The Corporate Saving Glut in the Aftermath of the Global Financial Crisis

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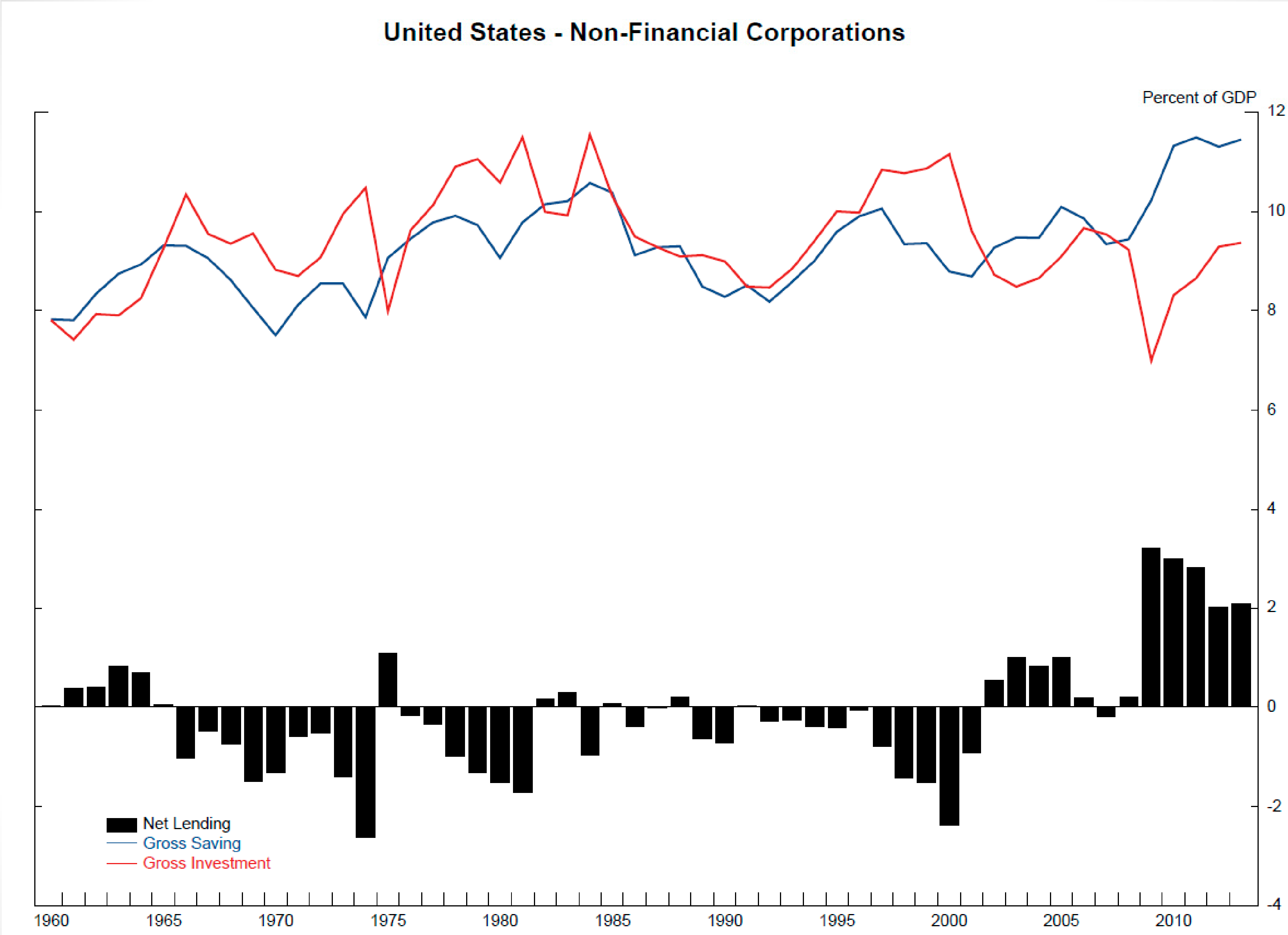
The Corporate Saving Glut

- In lead up to crisis Global Saving Glut (GSG) received attention.
- Excessive emerging market saving, relative to investment, held back aggregate global demand and put downward pressure on interest rates.
- Less examined was the large increase in saving relative to investment by non-financial corporations in the US and globally starting in the early 2000s.
  - Loeys et. al. (2005); IMF (2006); Andre et.al. (2007) .



United States - Non-Financial Corporations
Percent of GDP
12
10
8
6
4
2
0
-2
-4
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
Net Lending
Gross Saving
Gross Investment

