Capital Controls as Shock Absorbers

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Motivation

- The recent global financial crisis has resuscitated the debate on the relevance of capital controls as effective policy instruments for emerging market economies (EMEs).
- While the notion that capital inflow controls can enhance macroeconomic stability has received strong support from rather vast theoretical work, empirical work on this topic has been quite limited.

This Paper

- The objective of this paper is to bridge this empirical gap.
- Toward this end, I improve upon previous empirical work along two important dimensions.
  - I make use of the Gilchrist and Zakrajek (2012) credit supply shock series to measure global credit supply shocks.
  - I utilize a newly developed capital control dataset from Fernandez et al. (2016) that revises, extends, and widens the dataset originally developed by Schindler (2009), and later expanded by Klein (2012) and Fernandez et al. (2015).

This Paper

- I then integrate this capital control data with quarterly frequency output data of 33 EMEs and estimate nonlinear, state-dependent dynamic fixed-effect panel regressions to study whether the effect of global credit supply shocks differs across states of strict and light capital controls.

Results Overview

- Output in economies with stricter capital *inflow* controls responds significantly less to global credit supply shocks, whereas capital *outflow* controls have no significant shock-absorbing capacity.
- Leverage is significantly lower in economies enacting stricter capital inflow controls, suggesting that financial frictions play a role in driving the shock-absorbing capacity of inflow controls.

Related Literature

- The recent shift of opinion on the efficacy of capital inflow controls on the part of researchers is apparent both on the theoretical side (see, e.g., Bianchi (2011), Farhi and Werning (2012, 2014), Brunnermeier and Sannikov (2015), Ottonello (2015), Benigno et al. (2016), Korinek and Sandri (2016), Bianchi and Mendoza (2017), Davis and Presno (2017), and Schmitt-Grohe and Uribe (2017)) as well as on the policy side (see, e.g., Ostry et al. (2010) and Ostry et al. (2011)).

Related Literature

- The few papers that have looked at the shock-absorbing capacity of capital controls have either done so indirectly, i.e., not by conditioning on a particular identified shock but rather by regressing output on capital flows alone or their interaction with episodes of economic crises, or have done so directly but by only focusing on limited aspects of the controls shock-absorbing capacity:
  - e.g., Gupta et al. (2007), Ostry et al. (2010) and Ostry et al. (2011);
  - e.g., Edwards and Rigobon (2009).

Data

- Data is quarterly and covers 33 EMEs with samples that span 1995-2014.
- The main outcome variable I consider is output, defined as local currency current GDP divided by the GDP deflator.
- Other outcome variables I consider to learn more about the mechanism behind the results are investment, consumption, trade balance, country credit spreads, leverage, and capital flows.

