

## Hour 2

# The Importance of Productivity and Saving

In a very broad sense, our utility depends on two things.

How much we consume and how long we live.

$$U_{\text{now}} = \int_{\text{now}}^{\text{Expected Death}} A(t)E\{u[\text{consumption}(t)]\}dt$$

Therefore, our goal should be to create an economic system that lets us maximize our consumption profile and lengthen our life span.

Of course, there is plenty of room to discuss other things such as environmental degradation, social justice, individual happiness, spiritual considerations, quality of life, and a multitude of other important aspects to our existence. These are all important to economists, as well.

But, if you don't consume much and/or you don't live long, these other issues are not so important, after all. Right?

So, how can we raise consumption per capita and the average lifespan? The most important variable will be the output each person can enjoy. Ignoring for now the very important issue of the distribution of the output, we can consider the following

$$\left(\frac{\text{Consumption}}{\text{Population}}\right) \approx \left(\frac{\text{Output}}{\text{Population}}\right) = \underbrace{\left(\frac{\text{Labor}}{\text{Population}}\right)}_{\mathbf{1}} \underbrace{\left(\frac{\text{Hours}}{\text{Labor}}\right)}_{\mathbf{2}} \underbrace{\left(\frac{\text{Output}}{\text{Hours}}\right)}_{\mathbf{3}}$$

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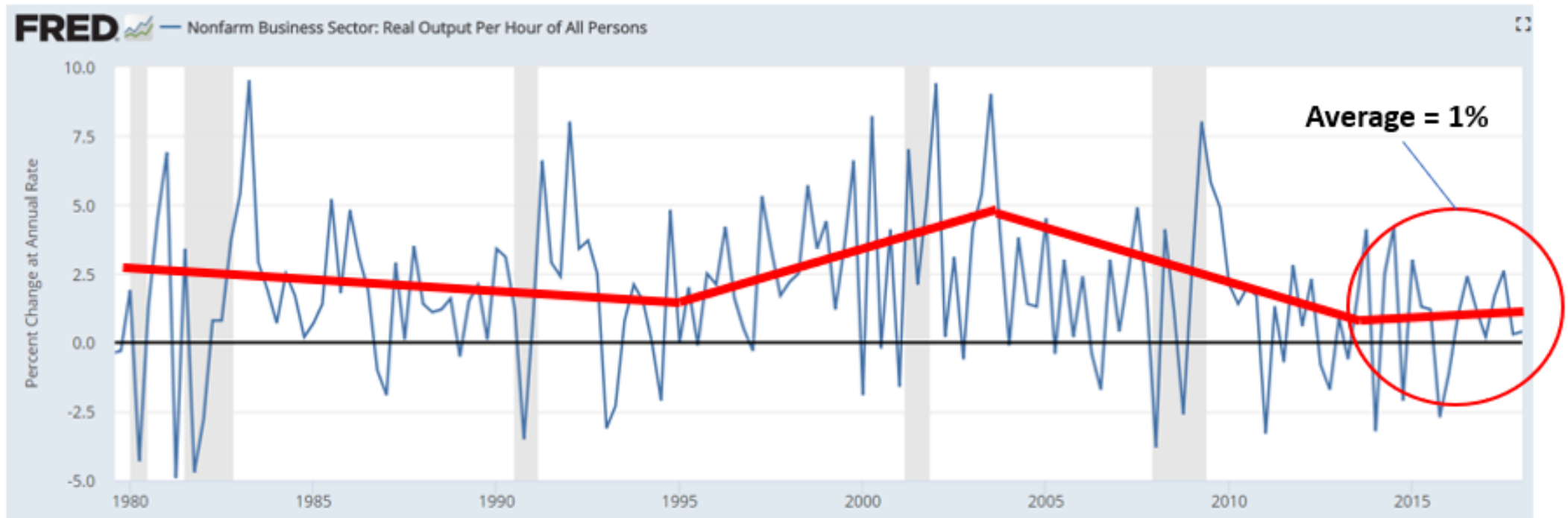
**1**                      **2**                      **3**

$$\textbf{Ratio 1} = \left(\frac{\text{Labor}}{\text{Population}}\right) \leq 1$$

$$\textbf{Ratio 2} = \left(\frac{\text{Hours}}{\text{Labor}}\right) \leq 24 \text{ hours / person}$$

