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Eller College  
of Management

2019  
**BREAKFAST  
WITH  
THE ECONOMISTS**

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Vice Dean of Faculty and Research  
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**Welcome.**

**Kevin Michalzuk**  
Banker  
J.P. Morgan Private Bank

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**Our region**  
Outlook for Tucson

**George Hammond**  
Director  
Economic and Business Research Center

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George Hammond, director  
Economic and Business Research Center  
ghammond@eller.arizona.edu

### Outlook At A Glance

- ▶ **Arizona's job expansion keeps on going**
  - ▶ Gains accelerated last year statewide and in Phoenix
  - ▶ Tucson's growth was stable
- ▶ **The state unemployment rate remains stubbornly above the U.S.**
  - ▶ Because job gains are expanding the labor force
- ▶ **The near-term outlook calls for continued, but slowing gains**
  - ▶ Recession risks remain elevated
- ▶ **Long-term outlook will be driven by demographics and technology**
  - ▶ As always, automation will create opportunities and challenges

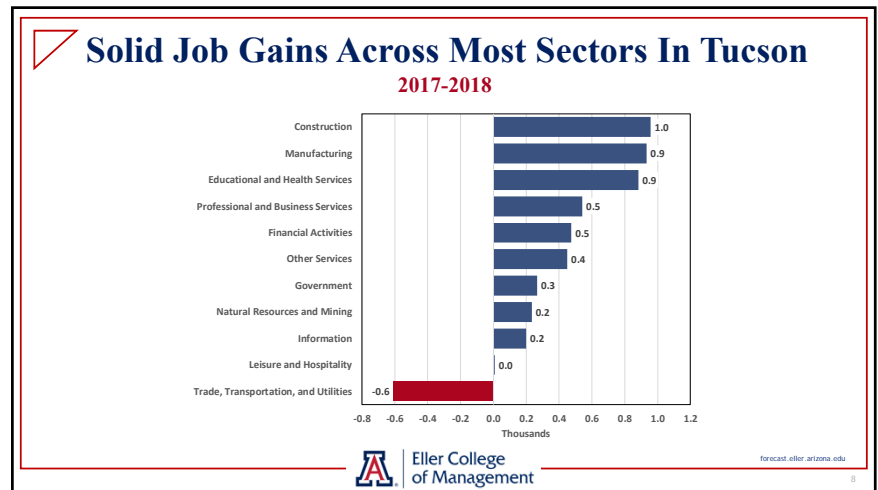
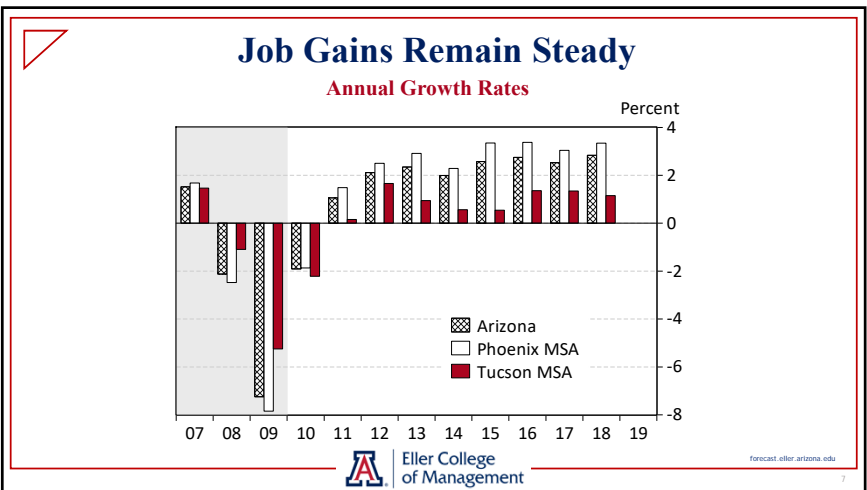
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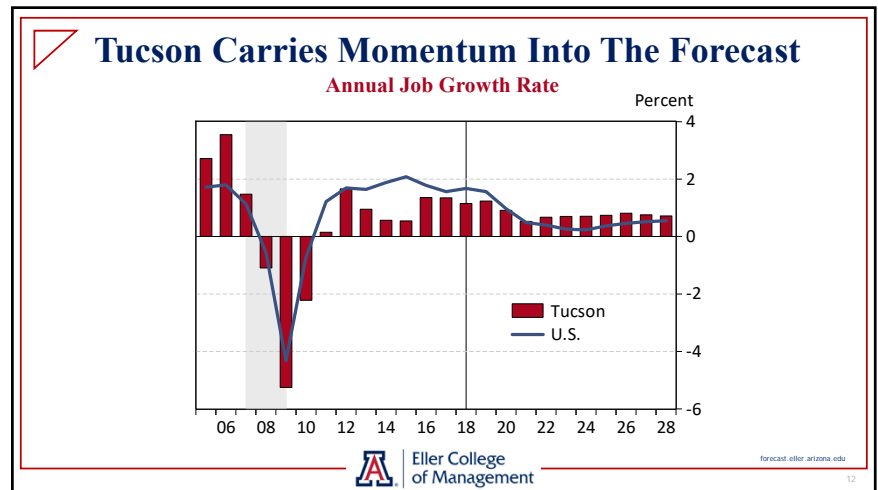
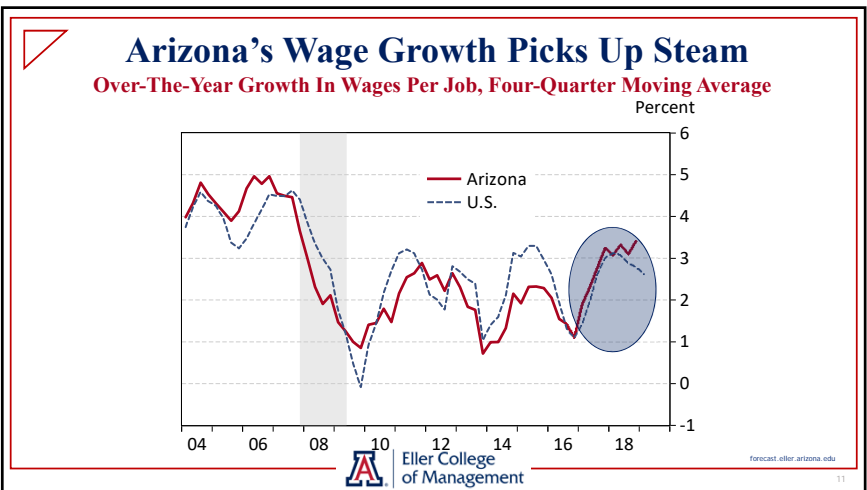
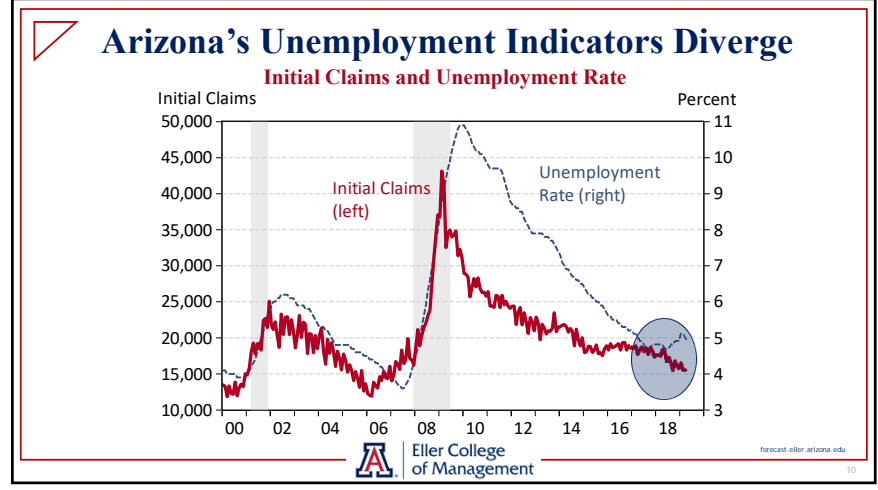
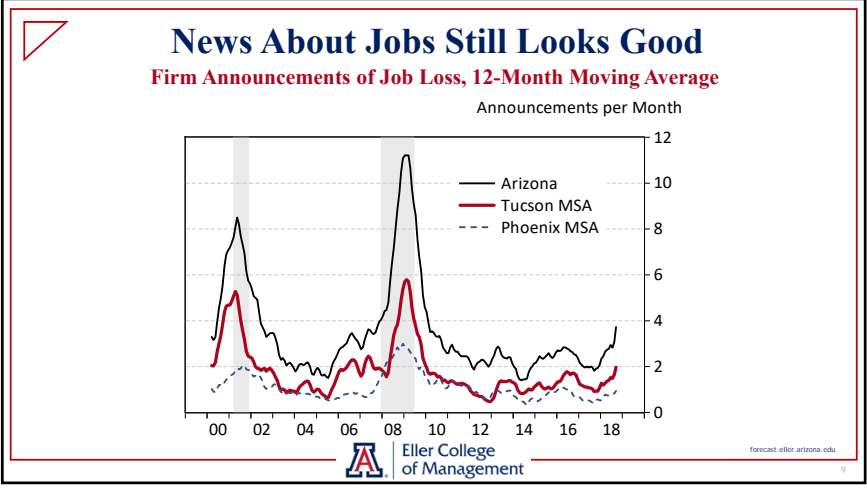
### Tucson's Economy Continues To Expand

