Federal Reserve
Bank of Boston®

What's going on?
Review of domestic and international developments

Presented to Mass Development's

Current Topics in Tax-Exempt Financing
27 November, 2018

Jeff Fuhrer, EVP and Senior Policy Advisor

The market rears its ugly head…

- As of Friday, all of 2018 gains erased
- Multiple triggers cited
  - Trade, foreign growth, Fed tightening, fear of a weakening economy
- No clear sectoral pattern to declines
- Signs of real weakness have not yet materialized
- Are the markets right? Is a downturn coming?

Market indexes since 9/3/18

Index, 12/29/17=100

120
115
110
105
100
95

NASDAQ
S&P
DJIA
10/3/18

20180903 20180907 20180913 20180919 20180925 20181001 20181005 20181011 20181017 20181023 20181029 20181102 20181108 20181114 20181120

Sectoral indexes

130
120
110
100
90
80
70

10/3/18

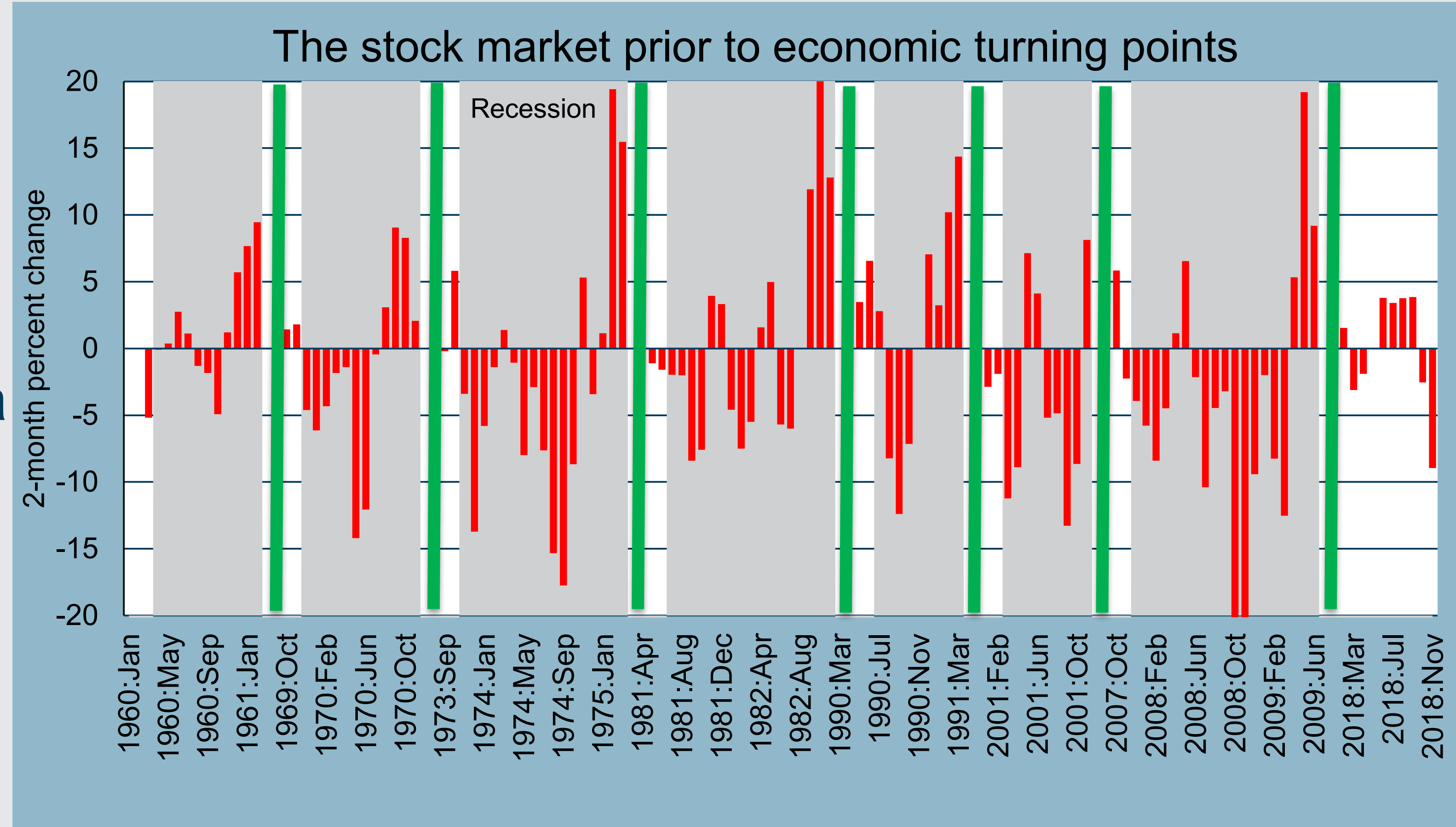
Internet
Health Care
Cons. disc.
Pub. Util.
Real estate
Energy
Financials

20180903 20180907 20180913 20180919 20180925 20181001 20181005 20181011 20181017 20181023 20181029 20181102 20181108 20181114 20181120

Sources: Wall Street Journal (DJIA, NASDAQ, oil price), NY Times (S&P), FRB H.15 (10-year), Haver analytics.

