Economic Implications of Tax Reforms

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Abstract

Recently, several proposals for significant reform of the federal tax system have received serious political consideration and many sound arguments for and against these proposals have been made. Although we summarize some of the economic arguments in this paper, it is not our purpose to discuss the merits of the proposals. Rather, our purpose is to show that, whatever proposal is adopted, it will be affected by and will affect the making and carrying out of monetary policy.
1. Introduction

Recently, several proposals for significant reform of the federal tax system have received serious political consideration and many sound arguments for and against these proposals have been made. Although we summarize some of the economic arguments later in the paper, it is not our purpose to discuss the merits of the proposals. Rather, our purpose is to show that, whatever proposal is adopted, it will be affected by and will affect the making and carrying out of monetary policy. We make two simple points about tax reform and central bank policymaking.

(1) The central bank response to tax reform affects both the likely behavioural responses of economic agents to tax reform and the welfare implications of tax reform.

(2) Tax reform, and the likely behavioural response to it, affects the central bank’s ability to implement monetary policy.

We use the term “central bank” to refer to central banks in general, recognizing that there are many specific institutional frameworks under which central banks operate and that they have different responsibilities and policy tools available. Our use of the term does not refer specifically to past, current, or future Federal Reserve policy. In general, we use the term “central bank response” to refer to any policy changes made in response to a tax reform by a central bank in order to carry out its responsibilities. But specifically, most of our analysis is related to the conduct of monetary policy in a general sense, although we do comment on some implications for the central bank role as lender of last resort and as a regulator of the financial system. We do not treat issues such as how, or by whom, central bank policy is determined either in general or in response to a tax reform. Nor do we treat the issue of how central bank policies are implemented, that is, whether the central bank policy targets prices or money supply or economic growth.

The central bank affects the outcome of tax reform because, particularly in the short run, it can affect who benefits and who loses under the tax reform. For instance, consider the imposition of a consumption tax. As has long been noted in the literature, if the central bank response is consistent with a one-time jump in the consumer price, then holders of nominally denominated assets suffer a loss in wealth. Even if the tax reform leads to higher future output, it would not necessarily help the elderly, who would thus bear a disproportionate welfare loss in the transition to the new tax regime.

Tax reform affects the central bank response because the central bank’s ability to implement that response may be substantially hampered because behavioural responses to tax reform, including anticipatory behaviour, would muddy the economic data. Observing the data, the central bank must distinguish between underlying macroeconomic phenomena to which it might or might not want to respond and the transitory effects of tax reform to which
it also might or might not want to respond.

2. The Economic Argument for Tax Reform

All of the recent, seriously considered reform proposals (see note1) would broaden the base of taxation by reducing tax deductions, thereby allowing rates to be decreased or the rate structure to be flattened. The economic argument for doing so is primarily that reducing tax rates is economically efficient because it reduces distortions, such as between the incentive to consume and the incentive to work or to save.

Other arguments for tax reform include simplified administration, increased compliance, and “fairness.” Of course, the fairness or equity implications of tax reform are a minefield not just for politicians but also for economists, as the theory of the second best reminds us.

There is an extensive and rapidly growing literature that analyzes the likely effects and merits of both general and specific tax reform proposals. However, as stated earlier, our purpose is not to analyze those merits, but rather to show why the outcome of tax reform is both affected by and affects the central bank’s response.

3. Central Bank Response Affects Tax Reform

To talk sensibly about why the central bank response affects the outcome of tax reform, one needs to have in mind a model for how the central bank’s actions affect the macro economy. A careful theoretical model is beyond the scope of this paper, but for the sake of providing intuition, we think of both output and prices in the short run as adjusting independently of the central bank’s monetary policy, whereas in the long run, output is constrained by the economy’s resources. The central bank can affect the level of nominal GDP and thereby indirectly target the level of prices by choosing how much money to supply. More explicitly, we assume that in the long run, the “standard” relation between prices and money holds. Under this relation, \( mv = qy \), where \( m \) is the money supply, \( v \) is velocity, \( y \) is output, and \( q \) is the consumer price, equal to \( p(1 + X) \), where \( p \) is the producer price and \( X \) is the sales tax.

4. Two Tax Reforms: Consumption Tax and Wage and Business Income Tax

In considering these two types of tax reform, we abandon all existing taxes. In the model above, these taxes include the retail sales tax, the wage tax, the business income tax, and the tax on capital income. We then replace these with either a tax on consumption or a tax on wage and business income. In the real world, this experiment corresponds to replacing all of the taxes currently levied at all levels of government with a single tax either on consumption or on wage and business income. Such a wholesale replacement of the tax system may seem unlikely, and modelling tax reform in this way may seem to exaggerate the economic effects of the central bank response. However, we think that in the context of our paper this policy
experiment is entirely sensible. First, we are making the simple, qualitative, stylized point that the central bank response matters; our focus is not on the different quantitative effects that would result from replacing only a portion of the tax system. Second, replacing all of the taxes makes it easier to obtain an intuitive understanding for the observed simulation effects. Third, it is not unlikely that a tax reform taking place only at the federal level would be followed in many states and localities by similar reforms. As Jorgenson (1996) has observed, many states piggyback their tax system on the federal system.

For each of the tax reforms, we solve for the tax rate that satisfies the government budget constraint in equilibrium, with government purchases fixed at their baseline level and the effect on revenue and expenditures of assumed monetary responses taken into account. By requiring that the government budget constraint be satisfied, we make sure that the welfare implications of the model are not confounded by allowing the government to run a deficit or a surplus. Further, our model captures some of the monetary policy effects on government revenues and expenditures that have been emphasized in the literature.

