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HOW DOES IT MATTER?

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ABSTRACT

This paper argues that the distinctions among different current theories of the business cycle do not have the force usually assumed in their behalf in discussions of macroeconomic policy. The distinction between aggregate demand and aggregate supply as the principal location of the disturbances that drive business cycles -- the distinction most popularly associated with "real business cycle" models -- is, from a policy perspective, less important than is commonly believed. The policy prescriptions that follow from these models have more to do with the kinds of assumptions that they incorporate about how markets function than with whether the chief disturbances to which the economy is subject work through demand or supply. At the same time, a further set of distinctions not customarily addressed in the business cycle literature, mostly revolving around the definition of "income," turns out to be surprisingly important. Finally, yet further issues, which traditionally receive too little attention from economists, arise from the fact that the people and the business institutions that make up the private sector of a modern industrialized economy are vastly heterogeneous, and that democratic forms of government, for all their virtues, have not been very effective in arranging appropriate transfers from one group to others as the need arises.

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Making economic policy typically requires positive as well as ethical judgments. Any kind of public policy inevitably involves fundamental presumptions that classify some aspects of human experience as desirable and others not, and that value some of these desirables more highly than others. (It is no accident that "policy" has the same root as "politics.") At the same time, if the actions taken are to be at all effective in promoting the ends sought, they must reflect a not wholly inaccurate perception of how they relate to the aspects of experience they are supposed to influence. In the case of economics, an essentially behavioral field of inquiry, the central question for policy purposes is how (if at all) individuals and institutions will alter the conduct of their affairs in response to any of the vast variety of changes that economic policy can bring about in the environments they face.

Macroeconomic policy is certainly no exception in this regard. Here too, the notion of which outcomes are desirable and which are not -- most obviously, the inherent desirability of a higher rather than lower standard of living, appropriately defined, over time -- must ultimately be assumed, not established. And here too, positive questions about the connection between

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public policy actions and specific developments bearing on the achievement of these objectives -- do large government deficits depress private capital formation? does tight monetary policy dampen overall economic activity? -- are central.

Moreover, many of the positive questions that bear most importantly on policymaking in the macroeconomic sphere are inherently quantitative, and not merely in the sense that empirical evidence is necessary to judge among competing theories of the same phenomenon. Simply asking which theory "explains" unemployment, for example, misses the point that with anywhere from six to eleven million people unemployed at any given time (in the United States, during the last decade), there is ample room for different sets of circumstances and responses to underlie the condition of different would-be workers. But conversely, simply asking whether any specific theory of unemployment is "true," in the sense that it accounts for the condition of at least some empirically detectable number of would-be workers, also misses what policymaking is, or ought to be, all about. The right question from a policy perspective is which theory or theories, if any, can account for enough of the observed unemployment to serve as a plausible guide to useful policy.

Business cycles -- the subject of this conference, and hence of this paper -- have traditionally figured prominently in macroeconomic research, although it is important not to confound the study of business cycles with the entirety of policy-relevant macroeconomics. Price inflation often varies with the business cycle, to be sure, but inflation also can and does occur on a time scale different than that which defines most business cycle research, and inflation can and does arise from causes not directly related to the business cycle. Economists have also recently taken up with renewed vigor the question of what makes economies grow, and whether countries that start out either

richer or poorer than one another will converge economically, over even longer spans of time. These matters are also part of macroeconomics, and they too bear importantly on key issues of public policy.

Even so, the study of business cycles -- what accounts for the irregularities surrounding whatever growth trend aggregate economic activity follows, and in particular what causes occasional episodes of apparent underutilization of the society's available economic resources -- is the heart of macroeconomics. After all, macroeconomics as a distinguishable sub-field within the discipline was born of economists' perplexity at the events of the 1930s, which not only challenged existing economic orthodoxies but also, for a time, threatened the integrity of several countries' democratic political structures. The positive question of why so many people were out of work and factories idle, and the corollary issue of what public policy could or should do to ameliorate the resulting human hardship, were, in the first instance, what the subject was all about. Although the aggregate-level fluctuations observed in the world's advanced industrialized economies in the post-Depression era have been both less severe and less distressing, in human as well as political terms, the same questions have largely framed this line of study ever since.

Modern research on business cycles revolves around several important distinctions, distinctions that appear to correspond to policy prescriptions no less than to positive economics. The line of research that grew most directly out of the Depression experience, and that dominated the first quarter-century of thought on the subject following World War II, emphasized fluctuations in the public's demand for goods and services. The implicit assumption behind this focus on demand was either that the economy's ability to produce goods and services was highly elastic, or that that ability, if less elastic, at least

did not experience sharp movements over business cycle horizons. The remaining question was then why the demand for goods and services fluctuated, including fluctuations that at times carried demand in the aggregate below what the available resources could readily supply. The main distinction this line of research came to emphasize was that between "monetary" disturbances, which disrupted the equilibrium between the public's desire to hold cash balances and the banks' ability to create those balances, and such non-monetary factors as changes in government spending and revenues or "autonomous" shifts in households' desire to consume or in firms' desire to invest. (See the survey paper prepared for this conference by David Laidler.)