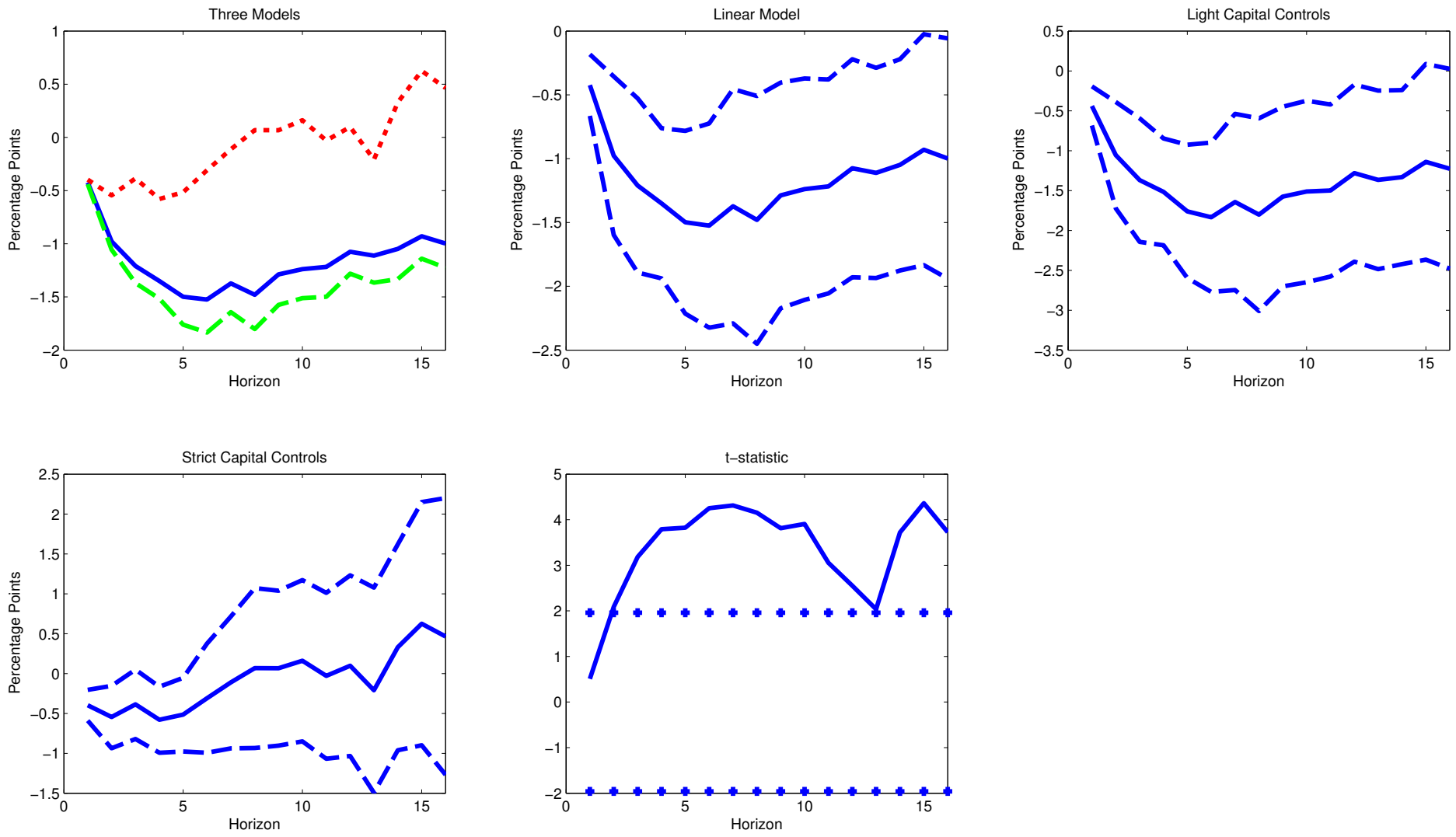
Methodology

- I follow the econometric framework employed in Auerbach and Gorodnichenko (2012), Ramey and Zubairy (2016), and Tenyero and Thwaites (2016), who use the local projection method developed in Jorda (2005) to estimate state-dependent impulse responses

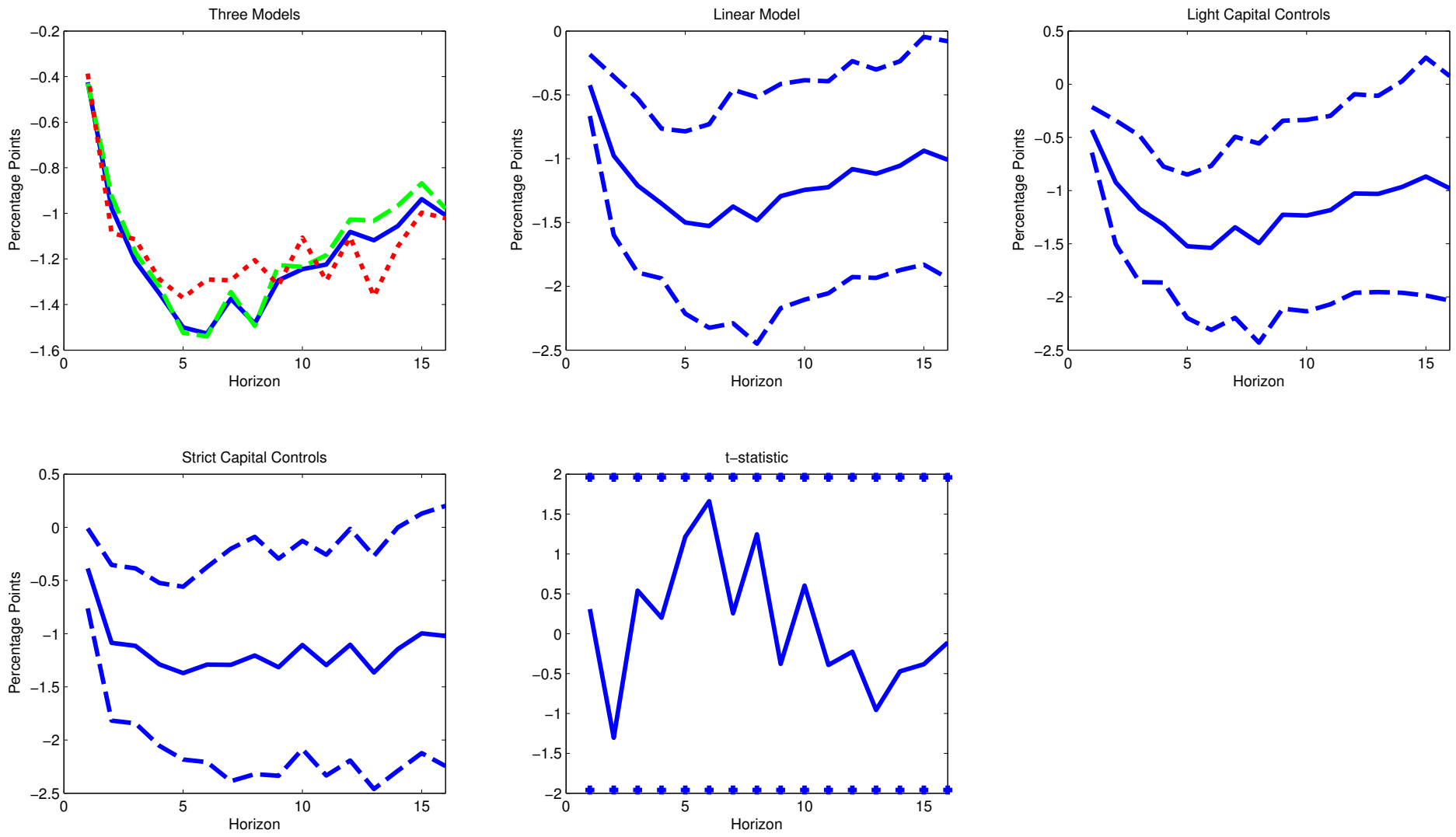
$$y_{i,t+h} - y_{i,t-1} = I_{i,t-4}[\alpha_{A,i,h} + \Xi_{A,h} EBP_t + \Omega_{A,h}(L) EBP_{t-1} + \Gamma_{A,h}(L)\Delta y_{i,t-1}] +$$
$$+(1 - I_{i,t-4})[\alpha_{B,i,h} + \Xi_{B,h} EBP_t + \Omega_{B,h}(L) EBP_{t-1} + \Gamma_{B,h}(L)\Delta y_{i,t-1}] + u_{i,t+h}.$$

