Welcome to the Swiss National Bank's
Karl Brunner Distinguished Lecture 2017

Zurich, 21 September 2017

Zurich, 21.09.2017 / Lino Guzzella / President

Willkommen – Bienvenus – Benvenuti – Bainvegni – Welcome

Introduction

Thomas J. Jordan

Chairman of the Governing Board
Swiss National Bank

Ideas and Institutions for Monetary Policy Making

John B. Taylor

Mary and Robert Raymond Professor of Economics
Stanford University

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Stanford University's Hoover Institution

SCHWEIZERISCHE NATIONALBANK
BANQUE NATIONALE SUISSE
BANCA NAZIONALE SVIZZERA
BANCA NAZIUNALA SVIZRA
SWISS NATIONAL BANK

Ideas and Institutions for Monetary Policy Making

John B. Taylor

The Karl Brunner Lecture
Swiss National Bank
September 21, 2017

Purpose of Lecture

- To try to apply the Brunner approach to current international monetary policy issues:
  - "Policies depend not only on <u>theories and evidence</u>, but on the structure of policymaking bodies and the procedures by which policies are made, implemented and changed.…
  - "Direct the attention of economists to major problems of economic policy and <u>institutional arrangements</u>.…
  - Encourage further research on policy and on the effects of <u>national agencies and international institutions</u> on the choice of policies"
- *From the Introduction to Carnegie-Rochester Conference Series*

A View on Recent Policy

- Allan Meltzer, Jackson Hole, August 2016
- Through "quantitative easing," Fed policy makers had actually been engaging in "competitive devaluation"
- "Other countries have now followed and been even less circumspect about the fact that they were engaging in competitive devaluation."
- "Competitive devaluation was tried in the 1930s, and unsuccessfully, and the result was that around that time major countries agreed they would not engage in competitive devaluation ever again…"
- "I would hope that from this point forward, the Federal Reserve would take the lead in trying to restore the agreement which said no more competitive devaluations."
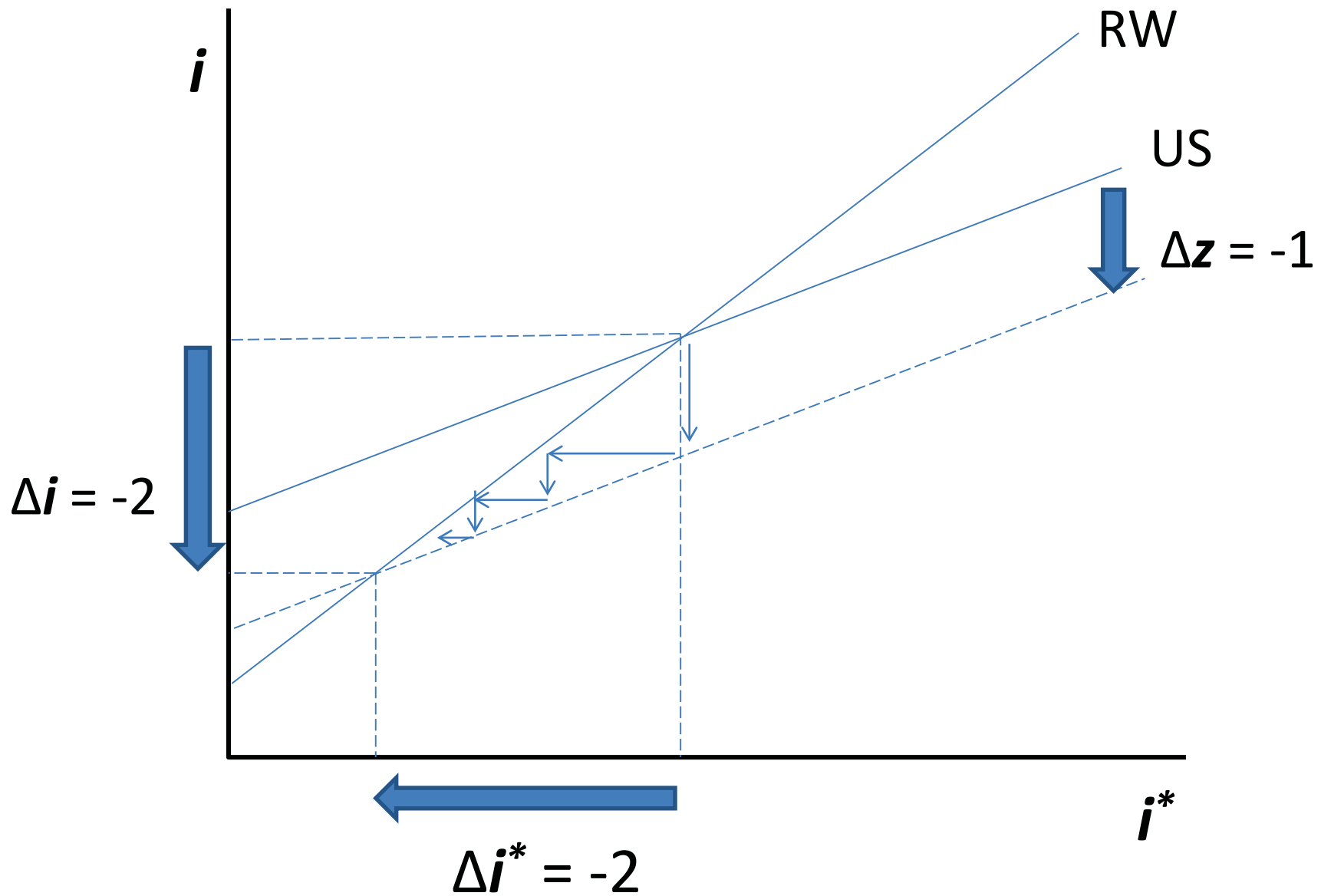
Global

