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# Nominal GDP targeting: Policy rule or discretionary splurge?☆

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ABSTRACT

In a neo-canonical monetary policy model, targeting of nominal GDP in terms of growth rates (not growing levels) is analytically equivalent to adoption of a policy that is optimal from a "timeless perspective," in the sense developed by Woodford and widely utilized in recent monetary policy analysis.



## 1. Introduction

The past 2–3 years have seen something of a resurgence of interest in the proposal that a desirable rule for the conduct of monetary policy would be provided by a central bank that consistently aims, period by period, to achieve target values of nominal GDP, with these designed to grow over time at a rate equal the central bank's preferred long-run average inflation rate (e.g., 2% pa) plus its estimate of the economy's long-run average rate of growth of real output (e.g., 3% pa), the latter of which might be taken as approximately independent of the inflation target.[1] This recent interest has been manifested largely in the non-scholarly literature (e.g., Romer, 2011; Krugman, 2011; McCallum, 2011) and especially in numerous internet blogs by authors including Scott Sumner, Lars Christensen, David Beckworth, and others. A notable exception in this regard is provided, however, in a recent academic conference paper by Woodford (2013), which devotes several pages to the topic. I will come back to this important contribution below.

In practice, it might be said, the basic idea is that monetary policy affects both inflation and real output by way of its influence on nominal aggregate demand, so one might want to focus upon, rather than nominal GDP itself, some other related measure of aggregate nominal spending. One example would be the measure favored by William Niskanen, "nominal final sales to domestic purchasers" (i.e., nominal gross domestic product plus net imports minus the change in private inventories).[2] A different type of departure from pure nominal GDP could be the use of a related measure of nominal spending that is available at a higher frequency, i.e., more often than quarterly. For example, it would be possible to utilize a measure based on the product of a producer (or consumer) price index and the Fed's industrial production index, both of which are available on a monthly basis. The feasibility of this type of approach refutes the possible objection that nominal GDP is available only at quarterly intervals, which might be judged as too infrequent for practical policymaking.

## 2. Nominal GDP criterion

One major issue, of course, is why use of the rate of growth of some nominal spending measure would be better than use of the rate of growth of a broad price index (i.e., some inflation rate) as the crucial variable on which the central bank should focus. In that regard, a basic consideration is that inflation is not the only macro variable that the central bank wishes to influence in a productive manner. Output (and employment) also is of great concern, so it is desirable (as well as politically inevitable!) that the central bank will take this real variable into account in making its policy

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[1] Academic supporters in the past included Hall (1984), Hall and Mankiw (1994), Taylor (1993), and McCallum (1988, 1990, 1999); Tobin (1983) discussed the idea sympathetically but did not actually support it. All of these writers followed the lead of Meade (1977), who had introduced the notion much earlier.

[2] See Niskanen (2009).

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decisions. But basic economic analysis suggests that monetary policy effects on real output are only temporary. So if nominal spending is kept constant at a rate equal to the steady-state rate of output growth plus the "target" inflation rate, then that inflation rate will be obtained on average. In practice, of course, the term "inflation targeting" has come to mean, among central bankers as well as academics, a policy that focuses not only on inflation—as was the case both officially and actually in New Zealand for several years beginning in 1990—but also on measures such as the "output gap," that is, the difference between actual output and its "natural" value (which would be forthcoming if it were not for certain frictions, including primarily price level *stickiness*, i.e., slow adjustment of prices to changes in macroeconomic supply-demand conditions). To focus on nominal GDP growth is only one way of taking into account both inflation and real output considerations, but it is a simple, clean way of doing so. It also has the attractive practical feature that it gives the central bank an objective that is expressed entirely in nominal terms—and is accordingly a variable that the central bank can in fact control on average.

It seems ironic, then, that when several academic economists suggested nominal income targeting to Federal Reserve officials in the 1980s, often the main objection put forth was that it would be difficult for the public to understand.[3] To the contrary, it seems likely that in fact it would be easier for the public to understand the meaning of nominal GDP than of a target variable that amounts to an unspecified weighted average of one particular inflation rate and some unreported measure reflecting current output and/or unemployment conditions. Indeed, I would argue that "total dollar spending" in the economy (while avoiding double counting)" is a way of describing nominal GDP that would make that concept at least as easy to understand by average citizens as "core inflation" or even "CPI inflation."