Definition of Net Lending

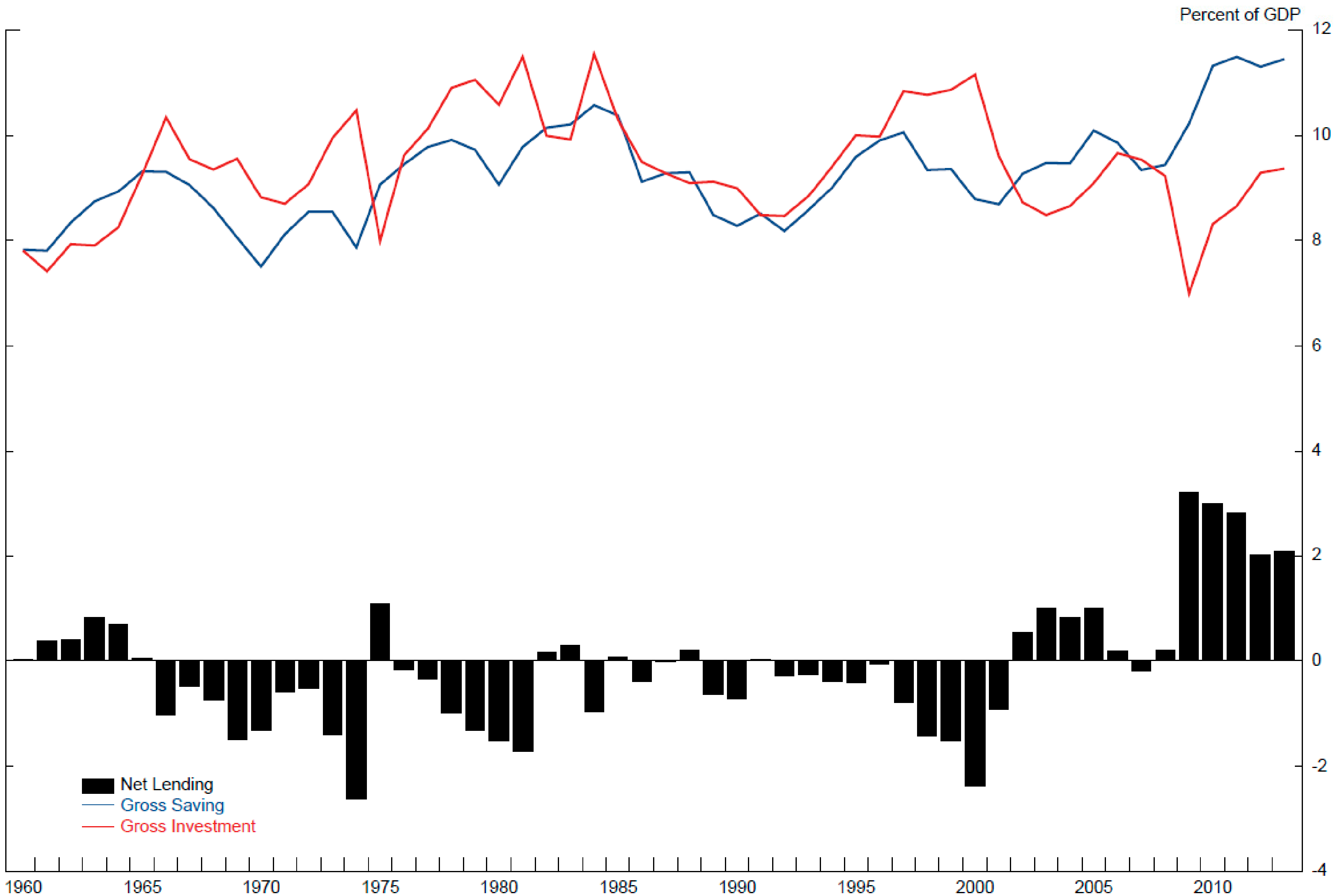
- Net lending = Saving – Investment

  = ΔFinancial Assets - ΔFinancial Liabilities

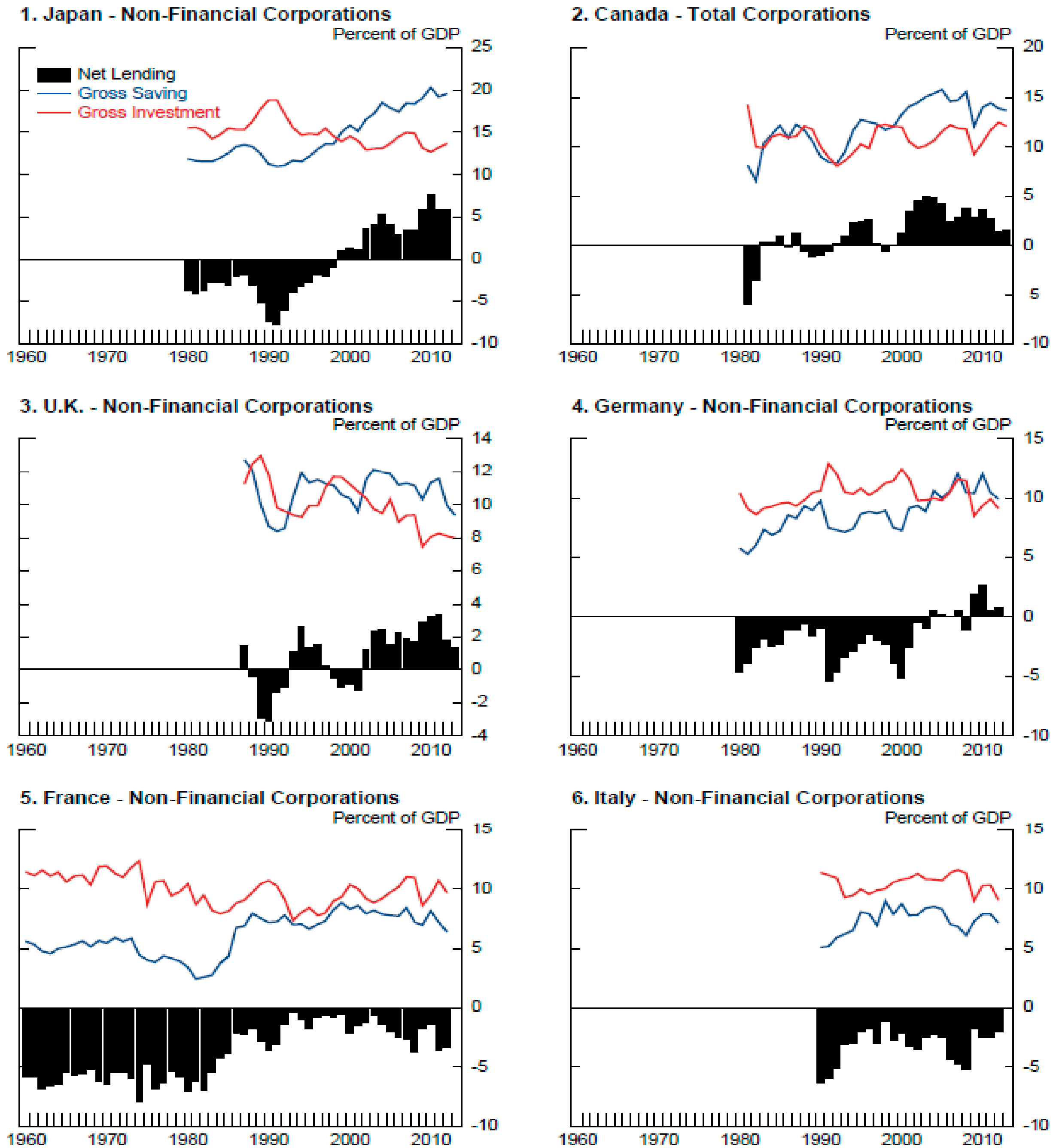
- Saving is equal to the undistributed profits of the firm, or:

  Saving = Profits – Dividends

United States - Non-Financial Corporations



G-7 Net Lending



Why might higher corporate net lending matter?

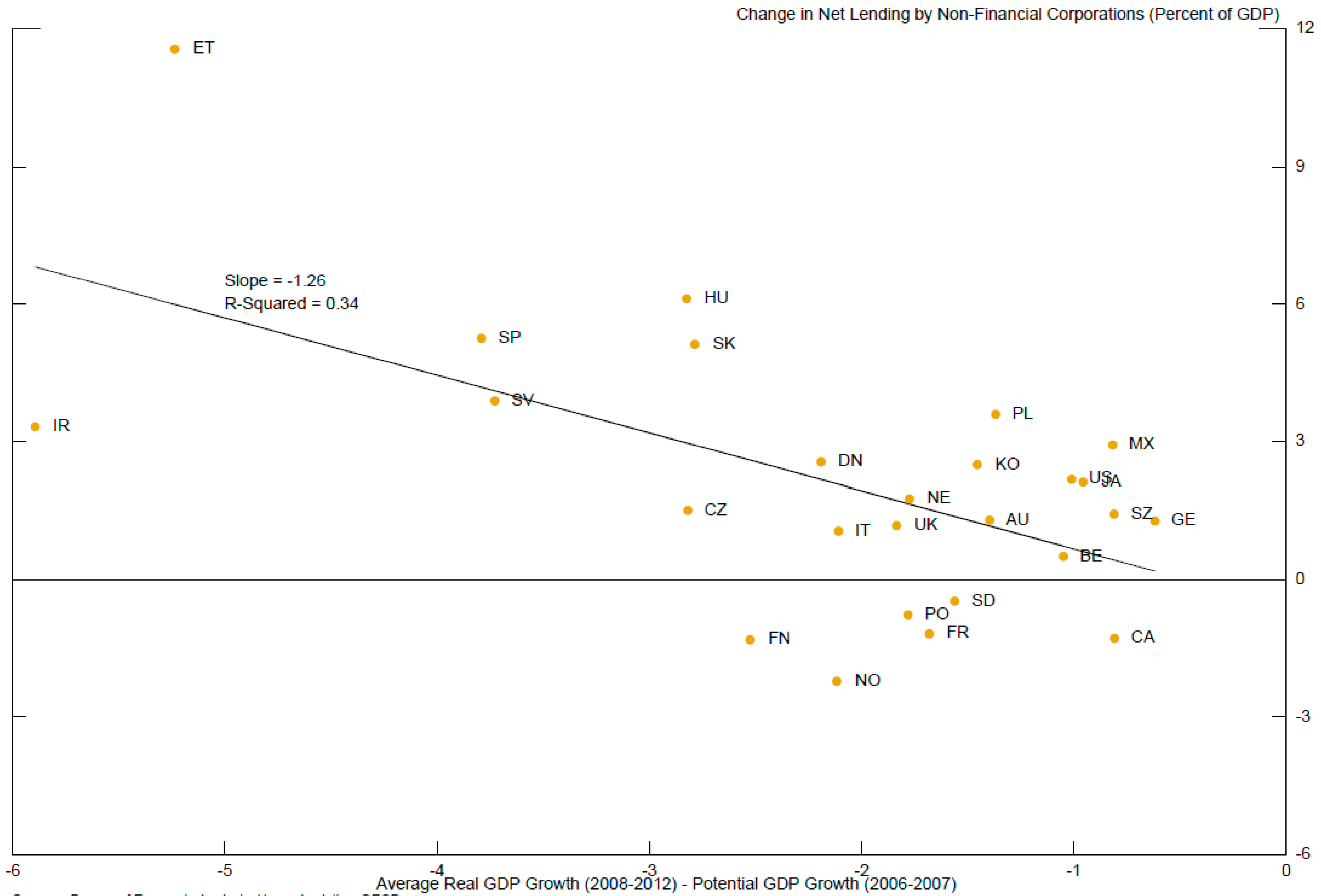
- Depends on why the surge took place:
- Possibility #1:
  - **Cyclical:** reflects endogenous response of investment to recession and weak recovery.
- Possibility #2:
  - **Cyclical +:** financial turbulence/uncertainty boosted corporate caution; firms reduced investment and hoarded profits to strengthen balance sheets.
- Possibility #3:
  - **Structural:** Secular Stagnation. Low potential growth (or other factors) depresses investment. High corporate saving contributes to decline in real interest rates.

Literature has focused on Investment

- Large literature on post-crisis response of investment. Largely attempting to distinguish between Possibility #1 (Endogenous to the cycle) and Possibility #2 (additional drag from uncertainty and deleveraging).

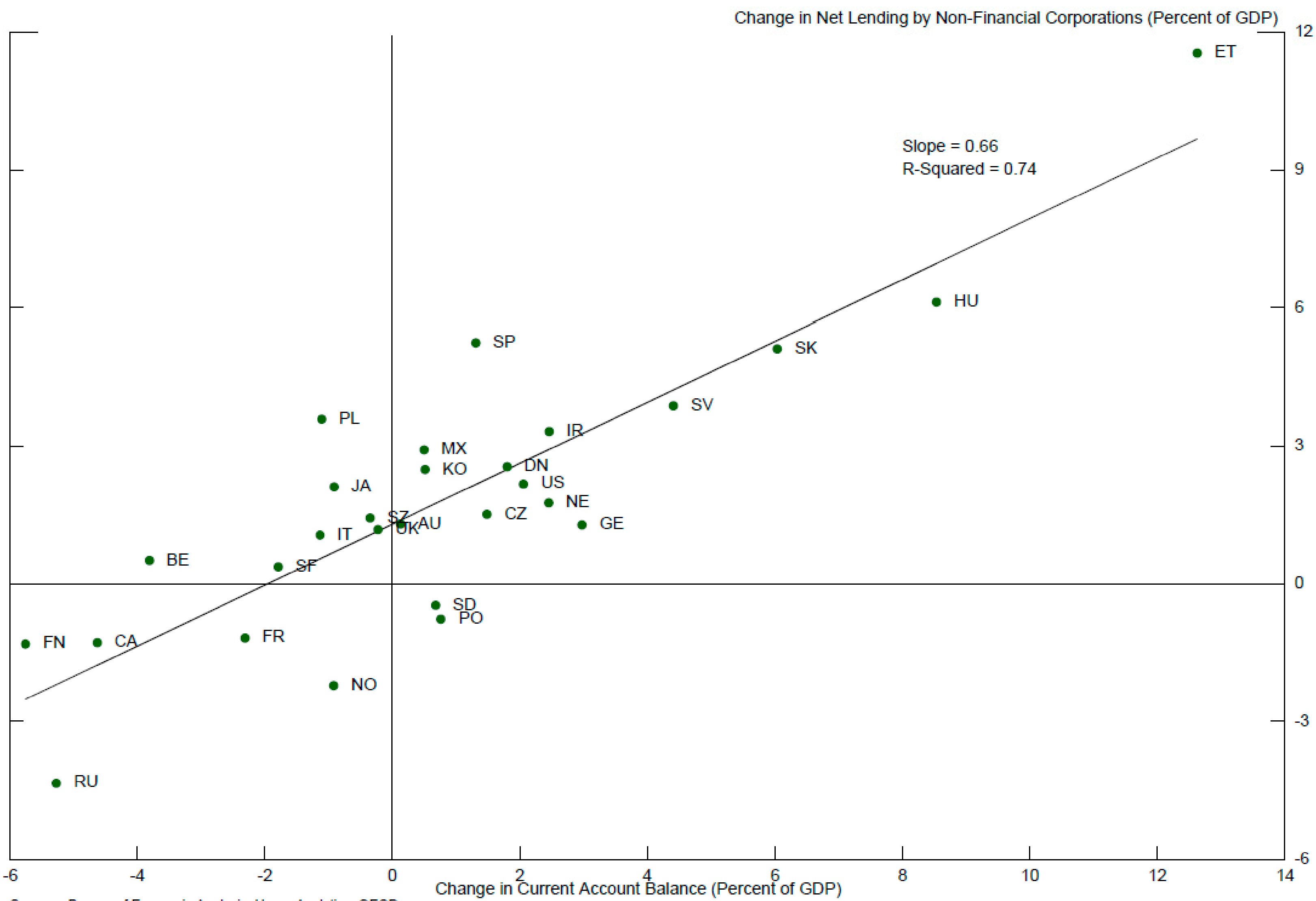
- Arguing for possibility #1:
  - IMF (2015)
  - Pinto and Tevlin (2014)
- More sympathy for possibility #2:
  - Lewis, Pain, Strasky, Menkyna (2014)
  - Banerjee, Kearns, and Lombardi (2015)
- A few earlier studies look at corporate net lending directly.
  - Loeys, et al. (2005)
  - IMF (2006)
  - Andre, et al. (2007)