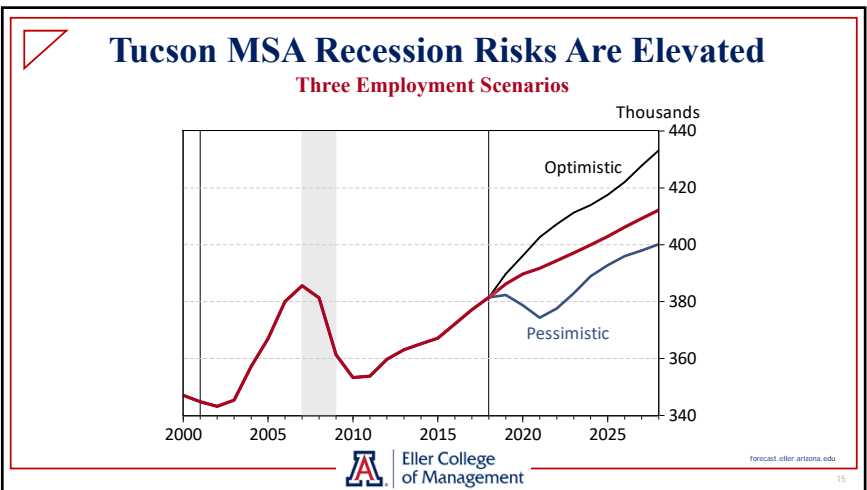
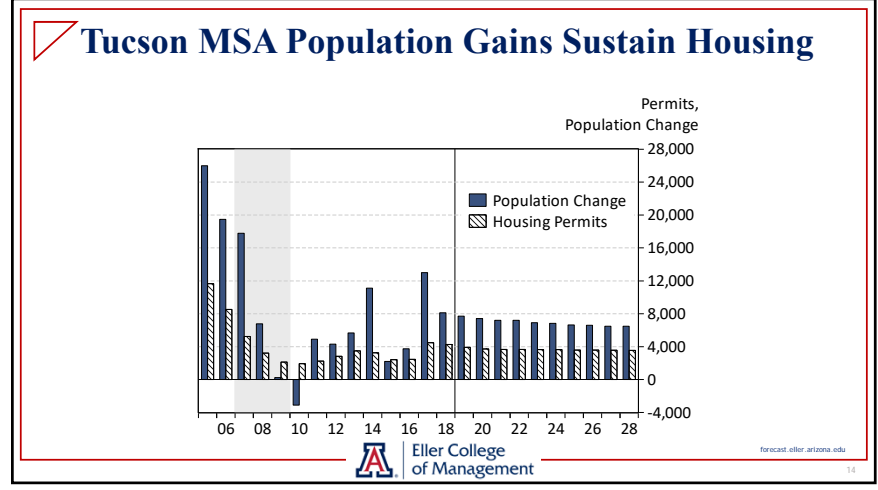
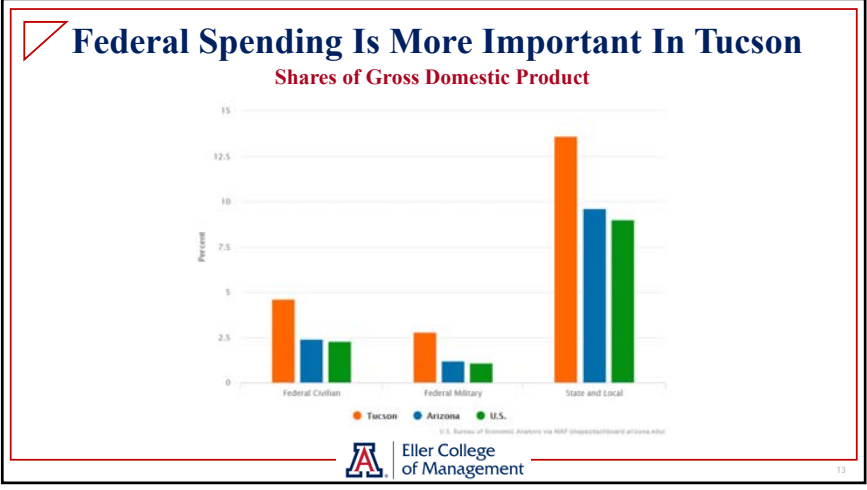
**MAP Dashboard Economy Scorecard**