But suppose that the central bank were to be explicit and clear about weights to be attached to target levels of inflation and output-gap variables separately. How would nominal income targeting compare with the last-mentioned type of "inflation targeting" substantively, i.e., in terms of results? Here one cannot be certain, but it is plausible that movements in nominal spending growth would be more closely and reliably related to central bank policy actions—primarily open market sales and purchases—than would movements in inflation and output taken separately. If so, then a central bank that targets nominal GDP would not have to rely upon its models of the way in which nominal and real variables are related, that is, its model of the "Phillips curve" relationship. This would be a significant analytical advantage, because the Phillips-curve relationship is the component of quantitative (i.e., econometric) macroeconomic models for which professional understanding and agreement is, by far, the weakest. Thus, if the central bank can manage nominal spending growth in a manner that does not involve the Phillips curve conceptually, it can conduct policy without reliance on that elusive relationship. By contrast, if it focuses on inflation and real GDP separately, or on inflation alone, it cannot possibly avoid its use.

The point of view expressed in the preceding discussion is somewhat reminiscent of Milton Friedman's approach to price-level determination, in which he famously depicts the central bank as choosing the supply of money in nominal terms while the private sector is choosing the quantity of money demanded in real terms. The interaction of these choices then determines the price level—see Friedman (1987, pp. 3–4). In the present application, the central bank determines the amount of spending in nominal terms, with the private sector's behavior determining how much of any change in spending will be in terms of (real) output changes and how much will be in (nominal) price level changes. Since the long-run average growth rate of private demand in real terms is due to the growth of labor and capital inputs plus the effects of technological progress—none of which will be strongly affected by the average inflation rate (according to almost universal agreement among monetary/macro economists)—the central bank's choices then yield the desired (target) inflation rate on average.[4]

## 3. Levels vs. growth rates

At this point we turn to the main topic of the present paper, namely, whether the utilized nominal GDP target values should be specified in terms of "level" or "growth-rate" measures. For an example of this distinction, suppose that the chosen rate of growth of nominal GDP is 4.5% per year. Suppose that in some year, however, the central bank misses that target by a full percentage point on the high side, yielding 5.5% growth consisting of (for example) 3.0% inflation and 2.5% real growth. Should the central bank (CB) strive for the usual 4.5% growth in nominal GDP again in the coming year? Or should it decrease its growth target to 4.0%, aiming thereby to be back at the previously implied path for the nominal GDP level at the end of the current year? In other words, should the nominal GDP targets be set in terms of growth rates or growing levels? In the latter case, one disadvantage will be that policy that decreases (or increases) nominal growth below (or above) its usual target value may be excessively restrictive (or expansionary), whereas the former (growth-rate) case leaves open the possibility of cumulative misses in the same direction for a number of periods, i.e., it permits "base drift" away from the intended path. My position on this issue, in writings in the past, has been that keeping with the target growth rates will, if they are on average equal to the correct value over time, be unlikely to permit much departure from the intended path and so should probably be preferred (McCallum, 1999). This is not at all a universal point of view, however, among nominal GDP supporters. Notably, Michael Woodford's prominent recommendation of nominal GDP targeting, presented at the 2012 Jackson Hole conference (sponsored by the Kansas City Fed) promoted the growing levels version; see Woodford (2013, pp. 228–231).

In what follows, let us suppose that the relevant time periods with which we are concerned are quarters, so that, for example, a 2% pa inflation rate would be, in fractional quarterly units, approximately 0.005 while a (say) 3% pa average growth rate of real output would be denoted as 0.0075.

## 4. Analysis in basic model

Now we proceed by considering the implications of the level vs. growth rate choice in the context of a simplified but explicit model of the type used as the starting point in a vast number of prominent publications including the treatise/textbooks of Woodford (2003), Walsh (2003, 2010), and Gali (2008), plus the highly influential articles of Clarida et al. (1999) and Woodford (1999). Specifically, we adopt a system comprising a Calvo-type price-adjustment/aggregate supply relationship

$$\pi_t = \beta E_t \pi_{t+1} + \kappa \tilde{y}_t + u_t, \tag{1}$$

[3] This statement is based on discussions at the time with Federal Reserve officials.

[4] Assuming, of course, that the central bank is correct in its estimate of the growth rate of real output.