











Douglas Meade University of Maryland December 7, 2017





Today

Great Again: Historical perspective on the forecast.

Policy Issues

- CBO Health care policy analysis
- Congressional tax reform and the states LUNCH
- US trade policy
- Tax and entitlement reform
- Infrastructure investment





- Examine economic factors contributing to perception of decline.
 Where possible, I'll compare with the forecast.
 - Changes in trade patterns, and their impacts on employment.
 - Labor productivity
 - Labor force participation and composition
 - Immigration
 - Inequality
 - Demographics
 - Debt
 - Investment
- Review Inforum Domestic and International Outlook
- Policy Issue: The Tax Plan



America's Greatest Year, According to Republicans



The 1950s, and the Reagan years

Source: Morning Consult/Lucid



America's Greatest Year, According to Democrats

The 1990s, and today





Snapshots

- 66% of Republicans interviewed by the Morning Consult Survey said that life was better 50 years ago (1967).
- The Reagan years are also remembered as a time of American greatness (1984).
- Voters compared these past years with conditions in the election year (2016).
- What can we say about the medium-term outlook (2030), compared with the current situation?



50 Years Ago: 1967

- Globalization was just beginning, import shares were small. USA had a trade surplus.
- More than 1/3 of US jobs were in goods-producing industries (including manufacturing).
- Men dominated the labor force.
- The percentage of immigrants was at a low point.
- Small federal debt (\$4,500) and health care costs per household.
- Small share of the elderly; baby boomers were kids.



33 Years Ago: 1984

- "Morning in America"
- "Standing Tall" Large defense buildup, combined with tax cuts, provided Keynesian demand stimulus.
- Federal debt (\$13,500/household) and trade deficits had increased dramatically.
- Health care costs per capita had more than doubled since 1967.
- Baby boomers and women entered the labor force in large numbers, providing strong supply side stimulus.



1 year ago: 2016

- Low unemployment and rising stock market
- Other features:
 - Slower productivity and GDP growth. Reduced outlook for growth. Low real median income growth, especially for those without college.
 - Low investment
 - Low labor force participation
 - Elderly population beginning to increase more rapidly
 - High health care costs
 - High and growing federal indebtedness (\$105 thousand/household!)
 - Still a high trade deficit
 - Record number of immigrant population



Forecast: 2030

- We project average real GDP growth of just over 2% consistent with potential.
- Imports are still higher, but their growth will slow.
- Decline in goods-producing jobs also is projected to slow.
- The age pyramid becomes almost rectangular, as large numbers enter the elderly age groups.
- Immigration will maintain labor force growth.
- Even with tax increases, debt rises to \$146 thousand per household.



International Trade and Employment

- World trade has grown tremendously since 1967.
- How has this affected U.S. jobs by industry? What is the outlook for the future?
- Using historical (1967-2016) and projected IO tables, we look at industry changes in imports and exports, and the impacts on employment in goods-producing industries.



Imports

- In 1967, US imports were only about 4.6% of GDP.
- This ratio had more than doubled to 10% by 1984.
- In 2016, it had risen to 14.7%. However, this is not much higher than the figure of 14.3% for 2000. In between was the Great Recession.
- The Inforum Outlook calls for the import to GDP ratio to rise to 16.5% by 2030.



Imports / GDP

Source: National Income and Product Accounts, and Inforum Outlook



Total Trade

- Total trade (exports + imports) to GDP is one measure of globalization.
- This ratio was just below .10 in 1967, and had risen to .18 by 1984.
- By 2016 we had reached .27.
- Total trade to GDP is projected to grow more slowly to 2030, reaching about .30.

(Exports + Imports)/GDP



Source: National Income and Product Accounts, and Inforum Outlook



Trade Deficit

- In 1967, USA was a net exporter.
- By 1984, the trade deficit had grown to 2.5% of GDP.
- Just before the recession it reached 5.6% in 2005.
- In 2016 it was 2.8%, and we are projecting it to stay between 3% and 3.5%.



Source: National Income and Product Accounts, and Inforum Outlook



Modeling Imports

- Total domestic use by commodity in the IO table is calculated as output + imports – exports.
- The import share is imports/domestic use, and is the average share of an additional dollar of purchases of each commodity that is imported.
- In the LIFT model, this calculation is central to the IO solution for output. For most commodities, import shares are forecast using econometric equations, that use relative (foreign/domestic) prices and trends.
- The next chart shows the commodities with the highest import share in 2016, and how this share has changed over time.



