The Dynamic Effects of Fiscal Policy

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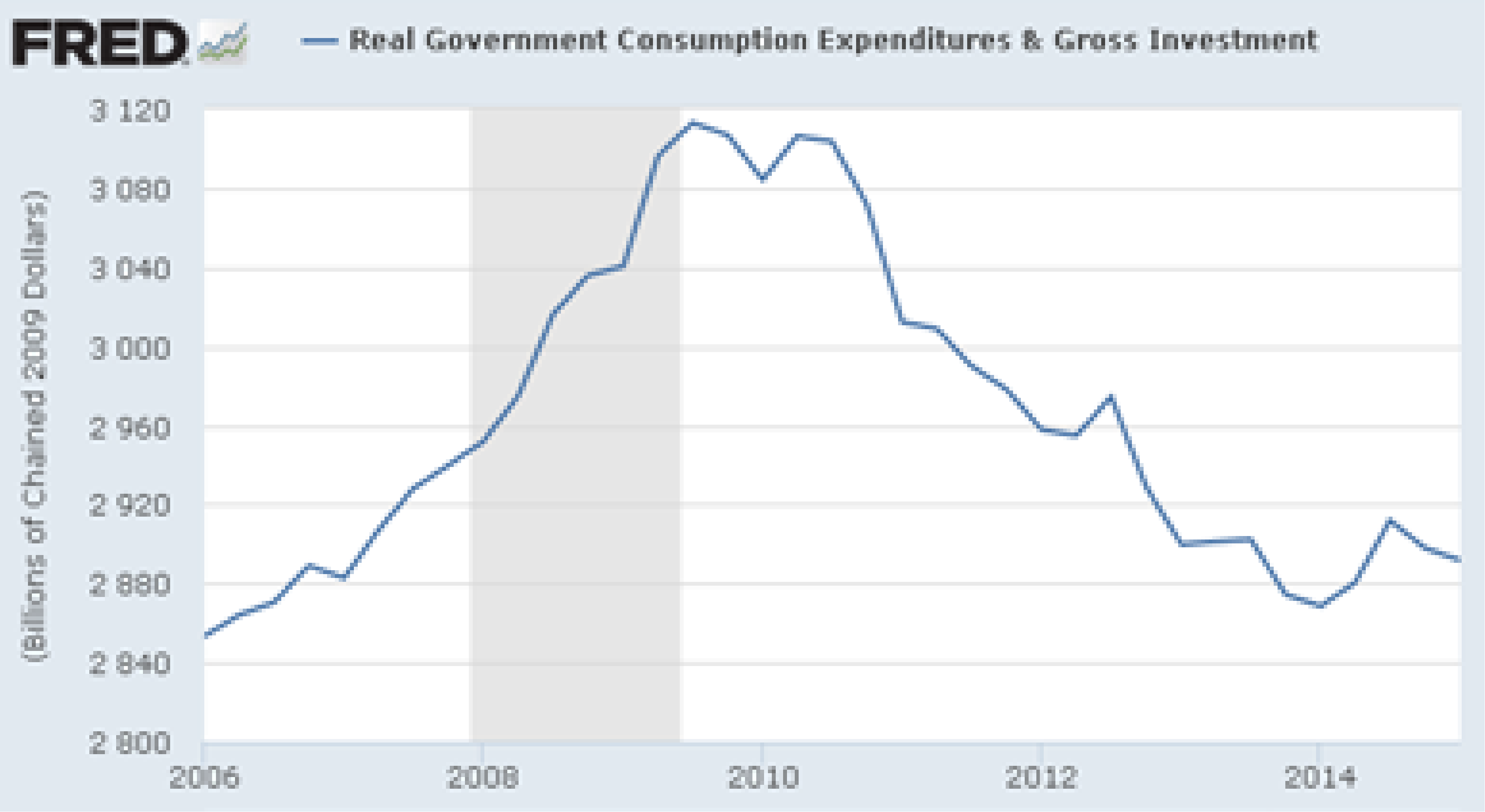