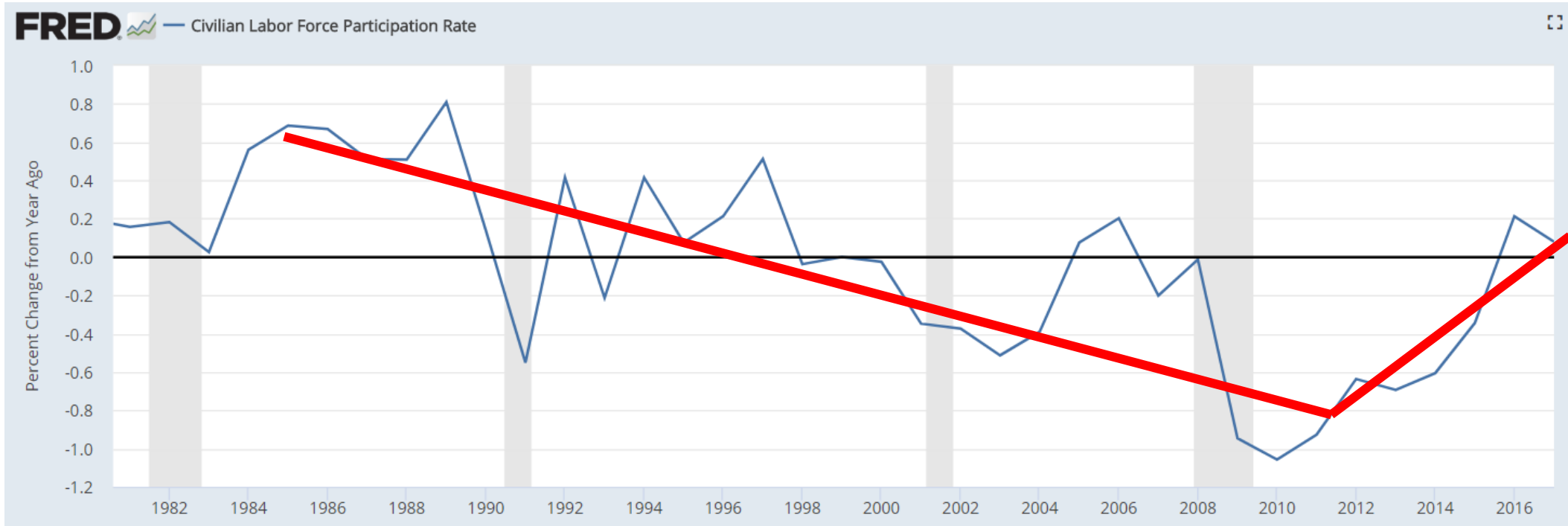
$$\textbf{Ratio 3} = \left(\frac{\text{Output}}{\text{Hours}}\right) \textbf{ no upper limit}$$

$$\text{Average Labor Productivity} = \left( \frac{\text{Output}}{\text{Hours}} \right)$$