Emerging markets

Per cent

Per cent

- Policy rate — Taylor rule — Range of Taylor rates
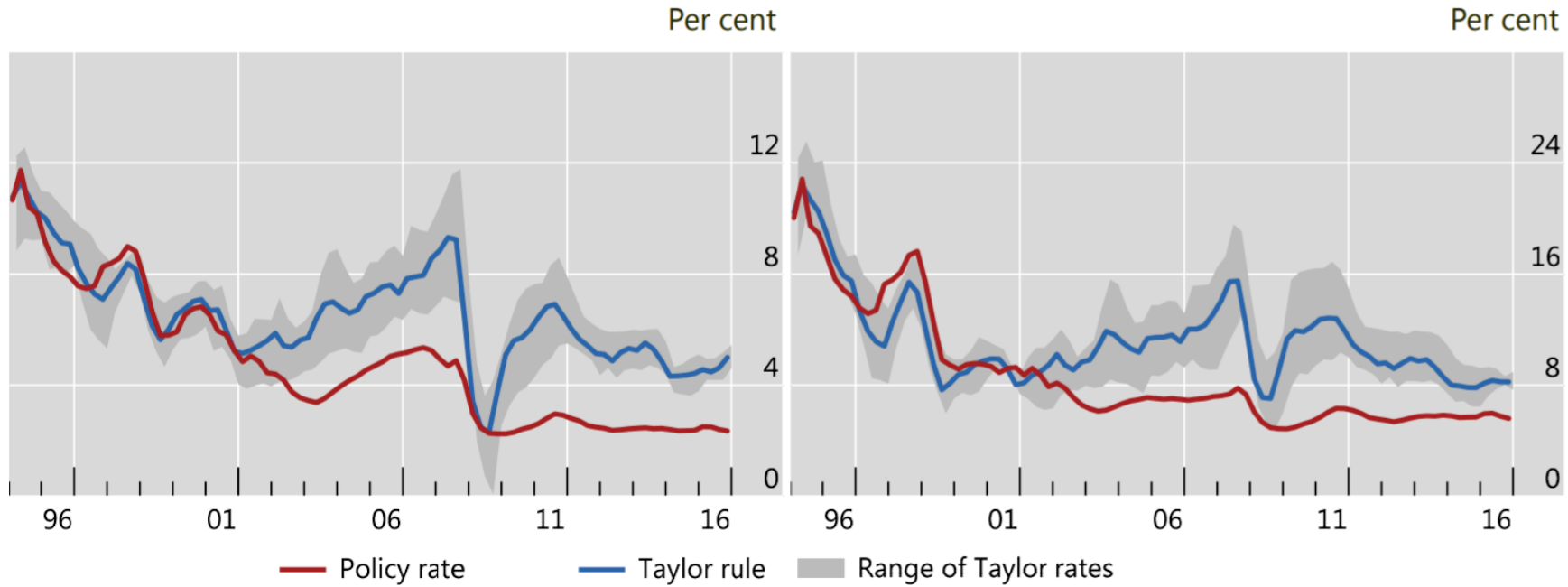
The Great Global Deviation
Source: BIS calculations based on Hofmann and Bogdanova (2012)

An Interest Rate Policy Spillover Amplification Mechanism

Basic Modeling Framework

Basic Modeling Framework

Assets	Liabilities		Assets	Liabilities
Domestic Securities	Reserve Balances		Foreign Securities	Reserve Balances

Key Variables to Keep Track Of

R_U = Fed, reserve balances, millions of dollars

R_J = BOJ, current account balances, 100s of million yen

R_E = ECB, current account plus deposit facility, millions of euros

R_S = SNB, sight deposits and other sight liabilities, millions of francs

I_U = effective federal funds rate, percent, dollar

I_J = call money rate, percent, yen

I_E = interest rate on deposit facility, percent, euro

I_S = Swiss average rate overnight (Saron), percent, Swiss francs

X_{JU} = exchange rate, yen per one dollar

X_{JE} = exchange rate, yen per one euro

X_{UE} = exchange rate, dollars per one euro

X_{SU} = exchange rate, Swiss francs per one dollar

X_{SE} = exchange rate, Swiss francs per one euro

X_{SJ} = exchange rate, Swiss francs per one yen

	R_U	R_J	R_E	R_S	I_U	I_J	I_E	I_S
R_U	1.00							
R_J	0.72	1.00						
R_E	0.49	0.64	1.00					
R_S	0.89	0.85	0.69	1.00				
I_U	-0.77	-0.36	-0.44	-0.58	1.00			
I_J	-0.53	-0.45	-0.37	-0.48	0.49	1.00		
I_E	-0.81	-0.57	-0.51	-0.71	0.76	0.87	1.00	
I_S	-0.84	-0.61	-0.59	-0.76	0.78	0.85	0.97	1.00

Sample: 2005.1 2017.5

Correlations Between Reserve Balances and Interest Rates

	R_U	R_J	R_E	R_S	I_U	I_J	I_E	I_S
R_U	1.00							
R_J	0.72	1.00						
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Correlations Between Reserve Balances and Interest Rates

