

Fiscal Policy for Economic Growth

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he American economy faces a set of immense, interrelated fiscal challenges. It is useful to discuss them over three closely interrelated time frames: short-, medium- and long-run. Short-run policies affect the options available for the longer-term. For example, the deficits accumulated in recent years have to be financed eventually with higher future taxes to pay the interest on the added debt. Current and future spending, taxes, deficits, and debt are linked by the Government's intertemporal budget constraint: the present discounted value of taxes must cover the present-discounted value

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of spending plus the debt net of assets. Longrun policies affect private behavior—and hence the economy and budget—now. Much of consumption will respond to expectations of longrun or "permanent" after-tax income; long-cycle business investment will respond to future tax rates, and so on.

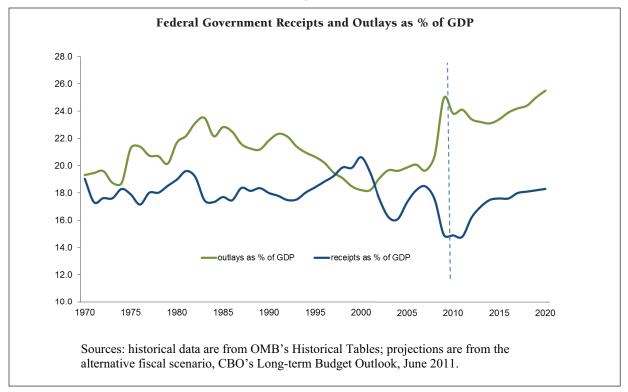
The current anemic recovery follows several years of record-demolishing budget deficits (Figure 1) amid clamor for additional short-run deficit spending and temporary tax cuts. The medium-run projections remain daunting (see the period from 2012 onwards in Figure 1). And it has been known for decades – as I wrote in a book entitled *Too Many Promises* (1986)– that the projected rapid growth of Social Security and Medicare costs are a looming fiscal iceberg (Figure 2 shows that even conservative estimates of projected deficits are several times the national

debt) which will have an economic impact of Titanic proportions. The result is a debt-to-GDP ratio rapidly rising to levels that historically have been associated with long periods of subpar growth and sovereign debt-related financial crises (Figure 3 shows the U.S. on a path towards debt ratios of Italian and Greek proportions).

Current spending, current deficits, and these projected deficits must be financed eventually; one solution suggested is proportionally higher income and payroll taxes on all taxpayers, but this would drive the combined top marginal tax rate on labor income to more than 80 percent by 2050¹ and to more than 70 percent for many middle-income working couples (Table 1 provides the basis for these bleak prospects).

Thus, we need a strategic long-run vision of fiscal policy – tax, spending, deficits and debt – supportive of a successful, dynamic growing

Figure 1



economy and we need a strategy for getting there from the current economic and fiscal morass. In short, we need a glidepath back to normalcy.

Economists have several methods for estimating the effects of fiscal policy on short- and

long-run output: calibrated analytical models, macroeconometric models, econometric estimation of relevant parameters (e.g., the government spending multiplier), vector autoregressions (VAR), and historical studies. Each has its

strengths and weaknesses; none is perfect, given the difficulty of distinguishing the effects of many factors. I refer to some of each type below, emphasizing what I view as the important and/ or underemphasized points without attempting to be comprehensive.

If we move down the path toward a European-style welfare state with substantially higher taxes and spending, we do so at our economic peril. Much of Western Europe's 30 percent lower per capita incomes than in America is directly or indirectly due to Europe's higher taxes and the welfare state they finance. [Prescott (2002) estimates virtually all is due to higher taxes; I believe the effect is sizeable but not that large; Hall (2009) argues for a labor supply elasticity about two-thirds of the Prescott estimate; Ljungqvist and Sargent (2006) emphasize disincentive effects from generous unemployment benefits, which are, of course paid for by the high taxes.]²

It is thus imperative that the tax share in GDP and marginal tax rates should be kept as low as possible, while remaining sufficient to fund necessary spending that passes rigorous cost—benefit tests. To prevent a growth-destroying debt (Reinhart and Rogoff 2009) and confiscatory tax-rate future, projected spending

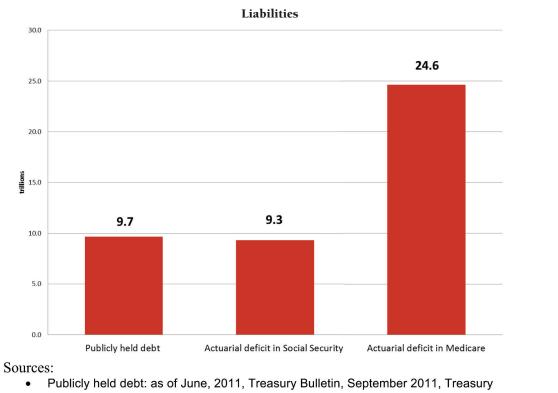
growth, especially of entitlements, must gradually be curtailed. Meaningful tax reform, with lower rates on a broader base of economic activity and people, can be an especially effective complement to spending control. But without serious spending discipline, even the best tax reforms are doomed to be undone

