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The Economic Impact of Tax Cut Proposals: A Prudent Middle Course

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BY MARK ZANDI

The U.S. recovery has lost significant momentum since the spring. Retailing, housing, business investment and industrial activity have all throttled back. Real GDP in the current quarter appears to be growing at a paltry annualized rate, less than 2%, almost half the 3% pace experienced since the recession ended a year ago.

The job market's progress has also stalled. Discounting the ups and downs in temporary federal hiring for the U.S. census, job gains are running at no more than 75,000 per month. Growth about double that pace is necessary to stabilize the unemployment rate, given even modest assumptions about labor force growth. After rising to 9.6% in August, the unemployment rate is likely to drift back into double digits in the coming months.

Consumer, business and investor confidence is extraordinarily fragile. According to nearly all surveys of sentiment, the panic that prevailed during the Great Recession has abated, but attitudes remain much darker than anything experienced even at the bottom of previous downturns (see Chart 1).

Surprising slowdown

Growth was expected to slow during the second half of this year, but not to the degree we have seen. Not surprising is the slower growth because of the fading fiscal stimulus. The stimulus provided a significant boost to growth during the second half of 2009 and early 2010 (see Chart 2). Indeed, it is no coincidence the recession ended last summer, when the stimulus was providing its maximum economic benefit.[1] The link between the stimulus and growth is the change in the temporary tax cuts and government spending. There was very little stimulus spending in the first quarter of 2009, when the Recovery Act was passed, but by the second quarter, nearly $100 billion was being provided to the economy. This change jump-started the recovery.

Stimulus spending has now begun to decline, and the economic benefit is fading fast. Without further policy help, this will quickly become a meaningful drag on the economy.

The boost to growth from the inventory swing in manufacturing is also winding down, as expected. Manufacturers had reduced production below demand during the recession, drawing down inventories rapidly. Over the past year of recovery, they have lifted production back to demand levels, and even a bit higher, to modestly rebuild their depleted stocks. This process is now about over, and the growth in industrial production is set to moderate.
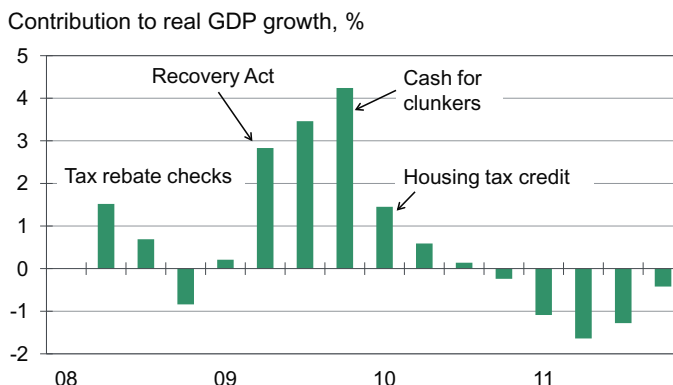
What was not anticipated was the European sovereign debt crisis that erupted in the spring. The U.S. recovery seemed ready
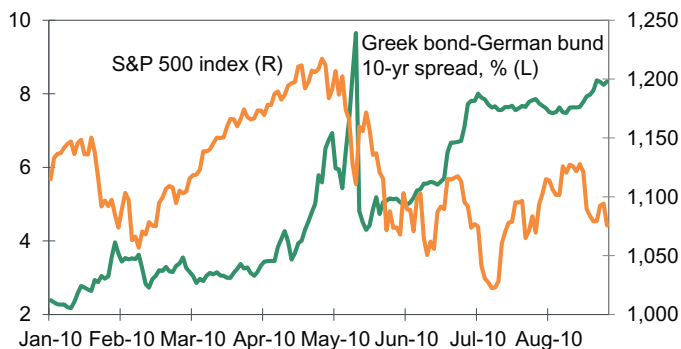
Chart 1: A Very Dark Mood