Reserve Balances at the Fed (R_U), the BOJ (R_J), and the ECB (R_E): 2005 - 2017
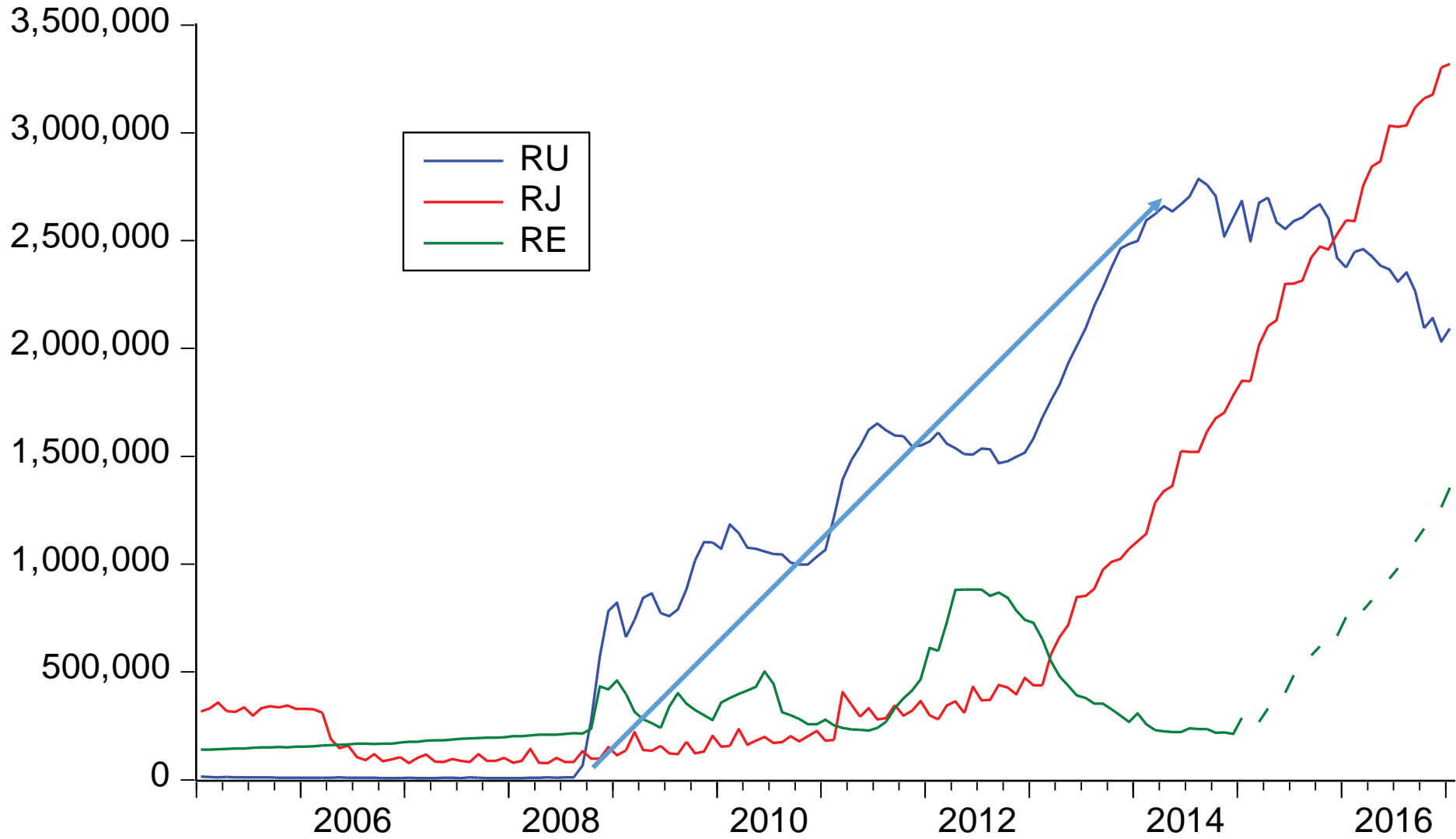
Reserve Balances at the Fed (R_U), the BOJ (R_J), and the ECB (R_E): 2005 - 2017
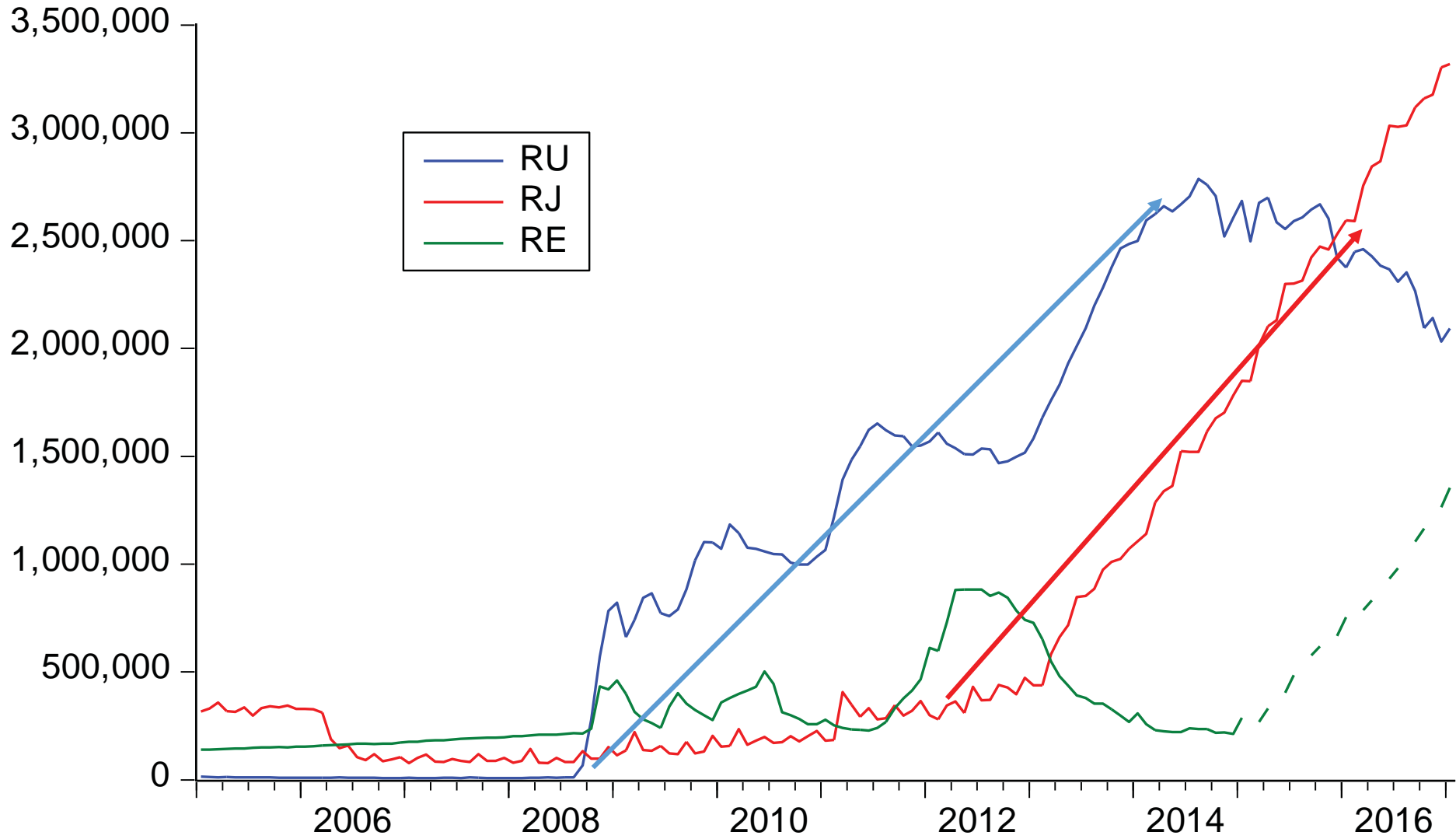