5. Two Monetary Policies: Accommodative and Non accommodative

In each of the reforms, we consider two alternative monetary policies. In the first, monetary policy is unchanged, or “nonaccommodative” (the monetary growth rate, is fixed at its baseline level). In the second, monetary policy “accommodates” the change in taxes. Before formally defining the term “accommodation,” we find it useful to recall that in the limiting case presented above, where prices are flexible and there are no incentive effects, a nonaccommodative policy would imply a constant consumer price and a drop in the producer price and the wage rate by the amount of the tax. Many economists would argue that such price changes are implausible and that the central bank should change its monetary policy in such a way as to accommodate a one-time increase in the consumer price by the amount of the tax, thus allowing the producer price and wage rate to remain constant. More formally, if the consumption tax changes from its baseline level of to a new level of, then the accommodative monetary policy would change the monetary growth rate from its baseline level of to a new level of, which satisfies the following equation: \((1 +\mu) = (1 +\mu) (1 +X)/(1 + X)\). The accommodative policy keeps both producer prices and the wage rate unchanged in the limiting case.

6. Which Central Bank Response Is Best

The decision as to which monetary response is the best one is, in the end, political. One important consideration is the view that monetary policy should not be used to effectively undermine the implicit and explicit contractual arrangements that underpin the economy. The case for this involves much more than a merely theoretic love of market out-comes.
Significant undermining of contractual relationships disrupts economic activity and thus undermines the central bank’s stabilization mission. Furthermore, sharp changes in the economic well-being of various agents are likely to have ramifications for the banking system, thus complicating the central bank’s mission as lender of last resort. A switch in tax regimes, however, potentially places the monetary authorities on the horns of a dilemma. A nonaccommodative policy implies abrogation of worker’s wage contracts.

7. Why Tax Reform Affects the Central Bank Response

As we noted earlier, tax reform affects the central bank response because the central bank’s ability to implement that response may be substantially hampered because behavioural responses, not the least of which are anticipatory effects before the effective date of the tax reform, are likely to muddy the economic data. We trace through some of these responses below. But we neglect many other important anticipatory effects, such as effects on financial markets and housing markets.

Central banks do not, in general, fine tune their economies on a quarterly basis; but even “gross tuning” requires a careful monitoring of economic activity. Under tax reform, the central bank would have to distinguish between underlying macroeconomic phenomena—to which it might want to respond—and the transitory effects of tax reform—to which it might or might not want to respond. Little guidance as to how to make such a distinction is provided by empirical evidence or by the current state of the art in macroeconomic modelling. The empirical evidence is scant because most countries that have levied a VAT were replacing existing consumption taxes of some form (such as a turnover tax or a wholesale tax). Only a few substituted VATs for some portion of income taxes, and no countries did so on anything like the scale under consideration. And the comprehensive macroeconomic models that are available cannot be relied upon to distinguish precisely between underlying macroeconomics and transitory tax effects. Sorting out the tax-induced noise from the economic music is likely to test the talents of even the most carefully tuned economic ear.

8. Anticipatory Effects of Consumption Tax

Suppose that a consumption tax were levied, and there were no monetary accommodation, so that the naive intuition from the limiting case would be that consumer prices would remain constant. This situation implies an anticipated drop in producer prices after the effective date of the tax reform. Firms would attempt to shed inventory before the effective date to avoid taking an inventory loss. At the same time, firms would avoid buying intermediate goods, expecting to be able to pay less after the effective date. The result would be downward pressure on prices in the near term and a tendency toward a bust/boom swing around the effective date.

Now suppose monetary accommodation, so that the naive intuition is for consumer prices
to jump by the amount of the consumption tax, allowing for constant producer prices and wages. Consumers would want to stock up, to shift as many consumption purchases as possible to before the effective date of the tax, to avoid the price increase. Firms would tend to ramp up production to meet the extra demand, but still there would likely be upward pressure on prices in advance of the effective date, as well as a boom/bust swing as consumption slumped after the effective date.

9. Conclusions

We argue that the central bank’s response makes a difference in how we think about the economic implications of tax reform and that tax reforms make a difference in the central bank’s ability to implement its response. Our hope is that researchers will attempt to trace out these effects more carefully in the context of a more richly specified, multiple agent, dynamic intertemporal model, in which monetary policy is explicitly modelled. There is an extensive literature analyzing the welfare implications of either monetary policy or fiscal policy; but few researchers have studied models that explicitly combine fiscal and monetary policy effects, particularly in the context of proposed tax reforms, although the literature contains many discussions that have proceeded at an intuitive level. Hall (2005) provides an interesting analysis that carefully considers the price effects of proposed tax reforms, although he considers these effects only under the assumption of an accommodative central bank response, and the analysis is not carried out in the context of a fully specified intertemporal model. The examines distributional effects of consumption taxes, under various assumptions about the central bank response but in the absence of incentive effects. Lucas and Stokey (1993) study fiscal and monetary policy effects in a simple, intertemporal economy without capital. Hansen and Cooley (1992) extend the analysis to an economy with physical capital and indivisible labour. And Chari, Christiano, and Kehoe (1991) study optimal taxation in an economy with uncertainty.

These studies contain many interesting results, but all assume long-lived agents, and the focus is on long-run effects. We think that there are important welfare effects of tax reform that cannot be explored without explicitly considering the generational structure. And, though the long-run effects of tax reform are an important focus of discussion, the short-run effects including those of the central bank response and of any transitional tax provisions intended to ameliorate short-run welfare effects may well turn out to be a determining factor in the political feasibility of implementing proposed tax reforms. As mentioned above, the static model we consider here can easily be motivated as the steady state of a fully dynamic model. Much of the intuition for the effects of the central bank response to tax reform can probably be obtained in the static model, but we hope to investigate these effects more fully in a dynamic model.
References


