

ECO 407

**Competing Views in
Macroeconomic Theory and Policy**

Lecture 3

**The Determinants of
Investment**

What Is Investment?

- For economists, the term investment refers to purchases of goods and services that increase the **capital stock** of the country (e.g., machines, equipment, buildings, R&D)
 - Therefore, it does not refer to **financial investment** (i.e., purchases of financial assets)
 - It refers to **real** investment (part of which maintains or increases the **productive capacity** of the country)
- This investment could be undertaken by businesses (e.g., machines and equipment), the government (e.g., infrastructure), and households (e.g., education)
- In economics, therefore, investment represents the allocation of a portion of current output toward the **increase of the capital stock** and the **expansion of future production**

The Orthodox View of Investment

- **Investment** is seen almost as an **automatic outcome** of social decisions to **save**

- All that's needed to **increase investment** is to **save more**

- The market mechanism will ensure that all savings are invested and in the most **productive** uses

- But decisions to save and invest are made quite independently in a market economy

- Households decide to postpone spending (i.e., they make the saving decision)

- Firms decide to acquire new machines and equipment, i.e., they make the decision to invest

- Scarth: *“Firms make the decision to invest by purchasing some of the newly produced output that the household did not want”*

The Orthodox View of Saving and Investment

- Scarth points out that high *investment* requires high *saving* (and thus low *consumption*)
- But he also points out that firms and households do not consult with each other when making these decisions
 - Therefore, if households wish to save more than firms wish to invest, then there will be an *increase in inventories* and a *recession* will ensue
- Scarth suggests that we should investigate why recessions occur , i.e., why saving and investment may get *temporarily* out of alignment
 - But neoclassical theory cannot explain recessions since *efficient market* are always supposed to clear

Orthodox View: Determinants of Investment

- Anything that stimulates *saving* (e.g., tax policies that lead households to save)
- Anything that reduces the *cost* of acquiring new fixed capital (e.g., lower rates of interest)
- Increases in the price of *equity* (since firms finance much of their investment by issuing new equities)
- Reduction in the *volatility* of business cycle (i.e., recessions are a big disincentive)
- *Taxes* matter (e.g., taxes on inflows of financial capital)

Borrowing Costs and Corporate Taxes

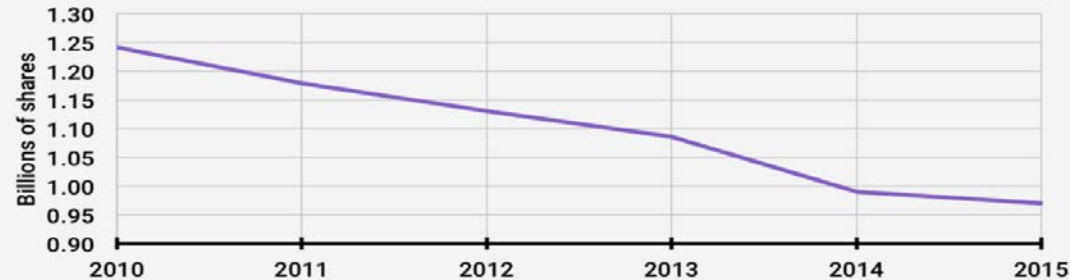
- A firm should increase the quantity of a factor of production up to the point where its **marginal product** is equal to its **real cost**
 - In the case of labour → $MP_L = W/P$ (i.e., the real wage)
 - In the case of capital → $MP_K = rc$ (i.e., rental cost of capital)
- Therefore, **employment** rises whenever $MP_L > W/P$ and **investment** rises whenever $MP_K > rc$
 - Therefore, increases in W/P requires greater **productivity**
- Scarth points out that a reduction in **corporate income tax** would cause only a small increase in investment
- He also claims that a tax on capital inflows would reduce investment (and thus also the standard of living)

Stock Markets and the State of Business Confidence

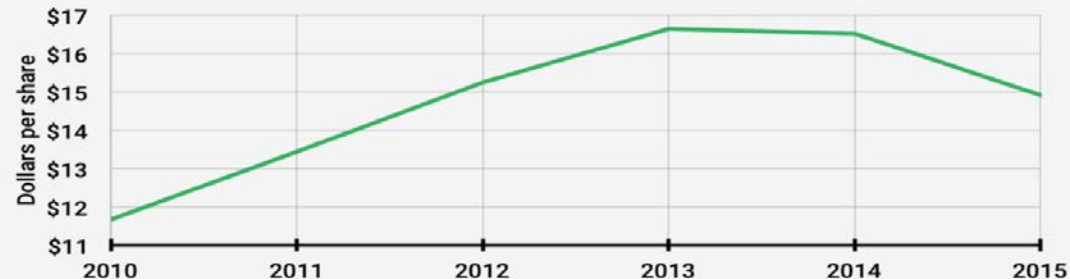
- Stock prices are determined by the *present value* of the expected *net income stream*
 - Stock prices would fluctuate around this fundamental value due to the “*animal spirit*” of investors
- Scarth identifies the waves of *optimism* in the stock market as a major driver of investment
 - He confuses *financial* investment with *real* investment
- But, what causes the stock market to go up?
 - As Chang points out, many shareholders do not care about the *long-term* future of the company
 - Therefore, they might prefer *short-term* profits to the cost of *long-term* investment

