

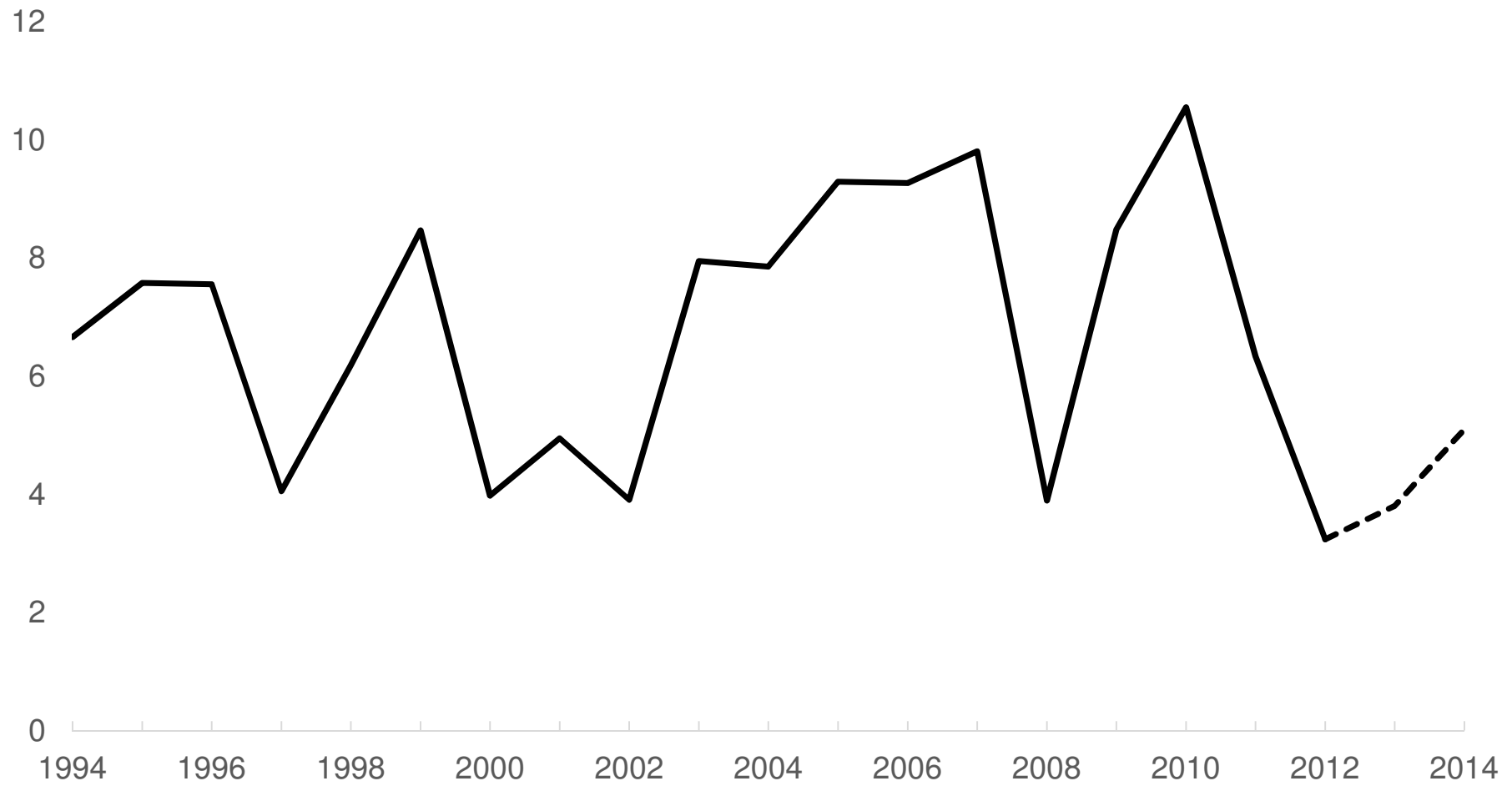
Defending against speculative attacks – it is risky, but it can pay off

**Christian Alexander Bernhard
Bauer* Erler** Herz****

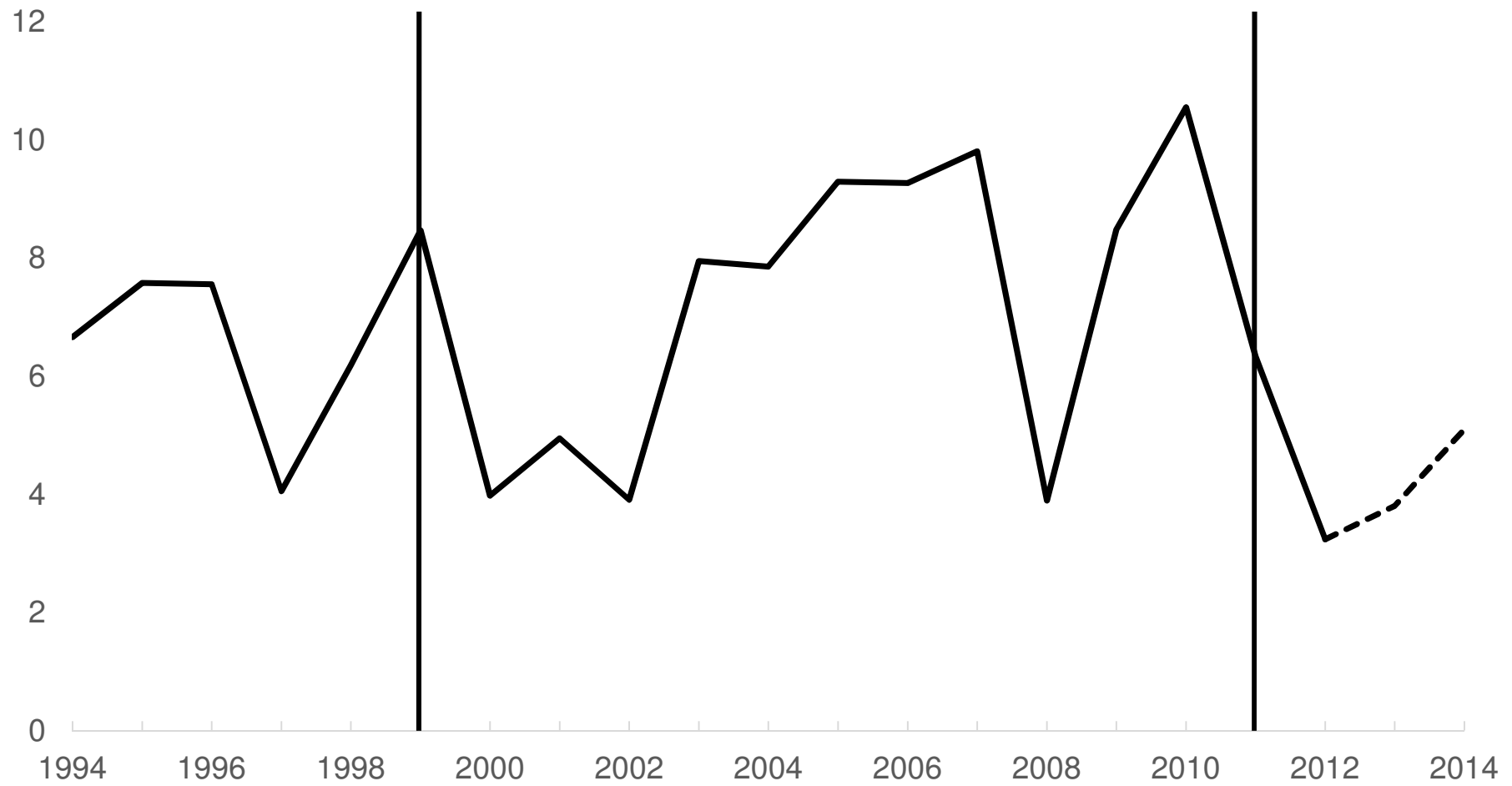
****Trier University **Bayreuth University***