The market predicts downturns (?)

- Sometimes it does
- Sometimes it doesn't
- Sometimes it predicts a recession when there isn't one
- Something to watch!

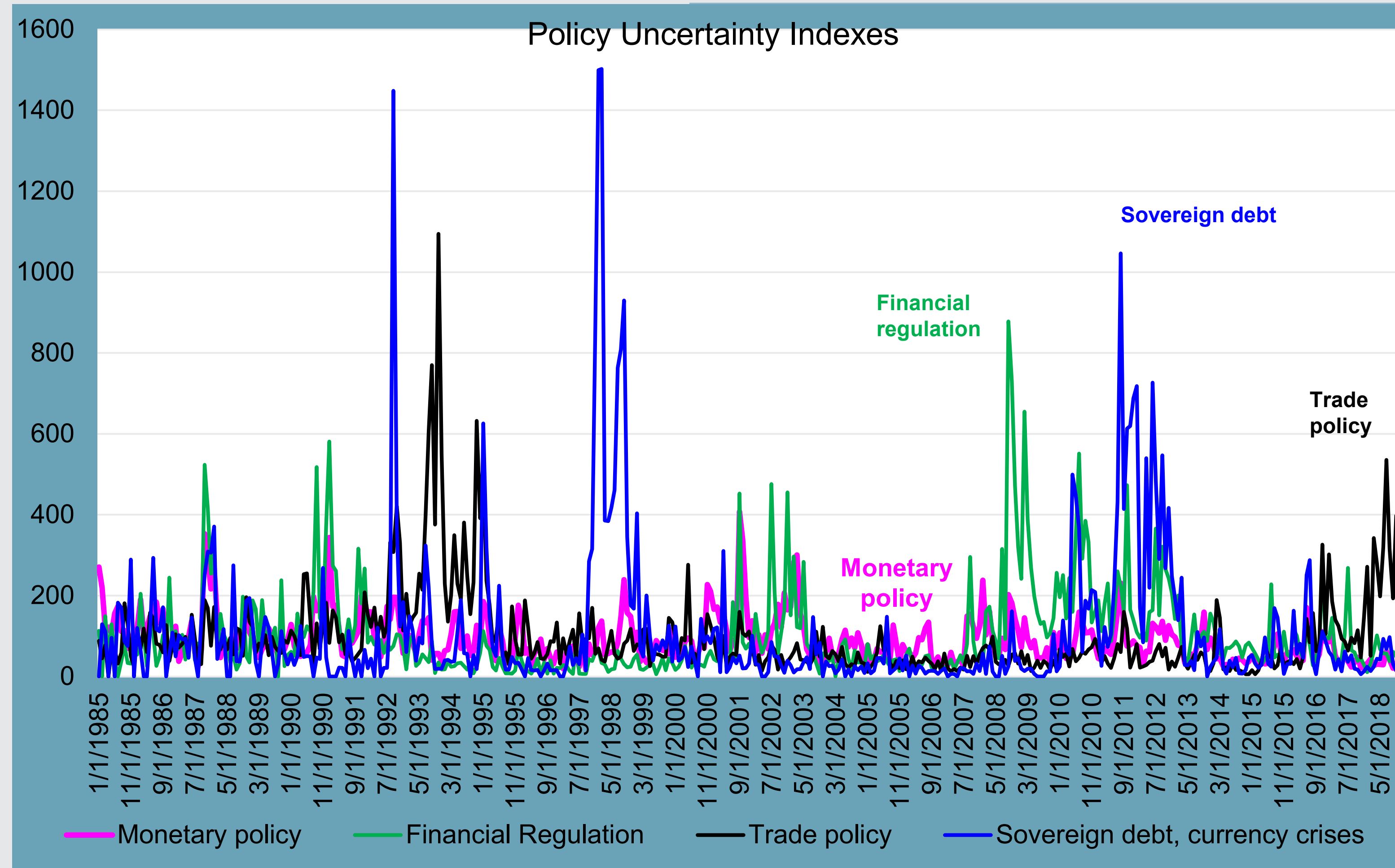


Sources: NY Times (S&P), National Bureau of Economic Research (turning points), Haver analytics.

Markets seem more uncertain, but about what?

Measures of uncertainty

- Market indicators somewhat elevated
  - Stock price volatility index (VIX) up, but not dramatically
  - Bond volatility (not shown) flat
  - Bond risk indicators up recently
- Policy uncertainty
  - Overall policy uncertainty below average (not shown)
  - Trade policy concerns are elevated, have partly normalized
- **Conclusion**: some trade worries, but also a generalized market correction
  - Less concern that it's a sign of macro weakness



Sources: http://www.policyuncertainty.com/categorical_epu.html (uncertainty indexes), CBOE (Vix), Haver Analytics.