How IBM's Buybacks Work

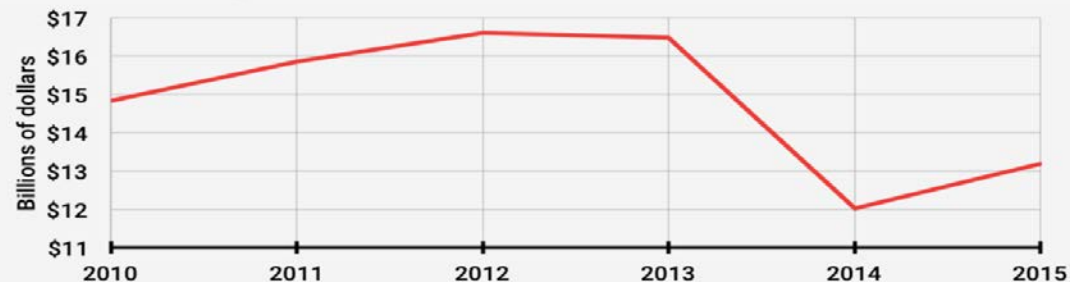
As the number of shares outstanding drops...



... earnings per share still rise...



... even though net income falls.



SOURCE: Bloomberg

BUSINESS INSIDER

IBM Corp spent \$125 b. on buybacks over 2005-2015 (while dividends were \$32 b. and capital spending and R&D were \$111 b.).

Carly Fiorina, **Hewlett-Packard's** CEO (1999-2005), bought back \$14 b. in company's shares (while profits were \$12 b.).

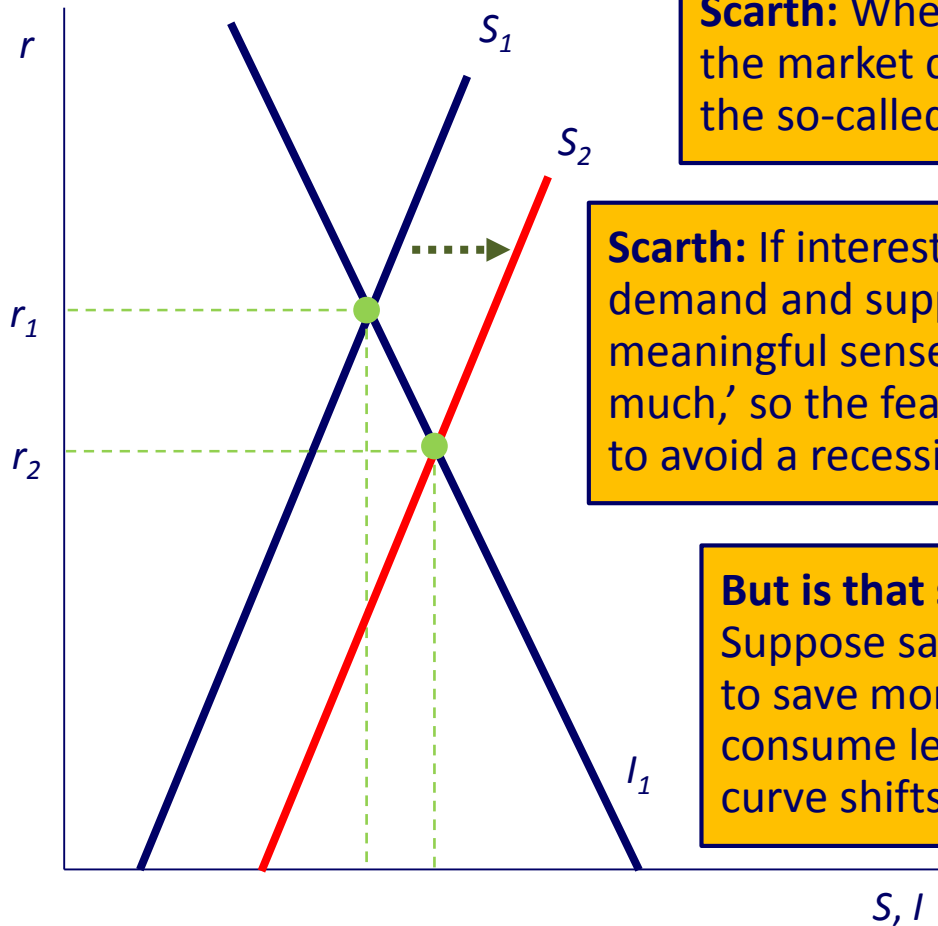
Mark Hurd, **Hewlett-Packard's** CEO (2005-2011), bought back \$43 b. in company's shares (while profits were \$36 b.).

