Past Experience with Large Deficits among Industrialized Countries

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Motivation

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- Biggest (by far) peacetime deficit ever

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- Look at other countries' experience
- Particular attention to inflation

Deficits and Inflation: Theory

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- Lucas and Stokey (1983), Calvo and Guidotti (1990), Missale and Blanchard (1994): Time consistency constraints

Deficits and Inflation: Empirics

- Sargent (1983a, 1983b): Link in post-WW I Europe
- Blanchard and Fischer (1989): "data rarely show a strong positive association between the size of the budget deficit and the inflation rate."
- Mixed evidence: Hamburger and Zwick (1981) for U.S.A., King and Plosser (1985) for 12 countries
- Recently: Catão and Terrones (2005), positive long-run association (107 countries, but wrong deficit concept).

Deficits and Inflation: Our Angle

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- Inflation is like fever
- Deficit is one of the "diseases"
- Is inflation always a symptom of the deficit disease?
- Use low quantiles of inflation to answer

Background: Government BC

(Simplified) government budget constraint:

$$\frac{B_t}{P_t Y_t} = \frac{1+i_t}{(1+\pi_t)(1+g_t)} \frac{B_{t-1}}{P_{t-1} Y_{t-1}} + \frac{G_t - T_t}{Y_t} + \frac{i_t M_t}{Y_t},$$

Drivers of Debt/GDP Ratio

- Govt BC after substituting Fisher equation:

$$\frac{B_t}{P_t Y_t} = \frac{(1+r_t^e)(1+\pi_t^e)}{(1+\pi_t)(1+g_t)} \frac{B_{t-1}}{P_{t-1} Y_{t-1}} + \frac{G_t - T_t}{Y_t} + \frac{(r_t^e + \pi_t^e) M_t}{Y_t}.$$

- Primary surplus (including default)
- Expected inflation (through seigniorage)
- Unexpected inflation: temptation to inflate debt away
- Real interest rate
- Economic growth

What Measure of Deficit?

- Standard notion (net outlays):

$$B_t - B_{t-1} = i_t B_{t-1} + P_t(G_t - T_t) + S_t,$$

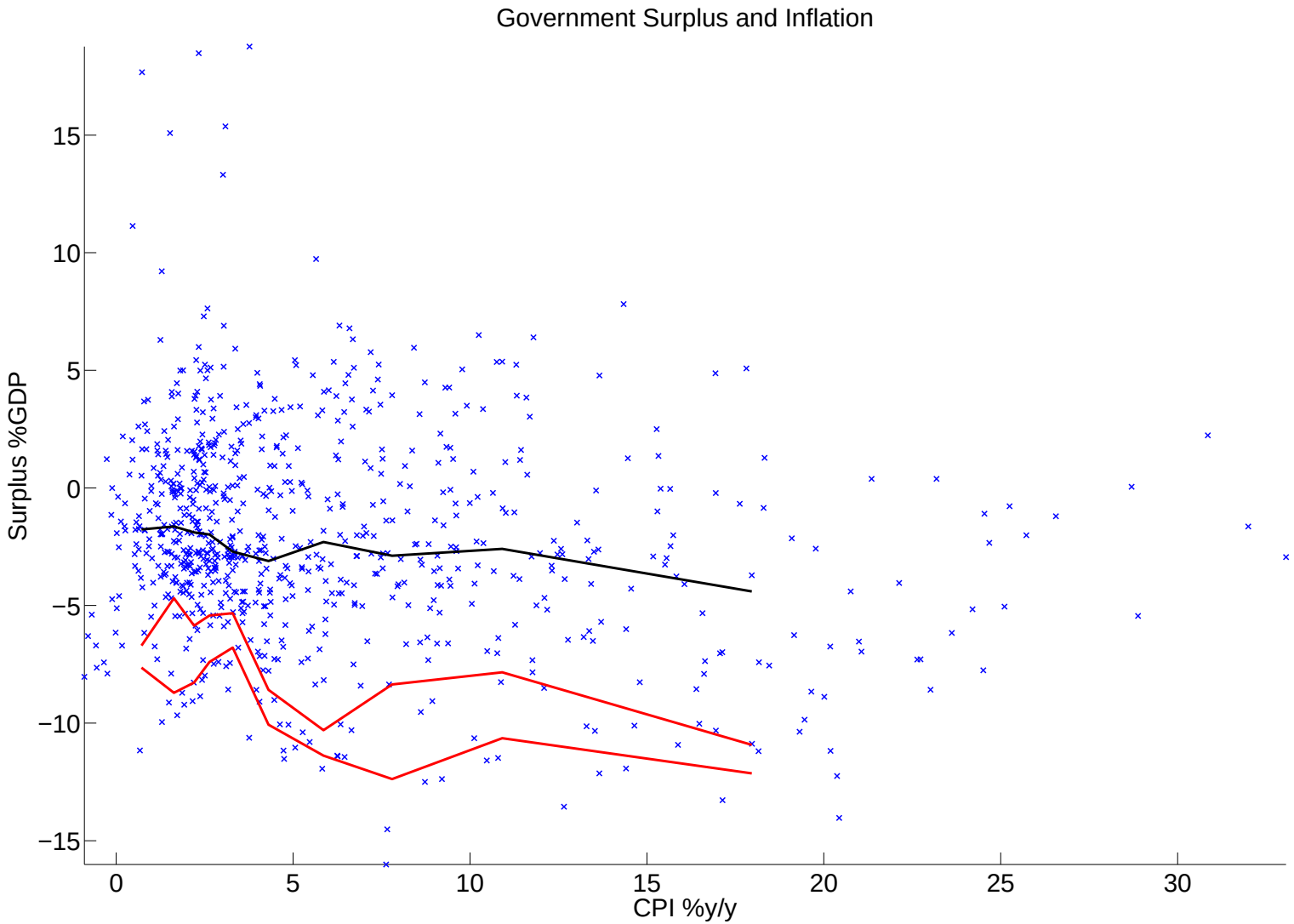
- Problem: $i_t \approx r_t + \pi_t \Longrightarrow$ mechanical link
- Hall and Sargent (1997, 2010):