Consumer confidence, 1985=100 (L)
Small business optimism, 1986=100 (R)
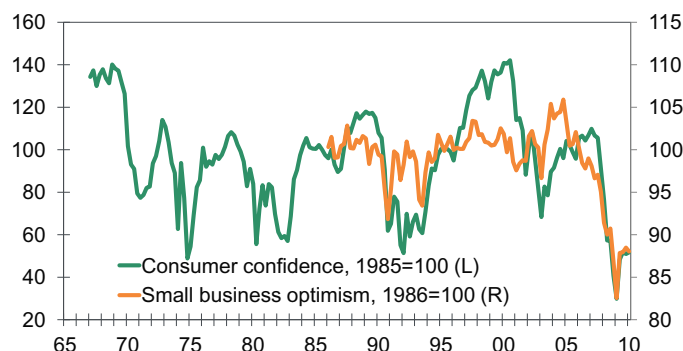
Sources: Conference Board, NFIB, Moody's Analytics

Chart 2: Benefits of the Fiscal Stimulus Fade
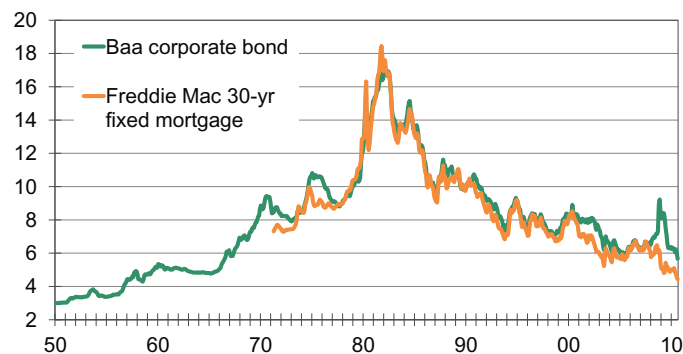
Contribution to real GDP growth, %

Source: Moody's Analytics

Chart 3: European Debt Crisis Slams Confidence

Sources: Bloomberg, S&P, Moody's Analytics

Chart 4: Long-Term Rates Approach 50-Year Lows

Sources: Moody's Investors Service, Freddie Mac

to evolve into a self-sustaining expansion, with businesses investing and hiring more aggressively. But the angst created by Europe's problems undermined stock prices and confidence (see Chart 3).[2] The Standard & Poor's 500 stock index fell nearly 15% in May and June. Businesses have seemingly put hiring plans on hold since then, while wealthier households, carefully attuned to the value of their stock portfolios, have turned more cautious in their spending.

As a result, the recovery is sputtering, and the odds of a double-dip recession during the coming year have risen to an uncomfortably high one in three.[3] The reason they are not higher is that large and midsize businesses are very profitable—economy-wide corporate profits are back to where they were prior to the recession—and have solid balance sheets and are thus unlikely to cut investment and payrolls. But the situation is fragile; nothing else can go wrong. Another round of financial turmoil in Europe, for example, or even a modest policy error here at home could unhinge the collective psyche.

More monetary easing

A misstep by the Federal Reserve would put a high hurdle in the recovery's path. The need for more monetary easing is increasingly evident given the rising unemployment rate, low inflation, and weakening inflation expectations. It is also questionable how effective the Fed's only other good remaining policy option, quantitative easing, would be in stimulating the economy.

Quantitative easing would mean further purchases of Treasury securities by the Fed in order to lower fixed mortgage rates and borrowing costs, support stock prices, and ultimately persuade lenders to ease underwriting standards. The possibility of additional quantitative easing was discussed at the FOMC's August meeting; since then, stock prices have stabilized and interest rates have declined. The Freddie Mac conforming loan rate has fallen to a record-low 4.3%, and the yield on Baa corporate bonds, the lowest investment-grade securities, has busted through to a 50-year low of nearly 5.5% (see Chart 4).

But it is not clear how much lower the Fed can push long-term rates or whether it can induce creditors to ease standards to restart the housing market and business expansion. The slide in home sales following the expiration of the federal homebuyers' tax credit has been extraordinarily severe, even with mortgage rates remaining low. Prospective buyers may be waiting to see whether Congress comes up with yet another tax incentive scheme following the three earlier temporary credits. More ominously, the weak job market and hobbled consumer sentiment could be impediments that even lower mortgage rates will not overcome soon.