More recently, following the Trump's tax cuts, **Apple** announced it would bring back most of the \$252 b. it was holding abroad. In turn, in May 2018, it bought back \$100 b. of its own stock.

The Market for Loans

- Scarth then moves the analysis from the stock market to the market for loans
 - He identifies the **supply of loans** with households' decisions to save (i.e., the savings curve)
 - ❑ ***But the supply of loans is provided by financial institutions***
 - And he identifies the **demand for loans** with businesses' decisions to invest
- The supply and demand for loans are assumed to be functions of the **rate of interest**
 - Lower income-taxes and decreased household confidence shift the supply of loans to the right
 - Higher corporate taxes and decreased business confidence shift the demand for loans to the left (Scarth)

Efficient Loans Market



Scarth: When the loans market works efficiently, the market clears at the rate of interest r_1 , i.e., at the so-called *natural* or *neutral* rate of interest.

Scarth: If interest rate is at the intersection of demand and supply for loans, then “there is no meaningful sense in which society can be saving ‘too much,’ so the fear of having insufficient total demand to avoid a recession can be viewed as a non-issue.”

But is that so?

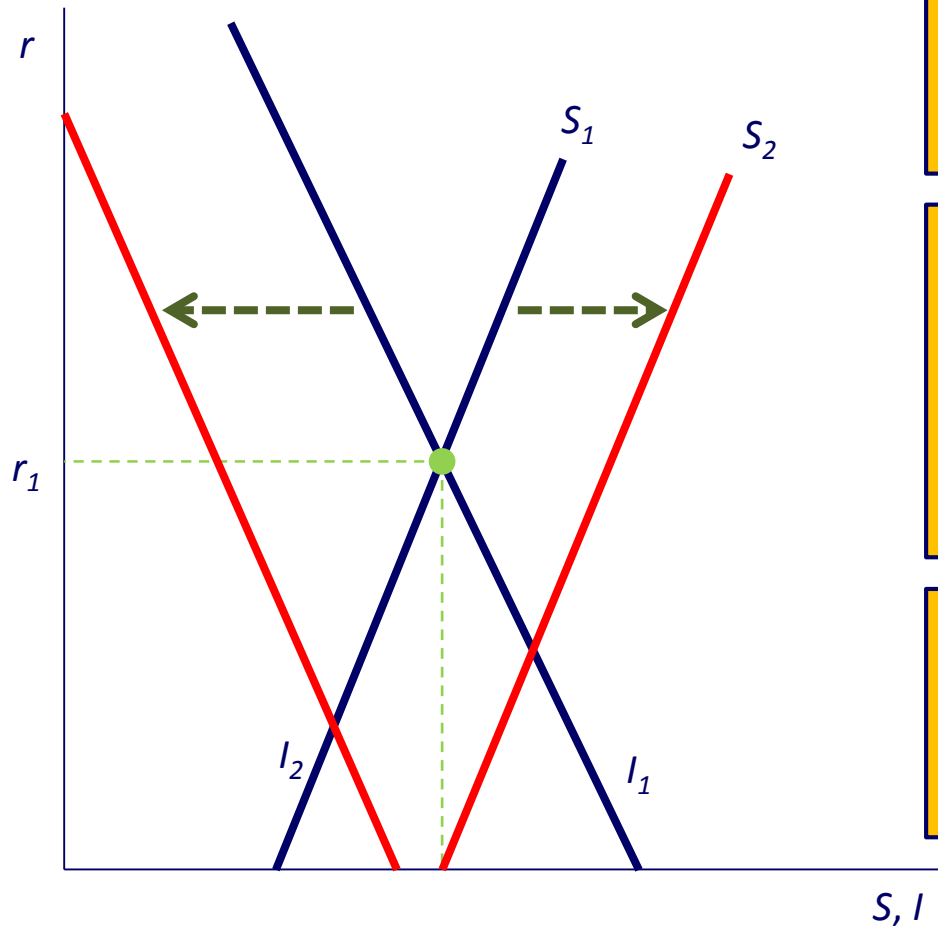
Suppose savers decide to save more (i.e., to consume less) so the S curve shifts to S_2 .