The economic events of the 1960s and 1970s, however, undermined confidence in the assumptions behind this exclusive focus on disturbances to the demand for goods and services as the source of business fluctuations. First, the emergence of rapid price inflation, as a by-product of the effort in many countries to stimulate demand so as to achieve ever higher levels of employment, made the corresponding supply appear less elastic than policymakers in those countries had hoped. Then the quadrupling of petroleum prices by the OPEC cartel (and subsequent redoubling, several years later) showed that aggregate supply could be not just inelastic but subject to disturbances just as abrupt, and apparently just as important for business fluctuations, as those highlighted in the earlier demand-oriented research. The emergence of a new set of business cycle theories primarily emphasizing disturbances to aggregate supply, in contrast to either strand of the earlier demand-based theories, framed yet another important distinction from which continuing research drew normative as well as positive conclusions. Over time, the ensuing "real business cycle" approach came to encompass not merely disturbances to aggregate supply but also those disturbances to aggregate demand that entered the story

in an analytically parallel fashion. (See the survey paper prepared for this conference by Olivier Blanchard.)

The object of this paper is to question whether the distinctions among different theories of the business cycle actually have the force usually assumed in their behalf in contemporary discussions of macroeconomic policy. To anticipate, these distinctions do carry important implications about which macroeconomic policies are likely to be more efficacious than others in a business cycle context, and about how best to carry out these policies. The distinction most popularly associated with the debate over "real business cycle" theories, however -- that is, the distinction between aggregate demand and aggregate supply as the principal location of the disturbances that drive business cycles -- is, from a policy perspective, less important than is commonly believed. The policy prescriptions that follow from most "real business cycle" models have more to do with the kinds of assumptions that these models incorporate about how markets function than with whether the chief disturbances to which the economy is subject work through demand or supply. At the same time, a further set of distinctions not customarily addressed in the business cycle literature, mostly revolving around the definition of "income," turns out to be surprisingly important. Finally, yet further issues, which traditionally receive too little attention from economists, arise from the fact that the people and the business institutions that make up the private sector of a modern industrialized economy are vastly heterogeneous, and that democratic forms of government, for all their virtues, have not been very effective in arranging appropriate transfers from one group to others as the need arises.

Aggregate Supply Versus Aggregate Demand: A Conventional View

In analysis along the line of the earlier post-war business cycle literature, in which the focus is on aggregate demand and the question at issue amounts to whether the chief disturbances to that demand are monetary or non-monetary, the analysis nearly always points to at least the potential usefulness of one or another kind of corrective policy intervention. If increased concerns about the risks embodied in non-money assets lead investors to want to hold a larger share of their portfolios in money balances, the central bank in a fractional reserve banking system should expand the quantity of bank reserves, so that banks can accommodate the larger demand for deposit creation. If a decline in stock prices leads households to want to cut back on their consumption spending, the fiscal authority should either increase its own spending or stimulate private spending by reducing taxes, or the central bank should stimulate interest-sensitive elements of private spending, like home building or automobile purchases, by increasing the quantity of bank reserves sufficiently to reduce market interest rates. And so the story goes.

Needless to say, a host of assumptions about the behavior of households and businesses, and about the economic environment that they face, underlies these policy inferences. As is well known, a non-accommodated disturbance to the demand for money -- or, in the same vein, an action by the central bank to increase the supply of bank reserves -- would not affect real economic activity if prices and wages were perfectly flexible, if credit markets were subject to neither ordinary frictions nor failures due to asymmetric information, and if none of the other familiar sources of monetary non-neutrality were present. Increased government spending would not stimulate real economic activity if whatever the government purchased were perfectly substitutable for private consumables. Nor would tax changes affect economic activity if all taxes were

lump-sum, if credit markets were perfect (so that, for example, no one faced liquidity constraints), and if no such factors as childlessness or immigration or uncertainty over future incomes rendered the appropriately discounted value of taxes to be levied at some undefined future date less than that of taxes to be paid forthwith. But in light of the readily apparent gulf between these sets of rarified conditions and the economies in which actual households and businesses carry out their affairs, the assumption that money is not neutral, or that government spending and tax changes do affect economic activity, is certainly plausible enough.