Import/Demand Shares of Goods

						1967-2016 Percent
Rank	Title	1967	1984	2016	2030	Increase
	1 Apparel and leather and allied products	4.1	31.7	73.3	79.5	1689.1
	2 Computer and electronic products	4.4	21.2	57.5	60.5	1217.5
	3 Electrical equipment, appliances, and components	2.6	13.0	51.5	53.4	1869.8
	4 Oil and gas extraction	9.9	22.2	43.0	35.5	333.8
	5 Miscellaneous manufacturing	8.3	23.9	42.5	48.7	414.1
	6 Textile mills and textile product mills	4.7	7.9	41.2	42.9	772.9
	7 Furniture and related products	0.7	7.3	35.9	39.1	4839.1
	8 Machinery	5.0	18.3	34.2	41.5	590.9
	9 Motor vehicles, bodies and trailers, and parts	4.2	22.9	34.1	45.3	717.6
1	0 Chemical products	2.6	9.0	26.7	32.7	931.1
1	1 Other transportation equipment	1.9	8.8	26.3	26.9	1283.2
1	2 Forestry, fishing, and related activities	11.4	11.8	22.7	31.7	100.1
1	3 Primary metals	9.7	17.5	22.7	34.2	133.9
1	4 Plastics and rubber products	1.9	6.7	19.5	27.9	941.6
1	5 Nonmetallic mineral products	2.4	8.7	18.5	22.3	666.5
	Average Share	4.6	13.4	27.8	30.9	500.9

Source: BEA Historical Annual IO Tables; Inforum LIFT Forecast



Goods Imports and Direct Jobs

		1967 Imports					
		2016	Share Applied to		Implied		
		Merchandise	2016 Domestic		Difference in		
Rank	Title	Imports	Demand	Difference	Employment		
	1 Computer and electronic products	316,378	24,013	292,365	916		
	2 Apparel and leather and allied products	142,293	7,953	134,340	433		
	3 Motor vehicles, bodies and trailers, and parts	317,124	38,786	278,338	367		
4	4 Machinery	142,541	20,632	121,909	357		
1	5 Miscellaneous manufacturing	90,252	17,557	72,695	298		
(6 Electrical equipment, appliances, and components	91,933	4,667	87,266	290		
-	7 Fabricated metal products	62,814	6,145	56,669	243		
8	8 Chemical products	228,150	22,128	206,022	219		
(9 Furniture and related products	39,681	803	38,878	217		
10	O Plastics and rubber products	48,096	4,617	43,479	137		
1	1 Textile mills and textile product mills	31,051	3,557	27,494	127		
12	2 Other transportation equipment	53,016	3,833	49,183	123		
13	3 Food and beverage and tobacco products	89,799	30,086	59,713	116		
14	4 Oil and gas extraction	115,769	26,686	89,083	95		
1	5 Forestry, fishing, and related activities	16,247	8,118	8,129	94		

Total Merchandise Sectors

4,309

Source: BEA Historical Annual IO Tables; Inforum LIFT Forecast



Export/Output Shares of Goods

					1967-2016 Percent
Rank	1967	1984	2016	2030	Increase
1 Other transportation equipment	8.6	20.2	46.5	47.3	439.3
2 Computer and electronic products	7.7	15.9	30.5	29.6	295.9
3 Machinery	11.8	16.8	25.8	30.9	118.9
4 Electrical equipment, appliances, and components	4.4	8.0	24.9	21.1	466.8
5 Miscellaneous manufacturing	3.7	6.7	21.7	19.8	480.1
6 Chemical products	6.5	10.8	19.2	20.1	193.0
7 Petroleum and coal products	4.1	4.2	16.4	18.5	299.7
8 Textile mills and textile product mills	2.1	3.8	15.9	18.7	644.5
9 Motor vehicles, bodies and trailers, and parts	5.6	11.2	14.7	17.3	165.5
10 Paper products	3.6	5.0	12.7	11.6	254.0
11 Farms	7.9	13.6	12.0	15.0	51.9
12 Plastics and rubber products	2.8	3.9	11.3	16.5	306.1
13 Primary metals	3.3	4.0	11.3	15.7	244.4
14 Oil and gas extraction	0.8	2.0	10.6	9.8	1298.1
15 Forestry, fishing, and related activities	3.9	4.7	10.2	13.5	162.6