INDICATOR	HOW ARE WE DOING?	HOW DO WE COMPARE?	RECENT CHANGE
BUSINESS GROWTH	0.5%	FROM 2016 TO 2017	▲
EMPLOYMENT GROWTH	1.2%	FROM 2017 TO 2018	▼
HOUSING AFFORDABILITY	66.2%		▼
MEDIAN HOUSEHOLD INCOME	\$48,676		▲
PATENTS	17.4	PER 10,000 WORKERS	▼
REAL GDP	2.9%		▲

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- ### New Wave Of Automation
- ▶ **Machines have always caused concern**
    - ▶ Industrial revolutions are disruptive by definition
    - ▶ They reallocate jobs, income, and wealth
  - ▶ **Smarter machines are here, with more coming**
    - ▶ Artificial intelligence
    - ▶ Mobile robotics
    - ▶ Genetic engineering
    - ▶ Big data
  - ▶ **As always, there is huge uncertainty about the future path of technological progress**
    - ▶ How fast will machines improve?
    - ▶ How fast will we adopt them?
    - ▶ How will we adjust our institutions to the changing world?
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### U.S. Automation Impacts

- ▶ **Frey and Osborne (2013) provide key input data**
  - ▶ Estimate probability of automation by detailed U.S. occupation
  - ▶ These estimates focus on job losses from automation
- ▶ **They assume that automation-resistant occupations require more:**
  - ▶ Detailed and precise sensing and dexterity
  - ▶ Social intelligence
  - ▶ Creativity

▶ Frey, C.B. & Osborne, M.A. (2013). The future of employment: how susceptible are jobs to computerisation? Technology Forecasting and Social Change, 114, 254-280.

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### Tucson Is Less Exposed To Automation Risk

Employment Shares

Probability Range	Tucson MSA	Arizona	U.S.
Low	33.4	31.8	31.2
Medium	24.2	23.5	23.1
High	42.4	44.7	45.7

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### Tucson Automation Risks Vary By Industry

Industry	Tucson MSA	U.S.
Education and Health Services	0.35	0.36
Information	0.46	0.45
Government	0.48	0.48
Manufacturing	0.51	0.64
Other Services	0.55	0.57
Professional and Business Services	0.57	0.57
Financial Activities	0.53	0.58
Construction	0.62	0.61
Natural Resources and Mining	0.61	0.64
Trade, Transportation, and Utilities	0.68	0.68
Leisure and Hospitality	0.70	0.78

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### Tucson's College Attainment Lags U.S.

