

The US Economy & the Muni Market



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23 October 2018

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Munis and midterms: five things to know

1. Muni rates:

- The firm's view that Congress will be split – with the Democrats controlling the House as the most likely outcome – our US rates strategists estimate that the 10-year Treasury yield would fall by less than 5bps.
- Should Democrats take the Senate and the Republicans retain the House, 10-year yields would fall some 5 to 10bps.
- Using these estimates and munis typical, directional but 70% rate move, we would expect muni 10-year rates to fall less than 3.5bp in the most likely midterm election outcome.

Mid-term election scenarios and market outcomes

| House | Senate | Margin of victory | Probability | 10-yr Treasury | 10-yr AAA muni |
|-------|--------|-------------------|---------------|--|---|
| D | R | Slim | High | Decline < 5bp | Decline < 3.5bp |
| R | D | Slim | Low | Decline 5bp - 10bp | Decline 3.5bp - 7bp |
| D | D | Slim Landslide | Medium Low | Decline ~10bp Decline 10bp - 20bp | Decline ~7bp Decline 7bp - 14bp |
| R | R | Slim Landslide | Medium Low | Increase 5bp - 10bp Increase 10bps - 20bp | Increase 3.5bp - 7bp Increase 7bp - 14bp |

2. Infrastructure:

- We are very cautiously optimistic on an infrastructure package being enacted if the Democrats take control of the House given that infrastructure has historically been of the more bipartisan issues.

3. Medicaid:

- If the Democrats take the House, we think the attempts by Republicans to drastically reign in federal Medicaid spending – or at least legitimately threaten to do so – will largely cease.
 - Congressional Republicans attempted to implement either per capita caps or block grant funding for the states.
 - That would have significantly curtailed federal Medicaid funding to the states, a credit negative given that states' healthcare expenditures make up large percentages of their overall spending.
- If Republicans retain control of Congress, we believe they will again attempt to lower federal Medicaid spending.

4. Tax Reform 2.0:

- If Democrats take control of the House, Tax Reform 2.0, as written by the Republican majority on the House's Ways and Means Committee, will largely die.
 - Democratic efforts to alter the Tax Cuts and Jobs Act's provisions – particularly the \$10,000 cap on state and local tax (SALT) deductions – will likely prove largely symbolic if Republicans retain Senate control.
 - The result: that provision will likely remain until at least December 2025, a negative for the high-tax states.
- If Republicans retain Congressional control, Tax Reform 2.0 could be re-booted, particularly if they are able to pass a legislative vehicle containing reconciliation provisions that avoid the need for Democrats' support in the Senate.

Munis and midterms: five things to know

5. Trade:

- Irrespective of which party controls either chamber of Congress, we believe that the trade tensions with China will escalate.
- The 10% tariff on Chinese imports is scheduled to ratchet up to 25% on 1 January 2019, and the President warned that he is willing to impose tariffs on all Chinese imports.
- These tariffs put downward pressure on states and their companies engaging in large amounts of trade with China – especially as retaliatory tariffs are implemented – and those with trade concentrated with China. It is also a headwind for the ports that handle large amounts of said trade, particularly in Southern California.

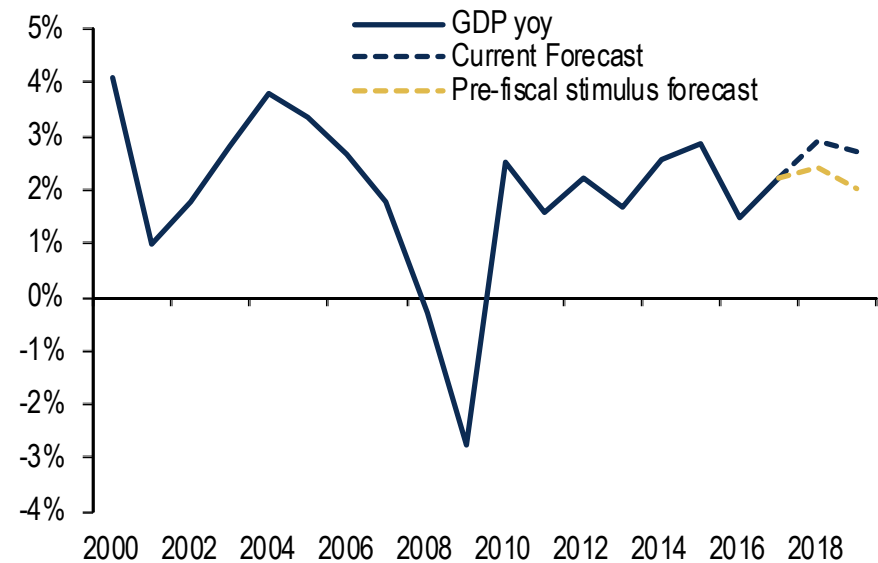
Economic forecasts

- Growth:
 - Real GDP growth of 2.9% this year and 2.7% next year
 - Potential holds at 1.7%
- Inflation:
 - No inflation scare
 - Core PCE inflation to reach 1.9% by end of 2018 and 2.2% by the end of 2019
- Fed:
 - 4 hikes in 2018, 3 hikes in 2019
 - Focus shifting to data and away from neutral interest rate estimates

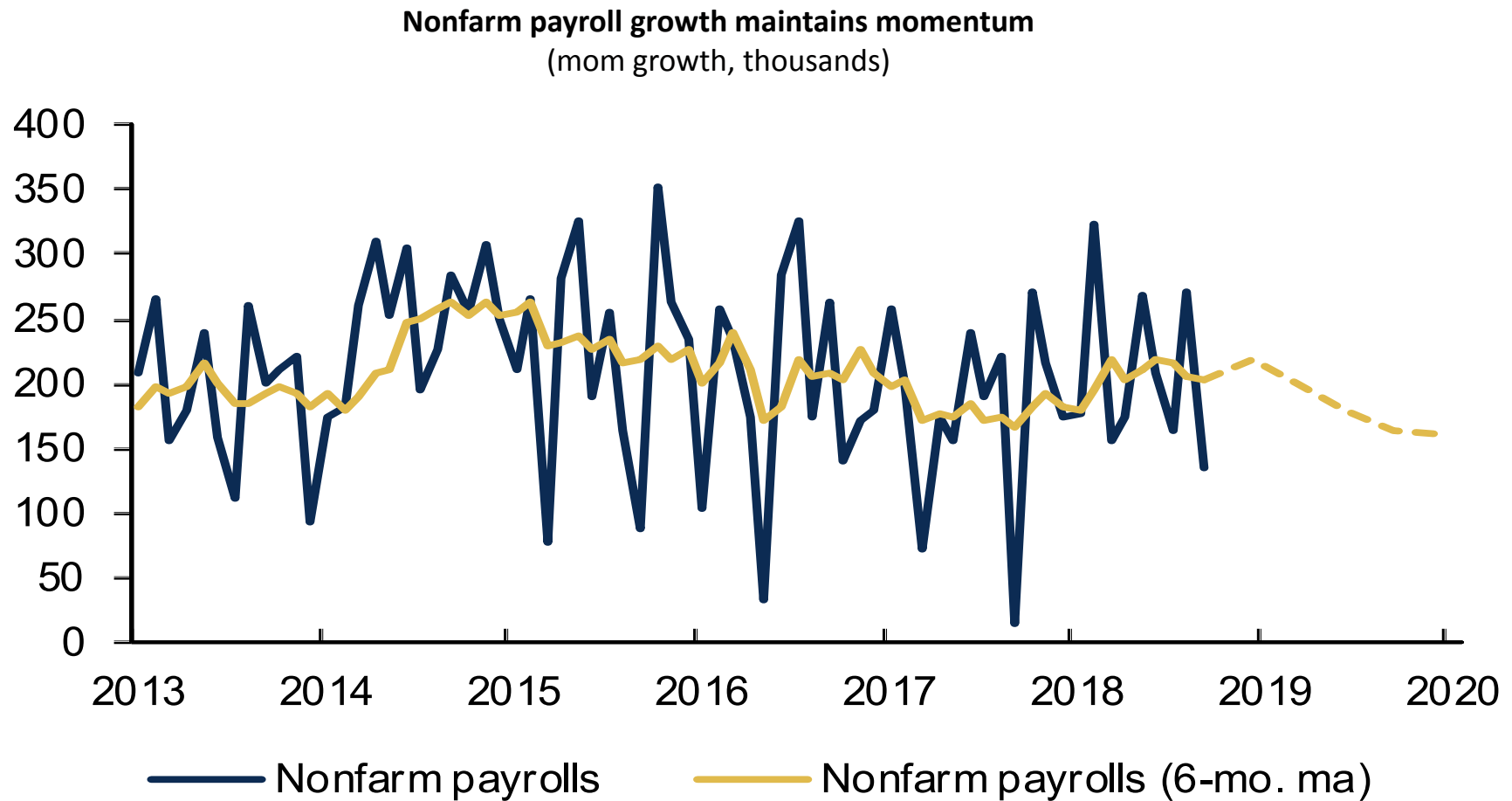
| | 1Q 18 | 2Q 18 | 3Q 18 | 4Q 18 | 1Q 19 | 2Q 19 | 3Q 19 | 4Q 19 | 2017 | 2018 | 2019 |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| GDP (% qoq saar) | 2.2 | 4.2 | 3.4 | 3.0 | 2.6 | 2.4 | 2.1 | 2.1 | 2.2 | 2.9 | 2.7 |
| Unemployment rate (%) | 4.1 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 | 3.3 | 3.2 | 4.4 | 3.9 | 3.4 |
| Core PCE (% yoy) | 1.7 | 1.9 | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2.2 | 1.6 | 1.9 | 2.1 |
| Core CPI (% yoy) | 1.9 | 2.2 | 2.2 | 2.2 | 2.1 | 2.3 | 2.4 | 2.5 | 1.8 | 2.1 | 2.3 |
| CPI (% yoy) | 2.3 | 2.6 | 2.6 | 2.5 | 2.1 | 2.3 | 2.5 | 2.4 | 2.1 | 2.5 | 2.3 |
| Fed funds rate (% eop) | 2.00-2.25 | 2.25-2.50 | 2.50-2.75 | 2.75-3.00 | 3.00-3.25 | 3.00-3.25 | 3.00-3.25 | 3.00-3.25 | 1.25-1.50 | 2.25-2.50 | 3.00-3.25 |

- Tax reform: 0.3pp to growth this year and 0.2pp next year
- Budget deal: 0.2pp to growth this year and next
- Unprecedented fiscal spending during expansion

Stimulating growth



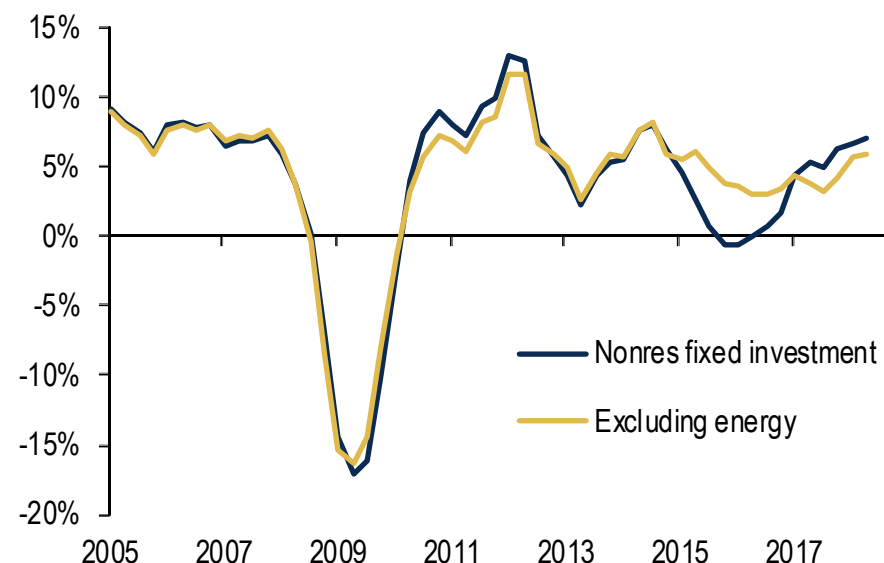
Labor market conditions tightening



Cyclical growth: CAPEX has room to go

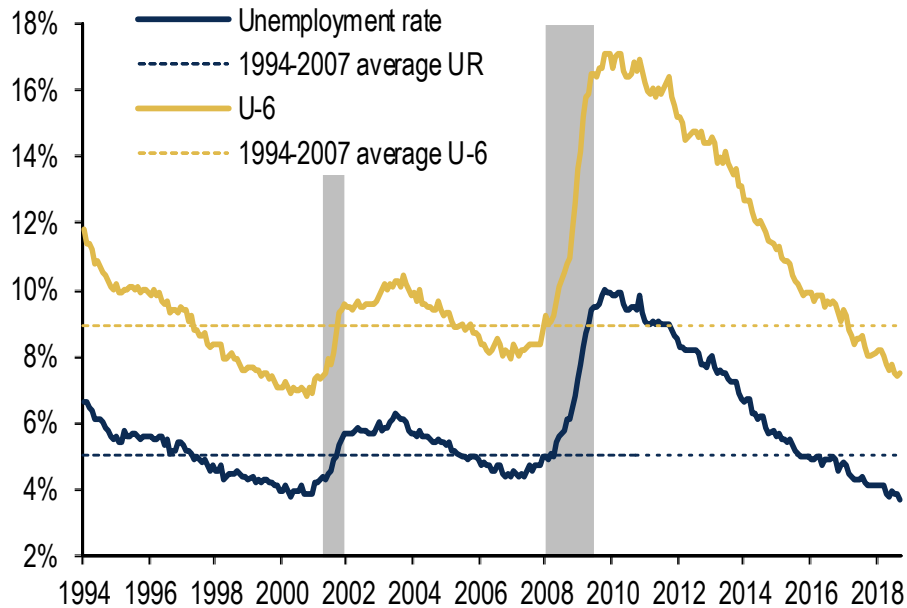
- Better overall growth projected
- Tax plan permits immediate expensing of capital expenditures
- Survey measures show solid business activity (e.g. ISMs, Philly Fed, Empire State, Chicago PMI)
- Pick up in oil prices