Lower borrowing costs have supported increased business investment in equipment and software but have not yet persuaded businesses to step up the pace of hiring. Businesses remain extraordinarily cautious, probably because of the still-raw memories

of the recession and policy uncertainty. Managers have watched as Congress heatedly debated healthcare, financial regulation, energy policy, immigration, and most recently, what to do about the expiring tax cuts. Even though healthcare and financial regulatory reform are now law, their new rules remain unclear. The nitty-gritty of these reforms is still being ironed out. Businesses will not take the plunge and expand payrolls until they have a clearer understanding of what the changes mean for them.

Expiring tax cuts

Fiscal policy from the Obama administration and Congress could also misfire. While some modest additional near-term fiscal stimulus is warranted, a fractured political landscape and upcoming midterm elections are diminishing the chances of this happening. The legislation most likely to pass would give the Small Business Administration more lending authority, boost community banks' capital, and increase tax benefits to promote business investment. Yet even if they are passed soon, these steps will probably not lift the economy quickly. The administration has a somewhat more ambitious fiscal stimulus agenda, including investment tax breaks for businesses and an infrastructure spending initiative, but the political odds do not favor this coming to fruition.

Fiscal policymakers also face a major decision regarding expiring tax cuts. Most were passed up to a decade ago under the Bush

Chart 5: Skittish High-Income Households

Personal saving rate for families in top fifth of income distribution
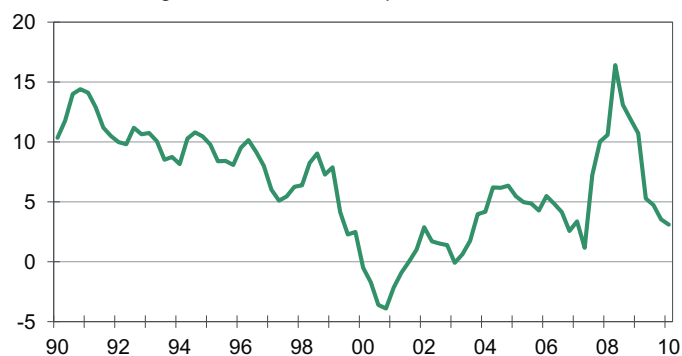
Sources: Federal Reserve, Moody's Analytics

administration and will lapse at the end of 2010 if Congress does not act. The most important provisions concern individual income tax rates, but capital gains and dividend taxes were also included, along with personal exemptions, the marriage penalty, the alternative minimum tax, the Making Work Pay program, the earned income tax credit, the child tax credit, and estate and gift taxes. In all, these tax cuts are worth about $300 billion per year, or about 2% of GDP, according to the Congressional Budget Office (see Table 1).

There is wide agreement that allowing all the tax cuts to expire January 1 makes little sense given the economy's fragility. Based on a simulation of the Moody's Analytics macroeconomic model, an across-the-board tax increase would precipitate a double-dip recession during the first half of 2011; the hit to after-tax income would undermine fragile consumer confidence and spending (see Table 2).[4] Employment would decline throughout much of 2011, bottoming out some 8.6 million jobs below its late-2007 peak. Unemployment would remain near double digits into late 2012.[5] Under this scenario, the economy does not return to full employment until 2015, eight years after the Great Recession began.[6]

There are longer-term economic benefits to allowing the tax cuts to expire. Budget deficits are measurably smaller in the latter half of the decade, which results in lower long-term interest rates and a generally stable federal debt-to-GDP ratio. The benefits also accumulate over time and become even

more pronounced in the subsequent decade. This clearly highlights the necessity of addressing the nation's longer-term fiscal problems once the economy is back on sounder ground.

While there is consensus against an across-the-board tax increase soon, this is where the consensus ends. The president supports permanently extending the current tax rates for all except the highest-income households, while congressional Republicans want the entire basket of cuts made permanent. More specifically, the president wants those with joint adjusted gross incomes above $250,000 annually to pay at rates that were in effect during the 1990s. For those in the top income bracket, the marginal personal income rate would rise from its current 35% to 39.6%. The capital gains tax rate for this group would rise from 15% to 20%.

In most times, raising taxes on the wealthy by such a modest amount would have little impact on the economy. According to the Moody's Analytics model, raising taxes on higher-income households as the president has proposed would reduce real GDP by 0.4 of a percentage point in 2011

and 0.2 of a percentage point in 2012. Payroll employment would be 770,000 lower, and the unemployment rate would be almost 0.4 of a percentage point higher by mid- 2012 at the peak of the impact. While the recovery would be weaker because of the hikes on the wealthy, it would not come undone.