Within the demand-oriented approach, the distinction between policy interventions that are likely to be actually versus only potentially useful turns importantly on assumptions about how much knowledge policymakers have. Early contributions to this literature established that uncertainty about forces or events that will affect the economy in the same way regardless of what actions policymakers take need not impair the effectiveness of policy interventions. By contrast, uncertainty about the magnitude and timing of the consequences of policy actions themselves clearly blunt the ability of such interventions to do any good at all. Indeed, without at least some minimum of knowledge about the how and when of such effects, an interventionist policy might well be destabilizing. These concerns are especially relevant for monetary policy in light of the familiar finding that the lags by which central bank actions affect economic activity are both long and variable. As a result, much of the debate within this literature over the relative merits of a more versus less activist stance for monetary policy have in fact hinged on the uncertainty issue, more so than on any disagreement over behavioral questions like whether money might be neutral.

Given the assumption that macroeconomic policy actions can stimulate or retard aggregate demand with at least some modicum of reliability on average over time, the guiding presumption of the demand-oriented business cycle literature is that they should do so in such a manner as to even out, in so far as is possible, disturbances affecting aggregate demand. The rationale underlying this presumption is simply that in the best of all worlds -- which by the economist's standard assumption is, of course, a world free of all impediments to market-clearing equilibrium, so that all relevant marginal this's always equalled the appropriate marginal that's -- disturbances to aggregate demand would not affect real economic outcomes anyway. In that world the allocation of all economic resources would depend solely on considerations associated with aggregate supply (and on more fundamental aspects of demand, like the prevailing economy-wide rate of time preference, which are unlikely to vary much over business cycle horizons). In an actual economy not blessedly free of all such imperfections, the role of macroeconomic policy is therefore to nullify the impact of disturbances to aggregate demand whenever possible, and thus to restore real economic activity to its pristine supply-determined equilibrium.

Against the background of this general philosophy of the demand-oriented approach to business fluctuations, the realization that aggregate supply too might be subject to sudden disturbances naturally created the appearance of a sharp analytical contrast. Unusually good or bad harvests, new technologies that increase productivity, or changes in an open economy's terms of international trade, all imply changes in just the marginal this's and that's that are ideally supposed to determine how the society deploys its resources. When supply considerations shift, therefore, the standard presumption is not to

offset their impact on real activity, but instead to interpret that impact as the requisite movement to a fresh supply-determined equilibrium. This new equilibrium may be either superior or inferior to the one that preceded it, depending on whether the disturbance that brought about the change was favorable or adverse, but in either case it is superior to any other allocation available in the new post-disturbance environment.

Hence the chief policy implication of the view that the business cycles actually observed in modern industrialized economies are "real business cycles," in the sense of movements driven by disturbances to aggregate supply (or, less likely for short-run fluctuations, disturbances to the fundamental underpinnings of aggregate demand) is that no macroeconomic policy response is either needed or appropriate. Indeed, any effort by policymakers to resist such a "real business cycle" would only amount to impeding the economy's progress toward its newly appropriate optimal allocation of resources.

This general philosophy too -- in an important but usually unstated sense, a direct corollary of that underlying the earlier demand-oriented research -- was well understood, at least implicitly, in that earlier literature. What was new from this perspective in the "real business cycle" approach was simply the idea that disturbances to aggregate supply might play a major role in short-run business fluctuations, as distinct from phenomena observed on a more secular time scale. After the experience of 1973-75, however, in which the then-largest decline in U.S. output and employment since the 1930s followed close on a four-fold increase in the price of a major input to industrial production, and other oil-importing economies around the world exhibited analogous problems, the possibility of business cycles caused by supply disturbances no larger seemed remote.

Aggregate Supply and Aggregate Demand: A Closer Look

Notwithstanding its intuitive attractiveness, the practical usefulness of this supply-versus-demand dichotomy as an organizing principle for macroeconomic policymaking is less than the underlying logic suggests, and for several reasons. The most straightforward of these is the difficulty, in an actual policymaking context, of drawing the requisite distinction. Many occurrences that in the first instance seem to represent disturbances to aggregate supply likewise cause disturbances to aggregate demand, and vice versa.

For example, if the United States used only oil produced from domestic wells, a sudden decision by cartelized oil companies to restrict production (in the spirit of the Texas Railroad Commission of earlier days) would simply correspond to an adverse shock to the economy's ability to supply the many goods, like petrochemicals, and services, like transportation and heating, that use oil as inputs. From a demand perspective, the incomes of oil users facing higher prices would initially fall by just the amount that the incomes of oil producers rose, so that aggregate demand would not shift. The economy's new equilibrium would represent the intersection of the adversely shifted aggregate supply schedule and the same aggregate demand schedule that prevailed beforehand. To resist the decline in overall real output by stimulative monetary or fiscal policy would only generate inflation.