Share Of Population Age 25-64 With BA Or More

City	Share of Population Age 25-64 With BA or More
Tucson	28.1
San Antonio	24.0
El Paso	23.1
Las Vegas	20.0%
Portland	23.1
San Diego	23.3
Chicago Springs	23.3
Denver	23.3
Austin	23.3
Phoenix	30.5
Portland	30.6
San Francisco	30.8
San Jose	32.3
San Jose	33.3
San Jose	37.6
San Jose	37.9
San Jose	38.0
San Jose	43.0
San Jose	43.7
San Jose	44.0%

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**Our world**  
U.S. Economic Outlook




**Sylvain Leduc**  
Executive Vice President and Director of Research  
Federal Reserve Bank of San Francisco

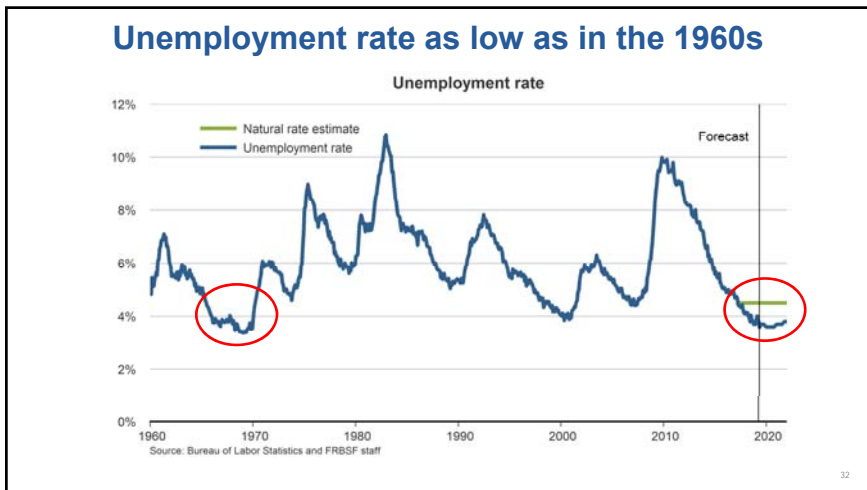
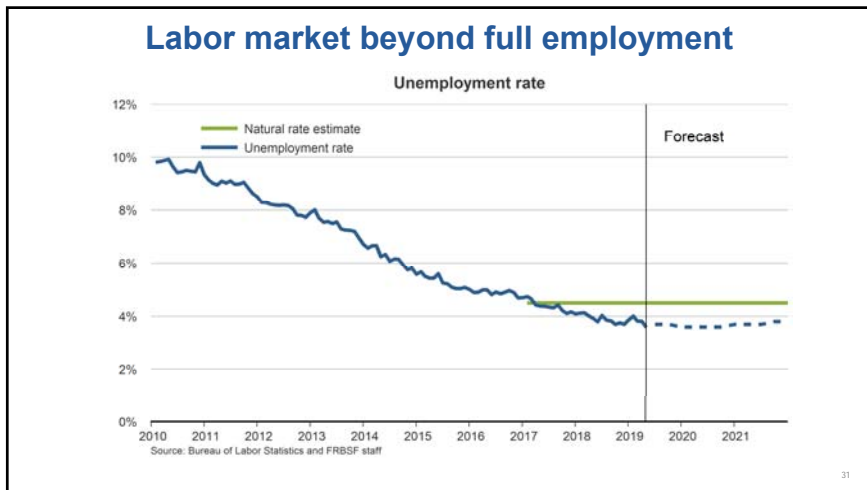
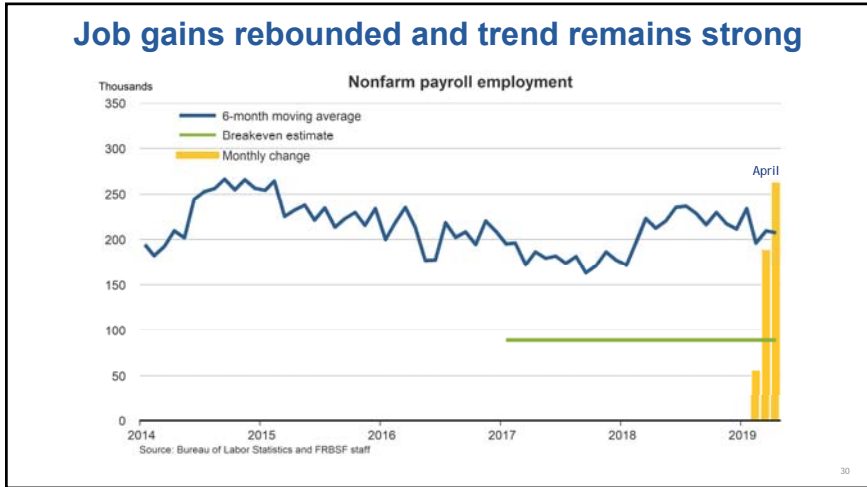
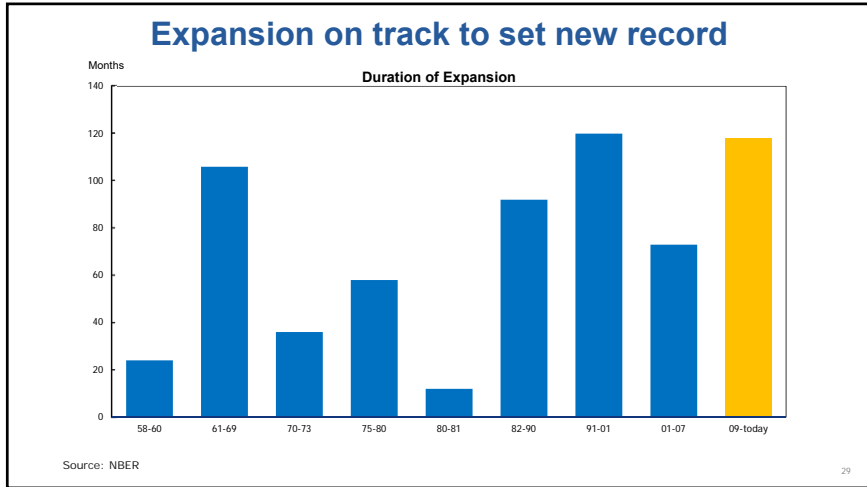