Energy is influential in business investment
(%yoy)



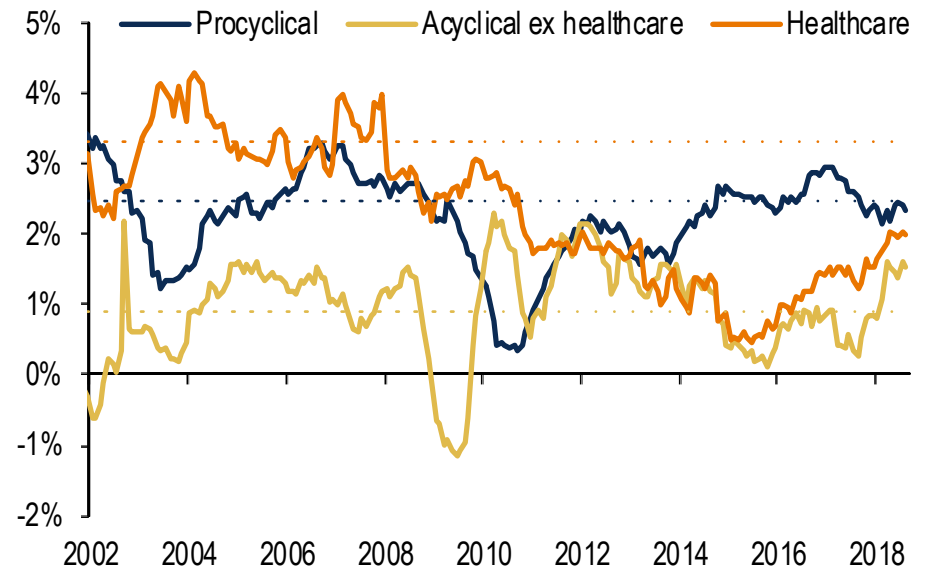
Labor markets continue to tighten

Unemployment rate: low and falling by any measure (%)



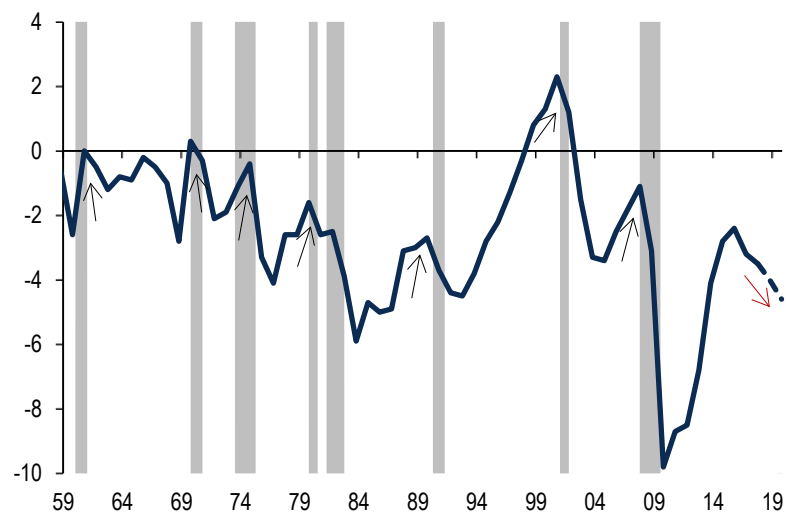
Procyclical inflation back to prior cycle trend despite tighter labor markets

(% year-over-year, dotted line is 2002-2007 average)



Deficits: unprecedented late-cycle surge

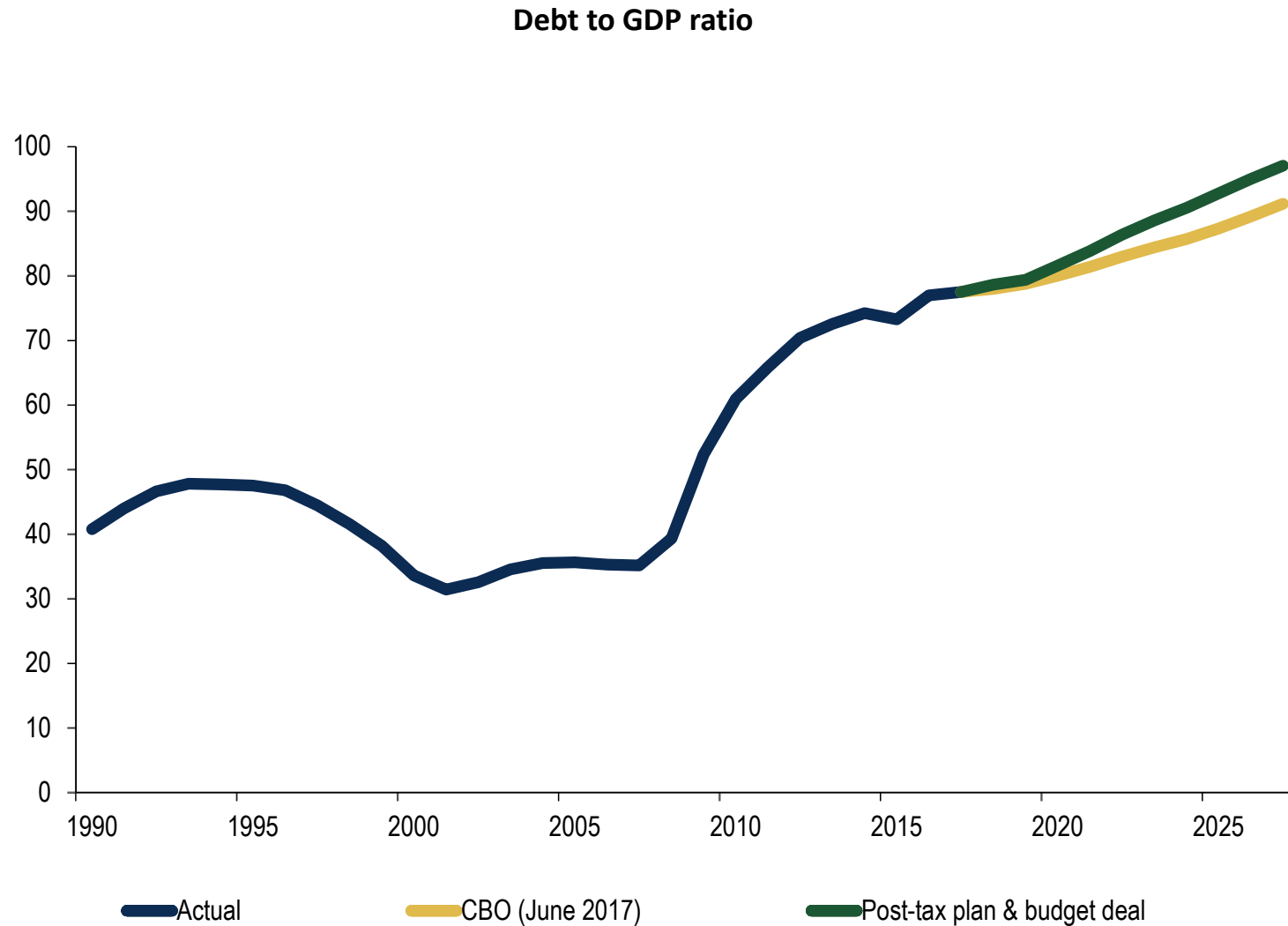
Budget balance over the business cycle (% of GDP)



Deficit expansion in the near term (\$bn)

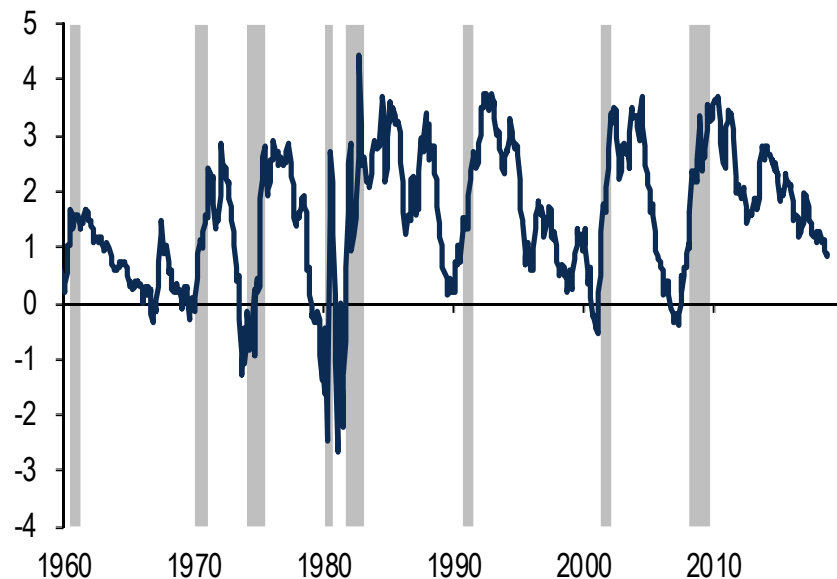
| | FY2018 | FY2019 |
|--------------------------------------|--------|--------|
| Previous BofAML estimate* | -600 | -689 |
| Tax Cuts and Jobs Act (Dynamic Cost) | -95 | -160 |
| Discretionary Spending Cap Increase | -72 | -125 |
| Supplemental Disaster Relief | -40 | -20 |
| Tax Extenders | -13 | -1 |
| Total | -820 | -995 |
| Actual | -779 | |

Public debt pushing higher

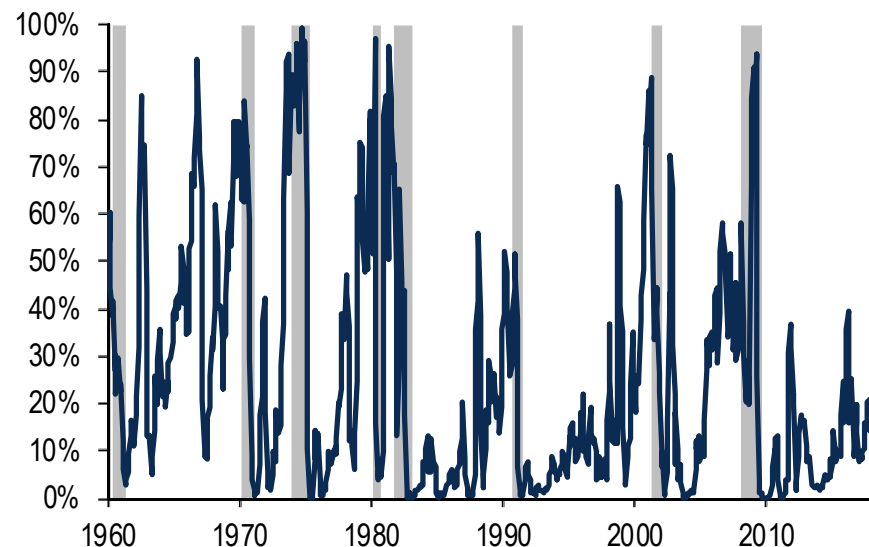


Recession watch: keep calm and carry on

The Treasury curve tends to invert prior to a recession (Three-month Treasury to 10-year Treasury spread)