A quick snapshot of recent data

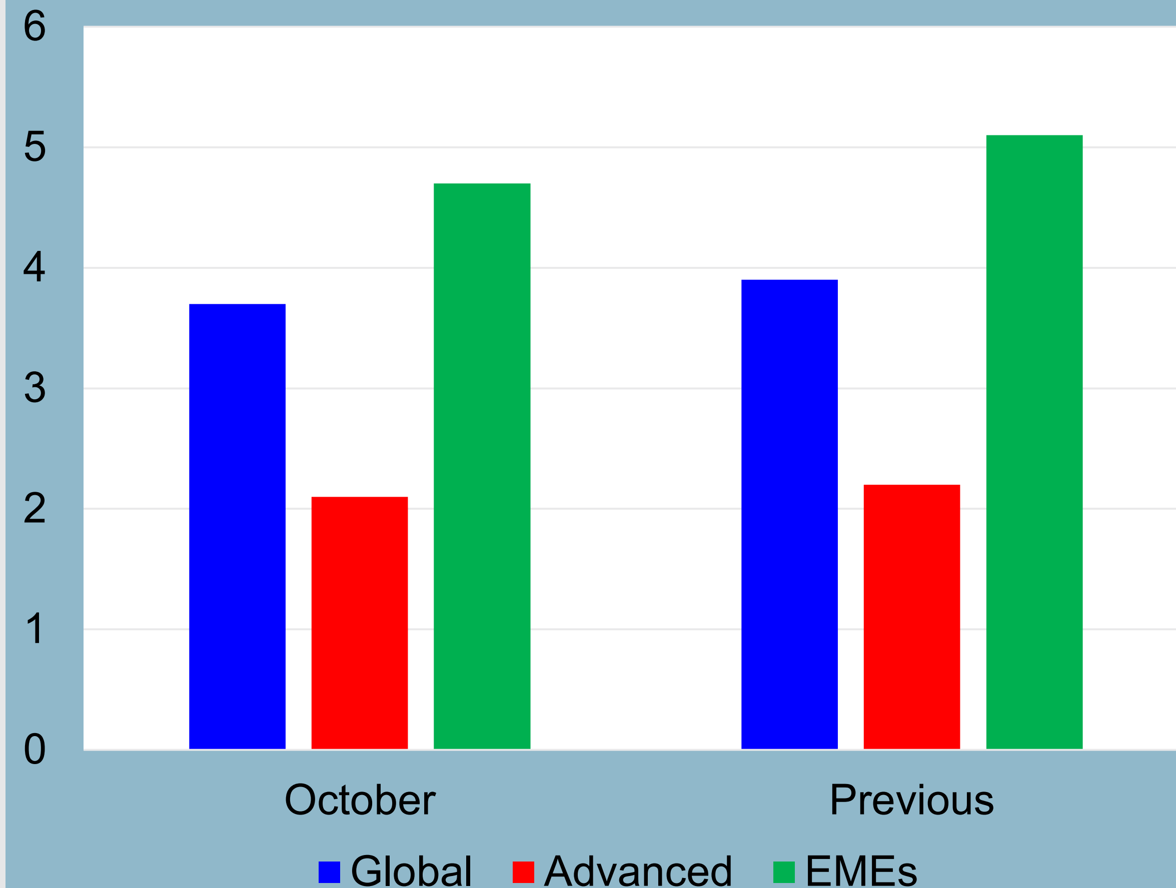
- Growth strong
  - Housing won't help
  - But consumption, nonresidential investment will
- Labor markets tight
  - And getting tighter
- Wage inflation picking up
- Price inflation up, but at target

Key Nonfinancial Indicators		
Measure	**October/Q4**	**Previous**
GDP growth (%, AR)	3.5	4.2
Consumption	4.0	3.8
Residential	-4.0	-1.3
Net Exports	-1.8	1.2
Employment (thousands/mo.)	250	218
Unemployment (% of LF)	3.7	3.7
Wages (AHE) (% chg., 12-mo.)	3.1	2.8
Infl. (PCE) (% chg., 12-mo.)	2.0	2.2
Fgn. growth (IMF, 2018-19)	3.7	3.9

Sources: BEA (GDP, inflation), BLS (Employment, unemployment, wages), IMF, Haver analytics.