Net Lending and Real GDP Growth, 2009-present vs. 2002-2005



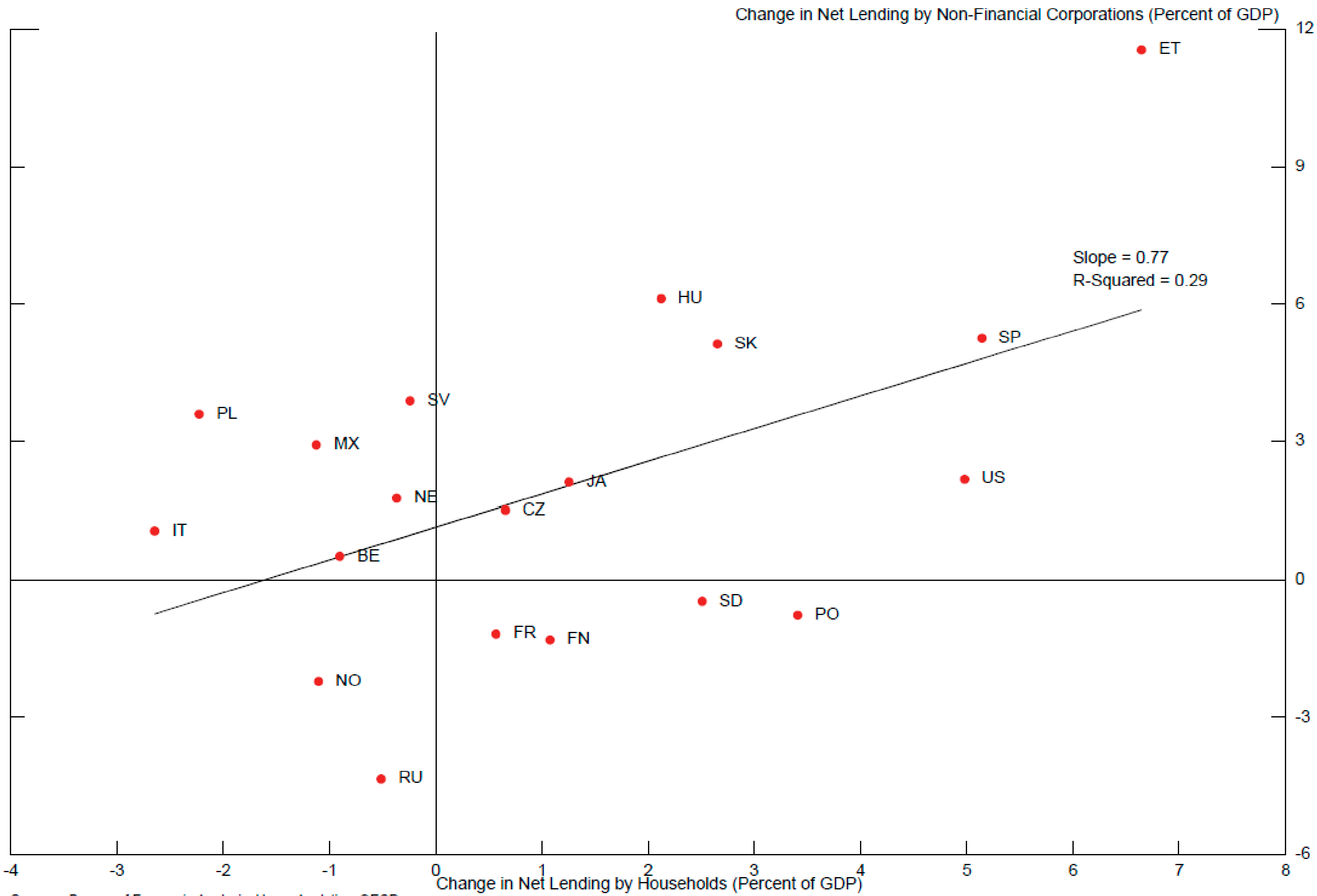
Sources: Bureau of Economic Analysis; Haver Analytics; OECD.

Net Lending and Current Accounts, 2009-present vs. 2002-2005



Sources: Bureau of Economic Analysis; Haver Analytics; OECD.

Change in Net Lending by Non-Financial Corporations, 2009-present vs. 2002-2005



Sources: Bureau of Economic Analysis; Haver Analytics; OECD.

Allocation of Profits

- In our empirical work we rearrange the net lending identity in order to focus on the allocation of profits across different uses.

- Starting from:

$$\text{Saving} = \text{Investment} + \Delta\text{Financial Assets} - \Delta\text{Financial Liabilities}$$

$$\text{Profits} - \text{Dividends} = \text{Investment} + \Delta\text{Financial Assets} - \Delta\text{Financial Liabilities}$$

- We can decompose profits into its three separate uses (investment, payouts to shareholders, and balance sheet adjustments):

$$\text{Profits} = \text{Investment} + \text{Payouts} + \Delta\text{ Net Financial Assets}$$

where

$$\text{Payouts} = \text{Dividends} + \text{Equity Buybacks}$$

and

$$\Delta\text{ Net Financial Assets} = \Delta\text{Financial Assets} - \Delta\text{Financial Debt Liabilities}$$

Allocation of Profits

- Why look at the allocation of profits?

1. Combining dividends and buybacks into "payouts" groups economically equivalent concepts.
    - Potential problem with standard definition of net lending is that reallocation from dividends to equity buybacks boosts measured net lending.
    - Jauch (2012) argues that apparent Corporate Saving Glut is due to switch toward buybacks.
2. Payouts to investors are an item of interest.
    - A common argument for secular stagnation is that investor payouts are displacing investment. Our approach will allow us to examine the behavior of payouts directly.