$$\text{Real value of debt}_t - \text{Real value of debt}_{t-1}$$

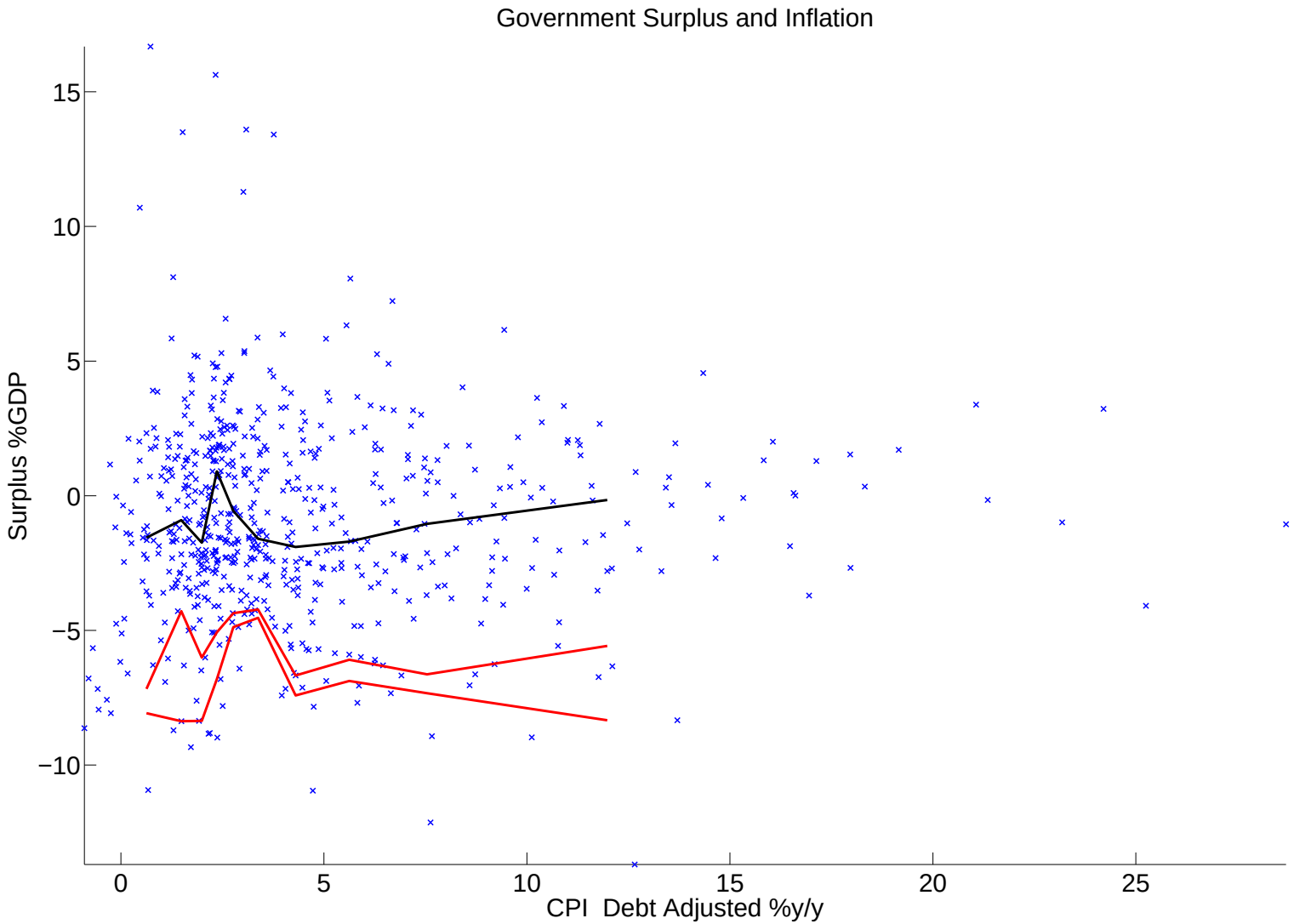
  Theoretically sound, very volatile.
- Our choice (and not just ours):

$$B_t - (1 + \pi_t)B_{t-1} = (i_t - \pi_t)B_{t-1} + P_t(G_t - T_t) + S_t,$$

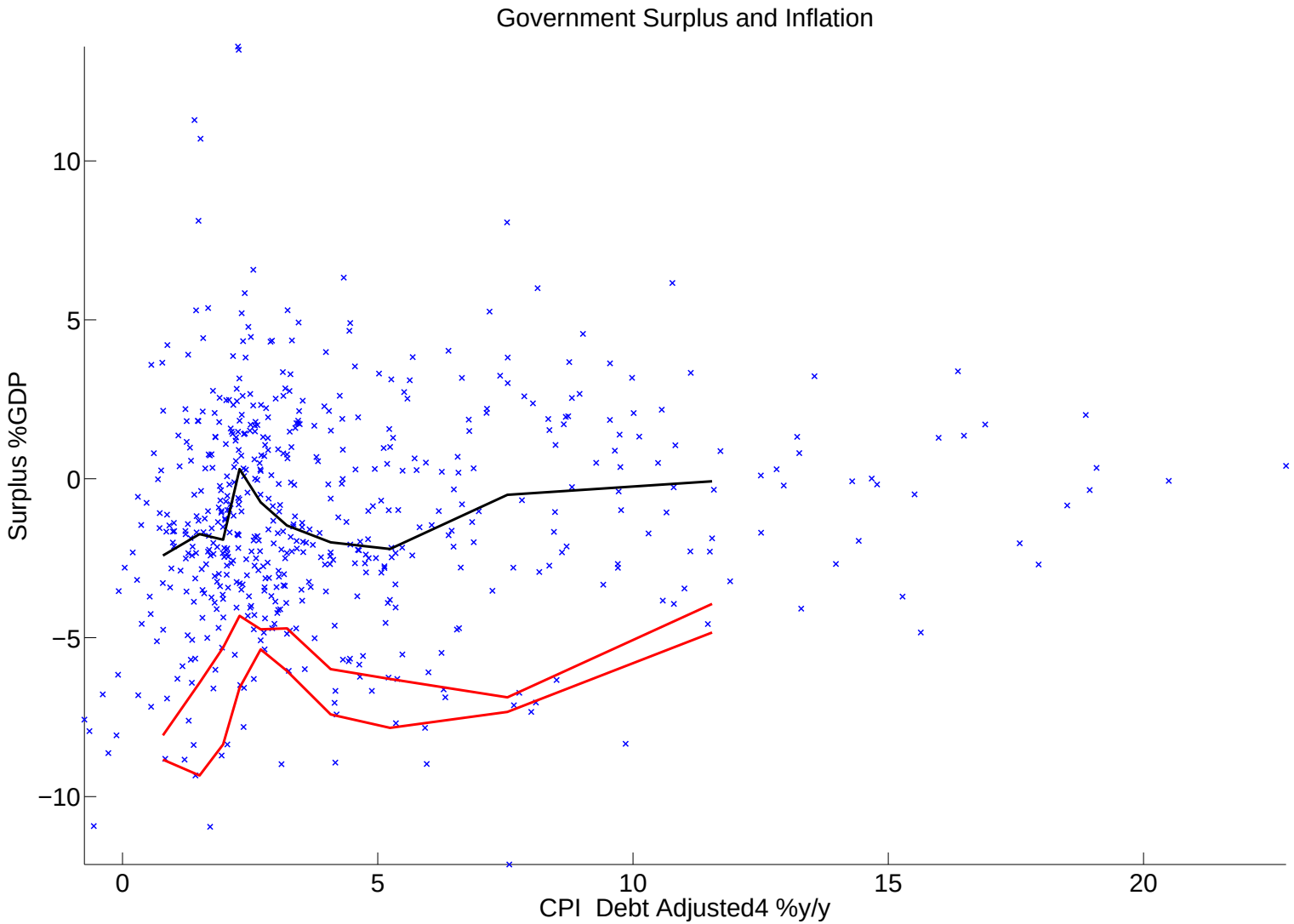
Deficit and Inflation in OECD before Adjustment