2.8 4.1 6.0 7.3



Goods Exports and Jobs

		2016	1967 Exports		Implied
		Merchandise	Share Applied		Difference in
Rank	Title	Exports	to 2016 Output	Difference	Employment
	1 Other transportation equipment	129,186	23,952	105,234	263
	2 Computer and electronic products	102,587	25,913	76,674	240
	3 Machinery	95,236	43,504	51,732	151
	4 Miscellaneous manufacturing	33,928	5,848	28,080	115
	5 Chemical products	148,765	50,773	97,992	104
	6 Fabricated metal products	31,714	10,662	21,052	90
	7 Motor vehicles, bodies and trailers, and parts	105,822	39 <i>,</i> 854	65,968	87
	8 Electrical equipment, appliances, and components	28,737	5,070	23,667	79
	9 Food and beverage and tobacco products	61,443	25,353	36,090	70
	10 Farms	44,279	29,147	15,132	65
	11 Plastics and rubber products	25,241	6,216	19,025	60
	12 Forestry, fishing, and related activities	6,293	2,397	3,896	45
	13 Paper products	20,949	5,919	15,030	34
	14 Textile mills and textile product mills	8,379	1,125	7,254	33
	15 Primary metals	27,126	7,875	19,251	30

Total Merchandise Sectors

1,586

Source: BEA Historical Annual IO Tables; Inforum LIFT Forecast



Decline in Goods Employment is Slowing

Goods Sectors Employment Shares





Goods Sectors Value Added Doesn't Decline as Much



Goods Sectors Value Added Shares



Labor Productivity

- The decline in jobs in goods producing sectors is due both to trade and higher productivity growth.
- Aggregate productivity growth has fallen by half (2000-2007: 2.6%; 2007-2016: 1.2%)
- Growth since 2010 has been even slower (0.6%).
- The slowdown is generally broad-based, but not all industries declined in the recent period.
- Inforum projects a return to more normal but modest growth (1.3% to 1.5%)



Faster Productivity Growth in Goods Sectors



Source: BEA historical real gross output and industry employment; Inforum LIFT forecast.



Productivity change in the nonfarm business sector, 1947-2016



Source: U.S. Bureau of Labor Statistics



Causes of Slower Productivity Growth?

- Slower investment and capital stock growth
 - Private equipment, structures
 - Public infrastructure
- Demographic changes
 - Aging of workforce
- Cyclical effects
 - Slow GDP growth since the crisis. (Several periods of negative growth).
- Structural effects
 - Continued decline of manufacturing, slow exports.



Labor Force Participation

- Total participation rose from the 50s through the 1980s, but has declined since 2000.
 - Demographic changes (age dependency, or share of working age population in the total)
 - Within-group changes (decline of teens, prime-age males)
- Economic impacts on participation
 How much have we lost due to the crisis?
 In what age/sex groups?



Major Trends in the Labor Force

- Decline of prime-age males, with further decline projected.
- Rise of prime-age females, but our forecast has the share declining slightly.
- Decline of teen participation, and the increase of the elderly.

Share of Labor Force									
	1967	1984	2016	2030					
Teenage, 16-19	8.4%	7.0%	3.7%	3.3%					
Male, 20-64	55.9%	51.0%	48.1%	45.9%					
Female, 20-64	31.7%	39.4%	42.3%	40.6%					
Male, 65+	2.7%	1.5%	3.2%	5.4%					
Female, 65+	1.3%	1.0%	2.6%	4.8%					



Labor Force Participation by Age and Sex: 1967-2030





Labor Force Participation by Age and Sex: 1967-2030







Source: Bureau of Labor Statistics; CEA calculations



Immigrant Population

Number of Immigrants and Their Share of the Total U.S. Population, 1850-2015





Immigrant Labor Force Projection

Immigrants and their U.S.-born children expected to drive growth in U.S. working-age population

Working-age population (25-64), in millions





Inequality

Since 1967, the USA has experienced a steady march toward greater income inequality.

Causes:

- Globalization
- Technology
- Institutions
- Economic trends driving inequality will probably continue.



Gini Coefficient



Inequality Snapshots

Selected Measures of Equivalence-Adjusted Income Dispersion: 1967 to 2016

	1967	1984	2016
MEASURES			
Shares of Equivalence-Adjusted			
Income of Quintiles			
Lowest quintile	5.6	4.6	3.5
Second quintile	12.0	11.0	9.1
Third quintile	17.1	16.8	14.7
Fourth quintile	23.2	24.0	22.5
Highest quintile	42.1	43.6	50.2
Summary Measures			
Gini index of income inequality	0.362	0.389	0.464

Source: U.S. Census Bureau, Current Population Survey, 1968 to 2017 Annual Social and Economic Supplements



Divergence of Real Disposable Income and Real Median Income



Source: Real median personal income: Census Bureau; Real disposable personal income: BEA



Demographics

- Projections are available by single year of age, based on assumptions about mortality, fertility, and net immigration.
- Inforum has added a demographic module to LIFT. We have reproduced Census projections and the modified SSA projection used by CMS.
- We've used the modified SSA in our forecast.
- The age-dependency ratio will peak in the mid 2030s. Until then, labor force growth will be constrained by changes in age composition.