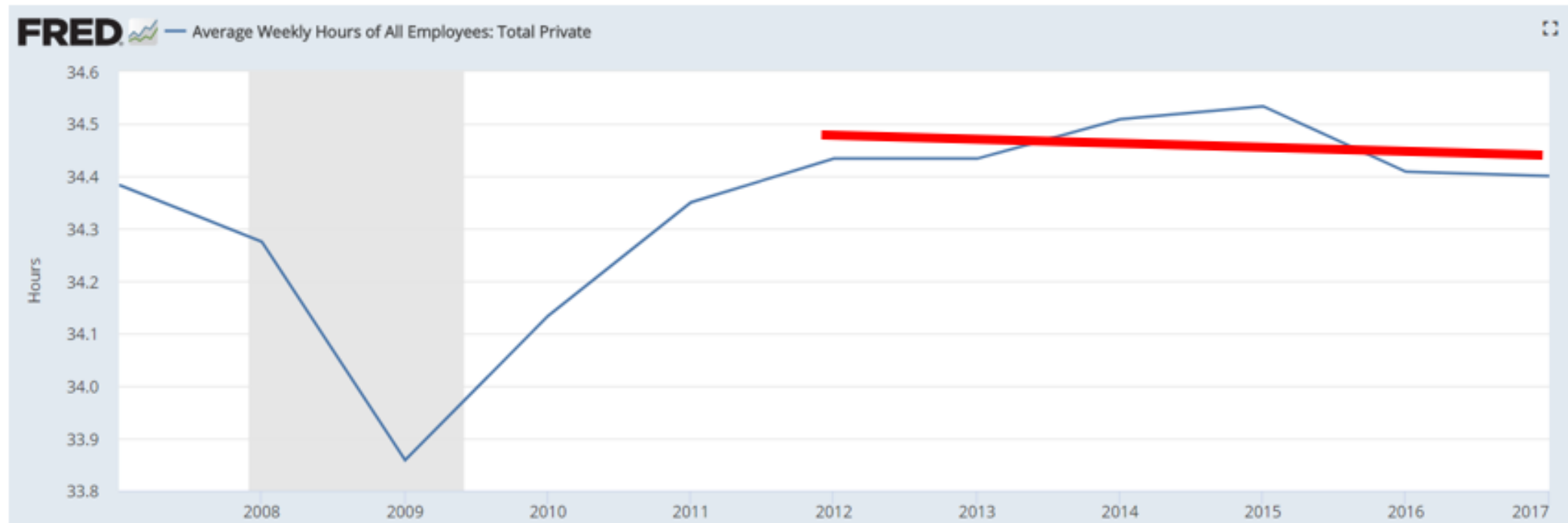


**Nonfarm Business Sector: Real Output Per Hour of All Persons**

# Proxy for Ratio 1: US Annual Data Growth in Labor Force Participation



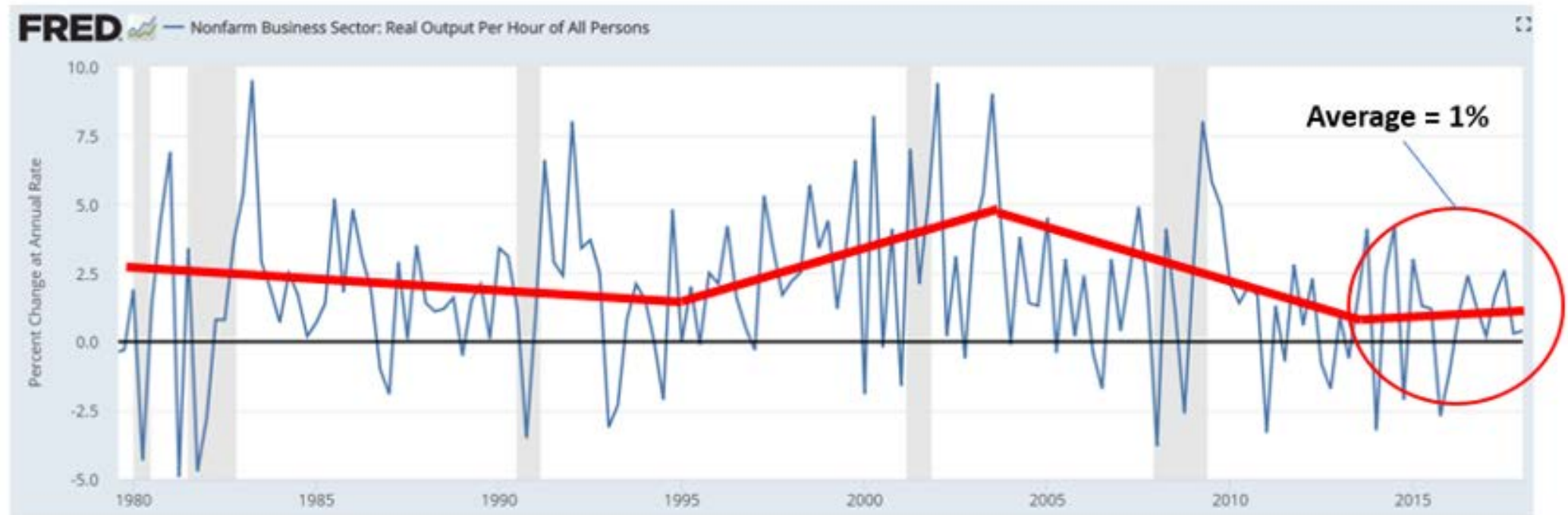
## Proxy for Ratio 2: Average Weekly Hours of All Employees in Private Sector





# How can we increase our growth in Average Labor Productivity?

$$\text{Average Labor Productivity} = \left( \frac{\text{Output}}{\text{Hours}} \right)$$



