

Conventional Macroeconomic Wisdom: A Caveat. By David Andolfatto¹

1 Introduction

In order to conduct monetary policy, central bankers (and/or the people they draw on for policy advice) must have some view as to how an economy functions. Any such view is necessarily based on some theory of how the world works. What exactly is this theory and what are its logical underpinnings?

A theory consists of three main ingredients. First, there is a set of phenomena for which an explanation is desired (endogenous variables). For central bankers, these variables are primarily inflation and output (GDP). Second, there is a set of phenomena that are believed to influence the set of endogenous variables, but which are viewed as being determined by forces beyond the central bank's control (exogenous variables). Some examples here include various events that are labelled as 'shocks,' as in an 'oil supply shock,' or an 'aggregate demand shock.' Third, there exists some mapping that relates how the set of endogenous variables depends on the set of exogenous variables².

It is sometimes difficult to get a handle on the precise structure of the theory that governs policy actions at the highest level of a central bank's hierarchy. A part of the problem here is that any such theory exists primarily in the head of central bankers themselves and is rarely made explicit to us. Perhaps this is because the real world in which central bankers must operate is sufficiently complicated as to make the mapping that relates exogenous and endogenous variables hopelessly complicated. Or perhaps central bankers have a strategic motive for being deliberately vague in their policy statements. Sometimes this ambiguity manifests itself in a humorous/frustrating way; consider the following quotations attributed to Federal Reserve Chairman Alan Greenspan:

"I know you believe you understand what you think I said, but I am not sure you realize that what you heard is what I meant."

"I guess I should warn you, if I turn out to be particularly clear, you've probably misunderstood what I've said."

Things are not quite so bad as these quotes suggest. There are ways to make educated guesses at how central bankers view the world by studying the language they employ (which reveals how they were trained in economics and/or who they listen to for policy advice). Furthermore, there is a branch of the academic literature that attempts to formalize the logical underpinnings of this language. This language has become so common place among central bankers, policy analysts, newspaper commentators and among an influential

¹ Simon Fraser University, May 12, 2005.

² More precisely, this component of a theory consists of a set of rules instructing us how to construct such a mapping.

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group of academics that I label it the ‘conventional wisdom.’ In what follows, I review the nature of this conventional wisdom and offer a critique that I hope will motivate some thoughtful reflection.

2 Conventional Wisdom

Let us begin with a time-series plot of real GDP for your favorite country. A visual inspection of the resulting graph typically reveals two striking features.

First, GDP tends to grow over time; and second, the pattern of economic development appears to be ‘uneven.’ Presented with these facts, most people find it irresistible to draw a smooth line through the data and label it ‘trend.’ The difference between actual and trend GDP is then labelled the ‘business cycle.’

While virtually all business cycle theorists perform such a calculation, interpretations of ‘trend’ and ‘cycle’ differ across various schools of thought. The interpretation behind the conventional wisdom is as follows. First, the statistical trend line (e.g., as calculated by a Hodrick-Prescott filter with a standard smoothing parameter) is labelled ‘potential output’ or ‘supply.’ Note that concepts such as ‘potential output’ or ‘supply’ are theoretical constructs; i.e., they are not self-evident objects that are directly observable in any data. Thus, implicit in the labelling of statistical trend as potential output is a theory of what determines this trend. While not often stated explicitly, this theory is rooted in the neoclassical view of the world in which long-run living standards are determined primarily by technological progress and where resources are allocated according to well-functioning markets. Potential output then is interpreted as the ‘optimal’ level of output that would be realized if markets worked perfectly well.

Since the economy’s theoretical trend line is assumed to be smooth, implicit in this view is the assumption that technological progress occurs in a more or less even manner over time. Having identified potential GDP in this manner, the conventional wisdom then proceeds to label the actual level of GDP as ‘demand’ and the difference between actual and potential output as the ‘output gap’ or ‘excess demand.’³ I am not sure what justifies the use of such labels. Perhaps the reasoning is as follows. Since we know (i.e., have assumed) that supply evolves smoothly over time and since actual GDP typically deviates from supply, it must be the case that actual GDP is determined by aggregate demand and that the economy is not normally in ‘equilibrium.’ Whatever the justification for such an interpretation, once one adopts it a number of conclusions appear to present themselves as being immediately self-evident. First, the ‘fact’ that supply does not equal demand constitutes prima facie evidence that market economies do not work perfectly well—at least, in the ‘short-run.’ Second, since actual GDP (demand) fluctuates around supply, it seems clear that ‘aggregate demand shocks’ appear to be the proximate cause of the business cycle. Third, since potential GDP describes an ‘optimal’ level of output, it seems obvious that policy should endeavor to stabilize the business cycle.