Age Dependency Ratios

Age Dependency Ratios: Young, Old and Total





Population Distribution: 1967 and 1984



In 1967, there were a very small share of elderly dependent population; the baby boom is at the bottom of the diagram.

By 1984, the boomers are in the early working years. Increased life-expectancy is thickening the top end.





Population Distribution: 2016 and 2030



The bulge of the baby boomers and the "echo" generation is apparent in 2016. The overall distribution is much more rectangular

- The flattening of the entire distribution in 2030 is striking!
- The dependency ratio is likely to remain high after 2030.





Health Spending Continues to Overtake Income

					Growth	n Rates
	1967	1984	2016	2030	1967-2016	2016-2030
National Health Expenditures (millions)	51,565	404,995	3,383,396	7,384,445	8.54	5.57
NHE Share of GDP (percent)	5.98	10.02	18.23	22.35	2.27	1.46
NHE per capita (dollars)	253	1,692	10,448	20,248	7.59	4.73
Real NHE per capita (2016\$)	1,428	3,426	10,448	15,087	4.06	2.62
Real disposable income per capita (2016\$)	16,421	24,563	43,091	51,672	1.97	1.30
Median household income (2016\$)	44,895	49,335	59,039		0.56	
Average Life Expectancy - Male	67.0	71.1	76.4	79.5		
Average Life Expectancy - Female	74.3	78.2	81.2	83.3		

Sources: National Health Expenditures: CMS and Inforum Outlook; Disposable income: BEA and Inforum Outlook; Median HH income: Census; Life Expectancy: Census and WHO (projections)



Debt

Household Debt

- Debt service ratio Household debt payments as a percent of income are at an historic low
- Debt / Income This ratio has returned to normal levels.

Government Debt

Debt held by the public – this will still grow rapidly as a percent of GDP, under current law. We've increased personal tax rates to slow the growth



Household Debt





Federal Debt Per Household



- Federal debt per household was about \$4,500 in 1967
- By 1984, this had tripled to \$15,300.
- In 2016, it was about \$112 thousand.
- The Inforum Outlook projects it reaching \$218 thousand by 2030.



Sluggish Investment

- Both private and public investment have been tepid in this expansion.
- Private
 - Regulations?
 - Policy uncertainty?
 - Tax code?
 - IMF (2015): The investment slowdown is occurring across many advanced economies, broadly consistent with slow output growth ("accelerator model").
- Public
 - S&L govt. has yet to recover from recession and declines in revenues.



Private Investment Compared to Previous Expansions





Long term forecast (to 2045):

- Potential GDP growth ~ 2.1%. Productivity and labor force participation constrain growth.
- Very gradual rebalancing of government and external accounts.
- Manufacturing outlook is for continued slower growth.
- Medicare and Social Security are each approaching 6 percent of GDP by 2045.
- Total National Health Expenditures is estimated to grow to 25 percent of GDP by 2045.



Outlook Overview

Real (Inflation Adjusted) GDP Components, Price Deflators, Annual Growth Rates, Percent

	14-15	15-16	16-17	17-18	18-20	20-30	30-45	16-45
Gross domestic product	2.9	1.5	2.3	2.6	2.4	2.0	2.0	2.0
Personal consumption	3.6	2.7	2.7	2.5	2.2	2.0	1.9	2.0
Nonresidential structures	-1.8	-4.1	5.6	6.7	5.5	2.7	2.2	2.8
Equipment investment	3.5	-4.0	4.4	4.5	3.6	2.9	2.7	2.9
Intellectual property	3.8	6.4	4.4	4.0	4.7	4.0	3.5	3.8
Residential	10.2	5.5	1.6	3.6	5.9	4.4	2.4	3.3
Exports	0.4	-0.3	3.5	3.6	2.8	3.2	3.4	3.3
Imports	5.0	1.0	4.0	3.6	2.8	3.0	2.9	3.0
Government	1.4	0.7	0.2	0.8	0.7	0.7	1.0	0.8
GDP deflator	1.1	1.3	1.8	2.1	2.0	2.1	2.0	2.0
Consumption deflator	0.3	1.3	1.7	1.9	2.1	2.1	2.1	2.1