**What's Next for the US Economy?**

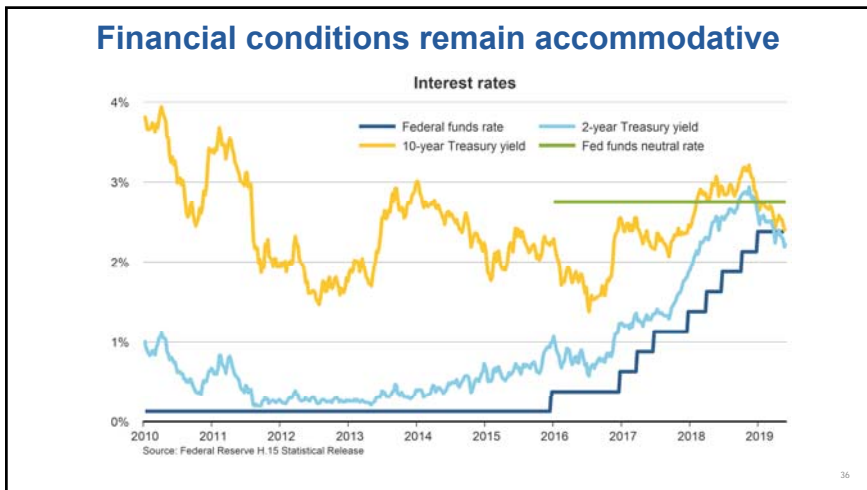
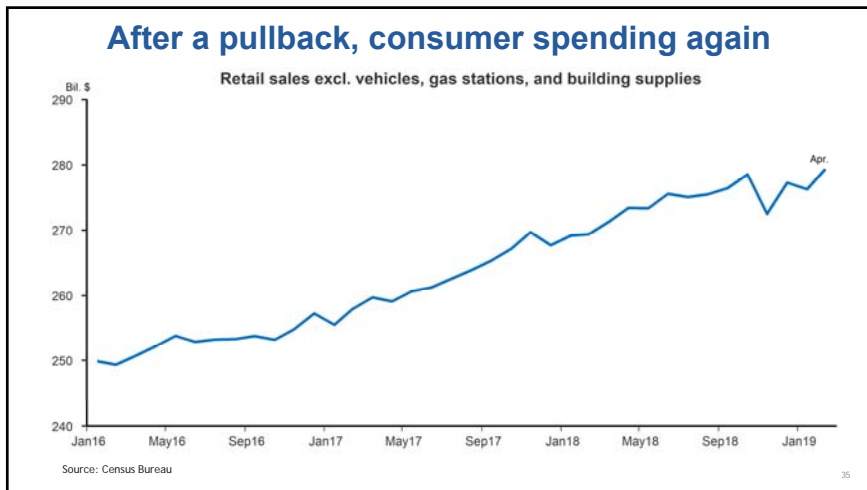
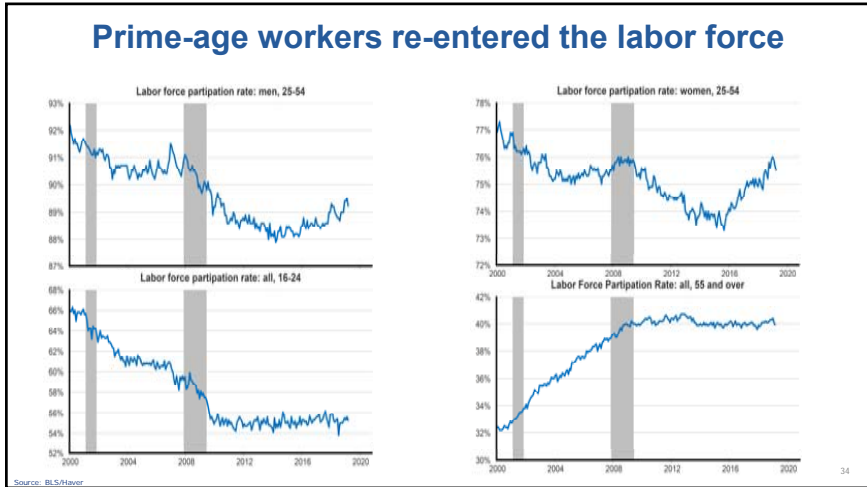
University of Arizona  
May 30, 2019  
**Sylvain Leduc**  
Executive Vice President & Research Director

*Data and Forecast as of May 24, 2019*

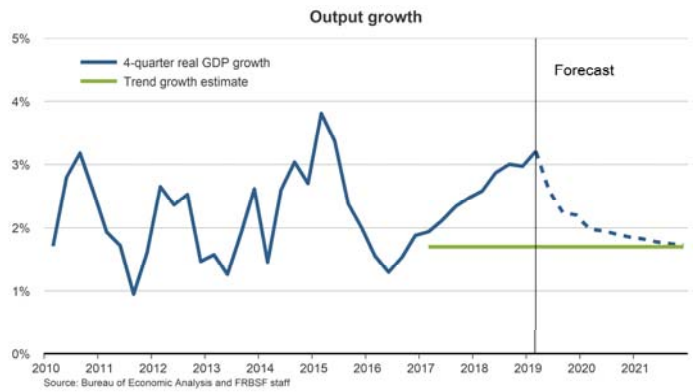








### Expect growth to moderate toward trend



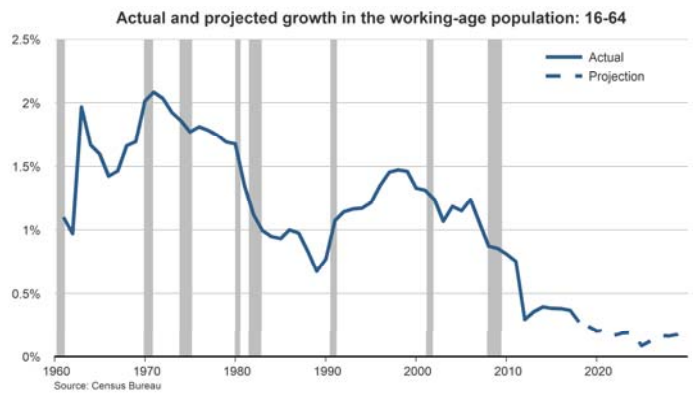
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### What determines trend GDP growth?

