Inforum Economic Outlook

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University of Maryland
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Why Model?

- Economic and social data -- raw material for reports and studies – in comprehensive databank used for analysis.

- Building models assists and test economists’ understanding on how the economy works.

- Assist the economic analysis and forecasting process. Leverage the historic record to detect future trends. Provide a comprehensive and consistent framework to assess assumptions and structures of an economic forecast.

- Simulate “counterfactual” to produce alternative scenarios and/or to evaluate policy measures or exogenous economic shocks.
LIFT Interindustry Macro Model Schematic

Supply Block
- Real Gross Output Demanded
- Imports of Goods and Services
- Labor Productivity
- Hours Worked
- Employment
- Unemployment

Input-Output
Output Identity

Factor Income Block
- Labor Compensation
- Indirect Taxes and Subsidies
- Capital Income and Depreciation

Input-Output
Price Identity

Price Block
- Product and Service Prices
- Consumption Prices
- Investment Prices
- Export Prices
- Monetary Policy / Interest Rates

Exogenous
- Population Profile
- Labor Force*
- Government Spend
- Tax Rates*
- Global Demand
- Global Oil Prices
- Global Trade Prices
- Exchange Rates*

Final Demand Block
- Private Consumption
- Government Expenditures
- Equipment Investment
- Structures Investment (NR)
- Residential Investment
- Inventory change
- Exports of Goods and Services

Real Incomes
- Personal
- National

Accountant Block
- Personal Disposable Income
- Government Taxes
- Other Revenue
- Transfer Payments
- Net Foreign Income and Transfers

National Accounts: GDP = C + I + G + X – M = W + P + T
Household Balance: S = PDI – C
Government Balance: NB = TR – (G + Tr + Int)
Current Account Balance: CA = X – M + NFI + NTrf
National Income: GNI = GDP + NFI
The Newest Generation of LIFT: IDLIFT2

- Interindustry structure and information derived from BEA benchmark 2002 IO and 1998-2010 annual IO tables.
- Time series of REAL IO Tables from 1998.
- Industry and commodity definitions harmonized with BEA NAICS IO and industry data.
- Consistent industry definitions for investment, employment and value added.
- Industry data integrated and reconciled to latest version of NIPA in real and nominal terms.
- Built partly with generous support of Center for Medicare and Medicaid Services (CMS).
Employment: Slow but Consistent Growth

Employment year-on-year percentage growth

Source: Bureau of Labor Statistics
Recovery from financial crises are protracted, because of the long, slow painful process of deleveraging.

2010 view that we weathered the storm were premature.

Monetary policy ineffective (liquidity trap).

Fiscal Policy: Stimulus is necessary, but could be relatively ineffective because...

Explosion of government debt inevitable from financial crisis.

Seldom do countries simply “grow” their way out of debts.

Rather, countries face the choice of inflating debts away or restructuring/defaulting.

Today, currency and capital regimes affect that choice.

Kenneth Rogoff and Carmen Reinhart, *This Time Is Different*
**Short-Term Issues**

What is holding back the recovery? (Hint: Austerity)

- **Austerity:** Fiscal retraction since 2010
- **Failed austerity:** Financial and economic turmoil in Europe
- **More Austerity:** Uncertainty surrounding “fiscal cliff”

What forces can boost recovery?

- **Deleveraging easing, especially for non-financial businesses**
- **Pent-Up demand for housing, rising home prices**
- **By 2015, exports should accelerate again**
- **Fiscal Stimulus? Infrastructure deserves a big new spend.**
- **Long run policy development and acceptance**
## Outlook Overview

### Real (Inflation-Adjusted) Quantities, Average Annual Growth Rates, Percent

<table>
<thead>
<tr>
<th>Demand</th>
<th>00-10</th>
<th>10-11</th>
<th>11-12</th>
<th>12-13</th>
<th>13-14</th>
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## Outlook Overview

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<th>25-35</th>
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<td>0.9</td>
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<td>1.2</td>
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<td>1.1</td>
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### Percent

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<th>Unemployment Rate</th>
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<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2020</th>
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<th>2035</th>
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<td>9.6</td>
<td>8.9</td>
<td>8.1</td>
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### Interest Rates

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<td>Yield, 10 yr. Treasury bonds</td>
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</table>