Recession probability remains subdued (%)

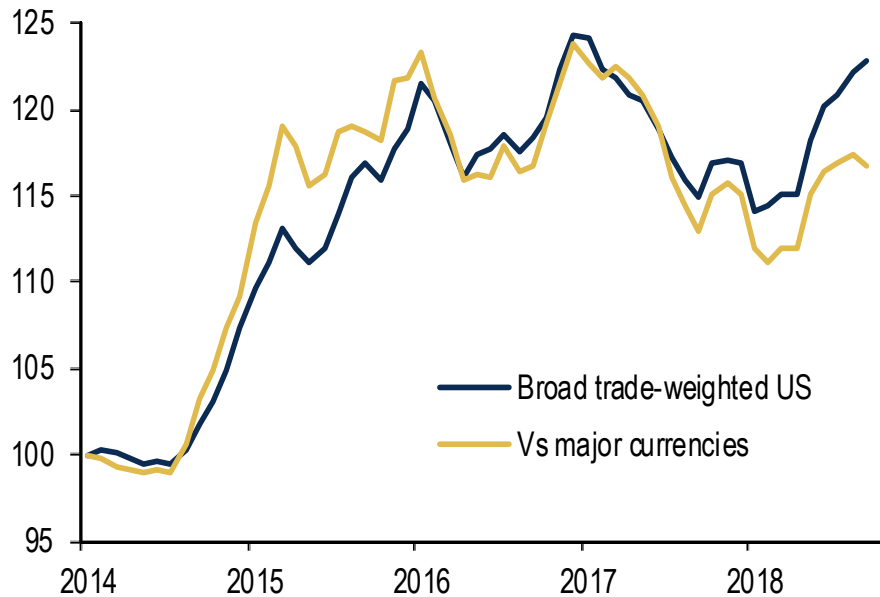


Grey shading indicates recessionary periods.

Dollar is only a slight tailwind

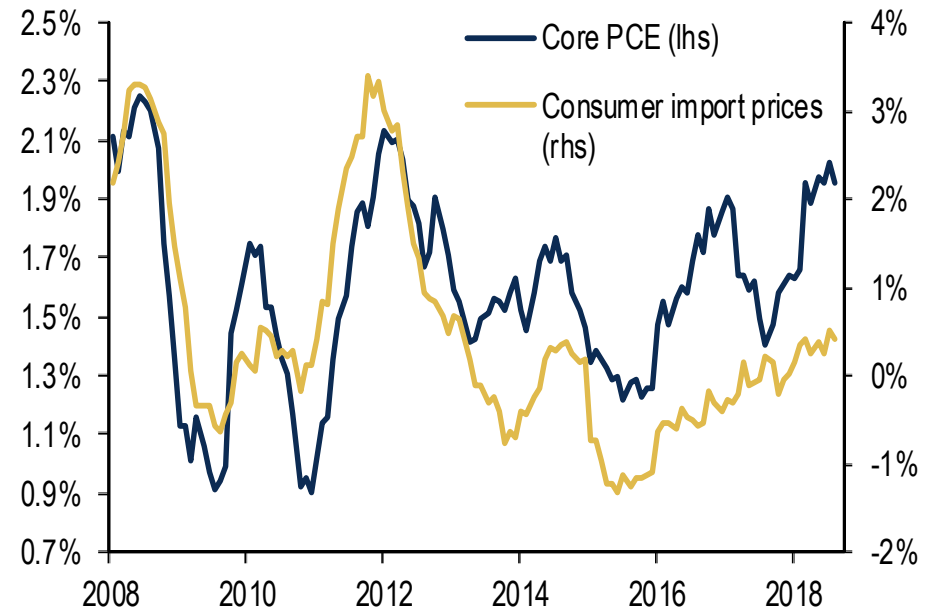
Dollar rollercoaster

(trade-weighted indices, 100=Jan 2014)



Consumer import prices and core PCE inflation

(% year-over-year)



Fed officials more optimistic

Evolution of the Fed's economic projections between December and June

| | 2018 | 2019 | 2020 | 2021 | Longer run |
|-------------------------------|--------------|--------------|--------------|------------|--------------|
| GDP(4Q/4Q) | | | | | |
| Sep projection | 3.1 | 2.5 | 2.0 | 1.8 | 1.8 |
| June projection | 2.8 | 2.4 | 2.0 | | 1.8 |
| March projection | 2.7 | 2.4 | 2.0 | | 1.8 |
| December projection | 2.5 | 2.1 | 2.0 | | 1.8 |
| Sep-December Change | 0.6 | 0.4 | 0.0 | | 0.0 |
| Unemployment rate (4Q) | | | | | |
| Sep projection | 3.7 | 3.5 | 3.5 | 3.7 | 4.5 |
| June projection | 3.6 | 3.5 | 3.5 | | 4.5 |
| March projection | 3.8 | 3.6 | 3.6 | | 4.5 |
| December projection | 3.9 | 3.9 | 4.0 | | 4.6 |
| Sep-December Change | -0.2 | -0.4 | -0.5 | | -0.1 |
| Core PCE (4Q/4Q) | | | | | |
| Sep projection | 2.0 | 2.1 | 2.1 | 2.1 | 2.0 |
| June projection | 2.0 | 2.1 | 2.1 | | 2.0 |
| March projection | 1.9 | 2.1 | 2.1 | | 2.0 |
| December projection | 1.9 | 2.0 | 2.0 | | 2.0 |
| Sep-December Change | 0.1 | 0.1 | 0.1 | | 0.0 |
| Federal Funds Rate | | | | | |
| Sep projection | 2.375 | 3.125 | 3.375 | 3.4 | 3.000 |
| June projection | 2.375 | 3.125 | 3.375 | | 2.875 |
| March projection | 2.125 | 2.875 | 3.375 | | 2.875 |
| December projection | 2.100 | 2.688 | 3.063 | | 2.750 |
| Sep-December Change | 0.275 | 0.437 | 0.312 | | 0.250 |

The Fed has redefined gradual

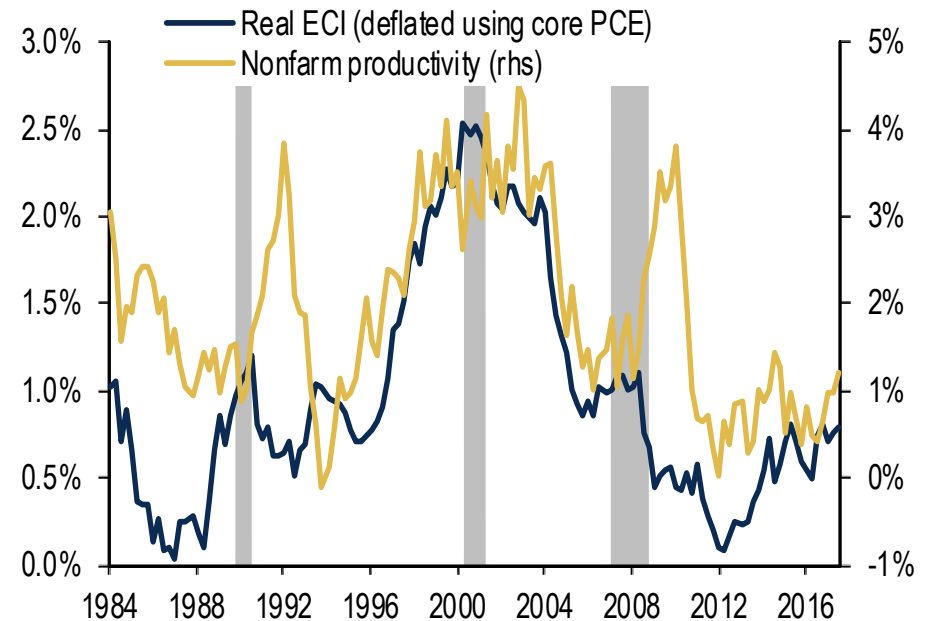
- Markets pricing ahead of Fed expectations for 2018 but there is skepticism for 2019 and beyond.
- Markets are usually “behind” the Fed in pricing in hikes.
- Financial conditions, low R^* and global market conditions are headwinds for the hiking cycle.

Market pricing of fed hikes based on fed funds futures
(number of hikes)



- Stubbornly low productivity growth contributes to slow wage growth.
- Employers will hesitate to increase wages if output per hour is weak.

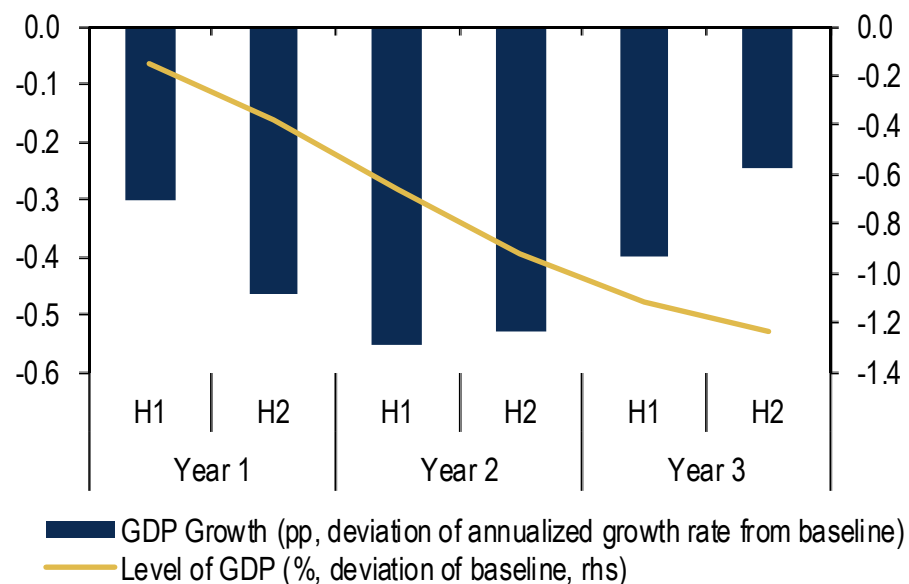
The link between wages and productivity
Two-year annualized growth



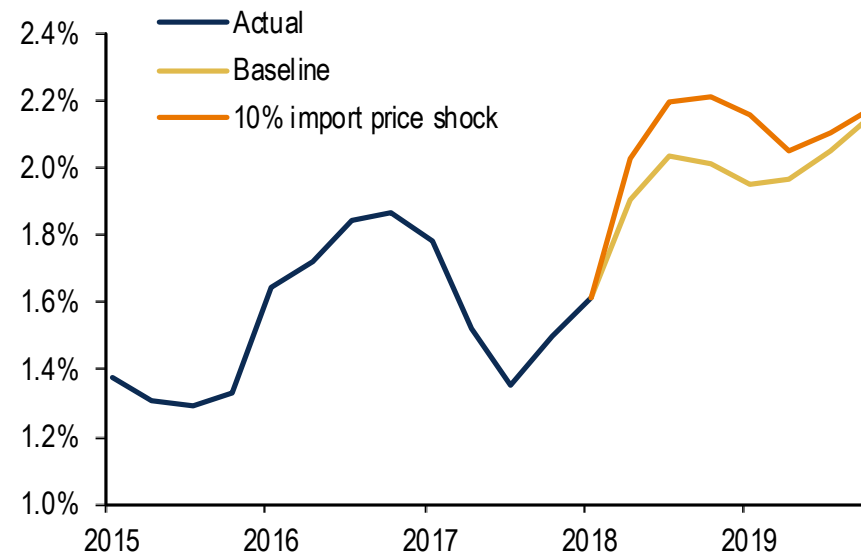
Grey shading indicates recessionary periods.