**Emerging Markets Finance Conference
20-21 December, 2013**

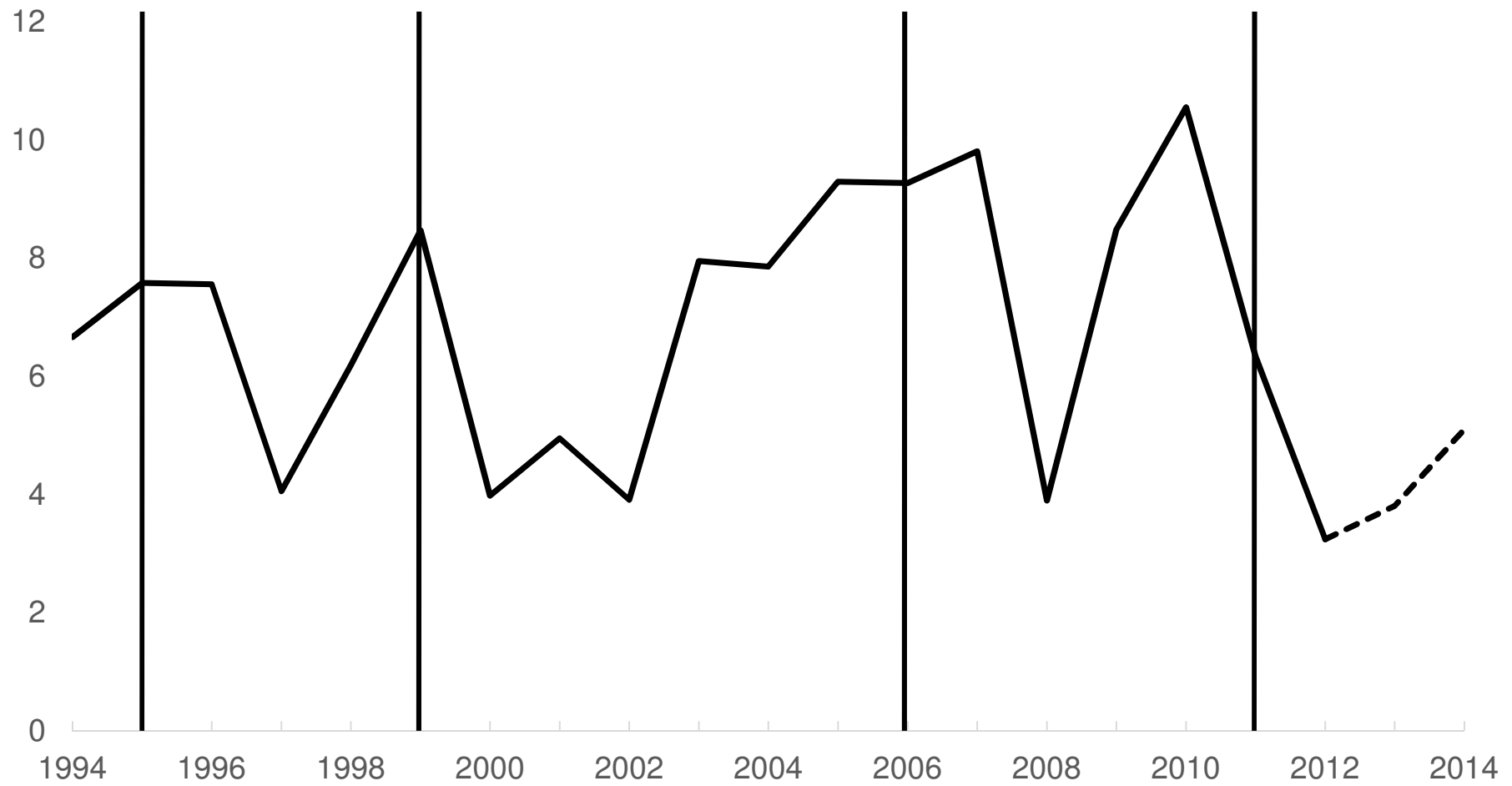
Currency crises and real growth: India



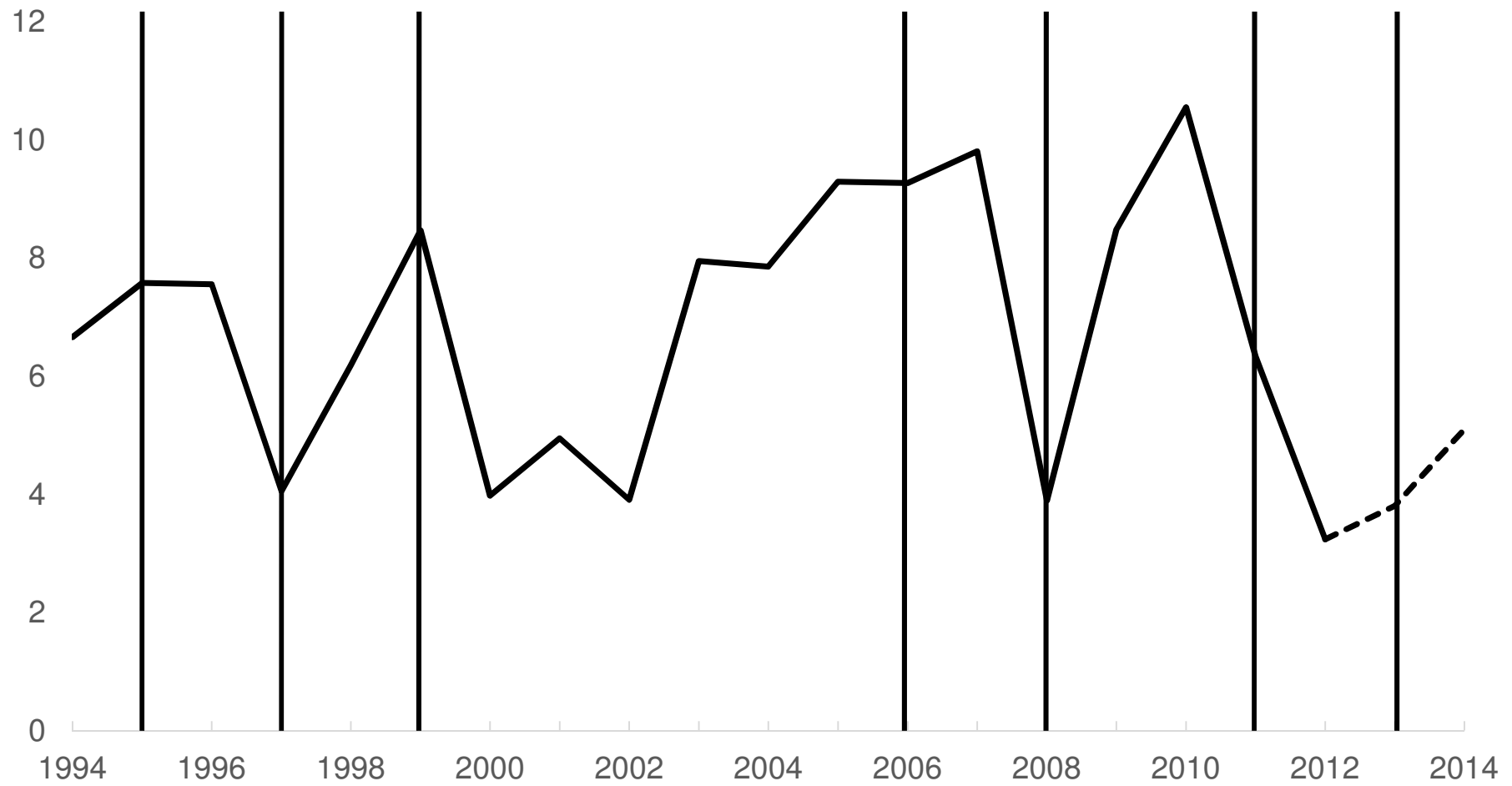
Currency crises and real growth: India



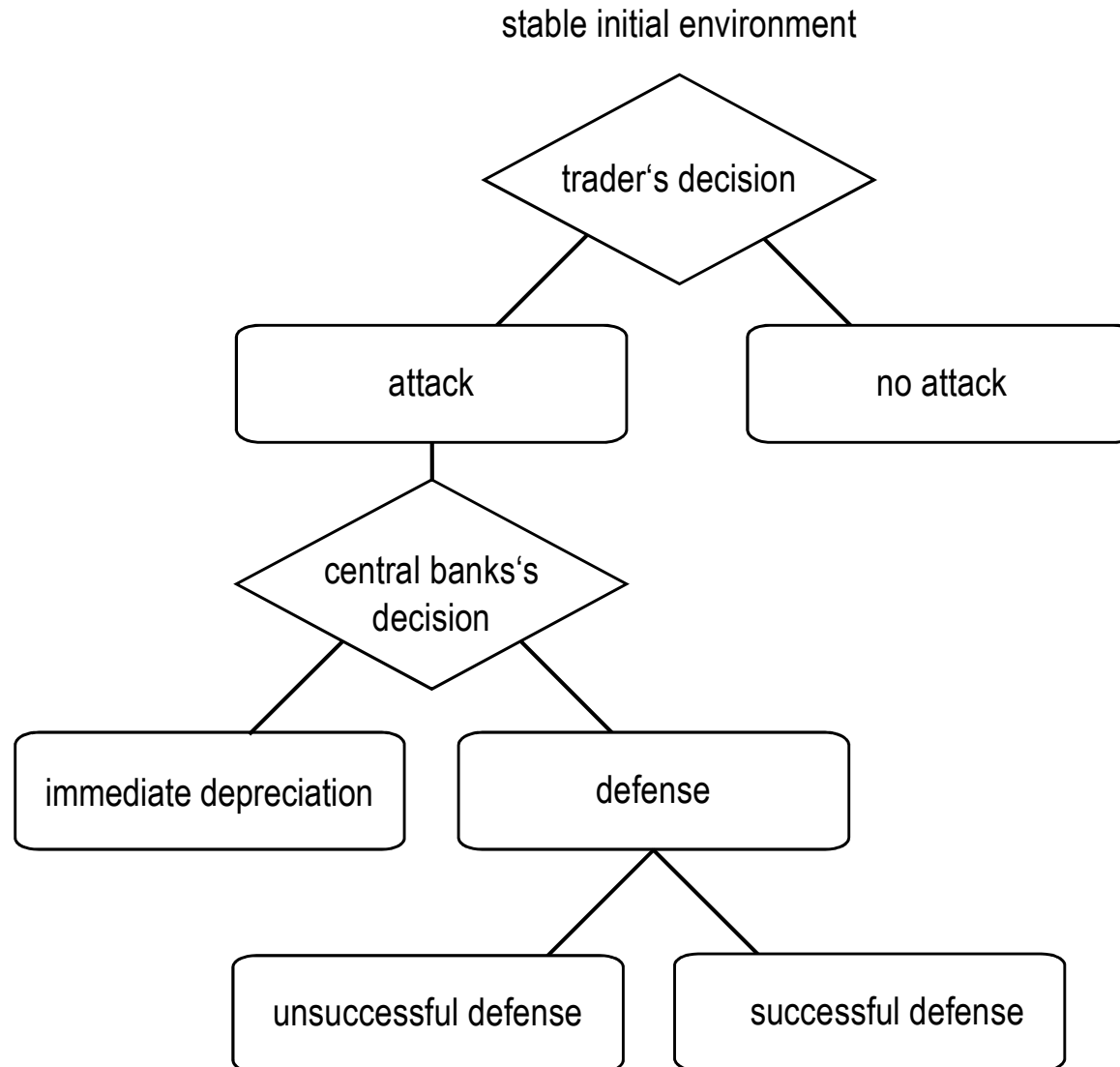
Currency crises and real growth: India



Currency crises and real growth: India

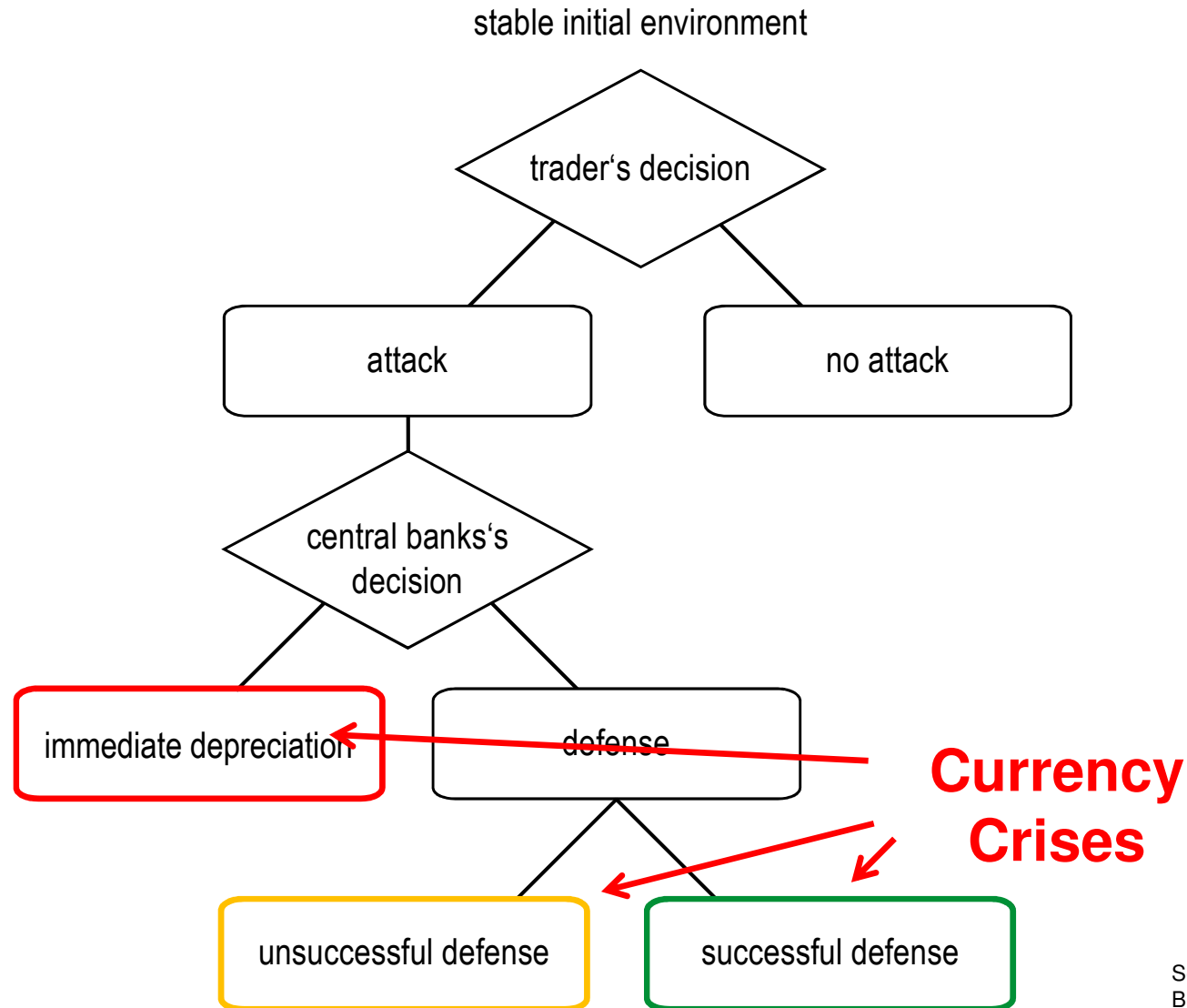


Currency crises: actors and outcomes



Source:
Bauer and Herz (2010)

Currency crises: actors and outcomes



Source:
Bauer and Herz (2010)

Main findings

- Currency crises are quite heterogeneous events.
- Central banks play a major role regarding the costs of currency crises → decision: to defend or not.