Reserve Balances at the Fed (R_U), the BOJ (R_J), and the ECB (R_E): 2005 - 2017
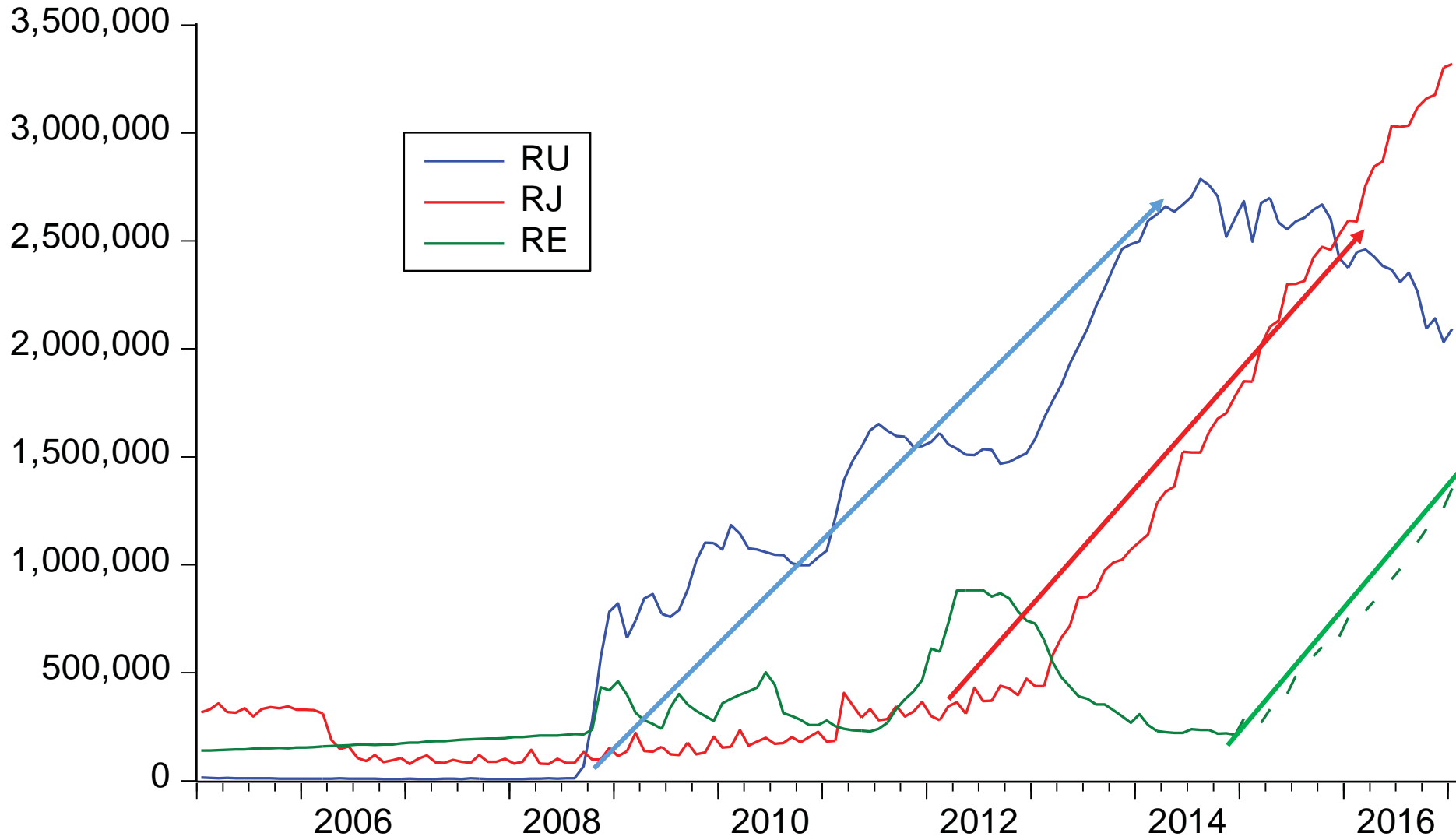
Reserve Balances at the Fed (R_U), the BOJ (R_J), and the ECB (R_E): 2005 - 2017