Potential impacts from trade war

Growth impact of a trade war



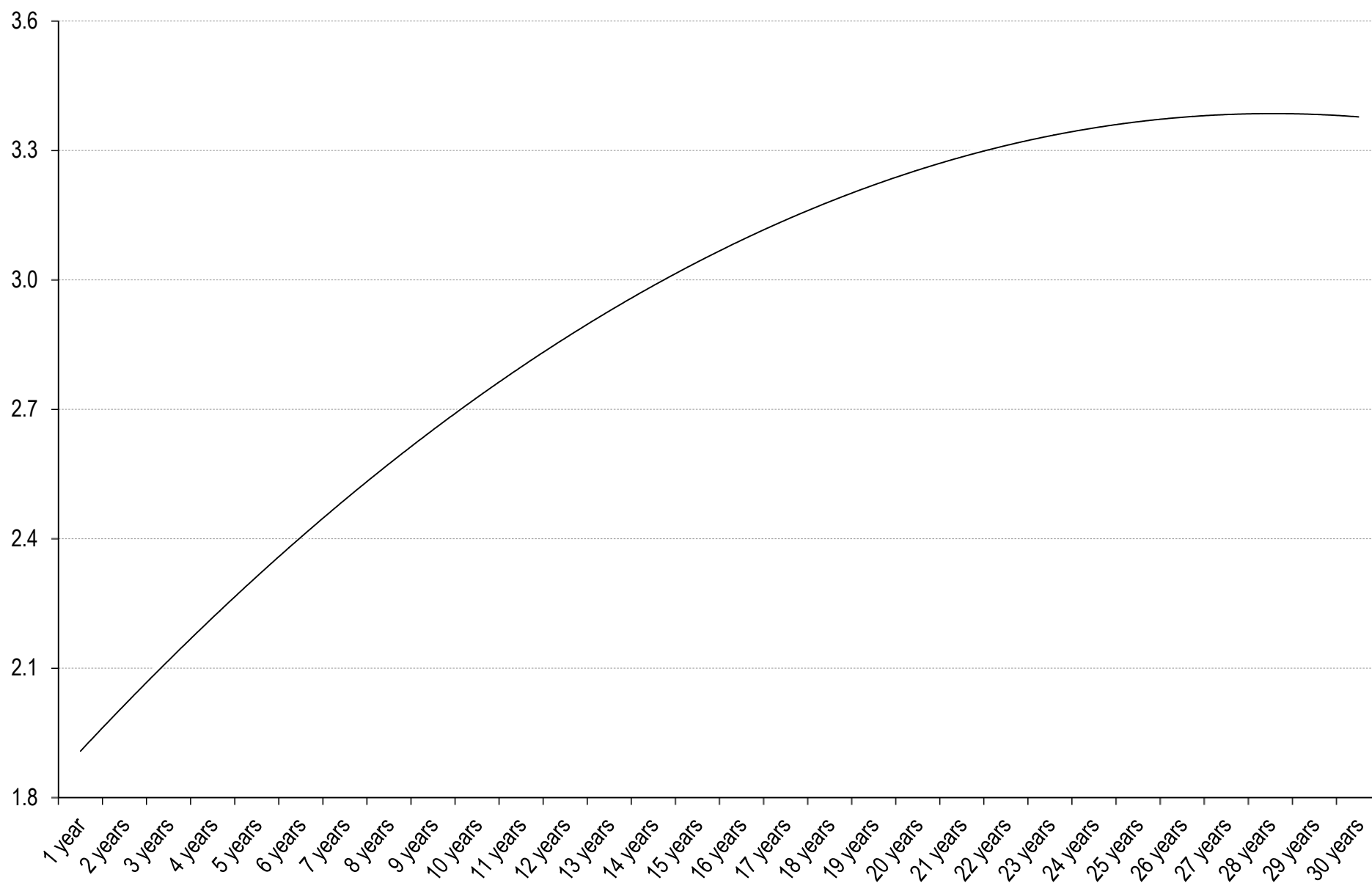
Core inflation impact of a trade war (% year-over-year)



US outlook table

| Real Economic Activity, % SAAR | 2Q 18 | 3Q 18 | 4Q 18 | 1Q 19 | 2Q 19 | 3Q 19 | 4Q 19 | 2016 | 2017 | 2018 | 2019 |
|---|-----------|-----------|-----------|-----------|-----------|-------|-------|-----------|-----------|-----------|-----------|
| Real GDP | 4.2 | 3.4 | 3.0 | 2.6 | 2.4 | 2.1 | 2.1 | 1.6 | 2.2 | 2.9 | 2.7 |
| % Change, Year Ago | 2.9 | 3.0 | 3.2 | 3.3 | 2.8 | 2.5 | 2.3 | | | | |
| Consumer Spending | 3.8 | 2.7 | 2.4 | 2.3 | 2.0 | 2.0 | 2.0 | 2.7 | 2.5 | 2.5 | 2.4 |
| Residential Investment | -1.4 | 2.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 6.5 | 3.3 | 0.9 | 2.6 |
| Nonresidential Investment | 8.7 | 6.1 | 5.0 | 3.9 | 4.0 | 3.0 | 3.0 | 0.5 | 5.3 | 7.4 | 4.5 |
| Structures | 14.5 | 6.5 | 5.5 | 4.0 | 4.0 | 3.0 | 3.0 | -5.0 | 4.6 | 6.9 | 5.0 |
| Equipment | 4.6 | 6.0 | 5.5 | 4.0 | 4.0 | 3.0 | 3.0 | -1.5 | 6.1 | 7.7 | 4.3 |
| Intellectual Property | 10.5 | 6.0 | 4.0 | 4.0 | 4.0 | 3.0 | 3.0 | 7.5 | 4.6 | 7.1 | 4.4 |
| Government | 2.5 | 3.5 | 2.5 | 2.5 | 2.3 | 1.7 | 1.7 | 1.4 | -0.1 | 1.8 | 2.4 |
| Exports | 9.3 | -1.5 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | -0.1 | 3.0 | 4.5 | 2.2 |
| Imports | -0.6 | 3.5 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 | 1.9 | 4.6 | 4.0 | 3.0 |
| Net Exports (Bil 12\$) | -841 | -880 | -896 | -909 | -923 | -937 | -950 | -786 | -859 | -880 | -930 |
| Inventory Accumulation (Bil 12\$) | -37 | 1 | 21 | 28 | 35 | 41 | 47 | 23 | 23 | 4 | 38 |
| Key Indicators | | | | | | | | | | | |
| Industrial Production (% SAAR) | 5.1 | 3.3 | 2.3 | 2.3 | 2.2 | 2.0 | 1.9 | -1.9 | 1.6 | 3.7 | 2.5 |
| Nonfarm Payrolls (Avg MoM change, 000s) | 217 | 190 | 220 | 200 | 180 | 165 | 160 | 195 | 182 | 211 | 176 |
| Civilian Unemployment Rate (%) | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 | 3.3 | 3.2 | 4.9 | 4.4 | 3.9 | 3.4 |
| Personal Savings Rate (%) | 6.8 | 6.7 | 6.4 | 6.4 | 6.3 | 6.2 | 6.2 | 6.7 | 6.7 | 6.8 | 6.3 |
| Inflation | | | | | | | | | | | |
| CPI, Consumer Prices (% SAAR) | 1.7 | 2.0 | 2.8 | 1.9 | 2.7 | 2.5 | 2.7 | 1.3 | 2.1 | 2.5 | 2.3 |
| % Change, Year Ago | 2.6 | 2.6 | 2.5 | 2.1 | 2.3 | 2.5 | 2.4 | | | | |
| CPI ex Food & Energy (% SAAR) | 1.8 | 2.0 | 2.1 | 2.6 | 2.5 | 2.4 | 2.4 | 2.2 | 1.8 | 2.1 | 2.3 |
| % Change, Year Ago | 2.2 | 2.2 | 2.2 | 2.1 | 2.3 | 2.4 | 2.5 | | | | |
| Core PCE Chain Prices (% SAAR) | 2.0 | 1.8 | 2.0 | 2.2 | 2.1 | 2.1 | 2.2 | 1.7 | 1.6 | 1.9 | 2.0 |
| % Change, Year Ago\$ | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.1 | 2.1 | | | | |
| Rates | | | | | | | | | | | |
| Fed Funds | 1.75-2.00 | 2.00-2.25 | 2.25-2.50 | 2.50-2.75 | 2.75-3.00 | - | - | 0.50-0.75 | 1.25-1.50 | 2.25-2.50 | 3.00-3.25 |
| 3-Month LIBOR | 2.34 | 2.40 | 2.70 | 2.91 | 3.17 | - | - | 1.00 | 1.69 | 2.70 | - |
| 2-Year T-Note | 2.53 | 2.82 | 2.90 | 3.00 | 3.10 | - | - | 1.19 | 1.88 | 2.90 | - |
| 10-Year T-Note | 2.86 | 3.06 | 3.25 | 3.30 | 3.35 | - | - | 2.44 | 2.41 | 3.25 | - |

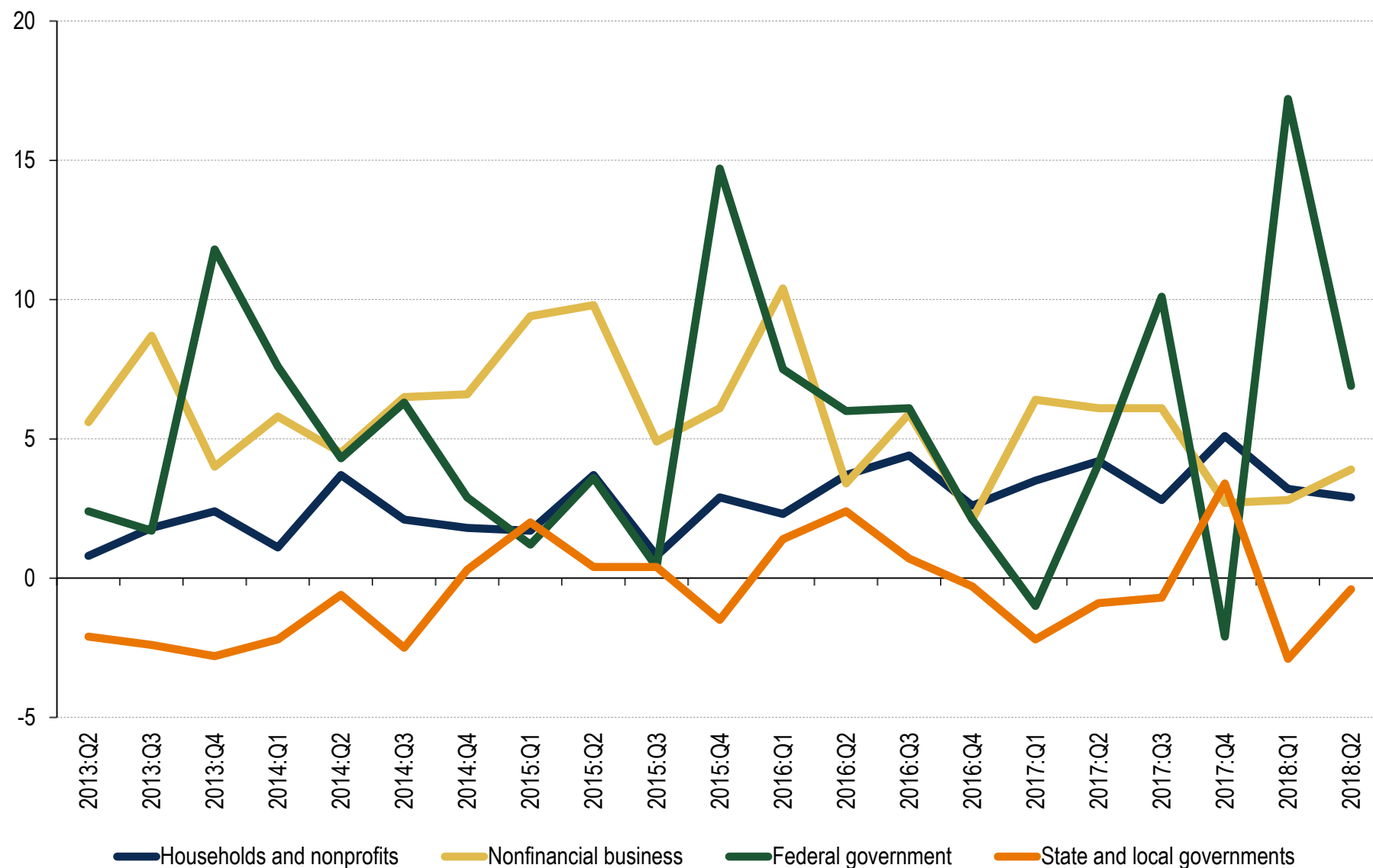
Municipal pricing is inefficient: AAA GO as of 19 October 2018



The Tax Cuts and Jobs Act of 2017 (TCJA)

- The TCJA lowered the top individual rate to 37% from 39.6%.
- The top effective rate is 40.8%, including the 3.8% Medicare surtax on investment income.
- For individuals – especially high earners in high tax states – tax reform made munis even more attractive given the tax reform’s capping of previously unlimited SALT deductions at \$10,000.
- The TCJA also reduced the corporate tax rate to 21% from 35%.
- The TCJA decreases the attractiveness of munis to US banks and Property & Casualty insurance companies (P&Cs), but increases it for life insurance companies.
- It also eliminated the tax-exemption on advance refundings issued after 31 December 2017, but the tax-exemption on advance refunding issued before that date maintain their tax-exemption, or were “grandfathered.”