### Nominal Quantities, Billions of Dollars

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<th>Current account (%) of GDP</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2020</th>
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<td></td>
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<tr>
<td>(% of GDP)</td>
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<td>-3.4</td>
<td>-3.5</td>
<td>-3.8</td>
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<td>-4.0</td>
<td>-3.3</td>
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<tr>
<td>Federal net borrowing (%) of GDP</td>
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<td>-787.4</td>
<td>-725.6</td>
<td>-767.1</td>
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<tr>
<td>(% of GDP)</td>
<td>-10.3</td>
<td>-9.3</td>
<td>-7.9</td>
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<td>-4.9</td>
<td>-4.4</td>
<td>-3.1</td>
<td>-2.6</td>
<td>-2.2</td>
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</table>
Government Fiscal Stimulus “Crowds-Out” Private Spending Through:

\[ \text{GDP} = (C + I + X - M) + G \]

- **Interest rates**: Increased G increases interest rate, discouraging interest-sensitive demand (C+I).

- **Price inflation**: An increase in G increases wages and prices, reducing demand for labor and exports and increasing imports.

- **Ricardian Equivalence**: An increase in G increases consumer savings in anticipation of tax increases.
Current fiscal drag is substantial....

Government consumption and investment

Year-over-year percentage change

Source: Bureau of Economic Analysis
... even considering transfers.

Real government spending
Year-over-year percentage change

Source: Bureau of Economic Analysis
Monetary Policy: Still in a Liquidity trap

Source: Federal Reserve Board
U.S. Interest Rates Remain at Zero, Inflation Remains Well-Contained, and Real Interest Rates are too high.

Source: Federal Reserve Board and Bureau of Labor Statistics.
Expected inflation is year on year change in last months core CPI deflator.
Eurozone in vicious fiscal spiral

Discretionary fiscal tightening, 2011-13
% of GDP, total 2011-13

- Germany
- France
- UK
- Eurozone
- Italy
- Greece
- Ireland
- Portugal
- Spain

Source: Oxford Economics/Haver Analytics
**European stagnation may last two more years.**

## Annual percent change in GDP (2005 dollars)

<table>
<thead>
<tr>
<th>Country</th>
<th>2009</th>
<th>00-09</th>
<th>09-10</th>
<th>10-11</th>
<th>11-12</th>
<th>12-13</th>
<th>13-14</th>
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<th>20-25</th>
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<td>All Listed Countries</td>
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<td>3.4</td>
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<td>2.4</td>
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<td>2.0</td>
<td>2.5</td>
<td>1.9</td>
<td>2.0</td>
<td>1.7</td>
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<td>3.9</td>
<td>3.9</td>
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<td>2.9</td>
<td>2.2</td>
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*Sources:* Inforum, OECD Economic Outlook, Consensus Forecasts, Blue Chip Economic Indicators
What could we expect from the Fiscal Cliff?

Static Score of Fiscal Policy Change, FY 2013–2022

(Billions of Current Dollars)

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<td>301</td>
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<td>573</td>
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<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>46</td>
</tr>
<tr>
<td>Reduction of unemployment benefits</td>
<td>26</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>Reduction of Medicare pay to physicians</td>
<td>11</td>
<td>20</td>
<td>22</td>
<td>24</td>
<td>26</td>
<td>29</td>
<td>31</td>
<td>33</td>
<td>35</td>
<td>37</td>
<td>268</td>
</tr>
<tr>
<td>Total Spending Decrease</td>
<td>103</td>
<td>115</td>
<td>122</td>
<td>126</td>
<td>130</td>
<td>132</td>
<td>134</td>
<td>137</td>
<td>139</td>
<td>142</td>
<td>1279</td>
</tr>
</tbody>
</table>

| Total Static Fiscal Contraction        | 502  | 564  | 578  | 597  | 622  | 648  | 674  | 710  | 749  | 795  | 6437     |
| GDP (CBO Baseline)                     | 15914| 16575| 17618| 18704| 19708| 20661| 21616| 22603| 23614| 24655| 201666   |
| Percent of GDP                         | 3.2  | 3.4  | 3.3  | 3.2  | 3.2  | 3.1  | 3.1  | 3.1  | 3.2  | 3.2  | 3.2      |

(1) Expiration of certain income tax (predominantly the Bush tax cuts) and estates and gift tax provisions scheduled to expire on December 31, 2012, and of indexing the AMT for inflation.

(2) Expiration of "tax extenders", mostly business tax concessions such as the R&D tax credit and investment expensing provisions.