- Two options to mitigate the costs of speculative attacks
 - immediate depreciation
 - successful defense.
- Unsuccessful defenses → high economic costs

Currency crisis definitions

- Exchange Market Pressure Index
Eichengreen et al. (1995), Bussière and Fratzscher (2006),
Cerra and Saxena (2008), Klaasen and Jager (2011)
- significant depreciation
Frankel and Rose (1996), Eichengreen and Rose (2003)
Bussière et al. (2010)

$$EMPI_t = \Delta e_t + \underbrace{\Delta i_t - \Delta r_t}_{\substack{\Delta i_t - \Delta r_t \\ \text{significant intervention}}}$$

Δe_t
significant depreciation

$\Delta i_t - \Delta r_t$
significant intervention

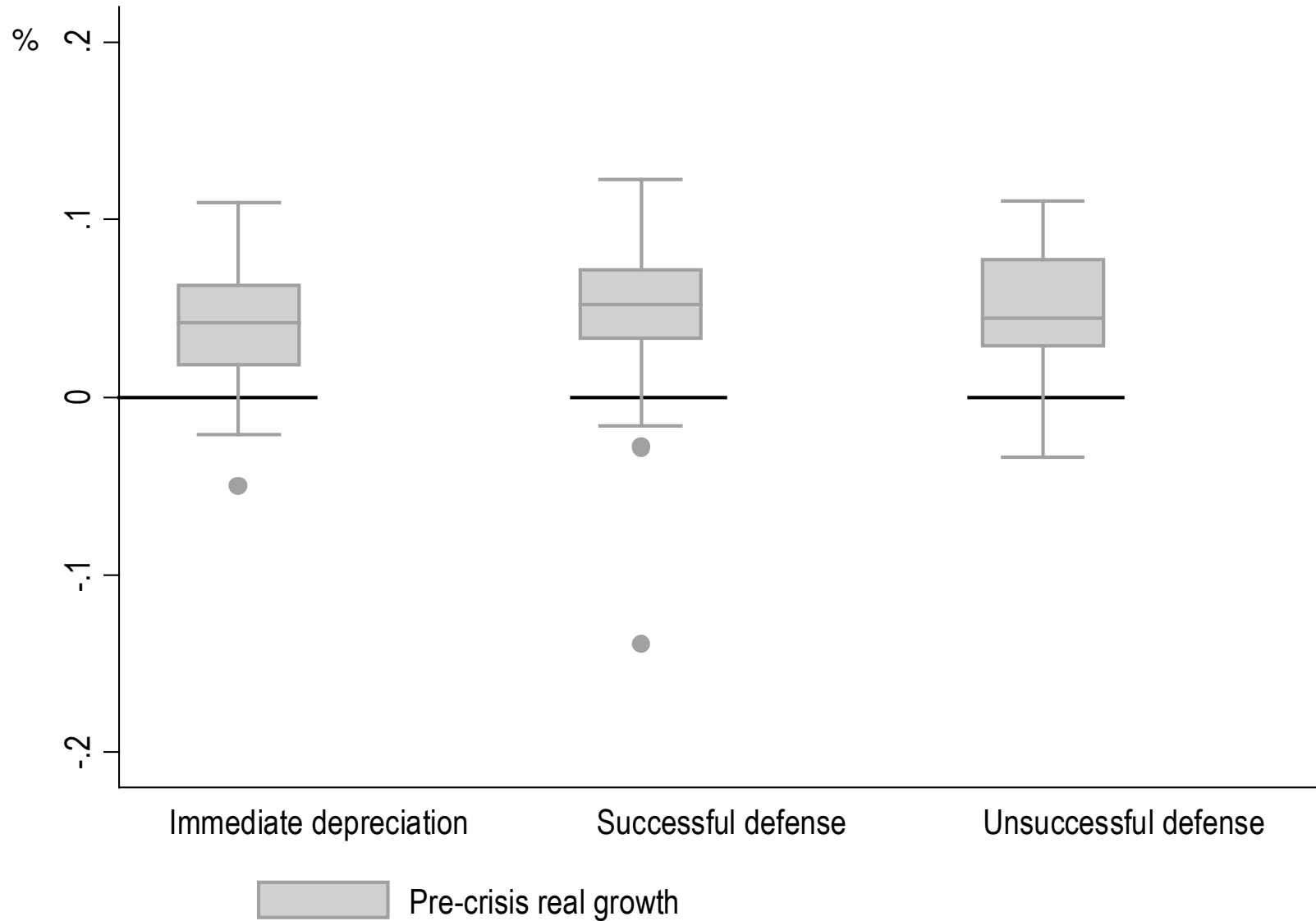
The (not so trivial) definition of currency crisis events