- **Output depends on**
  - (i) labor force (worker hours)
  - (ii) productivity (output per hour)
- **Best guess: Slow growth in labor force, modest growth in productivity**
- **Trend GDP growth now around 1¾%**

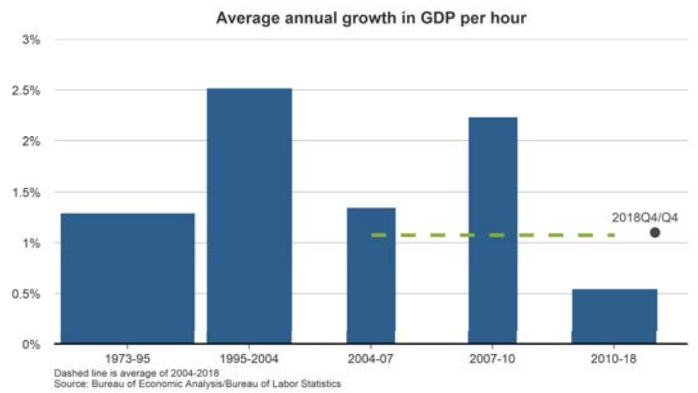
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### Demographics imply slow labor force growth



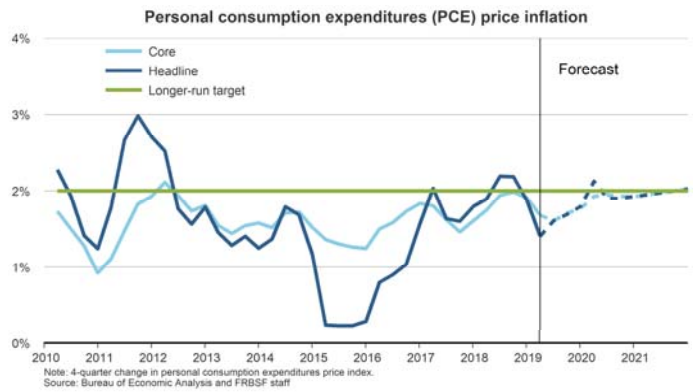
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### Productivity growth has been modest



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**Inflation expected to reach 2-percent target**



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**Risks to the Forecast**

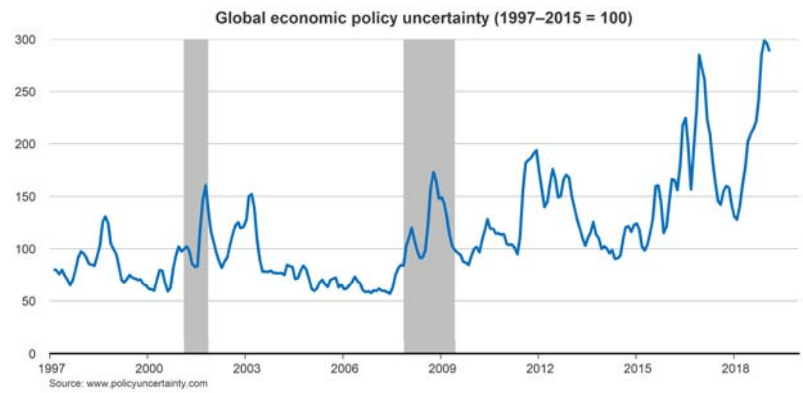
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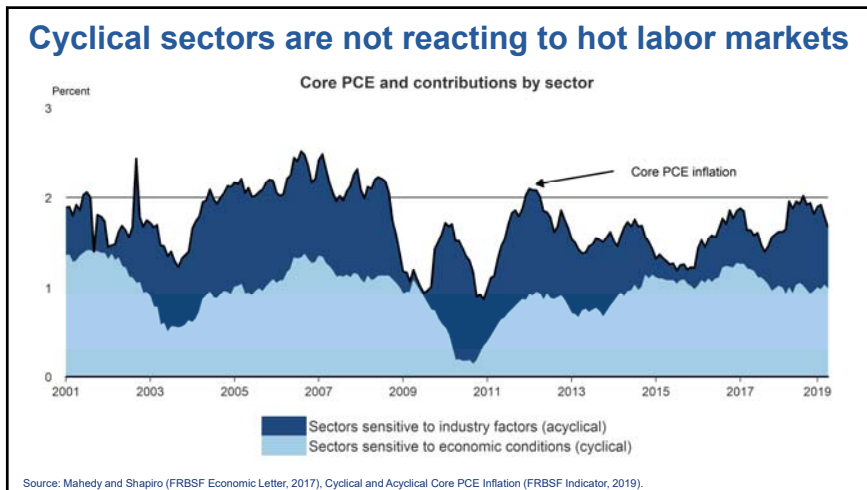
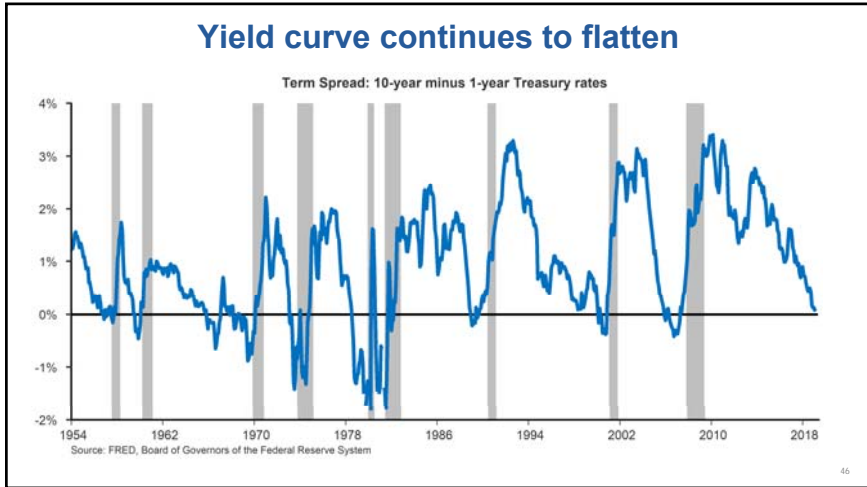
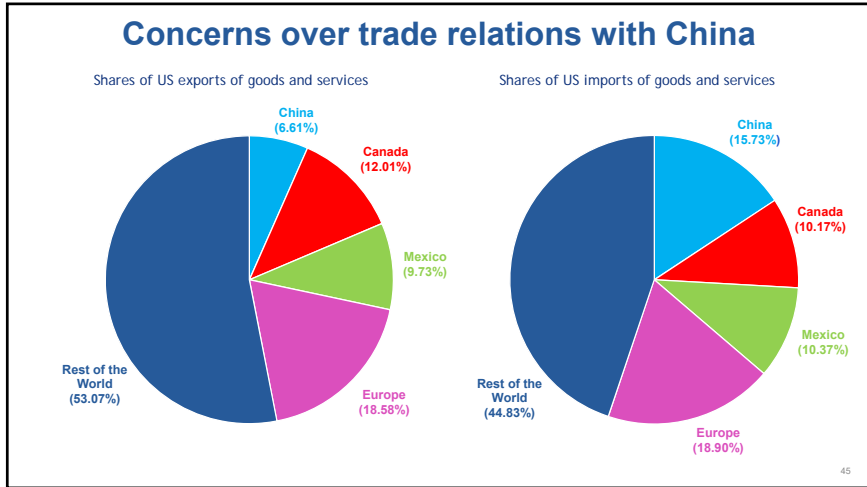
**From synchronized growth to synchronized slowdown**