Therefore, r falls to r_2 and investment increases. ***But, do firms invest more when they expect their sales to decrease?***

Scarth: Market Failure and Recessions

- The loans market works **efficiently** when the market outcome is at the intersection of supply and demand
 - ***There is no meaningful sense that society is saving too much (and that there is insufficient aggregate demand)***
- But **excessive pessimism** could cause the supply and demand curves to shift in a way that there is no equilibrium at a positive interest rate
 - In this case there is room for **temporary** government deficit spending (to defeat the mood of pessimism)
- For this very **unlikely** (?) situation (**market failure**) to occur though, both the demand and supply of loans need to be very steep

Market Failure and Recessions



When the loan market works **efficiently**, the market clears at the rate of interest r_1 .

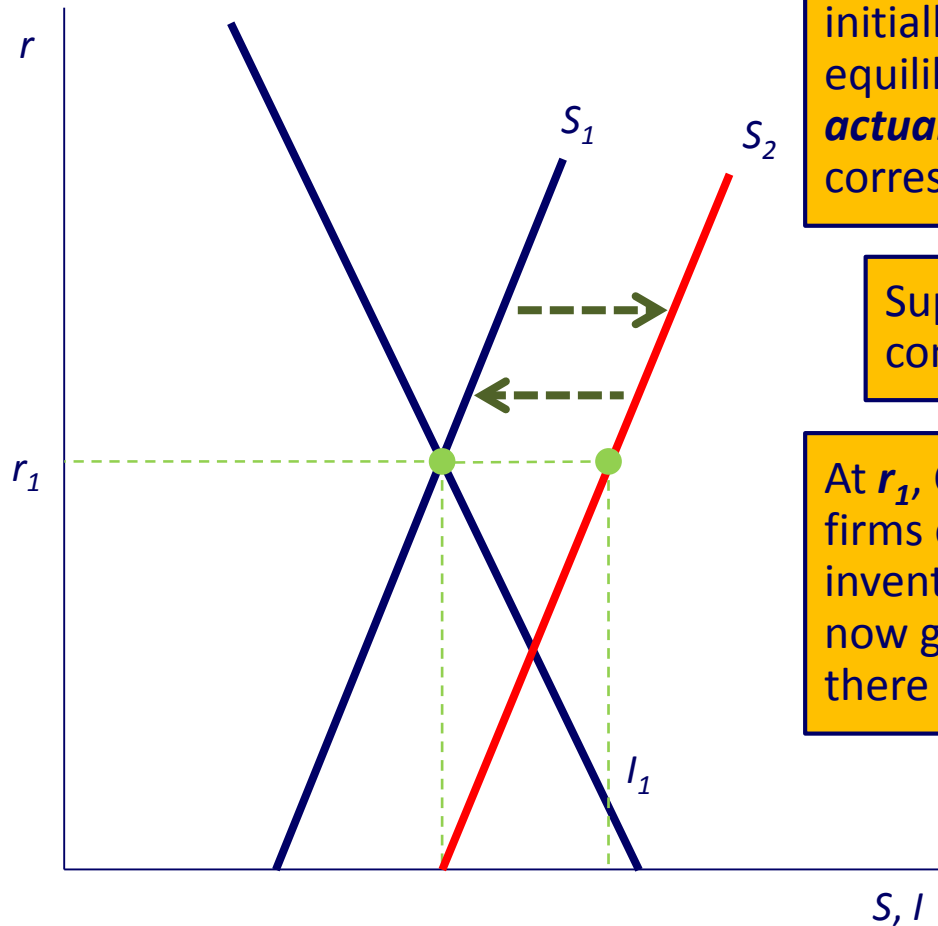
If a decrease in household and business **confidence** shifts the supply of loans to S_2 and the demand for loans to I_2 , then there is no equilibrium in the loan market at any level of the rate of interest.

In this case, $S > I$ for all r and thus a recession ensues (which justifies the implementation of expansionary fiscal policy).

Saving and Investment

- Consider a closed economy without the *government* sector
 - $Y = C + I$
 - $Y = Y_D$ (where $Y_D = C + S$)
- By definition, *saving* is equal to *actual investment*
 - $Y = C + S$ and $Y = C + \text{actual } I \rightarrow S = \text{actual } I$
- But *planned* investment and *actual* investment are not always equal
 - They will differ when the economy is not in “*equilibrium*” due to *involuntary* changes in inventory
- When in “*equilibrium*”, there is no *involuntary* change in inventory
 - *Planned* investment is equal to *actual* investment
 - *Desired* investment is equal to *saving*

Saving and Investment



At the rate of interest r_1 , the economy is initially in equilibrium at income Y_1 . At this equilibrium, the corresponding saving (or **actual** investment) curve is S_1 and the corresponding **desired** investment curve is I_1 .

Suppose a decrease in household confidence shifts the saving curve to S_2 .

At r_1 , C decreases and thus S increases and firms experience an involuntary increase in inventories. Therefore, **actual** investment is now greater than **desired** investment and there is an excess supply in the economy.