- Coefficients vary according to whether we are in state "A", i.e., strict capital controls are in place, or state "B", i.e., there are light capital controls.
- The impulse responses to the credit supply shock for the two states at horizon h are simply $\Xi_{A,h}$ and $\Xi_{B,h}$, respectively.

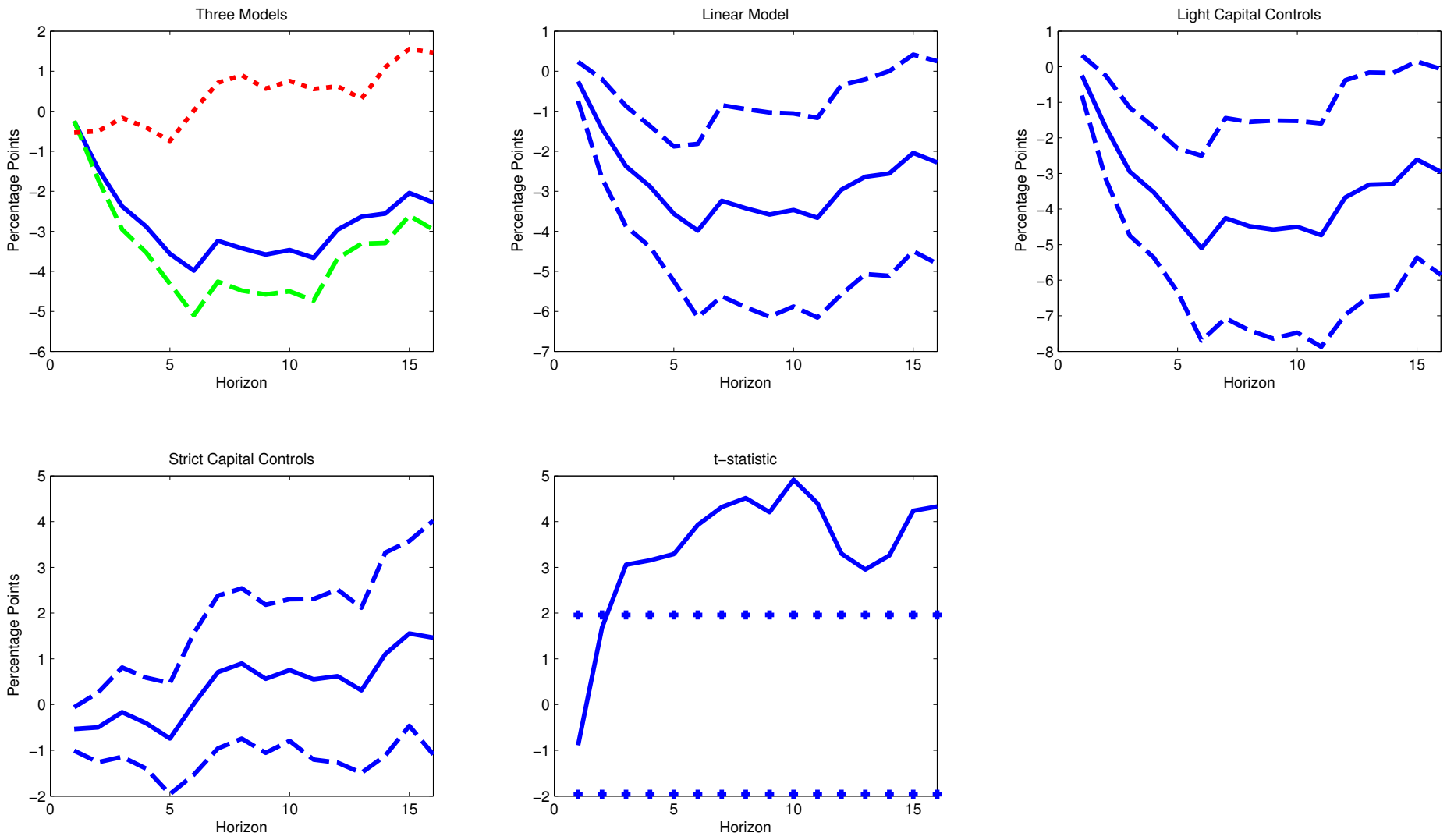
Capital Controls' Effect on Output's Sensitivity to Credit Supply Shocks: Inflow Controls Index