In the actual circumstances surrounding the OPEC price increases of 1973 and 1979, however -- circumstances that persist today, and are likely to do so for years to come -- the United States imports from foreign sources one-half or more of the petroleum it uses. An increase in price imposed by a foreign cartel constitutes a disturbance to both aggregate supply and aggregate demand. With U.S. oil imports running at some 7.5 million barrels per day (as

of the time of writing) a doubling of the current price of \$21 per barrel would immediately impose on American oil users the equivalent of an excise tax of \$57 billion per year, or about one percent of the national income, to be paid to foreigners. It is always possible, of course, that the right choice for macroeconomic policy may be to make no response, and accept the equilibrium represented by the intersection of the economy's adversely shifted aggregate supply schedule and the dampened aggregate demand schedule. But there is no reason why that need always be so.

A second, more fundamental reason why the distinction between supply disturbances and demand disturbances is of less value than meets the eye is that in many circumstances the dichotomy breaks down for reasons not of institutional fact (like reliance on foreign oil) but basic economic logic. A standard example of a contractionary disturbance to aggregate demand is a decline in households' willingness to spend on consumables at a given price, caused by any of a variety of trauma to consumer confidence. A standard example of an adverse disturbance to aggregate supply is a decline in workers' willingness to sell their labor at a given wage, caused by any of a variety of perceived changes in working conditions. But are these two disturbances really distinct?

An analogy to a different application of economic analysis may help to make the answer clear. In analysis of portfolio behavior, it is customary to take explicit account of the interrelationships among any investor's demands for different assets (or supplies, if the investor can also issue assets -- say, by borrowing). The root of these interrelationships is a balance sheet constraint, which allows the investor at any given time to hold assets that sum to no more, and in most familiar circumstances no less, than the value of the portfolio to be invested. At a given moment, therefore, increased demand for

one asset necessarily means reduced demand for (or, if the investor can borrow, increased supply of) at least one other asset. The point is not just that a change in expected return that induces an investor to hold less of one asset means he can then hold more of another. More importantly, anything that shifts the investor's entire demand schedule for one asset must also shift the demand schedule for at least one other asset. In the absence of special assumptions, a shift in the demand schedule for any one asset will shift the demand schedules for all other assets.

In the case of household behavior determining flows like consumer demand and labor supply, the analog to the balance sheet constraint in the portfolio case is a budget constraint. People earn incomes, by working and from other sources, and they either spend their incomes on consumables or save them. The sum of incomes earned from all sources must equal the sum of incomes spent and incomes saved. If some change in circumstances leads to a shift in the supply of labor, therefore, the budget constraint implies that it must also shift either the demand for consumables or the demand for saving, or both. Here too, the point is not just that a wage change that leads someone to work less will then reduce the amount he consumes or the amount he saves. More importantly, anything that shifts his entire labor supply schedule will necessarily shift either his consumption demand schedule or his saving schedule -- or, in general, both.

In principle, it is still possible to distinguish supply shocks from demand shocks by pushing the analysis back still further, to focus not on shifts in labor supply schedules or consumption demand schedules but on the specific events that trigger those shifts. For example, if a new President chose not to enforce the regulations protecting the safety and healthfulness of the workplace, and large numbers of Americans therefore became less willing to

work at any given real wage, the resulting shift in both labor supply and consumer demand schedules might plausibly be attributed to a supply disturbance. It is not clear what would be gained from that labeling, however, and in any case the resulting distinction would not fully correspond to the more conventional supply-versus-demand dichotomy with its powerful ability to support inferences about the circumstances under which macroeconomic policy should or should not attempt to counteract business fluctuations.

There is yet a third reason, however, why even the conventional supply-versus-demand dichotomy -- and even in circumstances in which the identification of a supply or demand disturbance is completely unambiguous -- does not have the force commonly associated with it in contemporary discussions of macroeconomic policy. From a policy perspective, what most importantly distinguishes the "real business cycle" approach from the more traditional analysis of either monetary or non-monetary influences on aggregate demand is not so much whether the relevant disturbance in the first instance affects the supply or demand sides of the economy (again, on the assumption that it is possible to draw such a line), but whether the analysis takes account of either the non-Walrasian market mechanisms or the non-Pigouvian tax systems that characterize actual economies. The standard presumption that the equilibrium allocation of resources established by supply considerations is "right," and conversely that movements of aggregate demand should not be left to interfere with it, rests on the assumption that there are no impediments to the clearing of all markets via the price mechanism, and that the tax system embodies a set of penalties and subsidies sufficient to internalize all relevant externalities. By contrast, if wages and prices are not perfectly flexible, or if markets are subject to frictions, or if the tax system leaves some

externalities uncorrected, then there is room for macroeconomic policy to respond to even the purest of "supply" shocks.