A Balance Sheet Policy Spillover Amplification? (Estimates from January 2005 to May 2017)

$R_J = -108 + 0.76R_U + e$

$\quad\quad$ (-1.2) $\quad$ (13.4)

$R_U = 647 + 0.72R_J + v$

$\quad\quad$ (9.01) $\quad$ (13.37)

$(1-.76*.72)^{-1} = 2.2$

Hypothesized Relationships between
Reserve Balances and Exchange Rates

$$X_{JU} = \alpha_0 + \alpha_1 R_J + \alpha_2 R_U + \alpha_3 R_E$$

$$X_{JE} = \beta_0 + \beta_1 R_J + \beta_2 R_U + \beta_3 R_E$$

$$X_{UE} = \gamma_0 + \gamma_1 R_J + \gamma_2 R_U + \gamma_3 R_E$$

Estimated Relationships Between Reserve Balances & Exchange Rates

	Constant	R_J	R_U	R_E
X_{JU}	113.0 (97.4)	2.10E-05 (19)	-1.22E-05 (-13)	-3.17E-05 (-12)
X_{JE}	153.6 (83.7)	1.56E-05 (8.8)	-1.20E-05 (-8.2)	-4.88E-05 (-11)
X_{UE}	1.366 (105)	-1.06E-07 (-8.5)	3.85E-08 (3.7)	-7.45E-08 (-2.3)

t-statistics with Newey-West

50.2	10.0	-6.9	-8.6
35.0	5.1	-3.9	-9.5
40. 8	-5.6	1.8	-1.6

A Counterfactual Simulation

- Compare volatility of the exchange rate with the counterfactual of no changes in reserve balances:

- yen/dollar
  - the s.e. of the regression: 7.27
  - s.d. of dependent variable: 14.11

- yen/euro
  - the s. e. of the regression: 11.3
  - s.d. of dependent variable: 18.03