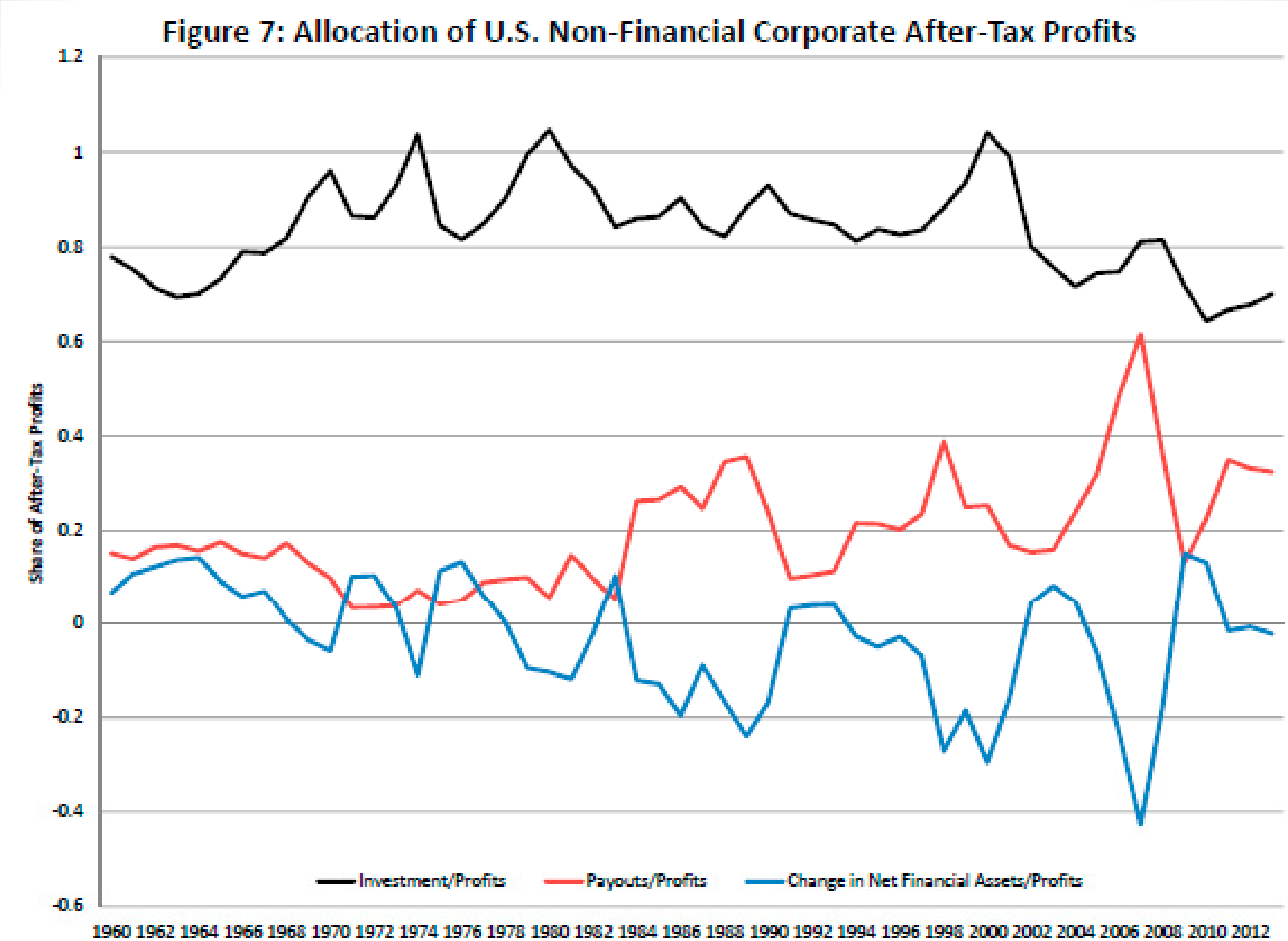
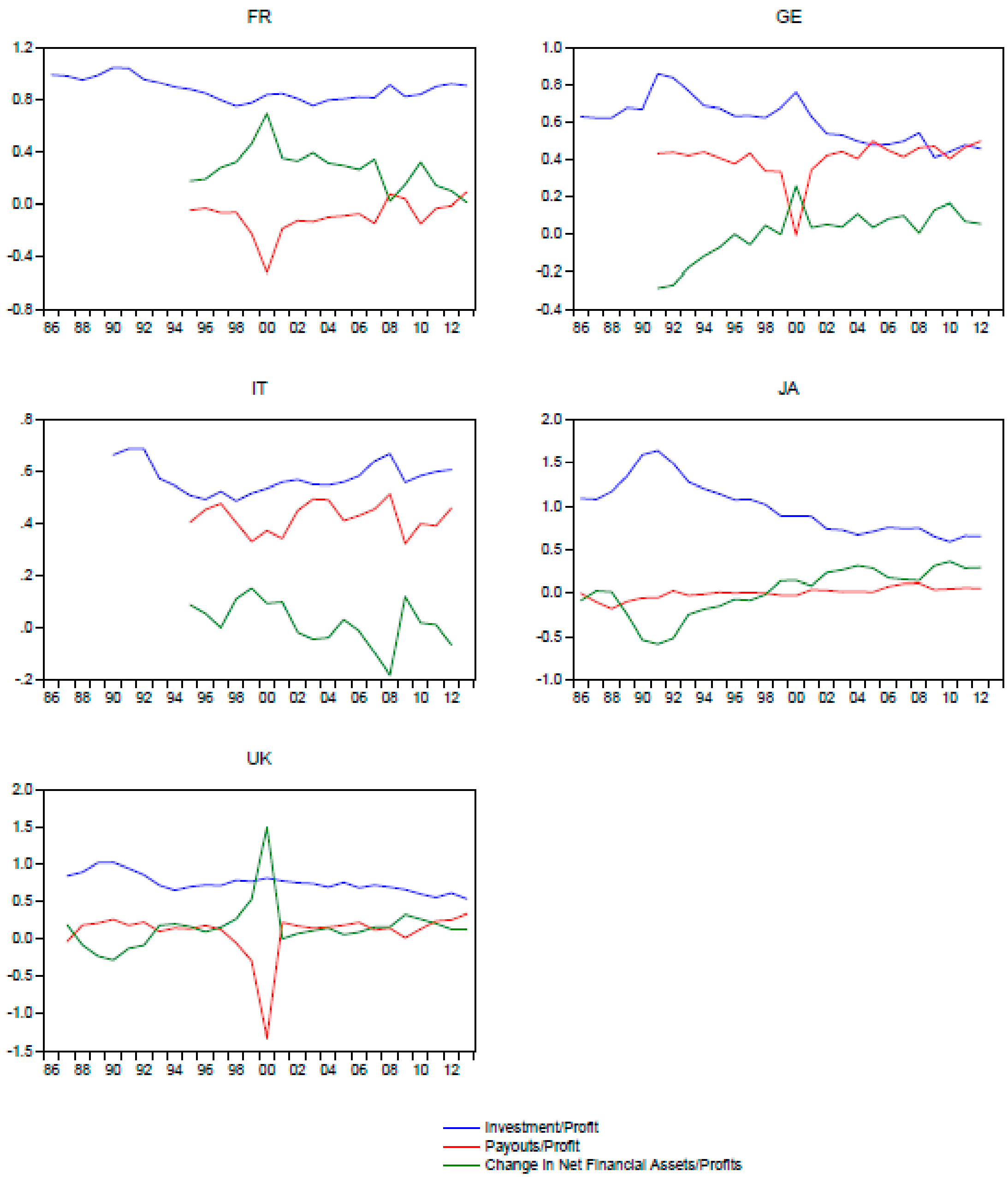


Figure 7: Allocation of U.S. Non-Financial Corporate After-Tax Profits
Share of After-Tax Profits
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
1960 1962 1964 1966 1968 1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012
Investment/Profits
Payouts/Profits
Change in Net Financial Assets/Profits

Figure 8: Allocation of Non-Financial Corporate After-Tax Profits



Econometric estimation

- G6 countries for which suitable data available: France, Germany, Italy, Japan, US, and UK
- Estimate times series regressions for U.S. individually and panel regressions for G6 linking investment, payouts, and change in net financial assets to standard macroeconomic determinants; estimation samples through 2001, 2006, and 2013.
- Compare actual and model-predicted paths to determine whether investment, payouts, and change in net financial assets exhibited unusual responses to recession before /during/ after the GFC.

Econometric estimation

- OLS regressions.
- Annual data from 1961 to 2013, depending on country.
- Estimate U.S. time series and G6 panel.
- Dependent variables are non-financial corporate data for:
    - Investment
    - Payouts
    - Δ Net Financial Assets.
- Both as a ratio to GDP and as a share of Profits.

Independent Variables

- Use lagged values to lessen endogenity.
- Variables
  - Real GDP growth
  - Real Interest Rate (10-year sovereign yield)
  - Relative Price of Investment Goods
  - Share of Intangibles in Investment
    - Decrease investment, Increase saving – Firms have to self-finance difficult-to-collateralize capital.
  - Profit growth.
- Panel
  - Includes country fixed effects.
  - Also includes demographics (percent pop. over 65)

Table 2c: United States 1961 - 2013

Dependent Variable:	(1) Investment/GDP	(2) Payouts/GDP	(3) Δ Net Financial Assets/GDP
Time Trend	**0.001**	0.000	**-0.001**
	3.153	-0.717	-2.363
Lagged Dependent	**0.666**	**0.546**	**0.346**
	6.581	3.472	2.648
Real Growth (-1)	**0.086**	0.035	**-0.214**
	3.383	0.476	-3.570
Real Interest Rate (-1)	0.000	**0.001**	**-0.001**
	-0.359	1.877	-1.730
Relative Investment Price (-1)	-0.003	**-0.085**	**0.075**
	-0.204	-2.074	1.840
Proportion of Intangibles in Investment	**-0.133**	-0.186	**0.339**
	-2.970	-1.591	3.126
Profit Growth (-1)	0.011	**0.051**	0.028
	1.093	2.269	0.943
# Observations	53	53	53
R^2	0.88	0.67	0.68
SER	0.003	0.008	0.008
DW Stat	1.54	1.64	1.94

Note: All regressions include an unreported constant. Red bold indicates significance at the 10 percent level.
T-statistics reported under coefficients