For example, consider the circumstances ("imagine" might be more appropriate in this case) if OPEC's leaders had been sincere in their protestations throughout the 1970s that they were merely using a higher price to encourage the world to economize on a scarce nonrenewable resource, and thus had compensated each oil-importing country by remitting the extra revenue that the cartel received, to be distributed on a lump-sum basis to that country's population. At least in conventional analyses -- that is, abstracting from the above discussion of inherent interrelationships among such aspects of behavior as labor supply and consumer demand -- this situation would strictly correspond to an adverse supply disturbance. The higher price of a key imported input would reduce the economy's overall ability to produce goods and services, but the lump-sum distribution of remitted proceeds would restore the demand for goods and services (in aggregate) to what it was beforehand. In the face of a decline in productivity, the economy's new equilibrium would presumably call for a lower real wage. As long as labor supply exhibits at least some positive elasticity, this new equilibrium would therefore involve lower levels of both output and employment.

But can an economy characterized by sticky nominal wages reach that new equilibrium without some assist from macroeconomic policy? Suppose that in this circumstance the central bank simply kept the supply of bank reserves fixed, and that no further disturbance affected either the public's demand for money balances or banks' willingness to create them from a given reserve base. The adverse aggregate supply shift would involve both reduced output and higher prices. The higher prices in turn would imply lower real wages. So far, so good. But in general there is no reason why the reduction of real wages

brought about by the price rise needed to clear the market for goods and services would be just proportional to the reduction of real wages required to clear the labor market. A plausible role for monetary policy in that case would be to deliver either a greater or a smaller price rise than would occur otherwise, so as to achieve whatever decline in real wages were necessary to reach the new equilibrium despite the rigidity of nominal wages.

The fact that monetary policy can play such a role, of course, does not mean that it actually should do so. The implications of uncertainty, emphasized above in the context of disturbances to aggregate demand, are pertinent here as well. In addition, inflation and deflation presumably impose costs too, and these need to be weighed against the costs of the incorrect allocation of resources that would ensue from too high or too low a real wage. But like the analysis of the relevant uncertainty, that comparison would remain to be carried out, and doing so would require not only some explicit conceptual view of the costs of price movements but also some ability to quantify these costs (relative to the costs of continuing product and labor market disequilibrium) -- on neither of which fronts has the economics profession achieved much progress. In any case, the prima facie presumption that there would be no role for macroeconomic policy to play in these events, simply because the initiating disturbance was a "supply shock," does not withstand scrutiny.

It is a merit of the real business cycle approach that most of the leading contributions to it have been both consistent and even explicit in this regard. The models used to carry out the analysis typically describe explicitly Walrasian market mechanisms with perfectly flexible wages and prices. For the most part, they also assume away such other potential impediments to optimal Walrasian outcomes as transactions costs, information

asymmetries in credit markets, behavioral nonlinearities, multiple equilibria (and hence the possibility of self-fulfilling expectations), and heterogeneities that might explain the existence of "inside" financial assets (importantly including most of what is conventionally called "money"). Of such assumptions are sharp policy conclusions made.

By contrast, the demand-oriented approach has been neither explicit nor consistent. To recall, the notion that macroeconomic policy should change aggregate demand, to counteract disturbances to it, stems from the presumption that the supply-determined equilibrium is always the right one. But macroeconomic policy can affect aggregate demand only if some kind of price rigidity or market imperfection (or incompleteness) renders monetary policy non-neutral and fiscal policy non-Ricardian. Whatever combination of rigidities and imperfections accounts for the potency of macroeconomic policy therefore vitiates the automatic presumption in favor of the optimality of the supply-determined equilibrium.

In the end, the dichotomy that remains genuinely compelling in its implications for macroeconomic policy in a business cycle context is not whether the disturbances underlying the fluctuations that confront policymakers predominantly affect aggregate supply or aggregate demand, but whether non-Walrasian rigidities and imperfections importantly characterize the individual behaviors and market mechanisms that collectively constitute "the economy." But that idea is hardly new.

Macro Policy for a Heterogeneous Economy

A large part of what distinguishes the modern world from the primitive is its incredible richness of texture. Individuals differ among one another along

an infinity of dimensions, of which many probably do not bear on economic behavior but many probably do. People have not just different preferences for this good or that, or for working more or less, but whole different approaches to organizing their existence in this world. People also differ in what they bring to the economic table in ways that go far beyond such familiar distinctions as who has had how much formal education or on-the-job training, or who owns what tradable assets. Institutions, to the extent that they take on an organic aspect and therefore reflect more than just the collective attributes of the individuals associated with them, likewise exhibit enormous differences among one another.