LONG-RUN ENTITLEMENT REFORM

ong-run entitlement cost growth is due primarily to rising real benefits per beneficiary, 55 percent for Social Security and 80 percent for Medicare, the remainder due to demographic pressures from the retirement of the Baby Boom generation and longer life expectancies (Hagist and Kotlikoff 2005).

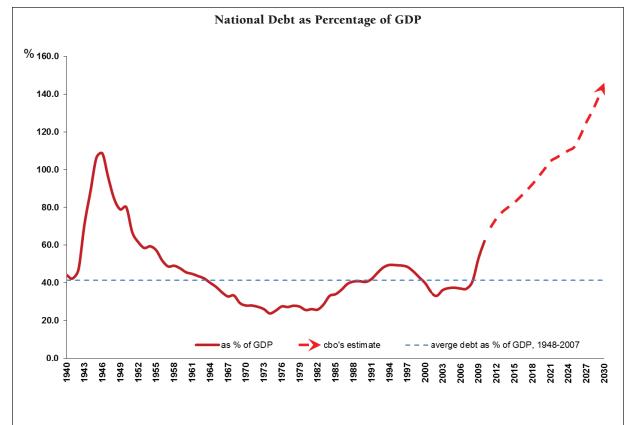
The current benefit formula implies that real Social Security benefits per recipient will soar in the next few decades for three reasons. First and most important, initial benefits are indexed to wages, which grow more than prices. Second, post-retirement indexing of benefits continues to use a flawed CPI that overstates inflation by 70-80 basis bp/year or so, despite some valuable improvements made by the Bureau of Labor Statistics³. Third, people will be living longer and hence collecting for more years. None-

Figure 2



- Department,
- Actuarial deficit in Social Security: Trustees' Report from Social Security Administration, May 2011
- Actuarial deficit in Medicare: Trustees' Report on the Financial Status of the Medicare Program, May 2011

Figure 3



Sources: historical data are from OMB's Historical Tables; projections are from the alternative scenario, CBO's Long-term Budget Outlook, June 2011.

theless, relatively modest changes can be made to ensure current payroll tax rates are sufficient to deal with the demographic deluge.

The claims that reforms would cut "guaranteed" benefits, breaking promises, depend on projecting the current benefit formula forward indefinitely and funding the program with transfers from other parts of the budget (i.e., income taxes) or ever increasing payroll tax rates. Yet national policy has recognized in a variety of ways that there is no guaranteed individual benefit. The Social Security Administration informs beneficiaries that 74 cents in taxes will come in for every dollar of projected benefits in coming decades. Congress has often changed benefits in the past, e.g., by taxing them, and is certain to do so in the future. In fact, the Supreme Court has ruled no one is entitled to the benefits, as they are not legally owned assets. Finally, most younger workers are not expecting to receive them. There is thus nothing "guaranteed" about the benefits; they involve immense economic, demographic, and political risk.

A set of common-sense reforms would strengthen and modernize Social Security, improve incentives, and eliminate the future funding uncertainty for families and the economy.

Table 1

Type of income	Current	2013	2016	2050
		Obama plan	To cover budget deficit	To cover primary deficit (f)
Top wage earners				
top federal rate	35.0%	39.6%	52.2% (b)	63.8% (b)
payroll tax (employer - employee combined)	15.3% (a)	15.3% (a)	16.2% (c)	16.2% (c)
state PIT (CA)	10.5%	10.5%	10.5%	10.5%
itemized deduction phaseout	-	2.0%	2.0% (d)	2.0% (d)
combined	44.1%	50.2%	70.8%	80.3%
Middle income (\$60k) (e)				
federal personal income tax	25.0%	25.0%	33.9% (e)	53.1% (e)
payroll tax - all uncapped	15.3%	15.3%	15.3%	15.3%
state PIT (CA)	9.5%	9.5%	9.5%	9.5%
itemized deduction phaseout	-	-	-	2.0%
combined	45.0%	45.0%	52.4%	70.5%

⁽a) The 12.4% social security portion is capped (currently at \$110,100, and indexed), so there is no marginal effect above that level.