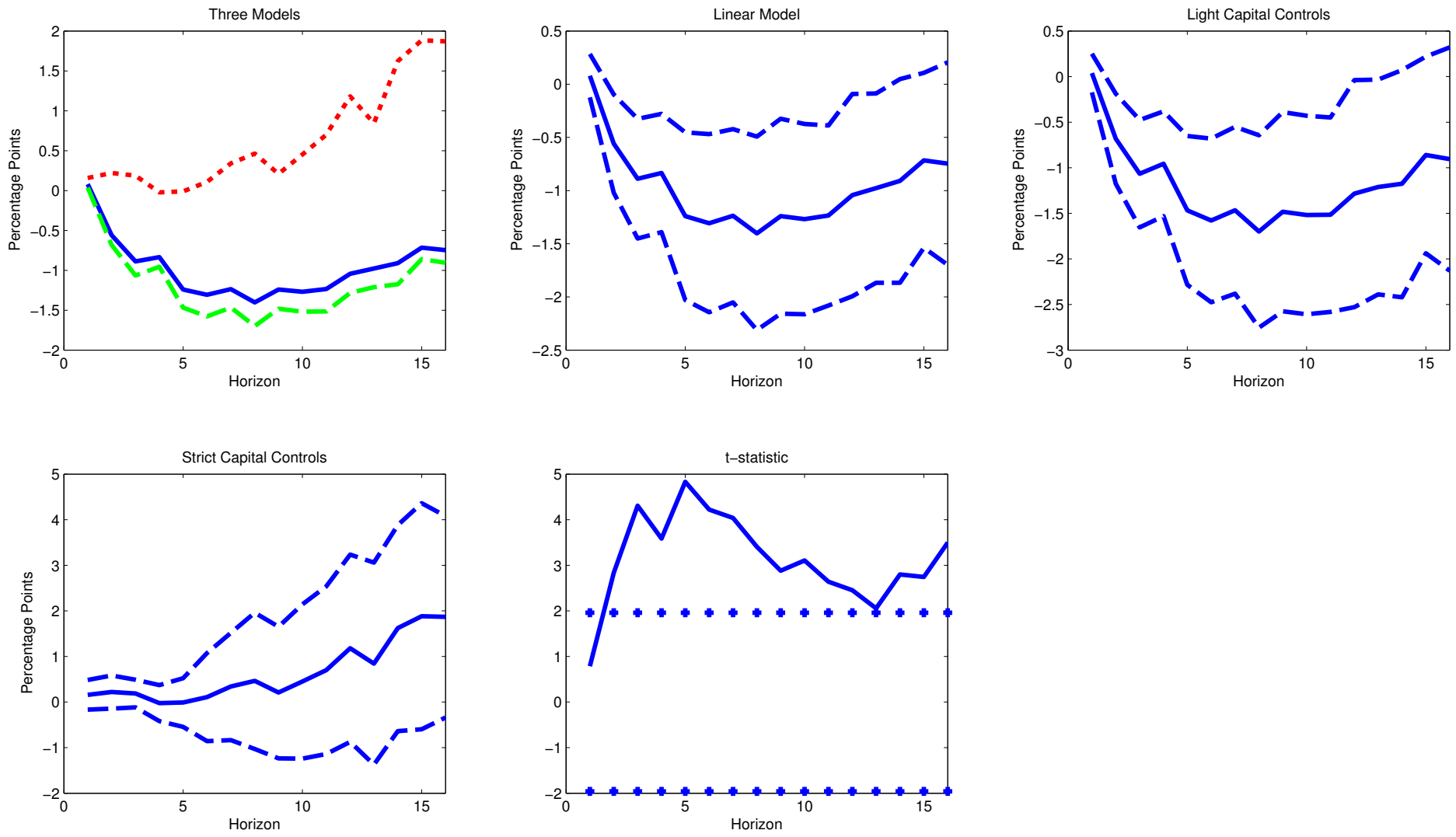
Capital Controls' Effect on Output's Sensitivity to Credit Supply Shocks: Outflow Controls Index