But these are not most times, and the model may be underestimating the negative economic consequences of raising taxes on the well-to-do.[7] This group panicked during the recession, spending less and saving more, and while they regained their bearings about a year ago, allowing the economy to recover, they appear very skittish (see Chart 5). The recent slowing in retailing in fact looks like their doing as they respond to the stock market decline. The unusual volatility in the wealthy's spending and saving behavior probably stems from their significantly smaller nest eggs. Particularly, the well-to-do 50-something baby boomers realize they are no longer financially prepared for retirement and are quick to react to changes in the stock market, house prices, and perhaps even to their tax liability.[8]

While only 1 million to 2 million households will pay higher taxes if the president gets his way, this rarified group accounts for, astoundingly, around one-fourth of all U.S. personal outlays.[9] It would not take much more of a pullback by the affluent than anticipated to derail the recovery. To quantify this risk, consider the consumer expenditure

TABLE 1

Cost of Extending Various Expiring Tax Provisions

$ bil, fiscal yrs

	2011	2012	2011- 2020
Bush Era Tax Cuts			
Income tax provisions of Bush tax cuts	-79	-150	-1615
Estate and gift taxes	-16	-44	-571
Reduced tax rates on capital gains and dividends	-15	-17	-348
Total Bush era tax cuts	-110	-210	-2534
Other Major Tax Provisions			
Making Work Pay tax credit	-30	-59	-571
Increased AMT exemption amount	-69	-31	-530
Total Tax Cuts	**-209**	**-299**	**-3635**

Source: Congressional Budget Office

TABLE 2
Economic Impact of Various Tax Cut Scenarios

| | REPUBLICAN PROPOSAL
Tax cuts made permanent | | ADMINISTRATION PROPOSAL
Tax cuts for top income bracket expire | | COMPROMISE PROPOSAL
Tax cuts for top income bracket phased in | |

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Real GDP, Annualized % change											
Tax cuts expire	2.68	0.90	3.78	5.94	4.29	2.68	2.33	2.39	2.32	2.25	2.23
Republican proposal	2.69	2.95	5.23	4.52	2.77	2.07	2.12	2.17	2.11	2.04	2.04
Administration proposal	2.68	2.58	4.79	4.77	2.94	2.31	2.23	2.25	2.17	2.12	2.12
Compromise proposal	2.69	2.95	5.00	4.31	2.89	2.30	2.22	2.24	2.17	2.12	2.12
Real GDP, 2005$ bil											
Tax cuts expire	13,226	13,345	13,850	14,673	15,302	15,712	16,079	16,464	16,846	17,224	17,609
Republican proposal	13,226	13,617	14,328	14,976	15,391	15,710	16,042	16,391	16,736	17,077	17,425
Administration proposal	13,226	13,567	14,217	14,895	15,334	15,687	16,037	16,399	16,757	17,114	17,479
Compromise proposal	13,226	13,616	14,298	14,914	15,345	15,698	16,047	16,406	16,762	17,118	17,481
Employment, mil											
Tax cuts expire	130.21	129.70	130.67	136.29	141.56	144.15	145.47	146.56	147.57	148.54	149.50
Republican proposal	130.22	131.52	135.03	139.94	143.29	144.98	145.98	146.84	147.65	148.40	149.18
Administration proposal	130.21	131.20	134.11	138.96	142.46	144.37	145.57	146.53	147.45	148.36	149.30
Compromise proposal	130.22	131.52	134.83	139.27	142.57	144.46	145.64	146.59	147.49	148.38	149.31
Unemployment Rate, %											
Tax cuts expire	9.72	10.65	10.22	7.86	6.08	5.70	5.73	5.69	5.63	5.60	5.57
Republican proposal	9.71	9.86	8.25	6.16	5.24	5.29	5.44	5.55	5.61	5.69	5.75
Administration proposal	9.71	10.00	8.65	6.59	5.60	5.55	5.61	5.65	5.66	5.65	5.64
Compromise proposal	9.71	9.87	8.33	6.46	5.56	5.52	5.59	5.64	5.65	5.65	5.64
Federal Budget Deficit, FY, $ bil											
Tax cuts expire	(1,277)	(732)	(1,055)	(770)	(489)	(485)	(503)	(506)	(513)	(544)	(581)
Republican proposal	(1,277)	(943)	(743)	(581)	(667)	(716)	(773)	(846)	(892)	(950)	(1,014)
Administration proposal	(1,277)	(904)	(795)	(664)	(685)	(709)	(716)	(749)	(789)	(845)	(905)
Compromise proposal	(1,277)	(943)	(782)	(630)	(677)	(703)	(715)	(749)	(792)	(850)	(914)
Federal Debt-to GDP Ratio, %											
Tax cuts expire	60.6	69.0	74.6	77.1	77.9	78.7	79.2	79.4	79.2	78.9	78.5
Republican proposal	60.6	68.5	72.4	74.1	76.1	78.2	80.1	81.7	83.2	84.6	85.9
Administration proposal	60.6	68.6	72.9	74.9	77.0	79.0	80.6	81.8	82.8	83.7	84.5
Compromise proposal	60.6	68.5	72.7	74.8	76.9	78.8	80.4	81.6	82.7	83.6	84.5