First, we should switch from wage indexing to price indexing. Second, we can modestly increase the retirement age in coming decades beyond that in current law, while maintaining an early retirement option. (The life expectancy of the elderly has been rising a month per year for decades and is projected to continue to rise.) Finally, we need to use the more accurate chainedCPI advocated by Boskin et al. (1996), which would remove about 30–40 bp of the upward bias in the current CPI, to index post-retirement benefits. This would more than eliminate the long-term insolvency. I also favor adding a "personal accounts" component to Social Security and raising benefits for the poorest elderly, but preventing the large tax increases to fund ever more generous benefits to much larger cohorts of retirees is the primary issue.

Medicare is projected to run much larger deficits than Social Security (see Figure 2). Slowing the projected growth of costs is essential, and there are two potential routes to doing so: rationing by regulation or relying on choice and price to reduce spending. Transitioning Medicare gradually to a premium support model—a bipartisan idea championed by Democrats such as Senator John Kerry and former CBO Director Alice Rivlin and Republicans such as current House Budget Committee Chairman Paul Ryan—is the most promising route to reform. The best current reform proposal, jointly sponsored by Senator Ron Wyden (D-OR) and Congressman Ryan (R-WI), would set up competition among private plans and traditional Medicare, phasing in for those currently under the

⁽b) Income tax increase would be considerably larger if payroll tax is not fully uncapped by this time.

⁽c) Assumes full uncapping; partial would leave top rate lower for very highest income, with cutoff depending on extent of uncapping.

⁽d) If continued.

⁽e) Assumes 2% real income growth; marries spouse with same income.

⁽f) CBO more realistic alternative baseline adjusted for conformity to 2013 Obama plan; combined rate would be much higher if taxes also increase to cover projected interest payments.

n.b. Combined rates net deductibility of state income taxes and partial payroll tax exclusion from income tax.

age of 55. With Government subsidizing purchases of insurance on a declining basis as income rises, with policies required to cover large and catastrophic expenses (to avoid these expenses being dumped on taxpayers in the end), and with options including higher deductibles and copays for lower cost, such reform can substantially reduce projected cost growth.

Would it be enough? Health spending is projected to increase from one-sixth to onethird of GDP in coming decades; that implies that Americans will be spending roughly onehalf of their income growth on health care! We cannot easily tell how consumers will value that spending, because much of it is currently priced at zero through third party insurance. Economists are still in the early stages of analyzing the historical, rapid rise in health care prices, breaking them down into true inflation and quality improvement. In some notable cases (cataracts, heart disease) there would appear to be substantial quality improvement, so more accurate measurement would raise GDP and lower health care inflation

In most other industries undergoing rapid technical progress, costs eventually decline substantially. That has not happened in health care and may not, given current institutions (although the rate of growth of health spending has slowed recently). So whether the increased spending will be worth the cost and whether these reforms will be sufficient remain open questions. But they would be a major improvement and the best place to start. To avoid major disruption to families and the economy, reforms to these programs should be phased in gradually after a grace period, growing to full effect across several decades.

TAX REFORM

Spending control is vital before debt levels or tax increases cause severe permanent economic stagnation. Tax reform, with lower rates to be collected on a broader base of economic activity and of taxpayers, could also substantially increase incomes by 6% per year or more. (Altig et al. 2001, Jorgenson and Yun 2001).

The U.S. has the second-highest corporate income tax rate of any advanced economy (39 percent including state taxes, 50 percent higher than the Organization for Economic Co-operation and Development average (OECD, Tax Database 2011), and one of the few remaining that taxes worldwide income. Of course, various

credits and deductions—such as for depreciation and interest—reduce the effective corporate tax rate. But netting everything, our corporate tax severely retards and misaligns investment, and these problems will only get worse as more and more capital becomes internationally mobile. Many major competitors, Germany and Canada among them, have reduced their corporate tax rates, rendering American companies less competitive globally.

Corporate income is taxed a second time at the personal level, as either dividends or capital gains. Between the new taxes in the health reform law and the expiration of the Bush tax cuts, these rates are soon set to increase by 60–200 percent. ⁴

This complex array of taxes on corporate income produces a series of biases and distortions. The most important is the bias against capital formation, that decreases the overall level of investment and therefore future labor productivity and wages. Also important are the biases among types of investments, depending on the speed of tax vs. true economic depreciation, against corporate (vs. non-corporate) investment, and in favor of highly leveraged assets and industries. These biases assure signifi-

cant impediments to overall capital formation that varies systematically. There is considerable evidence that high corporate taxes are economically dangerous; the OECD concluded that "Corporate taxes are found to be most harmful for growth, followed by personal income taxes and then consumption taxes." (Johansson et al. 2008)