Y will fall to eliminate the excess supply and the saving curve will shift back to S_1 when Y is once again in equilibrium but at a lower level.

Jim Stanford: Real Investment and the Private Credit System

- The ***stock exchange*** plays a secondary role in the process of real ***investment***
- **Because:** Most business finance their investment from ***retained profits*** and only turn to financial system when needed
 - The existence of credit and financial system provides companies with an important degree of freedom
- **But:** When the financial sector is ***optimistic***, it can demonstrate incredible vitality and exuberance
 - It finances exciting new ventures long before “savers” could set aside real resources to pay for those ventures
 - But each period of financial ***exuberance***, is followed by a predictable interlude of financial ***contraction***

Jim Stanford: The Benefits of Stronger Investment

- ***Growth*** – Investment is the most important source of economic growth
- ***Employment*** – Investment is essential to job creation and employment
- ***Economic evolution*** – Economies and companies don't just expand, they change over time
- ***Productivity*** – Investment is important for productivity growth (which rises living standards)
- ***Environment*** – Investment in energy-efficient technology reduces environmental damage

Heterodox View (J. Stanford): Determinants of Investment

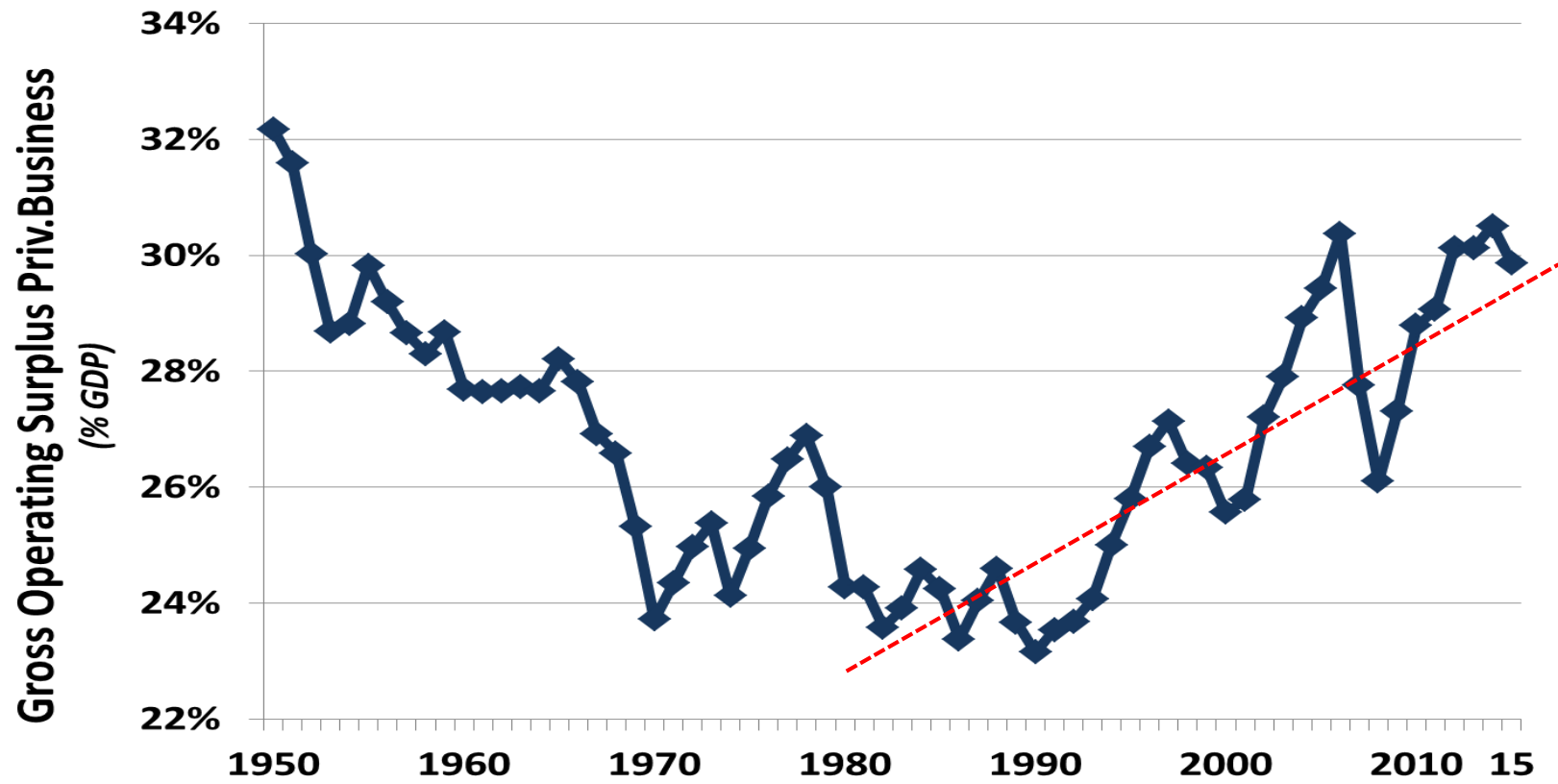
- Current business profits (indicators of *future profits*; provide funds)
- *Capacity utilization*
- *Growth* (the economy is expanding)
- *Cost of capital* (i.e., interest rate)
 - If interest rate is low, companies might prefer to invest rather than lending it (to banks)
- *Institutional* and *political climate*