Sources:
Going over the Cliff causes Recession in 2013

Quarter on quarter growth, SAAR

Source: Bureau of Economic Analysis, Inforum
Going over the Cliff causes recession in 2013

Number of Jobs, thousands

Baseline
Fiscal Cliff

2005 2010 2015 2020

130000
140000
150000
160000
170000
The Fiscal Cliff would cause long-lasting damage (though it does relieve the deficit).

Economic Effects: Figures are percent difference from Baseline scenario, except where noted.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Domestic Product</td>
<td>-0.6</td>
<td>-3.0</td>
<td>-4.8</td>
<td>-4.4</td>
<td>-3.2</td>
<td>-1.5</td>
<td>-1.3</td>
<td>-1.3</td>
</tr>
<tr>
<td></td>
<td>cumulative percentage loss</td>
<td>-0.6</td>
<td>-3.6</td>
<td>-8.4</td>
<td>-12.8</td>
<td>-16.0</td>
<td>-17.5</td>
<td>-18.8</td>
</tr>
<tr>
<td>Real Disposable Income (bil 05$)</td>
<td>-0.6</td>
<td>-6.1</td>
<td>-9.4</td>
<td>-9.8</td>
<td>-8.1</td>
<td>-5.3</td>
<td>-4.5</td>
<td>-4.7</td>
</tr>
<tr>
<td></td>
<td>cumulative percentage loss</td>
<td>-0.6</td>
<td>-6.8</td>
<td>-16.1</td>
<td>-25.9</td>
<td>-34.1</td>
<td>-39.3</td>
<td>-43.9</td>
</tr>
<tr>
<td>Civilian employment (% diff)</td>
<td>-0.6</td>
<td>-2.5</td>
<td>-3.9</td>
<td>-3.6</td>
<td>-2.3</td>
<td>-0.6</td>
<td>-0.4</td>
<td>-0.4</td>
</tr>
<tr>
<td></td>
<td>difference in thousands</td>
<td>-839</td>
<td>-3617</td>
<td>-5759</td>
<td>-5348</td>
<td>-3532</td>
<td>-946</td>
<td>-611</td>
</tr>
<tr>
<td></td>
<td>cumulative loss in job-years</td>
<td>-839</td>
<td>-4456</td>
<td>-10215</td>
<td>-15563</td>
<td>-19095</td>
<td>-20040</td>
<td>-20651</td>
</tr>
<tr>
<td>Manufacturing Employment</td>
<td>12840</td>
<td>12858</td>
<td>12931</td>
<td>12987</td>
<td>13056</td>
<td>13318</td>
<td>13498</td>
<td>13545</td>
</tr>
<tr>
<td></td>
<td>difference in thousands</td>
<td>-48</td>
<td>-227</td>
<td>-429</td>
<td>-411</td>
<td>-200</td>
<td>181</td>
<td>282</td>
</tr>
<tr>
<td>Fed Net Borrowing Reduction (bil $)</td>
<td>1</td>
<td>372</td>
<td>508</td>
<td>630</td>
<td>653</td>
<td>604</td>
<td>562</td>
<td>702</td>
</tr>
<tr>
<td>Baseline deficit as % of GDP</td>
<td>-7.8</td>
<td>-6.0</td>
<td>-5.3</td>
<td>-4.5</td>
<td>-4.2</td>
<td>-3.5</td>
<td>-3.3</td>
<td>-3.2</td>
</tr>
<tr>
<td>Reduction in percent of GDP</td>
<td>0.0</td>
<td>2.2</td>
<td>2.9</td>
<td>3.4</td>
<td>3.4</td>
<td>2.8</td>
<td>2.4</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Source: The Impact of the Pending Fiscal Crisis on Jobs and Economic Growth Analysis Using the LIFT Model
National Association of Manufacturers and Inforum
The Good News: Private Sector U.S. Balance Sheet pressures are subsiding

Since 2009, effectiveness of monetary and fiscal policy held back by consumer deleveraging.
- Modifications and refinancing -- why are we paralyzed?
- New (old) standards, large fees, incentive structure.
- Hubbard: let underwater borrowers refinance.


Constrained credit conditions hamper new firm formation, especially important for new job creation.
Household Net Worth: Looking Up, Slowly

Household Net Worth, Billions of $

$14 trillion !