Virtually every major tax reform proposal in recent decades has centered on lowering tax rates and broadening the tax base. Most proposals move toward taxing consumption. This could be accomplished by 1) junking the separate corporate income tax, integrating it with the personal income tax (e.g., attributing corporate income and taxes to shareholders or eliminating personal taxes on corporate distributions), and/or allowing an immediate tax deduction (expensing) for investment (which cancels the tax at the margin on new investment and hence is the priority of most economists; and 2) in the personal tax, allowing a deduction for all saving, e.g., by expanding or eliminating the limits on tax-deferred saving. The Hall-Rabushka Flat Tax, the Bradford progressive consumption Xtax, a value-added Tax (VAT), the Fair Tax retail sales tax, four decades of Treasury proposals,

the 2005 President's Tax Commission proposals, and the Simpson–Bowles Commission would all move in this direction.

We should transition to one or another of these systems, each of which moves to much lower rates on a broader, more consumption-oriented base. Revenue estimates for tax reform are mostly static, ignoring effects on output and income. Thus, the actual revenue produced by "revenue-neutral" base-broadening and rate-lowering is likely to be somewhat higher than zero, due to faster growth and less tax avoidance than typically assumed (Feldstein 2011). Any such "revenue dividend" relative to revenue estimates should primarily be devoted to reducing deficits and debt.

Those demanding higher taxes on the "rich" or anyone else must confront some inconvenient truths: The same CBO study reporting substantial gains in upper incomes from 1979 to 2007 also reported that taxes became more progressive over the same time period. Indeed, the U.S. has the most progressive tax system in the OECD. The top 1 percent of taxpayers, with 20 percent of income, pay 38 percent of income taxes, whereas about half of Americans pay none and 47 percent of Americans receive government

payments (U.S. Bureau of the Census 2009). Most redistribution occurs on the spending side of the budget. The U.S. has the second-highest corporate income tax rate of any advanced economy. With current rates, taxes will rise beyond, while spending remains far above, historical shares of GDP.

Reducing the corporate rate would help strengthen what is an historically anemic recovery from such a deep recession. The late Arthur Okun concluded that the corporate tax cut was the most powerful of the Kennedy tax cuts in strengthening slow growth. Replacing the current tax system with the reforms mentioned above, phased in over a few years, would also strengthen the economy long-term by decreasing distortions and increasing investment, productivity and future income. American workers would benefit from more jobs in the short run and higher wages in the long run.

However, if tax reform includes a new tax, the revenue from which is used to grow government substantially, it will seriously erode our long-run standard of living. The VAT has served that purpose in Europe and, while better than still-higher income taxes, the larger-size governments it has enabled there are the prime reason

European living standards and real incomes per capita are so much lower than ours. Trading a good tax reform for a much larger government is beyond foolish. No tax reform can offset losses that large. Hence, a VAT should only be on the table if it replaces other taxes and is accompanied by rigorously enforceable spending control that prevents the need for much higher taxes.

SHORT-RUN FISCAL STIMULUS

Discretionary fiscal policy should usually defer to monetary policy and the automatic fiscal stabilizers, given the recognition, legislative and implementation lags and social engineering, pork and ineffective policies likely to emerge from the political process. Fiscal policy should focus on permanent, predictable rules to support long-run growth. Why? Modern macroeconomics suggests that the assumptions behind large Keynesian multipliers—generally very sticky prices and wages and consumption primarily based on short-run disposable income—are, analytically and empirically, poor representations of reality.

Most consumption is out of longer-run prospects à la Modigliani's life cycle and Friedman's Permanent Income Theory (Hall and Mishkin),

with a modest percentage by liquidity-constrained consumers out of disposable income (likely somewhat higher in a deep recession). Prices and wages are not so sticky [Bils and Klenow (2004) and the obvious recent experience; perhaps that Keynesian construct made more sense in the 1930s with far stronger unions prone to strike, and Hoover's and Roosevelt's policies to keep prices up, etc.].

Government spending multipliers are essentially zero at full employment and close to zero in non-Keynesian models. Empirical estimates range from Barro's zero in peacetime and 0.8 wartime [Barro (2009) re-labels it a "dampener"] to 0.6-1.2 (Ramey 2011). These estimates use swings in military purchases (largest in wartime) to identify the multiplier and probably overstate a peacetime non-military purchases multiplier (military spending is overwhelmingly domestic, expected to be mostly temporary, etc.). Auerbach and Gorodnichenko (2010) estimate large (2.4) multipliers in recessions but negative multipliers in expansions, when unfortunately the bulk of the Obama stimulus occurred; larger multipliers for military than non-military spending. Iltzetzki et al. (2010) report multipliers of essentially zero for open economies and economies with flexible exchange rates; multipliers rapidly turning negative for economies with debt/GDP ratios over 50 percent; and suggest about 0.3 – 0.4 for the U.S. See also Cogan et al. (2010).