³ See: www.bankofcanada.ca/en/backgrounders/bg-p5.htm

What tools does a central bank have to exert influence on aggregate economic activity? Historically, economists focussed on the central bank's ability to control 'the' money supply. Most central banks have a legislated monopoly over the issuance of low-denomination paper notes (base money). The vast majority of an economy's money supply, however, is created by chartered banks in the form of demand deposits. In most modern economies, these demand deposits constitute private liabilities (claims against a bank's assets, including reserves of base money) that are legally required to be redeemable on demand (and at par) for base money.⁴ Given this legal restriction, and given a demand for base money (a component of which may arise through further legal restrictions, such as reserve requirements), a central bank is able to influence (though not fully control) an economy's money supply.

Many people hold the mistaken impression that central banks can alter the money supply via 'helicopter drop' transfers of base money in an economy. In fact, this type of policy action describes a fiscal operation and is legally outside the powers of any central bank that I am aware of (at least, without prior approval of the fiscal authority). Instead, a central bank controls the supply of base money in one of two ways: [1] through open market operations involving swaps of base money for government bonds; or [2] by altering its deposits of base money in the banking system. Exactly how such interventions were supposed to affect the economy was debated in a large and contentious literature concerning the nature of the 'monetary transmission mechanism.'

Conventional wisdom these days focusses less on a central bank's ability to control the money supply and more on its ability to influence 'the' interest rate. In part, this change in focus reflects the emergence of an implicit consensus on the nature of the monetary transmission mechanism; i.e., that among all the different ways in which central bank policy may influence an economy, the 'interest rate channel' is the most important.

But despite this change in focus concerning the central bank's primary policy instrument, it still remains true that ultimately, a central bank is restricted to achieve its goals through changes in the supply of base money. The key question then concerns which interest rate (or rates) are under the influence of central bank policy? In other words, which interest rates might be influenced by open market operations involving swaps of base money and government bonds (or injections/withdrawals of base money from the banking system)? Few people dispute the fact that such operations appear to influence nominal interest rates on government securities (and possibly relatively safe corporate debt instruments). These effects are most apparent at the short end of the yield curve (although, presumably the longer end is also influenced to the extent that long-term inflation forecasts are influenced by perceptions of central bank policy). But as far as intertemporal choices are concerned, the relevant interest rates are not nominal rates, but real rates (i.e., nominal interest rates adjusted for expected inflation). While there is still considerable uncertainty as to whether a central bank can influence the relevant set of real interest rates in any quantitatively important way, the conventional wisdom essentially just accepts the 'fact' that it can.

⁴ It is not clear whether this legal requirement is binding or not. In any case, the effect of this practice is to fix the nominal exchange rate between bank money and base money at par.

One way to justify this view of the world is to note that empirically, private sector forecasts of inflation often (but not always) appear to display an inertial tendency. To the extent that this is true, one might reasonably treat inflation expectations as approximately fixed over ‘short’ intervals of time. In this case, any change in nominal interest rates will induce a corresponding change in real rates—at least, for a ‘short’ period of time.

The next step is to link ‘the’ real interest rate to aggregate economic behavior. To focus on basics, let me abstract from open economy considerations and simply think about how things are supposed to work in a closed economy. Here, the conventional wisdom borrows from standard neoclassical theory (in the form of an IS curve). For example, an increase in the short-run real interest rate (which presumably works its way through the term-structure) leads to a decline in contemporaneous consumer demand (as households increase desired saving). Similarly, an increase in the real interest rate leads to a decline in investment demand (as the opportunity cost of borrowing rises for firms). Hence, an increase in the interest rate depresses aggregate demand, while a decrease in the interest rate stimulates aggregate demand.