Standard theories of the business cycle, be they of the aggregate demand or real business cycle type, mostly ignore this heterogeneity. Most familiar models at best distinguish the "representative household" from the "representative firm," although some demand-oriented models also distinguish those households that face liquidity constraints from those that do not. Financial intermediaries usually exist in these models only in the form of banks, which except for a stochastic element, unrelated to anything else in the analysis, amount to no more than an extension of the central bank. Much of the demand-oriented literature simply proceeds from mathematical statements describing the behavior of economy-wide aggregates, with no explicit representation of either households or firms.

Simplification and categorization are both essential, of course, to fruitful study of complex phenomena. Nevertheless, they also bear costs. From the perspective of macroeconomic policy, one of the costs of the level of abstraction at which the standard theories analyze business cycles is the blurring, if not total elimination, of distinctions that experience suggests matter importantly for actual policy decisions.

A hypothetical example can usefully illustrate the point. The Government of Japan recently made a \$9 billion cash payment to the U.S. Government in consideration for the American role in the Persian Gulf War. (For purposes of this discussion it is irrelevant whether one construes this transaction as a cost-sharing contribution in a joint endeavor or as a simple fee paid for services rendered.) It is widely reported that this payment aroused substantial political antipathy among Japanese voters. Suppose, therefore, that instead of remitting \$9 billion in cash, the Government of Japan had delivered 1 million Japanese-made automobiles, suggesting that the U.S. Government then sell them at an average price of \$9,000 each.

The arrival in the United States of a million new foreign-made automobiles, free of charge to the economy as a whole, would probably have a readily visible impact at the macroeconomic level. Moreover, because that impact would presumably be short-lived, the resulting macroeconomic disturbance would be of the sort commonly addressed in the business cycle literature. But would this event constitute a "supply shock" or a "demand shock" in the context of the standard theories?

Although it is perhaps conceivable to argue that the U.S. economy's ability to supply automobiles had thus been augmented by 1 million units, any such argument would inevitably hinge on arbitrary conventions of timing. If the gift cars all arrived in 1991, then this line of thinking would hold that 1991 aggregate supply had received a favorable shock, while aggregate supply in 1992 and beyond remained unaffected. In a model based on monthly time aggregation, however, the shock may only have occurred in July. This kind of awkwardness is inevitable in trying to relate discrete one-time quantities to concepts like production, which properly represent flows per unit time, and they are one indication that in this case the "supply shock" designation is

inadequate. Instead, the receipt of the million cars would more plausibly represent a one-time change in the economy's stock of consumer durables, which under most standard theories of consumption behavior would shift aggregate demand.

Given the identification of this event as a disturbance to aggregate demand, the standard presumption is that macroeconomic policy should respond. But how? Should the objective be to maintain levels of aggregate spending, inclusive of consumers' purchase from the government of the million Japanese-made automobiles? Should it be to maintain levels of aggregate output (which would be like maintaining aggregate spending exclusive of the new cars)? And what, if anything, should policy do about the shift in the composition of demand for U.S. output, which would involve a sizeable decline in demand for American-made automobiles?

If the U.S. economy consisted entirely of "representative agents," these matters would be either straightforward or irrelevant. The appropriate new equilibrium would involve a higher level of U.S. consumption and spending (inclusive of the million gift cars), and a lower level of U.S. production and value added, than would otherwise be the case. The fact that demand for American-made cars in particular would decline, while demand for other consumer goods and services would rise, would not matter. Each "representative agent" would be better off.

In the actual world of American economic policymaking, these questions would also be irrelevant, but for a different reason: The U.S. Government would decline the gift. The point is not just that the government would, of course, prefer the cash to the cars. If the cash were just not in the picture, and the only choice were to take the cars or receive nothing from the Japanese

in consideration of the American war effort, the U.S. Government would still decline the gift of the cars.

The reason why the actual policy choice would no doubt be to reject a gift that would make the "representative agent" in the American economy better off sheds light on two shortcomings of standard macroeconomic analysis. To begin, the models used do not adequately distinguish between income and output. In the hypothetical case under discussion, the heart of the matter is that aggregate income should rise while aggregate output should decline. If everyone in the economy were a "representative agent," with an equal share in aggregate income and aggregate output alike, there would be no reason to focus macroeconomic policy on maintaining output as distinct from income. Income is what would matter. (In fact, there are good reasons why output matters along with income, but they arise from dynamic considerations of international competition rather than economic fluctuations in the ordinary sense.) But in an economy made up of heterogeneous elements, many people's ability to earn income depends directly on their opportunity to contribute to output. If output falls, their income falls too, even if aggregate income rises.