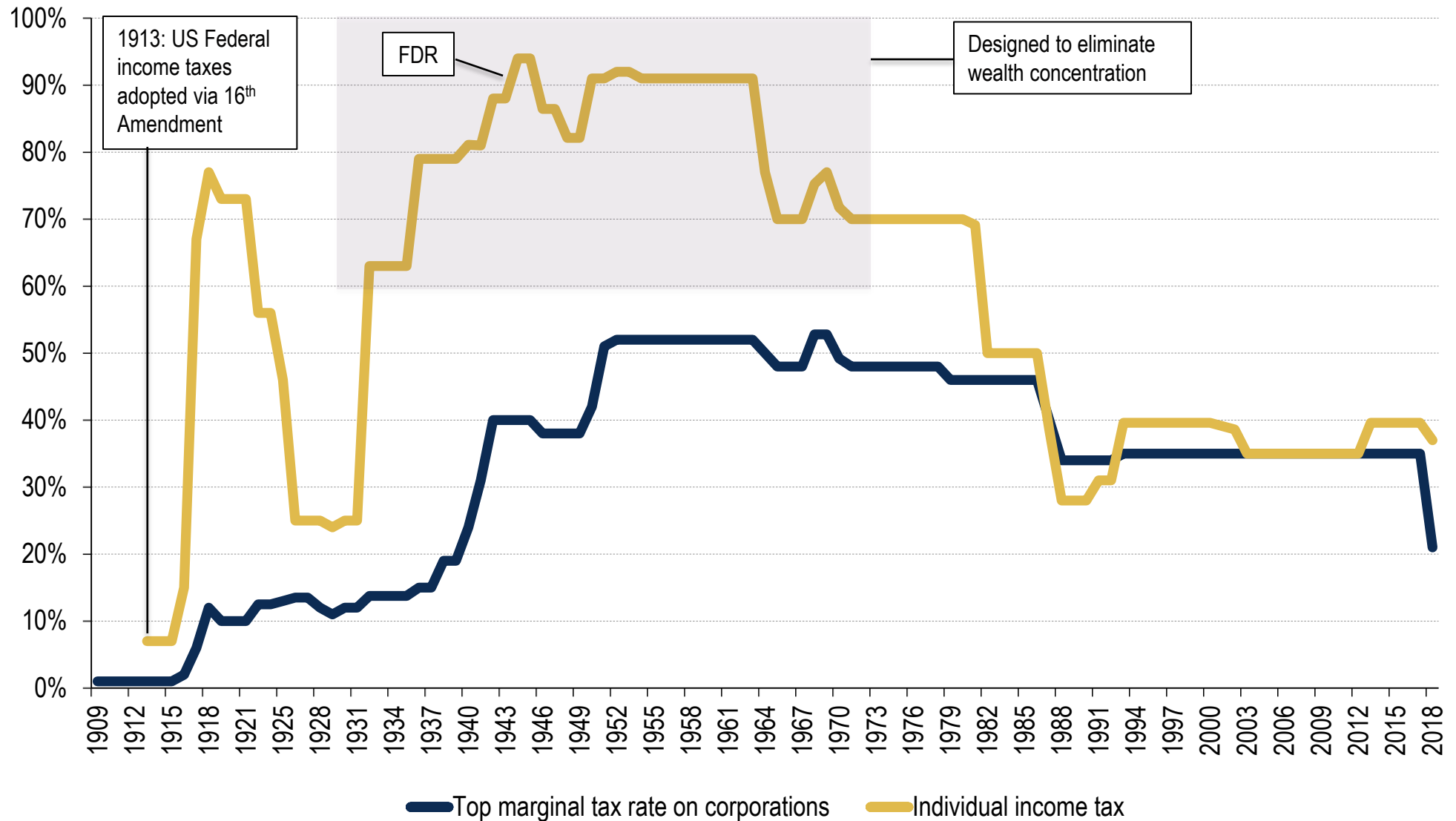
Debt growth of domestic nonfinancial sectors (%)



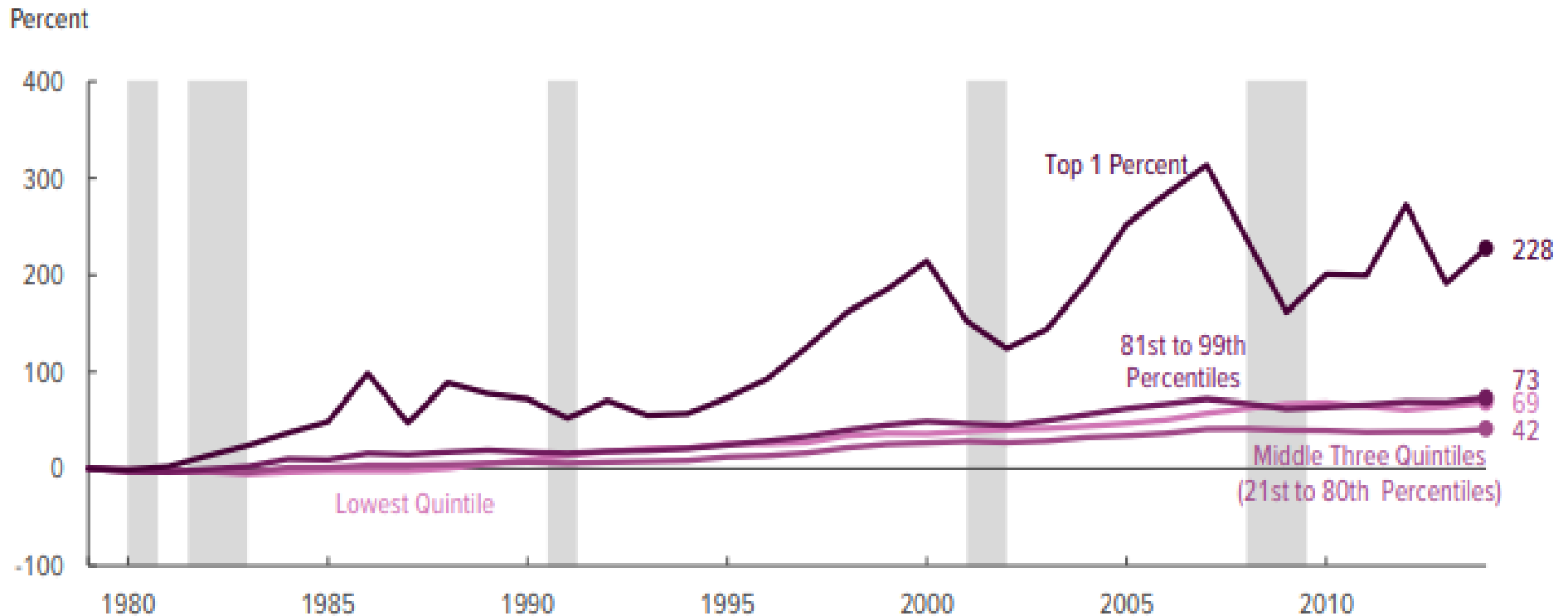
Approximate tax-equivalent spread for 10-year MMD vs. 10-year Treasury (bps)



History of American taxation: past and present



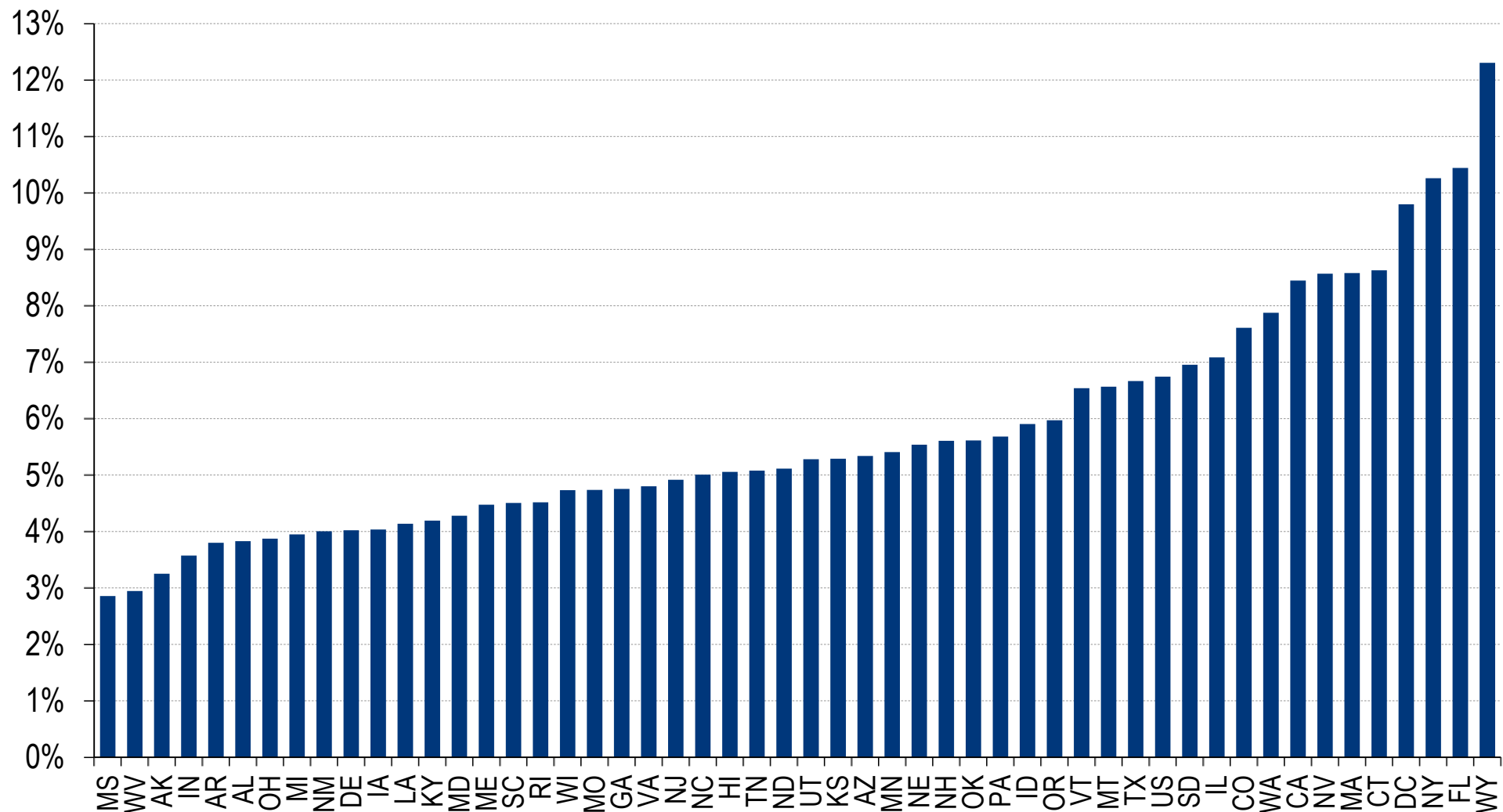
Cumulative growth in average income, by income group, 1979 to 2014



Percent of households reporting positive municipal debt holdings, by category and income group