Any similarity between conventional wisdom and the neoclassical model ends here. The point of departure concerns the question of what economic forces are viewed as determining the real rate of interest. From the neoclassical perspective, the real interest rate is just one of several prices that are determined in general equilibrium. Conventional wisdom, on the other hand, asserts that the real interest rate is chosen by the central bank. For an arbitrary interest rate, however, the aggregate supply of output will not correspond to the aggregate demand for output (equivalently, the supply and demand for loanable funds will not be equated). This difficulty is circumvented by appealing to a peculiar assumption; namely, that the aggregate supply of output will passively accommodate itself to the level of aggregate demand. In other words, the actual level of GDP is assumed to be ‘demand determined.’ This assumption is often justified on the grounds that various ‘contracting frictions’ present in labor/product markets are at work to keep nominal wages and/or prices relatively fixed over ‘short’ intervals of time (so that these prices do not respond in a timely manner to exogenous changes in economic circumstances).

Next, we need to ask about what type of ‘shocks’ are responsible for generating movements in aggregate demand. In principle, central bank policy could ‘shock’ the economy if it was to generate unanticipated movements in the interest rate/money supply. But I have yet to meet a central banker who would lay claim to such behavior (central bankers view themselves as responding to shocks; not creating them). Very often, unexpected changes in various foreign influences are blamed (e.g., a sudden surge in the demand for exports, a change in the terms of trade, a foreign financial crisis, etc.). But few people believe that the business cycle would cease to exist in the absence of international trade. So, what might cause the various domestic expenditure components to fluctuate? Exogenous changes in fiscal policy are a possibility, but barring wartime experiences, government purchases appear to be relatively stable over time. This leaves us with exogenous changes in consumer and investment demand. No one seems to be sure why consumer/investment demand should fluctuate for no apparent reason. References to consumer and ‘business

sector ‘confidence’ seems to suggest that sudden changes in expectations may be responsible. For households, these expectations likely concern forecasts over future income streams. For businesses, these expectations likely concern forecasts over the future return to capital spending. There seems to be some presumption that these expectations are not always ‘rational’ (as in when Greenspan warned of an apparent ‘irrational exuberance’ in late 1990s stock market). In other words, the conventional wisdom appears to view private sector expectations as having a life of their own (independent of economic fundamentals). We are often told, for example, how economic growth can only continue if ‘consumer confidence’ remains strong. Likewise, Keynes (1936) was apparently of the view that ‘animal spirits’ in the business sector (waves of optimism and pessimism) were responsible for the large observed swings in investment spending.⁵

Thus, depending on one’s views concerning the nature of expectations, a central bank has potentially several reasons for wanting to stabilize the business cycle. Consider, for example, an aggregate demand shock that is caused by the arrival of information that leads firms to rationally revise upward their forecast on the return to capital spending. Given ‘sticky’ nominal wages/prices, factors of production are likely to be ‘overutilized’ as production strains to meet the demand for new capital goods. To prevent or mitigate this (presumably temporary) overutilization of resources, the central bank may wish to raise the interest rate to ‘cool things down.’ An additional justification for such an action can be made if the central bank perceives the surge in investment spending to be based on an ‘irrational exuberance’ on the part of business managers. In this latter scenario, central bank intervention can be justified even in the presence of perfectly flexible nominal wages and prices.

Since the end of the great inflation of the 1970s, many central banks now view their primary mandate as keeping inflation ‘low and stable.’ There is a general consensus that monetary policies during the 1970s were far too accommodative to fiscal (and other) pressures and that the resulting high inflation was harmful to economic performance. Furthermore, there is a general belief that once high inflation is in place, expectations of inflation become ‘entrenched,’ making it very difficult bring inflation down. For this reason, once inflation (actual and expected) is at some desirable level, central banks view themselves as ‘guardians’ of this ‘social capital’ (low inflation expectations). Many central banks have adopted explicit inflation targets, which they view as providing the economy with a ‘nominal anchor.’ The credibility of this nominal anchor hinges on the willingness and ability of the central bank to pursue this goal. A good part of a central bank’s ability to maintain its nominal anchor depends on the extent to which it can act independently of political pressures exerted on it by the fiscal authority.

⁵ 4 In fact, the conventional wisdom notion of ‘irrational’ expectations does not square with Keynes (1936), who believed that exogenous fluctuations in expectations could be ‘rational’ in the sense of being ‘self-fulfilling prophesies.’ Keynes clearly had in mind a model of the economy that exhibited multiple rational expectations equilibria. However, this idea of multiplicity appears to have gone by the wayside as far as influencing conventional wisdom.