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**Global policy uncertainty surging again**



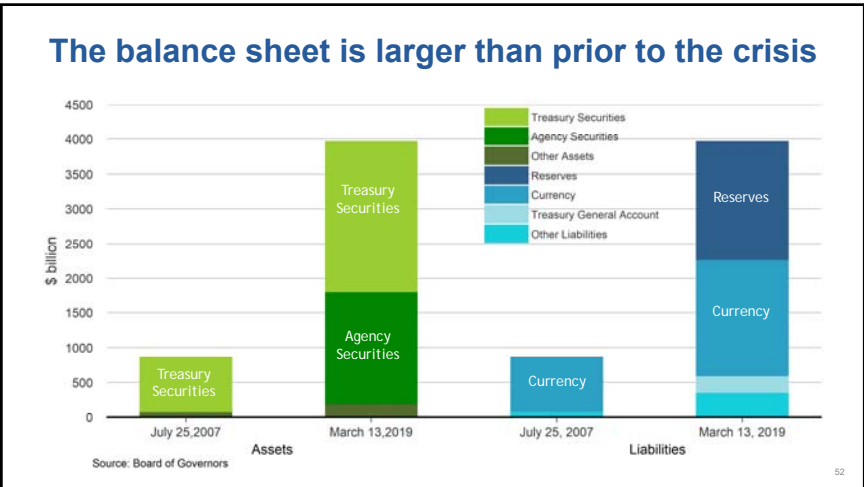
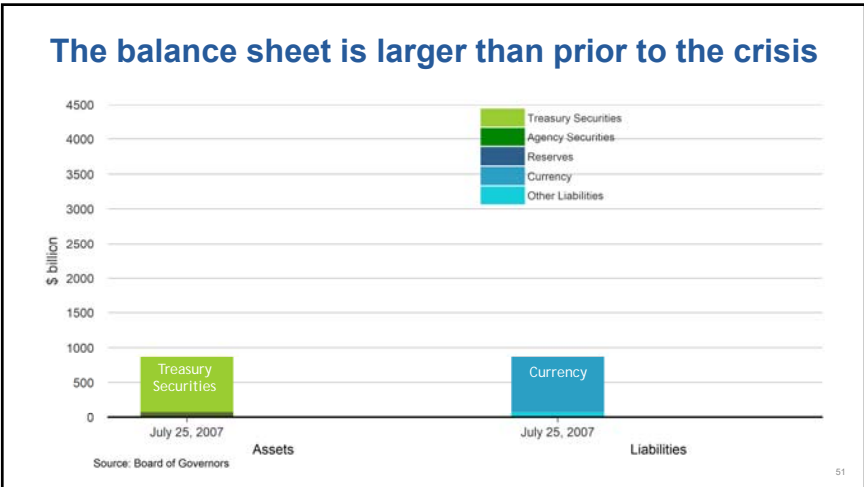