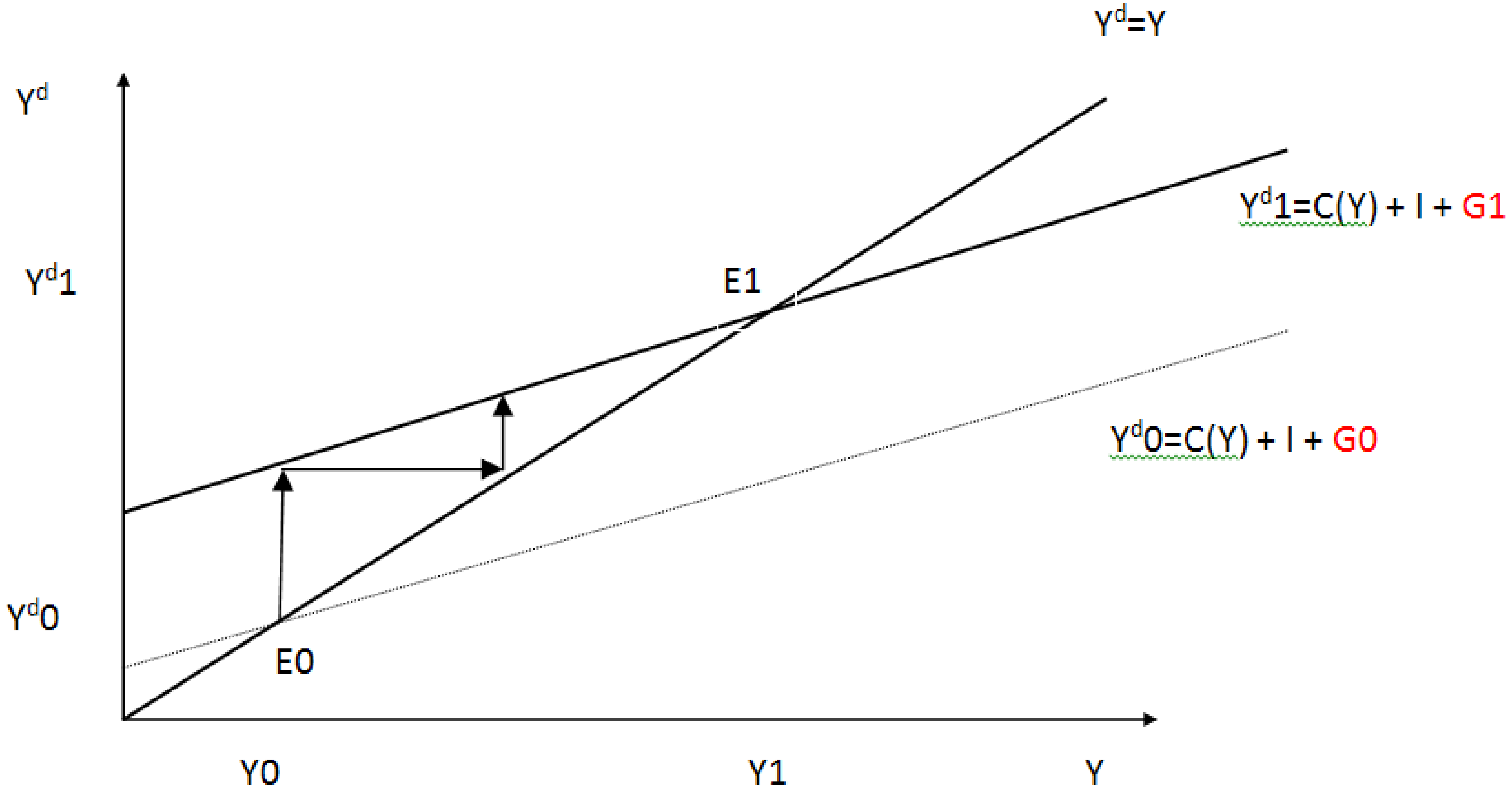
I. **The real world background** – the recent US experience