In addition to keeping inflation low, many central banks aim to keep inflation stable. While not often articulated explicitly, the underlying justification for this view must be based on the notion of ‘sticky’ nominal contracts. That is, if contractual terms governing economic relationships are stipulated in nominal terms, and if these nominal terms are based on expected inflation, any unexpected variability in inflation is likely to induce an undesirable redistribution of wealth (e.g., say, between creditors and debtors). If such uncertainty is costly to hedge and/or if contracts are costly to renegotiate, the resulting uncertainty in inflation-adjusted payoffs is likely to harm economic incentives and hence harm economic performance.

According to the conventional wisdom, variability in the inflation rate (around its trend, as determined by the nominal anchor) is determined by a Phillips curve relationship. This idea is usually expressed as follows. Imagine that actual GDP (demand) is above potential, so that there is a positive output gap. Then there is obviously an ‘excess demand’ for output. For a given interest rate, this excess demand will eventually manifest itself in the form of rising nominal prices and wages (or, more accurately, an acceleration in nominal prices and wages beyond what is stipulated by the nominal anchor). The converse holds true if, for whatever reason, the economy finds itself in a position of ‘excess supply’ (actual GDP below potential).

As it turns out, stabilizing the inflation rate in the face of aggregate demand shocks corresponds to the policy of stabilizing GDP fluctuations around potential. To combat a positive output gap, for example, the central bank should raise the interest rate. Since a positive output gap is inflationary, this policy simultaneously stabilizes the inflation rate.

Unfortunately, life is not so easy for central bankers in pursuing the twin goals of output and inflation stabilization. The alleged reason for this is the existence of other types of shocks that affect the inflation rate (inflation shocks) independently of aggregate demand. Depending on who one talks to, these shocks appear to come from two sources. The first source is called a ‘cost shock.’ This type of shock affects the cost of the business sector’s intermediate inputs (the classic example being oil). An oil supply shock, for example, increases the costs of production leading firms to eventually pass them on in the form of higher prices (so as to maintain their profit margins). The second source (stressed more by central bankers than academics) might be labelled an ‘expected inflation shock.’ There are several ways in which to think of such a shock. First, one might imagine that private sector forecasts of inflation simply fluctuate for ‘irrational’ reasons. Second, one might imagine that a cost shock triggers a self-fulfilling change in inflation expectations (Christiano and Gust, 2000). Third, one might imagine a change in the fiscal regime together with a change in the public’s perception of the degree of central bank independence.

Whatever the source of the inflation shock, its arrival poses somewhat of a dilemma for a central bank. Consider, for example, an oil supply shock that raises the world price of crude oil. To combat the resulting inflationary pressure, the central bank must raise the interest rate in an attempt to suppress aggregate demand. In other words, the central bank must risk generating a recession if it wishes to stabilize the inflation rate. Failing to stabilize the inflation rate in this manner, on the other hand, risks having inflation expectations move

away from the nominal anchor. Thus, to the extent that inflation shocks are an important source of economic variability, a central bank views itself as walking a tightrope in maintaining a balance between the competing goals of output and inflation stability.

3 Critique

There is no point in arguing whether conventional wisdom is ‘right’ or ‘wrong.’ Since any theory necessarily consists of abstractions, all theories are necessarily ‘wrong’ in a literal sense. The relevant questions are as follows: [1] whether conventional wisdom provides us with a reasonably good approximation/ interpretation of how an economy functions; and [2] whether there exist competing theories that might provide us better approximations/interpretations.⁶

My main problem with the conventional wisdom is not the theory itself; but rather, that it suffers from the problem of being conventional wisdom. In particular, when a theory becomes conventional wisdom, the language it suggests becomes so widely and commonly used that (aside from the efforts of a few eggheads in academia) it ceases to be viewed as just a theory and is instead tends to be accepted uncritically as ‘truth.’ If history has taught us anything, it is that we should be careful not to become too complacent with whatever is viewed as conventional wisdom at any point in time. The purpose of this section is to outline some of the ongoing challenges that underlie the logical consistency of the conventional wisdom described above.

To this end, perhaps a good place to start is with an empirical observation. As the U.S. economy emerged from the last recession, GDP began to rise while employment continued to fall for several quarters (about two years), leading to what some observers have called a ‘jobless recovery.’ By simple arithmetic, it follows that labor productivity is rising over the course of jobless recovery. Rising labor productivity is widely thought to be driven primarily by technological advancements that improve the efficiency of labor.