Moreover -- and from a practical perspective, more importantly -- many people's ability to earn income depends on their opportunity to contribute to the output of a specific good or service. In the hypothetical example of the Japanese gift cars, even if macroeconomic policy managed to maintain aggregate U.S. output unchanged (so that aggregate U.S. spending rose by the value of the million cars), the output of the American automobile industry would be smaller and the output of many if not most other American industries would be greater. This shift, even within a given level of aggregate output, would leave some people worse off even if the "representative agent" were better off.

To the extent that macroeconomic models address such issues at all, as opposed to burying them under the abstraction of the "representative agent," they typically do so in two ways. One is to assume that factors of production, including labor as well as capital, are mobile among alternative uses. The other is to assume that appropriate redistributions from those individuals initially made better off by any change to those initially made worse off can, in the end, leave everyone better off as long as the change is welfare-improving in the aggregate. Both of these responses fall short, at least in terms of what is relevant to macroeconomic policy in a business cycle context.

It is readily apparent that both labor and capital are far from fully mobile, even over horizons longer than any standard business cycle. Individuals possess both industry-specific and employer-specific human capital. Machines and buildings have limited functional adaptability or geographical mobility. Institutions, including not just conventional businesses but also many in the "not for profit" sector, likewise acquire vested interests in the continuation or expansion of quite specific economic activities. Even people with no direct participation in a company or industry may acquire analogous interests, in that the elimination of a business (or, for the same reasons, a military base) would reduce the demand for their own services or the market value of their nearby property. The costs of adjustment that give people and institutions the incentive to strive so hard to continue in the economic activity in which they are currently engaged rather than move to deployment elsewhere -- witness the recent Washington "summit" meeting of some one hundred American corporations to coordinate lobbying strategies to prevent the downscaling or possible elimination of the B2 bomber project, for

which each is a supplier -- are clearly great enough to preclude the immediate and full transfer of resources in the wake of some kind of supply disturbance.

The absence of the transfers by which the "winners" can so compensate the "losers" as to leave everyone better off after a change that would be welfare-improving in the aggregate also involves, conceptually, a kind of transactions or adjustment cost. Here, however, the costs precluding what the standard theory simply assumes will take place are not economic but political. For all their virtues, the democratic political institutions that govern the world's advanced industrialized economies have not been very successful at compensating those individuals or businesses, or other institutions, that are adversely affected by changes that benefit many others. The economist's notion of a Pareto improvement -- that is, a change that leaves at least some people better off and no one worse off -- therefore loses its practical relevance. Given the combination of enormous heterogeneity and limited mobility that characterizes the modern economy, few changes are likely to be Pareto-improving on initial impact. And given the inability of the prevailing political institutions to achieve the requisite transfers, the winners cannot compensate the losers so as to turn a change that is merely welfare-improving in the aggregate into a Pareto improvement. Hence "policy," including macroeconomic policy, becomes a matter of "politics" in the classic sense.

A different example may further sharpen the point. Unlike the hypothetical receipt of gift cars from Japan, the currently proposed free trade agreement between the United States and Mexico would, if instituted, alter considerations bearing on production in ways that properly constitute a "supply shock." Most obviously, the agreement would expand opportunities to produce goods, for sale in U.S. markets, from American capital and Mexican labor. Like a rise or fall in oil prices, these changes in supply considerations would

persist over time. But also like a rise or fall in oil prices, they would have a short-run impact that bears analysis in a business cycle context.

That analysis suggests that the new equilibrium would -- as in the case of the gift cars -- involve higher aggregate U.S. income and spending, and lower aggregate U.S. output and value added. For just the reasons discussed above, this change would be welfare-improving in the aggregate. (That is why economists typically favor free trade.) But here again, heterogeneity importantly enters the story. The reason why U.S. income would be higher despite lower U.S. output is that the additional income earned on American-owned capital deployed in Mexico would outweigh the loss of income earned at home by American workers. In this case, therefore, the relevant distinction is not who works (or owns stock) in the automobile industry and who works elsewhere, but who earns income from selling labor and who earns income from owning capital.

The fact that the free trade agreement would be welfare-improving in the aggregate for the United States means that owners of capital could, in principle, compensate workers so as to render everyone better off. But because there is little prospect that those transfers will occur, organizations representing U.S. labor strongly oppose the free trade agreement. If the agreement is enacted, the same groups will no doubt seek macroeconomic policy action to offset the loss of U.S. employment. (The ten-plus percent unemployment that has developed in Canada following the implementation of a parallel U.S.-Canadian free trade agreement has elicited widespread calls for monetary and fiscal expansion there.) Explaining that what has happened constitutes a straightforward supply shock -- and a favorable one, at that -- and that conventional business cycle theories therefore mandate simply allowing

the economy to go to its new (in the aggregate, preferred) equilibrium, would be of little practical import.