1. Increases in government spending in 2009 and 2010, followed by **decreases in 20011-3** to a level below the initial 2008 level:


FRED
Real Government Consumption Expenditures & Gross Investment
3 120
3 080
3 040
3 000
2 960
2 920
2 880
2 840
2 800
(Billions of Chained 2009 Dollars)
2006
2008
2010
2012
2014

2. The expected effects according to static Keynesian analysis

a) Increases in government spending in 2009 and 2010 => (multiplier) increases in C, Y and employment in 2010:

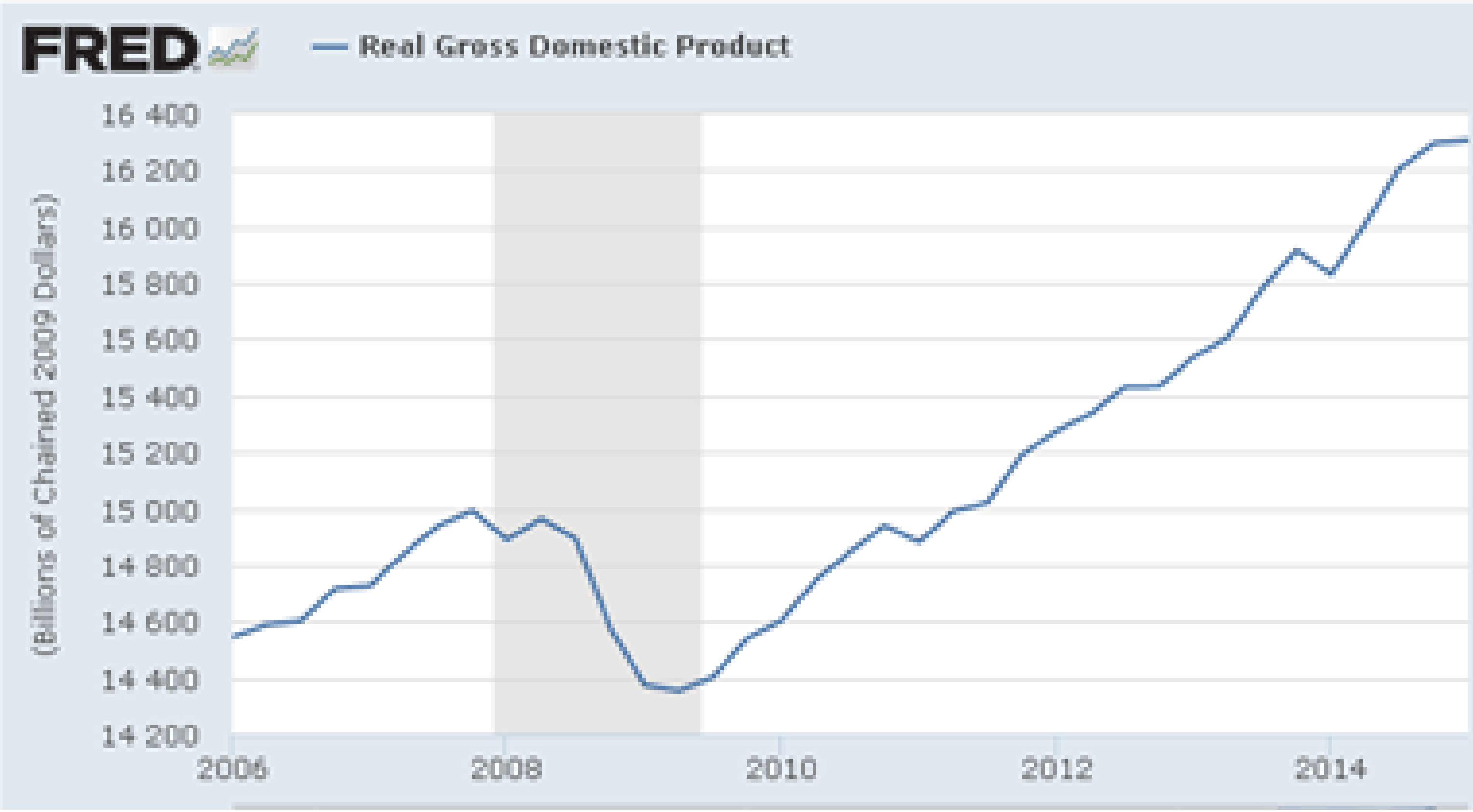

Y^d=Y
Y^d
Y^d1
Y^d0
Y^d1=C(Y) + I + G1
Y^d0=C(Y) + I + G0
E1
E0
Y0
Y1
Y

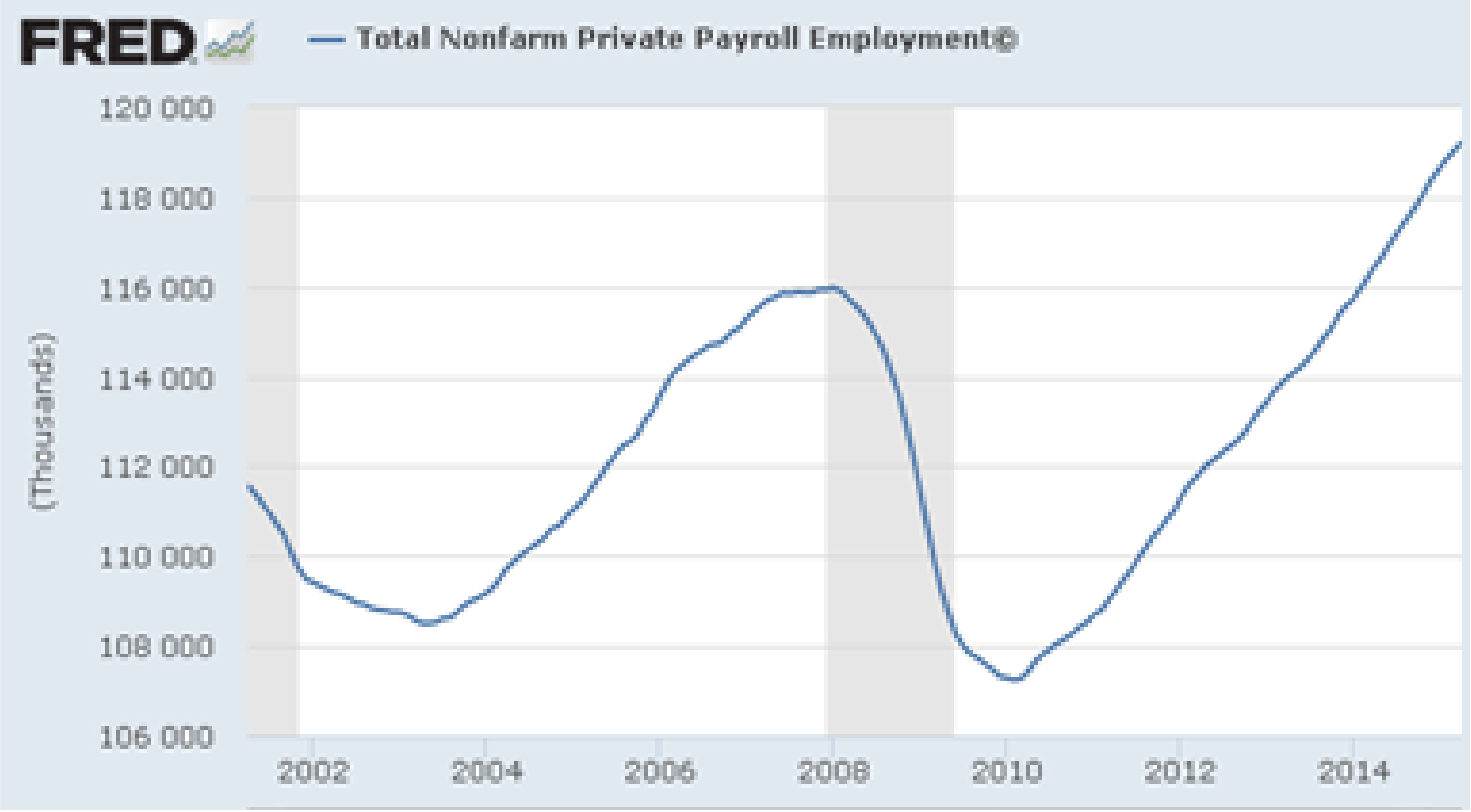
b) Decreases in government spending in 2011, 2012, 2013 => (multiplier) decreases in C, Y and employment in 2011-4.