Net worth

Net financial assets

Home equity

Source: Federal Reserve Board
Private Deleveraging is Progressing

US: Sectoral indebtedness

- Domestic financial sector
- Consumer
- Non-financial business
- Government

Source: Federal Reserve - Flow of Funds Accounts
Total Balance by Delinquency Status
Percent Mortgage Balances 90+ Days Delinquent

Source: Federal Reserve Board
Number of New Foreclosures

Thousands of Consumers

0 150 300 450 600

Source: Federal Reserve Board
Household Debt Service
Percent of Household Disposable Income

Source: Federal Reserve Board
U.S. Manufacturing now very competitive

Unit labour costs in manufacturing in US$, 2000Q1=100

Source: Oxford Economics
Policy Options

Fiscal
- More fiscal stimulus to fill AD hole: Bond yields remain low, education and infrastructure provide “bang for the buck.”
- A SR stimulus combined with LR deal on raising revenue with tax reform and reducing future entitlements would be most effective.

Monetary
- Provide guidance on future course of Fed rate.
- Create temporarily high inflation to aid deleveraging.
- Price level targeting, GDP targeting.

Structural
- Quicker deleveraging, greater facilitation of mortgage restructuring.
- Tax reform (eliminate loopholes, reduce rates).
- Remove regulations and other restrictions (health and finance).
- New labor market measures (job matching, increase mobility).
Most “net” new jobs created from new firms.

Source: Davis, Faberman and Haltiwanger (2010)
Long Term Issues

- Potential GDP: How much hysteresis from the Great Recession?

- Boosting Future growth, the Reform Agenda:
  - Tax: Enhance revenue without harming growth.
  - Entitlements: Cut projected SS, Medicare, Medicaid and government pension expenditures.
  - Health Care: What’s next?
  - Education: Things are going to change
  - Infrastructure
Elevated, chronic underemployment is eating away future prosperity

Employment to population ratio, percent

Source: Bureau of Labor Statistics
The Great Recession could have pulled down potential GDP by 6%.
Long Term Outlook: Three Paradoxes

In a global economy, all economics is local.
- Industry clustering and urbanization
- Human, social and infrastructure capital
- Immigration
- Regional policy

As highly productive sectors grow rapidly, their contribution to aggregate growth falls.
- Baumol’s “cost” disease, relevant to growth and fiscal debates
- Importance of technological spillovers to other sectors

As income inequality between countries falls (convergence), income inequality within (many) countries increases.
- Shaped by technology, globalization, immigration, etc.
- Highly relevant to education, health care and fiscal debates
21st century production clusters

Percentage of urban population and agglomerations by size class, 2025

Look no further.......

Average Sales Price Percent Change
Washington MSA
All Housing Types

Source: Metropolitan Regional Information Systems (MRIS), GMU Center for Regional Analysis
What is Baumol’s Disease?

As relative productivity diverges…

Relative Labor Productivity

Relative Prices

So does relative pricing
What is Baumol’s Disease?

Low productivity sectors dominate expenditure ….

And employment….
U.S. Income Distribution became skewed in the last thirty years.

Cumulative Growth in Average After-Tax Income (2009 dollars)
Even in Life Expectancy

Increase in Life Expectancy, and Increase in Difference in Life Expectancy by Economic Status

(Years)


a. Socioeconomic groups are defined using county-level indicators of education, occupation, unemployment, wealth, income, and housing conditions.
Longer term forecast (to 2040):

- Potential GDP growth ~ 2.4%
- Forecast assumes gradual rebalancing of private, government and external accounts.
- Weaker dollar, rapid technological growth in manufacturing, and rising savings rate changes economic structure toward exports and away from consumption.
- Nonetheless, government services and transfers will expand. Health care spending (with/without reform) will dominant future of government spending and domestic production growth.
- All roads lead to tax reform. To pay for entitlements, education and infrastructure, government revenues will have to rise. How this is accomplished is important.
Long term potential growth is almost 2.5% (strong productivity, low labor force growth)

Difference in logs, % - year moving average

- GDP
- Productivity
- Labor Force

1990 2000 2010 2020 2030
Household Savings Rate

Near term spurt because of deleveraging. More realistic expectations will drive slow consumption growth.
Current account deficit: soft landing

Billions of dollars

Current account
Net trade
Net income
Net Transfers

curr_acct         net_trade         net_income        net_transfer
Federal expenditures, revenues and deficit

Percent of GDP

Expenditure
Revenue
Deficit

rev_gdp exp_gdp def_gdp

Federal Debt as percent of GDP
(Debt held by the Public)
Reducing the Federal Deficit

Objectives and Method

- Stabilize debt/gdp (60% ?)
- Curtail discretionary spending growth, perhaps to level of inflation.
- Reform (reduce) entitlements. What do we mean by means testing?
- Comprehensive tax reform
- Cap expenditures/revenue at x% of GDP.
- Reform budget process.
Federal Net and Gross Debt ….