The point of all this is that, for reasons wholly apart from the questions of rigidities and market imperfections discussed earlier on, standard business cycle theories fail to address issues that importantly bear on the making of macroeconomic policy in a business cycle context. The upshot is, again, to blunt the force of whatever policy implication these models have to offer.

Concluding Thoughts

The main line of argument in this paper has been that recent developments in business cycle theory -- specifically, the emergence of "real business cycle" theories -- offer less in the way of practical guidance to macroeconomic policy than what the usual discussion of them normally conveys. One set of reasons has to do with the difficulty, either practical or conceptual, of drawing the required distinctions between aggregate supply and aggregate demand as the focal point of any given disturbance to the economy. Another stems from the dependence of these theories' policy implications on the absence of price rigidities or other impediments to fully Walrasian market outcomes, a key set of issues mostly resolved by assumption (and, to judge by the evidence, counterfactual assumptions at that) rather than analysis. A third set of reasons reflects the tension between the aggregate level at which these theories study economies and the rich heterogeneity characterizing actual economic behavior and interests in the modern world.

While each of these three arguments is relevant to macroeconomic policy in general, and therefore also to monetary policy in particular, there is yet an additional difficulty in attempting to apply lessons from the real business

cycle approach to the practical conduct of monetary policy. The injunction to leave monetary policy unchanged in the face of business fluctuations, because they are presumed to reflect disturbances to aggregate supply, is relevant in practice only when it is possible to define, recognize and implement the "no change" monetary policy in the first place. Does it mean maintaining growth of the money stock at some previously established rate? If so, which measure of the money stock is that? Moreover, a straightforward extension of the argument drawn above about the interdependence between supply shocks and consumption demand suggests that there is no guarantee that supply shocks necessarily leave portfolio demands unchanged -- including demand for whatever is the chosen measure of money. Is the "no change" monetary policy that real business cycle models warrant then to make the money stock grow along some new, appropriately adjusted path? If so, is monetary policy conducted in this way really distinguishable from the kind of actively interventionist policy that real business cycle models supposedly reject?

Questions like these are hardly unfamiliar, of course. They have traditionally stood at the core of the debate over the proper role of activist monetary policy within the demand-oriented approach. That they emerge once more, even in the context of real business cycle models, shows that this supply-oriented analysis, even with its full panoply of restrictive Walrasian assumptions, still does not resolve the long-standing issues at the cutting edge of how to conduct actual monetary policy. In the end, there is no easy way to avoid grappling with such hard problems as which measure(s) of money (or reserves, or credit, or interest rates) provides the best guide to the effect of monetary policy on economic activity, and how these quantitative relationships change over time in response to business cycle phenomena as well as other influences.

Finally, one last issue also merits attention. Expectations have always stood close to the center of thinking about business cycles. No reader of Keynes' General Theory could miss the persistent emphasis on the role of expectations, and in particular the role of changing expectations as the source of the "autonomous" shifts that play such a major role in demand-oriented models of business fluctuations. The more recent real business cycle models incorporate expectations in a more up-to-date, and therefore more explicit, way.

Although early work with models of "rational" expectations appeared not only to incorporate expectational elements explicitly but also to restrict them so as to preclude the kinds of randomly shifting sentiments to which previous work had attributed much of the observed aggregate fluctuation, the development of models exhibiting multiple equilibria has shown that that contrast was more one of style than of substance. In these models an economy can have a high- or a low-activity equilibrium, either of which its inhabitants may "rationally" expect. Moreover, in a manner strongly reminiscent of the earlier literature of "animal spirits" that caused "autonomous" shifts in demand, these expectations can be self-fulfilling. Whichever equilibrium people expect will prevail, and so they are "rational" to expect it.

What all this leaves open, of course, is the role that macroeconomic policies can or should play in influencing those expectations. Such a role for authority is well established in other areas relevant to public policy. No one any longer seriously suggests that the right to free speech includes the right to shout "fire" in a crowded theater in which no danger is present but the shout itself, and if somebody were to do that, no one would deny the responsibility of the management to take whatever steps it could to restore order. Similarly, the role of public policy institutions in arresting bank

runs that arise from no source other than the spread of false information is also well accepted. Is there then a parallel role for macroeconomic policy in fostering expectations that correspond to high-activity equilibria and resisting the development of low-activity expectations? If there is, how can either monetary or fiscal policy go about playing that role? Perhaps the next wave of research on the business cycle will say.