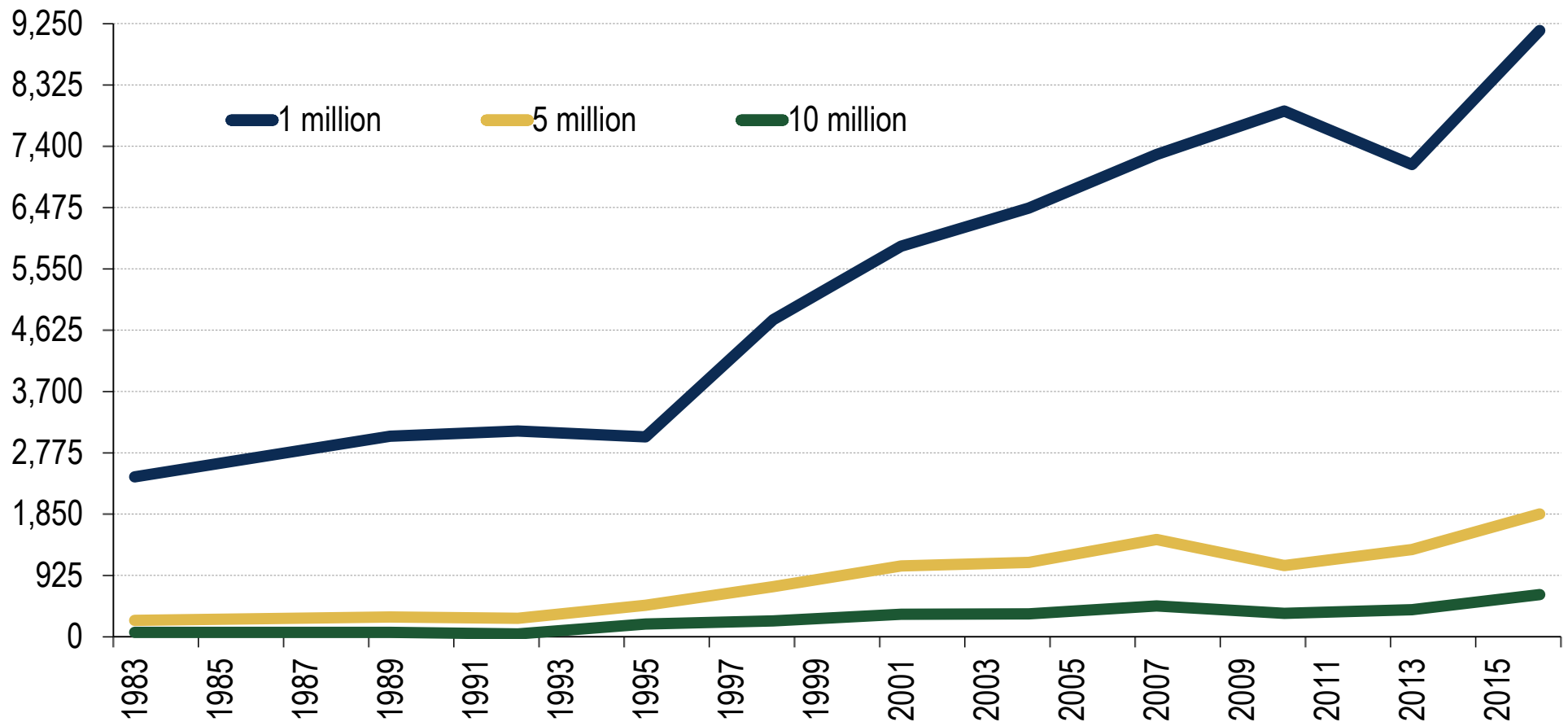
| | Holdings | 1989 | 1992 | 1995 | 1998 | 2001 | 2004 | 2007 | 2010 | 2013 | 2016 |
|------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1st | overall | 0.0% | 0.1% | 0.1% | 0.1% | 0.4% | 0.2% | 0.1% | 0.1% | 0.0% | 0.1% |
| (0-24.9) | direct | 0.0% | 0.1% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| | indirect | 0.0% | 0.0% | 0.1% | 0.1% | 0.3% | 0.2% | 0.1% | 0.1% | 0.0% | 0.1% |
| 2nd | overall | 1.2% | 0.3% | 0.8% | 1.5% | 0.9% | 0.5% | 0.2% | 0.2% | 0.1% | 0.3% |
| (25-49.9) | direct | 1.2% | 0.2% | 0.3% | 0.4% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% | 0.0% |
| | indirect | 0.0% | 0.1% | 0.5% | 1.1% | 0.9% | 0.5% | 0.2% | 0.1% | 0.0% | 0.3% |
| 3rd | overall | 1.7% | 1.7% | 1.9% | 2.7% | 2.0% | 1.8% | 0.9% | 0.4% | 0.6% | 0.6% |
| (50-74.9) | direct | 0.8% | 0.1% | 0.5% | 0.9% | 0.2% | 0.1% | 0.1% | 0.1% | 0.2% | 0.3% |
| | indirect | 0.9% | 1.6% | 1.4% | 1.8% | 1.8% | 1.7% | 0.8% | 0.3% | 0.4% | 0.3% |
| 4th | overall | 7.7% | 8.7% | 7.2% | 10.0% | 8.4% | 6.5% | 4.8% | 3.7% | 3.4% | 3.9% |
| (75-89.9) | direct | 5.8% | 2.5% | 2.5% | 1.9% | 3.4% | 0.7% | 0.7% | 1.3% | 0.8% | 1.5% |
| | indirect | 1.9% | 6.2% | 4.7% | 8.1% | 5.0% | 5.8% | 4.1% | 2.4% | 2.6% | 2.4% |
| 5th | overall | 30.7% | 32.5% | 29.9% | 24.8% | 28.9% | 22.9% | 20.4% | 23.6% | 18.1% | 19.6% |
| (90-100) | direct | 21.0% | 17.6% | 11.7% | 9.9% | 11.6% | 8.7% | 8.5% | 9.4% | 7.3% | 5.8% |
| | indirect | 9.7% | 14.9% | 18.2% | 14.9% | 17.3% | 14.2% | 11.9% | 14.2% | 10.8% | 13.8% |

Net capital gains as a percent of total income: Tax year 2015

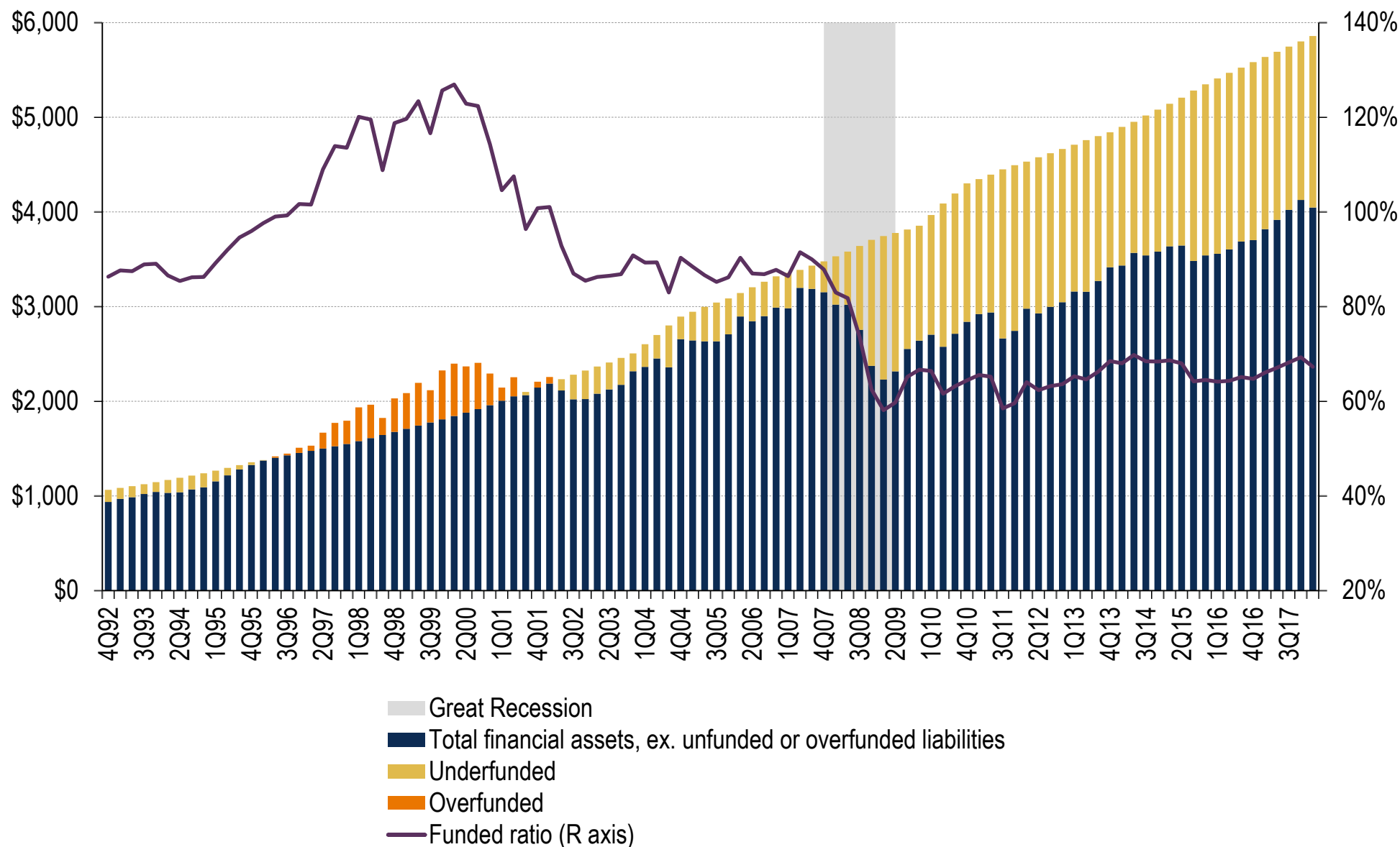


Wealth concentration's impact on tax policy

Count of millionaires and multi-millionaires, by number of households (000s) with net worth $\geq \$1\text{mn}$, $\$5\text{mn}$ and $\$10\text{mn}$ (in 1995\$)



State and local government defined benefit plans' total financial assets (\$bn)



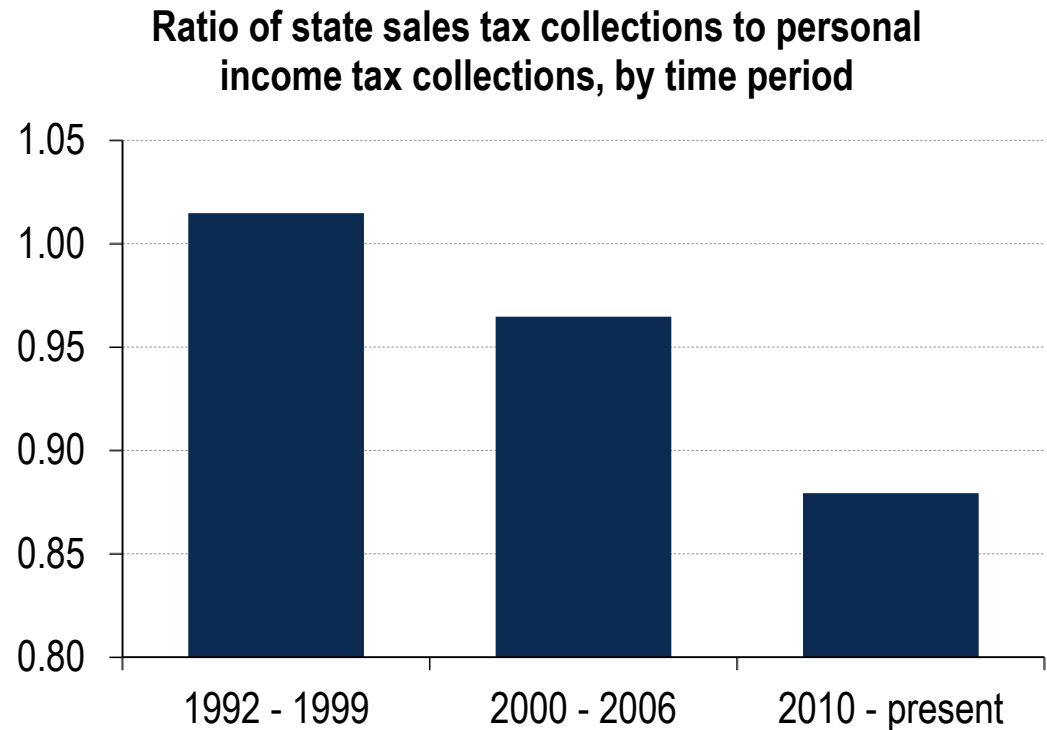
A comparison of bankruptcy filings by chapter for 12 month periods ending 30 June March

| Chapter | Purpose | 2014 | | 2015 | | 2016 | | 2017 | | 2018 | |
|---------|--|-----------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|
| | | Filings | Total (%) | Filings | Total (%) | Filings | Total (%) | Filings | Total (%) | Filings | Total (%) |
| 7 | For Individuals and corporations who seek to liquidate (or sell) their assets and distribute the proceeds to creditors. | 669,976 | 67.0% | 568,679 | 64.6% | 509,769 | 62.2% | 489,011 | 61.4% | 479,151 | 61.8% |
| 9 | For municipalities (cities and towns, villages, counties, taxing districts, municipal utilities, and school districts) to reorganize and emerge viable. Excludes states, District of Columbia and U.S. Territories. | 13 | 0.0% | 7 | 0.0% | 5 | 0.0% | 9 | 0.0% | 6 | 0.0% |
| 11 | For corporate debtors (whose debt exceeds \$360,475 and secured debt exceeds \$1.081mn) that intend to keep some assets and general income to pay off creditors and emerge viable in about 3-5yrs. If they are unable to devise a workable plan, they move to Chapter 7 for liquidation. | 8,347 | 0.8% | 6,672 | 0.8% | 7,928 | 1.0% | 6,999 | 0.9% | 7,141 | 0.9% |
| 12 | For family farmers or family fisherman with debt not exceeding \$3.7mn for a farmer and \$1.7mn for a fisherman. The debtor's plan must propose to pay off debts over about 3-5yrs. | 394 | 0.0% | 357 | 0.0% | 459 | 0.1% | 482 | 0.1% | 475 | 0.1% |
| 13 | For individuals with regular income of no more than \$360,475 and secured debts of less than \$1.081mn. Similar to Chapter 11 for corporations. Allows a debtor to keep property and pay debts over approximately 3-5yrs. | 321,278 | 32.1% | 303,945 | 34.5% | 300,858 | 36.7% | 299,398 | 37.6% | 288,741 | 37.2% |
| 15 | For cases involving cross-border claims. Typically the debtor is a foreign company with U.S. debts. Applicable where debtors, assets and other parties involving more than one country. | 74 | 0.0% | 76 | 0.0% | 140 | 0.0% | 138 | 0.0% | 64 | 0.0% |
| total | | 1,000,082 | 100% | 879,736 | 100% | 819,159 | 100% | 796,037 | 100% | 775,578 | 100.0% |