The jobless recovery is considered to be a ‘puzzle’ for two reasons. First, aside from a similar experience in the early 1990s, it seems inconsistent with historical business cycle behavior. Usually it is the case that employment begins to rise soon after any recovery in GDP growth. Second, an extended jobless recovery appears difficult to square with conventional wisdom. Consider the following quote by Ben Bernanke (2003):

“Strong productivity growth provides major benefits to the economy in the longer term, including higher real incomes and more efficient and competitive industries. But in the past couple of years, given erratic growth in final demand, it has also enabled firms to meet the demand for their output without hiring new workers. Thus, in the short run, productivity gains, coupled with growth in aggregate demand that has been insufficient to match the

⁶ Of course, there is also the question of how we are to measure what ‘good’ and ‘better’ mean.

expansion in aggregate supply, have contributed to the slowness of the recovery of the labor market.”

This ‘explanation’ appears to hypothesize an unusually rapid increase in potential GDP (which is normally viewed as evolving more smoothly over time), brought about by a ‘technology shock.’ Since actual GDP is rising rapidly, it follows that aggregate demand must be as well. However, we are told that the rise in demand has been ‘erratic’ and ‘insufficient’ to match the expansion in aggregate supply (potential GDP). As a result, firms are compelled to trim their workforce, as fewer (and more efficient) workers are able to meet available demand. Presumably, this insufficiency in aggregate demand is also responsible for the relatively low and stable inflation that has been experienced over this episode.

What, if anything, is ‘wrong’ with this explanation? Perhaps there is nothing wrong. What is wrong, however, is when such explanations are accepted without any critical evaluation. The assumption of a ‘technology shock’ seems plausible enough (although it seems to violate the conventional notion that such shocks are too small to influence the business cycle in any significant way). After all, who can predict the arrival and diffusion patterns of technological advancements that alter the structural characteristics of an economy? On the other hand, we are also told that aggregate demand has been ‘erratic’ and ‘insufficient’ without being told why this might be the case. Presumably, it is erratic because aggregate demand shocks are erratic. But simply stating things this way is to label our ignorance in a slightly different manner. Where do these erratic aggregate demand shocks come from? Can we identify such shocks with specific events? Similarly, we are told that aggregate demand has been ‘insufficient.’ I am aware of models that can generate what appears to be ‘insufficient aggregate demand’ on the presumption that nominal prices/wages are ‘sticky.’ I am not sure, however, whether Bernanke is suggesting that nominal prices and wages are supposed to be sticky for several quarters; they certainly do not appear to be so in the data.⁷

Let me dwell a moment on the issue of sticky nominal prices. First, almost no one disputes the fact that there are at least some nominal prices and wages that appear to be changed relatively infrequently (e.g., for many months). For example, my nominal (university) salary remains fixed for a year at a time. At the same time, the amount of work I am expected to deliver over the course of year does not change very much either (why is there so little discussion of sticky quantities?). So, is my nominal wage ‘sticky’ or is its apparent stability largely a reflection of an underlying stability in my supply (and the demand for) my labor? Since there is currently a modest inflation in Canada (around 2% per annum), one might argue that my real wage is falling throughout the year. But presumably, my wage contract has anticipated this. It seems hard to imagine how the allocation of my time might be affected by the behavior of inflation. When inflation is high and variable, contracts naturally emerge to embed cost-of-living allowances (COLA clauses) to mitigate any glaring distributional consequences. I expect the same would be true at my university. In any case, as theorists have pointed out for some time, in a long term relationship the fact

⁷ Needless to say, it is hardly fair to criticize Bernanke on the basis of a single short quote. My purpose here is more to criticize those who seem too willing to accept simple ‘cut and dried’ explanations.

the changes to payment streams occurs in lumps in no way restricts the ability of the contract to achieve real outcomes. Before we can make any progress the issue of how best to use data to shed light on whether wages in long-term relationships are indeed sticky needs to be addressed.

But perhaps the university (long-term relationship) example is a poor one. As it happens, I also worked for several years in the construction sector. During that time, my nominal wage rate was negotiated by my union and it too changed relatively infrequently. On the other hand, I also worked at several 'side jobs,' mainly in small residential projects where I charged a piece rate that varied considerably depending on demand conditions. It is hard to tell whether my nominal wage was sticky or not.

Finally, one might note that even if nominal wages are sticky at the individual level, they need not be at the aggregate level. This would be true, for example, if individual nominal wage contracts were negotiated in an unsynchronized manner according to a state-dependent pricing rule (Caplin and Spulber, 1987). Given the huge flows of workers into and out of employment each month and the fact that workers know well the value of their time and money, such a scenario seems entirely plausible.