The potential exception to such limited efficacy of discretionary fiscal policy might occur when the Fed is at the zero lower bound (ZLB), other monetary policy channels are unlikely to work, we are in a deep, long-lived recession, and something effective can be enacted and implemented quickly at reasonable cost.5 At the ZLB, there is an important "sticky" price, the short-run nominal Fed Funds interest rate (while interest rates move together, it is important to note thus far firms and households are paying rates wellabove zero and, given recent inflation, the real Fed funds rate is indeed negative; the ZLB arguments are strongest in a deflation, e.g. the U.S. in the Great Depression or Japan in recent decades). Christiano et al. (2011), Mountford and Uhlig (2009), Woodford (2011) and others simulate temporarily higher multipliers at the ZLB, declining rapidly. Hall's estimate is 1.7 at the ZLB vs. 0.7 normally (2009). Woodford (2011) notes that even at the zero lower bound, the potential larger multipliers could turn negative (a "destroyer") if people expect taxes and spending beyond the ZLB period, which was especially likely given President Obama's other spending proposals and the immense size of the deficits. While the timing and situation may have been ripe in February 2009, the actually enacted ARRA in my view failed badly on implementation, design and cost effectiveness (see also Cogan and Taylor 2010, Mulligan 2011). Using the Congressional Budget office (2011) job estimates, the cost was \$330k–\$1.1m per job. Worse yet, Uhlig (2010) estimates every ZLB dollar of deficit-financed spending eventually costs the economy over \$3 in future output.

The modest, temporary, inframarginal rebates [Barro and Redlick (2011) document the importance of marginal rates to output] and transfer payments of Bush in 2008 and Obama in 2009 barely budged aggregate consumption. This was more consistent with life-cycle and permanent income views of consumption than the Keynesian view that most consumption is out of current disposable income (which implies larger multipliers). The aid to state and local governments seems primarily to have reduced their borrowing (Cogan and Taylor 2010). And the infrastructure spending was little and late.

It is also instructive that the tax cuts of

the Kennedy, Reagan, and George W. Bush administrations focused on marginal rates, were perceived to be long-lived, and, when fully implemented, coincided with a substantial acceleration in economic growth. Correspondingly, Mountford and Uhlig (2009) report much larger tax than spending multipliers in their U.S. structural VAR estimates; the spending multipliers turn negative by year 2. Romer and Romer (2010) also report large tax multipliers. Perhaps one reason for these non-Keynesian results is that the private sector's expectations of future taxes and spending are heavily influenced by the short-run policy mix, with tax reductions implying less future spending and taxes than spending increases.

President Obama in his new stimulus proposals has been emphasizing infrastructure spending and tax hikes on the rich to pay for it, along with an extension of the temporary small payroll tax and extended unemployment insurance. The nation certainly has important infrastructure needs, some of which are properly federal. ARRA was initially sold as "shovel-ready" projects that would quickly create jobs. But only a tiny fraction went for infrastructure; it was spent slowly and widely criticized as inefficient

(the Los Angeles City Comptroller estimated that it cost \$2 million per job). As Harvard's Ed Glaeser (2010) notes, the ARRA infrastructure spending was not directed to areas with the highest unemployment or biggest housing busts. Besides, modern public infrastructure jobs use large equipment, not shovels, and so are not very labor intensive. The Japanese result, after repeated 15–20 trillion yen stimulus programs heavy on infrastructure, was dismal. It is better that infrastructure spending take place through the normal multiyear legislation rather than poorly planned, highly politicized short-term stimulus occurring well after it is most needed and likely to be most effective.

So relating these models to the real world, federal purchases were quite small, and they and the tax rebates and transfers appear to have had a very expensive, small effect. Highly effective fiscal stimulus remains at best a theoretical possibility at the ZLB, challenged to overcome practical and political obstacles. So it is important to determine the net of cost-benefits of any spending, and here too we must be far more rigorous than just naming popular categories, even those that conceptually might increase private productivity such as infrastructure or

precompetitive generic technology research and development. We must compare the imperfect government policies likely to be implemented with imperfect market outcomes; will they improve the situation *and* merit the cost? Government failure, including crony capitalism, rent-seeking and dispensing, pork, and regulatory capture, is as pervasive as market failure due to monopoly, externalities, or information problems.