Sources: BEA, BLS, Treasury, Moody's Analytics

equation for those in the top part of the income distribution that is included in the Moody's model. (A detailed description of the consumer spending equations in the model is provided at the end of this article.) The estimated marginal propensity to consume—the proportion of after-tax income that is spent—is about 0.4, and the stock wealth effect—the expected change in their spending due to a $1 change in the value of their equity holdings—is just over 4 cents. The recovery would stall if instead the MPC for this group was consistent with the rest of the population and their stock wealth effect was 10 cents. These changes to the MPC and stock wealth effect would represent meaningful changes in this group's behavior, but they are plausible in the current stressed environment.

Another argument often made for not raising taxes on the top income group is that it would hurt small business owners. Most have set up their businesses as S corpora-

tions under the tax code so that their profits are treated as personal income and taxed at personal rates. Since small businesses have historically been the engine of the nation's job machine, tax hikes on the wealthy would deal a serious blow to job growth and the broader economy.[10] This argument is often overdone by its proponents—only about 3% of small business owners pay the higher tax rates—but it has some merit (see Table 3). Many of the most successful business own-

TABLE 3
Business Income by Marginal Tax Rate, 2011

Statutory Marginal Income Tax Rate	All Tax Units [1]		Tax Units with Business Income [2]		Tax Units Reporting Positive Business Income				Positive Business Income
							Greater than 50% of AGI		
	Number (ths)	Percent of total	Number (ths)	Percent of total	$ bil	Percent of total	Number (ths)	Percent of bracket	As percent of AGI of bracket [3]
Non-filers	20,020	12.9	981	2.7	3.1	0.3	4.8	2.3	6.2
0	29,284	18.8	9,201	25.5	59.5	6.2	29.6	15.9	25.5
10	24,856	16.0	4,951	13.7	45.9	4.8	21.1	5.9	7.6
15	49,707	32.0	10,777	29.9	113.1	11.8	21.3	3.1	4.4
25	23,562	15.2	6,180	17.2	114.2	11.9	19.4	3.1	4.8
26 (AMT)	1,991	1.3	932	2.6	37.5	3.9	34.4	7.3	7.9
28 (Regular)	2,975	1.9	1,082	3.0	48.6	5.0	29.3	7.6	9.7
28 (AMT)	1,722	1.1	1,028	2.9	113.5	11.8	60.3	14.7	16.3
36	414	0.3	272	0.8	39.0	4.0	58.9	26.2	26.3
39.6	838	0.5	622	1.7	388.2	40.3	79.4	32.5	33.4
All	155,368	100.0	36,026	100.0	962.5	100.0	23.1	6.4	10.9

(1) Calendar year. Tax units that are dependents of other tax units are excluded from the analysis; (2) Includes all tax units reporting a gain or loss on one or more of Schedules C, E or F; (3) Business income is defined as the sum of the absolute values of the gains or losses reported on Schedules C, E and F.