Table 3c: Share of Profits- United States 1961 - 2013

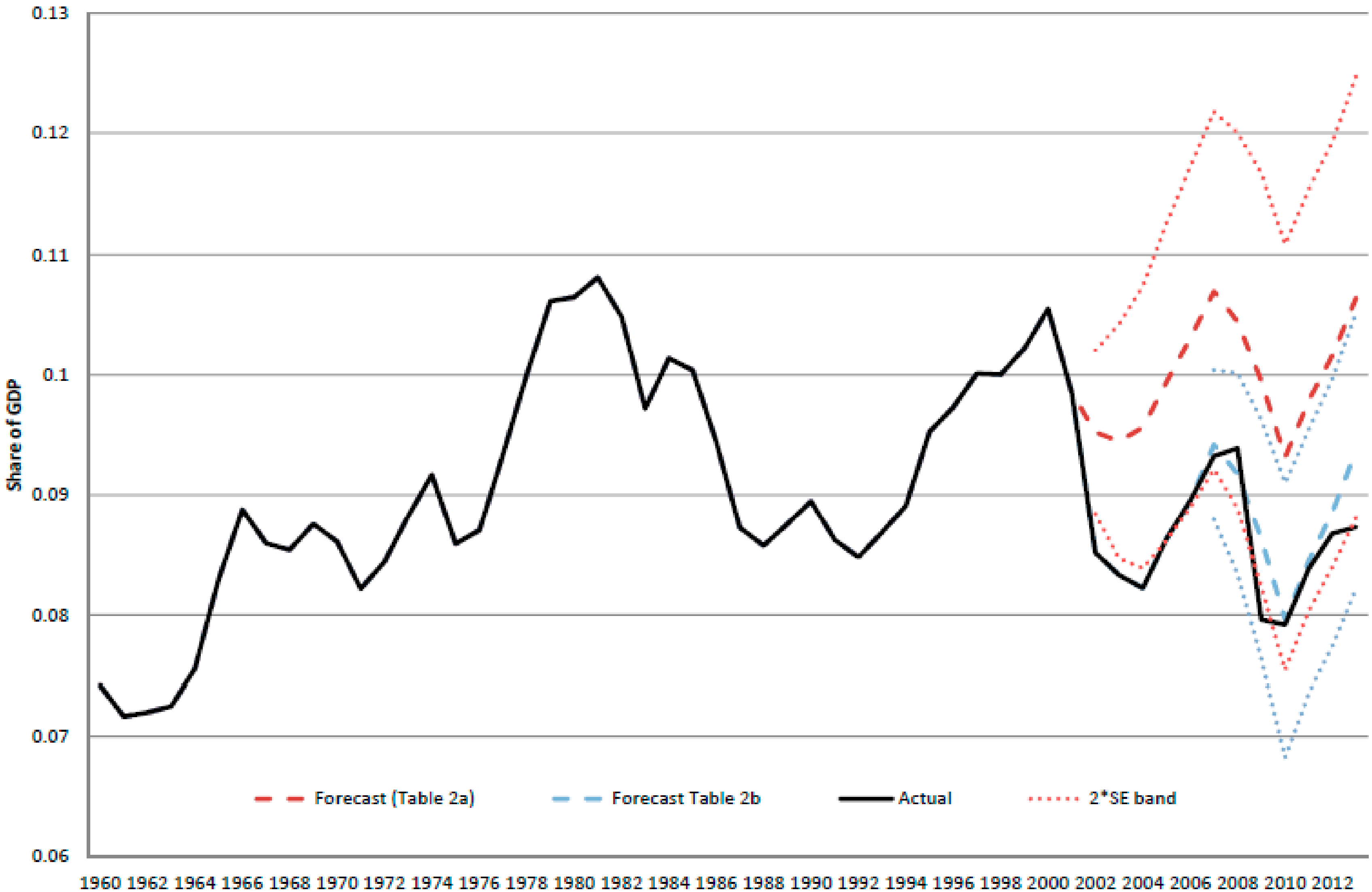
Dependent Variable:	(1) Investment/Profits	(2) Payouts/Profits	(3) Δ Net Financial Assets/Profits
Time Trend	**0.004**	**0.003**	**-0.008**
	2.061	1.617	-2.951
Lagged Investment/Profits	**0.748**	**-0.690**	-0.058
	5.945	-5.802	-0.393
Lagged Payouts / Profits	0.001	**0.274**	**-0.275**
	0.016	1.830	-1.811
Real Growth (-1)	**1.693**	-0.108	**-1.585**
	4.726	-0.173	-2.361
Real Interest Rate (-1)	-0.001	**0.021**	**-0.020**
	-0.208	3.177	-2.392
Relative Investment Price (-1)	-0.007	**-0.688**	**0.694**
	-0.035	-2.149	1.955
Proportion of Intangibles in Investment	**-0.962**	**-2.366**	**3.328**
	-1.920	-2.660	3.598
Profit Growth (-1)	-0.189	-0.201	0.390
	-1.084	-1.002	1.380
# Observations	53	53	53
R^2	0.79	0.76	0.71
SER	0.046	0.060	0.070
DW Stat	2.02	1.76	2.07

Note: All regressions include an unreported constant. Red bold indicates significance at the 10 percent level.
T-statistics reported under coefficients

Out-of-sample projections

- Estimate model through both 2001 and 2006.
- Compute projections for 2002-2013 and 2007-2013.
- Dynamic simulations: prediction for dependent variable used as lagged value for subsequent year.

Figure 9: U.S. Investment / GDP (Tables 2a and 2b)



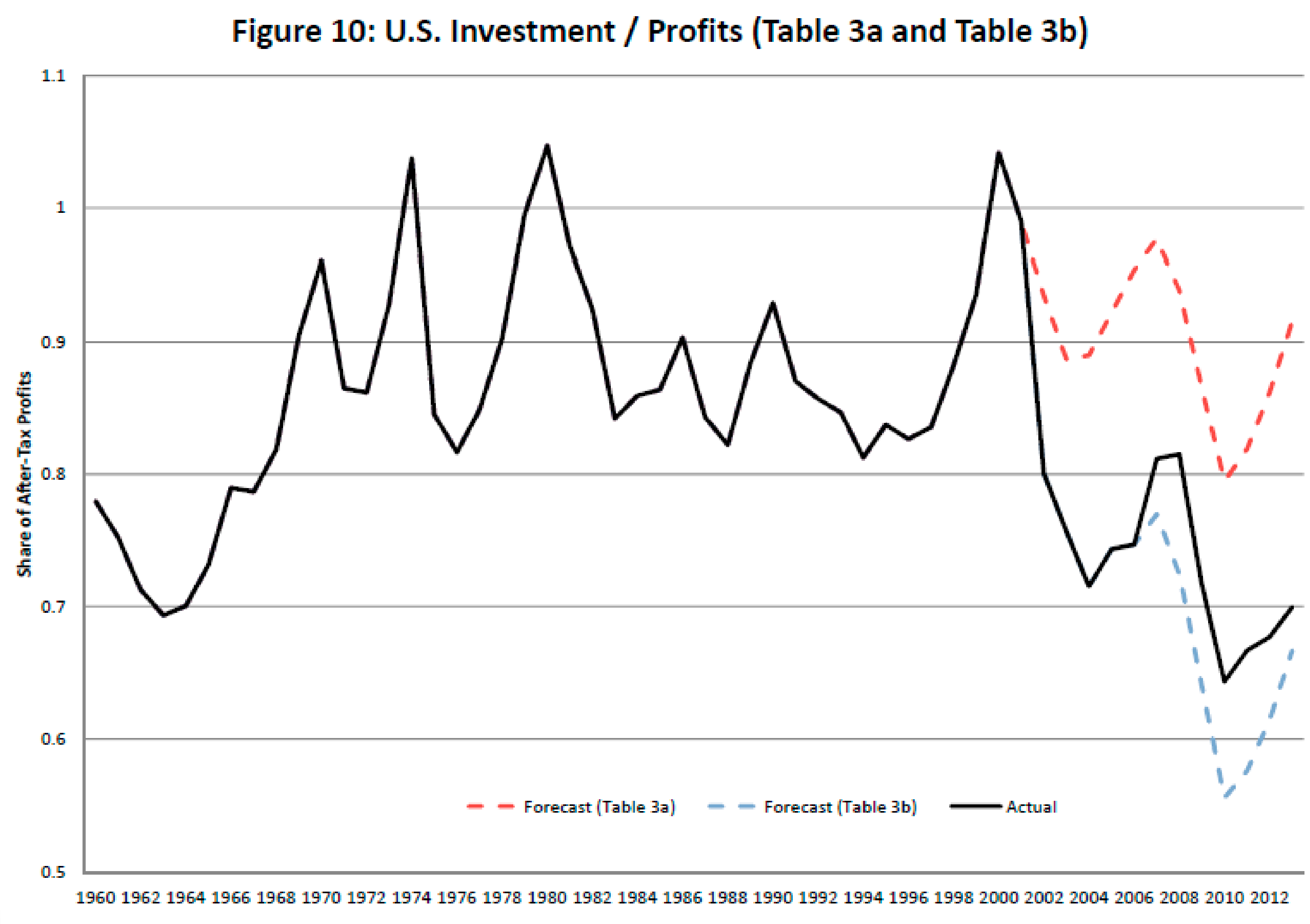


Figure 10: U.S. Investment / Profits (Table 3a and Table 3b)
Share of After-Tax Profits
1.1
1
0.9
0.8
0.7
0.6
0.5
1960 1962 1964 1966 1968 1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012
Forecast (Table 3a)
Forecast (Table 3b)
Actual

Figure 12: Investment/Profit Panel (Tables 5a and 5b)