Much of what I have said above applies to nominal product prices as well. On this front, there some interesting recent empirical work by Bills and Klenow (2002) and Klenow and Krystov (2003), among others. In a nutshell, this literature claims to find that the median length between price changes across a wide range of product categories is fairly short (about 4.3 months). Furthermore, it appears that the frequency of price changes varies dramatically across product categories. Casual empiricism reveals that this is the case. For example, why is it that my favorite gasoline retailer appears to have no problem in changing the posted price of gas at a very high frequency, while leaving the price of his motor oil, gum, cigarettes, and other goods unchanged for months? It is also interesting to note that Golosov and Lucas (2003) report that in their sample (in which inflation averaged around 1% per annum), the average size of price increases and decreases is in the order of 10%. This latter observation in particular poses a challenge for sticky-price models since seems that the bulk of the large price changes in the data are driven by some idiosyncratic factors at the individual level that seem to have little to do with aggregate shocks.

In short, I think it is fair to say that the verdict is still out as far as sticky prices and wages are concerned. Perhaps these objects are indeed sticky and perhaps such stickiness has some implications for how shocks are propagated throughout an economy and what the appropriate policy response is in light of such stickiness. But economists still do not have a good model to explain why nominal variables should display any welfare-reducing stickiness. In the absence of such a model, care should be taken in presuming that business cycles reflect welfare-reducing fluctuations in economic activity correctable by appropriate variations in the interest rate.

So much for sticky prices. But as I alluded to above, another branch of the conventional wisdom (mainly, nonacademic) appears to view the business cycle as suboptimal for entirely different reasons. These reasons appear to hinge on the belief that aggregate

demand shocks occur for no particularly good reason (e.g., animal spirits). According to this view, the economy consists of individual actors who behave much like wild and wacky teenagers might at their first dance where alcohol is involved. The direction of the party appears in many ways to have a life of its own, but the direction can be influenced by the amount of alcohol available in the public punch bowl. If the punch bowl is sufficiently 'spiked,' the party is liable to get of hand (which to some people like myself, actually sounds like a good thing). On the other hand, if the punch bowl is overly diluted, the party is likely to become deathly dull. In this scenario, the central bank is viewed as the supplier of alcohol (in the form of an interest rate choice). Having the best interests of the teenagers at heart, the central bank wisely chooses the alcohol content to keep the party moving along at a measured pace.

Perhaps you do not think this analogy a good one. However, I cannot count how many times I have heard the saying "The Fed's job is to take away the punch bowl just as the party gets started." Likewise, one often reads how the economy appears to be "overheating," as if the economy was a mindless engine with a central bank applying more or less pressure on the gas pedal (interest rates). Similarly, the notion of "insufficient demand" seems to suggest that those darn teenagers simply do not know how to party well if left to their own devices.

Perhaps there is some merit to this view. On the other hand, it seems to make a number of questionable presumptions. While we all know of people (perhaps ourselves) that may appear to behave kooky at times, whether the same holds true at an aggregate level is somewhat doubtful. Stupidity in the market place, when it occurs, is usually punished severely. And who is Alan Greenspan to say whether the management team at General Motors (say, contemplating a huge capital expenditure program) appear to have their net present value calculations all wrong? Similarly, can the central bank really tell whether individual households appear to be consuming too much? Perhaps central bankers do possess such special powers, but if so, why are they so different than the rest of us? I have yet to see anyone try to articulate this view in any convincing fashion.

A more sophisticated version of this 'animal spirits' hypothesis is that economic actors are in fact individually rational, but that various 'strategic complementarities' in the economic environment give rise to an indeterminate number of self-fulfilling prophesies (so that the economy's direction depends solely on an arbitrary set of expectations). There do exist logically consistent models that can formalize this view, although one rarely (if ever) hears of this language spoken at central bank conferences or in the speeches made by central bankers. In any case, to justify a systematic policy response, this view too presumes that central bankers can somehow 'see' the true level of potential GDP and identify the appearance of a 'speculative bubble' in a timely manner. Neither of these conditions is likely to hold in reality.