The Government's inefficiency and ineffectiveness hit new lows with the "stimulus" and expanded corporate welfare. The explosion of flawed social engineering and industrial policy should be ended, whether in spending, loans, guarantees, or mandates. The government must get much more out of current revenues before considering raising more. We should eliminate corporate welfare and subsidies for the well-off, not raise their taxes; we need our most productive citizens and businesses working and investing, not chasing government largesse.

MEDIUM-TERM FISCAL CONSOLIDATION

Some argue fiscal consolidation would quickly boost confidence and the economy, as it apparently did for Denmark and Ireland in the 1980s. Opinions differ on the net effects of the new fiscal programs of the highly-indebted European countries. But the U.S. is one-fifth of the global economy; interest rates are already low, and many other countries will be consolidating simultaneously, so the generalization may not be warranted. I support aggressive fiscal consolidation, but phased in over several years as the economy recovers, based on permanent policies, not temporary fixes, primarily on the spending side. That would also greatly reduce the uncertainty and expected costs confronting the private sector, which have been an important drag on the economy.

The evidence is substantial that large tax increases are much more likely to cause recessions than are large spending cuts (the International Monetary Fund 2010), and that such increases are much less likely to successfully consolidate the budget. Successful consolidation (in both these senses) in the post-World War II OECD relied on an average of \$5–\$6 of spending cuts for every \$1 of tax hikes (Alesina and Ardagna 2010).

A successful society needs an effective government, doing essential government functions well; the federal government is doing too much, too much of it poorly, some better left to the

private sector. In addition to the reforms mentioned above, we should aim to bring spending down to pre-crisis levels (reductions that large in the 1980s and 1990s were consistent with strong growth; ditto even larger reductions in Canada); end temporary programs before they develop permanent constituencies; consolidate, eliminate, and modernize programs; and replace half of the 42 percent of federal civilian workers due to retire in the next ten years with technology and one-stop shopping. These steps would better serve a more carefully targeted set of people with more effective programs.

CONCLUSION

Policy must preserve our economic flexibility and dynamism to maximize non-inflationary growth. That is essential, not only for future American living standards, but also for national security and geopolitical leadership. That will require the lowest possible tax rates on the broadest base, spending control and entitlement reform. Also vital are regulatory and litigation reform, reform of public education, more effective job training, trade liberalization, and sound monetary policy. That is no small task, but it is far from unachievable, let alone impossible.

Letters commenting on this piece or others may be submitted at http://www.degruyter.com/view/j/ev?tab=services

NOTES

- 1. These figures are based on CBO's more realistic alternative primary (excluding interest payments) deficit baseline adjusted for conformity to 2013 Obama plan. The combined rate would be much higher if taxes also increase to cover projected interest payments, state deficits, and/or the implications of the rising ratio of voters receiving government payments to those paying income taxes.
- 2. Returning to the effects of taxes on labor supply, Keane's (2011) extensive survey of the literature concludes that, especially when account is taken of other margins besides hours of work, such as human capital [something I long ago pointed out in a paper for the Treasury (Boskin 1975)] and, for women, also fertility and marriage, the long-run labor supply effects of taxes are large.
- 3. The more accurate chained-CPI originally proposed by the Boskin Commission would eliminate 30 or 40 bp of the upward bias, and should be used for all indexed programs
- 4. If the Bush '43 tax cuts are allowed to expire, the tax rate on dividends would revert to the ordinary income rate, 39.6 percent at the top. President Obama, from late in the 2008 campaign, proposed to raise the rate to 20 percent and held that position until recently. He now proposes a minimum 30 percent top rate on the highest income group where much of the dividends and capital gains are received. And, in a move remarkably unheralded, his FY2013 budget

- proposes to take the dividend rate back to the 39.6 percent pre-Bush top rate. The extra 3.8 percent tax to fund Obamacare, and the 1–2 percent marginal rate increase from his proposed phase-out of itemized deductions, thus bring the combined rate to about 25, 35, or 45 percent, respectively.
- 5. In late 2008 and early 2009, I advocated a large payroll tax cut on employers and employees, especially given that a large stimulus bill was going to be passed. At the time, massive layoffs loomed and I thought, if the President and Congress insisted on doing something temporary as opposed to more sensible permanent lower corporate and personal rates, combined with spending control as the economy recovered, a payroll tax cut had the best chance of cushioning the labor market (Bils and Klenow 2008). A payroll tax cut had the advantage of being somewhat effective under alternative macroeconomic theories. Unfortunately, we got the stimulus bill instead. The December 2010 payroll tax cut was small and on the employee side only (while the employer part is ultimately shifted to workers, in the short run a payroll tax cut would be cash flow to employers; a common directive from VC firms in California to their portfolio companies in 2009 was to get cash flow positive immediately, we would not be supplying funds for some time). All that said, most hiring decisions are based on the expected contribution to revenues of the firm compared to the cost of hiring the worker. A temporary partial payroll tax cut will be a very small cost reduction compared to the cost the firm incurs in wages, training, benefits, etc., especially over the several-year horizon on which firms base decisions. There are a few industries where turnover is so high it might make a difference, but in most firms in most industries, the impact is likely modest, especially when you add in all the other

costs, i.e. regulation, taxation, uncertainty, etc., being piled on the economy.