- significant intervention & significant depreciation
 - successful defense: significant intervention without a significant devaluation during the subsequent 12 months
 - unsuccessful defense: significant intervention followed by a significant devaluation during the subsequent 12 months
 - immediate devaluation: significant devaluation without a significant intervention during the preceding 12 months
- Separation of events to avoid contamination by nearby events
 - crisis/event in year T
 - no other event in $T-1$ and $T+1$

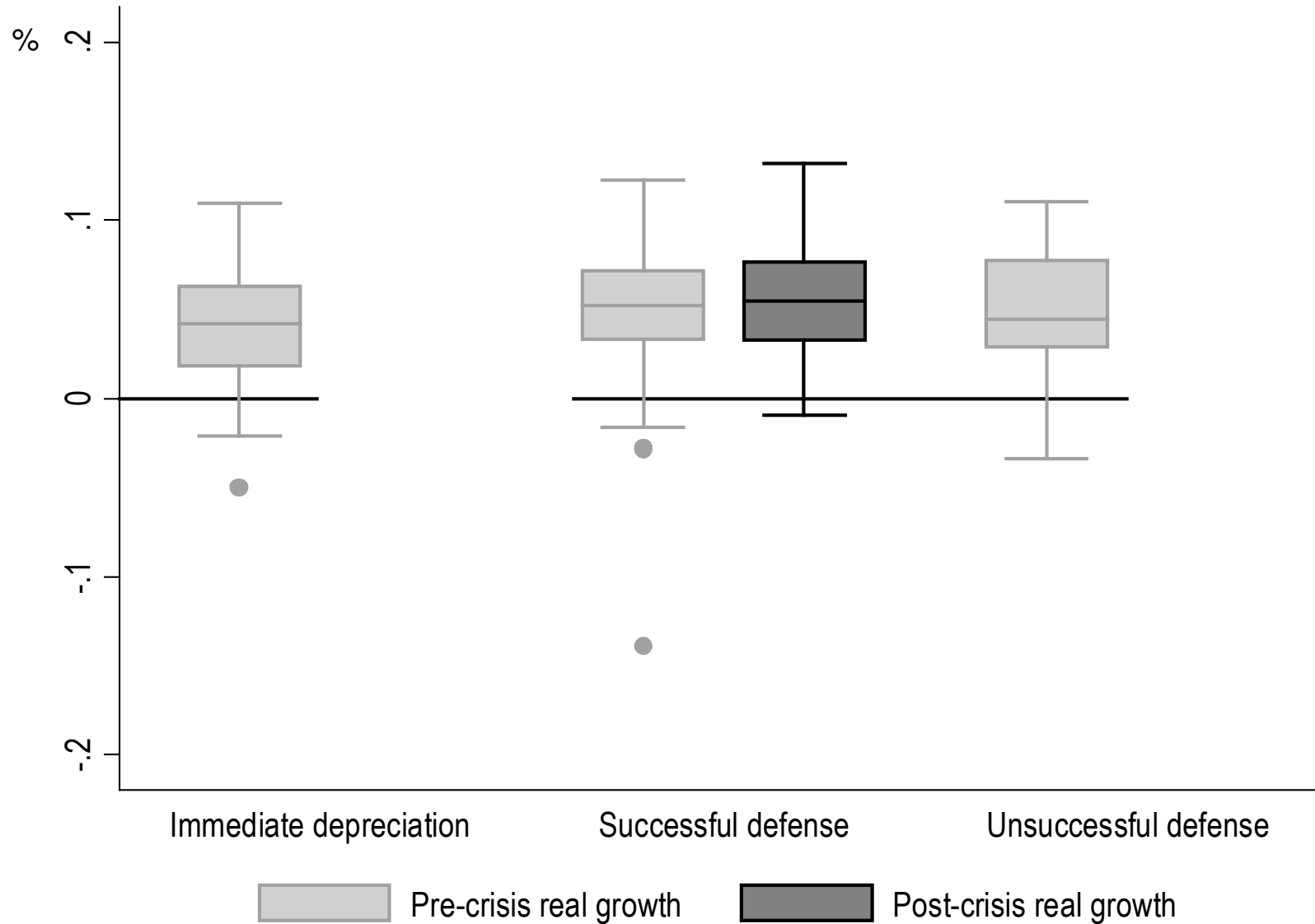
Data

- aggregated to annual data
- 32 emerging market countries between 1960 and 2010
- 163 crisis events can be categorized into the 3 types of crises:
 - 42 immediate depreciations
 - 87 successful interventions
 - 34 unsuccessful interventions

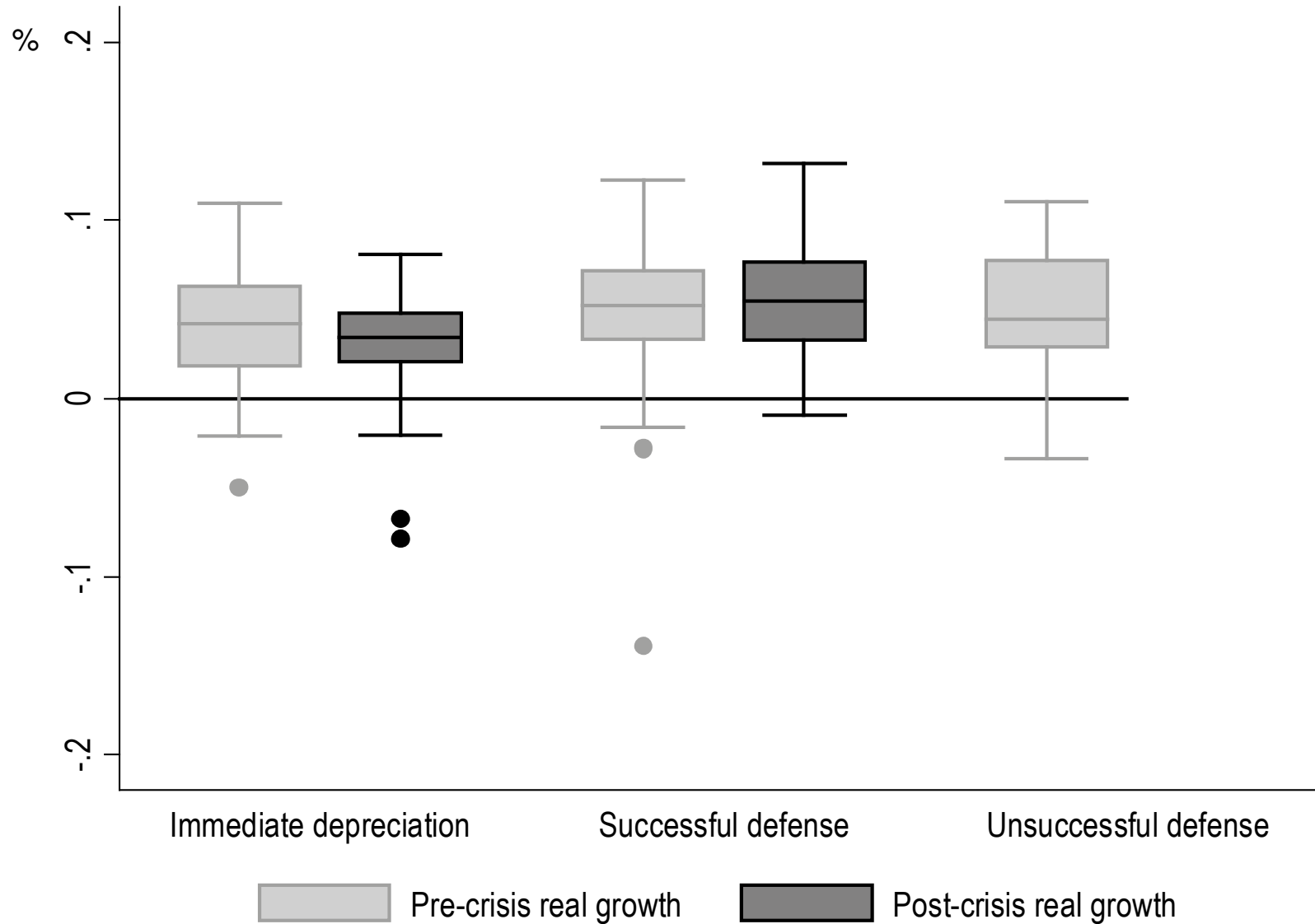
Pre and post crisis real growth (1960 – 2010)