4 An Alternative Perspective

Let us return to where we started; i.e., with a time-series plot of real GDP for your favorite country. The pattern of economic development tends to be one of growth and fluctuations. Implicit in the conventional view is that the factors that influence growth have little, if any, major influence on economic fluctuations. This interpretation becomes evident when a smooth statistical trend is labelled ‘potential output.’ However, as pointed out by Hicks (1965), there is no compelling a priori reason to begin theorizing in this manner; i.e.,

“The distinction between trend and fluctuation is a statistical distinction; it is unquestionably a useful device for statistical summarizing. Since economic theory is to be applied to statistics, which are arranged in this manner, a corresponding arrangement of theory will (no doubt) often be convenient. But this gives us no reason to suppose that there is anything corresponding to the economic side which is at all fundamental. We have no right to conclude, from the mere existence of the statistical device, that the economic forces making for trend and for fluctuation are any different, so that they have to be analyzed in different ways. It is inadvisable to start our economics from the statistical distinction, though it will have to come in at an appropriate point, as an instrument of application.”

Before the so-called Keynesian revolution, a prominent view was the business cycle was largely a by-product of the natural process of economic development (i.e., technological progress); see, for example, Schumpeter (1939). This view has recently been re-examined by the real-business-cycle literature; e.g., see Long and Plosser (1983) and Plosser (1989).⁸

According to this view, there is no God-given reason to believe that an economy’s technological frontier should expand in a ‘smooth’ manner over time. Virtually no one denies that our remarkable advance in living standards over time is due to technological progress. But new technologies vary in their size and scope; their arrival is unpredictable; they affect different sectors in different ways (very often negatively); and their rates of diffusion may vary, depending on circumstances (including government policy). Sector-specific technology shocks may induce positive comovement in sectors throughout the economy if (as is the case) sectors rely on each other’s outputs as intermediate inputs; see, for example, Hornstein and Praschnik (1997). Adjustments costs may entail periods of unemployment and ‘idle’ capital. Human and physical capital investments that looked good ex ante, may turn out bad ex post. Even the arrival of information concerning the state of technology and investments (without any change in the underlying state of technology) may induce fluctuations in spending and factor market activity. Imperfectly hedged individuals are likely to see great variation in their fortunes throughout this process.

There is a common perception that technology shocks directly affect only the ‘supply side’ of an economy. There is a sense in which this is true, although one might point out that, in general equilibrium; any type of shock is likely to have both supply and demand effects. However, there is also a sense in which this impression is false. One potentially important

⁸ Mankiw (1989) provides a criticism of the real-business-cycle literature that gets so many things wrong, it is hard to take seriously (which is not to say that legitimate criticisms do not exist). While he disparages the notion of technology shocks, one might note that he does not appear willing to propose an alternative plausible source of exogenous disturbance.

dimension of a ‘technology’ shock is the arrival of information (or news) that leads decision-makers to revise their forecasts concerning the return to contemporaneous consumption (saving) and investment choices. In principle, such a shock may occur without any corresponding change in the contemporaneous state of technology (so that the current ‘aggregate supply’ remains stable). At the same time, the arrival of such news is likely to generate what appear to be ‘autonomous’ changes in consumer/ investment spending (i.e., a change in ‘aggregate demand’). Beaudry and Portier (2003) provide evidence which suggests that these ‘news shocks’ (shocks that do not affect productivity in the short-run, but do affect productivity in the long-run) appear to account for about 50% of business cycle fluctuations.

If the scenario just described is reasonably accurate, one would expect to see considerable variability in economic aggregates even if markets functioned perfectly well. Precisely how ‘market imperfections’ may influence the process of growth and fluctuations is an interesting theoretical and empirical question, but clearly one need not begin theorizing under this hypothesis. Equally interesting is the question of how ‘government imperfections’ might influence this whole process (e.g., as in government restrictions on branch banking, the absence of which may have prevented the wave of bank failures that occurred during the Great Depression).

In short, perhaps it is a mistake to associate an economy’s ‘potential output’ with a smooth statistical trend line. To take an extreme view, perhaps an economy’s actual GDP is its potential at any given point in time. While we may all have a latent desire to see development proceed ‘smoothly,’ perhaps this is just not possible—or even desirable. We know, for example, that seasonal fluctuations in aggregate economic activity swamp those fluctuations that occur at business cycle frequencies; yet few of us yearn for an absence of seasons. The GDP of many economies falls by more than 70% for two consecutive periods (days) every week, yet few of us lament the arrival of the weekend. Perhaps stabilization policies, to the extent that they are effective, do more harm than good. Does anyone really know?