Source: Urban-Brookings Tax Policy Center

ers, those who are presumably doing much of the hiring and investing, are hurt by the higher tax rates. To see this, consider that nearly one-half of the $1 trillion in taxable business income earned in 2009 accrued to business owners who will face higher taxes. And nearly one-third of taxpayers whose taxes would rise derive a significant proportion of their income—more than half—from their businesses. It should also be reiterated that in these stressed times, business owners, like households, may not respond the same way to higher tax rates as they would in more normal times. Raising taxes on successful small business owners when conditions are so difficult could have material negative economic consequences.

On the other side, some argue that revenue generated from higher taxes on the wealthy could pay for an additional economic stimulus such as a bigger job tax credit or 1930s-style work programs. This view has theoretical merit, since multipliers on these other forms of stimulus are generally larger than the multiplier on taxes for the wealthy (see Table 4). However, it would likely be asking too much of our political system to engineer just the right trade-off

TABLE 4
Fiscal Stimulus Bang for the Buck

Tax Cuts	Bang for the Buck
Nonrefundable lump-sum tax rebate	1.01
Refundable lump-sum tax rebate	1.22
Temporary Tax Cuts	
Payroll tax holiday	1.23
Job tax credit	1.29
Across-the-board tax cut	1.03
Accelerated depreciation	0.25
Loss carryback	0.24
Housing tax credit	0.88
Permanent Tax Cuts	
Extend alternative minimum tax patch	0.50
Make Bush income tax cuts permanent	0.35
Make dividend and capital gains tax cuts permanent	0.39
Cut in corporate tax rate	0.32
Spending Increases	
Extending unemployment insurance benefits	1.60
Temporary federal financing of work-share programs	1.69
Temporary increase in food stamps	1.72
General aid to state governments	1.41
Increased infrastructure spending	1.57
Low-income home energy assistance program	1.14

Note: The bang for the buck is estimated by the one-year dollar change in GDP for a given dollar reduction in federal tax revenue or increase in spending.

Source: Moody's Analytics

here, especially with an already-politicized Congress that may become much more so after November's elections.

The Republican proposal to keep the current tax rates permanently in place even for the wealthy would support a near-term recovery, but it would be costly to taxpayers over the long term. According to the CBO, the loss in federal revenue will total more than $700 billion over the next decade if the current tax rates are not allowed to expire. The CBO's analysis probably does not fully consider the benefits of lower tax rates on saving, investment, and thus long-term growth, but even so, tax cuts do not pay for themselves. Even when President Reagan slashed much higher tax rates in half, this so-called Laffer Curve argument failed; in the current tax debate, it is unsupportable. By definition, high-income households are where the money is; higher rates would raise substantial revenue for much-needed long-term deficit reduction.

To see this, consider a simulation of the Moody's Analytics model under the assumption that all the expiring tax cuts are extended indefinitely (see Table 2). Compared with the simulation that assumes the president's tax hikes are adopted, real GDP by the end of 2020 is more than $50 billion lower, and the federal debt load is almost $370 billion heavier. The federal debt-to-GDP ratio is about 1.5 percentage points higher a decade from now as a result. The larger deficits and debt load prompt higher interest rates, offsetting the long-term benefit from increased saving and investment by wealthy households.

A prudent middle course between the president's plan and the Republican counter-proposal would be to forestall any tax hikes in 2011 but slowly phase in higher rates on upper-income households beginning in 2012. By then the economy will presumably be on firmer ground, with stock and house prices consistently rising. Allowing the tax cuts for high-income households to expire over, say, a three-year period would not harm the economy. Fears of diminished living standards among high-income households will have faded, and the increases would be small enough to not materially alter their decisions about spending, working or investing. Remember that these households paid the same higher tax rates during the 1990s, a time when the U.S. economy performed admirably. And affluent households benefit as much as anyone from a reduced federal deficit, which keeps interest rates lower, spurring more investment, jobs and wealth creation.

Simulating the Moody's Analytics model under this middle ground proposal results in a more durable near-term recovery than when using the president's plan and a much smaller federal debt load in the long run than under the Republican plan (see Table 2).[11]

Conclusions

The recovery is faltering, and policymakers are struggling to respond. For the Federal Reserve, the next move is to resume quantitative easing, which seems increasingly likely. For fiscal policymakers, deciding what to do about the expiring tax cuts is their most important task.