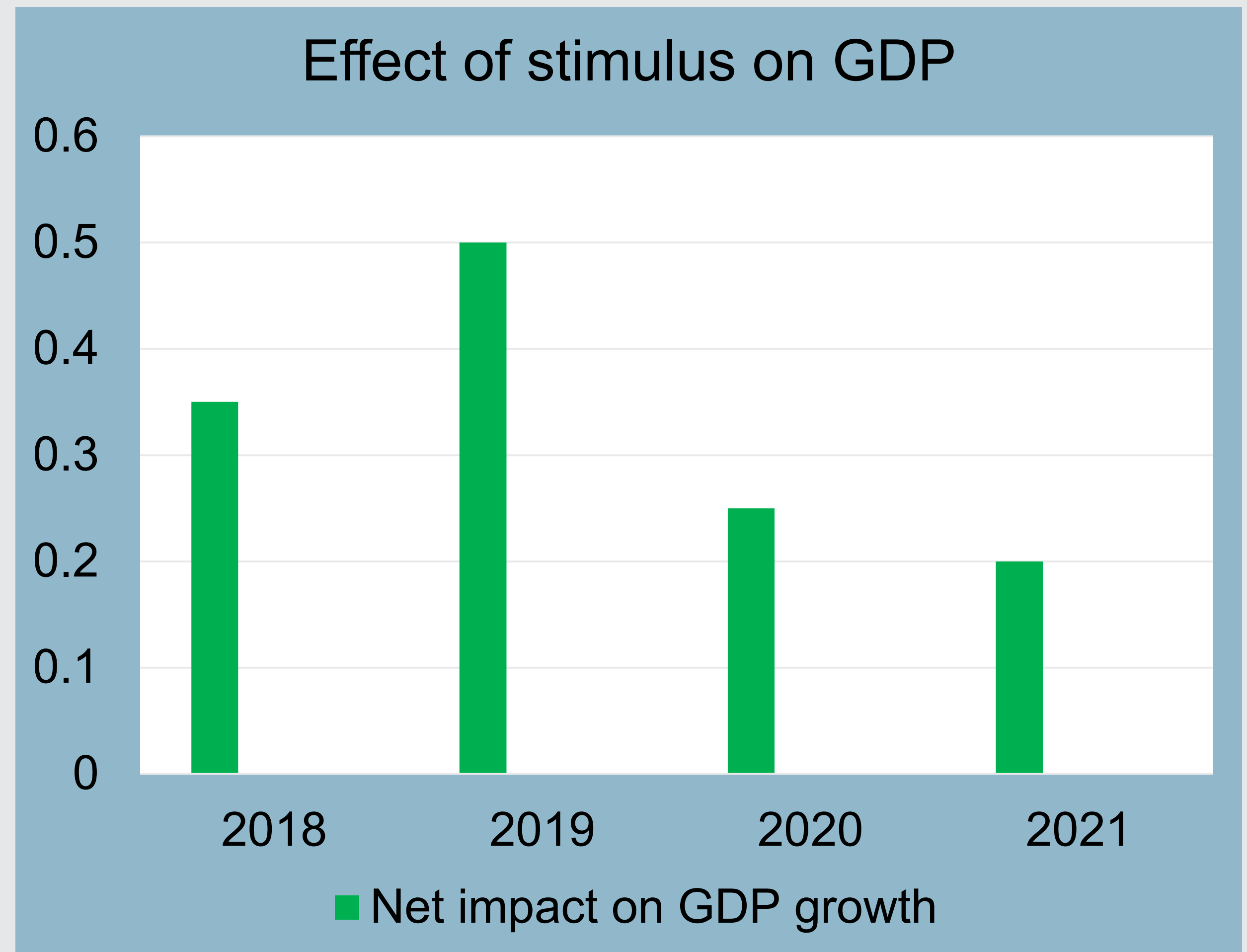
Rest of world growth:helping?

- Some slowing in advanced economies
  - Forecasts for most advanced economies revised down
- China continues to decelerate
  - Other EME country forecasts also revised down
- Still, overall global growth ok, which will help with exports
- Appreciation of the dollar will not help
  - 10% appreciation this year
- Neither will tariffs—we'll come back to this



Fiscal policy effects

- Tax cuts, budget expansion:
  - Small effects on net employment, wage growth, investment
  - Larger effects on stock prices, profits
  - Some stimulus from decline in personal income tax rates
- Stimulative effects fade in 2020, reducing growth rate