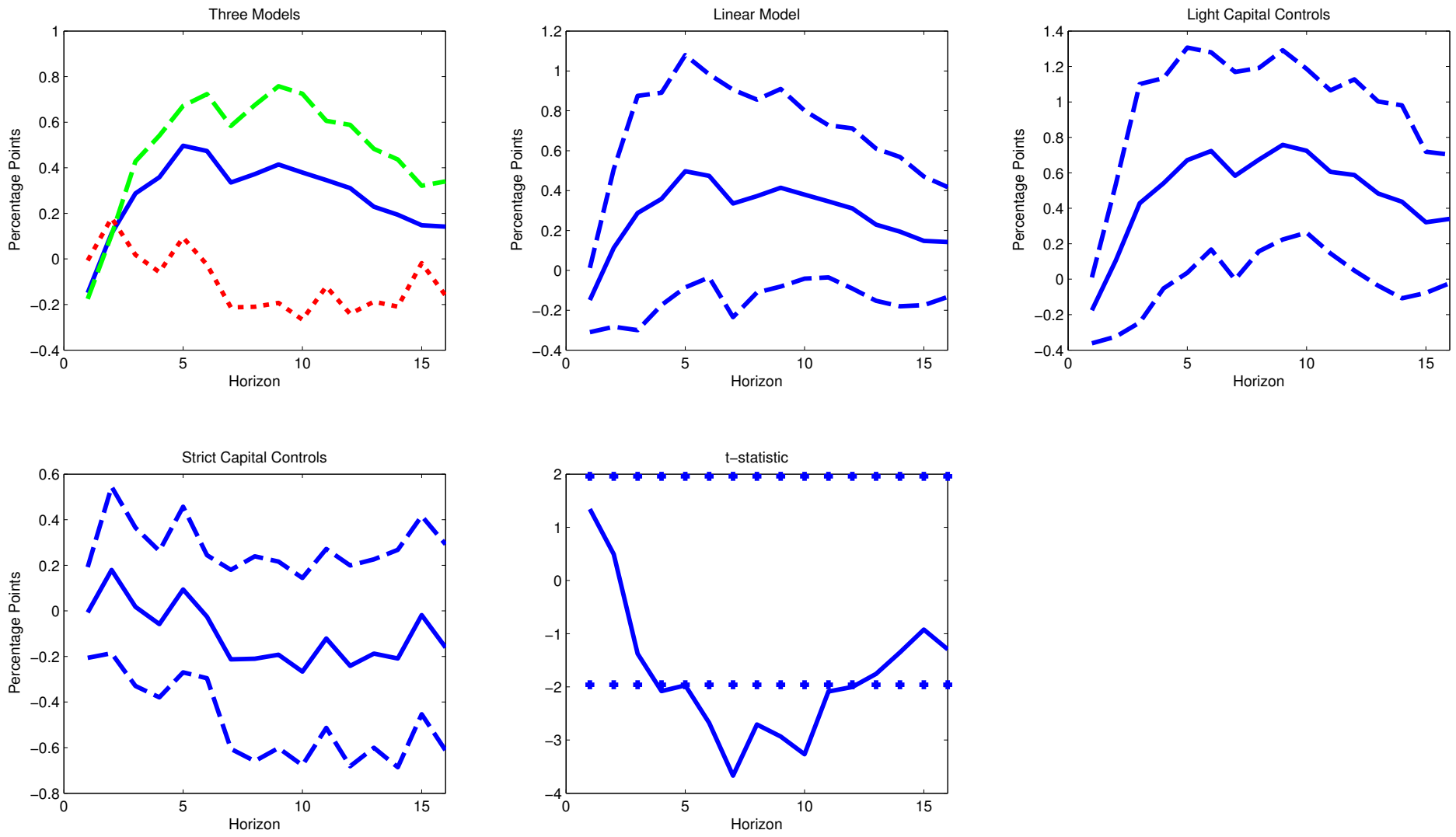
Capital Controls' Effect on Investment's Sensitivity to Credit Supply Shocks



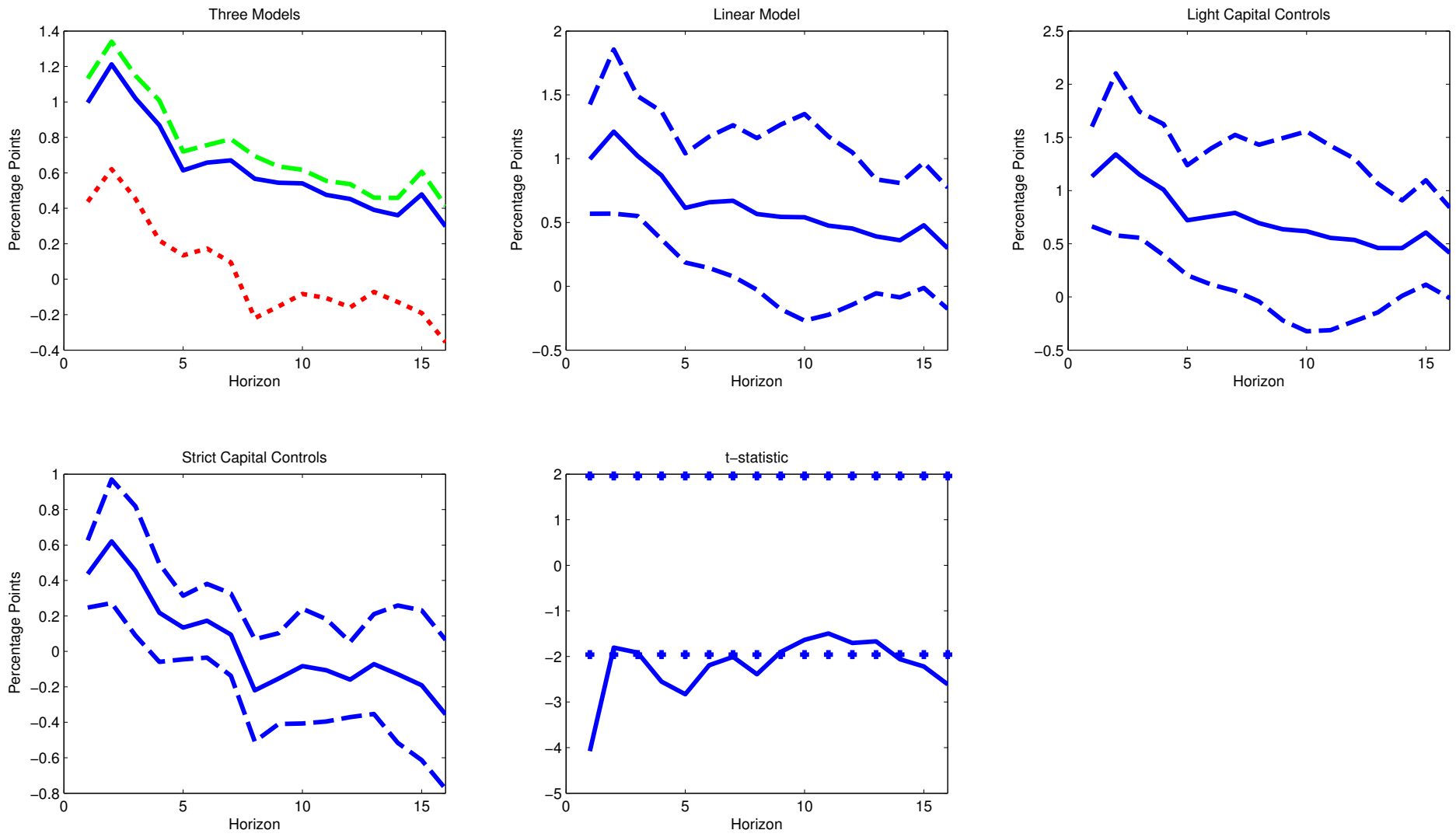
Capital Controls' Effect on Consumption's Sensitivity to Credit Supply Shocks