The president's plan to raise taxes on the wealthy just a few months from now would take an unnecessary gamble. Businesses have only recently begun to add jobs, and they appear a long way from hiring at a pace that will reduce the unemployment rate. Even under the best of circumstances, the jobless rate will remain near double digits well into next year. High unemployment has cast a shadow on Americans' collective psyche that will only darken with higher tax-es, raising the already-uncomfortable odds that the economy will suffer a double-dip recession. The Republican plan to keep taxes on the wealthy at their current rate forever takes an unnecessary gamble with the nation's long-term fiscal health. Tax cuts do not pay for themselves and, given our fiscal challenges, are a luxury we cannot afford.

Prudent risk management would argue for a middle ground: Do not raise anyone's taxes in 2011 but phase in higher tax rates on the wealthy when the economy is off and running in 2012. This addresses both the near-term threat to the recovery and the long-term threat to the fiscal situation.

Whatever policymakers do regarding the tax code, they should do quickly. The uncertainty of not knowing what tax rates will be just a few months from now is adding to the collective nervousness. Tax anxiety alone is not causing households and businesses to act differently, but combined with the other current epic debates over policy, the effect on economic decision-making is discernible. Most importantly, it likely is affecting whether businesses hire.

None of this means the tax code should be off limits when deciding how to fix the long-term fiscal problems. Everything must be on the table for the fiscal commission now working toward a solution. Experience with fiscal austerity at home and overseas strongly suggests it is best for the economy in the long run to restrain government spending rather than raise taxes, but that trade-off must also be part of the national debate.

Three years have passed since the nation's economic nightmare began. In that time, out of necessity, the government has made a string of momentous policy decisions. Some have worked out well, others have been disasters. We cannot afford more mistakes.

Appendix: Consumer spending equations

The Moody's Analytics model has been enhanced to better capture the macroeconomic impact of the tax proposals under consideration by adding equations for spending by consumers in each quintile of the income distribution. This allows the model to account for substantial differences in spending behavior among income groups, including the response to changes in marginal tax rates.

The consumer spending equations are estimated based on a quarter-century of data through 2008 from the BLS's consumer expenditure survey. The CES data serve a range of purposes, most notably the construction of the U.S. consumer price index. The equations are specified as a fixed effects error correction model. The trend equation in this specification is log linear, with independent constant terms for each of the quintiles and after-tax income and the share of the population aged 40 to 55—households' biggest saving years—as explanatory variables. In the long run, abstracting from the vagaries of the business cycle and the ups and downs in interest rates and asset prices, consumer

spending grows at a rate consistent with after-tax income and changes in the age composition of the population.

The adjustment equation in this specification, which determines how and when consumer spending returns to trend after being pushed away by the business cycle and other forces such as changes in the tax code or movements in stock and house prices, is specified as a change in logs (see Table 5). The explanatory variables in the adjustment equation include the household debt service burden, stock prices, and tangible assets—mostly composed of housing.[12]

The marginal propensity to consume out of after-tax income varies from well over 1.0 for those in the bottom (first) quintile of the income distribution to less than half that for those at the top of the distribution (fifth quintile). Those in the bottom quintile have nonincome sources of cash to support spending. Stock prices only affect the spending of consumers in the top quintile with a wealth effect of 4.3 cents. The implied aggregate stock wealth effect among all consumers is closer to 3 cents, which is very consistent

with other estimates of this effect. The housing wealth effect is larger at closer to 8 cents, as changes in housing wealth affect decisions by consumers in the top two quintiles of the distribution. Debt service burdens also matter, but only for those in the bottom two quintiles. The regression statistics, including the R-squared and Durbin-Watson, indicate the estimation results are very strong.

The rate at which consumer spending adjusts back to its trend is very similar for those in the bottom four quintiles, taking about two years. The adjustment is measurably slower for those in the top quintile, for which is takes more than three years. This suggests that it takes longer for the well-to-do to make changes in their spending in response to changes to their financial situation.

For reference, according to the 2008 CES survey, those in the first quintile made less than $19,000 during the year. The second quintile made between $19,000 and $36,300, the third quintile made between $36,300 and $59,100, the fourth quintile made between $59,100 and $93,000, and the fifth quintile made over $93,000.