On tariffs and trade

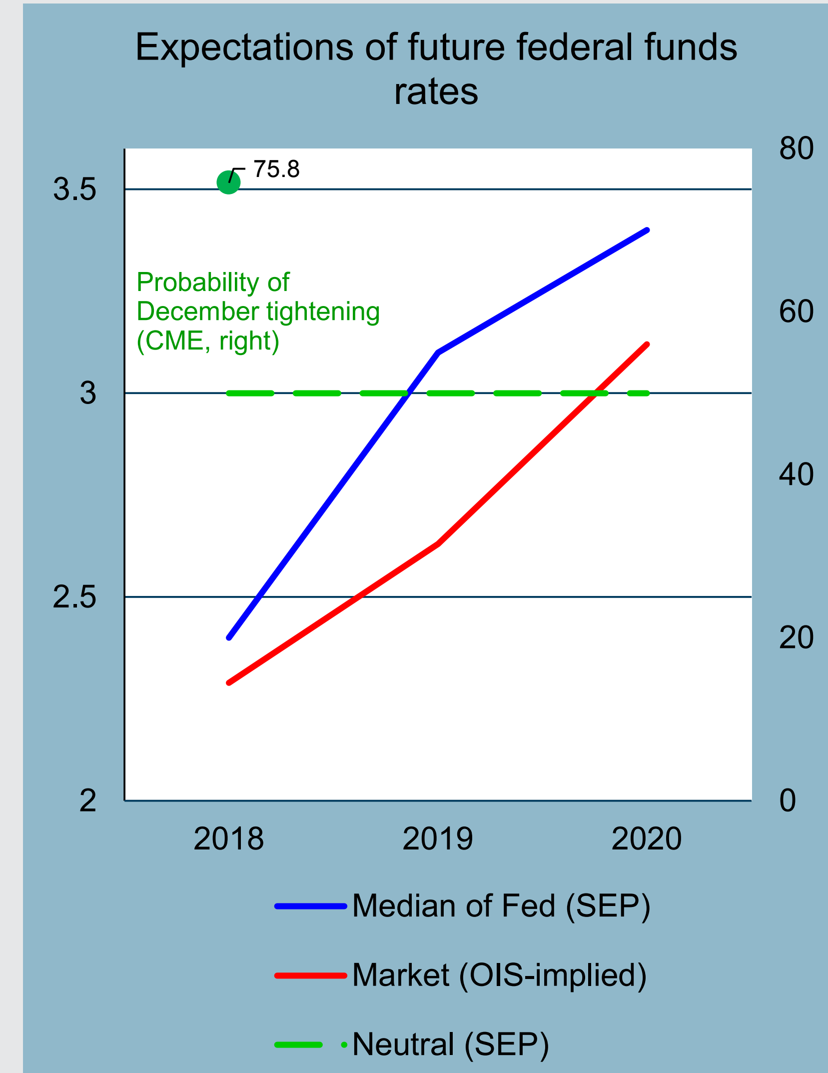
GDP Primer

1. GDP = Consumption + Investment + Govt. spending **+ Exports(↓) – Imports(↓)**
2. Our tariffs lower imports, theirs lower exports
3. Overall trade declines, but the net effect on GDP is small

- Where to start?
- Tariffs with retaliation imply smallish effect on GDP
    - Other effects on supply chain, competing goods, substitutes, etc.
    - Likely direct effect on activity: modest, but not helpful
- Effects on prices
    - Depends on contracts, etc. – likely small-ish
    - Also less impact if these are one-time adjustments in prices, versus ongoing/inflationary (feeding into inflation expectations?)
- Other effects—uncertainty, financial markets—are harder to gauge

Where does this leave policy?

- The easy decisions have been made
  - As of November, the FOMC has increased the target federal funds rate to a range of 2-2.25%
  - Many believe they will increase rates again in December, to a range of 2.25-2.5% (70-80% probability of another ¼ point or greater)
- The hard decisions are yet to come
  - Is that enough? Do we need to raise rates more?
  - How do we know?
- The answer hinges on what we think neutral policy is, and on whether conditions will require interest rates that restrict activity somewhat (i.e. rates above the "neutral" rate)
- But first…



Sources: Board of Governors (SEP median, neutral), Reuters (OIS), Haver analytics.

The “neutral rate” and monetary policy

- DEFINITION:
  - Policy rate is neutral when
    1) The setting of the federal funds rate is consistent with an economy in balance, characterized by
       - Full employment of all resources (labor and capital)
       - Inflation at or near the FOMC target (and expected to stay)
       - Growth at a sustainable rate (potential)
    2) And maintaining the interest rate at that setting will not
       - Slow or speed up the economy
       - Move us away from full employment
       - Move us away from the inflation goal
- What is that interest rate?