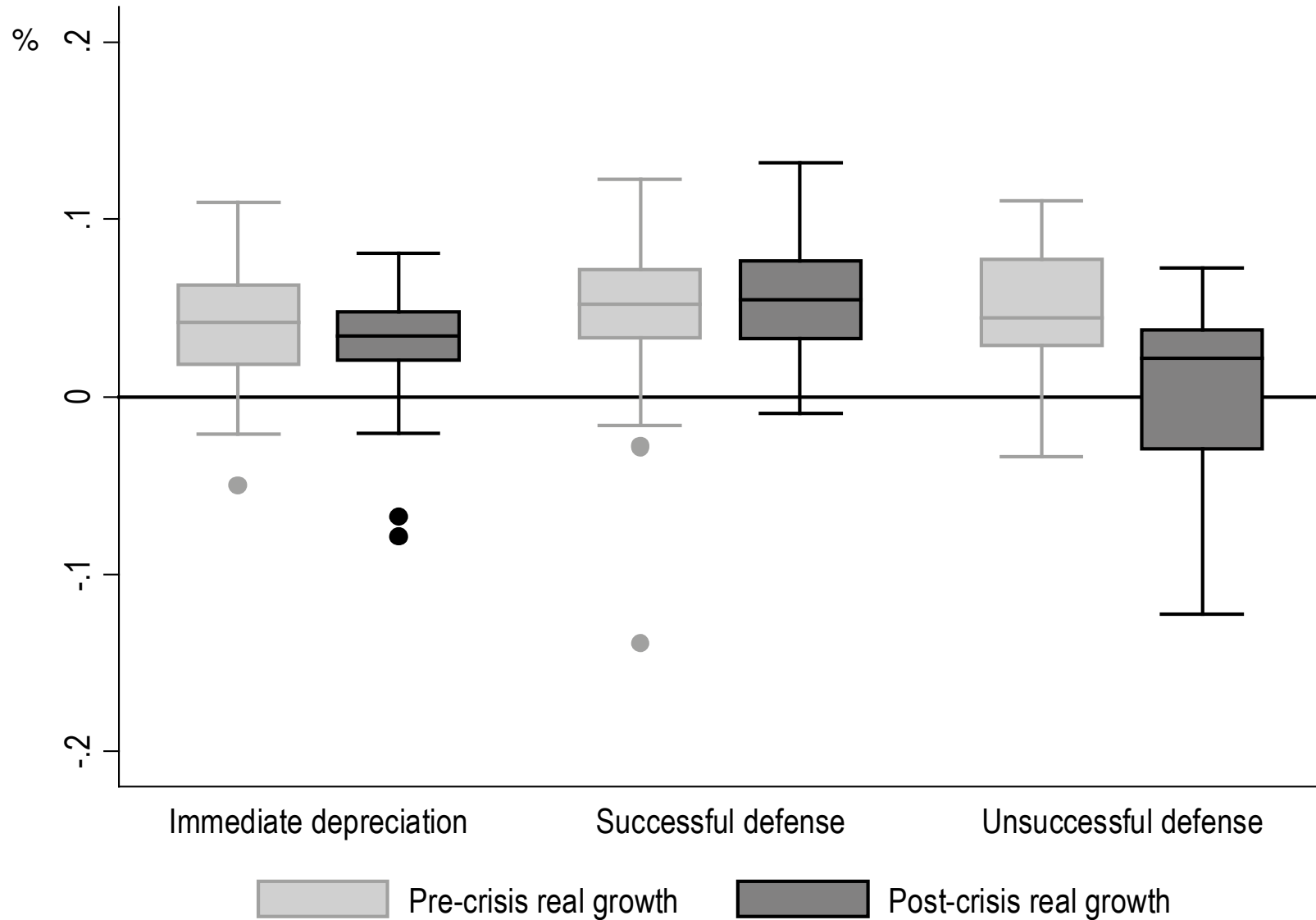
Pre and post crisis real growth (1960 – 2010)



Pre and post crisis real growth (1960 – 2010)



Pre and post crisis real growth (1960 – 2010)



Empirical Analysis – two approaches

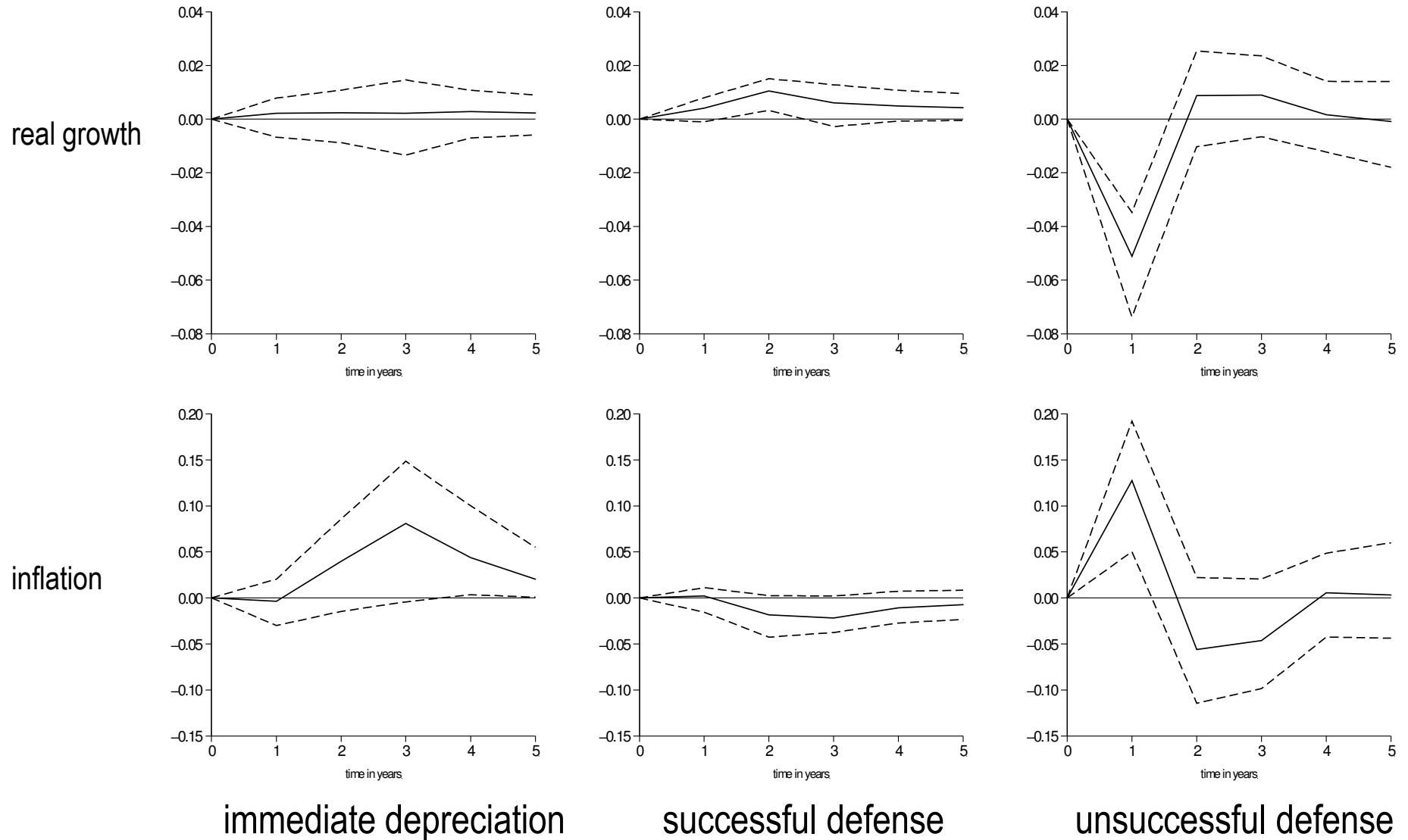
- panel VAR

$$X_{it} = \Gamma(L) X_{it} + F(L) D_{it} + \omega_i + d_t + \varepsilon_{it}$$

- univariate panel autoregressive:

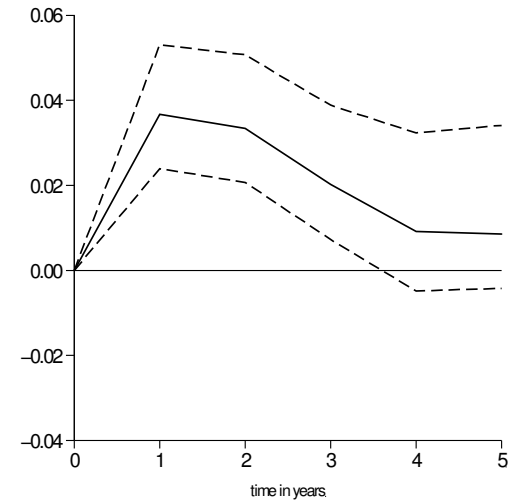
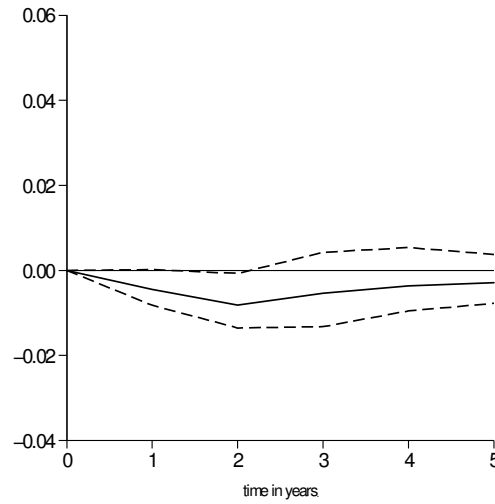
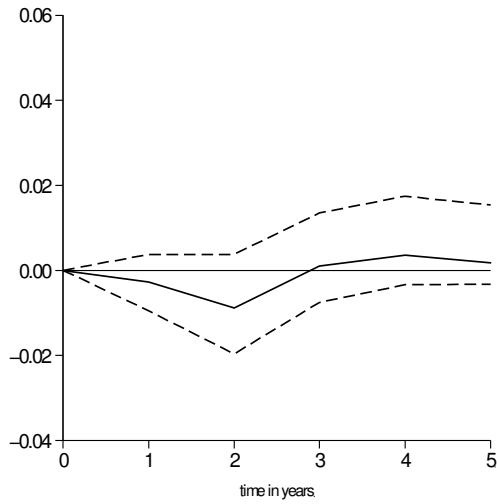
$$x_{it} = \alpha_i + \omega_t + \sum_{j=1}^3 \beta_j x_{it-j} + \sum_{k=1}^3 \sum_{s=1}^3 \alpha_{ks} D_{kit-s} + \varepsilon_{it}$$