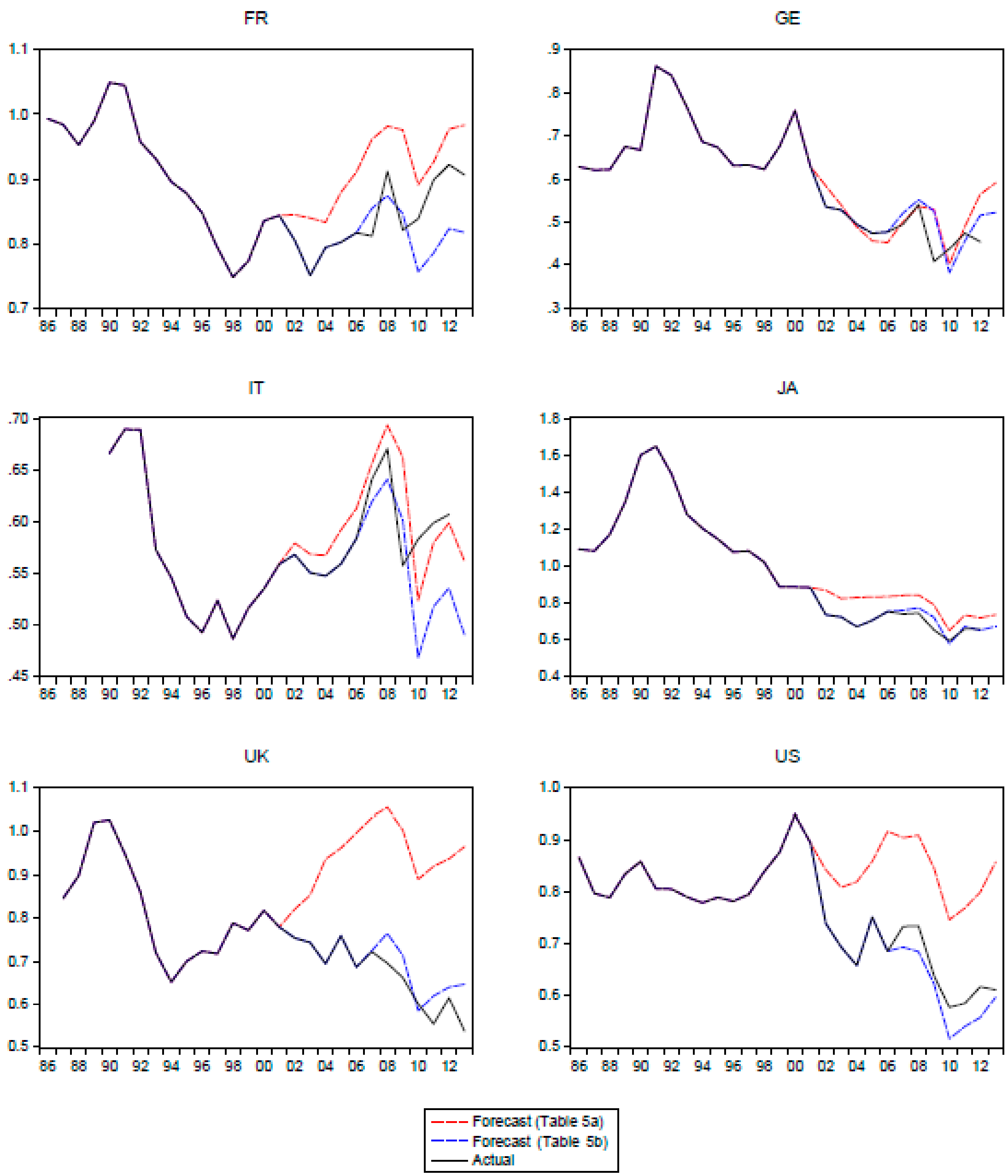
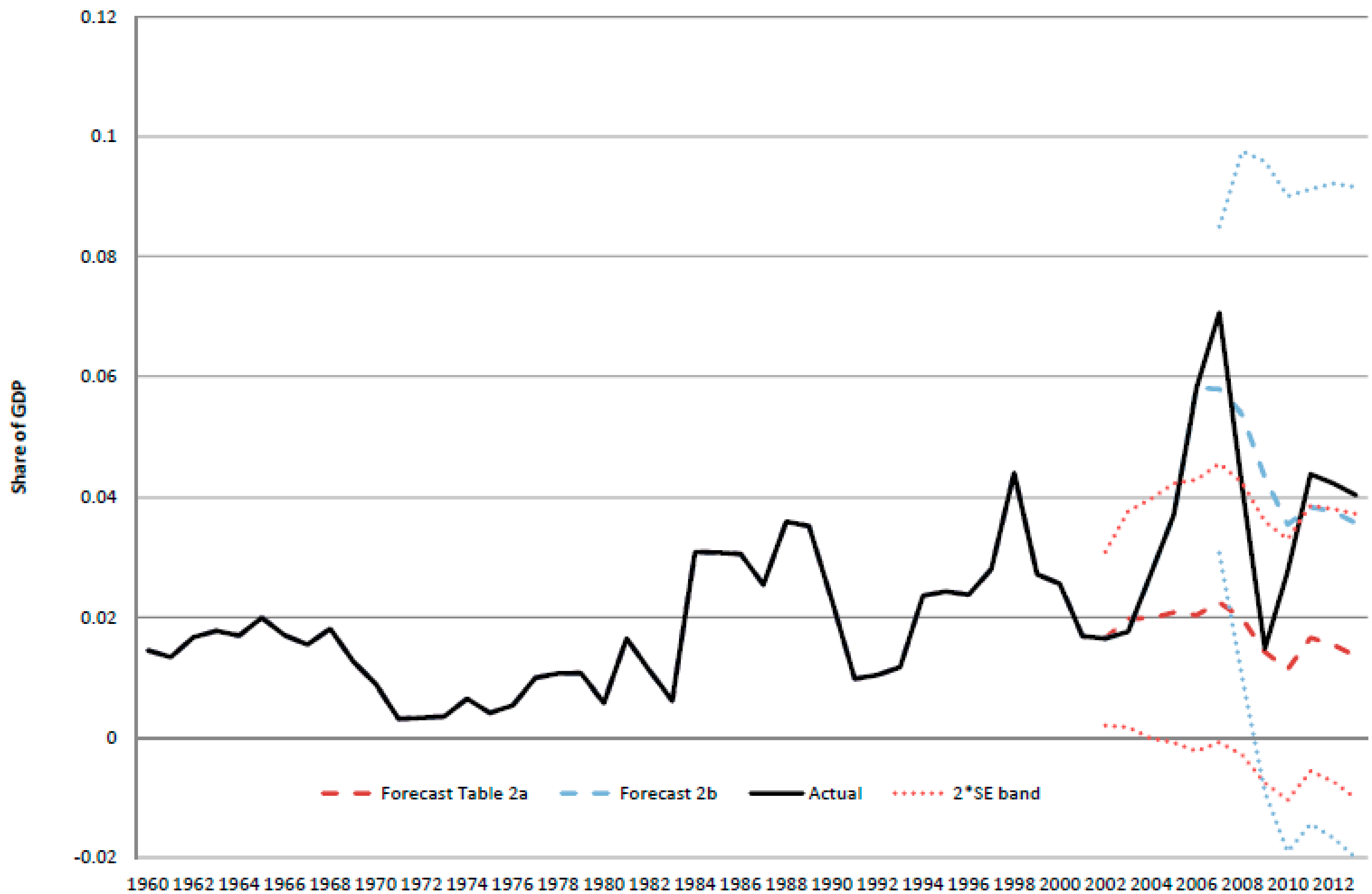


Figure 13: U.S. Payouts / GDP (Table 2a and 2b)



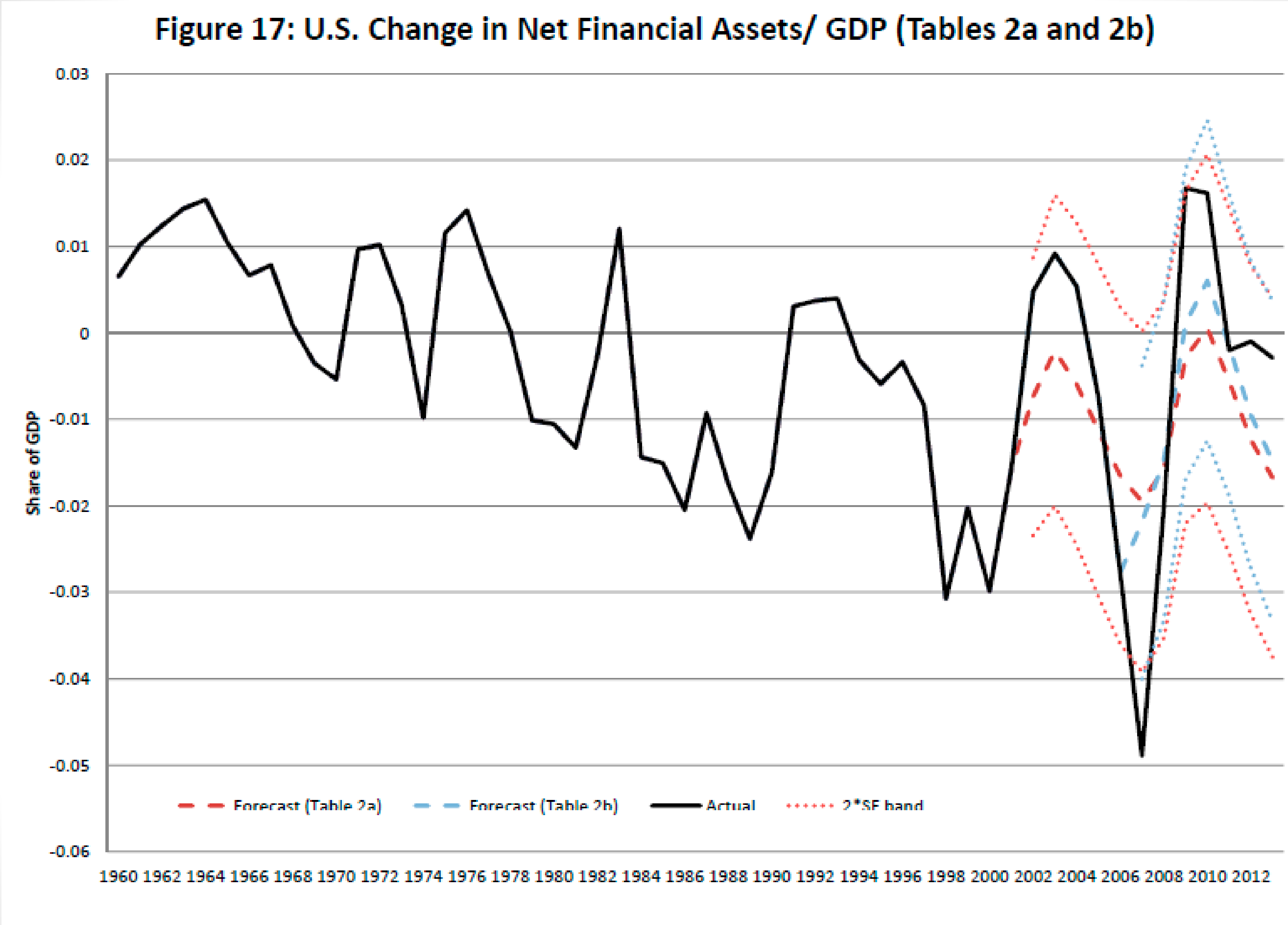


Figure 17: U.S. Change in Net Financial Assets/ GDP (Tables 2a and 2b)
Share of GDP
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
1960 1962 1964 1966 1968 1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012
Forecast (Table 2a)
Forecast (Table 2b)
Actual
2*SE band

Out-of-sample projections

Conclusions:

- Post-crisis dynamics of U.S. and other G6 **investment**, **payouts**, and **change in net financial assets** largely in line with fundamentals.
  - Both as a share of GDP and share of corporate profits.