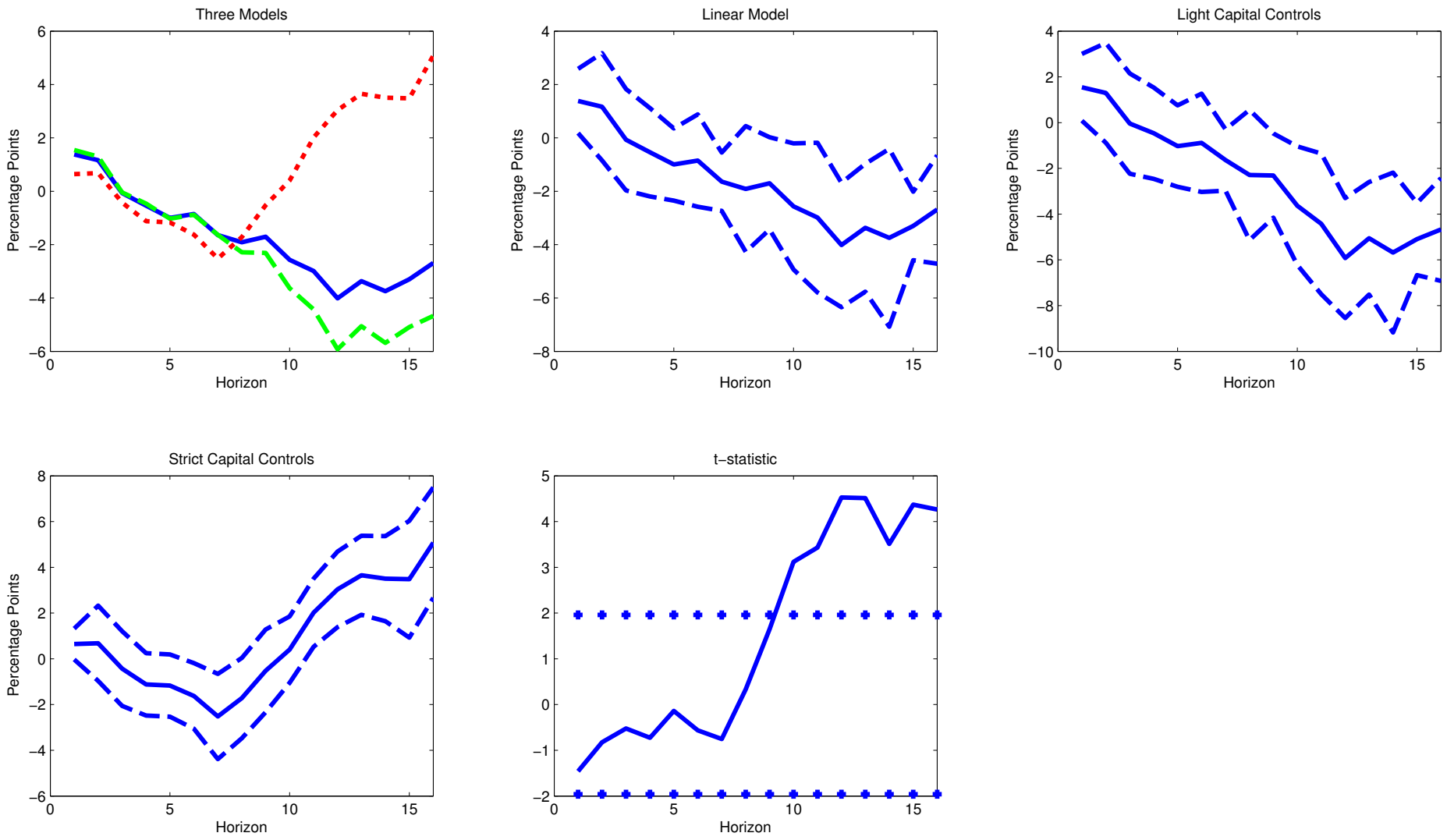
Capital Controls' Effect on Trade Balance's Sensitivity to Credit Supply Shocks



