflation, or expected disinflation, makes people want to hold money rather than buy goods. It is an increase in the real rate of interest, necessarily so when nominal interest rates are constrained by the zero floor of the interest on money. This is another factor Fisher stressed in his explanation of the Great Depression. Keynes stressed it too, as a pragmatic reinforcement of his overall argument.

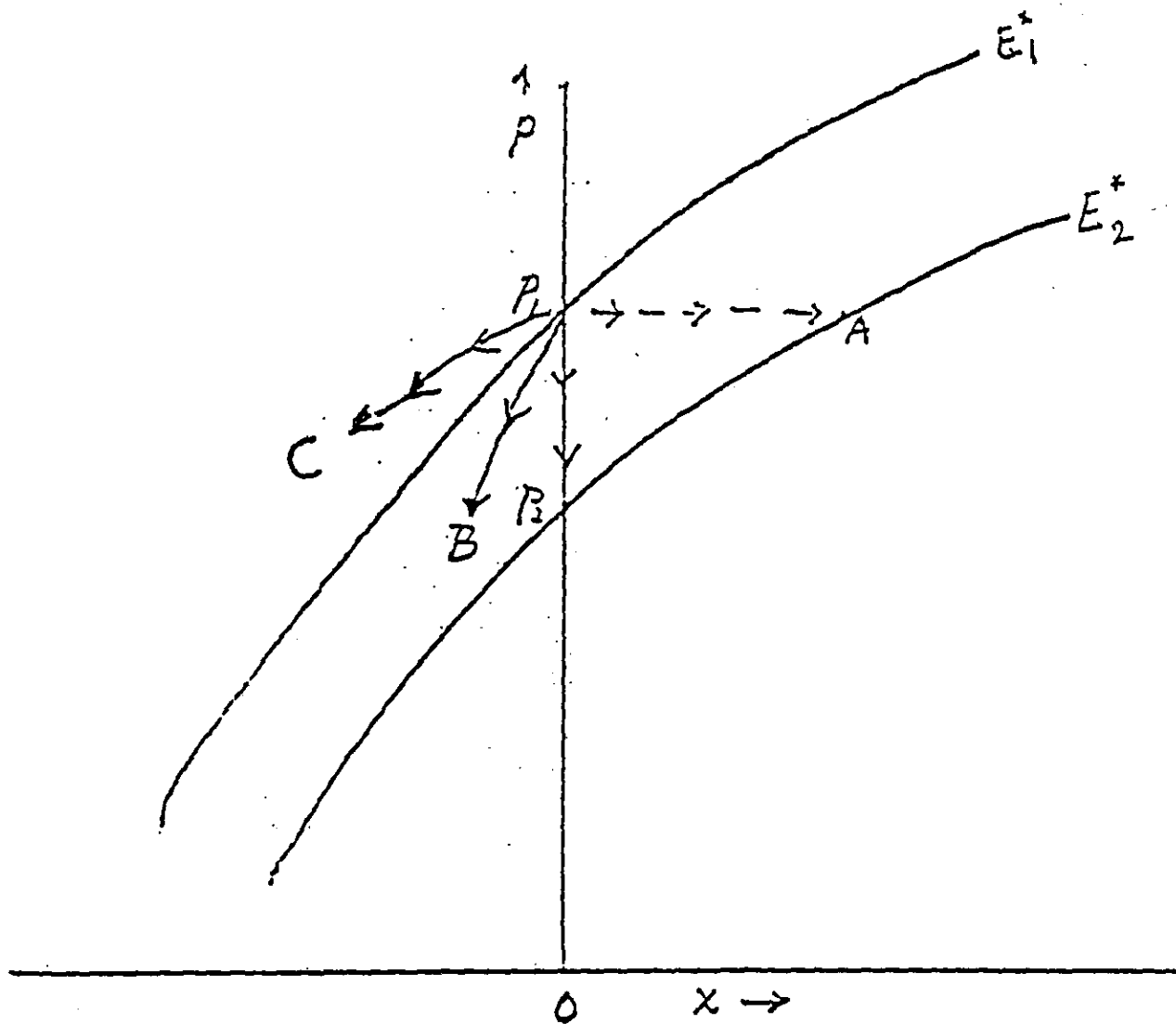
The process of price change matters when the change takes place in real time, because during the transition it tends to move the demand/supply balance in the wrong direction. After a negative demand shock an increase in demand associated with a lower price level is required to restore equilibrium; a falling price actually diminishes demand.

Not surprisingly, the New Classicals, and evidently the self-styled New Keynesians too, take the easy way out. The possible instability of the price-adjustment process is an embarrassment. They tacitly avoid it by assuming perfect flexibility, so that after surprise shocks prices jump to their new equilibria without passage of time.

The problematic stability of real-time price adjustment is evident in Figure 5. Here the horizontal axis represents expected price deflation or inflation,  $x$ . The vertical axis represents  $p$  the log of the price level. An upward sloping curve like  $E_1^*$  plots combinations  $(x, p)$  of expected price change and price level that generate the same aggregate real demand  $E$ . The slope reflects the assumptions that demand is related negatively to the price level and

Figure 5

AGGREGATE DEMAND RELATED TO PRICE LEVEL AND PRICE CHANGE  
The Questionable Stability of Price Adjustment





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positively to its expected rate of change. In given circumstances, a higher curve refers to a lower demand  $E$  and a lower curve to higher demand. The curvature of the  $E^f$  loci reflects the assumption that the "Keynes effect" of increases in real money balances in lowering interest rates declines as those balances rise and interest rates fall.