- However, compared to earlier norms (1960-2001),:
  - **Investment** has been unexpectedly weak,
  - while investor **payouts** have been unexpectedly high,
  - and **change in net financial assets** unexpectedly strong.
  - Most apparent in the U.S., U.K., and France. Less apparent in other G6.

Conclusion

- Non-Financial Corporate Net Lending has increased. Most apparent post-GFC, but also prior to the crisis.
- We find that most of the post-GFC increase in corporate net lending, and decrease in investment, was an endogenous response to weak activity.
- However, we found that going into the GFC, investment had already fallen below predicted levels.
- This weakness unlikely to have resulted from corporate caution as payouts to investors have been abnormally high.
- The corporate saving glut may reflect perceived lack of investment opportunities rather than tight financial conditions or corporate caution.

Extra Slides

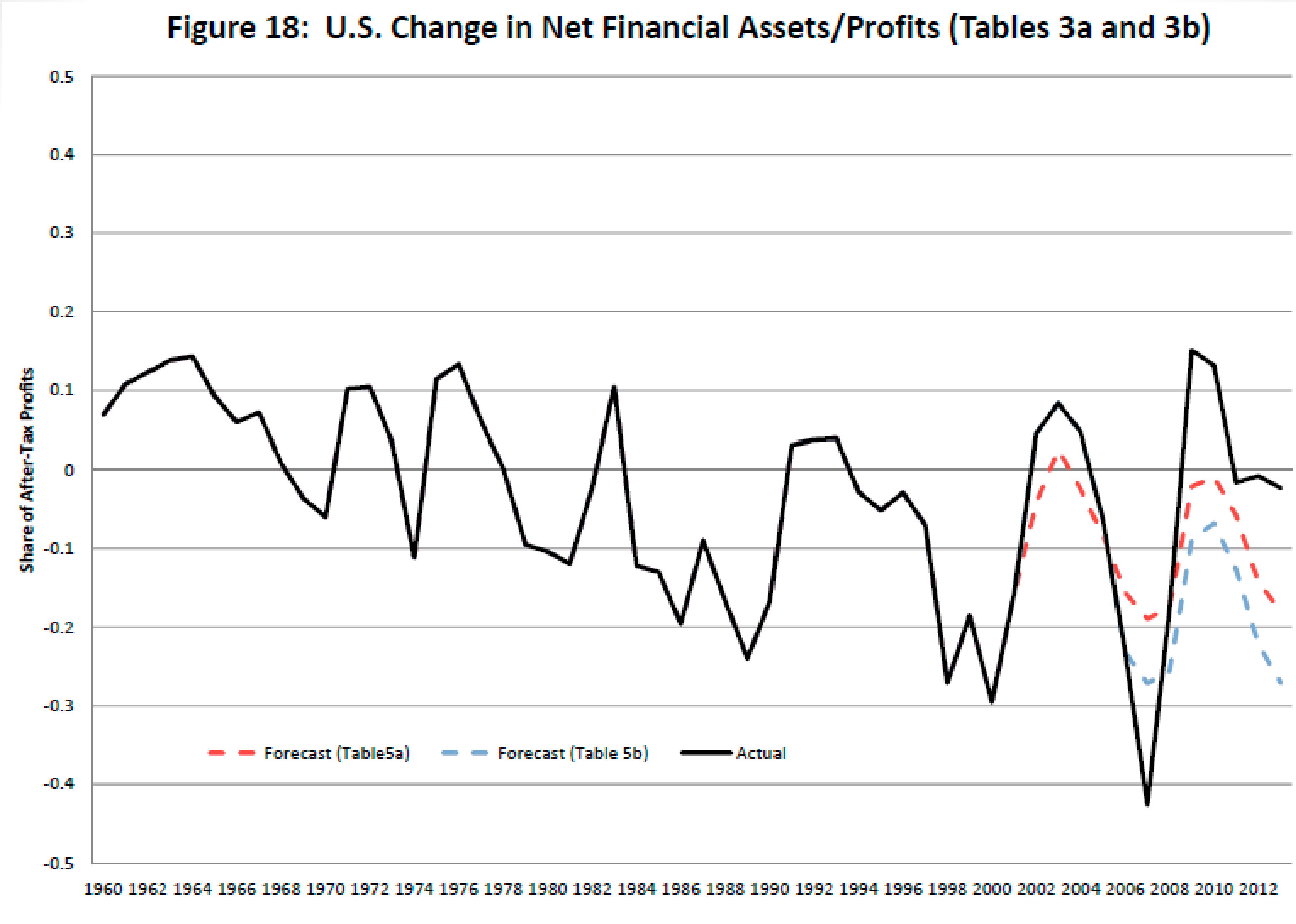


Figure 18: U.S. Change in Net Financial Assets/Profits (Tables 3a and 3b)
Share of After-Tax Profits
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
Forecast (Table5a)
Forecast (Table 5b)
Actual
1960 1962 1964 1966 1968 1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012

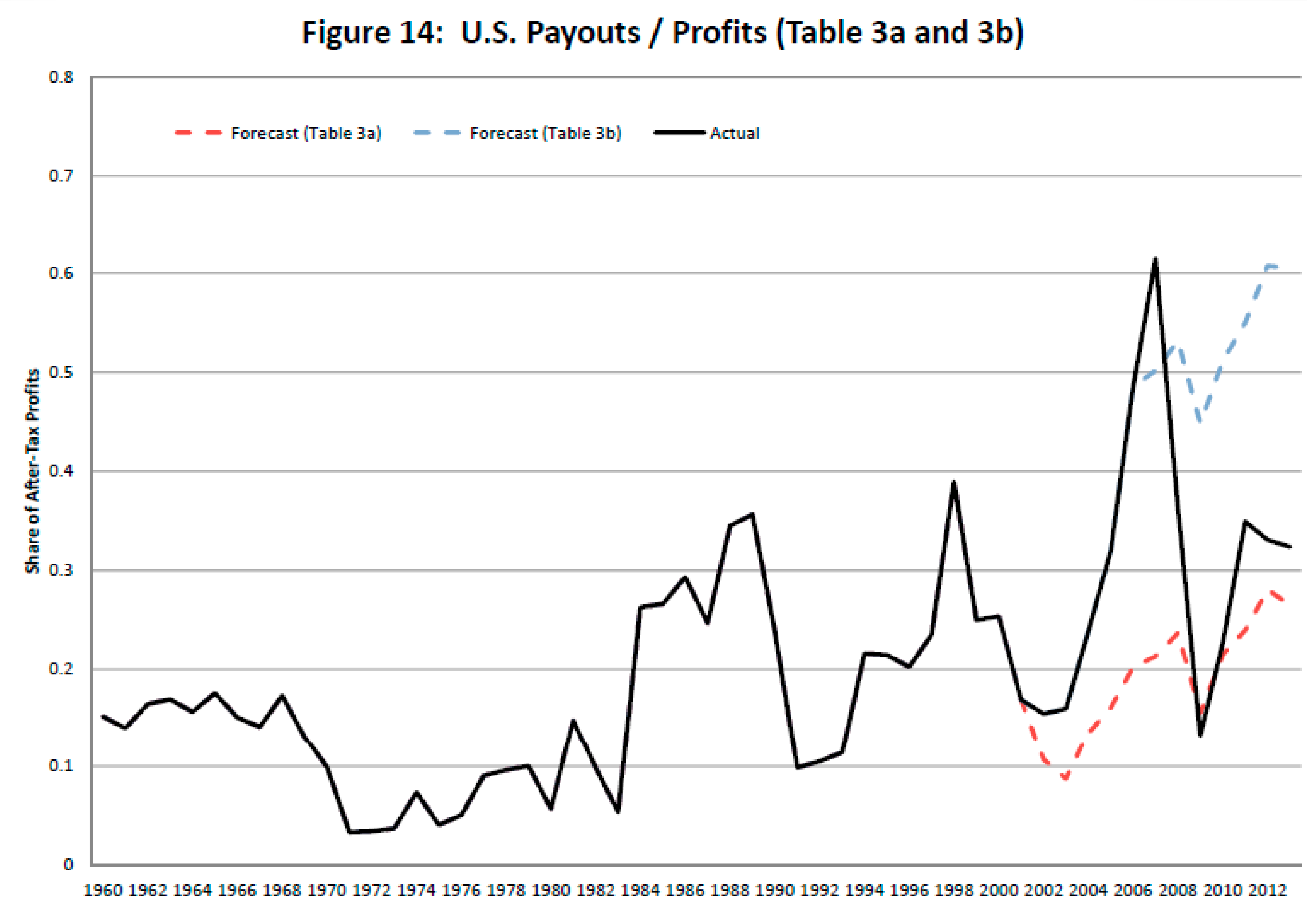


Figure 14: U.S. Payouts / Profits (Table 3a and 3b)
Forecast (Table 3a)
Forecast (Table 3b)
Actual
Share of After-Tax Profits
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1960 1962 1964 1966 1968 1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012

Table 4c: Panel Regression - Ratios to GDP - 1960-2013

Dependent Variable:	(1) Investment/GDP	(2) Payouts/GDP	(3) Δ Net Financial Assets/GDP
Time Trend	**0.000**	0.000	**-0.002**
	1.697	0.756	-3.862
Lagged Dependent	**0.758**	**0.181**	**0.332**
	16.727	3.235	6.007
Real Growth (-1)	**0.123**	**0.131**	**-0.313**
	5.288	2.036	-4.337
Real Interest Rate (-1)	0.000	0.000	0.000
	1.037	-0.365	-0.126
Relative Investment Price (-1)	-0.015	-0.005	-0.056
	-1.596	-0.146	-1.473
Proportion of Intangibles in Investment	**-0.001**	0.001	0.001
	-2.981	0.653	0.718
Profit Growth (-1)	0.011	-0.006	**0.062**
	1.513	-0.232	2.268
Over 65 Population Ratio	0.000	0.001	**0.006**
	-0.663	1.391	5.215
# Observations	196	164	164
R^2	0.94	0.84	0.71
SER	0.006	0.015	0.017
DW Stat	1.89	2.31	2.25