# Means of Promoting Productivity

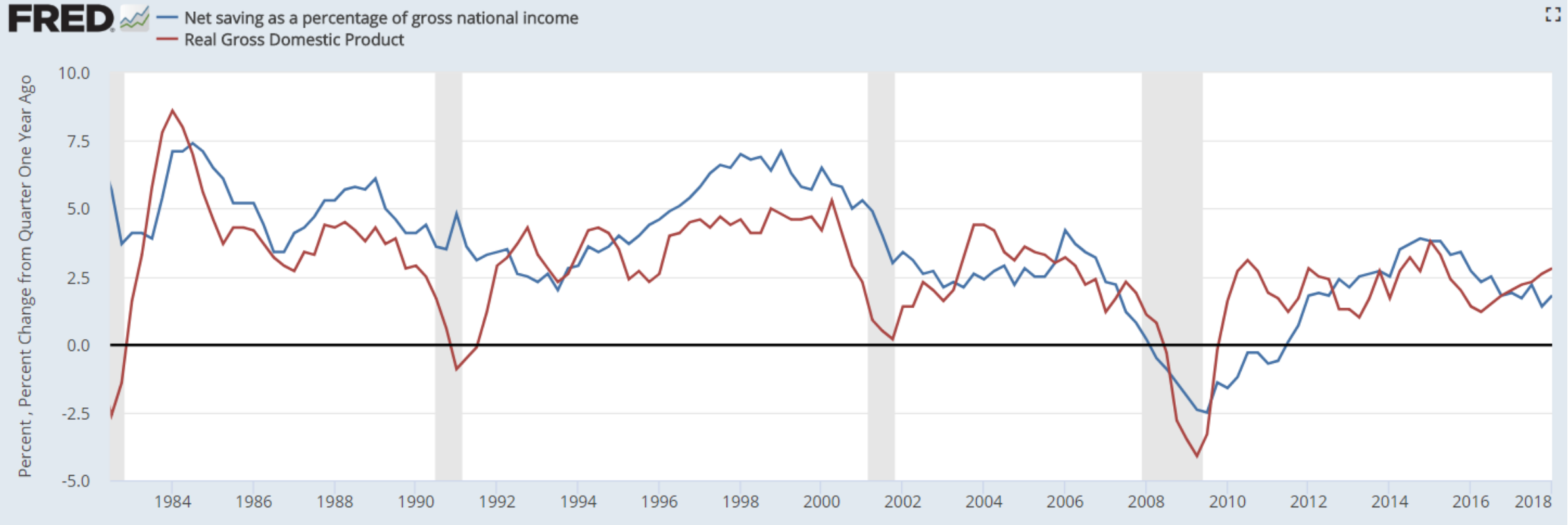
- (1) Greater levels of physical capital
- (2) Greater levels of human capital
- (3) Improved technology
- (4) Expansion of markets through free trade
- (5) Increased competition in product and labor markets
- (6) Reduced levels of regulations on business
- (7) Substantial reductions in the administrative state
- (8) Greater exploitation of the earth's raw materials
- (9) Improved political institutions that encourage entrepreneurship
- (10) Results-based educational systems

Each of these factors affecting productivity requires considerable saving on the part of society and a strong willingness to borrow and use the saving to prepare for the future, i.e. invest.

Saving comes from three sources:

- (1) Individuals:  $Y - \text{Depreciation} - \text{Retained Earnings} - \text{Taxes} - \text{Consumption} = S_1$
- (2) Companies:  $\text{Retained Earnings} + \text{Depreciation} = S_2$
- (3) Government:  $\text{Taxes} - \text{Government Spending} = S_3$

$$S = S_1 + S_2 + S_3 = I_d + I_f = I \quad \longrightarrow \quad Y = C + I_d + G + NX$$



Saving as Percentage of GDP is well correlated with Growth of Real GDP.

An ideal situation is where you have strong growth in *desired* saving and *desired* investment. The, *actual* saving and *actual* investment can then grow in a stable manner letting the productive capacity of the economy grow in a strong and stable manner. The problem is that no one knows how to get such growth in desired saving and desired investment. Much depends on optimism in the country and a willingness to take risks and prepare for the future – Very Hard to Achieve.

# Summary Hour 2

1. Goal of economic policy is to raise consumption stream and lifespan. Best way to do this is to raise output per person. Only reliable way to raise this is to raise productivity, or output per labor hour.
2. Productivity in the US has been growing slowly recently and is very unstable.
3. A short list of things that raise productivity includes greater levels of physical capital, greater levels of human capital, improved technology, expansion of markets through free trade, increased competition in product and labor markets, reduced levels of regulations on business, substantial reductions in the administrative state, greater exploitation of the earth's raw materials, improved political institutions that encourage entrepreneurship, and results-based educational systems.
4. To do these things we need saving. Total national saving is composed of three parts: (i) household saving, (ii) business saving, and (iii) government saving.
5. Policies to increase saving in one category may reduce it in another category.
6. Very important to remember the distinction between planned saving and actual saving, as well as planned investment and actual investment. Our goal must be to raise planned investment and planned saving together.

## Next up: Challenges to the US Economy

1. Debts and deficits
2. The effect of automation
3. Interest rate and Fed balance sheet normalizations
4. Trade issues\*
5. Social security viability
6. Immigration Problems