Suppose that initially the "isoquant"  $E_1^f$  makes demand equal to full employment equilibrium output  $Y^*$ , here taken to be constant. Points above or left of that isoquant are positions where  $E$  is lower than  $Y^*$ , characterized by Keynesian unemployment. Points below or right of  $E_1^f$  are positions of macroeconomic excess demand. In Figure 5, the equilibrium inflation rate (expected and actual) and price are  $(0, p_1)$ . Suppose now that a discrete one-time negative shock to real demand shifts the isoquant for  $E=Y^*$  down to  $E_2^f$ , so that the new equilibrium inflation rate and price are  $(0, p_2)$ . The old isoquant  $E_1^f$  now implies an  $E$  lower than  $Y^*$ . To restore equilibrium the price level must fall from  $p_1$  to  $p_2$ . How is the price decline to be accomplished? One scenario is the New Classical miracle, an instantaneous precipitous vertical descent, so that there is no time interval during which actual or expected price changes are other than zero. If jumps of that kind in  $p$  are excluded, there is no path of actual price changes and rationally expected prices that avoids departure from  $E=Y^*$  during the transition. It would take a burst of positive inflation, actual and expected, to offset the negative demand shock, as at point A. But this would move the price level in the wrong direction.

The likely scenario is a path like B or C in Figure 1: The excess supply that now characterizes the initial equilibrium point  $(0, p_1)$  and the first isoquant starts prices declining, and the anticipation of their decline is bad

for aggregate demand. Along B the real balance effect is strong enough to overcome the negative effects of the deflation; aggregate demand  $E$  is increasing as the path hits lower isoquants. The new equilibrium may be attained, though probably by a damped cyclical process. Along C, however, the price level effect is too weak to win out, and the gap of  $E$  and  $Y$  below  $Y^*$  is increasing.

Fisher and Keynes both thought that output and employment would be less volatile if money wages and prices were fairly stable, rather than flexible. They were right. In [Tobin, 1975] I exhibited a simple formal macroeconomic system, classical in the sense that it has only one equilibrium, which is characterized by full employment and a constant price level. It is easy to specify plausible dynamics that make the equilibrium unstable, because the price-change effects outweigh the price-level effects. Moreover, the system could be stable locally but unstable for large displacements.

The question whether price flexibility (in any sense short of the perfect-flexibility fairy tale) is stabilizing has begun to receive considerable attention. Delong and Summers [1986] have investigated this question using the Fischer-Taylor staggered-contract model [Fischer, 1977; Taylor, 1980], amended to allow both price-level and price-change effects on demand. Their most interesting simulation has the intuitively desirable property that close to the limit of perfect price flexibility greater price flexibility means greater output stability, while farther away from it the reverse is true. Similar results are obtained by Caskey and Fazzari [1988] and Chadha [1989].

#### EMPIRICAL EVIDENCE

We do not need fancy econometrics to mobilize evidence against the "real business cycle" view that observed fluctuations in output and employment are

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movements in price-cleared equilibrium. Here are a number of regularities of U.S. business cycles that falsify the implications of the New Classical hypothesis. [Okun, 1980]

1. Unemployment itself. If people are voluntarily choosing not to work at prevailing wages, why do they report themselves as unemployed, rather than as "not in labor force"? Real business cycle theory explains fluctuations of unemployment as intertemporal choices between work and leisure. Workers drop out when real wages, the opportunity costs of leisure, are temporarily low relative to what they expect later. This might be an explanation of cyclical movements in employment if real wages were strongly pro-cyclical, but there is no such systematic regularity. Nor is there empirical evidence of high sensitivity of labor supply to current and expected real wages.

2. Unemployment and vacancies. New classicals ask us to believe that the labor market is in equilibrium at 9 percent unemployment, the same as it is at 5 percent. If so, there would be no reason to expect the balance between unemployment and job vacancies to be any different in the one case than in the other. Both unemployment and vacancies would be higher in recession. However, a strong negative association between unemployment and vacancies -- as would be expected in Keynesian theory -- is obvious in the U.S. and other market capitalist economies.

3. Quits and layoffs. If recessions and prosperities are both equilibria, there is no reason to expect the relative frequency of voluntary quits from jobs and involuntary "separations" to be any different. But of course there are many more layoffs, relative to quits, when unemployment is high and vacancies are scarce. There are many more "job losers" relative to "job leavers" in recessions.

4. Excess capacity. The utilization of plant and equipment varies cyclically parallel to the utilization of labor. Presumably machines are not choosing leisure voluntarily.

5. Unfilled orders and delivery delays. These move pro-cyclically, again suggesting strongly that demand is much higher relative to supply in prosperities than in recessions.

6. Monetary effects on output. According to the "classical dichotomy," monetary events and policies should affect only nominal prices. Real outcomes should be independent of them. The evidence that this is not true is overwhelming.

The list could go on. Why do so many talented economic theorists believe and teach elegant fantasies so obviously refutable by plainly evident facts? Trying to answer that question would take us into a speculative excursion on the sociology of the economics profession, beyond the scope of this paper.

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### NOTE

This paper is a written version of my lecture at the 1992 annual meetings of the Eastern Economic Association in New York City. The lecture and this paper draw on a longer paper with a similar message [Tobin, 1993]. I would like to express my gratitude for the faithful and valuable research assistance of Mitchell Tobin, Yale College 1992 (no relation).

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