3. What actually happened:

– increases in output and employment in 2010

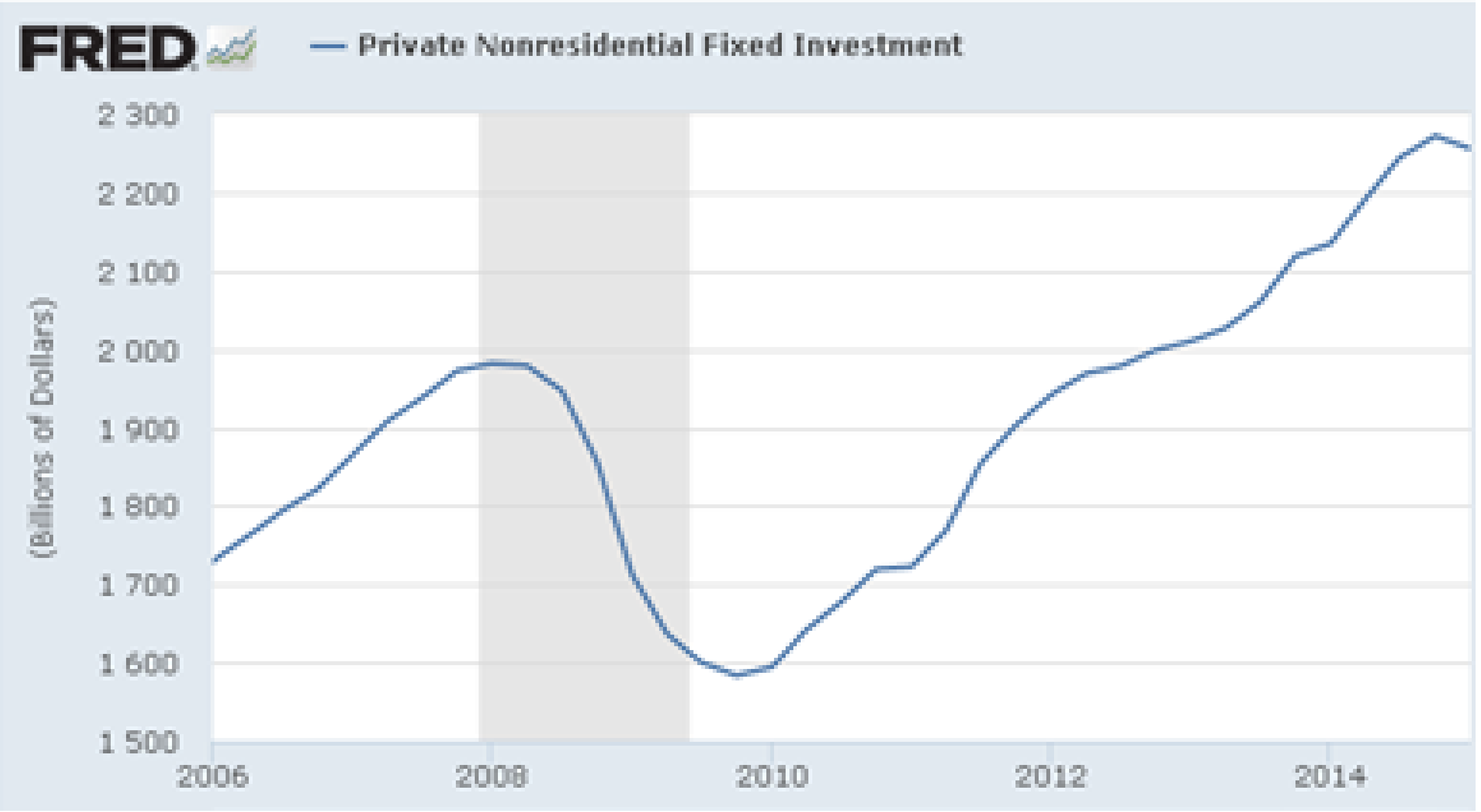
- followed by further increases in output and employment in 2011-4 - despite the successive declines in government spending:


FRED
Real Gross Domestic Product
(Billions of Chained 2009 Dollars)
16 400
16 200
16 000
15 800
15 600
15 400
15 200
15 000
14 800
14 600
14 400
14 200
2006
2008
2010
2012
2014


FRED
Total Nonfarm Private Payroll Employment©
120 000
118 000
116 000
114 000
112 000
110 000
108 000
106 000
(Thousands)
2002
2004
2006
2008
2010
2012
2014

4. What made this possible?

The **successive increases in private non-residential investment since 2011:**


FRED
Private Nonresidential Fixed Investment
(Billions of Dollars)
2 300
2 200
2 100
2 000
1 900
1 800
1 700
1 600
1 500
2006
2008
2010
2012
2014

II. But what led to these successive increases in private investment? My proposed answer: the dynamic effects of fiscal policy.

1. In the first year, ↑ G:

⇒ (through the multiplier) ↑ output

≠> ↑ I, because I takes time to react to changes in the level of economic activity.

2. But in the 2nd year investment responded to the greater level of activity of the first year.

Indeed, the ↑ output in the first year had several favourable implications on firms’ willingness and financial capacity to invest in the 2nd year:

1st) ↑ utilization of firms’ K stock => ↑ willingness of firms to ↑K, ie, to make new I.

2nd) Amplified ↑ profits.

The reason: because of fixed costs, when ↑ output ↑ sales revenues > ↑ production costs.

In turn, the amplified ↑ profits =>

a)↑ firms' capacity to finance new I from internal sources =>

⇒↑ firms' capacity to obtain credit to finance new I

(the reason: each extra euro a firm uses to finance new I makes banks willing to grant it extra credit of, say, 2 euros).

b) ↑ expected profits =>

- ↑ firms' willingness to make new I.
- ↑ banks' willingness to extend credit to new I.