Bottom line: Investment is a *forward-looking decision* based on the business owner's *expectations* of making a profit

Recent Trends

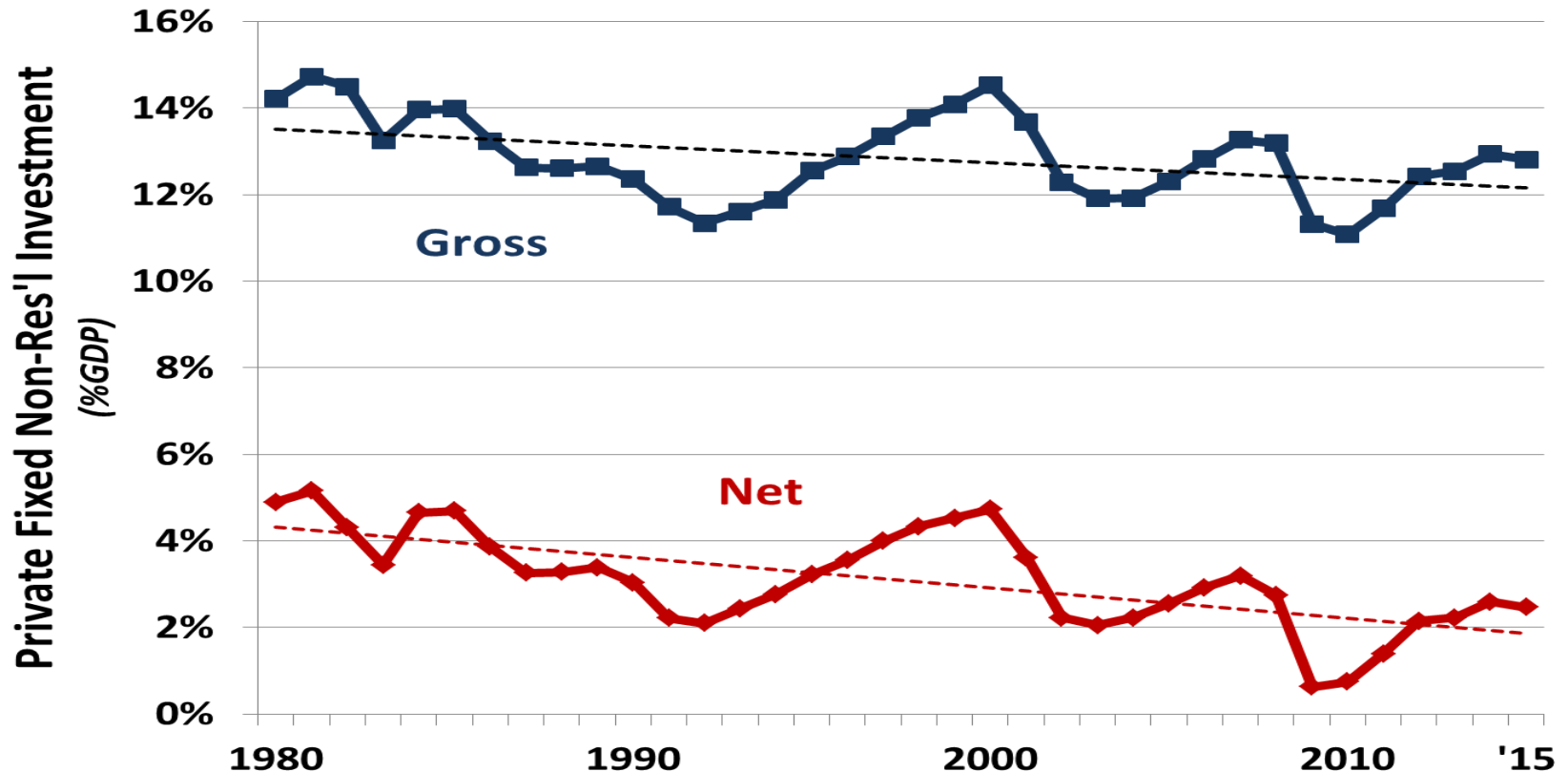
- In Canada, business investment has remained surprisingly sluggish despite:
 - A business-friendly political and legal climate
 - High current and expected profits
 - Historically low interest rates
 - As Stanford observes, new investment has not kept up with the growth of profits
 - Companies have been paying off debt and accumulating cash (“dead money”, according to Mark Carney)
 - Companies are not taking advantage of new technology to boost productivity and generate employment
- What explains this sluggish performance of investment?
 - Existence of excess capacity
 - Policies redistributing income towards capitalist class