The neutral rate in pictures

SPEED LIMIT
Growth = 1.7%, U=U*, Infl.=2%

R = R*
Other things equal, will keep economy at speed limit

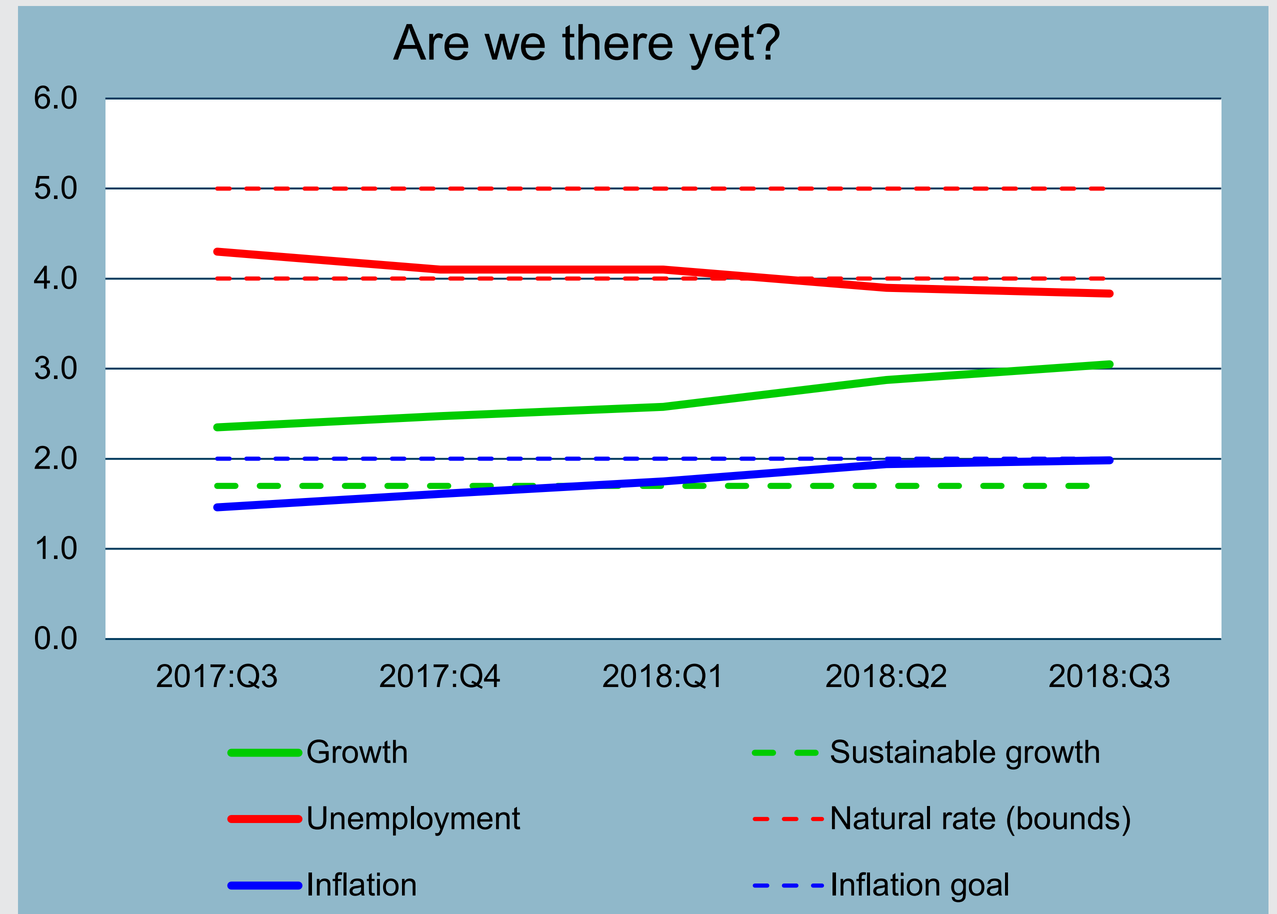
Steady as she goes…

R > R*
Other things equal, will slow economy below speed limit (higher U, lower inflation, lower growth)

R < R*
Other things equal, will speed economy above speed limit (lower U, higher inflation, higher growth)

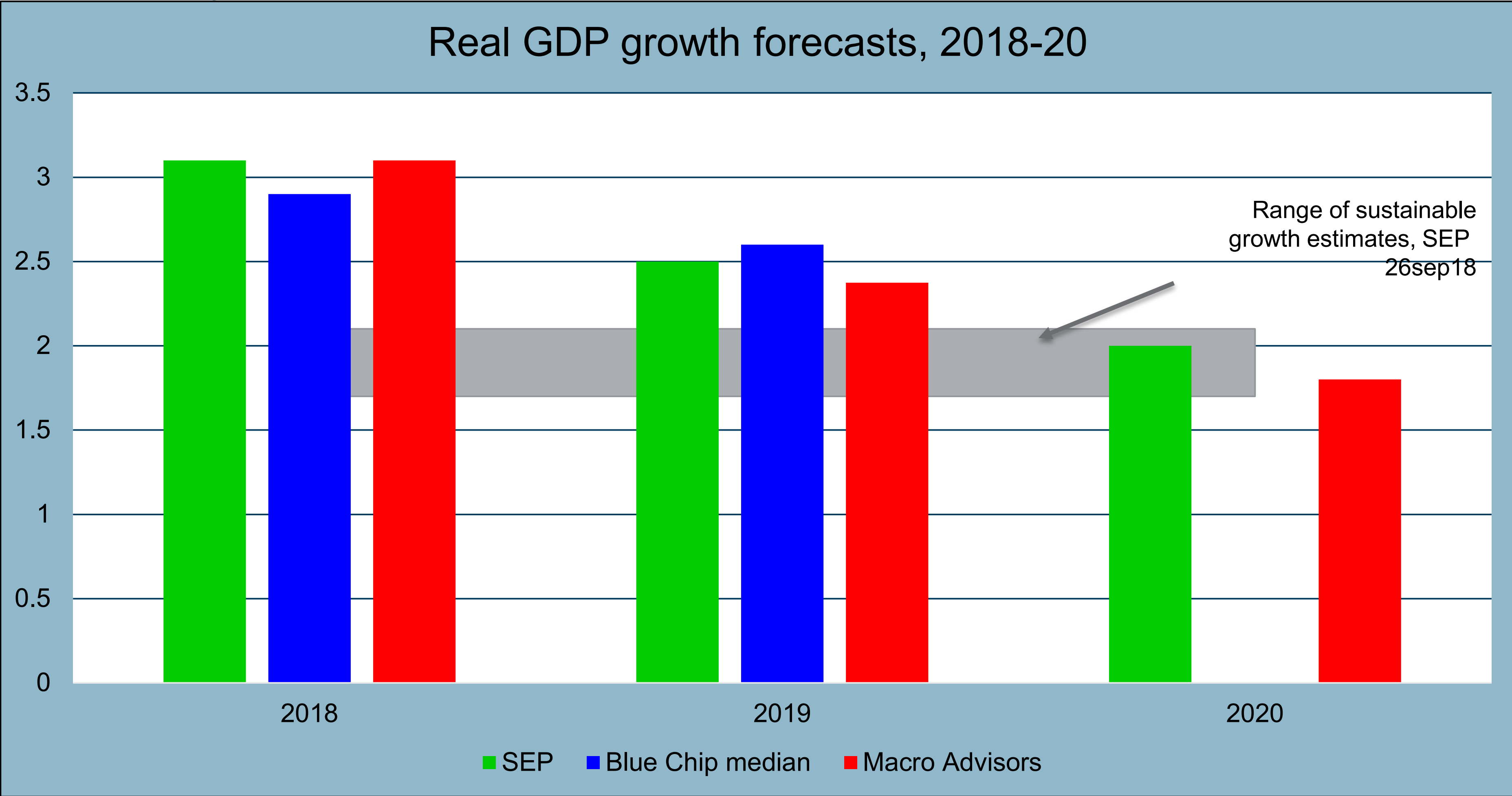
Are we at the “Goldilocks” point?