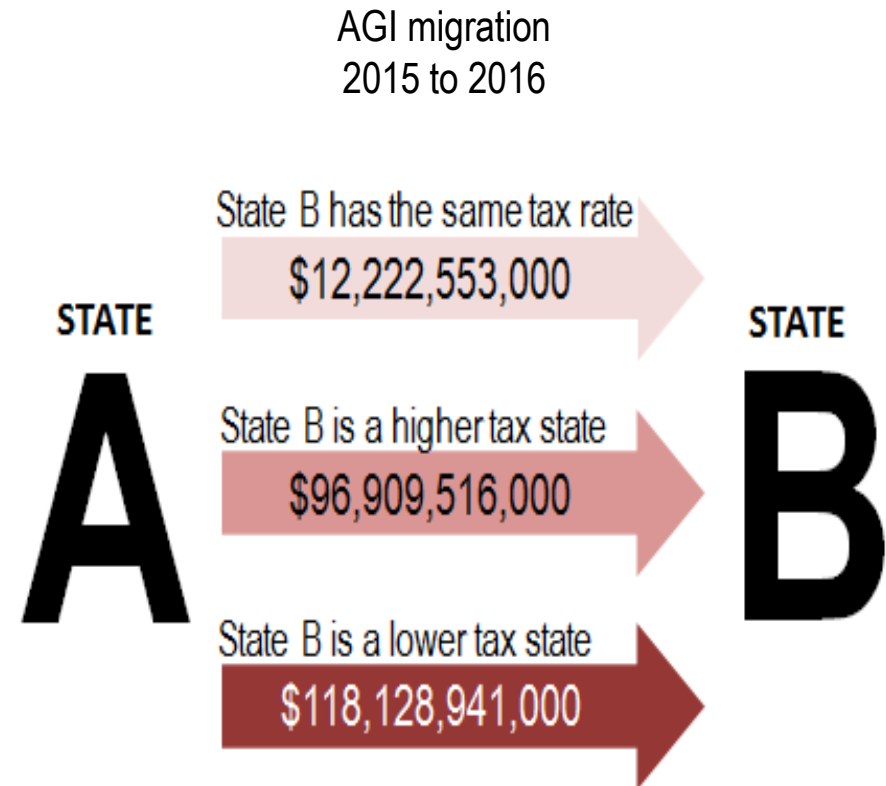
States cannot file for bankruptcy and subdivisions need the authorization of the state.

Soak the rich? The “one-percent” risk

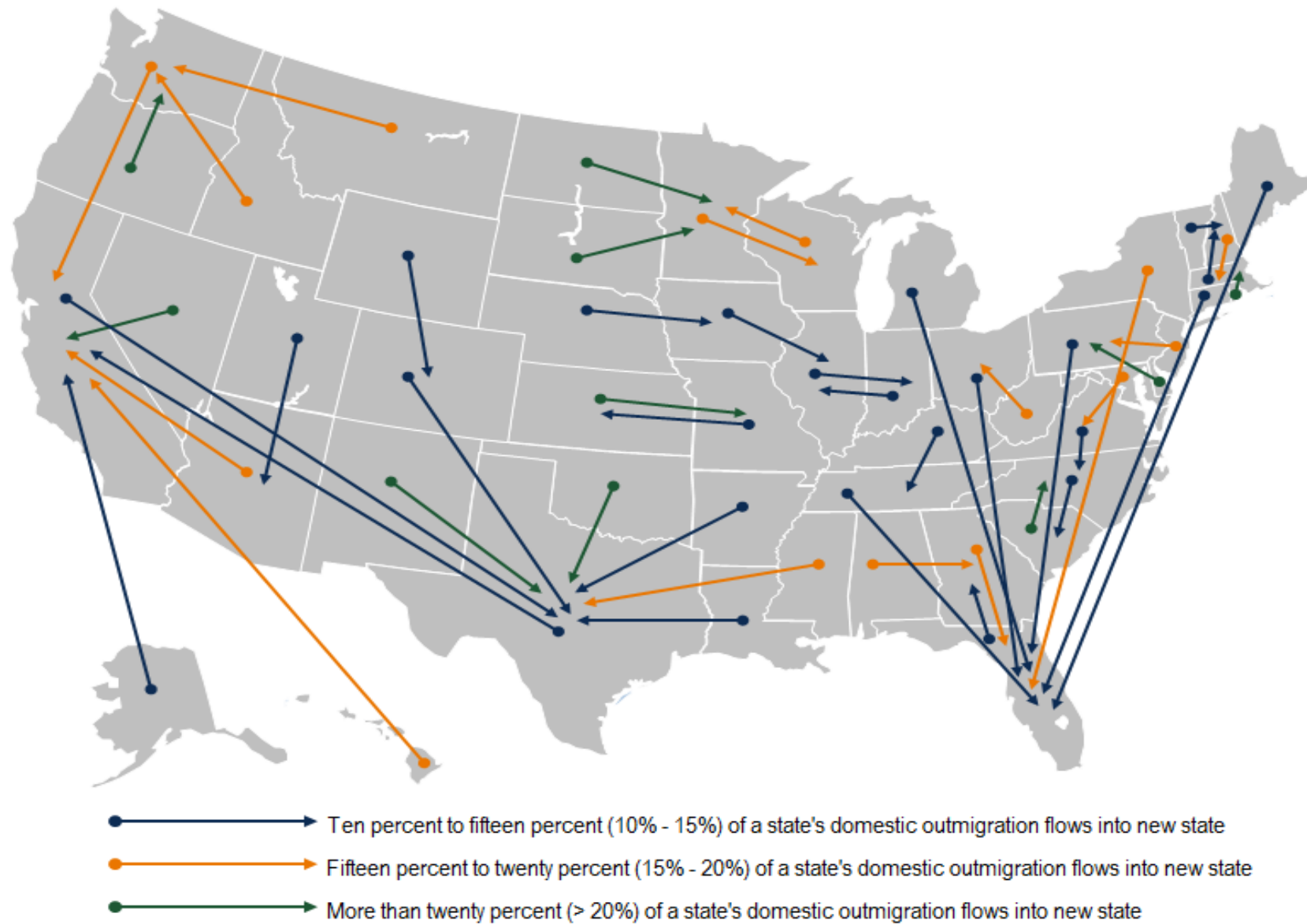
- Data show that the states have become increasingly reliant on personal income tax collections and less so on sales tax revenue.
- In the period immediately prior to the Great Recession, the ratio of state and local government sales tax collections to personal income tax collections stood at roughly 0.96x.
- Since 2010, that has dropped significantly to just shy of 0.88x.



- Large percentages of outmigration from high-tax states have flowed into lower or no-income tax states.
- Connecticut, New York and Maine residents primarily migrated to Florida (no state income tax)
- New Jersey residents primarily migrated to Pennsylvania (a state where the top marginal rate is nearly 6% lower than New Jersey's).
- California residents primarily migrated to Texas (no state income tax) and Oregon residents primarily migrated to Washington (no state income tax).

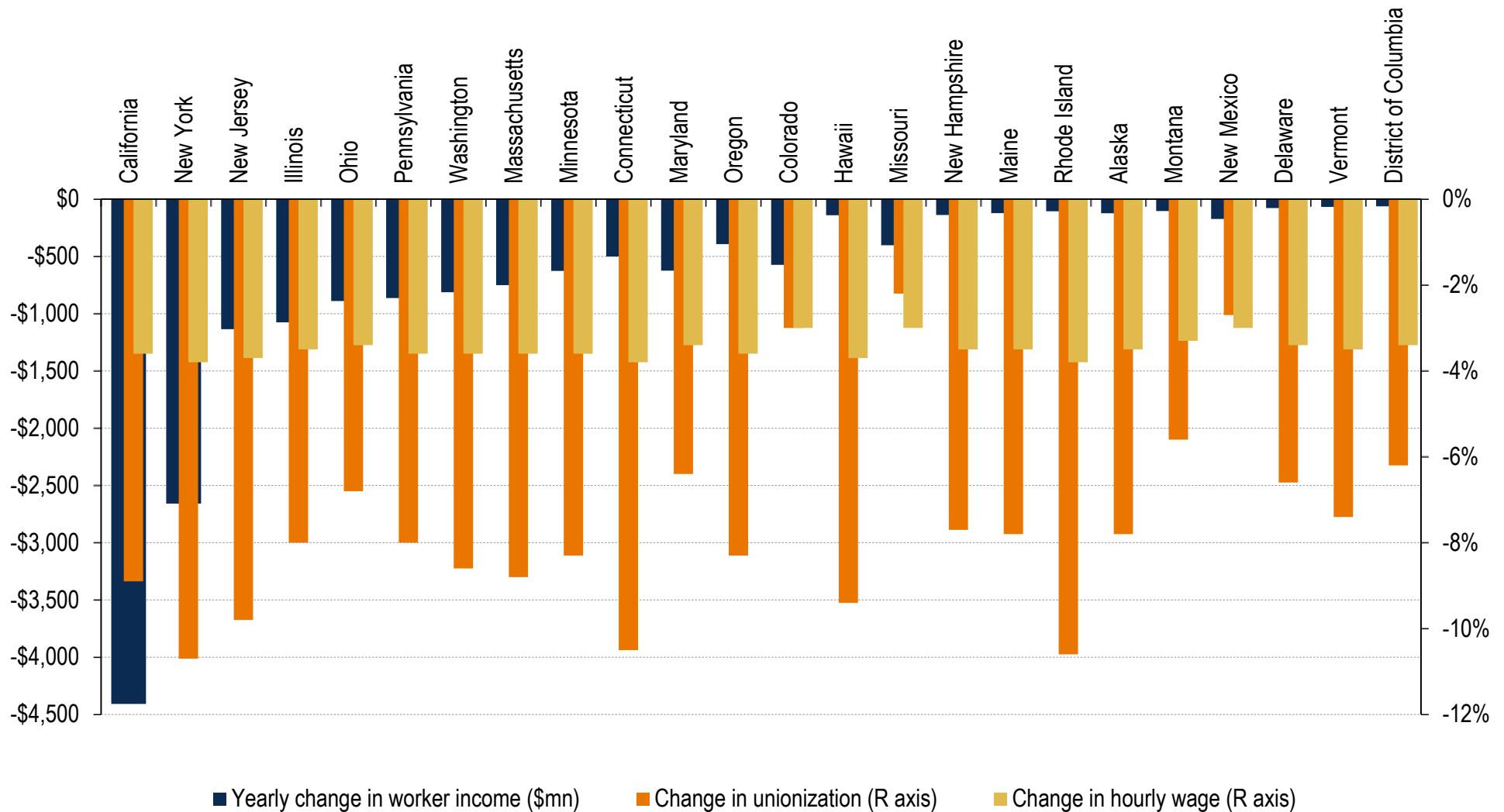


State-to-state population migration in 2015



- *Murphy v. National Collegiate Athletic Assn.*
 - States may operate sports books; Court legalized sports betting nationally
- *South Dakota v. Wayfair, Inc.*
 - States can impose sales tax requirements on online retailers
- *Janus v. American Federation of State, County and Municipal Employees*
 - Compulsory union dues for non-union public employees are unconstitutional