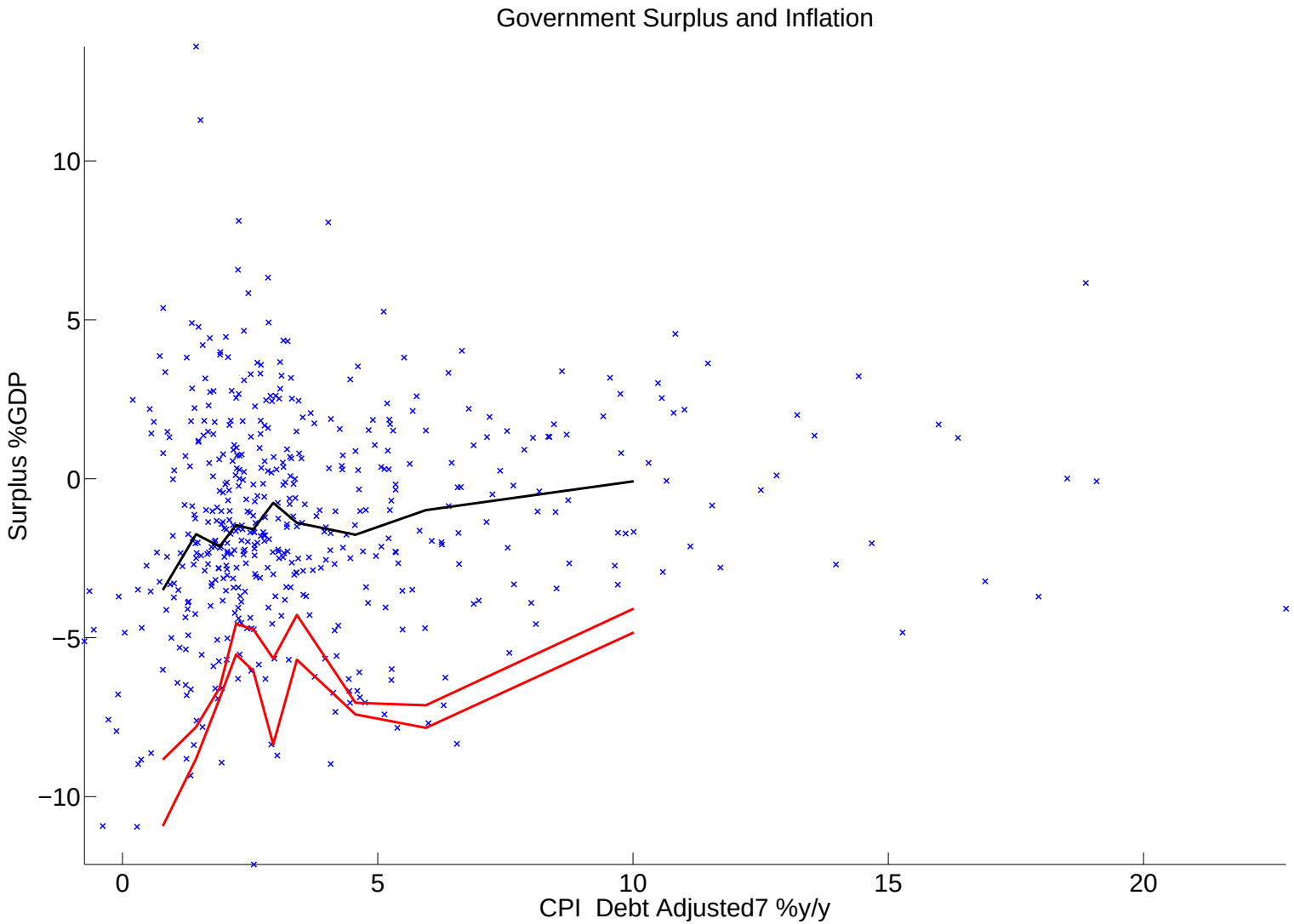
Deficit and Inflation after adjustment



Do Deficits Lead Inflation? 2-4 yr average



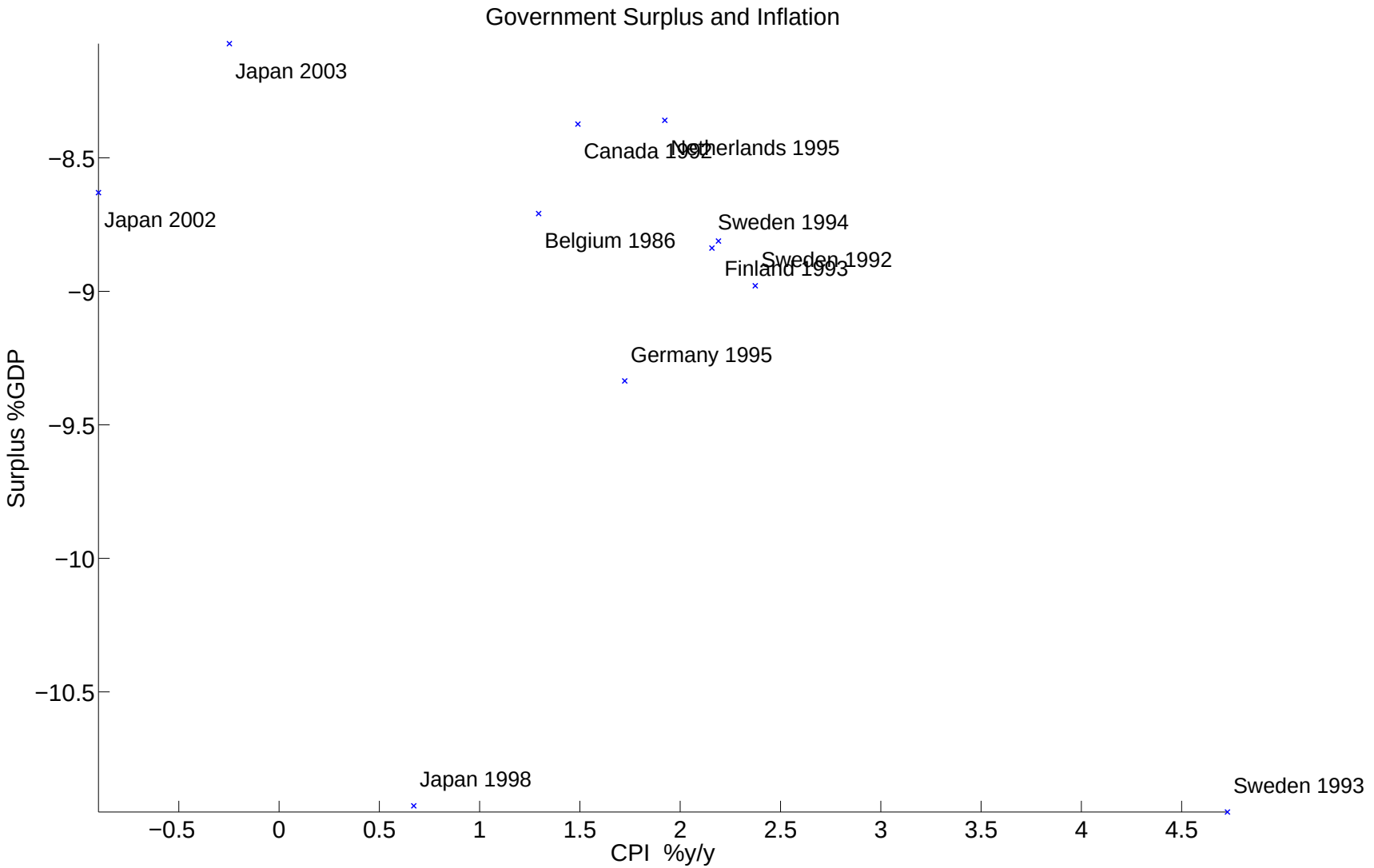
Do Deficits Lead Inflation? 5-7 yr average



Why is the Relationship Weak?

- Standard problem of estimating demand vs. supply curve
- Demand: "bad" governments run big deficits
- Supply: only "good" governments can borrow extra 10% of GDP in a year

Who are the High Deficit, Low Inflation Countries?