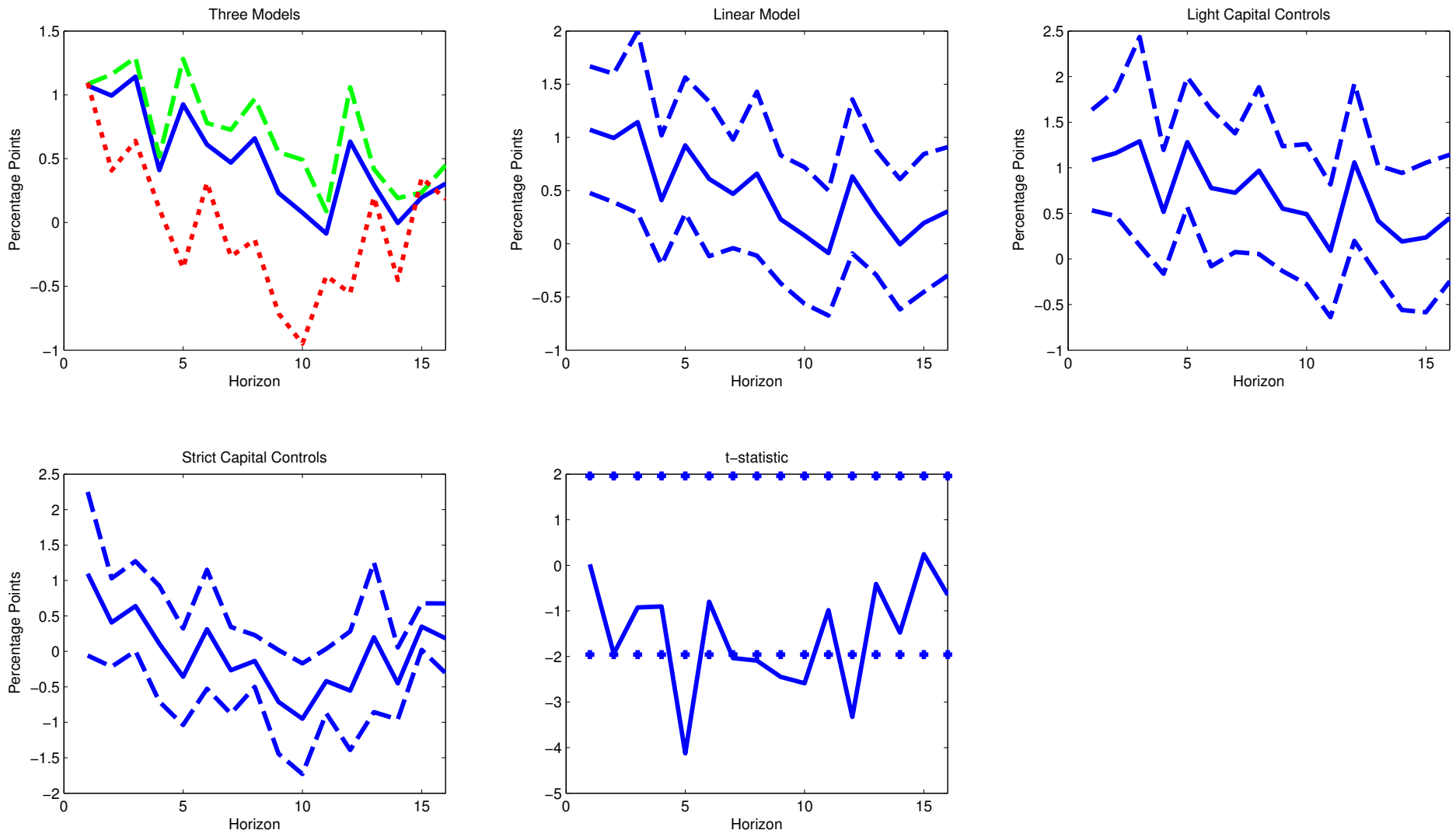
Capital Controls' Effect on EMBI's Sensitivity to Credit Supply Shocks



Capital Controls' Effect on Leverage's Sensitivity to Credit Supply Shocks



Capital Controls' Effect on Capital Flows' Sensitivity to Credit Supply Shocks



Do Capital Inflow Controls Reduce Leverage?

- Interpreted through the lens of the models advanced in the Sudden Stops literature, the empirical results presented so far imply that steady state leverage should be lower in economies which have strict capital inflow controls in place.
- From an unconditional standpoint, a simple computation of the correlation between leverage and the capital inflow controls variable already tells an informative tale: the two variables have a significantly negative correlation of -0.19, implying that being in a stricter controls state is associated on average with also having lower leverage.