Janus v. AFSCME

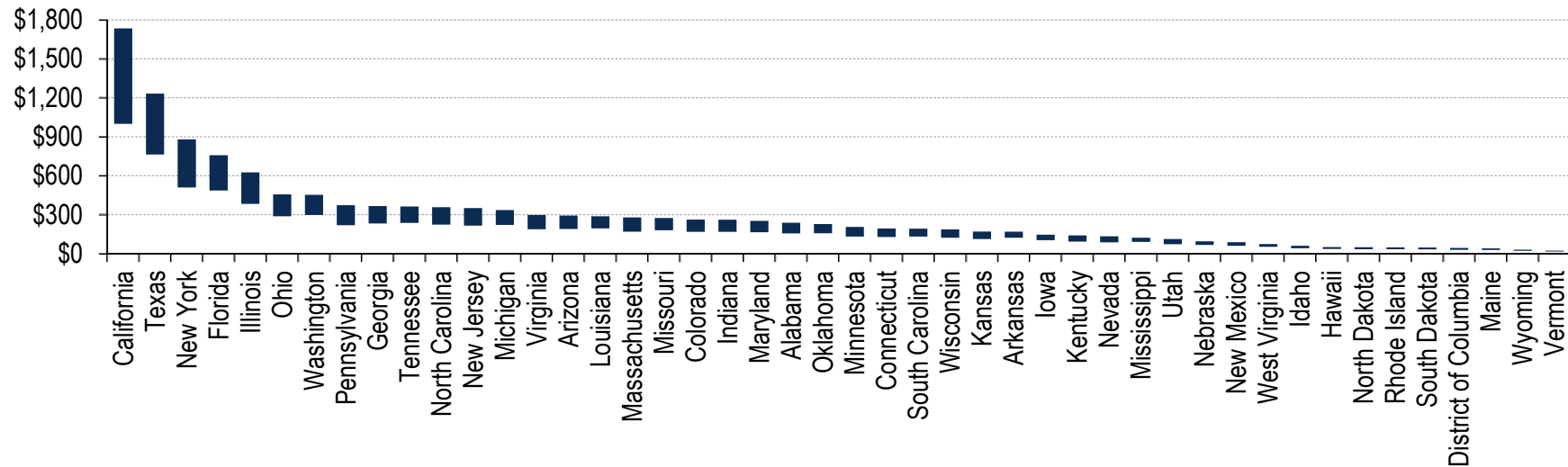


| Area | Measure | RTW | NRTW | Difference (RTW vs NRTW) |
|---|---------------|--------|--------|-----------------------------|
| State public sector union membership | Median | 16.6% | 48.2% | -31.6% |
| | Average | 18.5% | 46.4% | -27.9% |
| Median change in union membership (ppt) | 1997 to 2017 | -2.5 | -0.7 | -1.8 |
| | 2007 to 2017 | -0.8 | -0.2 | -0.6 |
| MSA public sector union membership | Median | 16.6% | 52.9% | -36.3% |
| | Average | 21.0% | 49.8% | -28.8% |
| Debt, pension & OPEB per capita as % of Gross State Product (GSP) | Median | 4.7% | 10.8% | -6.1% |
| | Average | 5.8% | 14.2% | -8.4% |
| State and local government employment (000s) | Median | 284.6 | 296.0 | -11.4 |
| | Average | 358.4 | 423.8 | -65.4 |
| State and local government payroll (\$bn) | Median | 0.9 | 1.2 | -0.3 |
| | Average | 1.2 | 1.9 | -0.7 |
| Monthly payroll for state government employees (\$) | Median | 4,612 | 5,393 | -781 |
| | Average | 4,680 | 5,492 | -812 |
| Monthly payroll for local government employees (\$) | Median | 3,807 | 5,150 | -1,343 |
| | Average | 3,970 | 5,084 | -1,114 |
| State pension funding ratio | Median | 72.4% | 62.5% | 9.9% |
| | Average | 72.6% | 62.6% | 10.0% |
| State government pension contributions (\$mn) | Median | 1,290 | 1,362 | -73 |
| | Average | 1,536 | 2,919 | -1,384 |
| State government pension contributions per member ¹ (\$) | Median | 4,022 | 6,144 | -2,122 |
| | Average | 5,263 | 7,371 | -2,108 |
| State employee pension contributions (\$mn) | Median | 542 | 567 | -25 |
| | Average | 659 | 1,125 | -466 |
| State employee pension contributions per member ¹ (\$) | Median | 2,008 | 2,710 | -702 |
| | Average | 1,909 | 2,789 | -880 |
| Local government pension contributions (\$mn) | Median | 79 | 201 | -122 |
| | Average | 270 | 1,387 | -1,118 |
| Local government pension contributions per member ¹ (\$) | Median | 8,105 | 14,945 | -6,840 |
| | Average | 13,654 | 16,955 | -3,301 |
| Local employee pension contributions (\$mn) | Median | 26 | 60 | -34 |
| | Average | 72 | 337 | -265 |
| Local employee pension contributions per member ¹ (\$) | Median | 2,443 | 3,378 | -935 |
| | Average | 2,451 | 3,030 | -579 |
| Work stoppages of 1,000 workers or more since 1993 | Total | 58 | 422 | -364 |
| | Public sector | 2 | 123 | -121 |
| State and local government ratings ² | AAA | 9.4% | 6.6% | 2.8% |
| | AA | 77.0% | 73.2% | 3.8% |

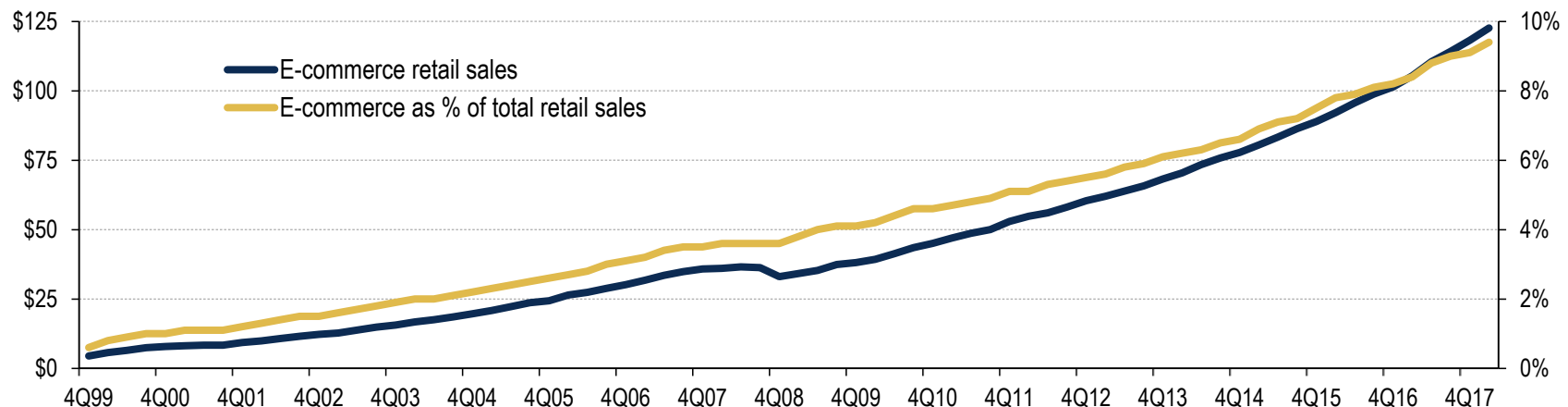
Source: Barry T. Hirsch (Georgia State University) and David A. Macpherson (Trinity University) analysis of US Department of Labor, Bureau of Labor Statistics and US Census Bureau data published annually at unionstats.com; Standard& Poor's; US Census Bureau; Bureau of Labor Statistics; BofA Merrill Lynch Global Research. ¹Total members, including both active and inactive. ²Based on Fitch Ratings.

South Dakota v. Wayfair, Inc.

Estimates of 2017 potential revenue gains from expanded tax collection authority on remote sales, by state (\$mn)

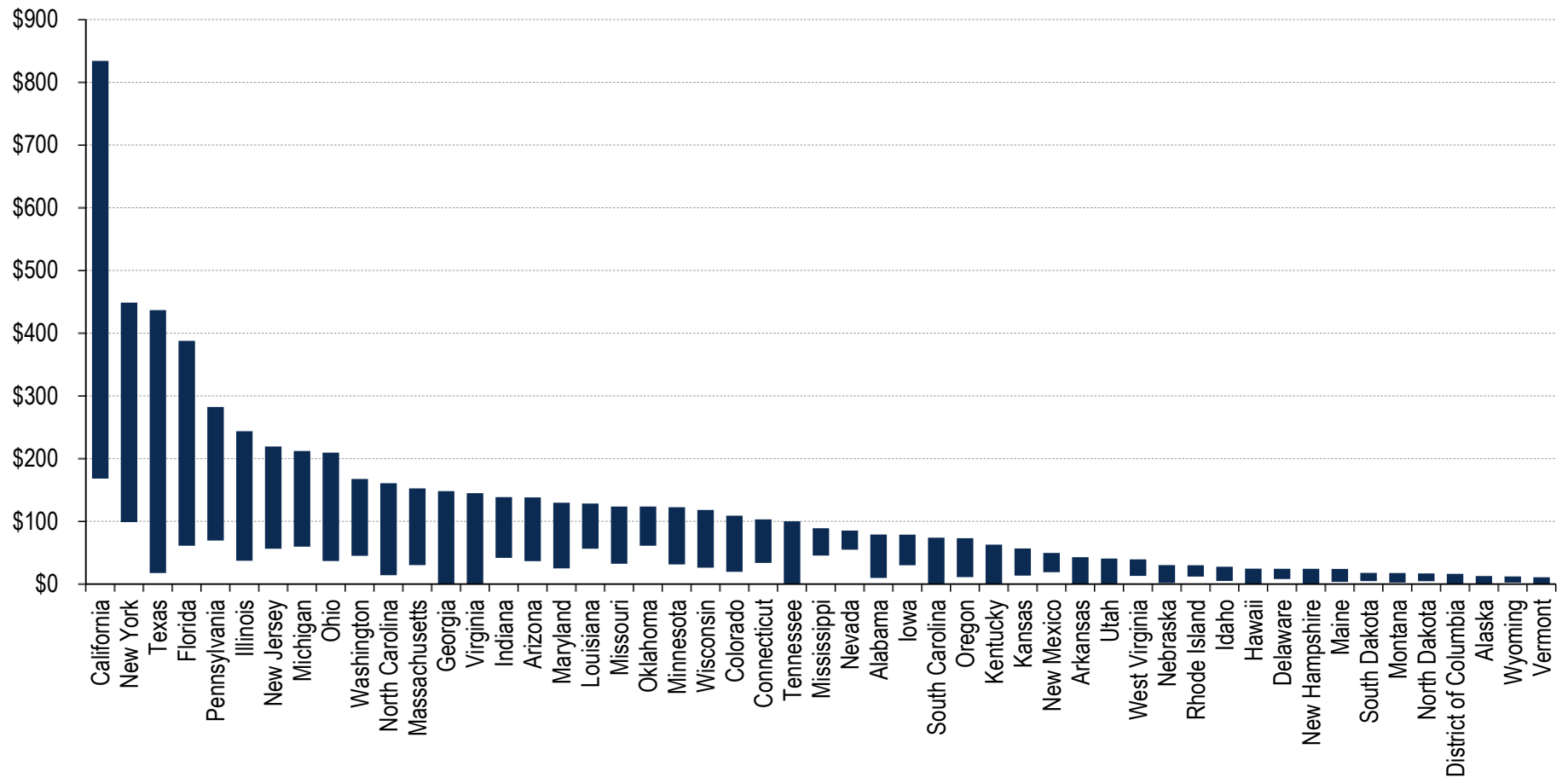


E-commerce retail sales, and as a percentage of total retail sales, by quarter (\$bn)



Murphy v. National Collegiate Athletic Assn.

State-level revenue increase estimates from the legalization of sports betting



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