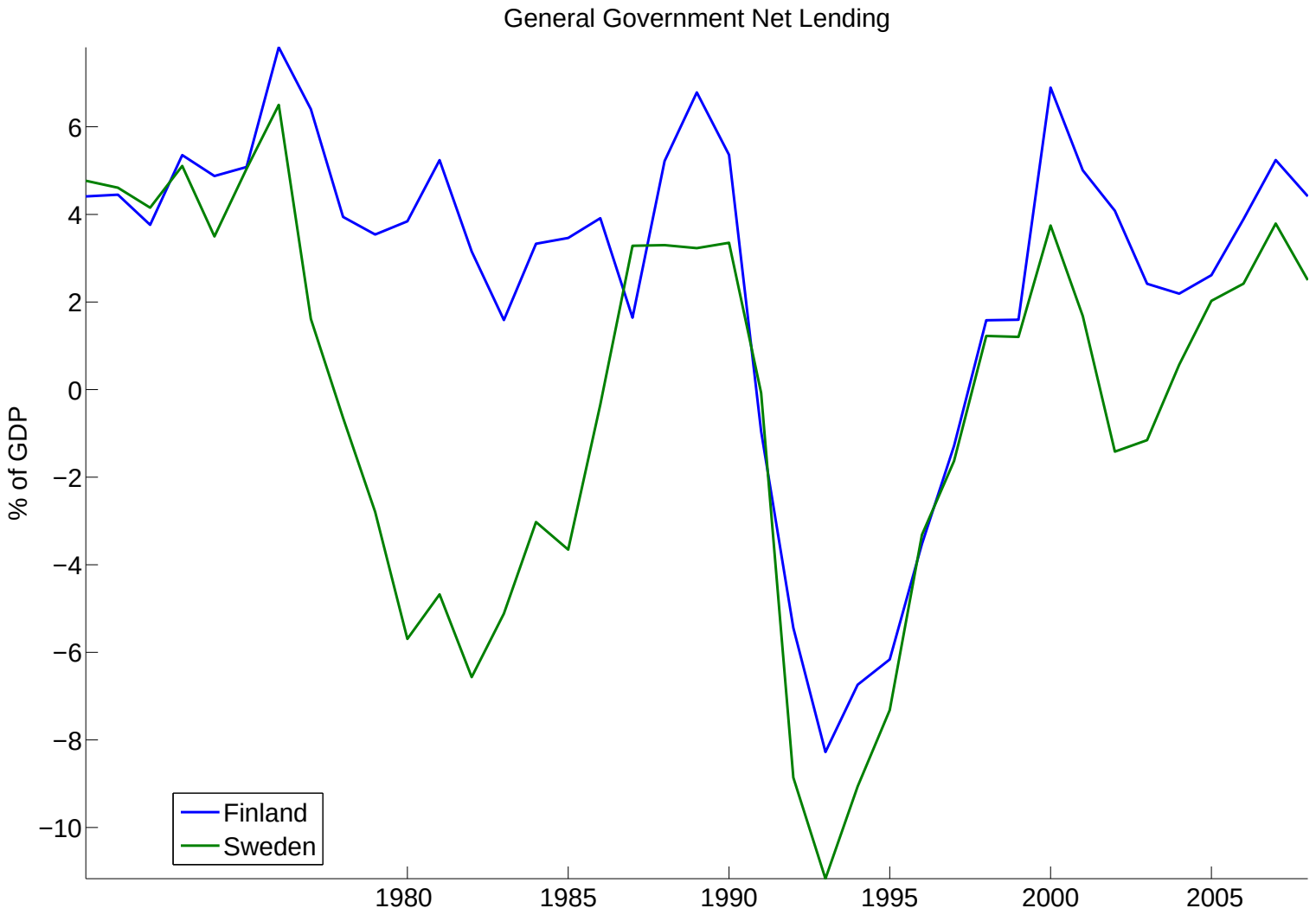
Finland and Sweden in the 1980s

- Liberalized capital movement, credit markets in the 1980s
- Fixed exchange rate
- Experienced large capital inflow, asset price boom
- Weak risk management by banks
- Inflation: before the crisis