- euro /dollar
  - the s.e. of the regression: .080
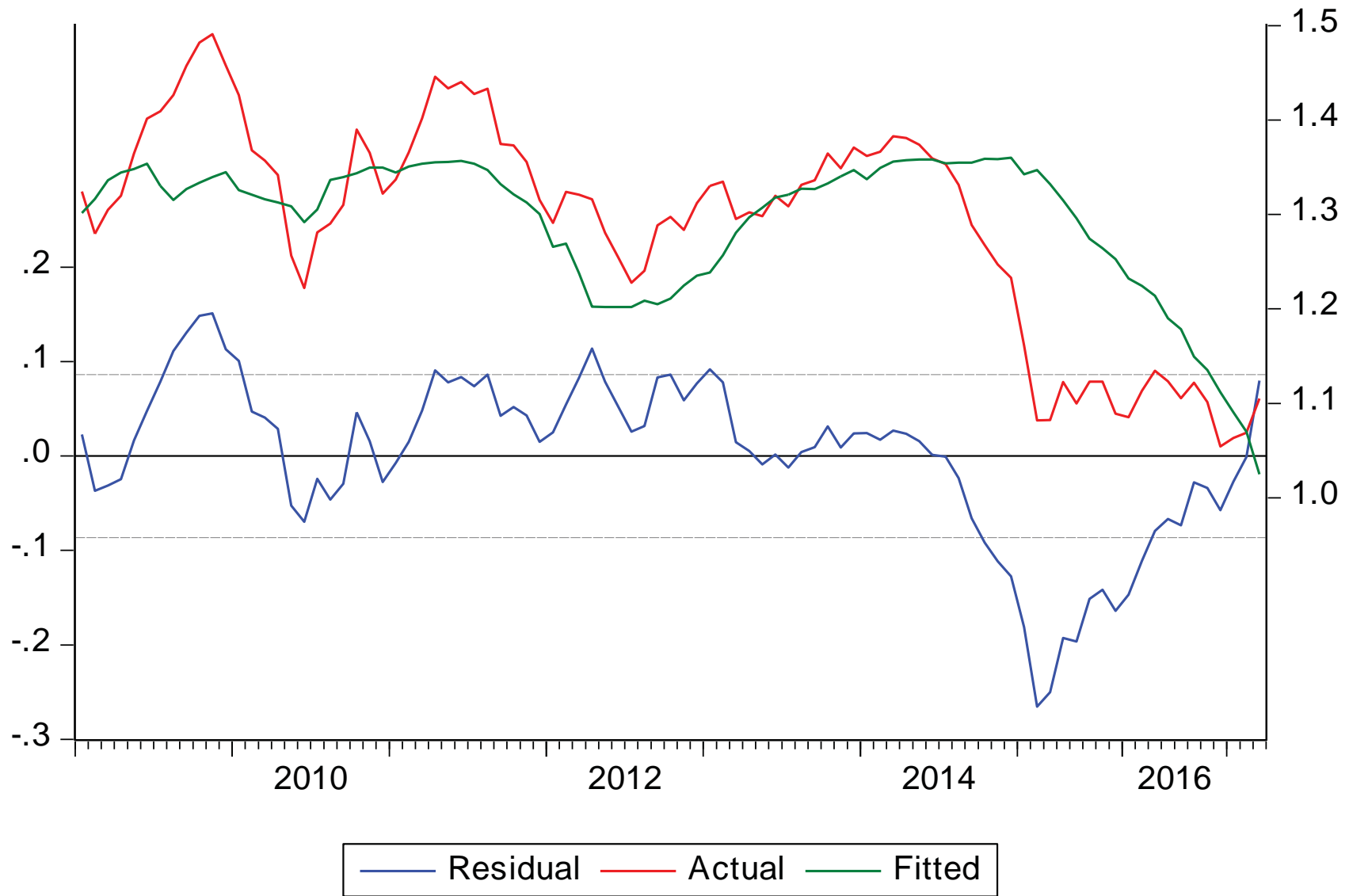