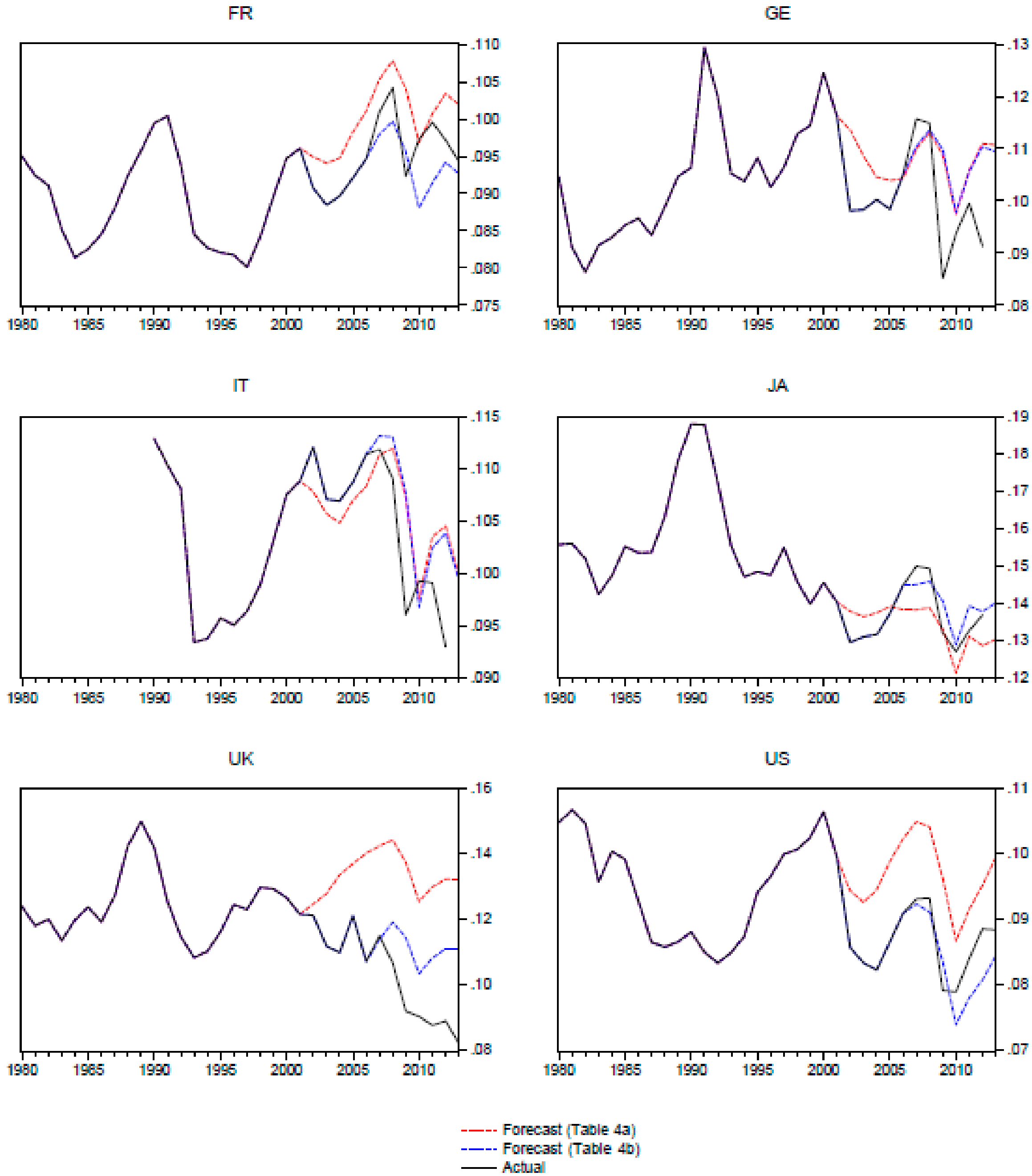
Note: All regressions include an unreported constant and country fixed effects.
Red bold indicates significance at the 10 percent level. T-statistics reported under coefficients

Table 5c: Panel Regression - Share of After-Tax Profits - 1960-2013

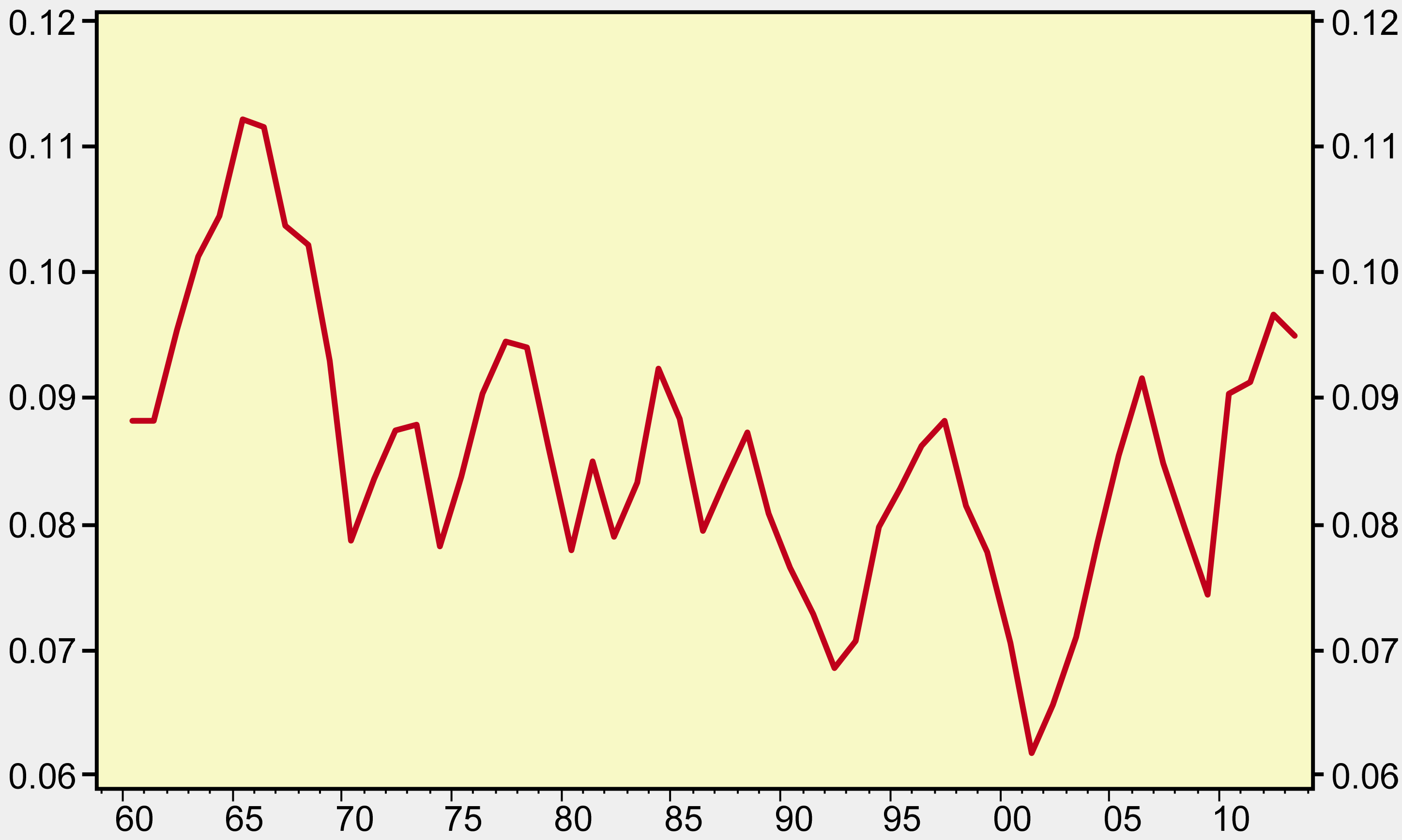
	(1)	(2)	(3)
Dependent Variable:	Investment/Profits	Payouts/Profits	Δ Net Financial Assets/Profits
Time Trend	**0.004**	0.004	**-0.009**
	2.882	1.395	-2.778
Lagged Investment/Profits	**0.814**	0.032	**-0.845**
	17.420	0.362	-8.892
Lagged Payouts / Profits	-0.003	**0.181**	**-0.182**
	-0.109	3.173	-3.021
Real Growth (-1)	**1.474**	**0.869**	**-2.343**
	6.517	2.003	-5.103
Real Interest Rate (-1)	-0.002	-0.001	0.003
	-0.547	-0.184	0.458
Relative Investment Price (-1)	0.141	0.043	-0.204
	1.206	0.189	-0.842
Proportion of Intangibles in Investment	-0.004	0.003	0.001
	-1.428	0.499	0.182
Profit Growth (-1)	0.033	-0.082	0.047
	0.350	-0.457	0.245
Over 65 Population Ratio	**-0.009**	0.004	0.005
	-2.296	0.510	0.682
# Observations	164	164	164
R^2	0.93	0.80	0.76
SER	0.054	0.103	0.110
DW Stat	1.88	2.32	2.30

Note: All regressions include an unreported constant and country fixed effects.
Red bold indicates significance at the 10 percent level. T-statistics reported under coefficients

Figure 11: Investment / GDP Panel (Tables 4a and 4b)



U.S. Non-Financial Corporate Net Operating Surplus / GDP



Source: Haver Analytics