U.S.: Profits as Percentage of GDP (1950-2016)



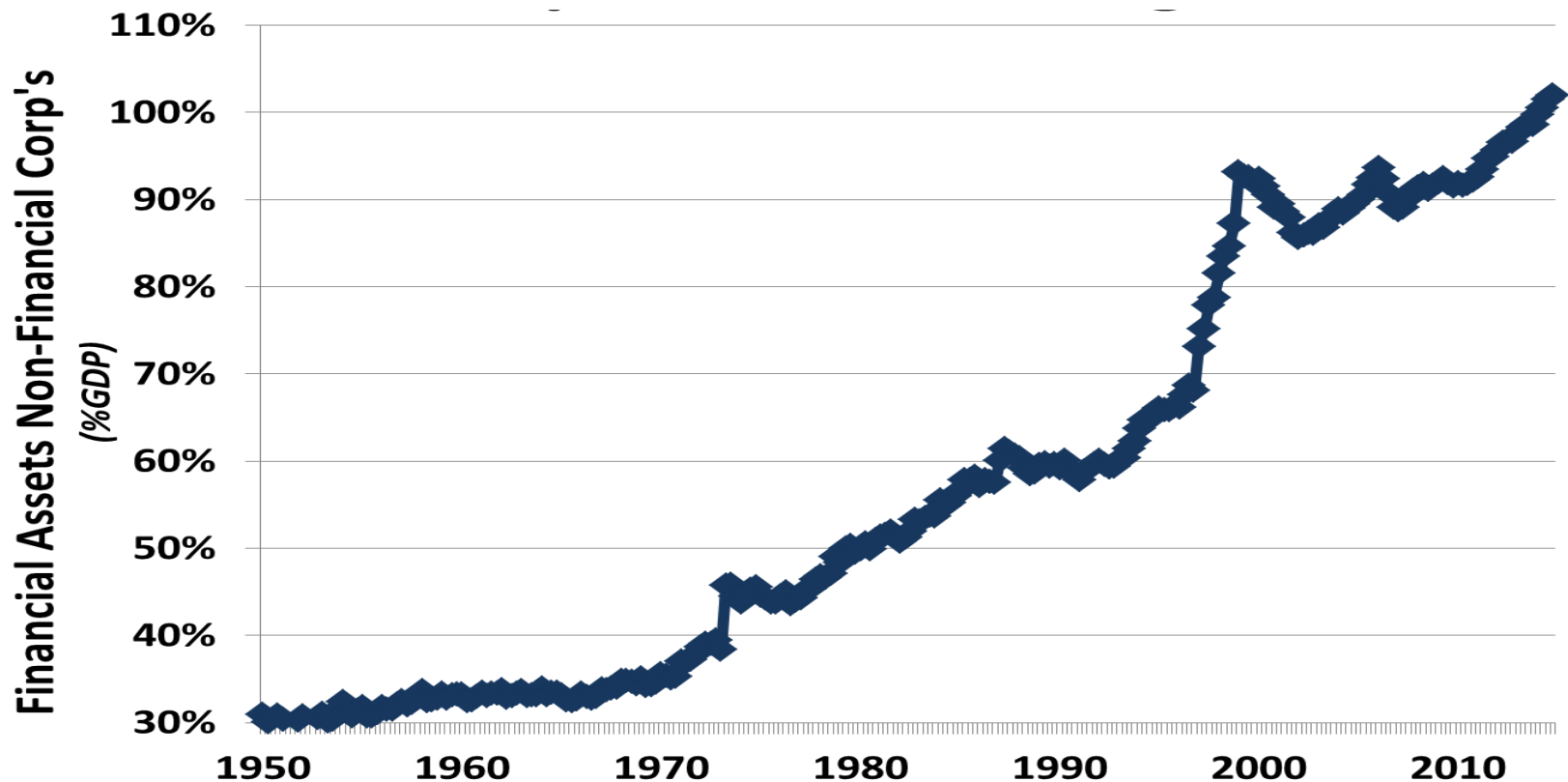
Source: J. Stanford, "U.S. Private Capital Accumulation and Trump's Economic Program", *real-world economics review*, No. 79 (March), 2017.

