The Outlook for Business Investment and Productivity

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Motivation

• On July 1, the current economic expansion will be the longest on record.

• Some worry that expansions die of old age; most economists don’t fully buy this view.

• Still, recession risks appear to have risen.

• Economists look at many variables to gauge the strength or weakness of the economy.

• Labor markets are important, as is business investment. I’ll focus on the latter.
Why Does Investment Matter?

• Rising living standards depend on several factors.
• One factor is the rate of investment per worker. \( \uparrow I \rightarrow \uparrow \text{Productivity} \rightarrow \uparrow \text{Incomes} \).
• Another factor is worker knowledge (e.g., education) and the invention of new ideas.
• This talk—broadly—discusses the trends in these two important factors.
Presentation Outline

• Some data . . .
• Some economics . . .
• Some analysis.
The views I will express today are my own and do not necessarily reflect the positions of the Federal Reserve Bank of St. Louis or the Federal Reserve System.
The Current Expansion

• The average recession and expansion have lasted 11 and 58 months respectively, from 1945-2009.

• The current expansion will become the longest in U.S. history on July 1, 2019.
Recession Probabilities are Elevated . . . Or are They?

Model-Based Recession Probabilities

Source: Haver Analytics, FRB St. Louis, FRB New York, and Board of Governors of the Federal Reserve
Labor Market Conditions are the Best in Several Years

A U.S. Labor Market Conditions Index
Indexed Value (>0 = Above-Average Labor Market Conditions)

SOURCE: Federal Reserve Bank of St. Louis
Data through April 2019.
Business Investment is Volatile and Also Varies with the Strength of the Economy
Growth of Business Investment Was Strengthening Modestly.

Growth of Real Business Fixed Investment, 2010-2019
Four-quarter percent changes

Tax Reform, 2017:Q4

SOURCE: BEA and Haver Analytics
SOME FORWARD-LOOKING INVESTMENT INDICATORS
Surveys of Federal Reserve Banks and Small Businesses.

**Forward-Looking (6-month ahead) CapEx Surveys and New Orders for Core Capital Goods**

Percent Increase less Percent Decrease

- **Avg. FRB & NFIB**
- **Core CapEx Orders**

**NOTE:** Average of surveys published by the New York, Boston, Philadelphia, Dallas, Kansas City, and Richmond Banks. NFIB is National Federation of Independent Business.
Stock Prices of Semiconductor Firms Lead High-Tech Investment.

Growth of Business Fixed Investment in Information Processing and the Philadelphia Semiconductor Index
Four-quarter log changes

Investment (right)  ---- Tax Reform 2017:Q4

Semiconductor Index (left)

SOURCE: BEA and Haver Analytics
Correlation coefficient: 0.43
A NEW FORWARD-LOOKING INDICATOR OF BUSINESS INVESTMENT

(Preliminary Research)
Theories of Business Investment

• Many models of business fixed investment (\(\Delta K\)).
  • Accelerator model, Tobin’s q, cash flow
  • The relative price of K seems to be important, but not \(i\).

• Others believe that statistical models (e.g., VARs) are the best predictors of \(\Delta K\).

• Since Bernanke (1983), the literature abounds with the importance of uncertainty as a predictor of \(\Delta K\).
One Explanation for Weak Investment: High and Rising Uncertainty

Economic Policy Uncertainty Index and Expansion Averages

Index, Sept. 1985 = 101 (3-month moving averages)

NOTE: Policyuncertainty.com and Haver Analytics.
The observation is April 2019.
The Leading Index of CapEx is Highly Correlated with Future Investment

Leading Indicator of Business Capital Expenditures and 4-Qtr Growth of Real Business Fixed Investment

Index: Values greater than 1 signal improving conditions for real business fixed investment

- Real BFI (Left)
- Leading Indicator (Right)

Correlation Coeff.: 0.78  0.73  0.58  0.36

Sources: FRB, WSJ, PU, EIA, BEA, BLS, Shiller, Census, NABE, CB, Haver Analytics, and author’s calculations
Forecasters: Don’t Expect a Investment Boom Anytime Soon

Growth of Real Business Fixed Investment: Actual and Projected

Percent


Real BFI
CBO Jan. 2019
Blue Chip Mar. 2019
Forecasts

SOURCES: BEA, CBO, Blue Chip Consensus, Haver Analytics
But Productivity Growth is Accelerating . . . A Puzzle

Growth of Labor Productivity in the Nonfarm Business Sector
Percent changes, annual rates

The Rise of Intangible Investment: One Piece of the Puzzle?

• “Capitalism without capital.” (Haskel and Westlake)

• Brynjolfsson, Rock, and Syverson (2018) argue that the rise of general purpose technologies like AI and machine learning require significant complementary investments.

• These complementary investments are often intangible in nature and hard to measure.

• Moreover, these investments tend to boost productivity growth with a lag.
Nominal Business Fixed Investment Shares

Tangible and Intangible Business Fixed Investment as a Percent of Nominal Fixed Investment and their Linear Trend Since 1960

SOURCE: BEA/Haver Analytics
On the Cusp of . . . Something

• An increasing share of intangible investments in response to R&D and new technologies could presage faster productivity growth.

• But a rising share of intangible investments potentially has massive implications for society and the economy.

• For society, this includes education policy, intellectual property rights, and “infrastructure.”

• For economists and national income accountants, issues of measurement and modeling are paramount.
QUESTIONS?