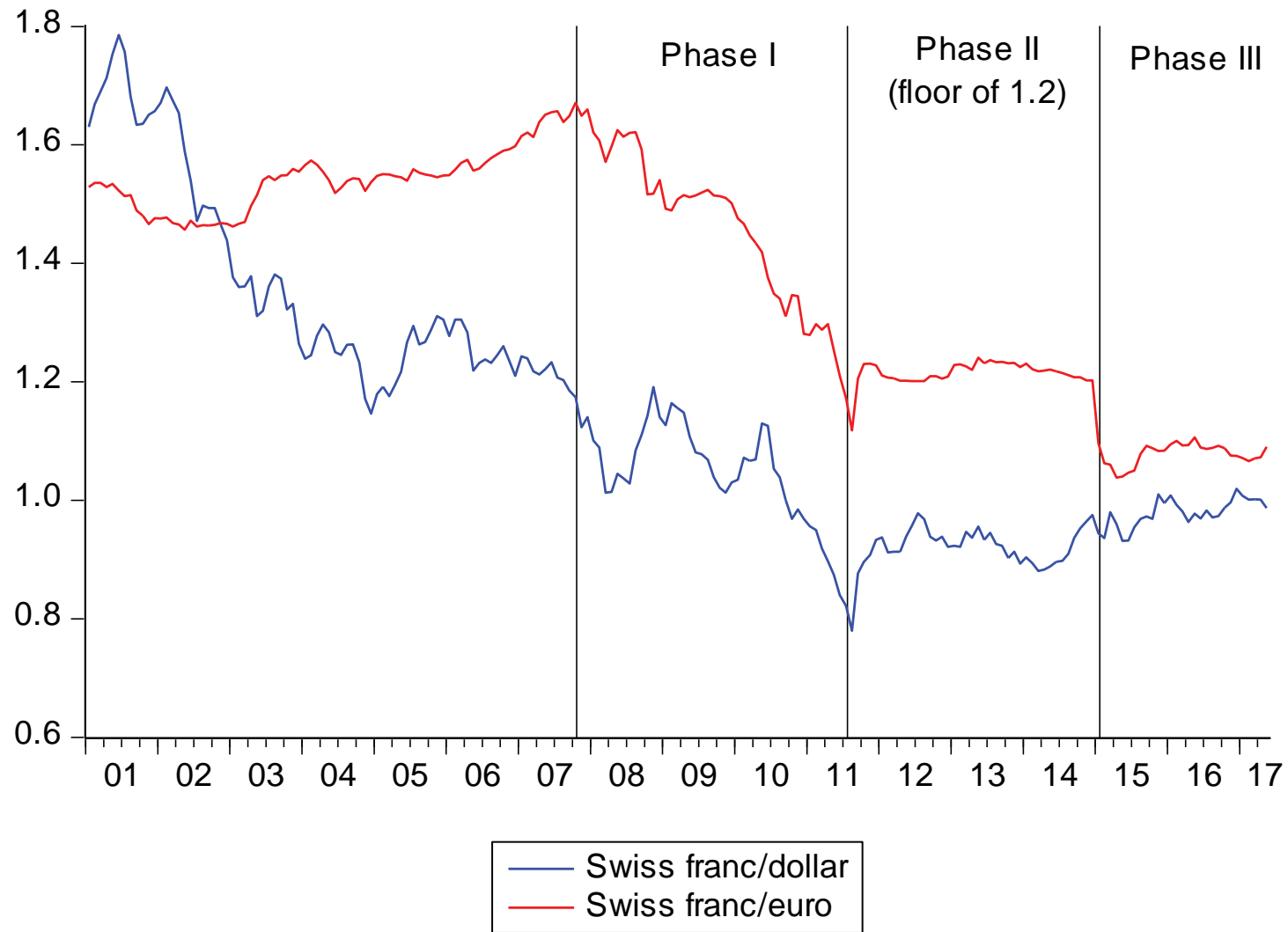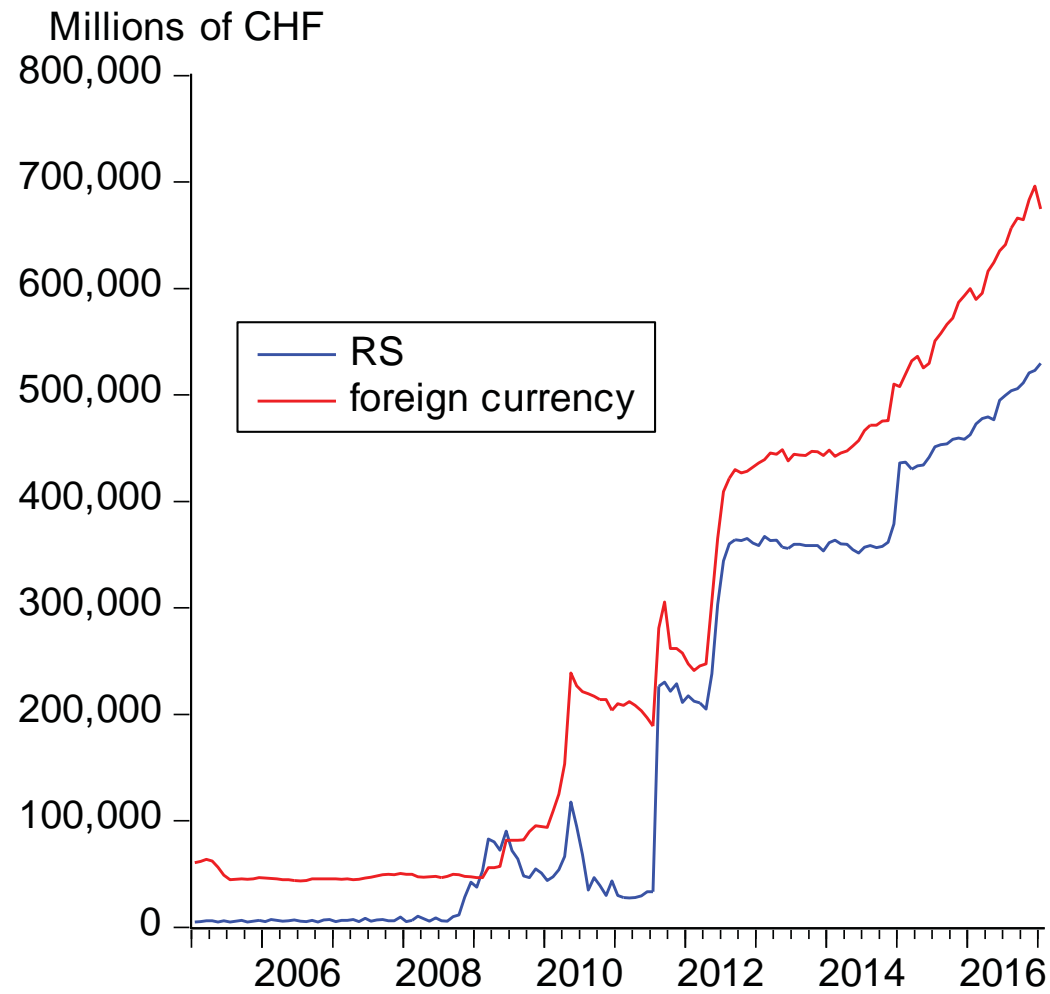 - s.d. of dependent