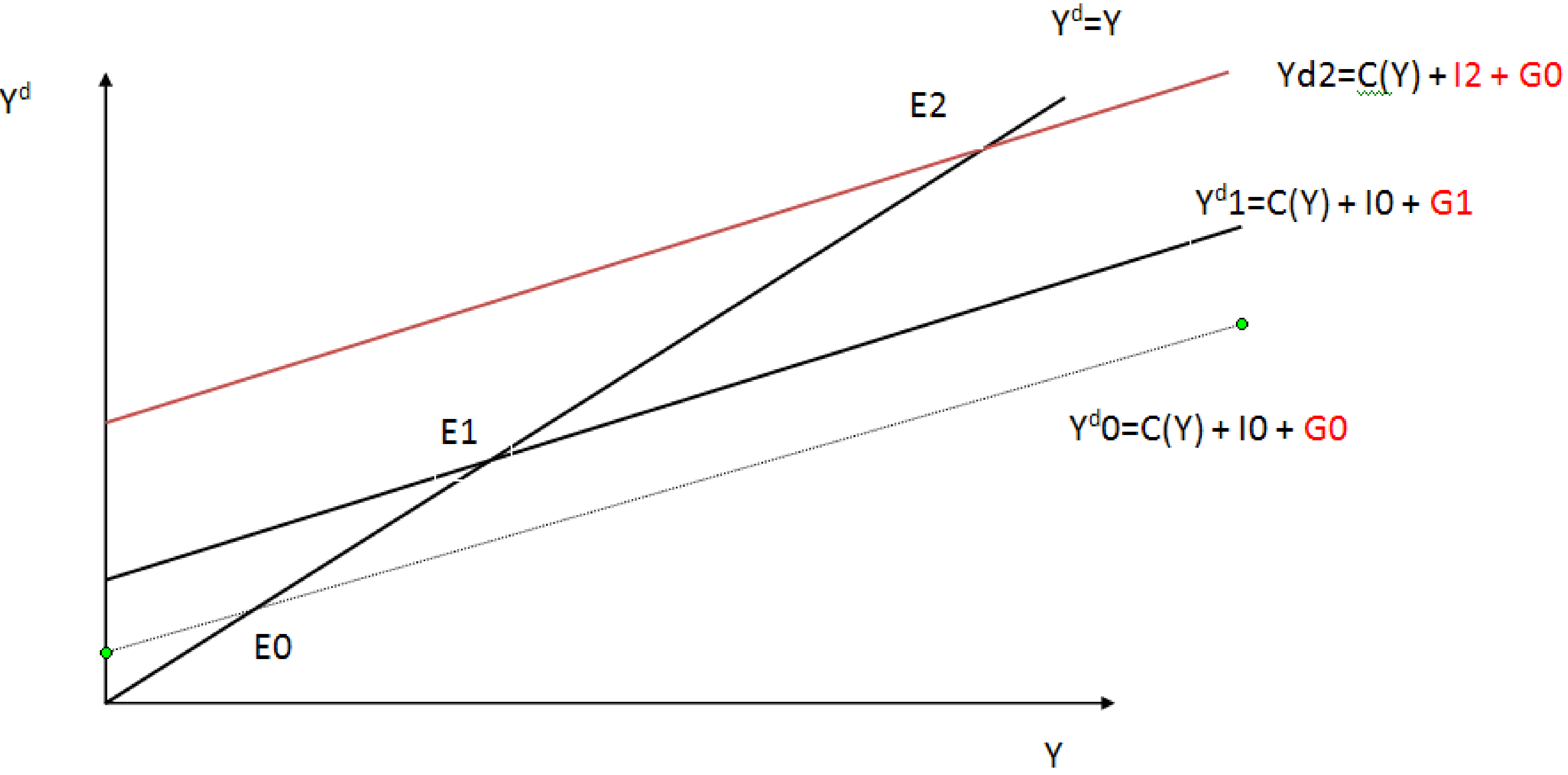
3.So: given the ↑ I in the 2^{nd} year, what happened to economic activity?