Accrued Debt Held by the Public plus Trust Funds (09/30/12)

Source: U.S. Treasury Department and Inforum Calculations
...do not cover accrued obligations.

Federal Debt + Trust Funds + Unfunded Obligations

Source: U.S. Treasury Department and Inforum Calculations
Federal Expenditures: Historical and Projected

Expenditures as a Percent of GDP

Source: Congressional Budget Office, Baseline (Current Law) Budget Projection, August 2012
Level/Share of Federal Revenue is less relevant than how it is raised

- Establishing an arbitrary cap on expenditures and revenue (18, 21%, etc) is a bad idea.
- High marginal income taxes can retard growth. Corporate income taxes are very inefficient.
- Income exclusions for health care insurance, mortgage interest, and other goodies are extremely regressive and counterproductive. As are payroll taxes.
- Energy taxes should include externalities.
- Move away from taxes on capital and labor and toward taxes on consumption and energy (or carbon).
- Radical tax reform will be key to future.
Tax Reform: How can we tax labor and capital less and consumption more?

- Reduce/Eliminate tax expenditures, especially:
  1. Convert health care premium income exclusion to tax credit (voucher). (~$160 billion in FY2010)
  2. Phase out mortgage interest deduction (~$110 billion in 2010).

- Use proceeds to lower and flatten rates.
- Lower Corporate tax rates (phase out eventually)
- Unify rates across earned, dividends, capital.
- Best time ever for Higher energy taxes/Carbon tax!
- National Sales (RD) or Value Added Tax.
"Tax Expenditures"

<table>
<thead>
<tr>
<th>Tax Break Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortgage interest deduction</td>
<td>$573B</td>
</tr>
<tr>
<td>Health care subsidy for work-based plans</td>
<td>$568B</td>
</tr>
<tr>
<td>Exclusion of retirement plan contributions*</td>
<td>$460B</td>
</tr>
<tr>
<td>Lower tax rate on dividends/cap gains</td>
<td>$419B</td>
</tr>
<tr>
<td>Earned income tax credit</td>
<td>$261B</td>
</tr>
</tbody>
</table>

*Includes traditional pension plan as well as 401(k) contributions.

Source: Joint Committee on Taxation
**Tax subsidies for health are unfair and boost (wasteful?) expenditures**

<table>
<thead>
<tr>
<th>Insurance</th>
<th>Employer Provided</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Premium Cost (including employers)</td>
<td>12000</td>
<td>12000</td>
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<tr>
<td>Income</td>
<td>150,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Tax bracket</td>
<td>30%</td>
<td>15%</td>
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<tr>
<td>Tax subsidy</td>
<td>3600</td>
<td>1800</td>
</tr>
<tr>
<td>Net cost</td>
<td>8400</td>
<td>10200</td>
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</tbody>
</table>
Entitlement Reform: Social Security

- Increase cap on payroll taxes.
- Change COLA to better reflect inflation.
- Reduce benefits for richest, strengthen safety nets for poorest.
- Increase retirement age.
- Cover new S&L workers.
- Little sentiment for private retirement accounts.
# Health Care Reform: Common Elements to Two Approaches

## General Health Care

<table>
<thead>
<tr>
<th>Democrats</th>
<th>Republicans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private insurance, State exchanges, Premium support, No pre-exist conditions, Mandate &amp; Means test</td>
<td>Private insurance, Current market system, Sell across states, No pre-exist conditions, Portability incentives</td>
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</table>

## Medicare

<table>
<thead>
<tr>
<th>Democrats</th>
<th>Republicans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility-style regulation (Command &amp; Control) Integrated, proven care Electronic records Assume GDP+1</td>
<td>Fed/priv insurance, Federal exchanges, Premium support, Means &amp; Health tests, Cap at GDP+1</td>
</tr>
</tbody>
</table>
In 21st Century, productivity in large, rapidly growing sectors will need to grow faster.

National Health Expenditures as Percent of GDP
Current CMS Trustees Forecast

The U.S. pays much more for Health Care...

Figure B-4: Relationship between national income per capita and health care spending, OECD Countries, 2007

Source: OECD Health Data 2009
But health outcomes are generally inferior.

Figure B-3: Mortality amenable to health care, selected countries 1997 to 2003

Source: Nolte and McKee, 2008
Inforum Economic Outlook

Thank you!