- Growth rising and above sustainable
- Unemployment falling below sustainable
- Inflation now at target
- So we are at a nice “Goldilocks point”—growth’s good, unemployment’s low, inflation’s good
  - Or have we overshot a bit?



Sources: BLS (unemployment), BEA (inflation, GDP growth), Board of Governors (SEP bounds), Haver analytics.

The economy is at or past our "Goldilocks" point. Will we stay near it? Or stretch a little further?

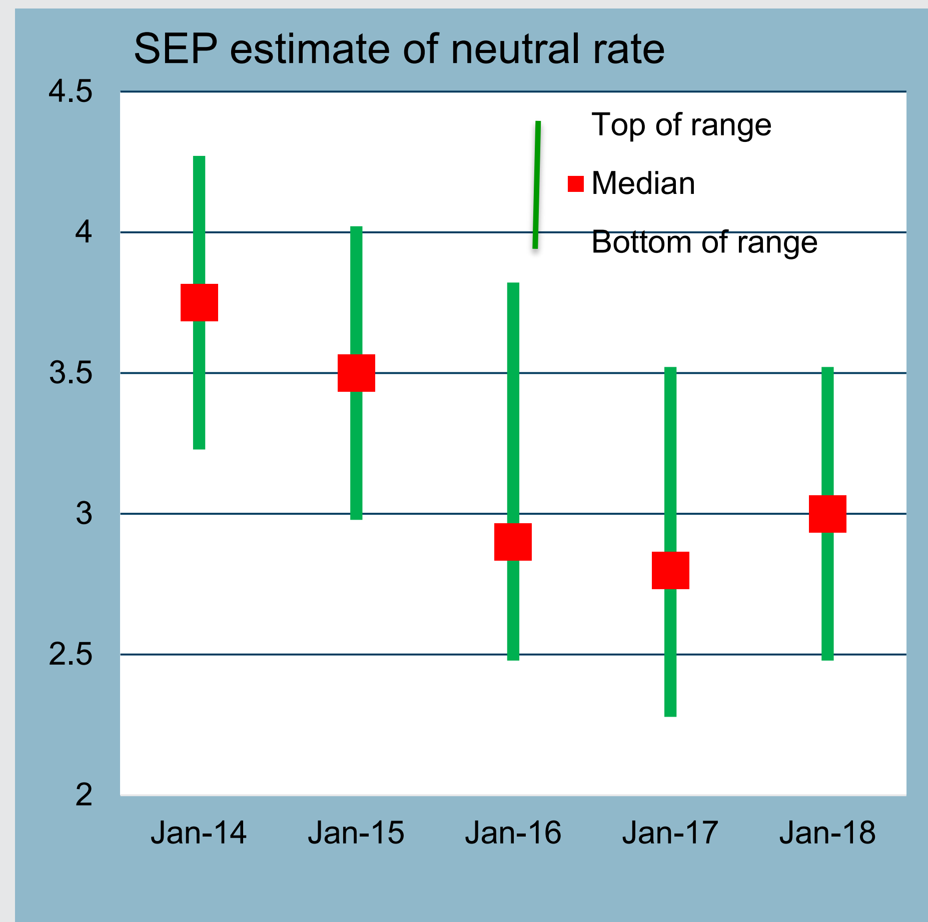


Sources: Board of Governors (SEP), Blue Chip, Macro Advisors, Haver analytics.