U.S.: Business Fixed Capital Investment as Percentage of GDP (1980-2016)



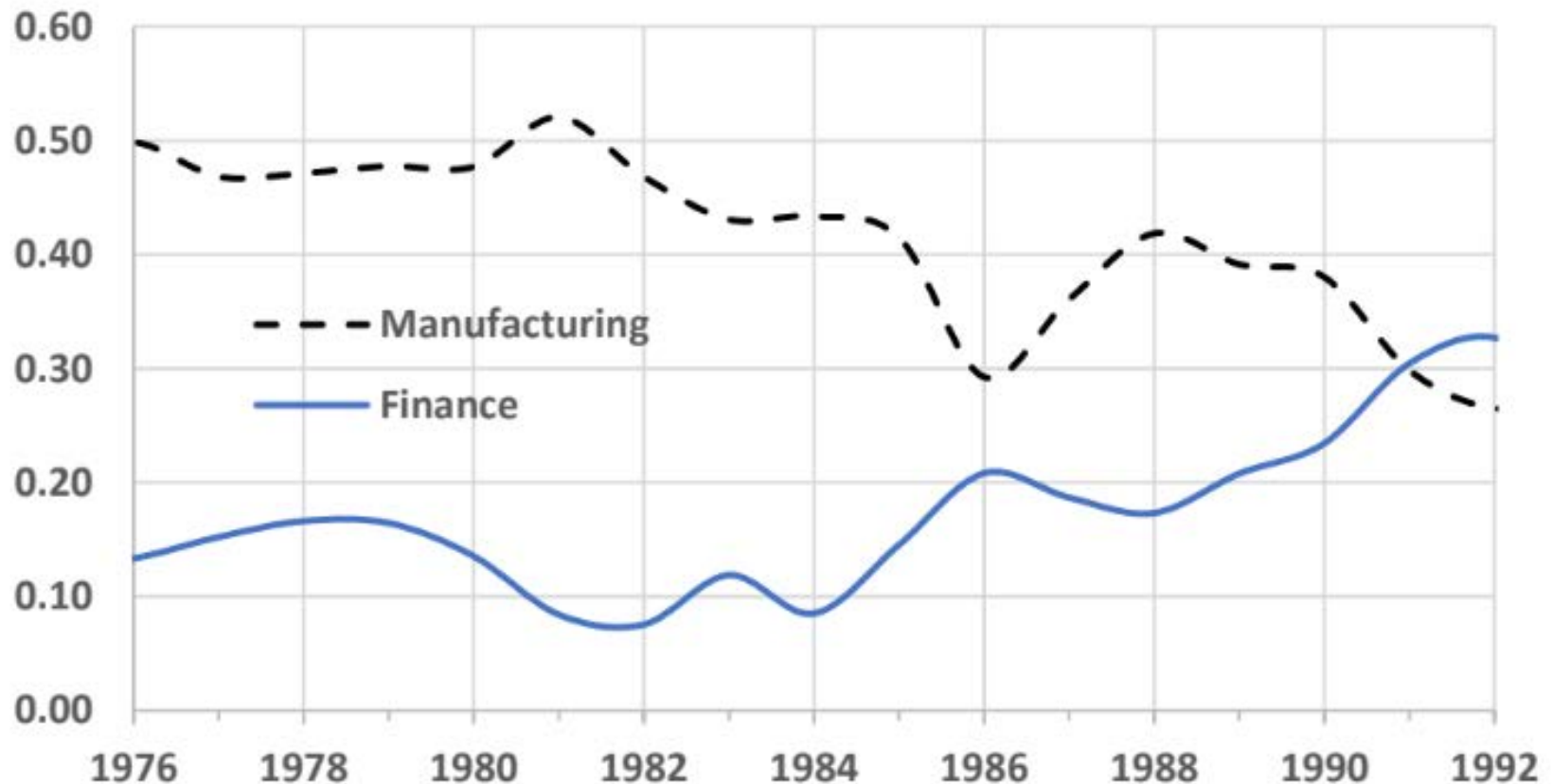
Source: J. Stanford, "U.S. Private Capital Accumulation and Trump's Economic Program", *real-world economics review*, No. 79 (March), 2017.

U.S.: Corporate Hoarding as Percentage of GDP (1950-2016)



Source: J. Stanford, “U.S. Private Capital Accumulation and Trump’s Economic Program”, *real-world economics review*, No. 79 (March), 2017.

U.S.: Share of Corporate Profits in Finance and Manufacturing (1976-1992)



Source: J. Komlos, "Reaganomics: A Historical Watershed," 2018 (unpublished).

Some Conclusions

- Pro-business policies and high profits had little impact on investment
 - *It undermines the logic of “trickle down” economics*
- There should be more effective ways of enhancing investment:
 - An effective *industrial policy* (“developmental state”)
 - Greater *infrastructure* expenditure
 - Better *distribution of income* to increase aggregate demand