Conspicuous by its absence is any discussion so far of the role of money and central banks. The rationale for central banking was at one time a hotly debated issue; see Smith (1936). While the debate came out in favor for central banking, whether economics or politics influenced this outcome is not clear. In any case, central banks can and do play an important role in an economy’s payment system, primarily as clearinghouses and as lenders of last resort. But it is less clear whether any day-to-day tinkering in the short-run money markets have any great influence at all. Since most central banks have a legislated monopoly over small-denomination fiat note issue (cash), they likely can and do exert influence over the long-run inflation rate (at least, to the extent that they are free of a revenue-hungry fiscal authority). Nevertheless, the private sector remains more or less free to create all the money it needs, so that abstracting from money is perhaps not a bad first approximation (at least, for understanding normal peacetime developments). However, the theory of money and banking is still relatively undeveloped and so it is difficult to take a definitive stance on the relative importance of monetary phenomena in generating or propagating business cycles.

Of course, these days, not even the conventional wisdom speaks very much about the role of money in an economy. Monetary policy is widely viewed as a rule that dictates the expected time-path of the short-run nominal interest rate (as a function of the expected time-path of future output and inflation gaps). While a central bank's current interest rate target is often described as 'market leading' (as if the market simply takes its cue from monetary policy in determining the structure of interest rates), it often appears instead to be 'market following' (so that it is the central bank that appears to be accommodating its stance to natural market pressures).

Consider for example the case of a central bank committed to achieving an inflation target. Now, imagine an economy that begins receiving 'news' that a good deal of its recent investments are likely to turn out poorly (relative to the expectations that initially motivated the capital expenditure). As the business sector lowers its forecast on the return to capital spending, the aggregate demand for investment slows down (with stock markets reacting negatively as well). As households foresee weakness in their future earnings, 'consumer confidence' wanes along with consumer demand. Wealth portfolios witness a shift away from business equity and debt into safer government securities, including both money and bonds. The increase in demand for government bonds drives up bond prices (with a corresponding drop in yields). The increase in demand for cash raises the value of money, leading to disinflationary pressures. The weakness in the economy and the disinflationary pressure induces a central bank to lower its 'market leading' interest rate.

The scenario I just described sounds a lot like what happened during the last U.S. recession. Over that episode, the Fed lowered the federal funds rate dramatically over a relatively short period of time. That the Fed did so was likely a wise policy action, but only in so far as it accommodated natural market pressures that were driving interest rates lower in any case. To suggest that the Fed was actually controlling the economy over this episode is likely to have things backwards. This is not to suggest that the Fed is powerless. In particular, if the Fed had not accommodated market pressures in the way it did (say, by trying to maintain interest rates at an 'artificially' high level), the result may very well have been a more severe recession (and possibly deflation). The point here is simply that much central bank behavior can plausibly be interpreted as accommodative reactions to technology/news shocks in pursuit of an inflation target. To the extent that recessions and booms are caused by such shocks, a central bank likely has little business in trying to stabilize the economy beyond what it can achieve simply by pursuing its inflation target.

5 Conclusion

Conventional wisdom views the business cycle as the product of aggregate demand and inflation shocks that move the economy away from an independently determined smooth trend rate of growth. The deviation in actual GDP away from trend is itself viewed as a product of 'market failure,' that at time occurs on a 'grand scale' (Mankiw, 1989, pg. 79). Active monetary (and fiscal) policies are viewed as desirable 'stabilizers' for an economy that may otherwise exhibit excessive volatility.

An alternative view argues that the business cycle is largely a natural byproduct of the process of economic development, so that 'trend' and 'cycle' are not independent phenomena. Markets may be imperfect, but as resource allocation mechanisms, they dominate any practical alternative (e.g., planned economies). Many perceived market imperfections are in fact the by-product of politically-motivated government interventions and regulations. Central banks themselves owe their existence to past fiscal authorities hungry for seigniorage revenue. In so far as it is possible, monetary policy should endeavor to replicate the services that would have been provided by well-functioning private institutions that have been regulated out of business. Since the process of economic development results in winners and losers, many fiscal actions appear to be motivated by the redistributive demands of various special interests. The fiscal responses to such demands provides a further source of disturbance in the economy and the distortions introduced by such policies can further hamper the way in which an economy responds to the inevitably changing economic landscape of a growing economy.

Which of these two views presents a more accurate description of reality is not known with certainty. Perhaps there is an element of truth in both of these perspectives. But then, this is precisely the point of the present essay.

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