REFERENCES AND FURTHER READING

Alesina, Alberto and Silvia Ardagna (2010 "Large Changes in Fiscal Policy: Taxes versus Spending," Tax Policy and the Economy, 24: 35–68. http://www.economics.harvard.edu/faculty/alesina/files/Large+changes+in+fiscal+policy October 2009.pdf

Altig, David, Alan Auerbach, Laurence Kotlikoff, Kent Smetters and Jan Walliser (2001) "Simulating Fundamental Tax Reform in the United States," American Economic Review, 91:574. http://emlab.berkeley.edu/users/auerbach/ftp/taxreform/flatfinal.pdf

Auerbach, Alan and Yuriy Gorodnichenko (2010) "Measuring the Output Responses to Fiscal Policy," Cambridge, MA: NBER, Working Paper No. 16311, August. http://voxeu.org/index.php?q=node/5462

Barro, Robert J. (2009) "Government Spending is No Free Lunch," Wall Street Journal, January 22. http://faculty.morainepark.edu/jhalter/economics/docs/nfl_government_spending.pdf

Barro, Robert and Charles Redlick (2012) "Macro-economic Effects from Government Purchases and

Taxes," Quarterly Journal of Economics. http://online.wsj.com/article/SB123258618204604599. <a href="http://http

Bils Mark and Peter Klenow (2004) "Some Evidence on the Importance of Sticky Prices," Journal of Political economy, 112: 947–985. http://klenow.com/StickyPrices.pdf

Bils, Mark and Peter Klenow (2008) "Fiscal Stimulus in the Form of Lower Payroll Taxes," Stanford, CA: SIEPR Policy Brief. http://www-siepr.stanford.edu/papers/briefs/policybrief-ja-n09A.pdf

Boskin, Michael(1975) "Notes on the Tax Treatment of Human Capital," Compendium of Tax Research: Proceedings of the United States Treasury Symposium on Tax Research. Washington, D.C., U.S. Department of the Treasury. http://www.nber.org/papers/w116

Boskin, Michael (1986) Too Many Promises: The Uncertain Future of Social Security. Homewood, IL, Dow Jones-Irwin. http://www.amazon.com/Too-Many-Promises-Uncertain-Security/dp/0870947796

Boskin, Michael, Ellen Dulberger, Robert Gordon, Zvi Griliches and Dale Jorgensen (1996) "Toward A more Accurate Measure of the Cost of Living," Report to the U.S. Senate Committee

on Finance, December. http://www.worldcat.org/title/toward-a-more-accurate-measure-of-the-cost-of-living-final-report-to-the-senate-finance-committee-from-the-advisory-commission-to-study-the-consumer-price-index/oclc/43024839

Christiano, Lawrence, Martin Eichenbaum, and Sergio Rebelo (2011) "When is the Government Spending Multiplier Large?" Journal of Political Economy, 19(1):78–121. http://faculty.wcas.northwestern.edu/~yona/research/Multiplier-version12.pdf

Cogan, John F., Tobias Cwik, John B. Taylor and Volker Wieland (2010) "New Keynesian versus Old Keynesian Government Spending Multipliers," Journal of Economic Dynamics and Control, 34(3):281–295. http://www.harrisdellas.net/conferences/hydra09/papers/nber-w14782.pdf

Cogan, John and John Taylor (2010) "The Obama Stimulus Impact? Zero", Wall Street Journal, December. http://www.hoover.org/news/daily-report/59876

Congressional Budget Office (2011) Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output, November. http://archive.feedblitz.com/812526/~4144226

Gleaser, Edward (2010) "Wasted Stimulus", Economix, New York Times, March 2. http://economix.blogs.nytimes.com/2010/03/02/wasted-stimulus/

Feldstein, Martin (2011) "The Tax Reform Act of 1986: Comment on the 25th Anniversary" Cambridge, MA: NBER, Working Paper # 17532, October. http://www.nber.org/papers/w17531.pdf
Hagist, Christian and Laurence J. Kotlikoff (2005) "Who's Going Broke?" Cambridge, MA, NBER, Working Paper No. 11833. http://swsl.bu.edu/kotlikof/Who%20is%20%20going%20
Broke,%20August%2029,%202006.pdf