Outlook Overview

	14-15	15-16	16-17	17-18	18-20	20-30	30-45	16-45
Population	0.8	0.9	0.9	0.9	0.9	0.8	0.6	0.7
Labor force	0.8	1.3	1.3	0.9	0.9	0.7	0.5	0.6
Employment	2.0	1.4	2.0	1.3	0.7	0.7	0.5	0.6
Labor productivity	0.9	0.3	0.3	1.2	1.6	1.3	1.5	1.4
Potential GDP	1.6	1.6	2.5	1.3	1.8	2.1	2.0	2.1
	2015	2016	2017	2018	2020	2025	2030	2045
Unemployment rate	5.2	4.9	4.4	4.0	4.4	4.8	4.8	4.8
Treasury bills, 3-month	0.1	0.3	0.9	1.7	2.6	2.8	2.9	3.1
Yield, 10 yr. Treasury bonds	2.1	1.8	2.4	2.8	3.5	3.7	3.8	4.4
Nominal Quantities (billion \$)								
Current account	-462.2	-451.5	-505.8	-528.5	-596.8	-752.0	-895.6	-1298.9
(percent of GDP)	-2.6	-2.4	-2.6	-2.6	-2.7	-2.8	-2.7	-2.2



Long term potential growth is about 2.1%





Decomposition of Real GDP Growth

	80-16	16-20	20-30	30-45
Population	0.95	0.93	0.82	0.58
Working age population	1.15	1.08	0.82	0.47
Labor force	1.11	1.00	0.71	0.46
Total labor productivity	1.61	1.17	1.34	1.51
Average hours worked	-0.13	0.00	0.01	-0.02
Real GDP	2.65	2.36	2.01	1.95

- From 2030-45, even though population growth has declined to 0.58 percent, labor force is growing only at 0.46 percent.
- Productivity growth returns to just below its average level from 1980-2016 in the 2030-2045 period.
- Higher than 2% average GDP growth would require significant increases in labor force participation and/or labor productivity growth.



International Trade

- Trade has slowed since 2012 relative to historical performance and to GDP growth.
 - Between 1985 and 2007, real world trade grew twice as fast as GDP. From 2012-2016, it has barely kept up.
- The reasons are not clearly understood, but suspects include:
 - Waning pace of trade liberalization.
 - Uptick in protectionism.
 - Worldwide slowdown in capital investment.
 - Decline in growth of global value chains (GVCs).
- More recently, we have seen:
 - Slower growth in China.
 - Brexit, emerging markets problems.
- Against this backdrop, the dollar has been strong, discouraging US exports.



US Exports Share of World Exports Has Declined in Periods of Rapid World Growth



The Senate Tax Plan

Individual Income Tax

- Still 7 brackets, but different cutoffs and generally lower rates.
- Capital gains, dividends, and interest income taxed at the current rate.
- Individual AMT repealed
- Increase standard deduction, eliminate personal exemption, increases Child Tax Credit, AMT partially retained, ACA Mandates repealed.
- Most of these provisions "sunset" on December 31, 2025, resulting in a tax increase for many households.

Business Income Taxes

- Reduce corporate income tax from 35% to 20%. Deduct 17.4% of qualified pass-through income, but eligible income limited to 50% for partnerships and S-corporations.
- Full and immediate expensing of investment for the first 5 years. Net interest expense deductibility limited to 30% of adjusted taxable income.
- Eliminate most corporate tax deductions and credits (business tax preferences).



Impacts of the Tax Plan?

- Income Distribution: by 2027 much of the tax reduction would go to the top 1% of households. Some households would see tax increases.
- Federal Revenue: JCT estimated \$1 trillion dynamic revenue loss from 2018 to 2027.
- Savings and Investment: The plan reduces the user cost of capital investment, and so should increase equipment and structures investment.
- Demand Effects: The reduction in the federal tax receipts stimulates the private economy, at least in the short-run. However, debt increases faster.



Considerations in Modeling the Impacts

- Unemployment: Already 4.1% and falling. The Fed is worried about overheating. If investment and consumption increase, will additional demand be satisfied with a surge in imports?
- Potential GDP: Estimates of impact on GDP range as high as 0.4% increase per year. Potential GDP could rise by increased labor force participation and productivity growth, but how fast?
- Savings: If most benefits go to the wealthy, savings will go up, reducing the personal consumption increase.
- Investment: Businesses are sitting on large amounts of cash. Will they increase investment with more cash availability and reduced user cost?



Economic Outlook Paper (in folder)

- Current Economic Environment
- Forecast Summary (Table 1)
- Macroeconomic Outlook
- Risks to the Outlook
- Inforum LIFT-3 Model
 - 1997 to 2015 IO tables, 2007 NAICS
 - Consistent with current NIPA
 - 121 commodities and 71 industries







Thank you!