Welcome.

Stanley Reynolds
Vice Dean of Faculty and Research
Eller College of Management

Welcome.

Kevin Michalzuk
Banker
J.P. Morgan Private Bank

Our region
Outlook for Tucson

George Hammond
Director
Economic and Business Research Center

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

Tucson’s Economy Continues To Expand

MAP Dashboard Economy Scorecard

- 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
- PCE 10,000 Workers: 17.4
- US GDP: 2.9%

Job Gains Remain Steady

Annual Growth Rates

- Solid Job Gains Across Most Sectors In Tucson
  - 2017-2018

George Hammond, director
Economic and Business Research Center
ghammond@eller.arizona.edu
News About Jobs Still Looks Good
Firm Announcements of Job Loss, 12-Month Moving Average
Announcements per Month

Arizona’s Unemployment Indicators Diverge
Initial Claims and Unemployment Rate

Arizona’s Wage Growth Picks Up Steam
Over-The-Year Growth In Wages Per Job, Four-Quarter Moving Average

Tucson Carries Momentum Into The Forecast
Annual Job Growth Rate
Federal Spending Is More Important In Tucson

Shares of Gross Domestic Product

Tucson MSA Population Gains Sustain Housing

Tucson MSA Recession Risks Are Elevated

Three Employment Scenarios

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?
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


Tucson Is Less Exposed To Automation Risk

Employment Shares

Tucson's College Attainment Lags U.S.

Share Of Population Age 25-64 With BA Or More
New features now available! The Arizona’s Economy App
Real-time data at your fingertips.

Discover the Forecasting Project
Economic Forecasts for Arizona, its Metro Areas, and the West
forecast.eller.arizona.edu

Learn about Southern Arizona.
mapazdashboard.arizona.edu

Explore data for border economies.
Arizona-Mexico Economic Indicators
azmex.eller.arizona.edu
Expansion on track to set new record

Job gains rebounded and trend remains strong

Labor market beyond full employment

Unemployment rate as low as in the 1960s

George Hammond, director
Economic and Business Research Center
ghammond@eller.arizona.edu
Moderate wage growth continues

Nominal average hourly earnings year/year growth rate, seasonally adjusted

Source: Bureau of Labor Statistics

Prime-age workers re-entered the labor force

Labor force participation rate: men, 25-54

Labor force participation rate: women, 25-54

Labor force participation rate: all, 16-54

Labor force participation rate: all, 55 and over

Source: BLS/Haver

After a pullback, consumer spending again

Retail sales excl. vehicles, gas stations, and building supplies

Source: Census Bureau

Financial conditions remain accommodative

Interest rates

- Federal funds rate
- 10-year Treasury yield
- Fed funds neutral rate

Source: Federal Reserve H.15 Statistical Release
Expect growth to moderate toward trend

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%

Demographics imply slow labor force growth

Productivity growth has been modest

George Hammond, director
Economic and Business Research Center
ghammond@eller.arizona.edu
Inflation expected to reach 2-percent target

Personal consumption expenditures (PCE) price inflation

Risks to the Forecast

From synchronized growth to synchronized slowdown

Global policy uncertainty surging again

George Hammond, director
Economic and Business Research Center
ghammond@eller.arizona.edu
Concerns over trade relations with China

Shares of US exports of goods and services
- China (6.12%)
- Canada (12.01%)
- Mexico (9.73%)
- Europe (18.58%)
- Rest of the World (53.91%)

Shares of US imports of goods and services
- China (15.73%)
- Canada (10.17%)
- Mexico (10.37%)
- Europe (18.90%)
- Rest of the World (44.83%)

Yield curve continues to flatten

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

George Hammond, director
Economic and Business Research Center
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Why is the Fed’s Balance Sheet Still So Large?

Key elements of the balance sheet

- Liabilities
  - Currency
  - Treasury General Account
  - Reserves

- Assets
  - Treasury Securities
  - Agency Securities

The balance sheet is larger than prior to the crisis
Pre-crisis policy was conducted with “scarce” reserves

Federal Funds Rate

Banks' Demand for Reserves

Quantity of Reserves

Pre-crisis policy was conducted with “scarce” reserves

Federal Funds Rate

Supply of Reserves

Target rate

Banks' Demand for Reserves

Quantity of Reserves

Policy is now conducted with “ample” reserves

Interest Rate

Banks' Demand for Reserves

Quantity of Reserves

Interest Rate

Supply of Reserves

Interest on Reserves

Banks' Demand for Reserves

Quantity of Reserves
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

A special thank you to JPMorgan Chase & Co. for sponsoring today’s event.