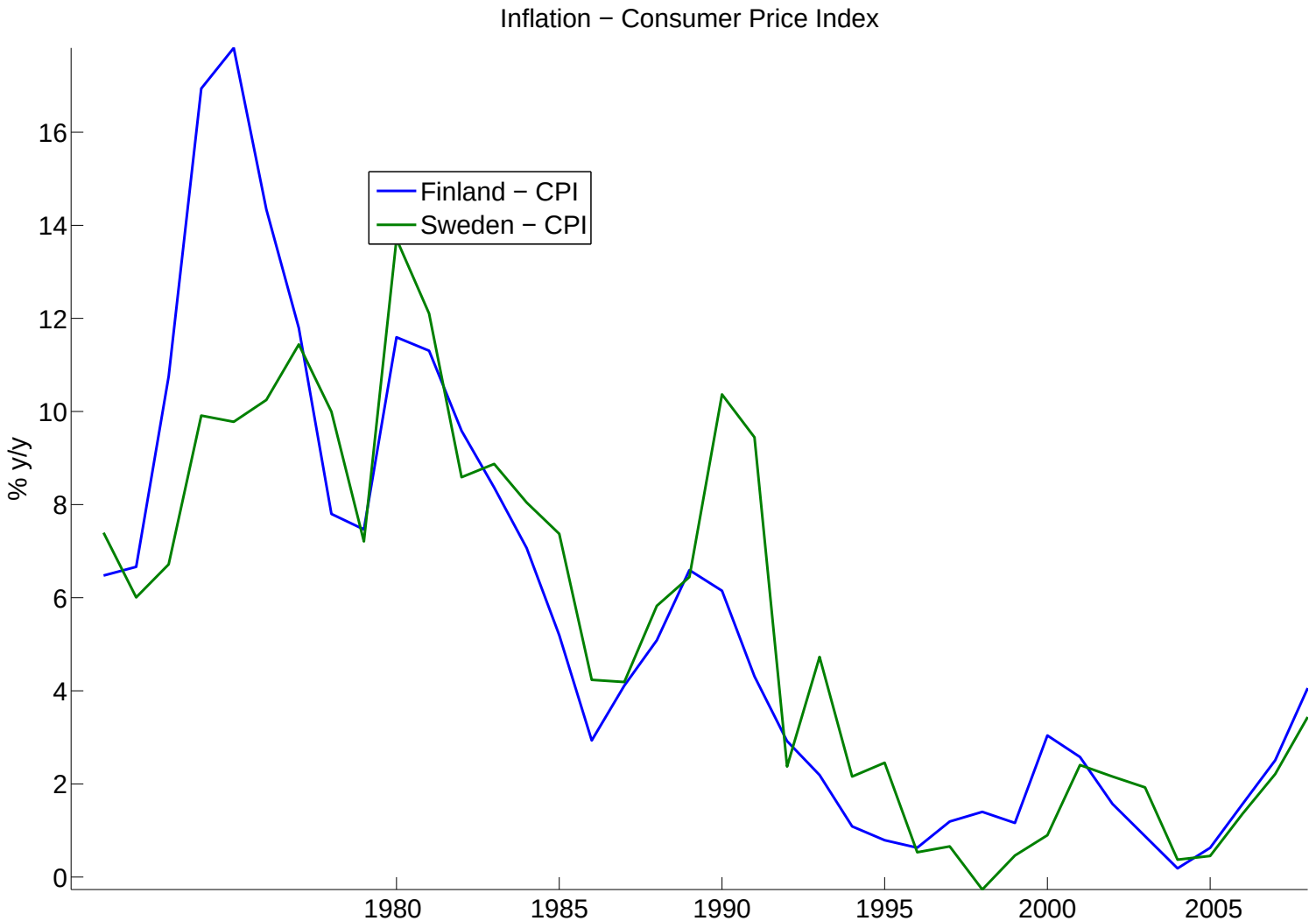
Finland and Sweden: the early 1990s

- Higher interest rates (German reunification, exchange rate peg)
- Asset prices stop, reverse
- Recession, housing bust
- Recapitalize banks, automatic fiscal stabilizers
- Inflation plummets, stays low