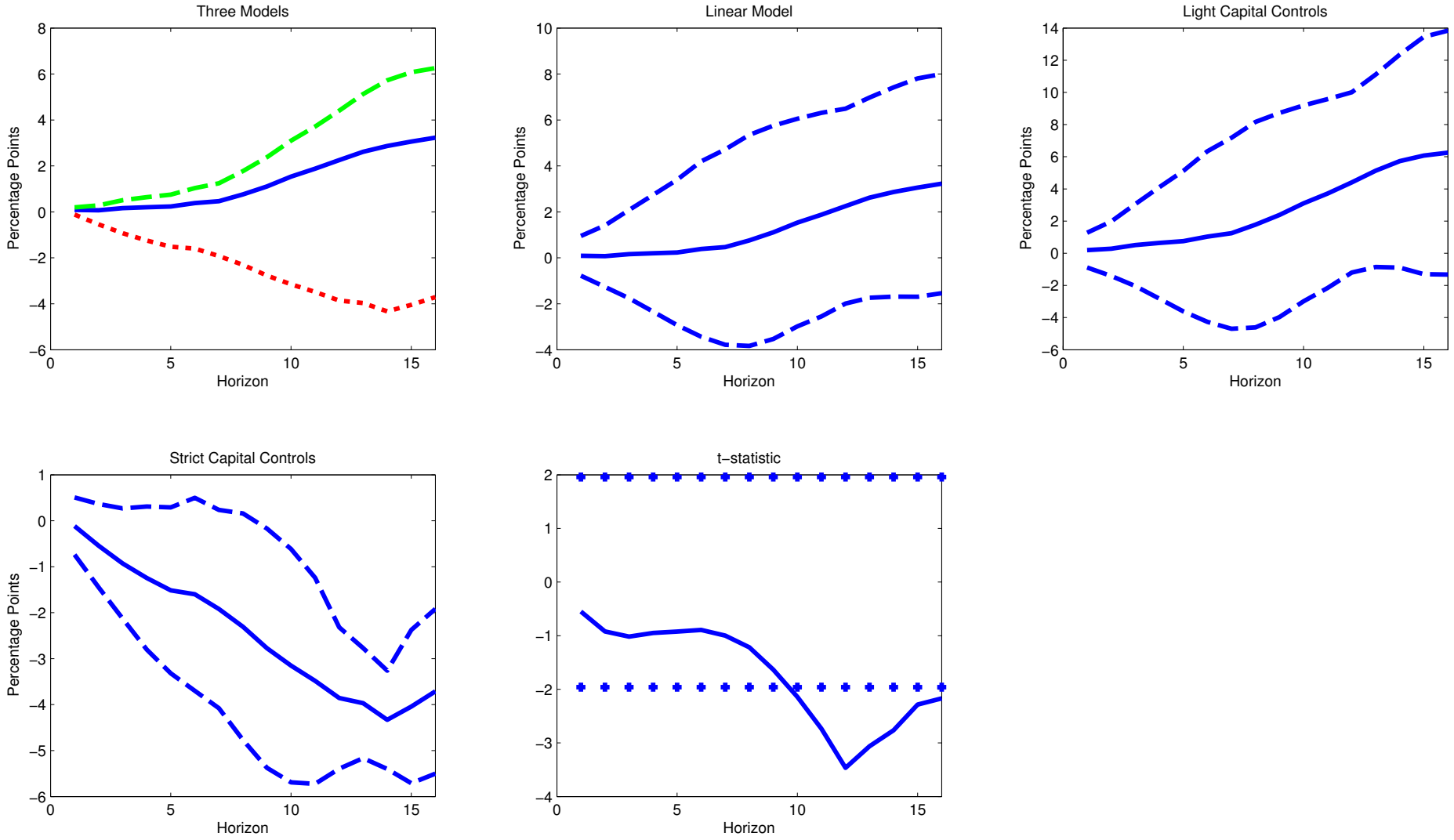
Do Capital Inflow Controls Reduce Leverage?

- To complement this unconditional evidence with conditional evidence that controls for the effects of global credit supply shocks, I estimate a similar specification to the baseline one, given by

$$\begin{aligned} Lev_{i,t+h} - Lev_{i,t-1} = I_{i,t-4}[\Phi_{A,h} + \Xi_{A,h} EBP_t + \Omega_{A,h}(L) EBP_{t-1} \\ + \Gamma_{A,h}(L) \Delta Lev_{i,t-1}] + (1 - I_{i,t-4})[\Phi_{B,h} + \Xi_{B,h} EBP_t \\ + \Omega_{B,h}(L) EBP_{t-1} + \Gamma_{B,h}(L) \Delta Lev_{i,t-1}] + u_{i,t+h}, \end{aligned}$$

- where *Lev* is log of leverage (ratio of BIS-reporting banks' claims on an EME to its GDP); and coefficients $\Phi_{A,h}$ and $\Phi_{B,h}$, which are now the center of my attention, represent the average effects of being in a state of strict controls and light controls, respectively.

Capital Inflow Controls Effect on Leverage



Conclusion

- The empirical evidence put forward in this paper, which shows that strict capital inflow controls moderate the effects of global credit supply shocks, lends credence to the view that inflow controls are warranted on the grounds of their positive effect on macroeconomic stability.
- While it is beyond the scope of this paper to conduct a full-blown analysis of both the macroeconomic stability implications and long-run growth implications of capital controls, it is important to recognize that the 'no free lunch' concept in economics may also hold for this paper.