Empirical Analysis: panel VAR (I)

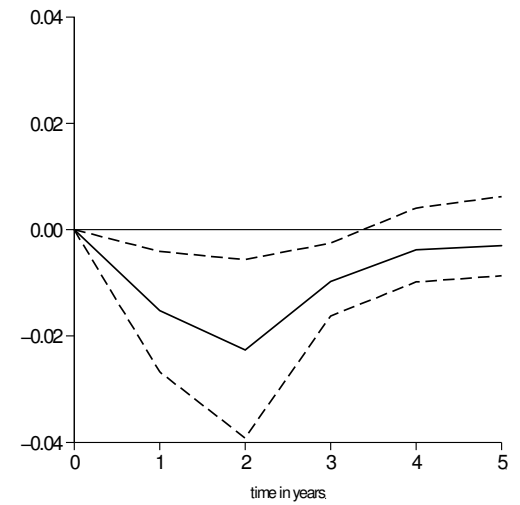
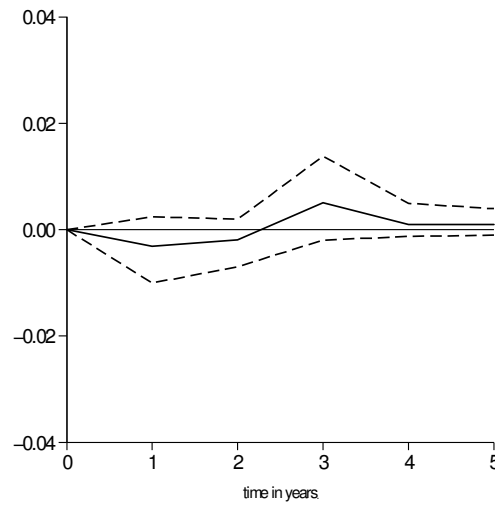
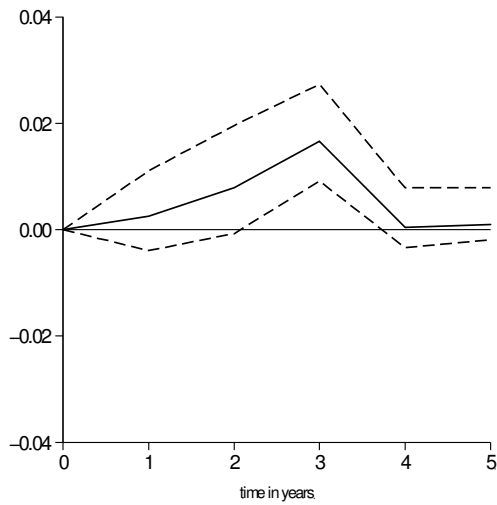


Empirical Analysis: panel VAR (II)

current
account



private
capital
inflows



immediate depreciation

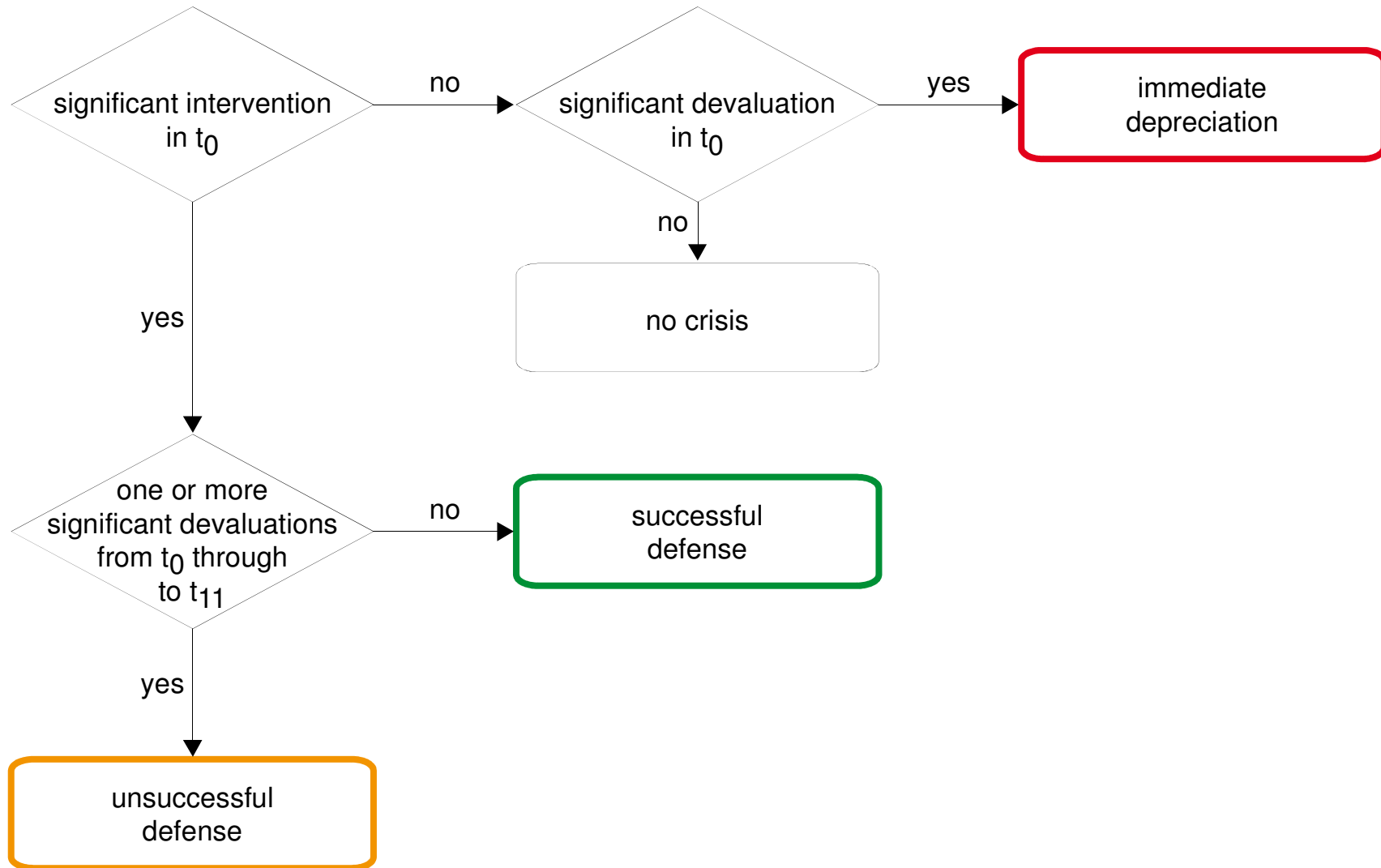
successful defense

unsuccessful defense

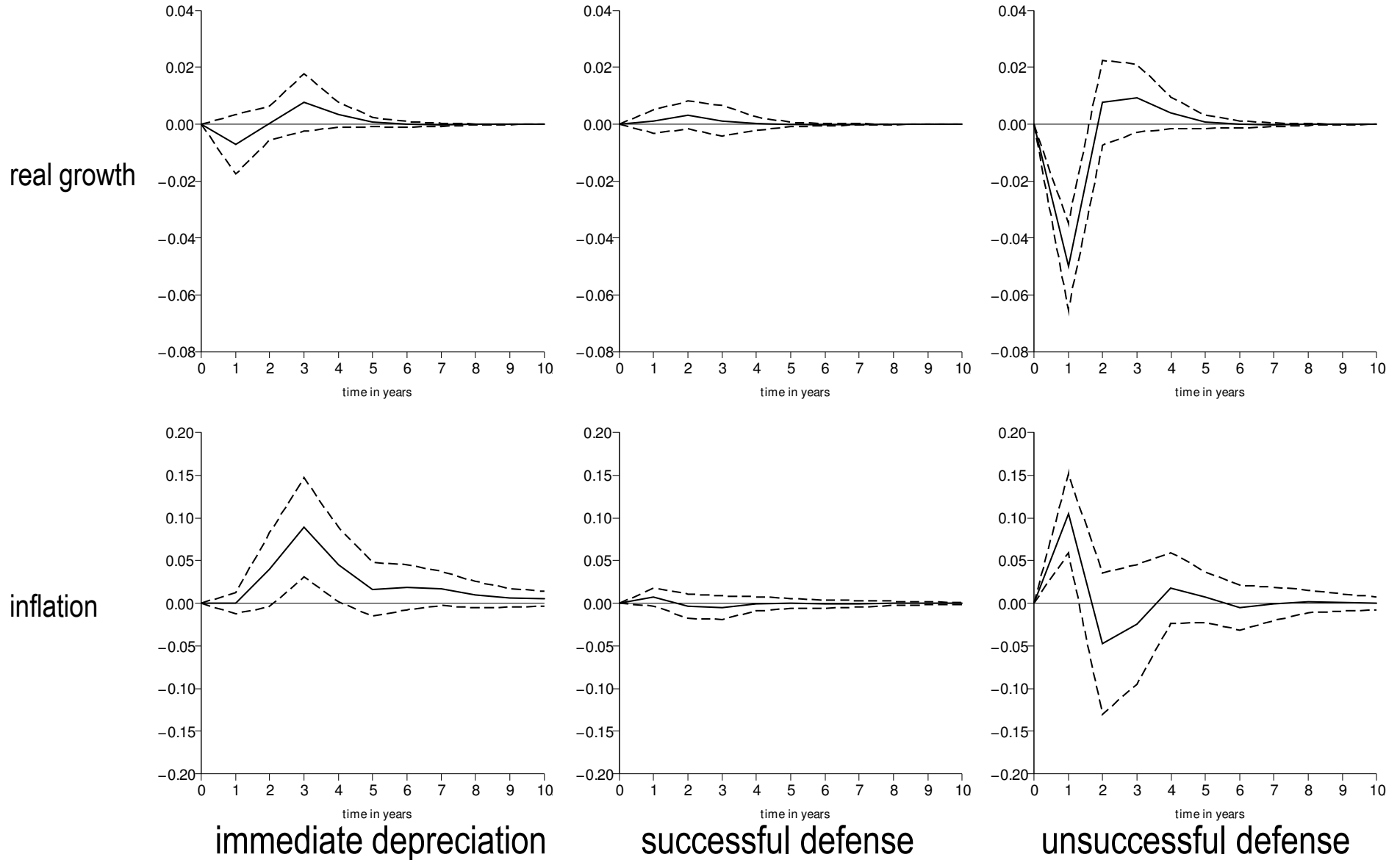
Summary

- Not all currency crises are created equal
- Need to differentiate currency crises
- Crisis management matters
- Costs of non-intervention are likely to be overestimated
- Defending is a risky decision!
- Non-intervention as an “intermediate” strategy