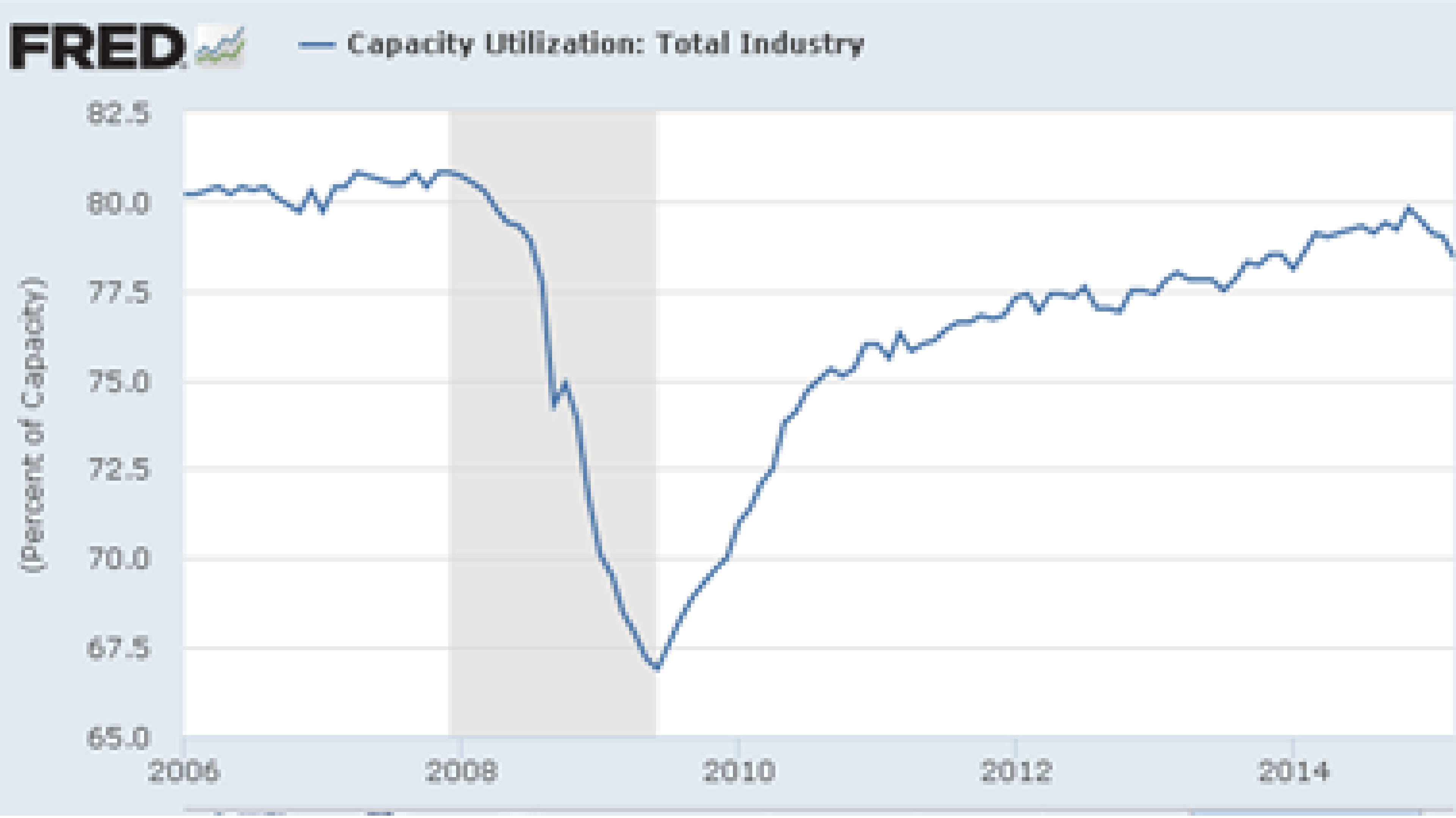
Suppose that in this 2^{nd} year, ↓ G back to its initial level.

In this case, the evolution of activity depended on which of the two was greater: ↑ I or ↓ G.

4. If ↑ I > ↓ G, in the 2^{nd} year there was a 2^{nd} upward shift in the AD curve:

A 2^{nd} positive stimulus to AD that, through the multiplier, led to increases in output, C, **utilization and profits in the 2^{nd} year.**


$Y^d=Y$
$Yd2=C(Y) + I2 + G0$
Y^d
E2
$Y^d1=C(Y) + I0 + G1$
E1
$Y^d0=C(Y) + I0 + G0$
E0
Y


FRED
Capacity Utilization: Total Industry
82.5
80.0
77.5
75.0
72.5
70.0
67.5
65.0
(Percent of Capacity)
2006
2008
2010
2012
2014

5. In turn, the increases in utilization and profits in the 2nd year

led to a 2nd increase in investment in the 3rd year,

and so on:

A self-sustained boom based in essence on the following feedback causality:

↑ I => ↑ utilization, ↑ profits => ↑I =>…

A boom whose trigger was an initial ↑ G that was soon afterwards reversed.

Final note - the following Harrod's insight was the key driver implicit in the boom just described:

Firms respond to ↑ utilization by ↑ I to ↑ capacity,

and thereby ↓ utilization to the initial level.

But, in doing this, they unconsciously provoke a macroeconomic effect:

– ↑ I => (by the multiplier) ↑ AD.

And since the multiplier = 1.5 > productivity K = 1/12,

The effect of ↑ I on AD > than its effect on capacity=>

⇒↑ utilization instead of ↓ utilization,

A fact that induces firms to ↑ I once again, and so on.