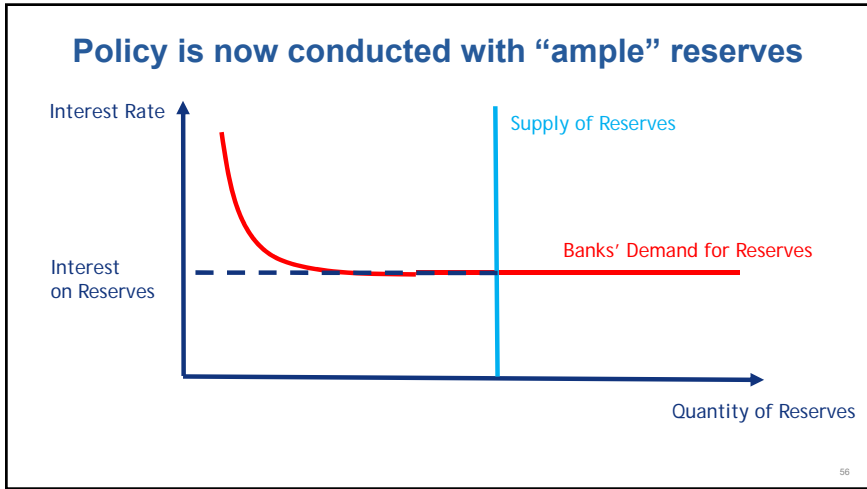
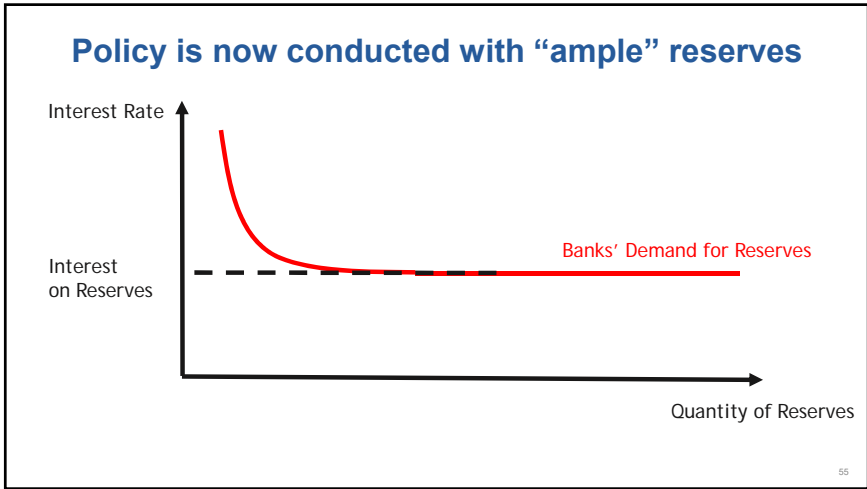
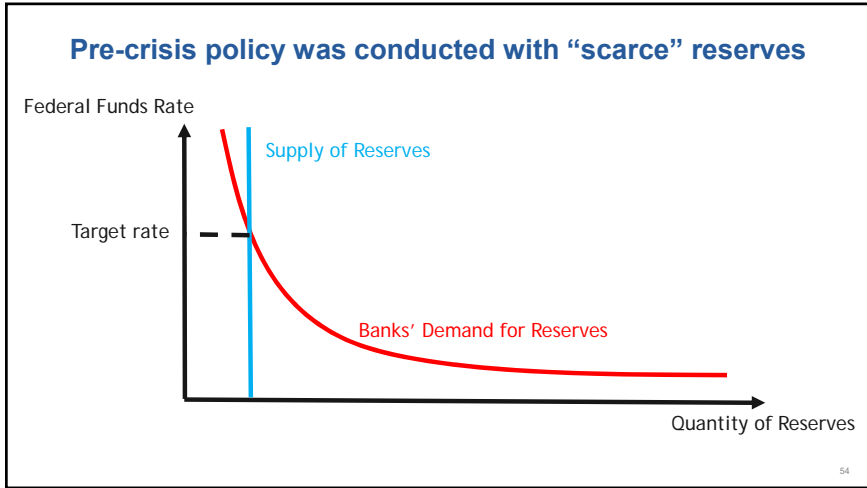
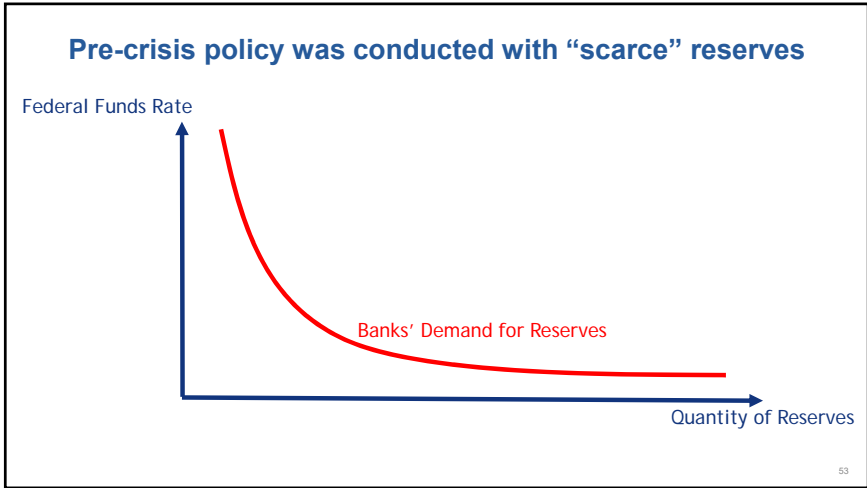
- ### A few take-aways
- Overall, the economy is in a good place
  - Job gains remain strong and wages growing moderately
  - Growth should slow towards its sustainable trend pace
  - Watching foreign developments and trade tensions closely
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## Why is the Fed's Balance Sheet Still So Large?

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- ### Key elements of the balance sheet
- **Liabilities**
    - **Currency**
    - **Treasury General Account**
    - **Reserves**
  - **Assets**
    - **Treasury Securities**
    - **Agency Securities**
- 50





### Balance sheet conclusions

- The Fed's larger balance sheet is here to stay
- Policy will be conducted with "ample" reserves using interest on reserves to affect the federal funds rate
- Duration of asset portfolio still to be determined

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