Currency crisis definitions (III)



Empirical Analysis: univariate panel autoregressive



Empirical Analysis IV

Years after crisis	1	2	3	4	5
Consumption growth					
Immediate depreciation	0.003	0.005	0.005	0.000	-0.001
Successful defense	0.003	0.007	-0.007	-0.002	0.000
Unsuccessful defense	-0.041	0.005	0.000	0.002	0.000
Investment growth					
Immediate depreciation	-0.033	-0.007	-0.005	0.000	0.001
Successful defense	-0.006	-0.012	-0.003	0.001	0.001
Unsuccessful defense	-0.189	0.011	0.048	0.019	0.000
Export growth					
Immediate depreciation	-0.056	-0.008	0.014	0.000	-0.001
Successful defense	-0.006	0.002	0.011	0.000	-0.001
Unsuccessful defense	-0.064	-0.040	0.017	0.002	-0.002
Import growth					
Immediate depreciation	-0.064	0.003	0.007	0.003	-0.001
Successful defense	-0.016	-0.010	0.007	0.003	0.000
Unsuccessful defense	-0.185	0.019	0.041	0.009	-0.007
Debt-to-GDP ratio					
Immediate depreciation	0.020	0.018	0.002	0.001	0.001
Successful defense	0.014	0.015	0.001	0.000	0.000
Unsuccessful defense	0.078	0.068	0.040	0.031	0.026
Unemployment rate					
Immediate depreciation	0.007	0.004	-0.001	-0.002	-0.002
Successful defense	0.000	-0.002	-0.002	-0.001	-0.001
Unsuccessful defense	0.013	0.010	0.003	0.000	-0.001

Currency Crises and Real GDP

Real GDP: Turkey



Currency crisis definitions (I)

		defensive action	
		No	Yes
depreciation	No	no crisis	successful defense
	Yes	immediate depreciation	unsuccessful defense

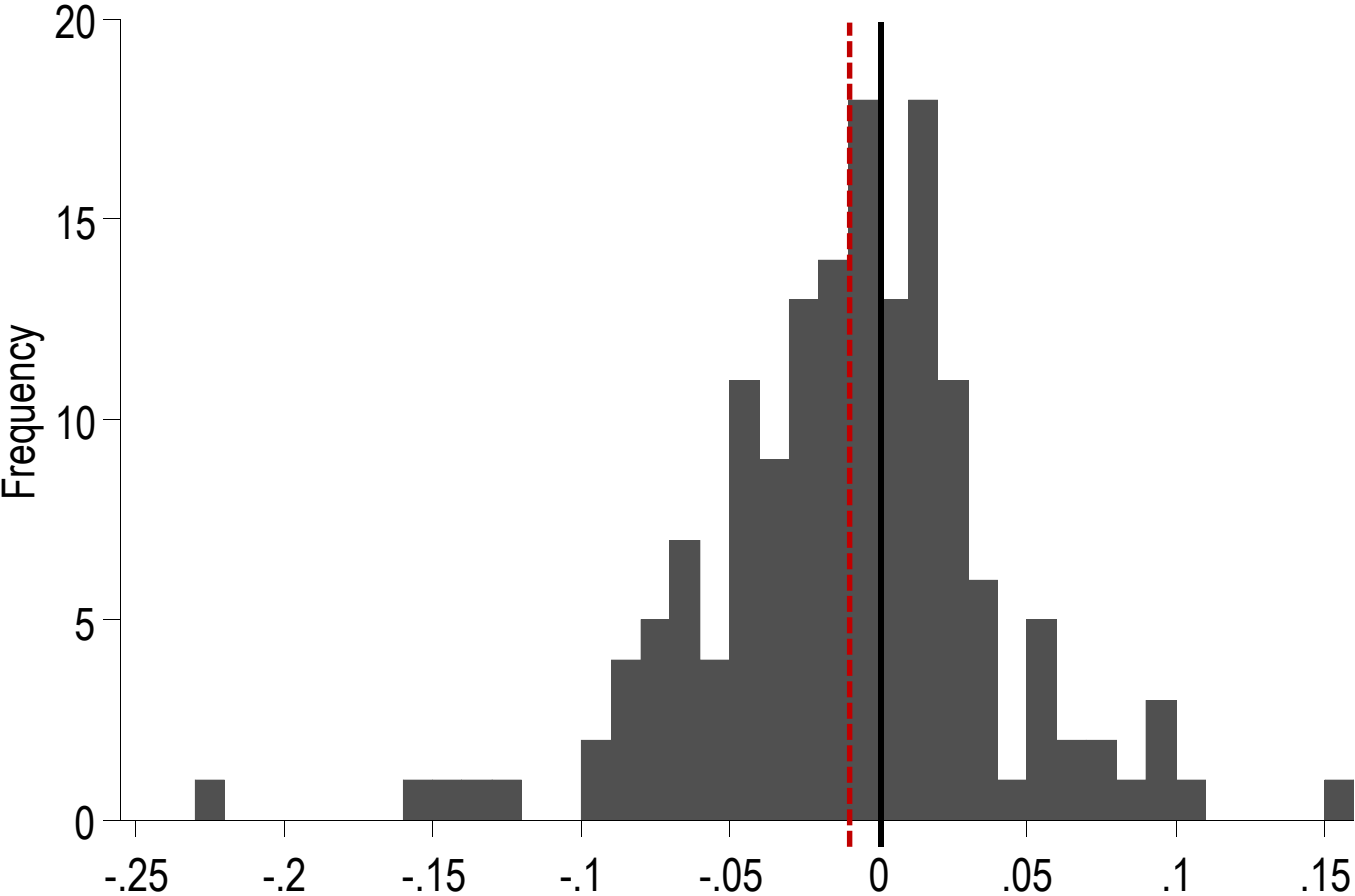
3 Currency Crisis Definitions

		Defensive action	
		No	Yes
Devaluation	No	no crisis	successful defense
	Yes	immediate devaluation	unsuccessful defense