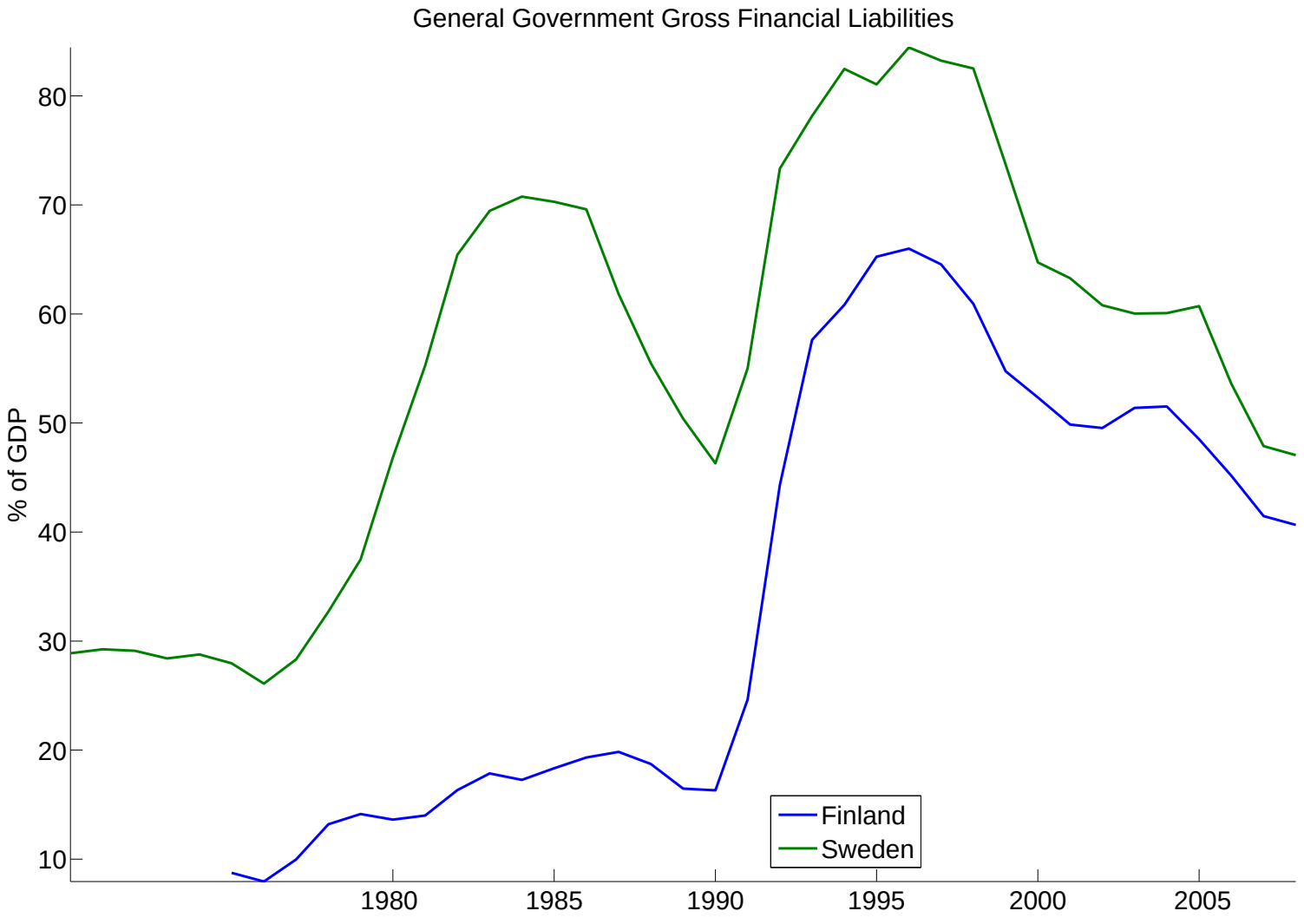
Deficits in Sweden and Finland



Inflation in Sweden and Finland



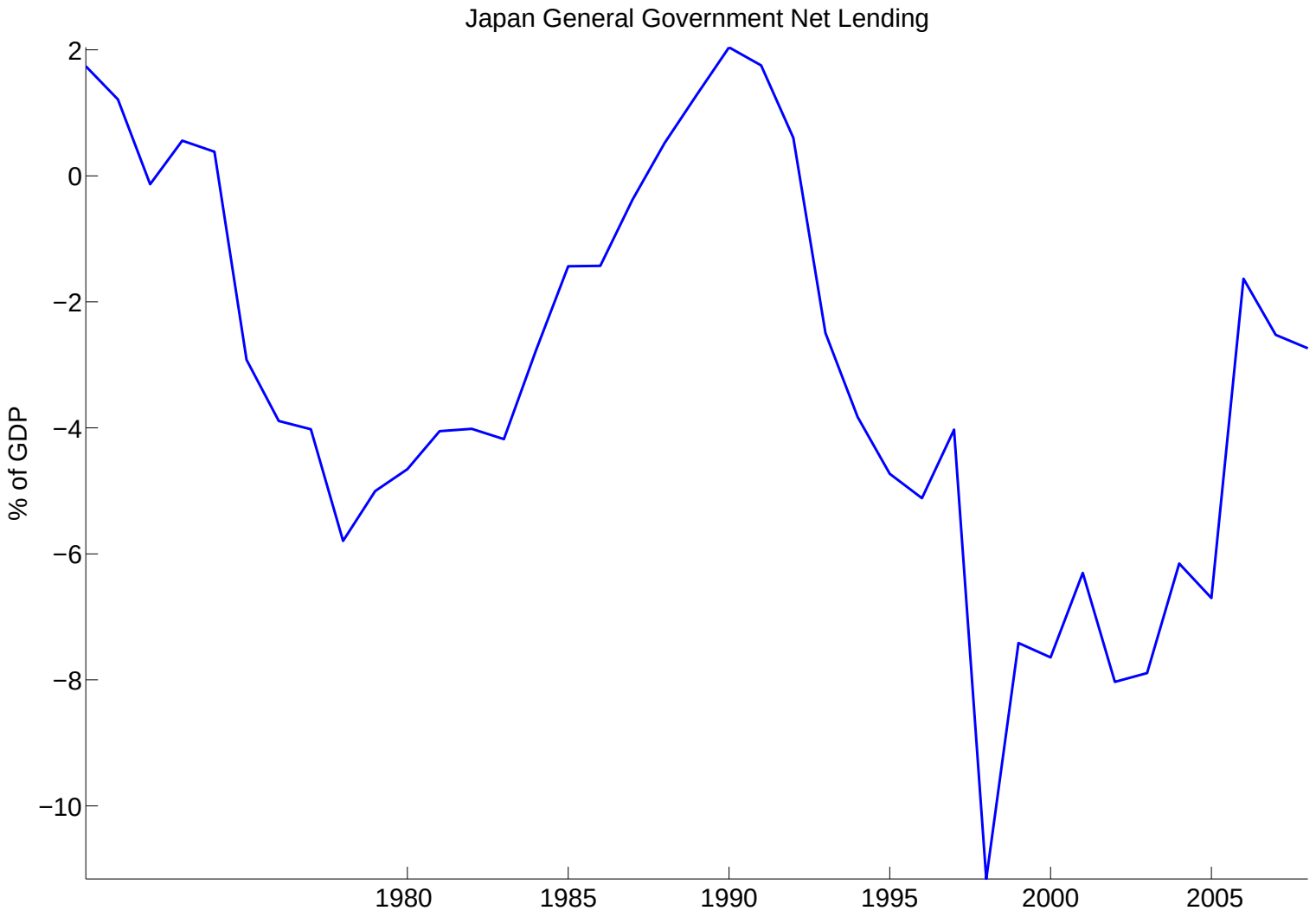
Debt/GDP in Sweden and Finland



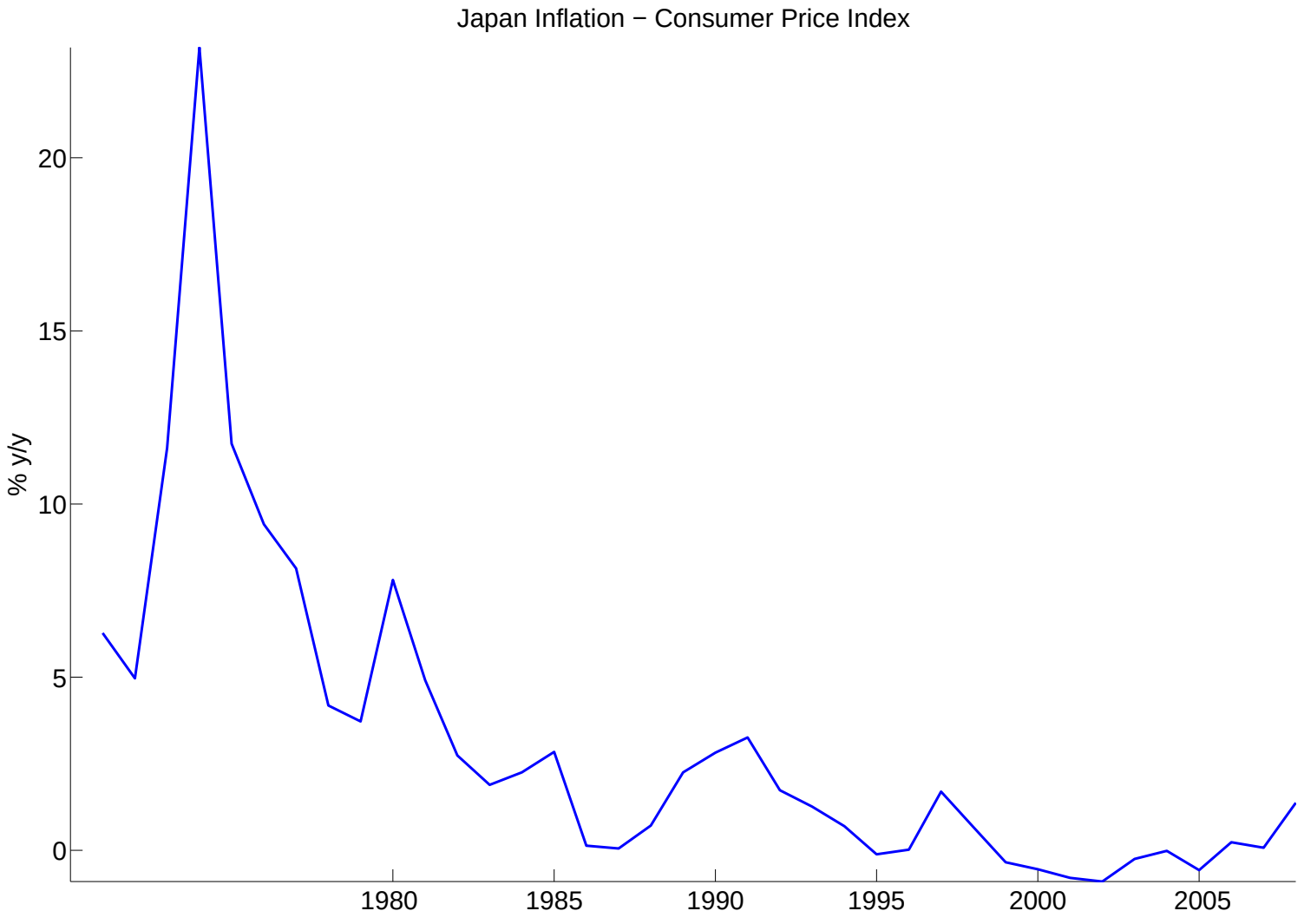
Japan

- Similar asset boom-bust to Sweden, causes less clear
- Flexible exchange rate, moves quite a bit
- Experienced large capital inflow, asset price boom
- Inflation: low before the crisis, deflation afterwards
- Deficits not due to rescues, "fiscal stimulus"