Suggests something more restrictive than neutral policy may be desirable. So where's the line between neutral and restrictive?

- It's not a line, it's a fuzzy band
  - The FOMC's estimate has changed over time (SEP)
  - About 2.5-3.5%?

- Where do these estimates come from?



Sources: Board of Governors (SEP).

Simple determinants of long-term (real) rates

(these are also the determinants of long-term economic growth)

Productivity growth: Slow

Labor force growth: Slow

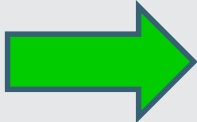
Implies that long-term real rate is low

- Simple idea: the longer-run (real) rate of growth of the economy serves as an important benchmark for the rate of return on financial assets

Sources: Bureau of Labor Statistics, Haver analytics.

A quick way to estimate where we switch from restrictive to expansionary rates: How has unemployment behaved as we've raised rates?

Year	Change in unemployment (ppts)	Average funds rate
2010	DECLINE (-0.4)	0.18
2011	DECLINE (-0.9)	0.10
2012	DECLINE (-0.8)	0.14
2013	DECLINE (-0.9)	0.11
2014	DECLINE (-1.2)	0.09
2015	DECLINE (-0.7)	0.13
2016	DECLINE (-0.3)	0.40
2017	DECLINE (-0.6)	1.00
2018 (thru Oct.)	DECLINE (-0.4)	1.39



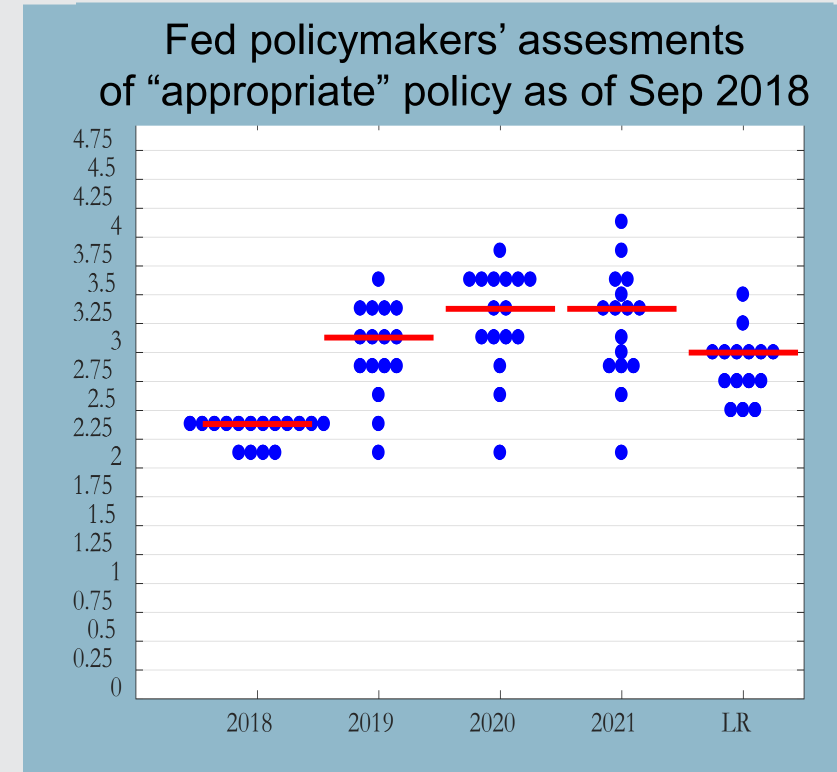
Implies these were quite stimulative rates, i.e. the neutral rate is notably higher than these rates

More sophisticated estimates suggest the same—a neutral rate of 2.5-3.5%

Sources: BLS (unemployment), FRB H.15 (federal funds rate), Haver analytics.

How far above "neutral" to go?
Threading the needle: balancing risks on either side

- If we increase rates too fast:
  - We could disrupt financial markets and prematurely end the recovery.
  - In addition, if the risk of rising inflation is small, even with tighter labor markets,
    - Then there's less reason to tighten.
- If we increase rates too slowly:
  - Could increase the risk that the economy will overheat,
  - Yielding inflation, or over-investment, or financial imbalances.
  - Such imbalances are almost always followed by significant "corrections."
- So our goal is to raise rates just fast enough to balance the two risks and prolong the expansion.
- Hoc plus artis quam scientiae.



Sources: Board of Governors (SEP).

Conclusions

- The economy is doing quite well
  - Employment growth continues
  - Real GDP growth continues
  - Inflation appears well-contained
- But an over-heated economy could put the recovery at risk
  - Either real or financial or inflation stresses could upset the apple cart
- **SO:** Move policy rate to neutral for sure
  - Somewhat beyond?
- We'll see…