Hall, Robert (2009) "By How Much Does GDP Rise if the Government Buys More Output?" Washington DC, Brookings Panel on Economic Activity, September. http://www.jstor.org/sta-ble/25652733

Hall, Robert and Frederic Mishkin (1982) "The Sensitivity of Consumption to Transitory Income: Estimates from Panel Data on Households," Econometrica, 50(2):461–481. http://links.jstor.org/sici?sici=0012-9682%28198203%2950%3A2%3C461%3ATSOCTT%3E2.0.CO%3B2-R

Ilzetzki, Ethan, Enrique Mendoza and Carlos Vegh (2010) "How Big (Small?) Are Fiscal Multipliers?" Cambridge, MA: NBER, Working Paper # 16479. http://econweb.umd.edu/~vegh/papers/multipliers.pdf

International Monetary Fund (2010) "Will It Hurt? Macroeconomic Effects of Fiscal Consolidation". World Economic Outlook, October. http://www.imf.org/external/pubs/ft/weo/2010/02/pdf/c3.pdf

Johannson, Asa, Christopher Heady, Jens Arnold, Bert Brys and Laura Vartia (2008) "Taxation and Economic Growth," Paris: OECD Economics Department Working Paper 620. http://ideas.repec.org/p/oec/ecoaaa/620-en.html

Jorgenson, Dale and Kun-Young Yun (2001) "Lifting the Burden: Tax Reform, the Cost of Capital and U.S. Economic Growth," Cambridge, MA, MIT Press. http://mitpress.mit.edu/catalog/item/default.asp?sid=FCBF85BB-CED7-46B4-8749-9F3DB938F8F8&ttype=2&tid=8624

Keane, M. (2011) "Labor Supply and Taxes: A Survey," Journal of Economic Literature, XLIX(4): 961–1075. http://pubs.aeaweb.org/doi/pdfplus/10.1257/jel.49.4.961

Ljungqvist, Lars and Thomas Sargent (2006) "Do Taxes Explain European Employment?" In: Macroeconomics Annual 2006," Cambridge, MA: NBER. http://ideas.repec.org/h/nbr/nberch/11179.html

Lucas, Robert (2006) "Analytical Foundations of Supply-SideEconomics," Oxford, OxfordEconomic Papers. http://www.jstor.org/stable/2663227
Mountford, Andrew and Harald Uhlig (2009) "What Are the Effects of Fiscal Policy Shocks?" Journal of Applied Econometrics, 24(6), 960–992. http://onlinelibrary.wiley.com/doi/10.1002/jae.1079/abstract?systemMessage=Wiley+Online+Library+will+be+disrupted+3+Mar+from+10-13+GMT+for+monthly+maintenance

Mulligan, Casey (2011) "The Minimal Impact of the Stimulus," New York Times, Economix, March 2. http://economix.blogs.nytimes.com/2011/03/02/the-minimal-impact-of-the-stimulus/

Organization for Economic Co-operation and Development (OECD), (2011) OECD Tax Database. Washington, D.C., Centrefor Tax Policy and Administration. http://www.oecd.org/document/60/0, 3746, en 2649 34533 1942460 1 1 1 1,00. http://www.oecd.org/document/60/0, http://www.oecd.org/document/60/0, bttml

Prescott, Edward C. (2002) "Prosperity and Depression," American Economic Review, 92(2): 1–15. http://pubs.aeaweb.org/doi/pdf/10.1257/000282802320188916

Ramey, Valerie (2011) "Identifying Government Spending Shocks: It's All in the Timing," *Quar-*

terly Journal of Economics, 126(1): 1–50. http://qje.oxfordjournals.org/content/126/1/1.short

Reinhart, Carmen M. and Kenneth S. Rogoff (2009) "This Time is Different: Eight Centuries of Financial Folly," Princeton, Princeton University Press. http://press.princeton.edu/titles/8973.html

Romer, Christina and David Romer (2010) "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," American Economic Review, 101(3), 763–801. http://

Uhlig, Harald (2010) "Some Fiscal Calculus," American Economic Review, 100(2): 30–34. http://www.aeaweb.org/articles.php?doi=10.1257/aer.100.2.30

www.aeaweb.org/articles.php?doi=10.1257/

United States Bureau of the Census (2009) "Survey of Income and Program Participatio," Washington, D.C. http://www.census.gov/sipp/core_content/2008/2008.html

Woodford, Michael (2011) "Simple Analytics of the Government Expenditure Multiplier," American Economic Journal: Macroeconomics, 3(1): 1–35. http://www.aeaweb.org/articles.php?doi=10.1257/mac.3.1.1



aer.100.3.763