TABLE 5

Consumer Expenditure Model

Independent Variable: Real Consumer Expenditures
Transformation: Difference of Logs
Method: Pooled EGLS (Cross-section weights)
Sample: 1987 2008
Included observations: 22 after adjustments
Cross-sections included: 5
Total pool (balanced) observations: 110
Linear estimation after one-step weighting matrix

Variable	Coefficient	Standard Error	t-Statistic	Probability
Constant	0.0817	0.0407	2.0062	0.0477
After Tax Income, First Quintile	1.1235	0.6069	1.8512	0.0673
After Tax Income, Second Quintile	0.7020	0.2096	3.3491	0.0012
After Tax Income, Third and Fourth Quintiles	0.4394	0.1460	3.0105	0.0033
After Tax Income, Fifth Quintile	0.3975	0.1950	2.0381	0.0443
S&P 500 Index, Fifth Quintile	0.0432	0.0241	1.7918	0.0764
Household Debt Service Burden, First Quintile	-0.0174	0.0058	-3.0216	0.0032
Tangible Assets, Fourth and Fifth Quintile	0.1094	0.0412	2.6582	0.0092
Error Correction, First and Second Quintiles	-0.4637	0.1431	-3.2410	0.0016
Error Correction, Third Quintile	-0.4246	0.2052	-2.0690	0.0413
Error Correction, Fourth Quintile	-0.5554	0.1651	-3.3650	0.0011
Error Correction, Fifth Quintile	-0.2974	0.1996	-1.4899	0.1396

Fixed Effects (Cross):

First Quintile	-0.0872			
Second Quintile	0.2445			
Third Quintile	-0.0471			
Fourth Quintile	-0.0537			
Fifth Quintile	-0.0565			

Weighted Statistics

R-squared	0.935
Adjusted R-squared	0.925
S.E. of regression	0.023
F-statistic	90.177
Sum squared resid	0.049
Durbin-Watson statistic	1.959

Endnotes

1. An analysis of the economic impact of the fiscal stimulus and other policy efforts in response to the financial panic and Great Recession are provided in "How the Great Recession Was Brought to an End," Alan Blinder and Mark Zandi, July 27, 2010.
2. The spread between yields on 10-year Greek sovereign bonds and German bunds is a good proxy for this angst.
3. The probability of recession in the next six months is derived from a leading indicator model that includes housing permits, initial unemployment insurance claims, the trade-weighted value of the dollar, consumer confidence, equity prices, the Treasury yield curve, and the VIX index. These components are combined into an index using weights estimated from regression analysis.
4. It is assumed that the Making Work Pay and AMT patch are extended indefinitely in these simulations.
5. In all of the simulations conducted for this analysis, monetary policy is determined endogenously in the model. In the context of the current zero interest rate policy, this means the Federal Reserve will engage in more or less quantitative easing in response to changes in the unemployment rate, core inflation, and inflation expectations. No additional near-term fiscal policy adjustments are assumed, save for the automatic stabilizers built into the tax code and government spending.
6. The full-employment unemployment rate rises in all of the scenarios compared with its estimated 5% prior to the Great Recession. Pushing the NAIRU higher are the long bouts of unemployment, which erode workers' skills and marketability, and the millions of underwater homeowners, which impedes the ability of unemployed workers to move to available jobs.
7. The model is estimated over long historical periods, and while the estimated relationships between the economic variables may hold well on average, they may not do so in very unusual periods such as the current one.
8. Probably reinforcing this behavior are changing expectations regarding future asset returns. Given recent experience, investors are marking down their forecasts for asset price growth from the high single digits to the mid-single digits. If asset returns are lower, then households realize they need to save even more to make up for any decline in their net worth.
9. Estimates of the personal outlay share and personal saving rate by income group are based on data from the Federal Reserve's flow of funds and survey of consumer finance. The methodology used is available upon request.
10. Establishments that employ fewer than 100 employees accounted for approximately one-half of all jobs and two-thirds of the net job creation in the previous economic expansion during the 2000s.
11. This middle ground is the Moody's Analytics baseline (most likely) economic outlook and includes a number of other policy assumptions that are common across all of the simulations discussed in this piece.
12. The household debt service burden measures the share of after-tax income households must devote to making the interest and principal payments to remain current on that debt. The Federal Reserve is the source of these data.

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