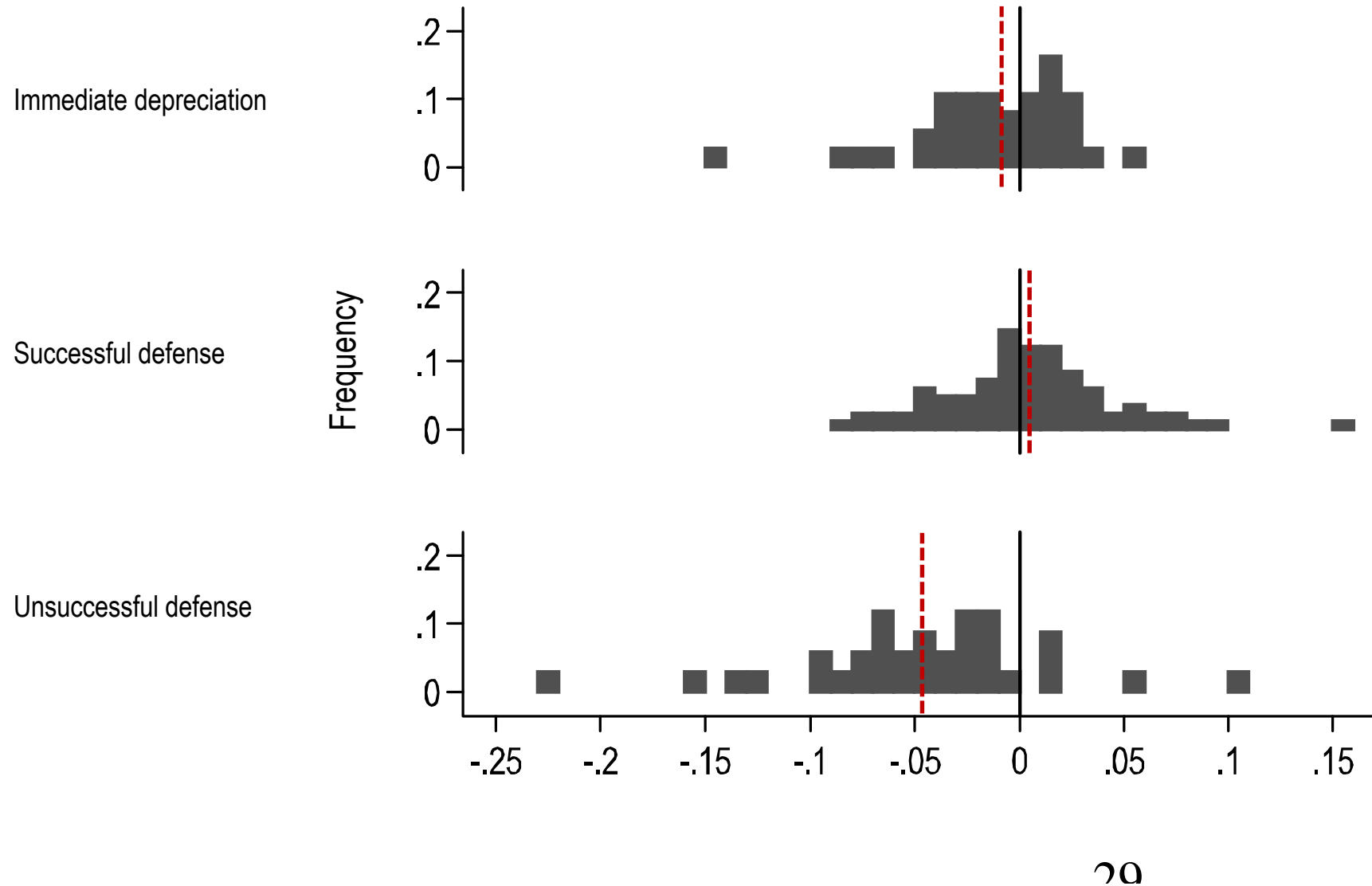
3 Currency Crisis Definitions

		Defensive action	
		No	Yes
		Devaluation	No
Yes	immediate devaluation		unsuccessful defense

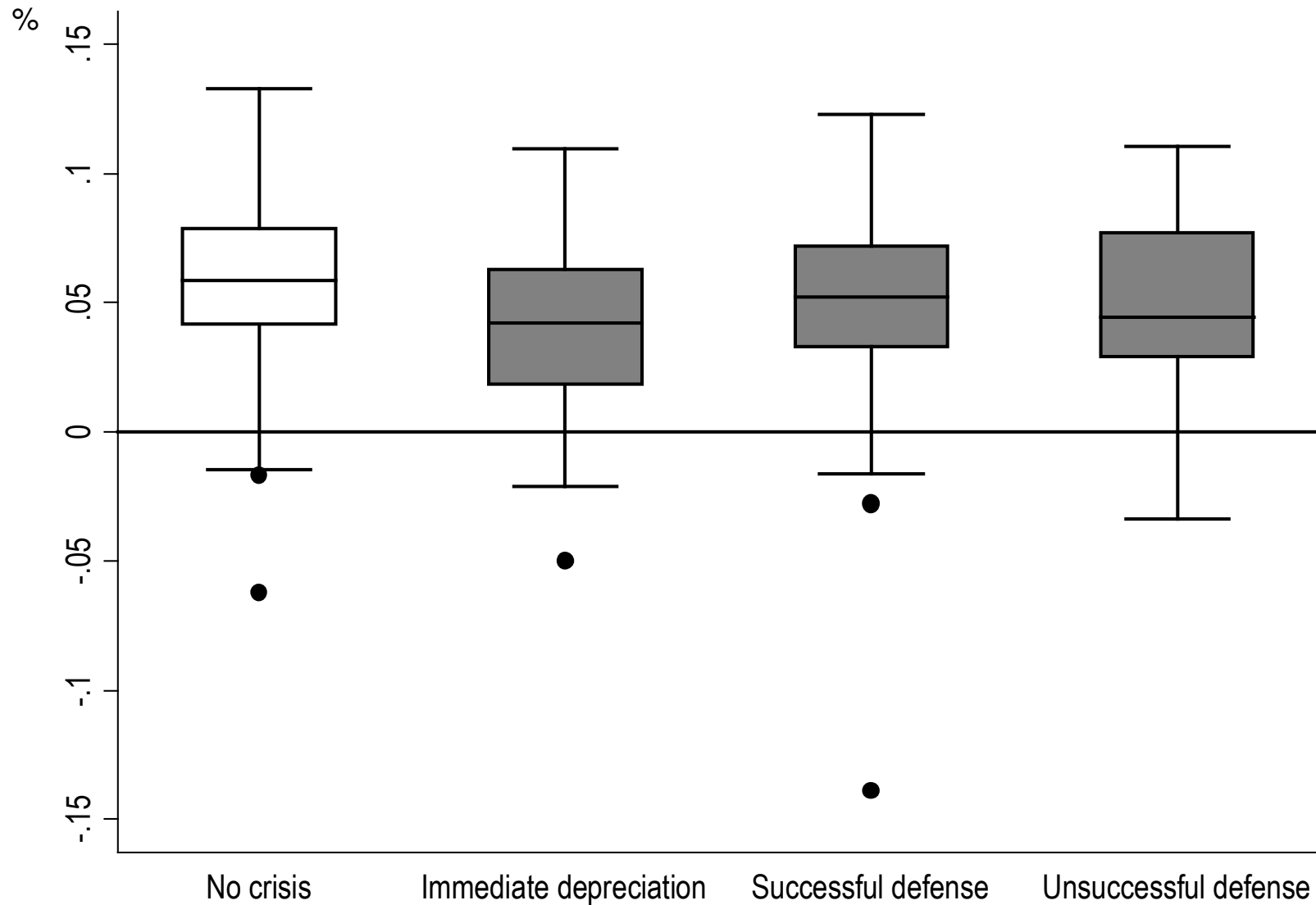
Deviation from pre crisis growth: all crises (1960 – 2010)



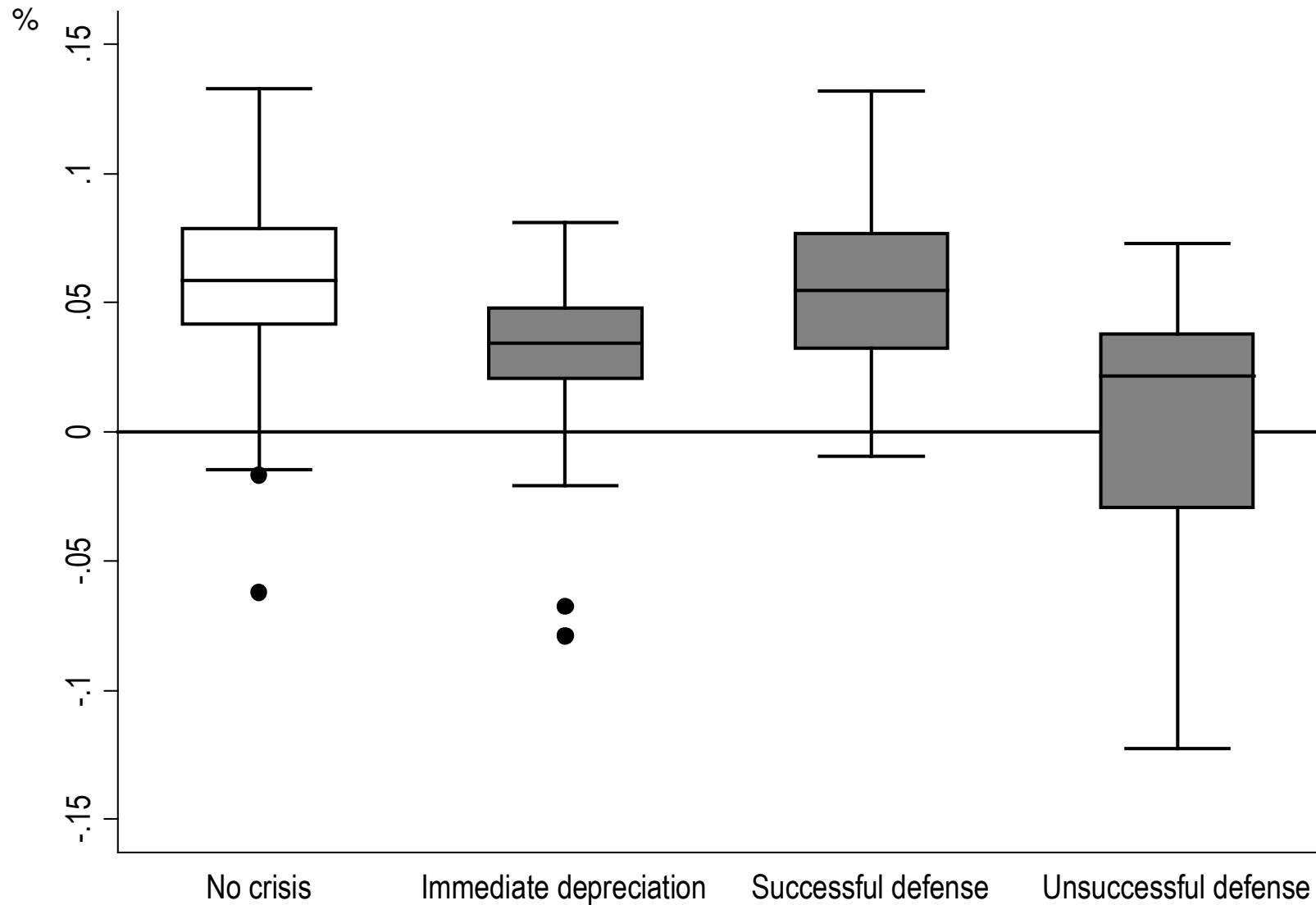
Deviation from pre crisis growth: different types of crises (1960 – 2010)



Pre crisis real growth (1960 – 2010)



Post crisis real growth (1960 – 2010)



Pre and post crisis real growth (1960 – 2010)