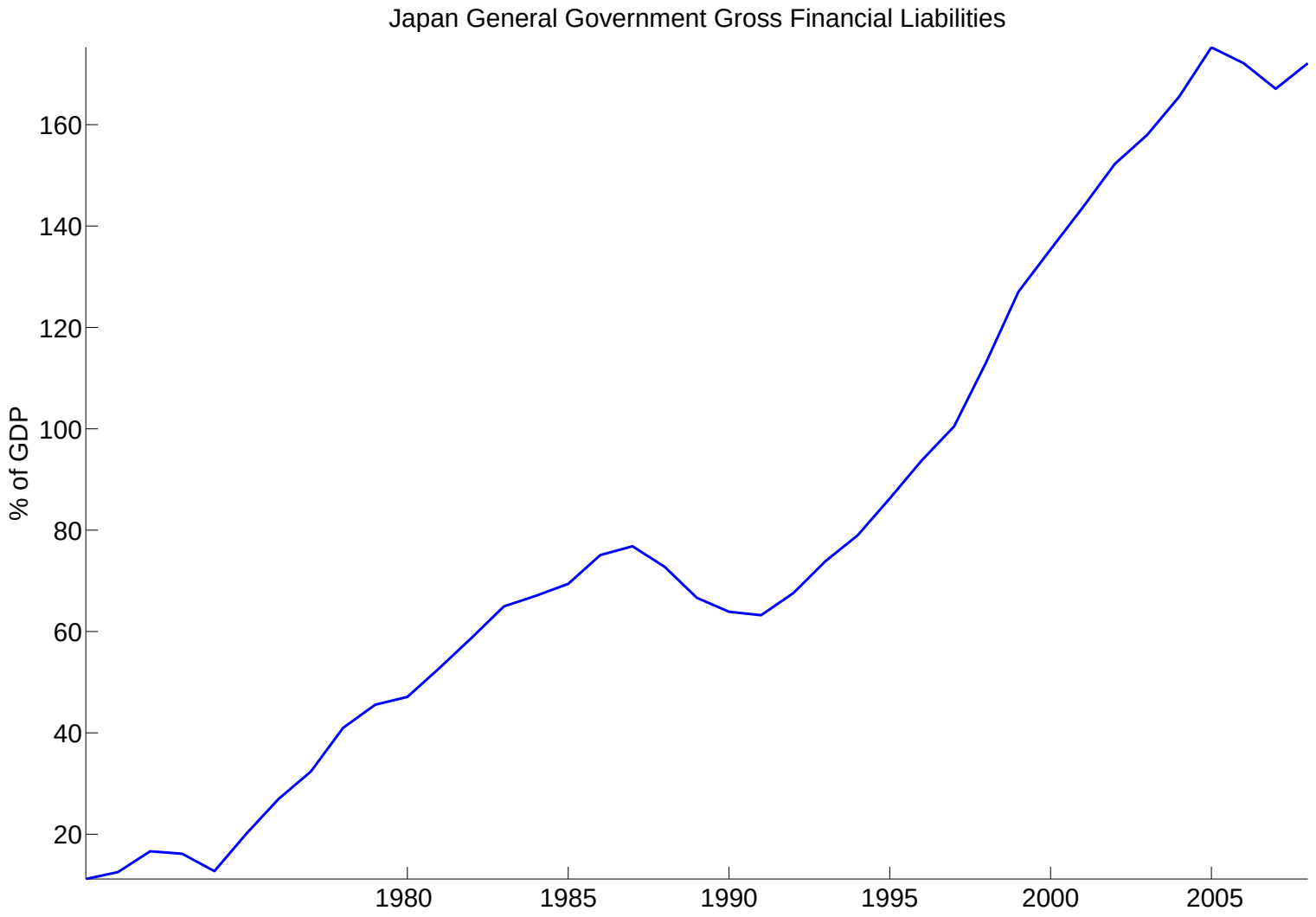
Deficit in Japan



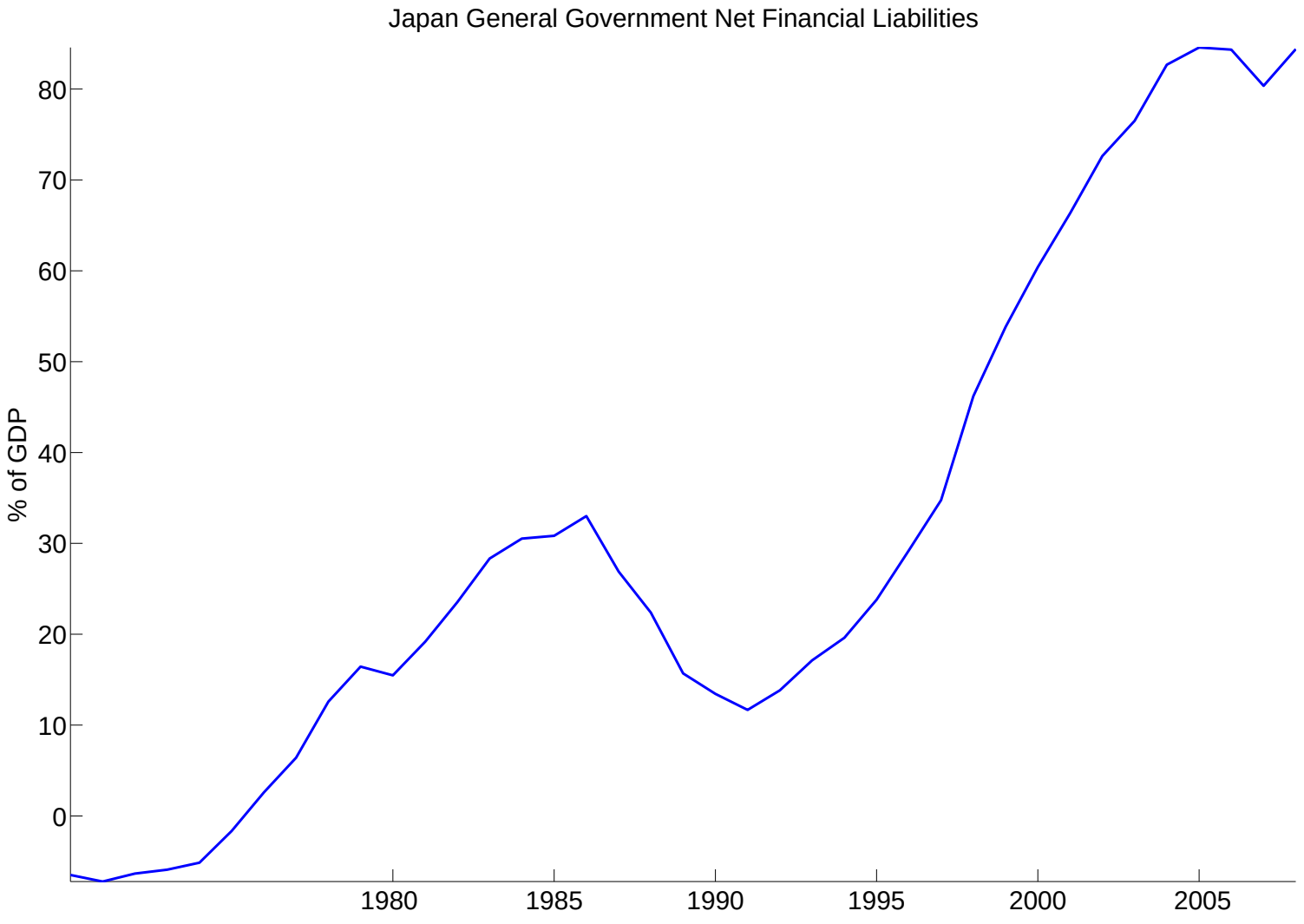
Inflation in Japan



Gross Debt/GDP in Japan



Net Debt/GDP in Japan



Conclusion

- There are precedents for the large deficits we observe in the U.S. today
- These precedents all followed financial crises
- Inflation did not follow in past episodes
- Sweden and Finland: deficits followed by surpluses, growth
- How Japan will stabilize remains to be seen