variable: .112
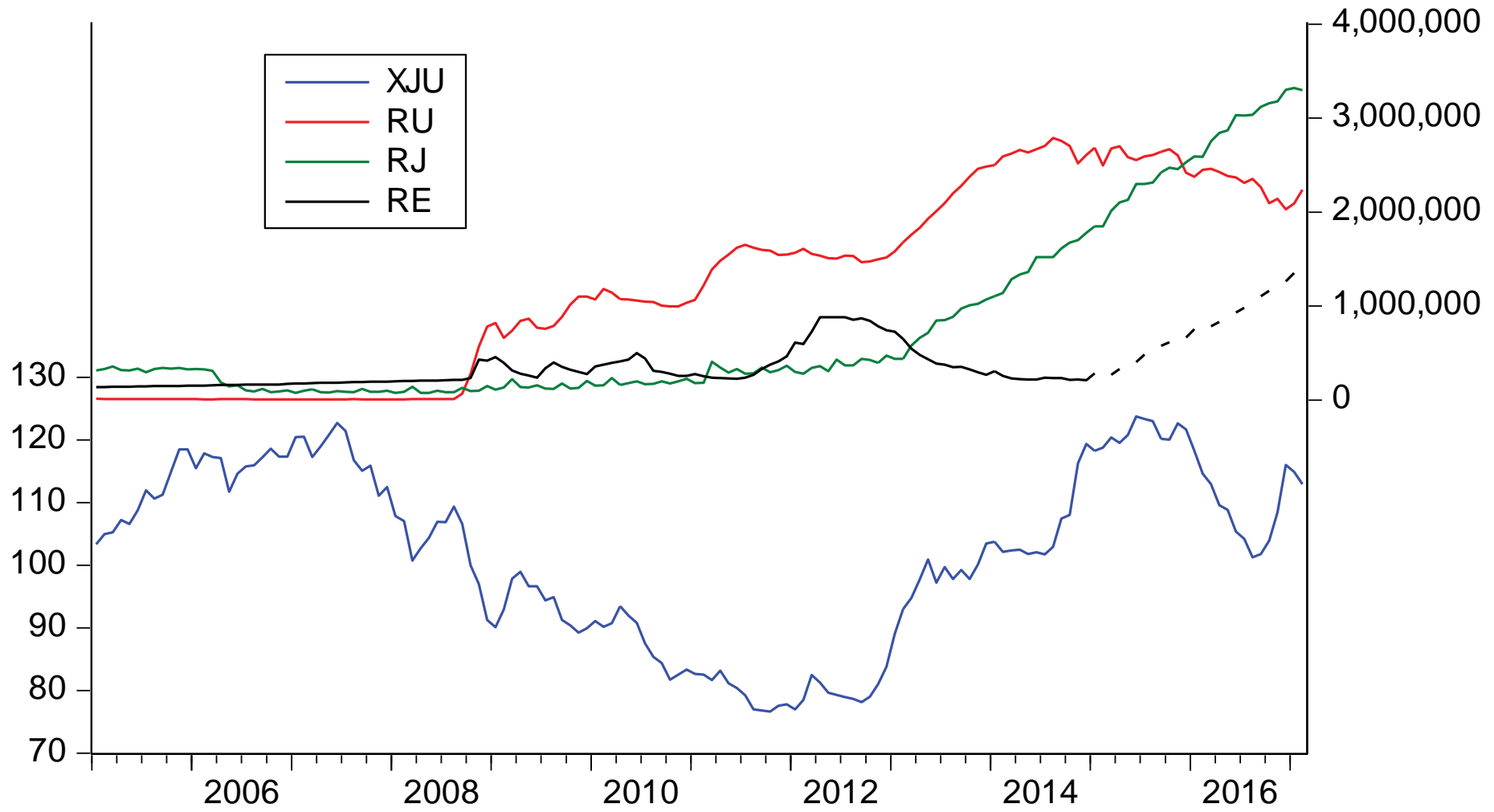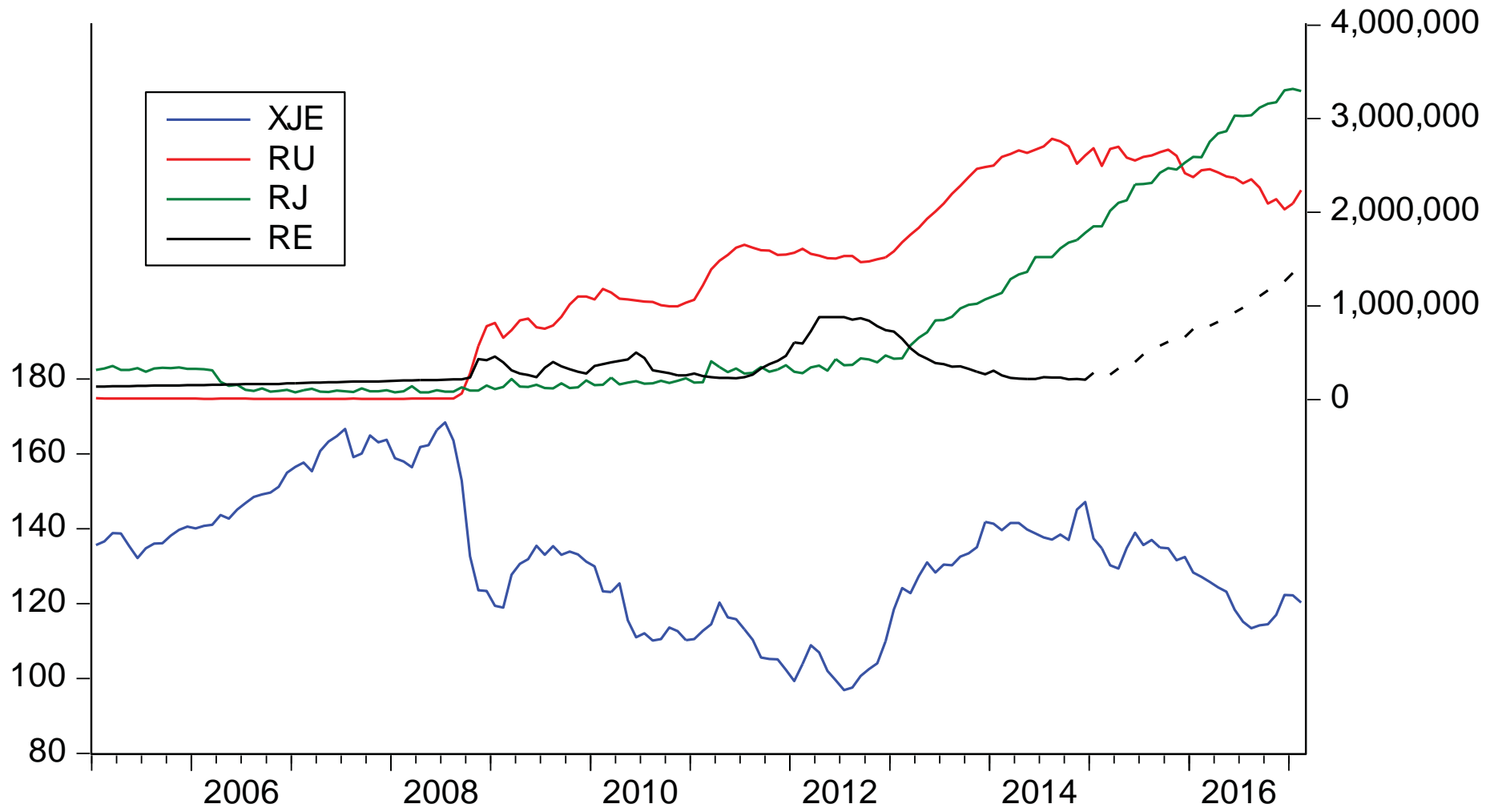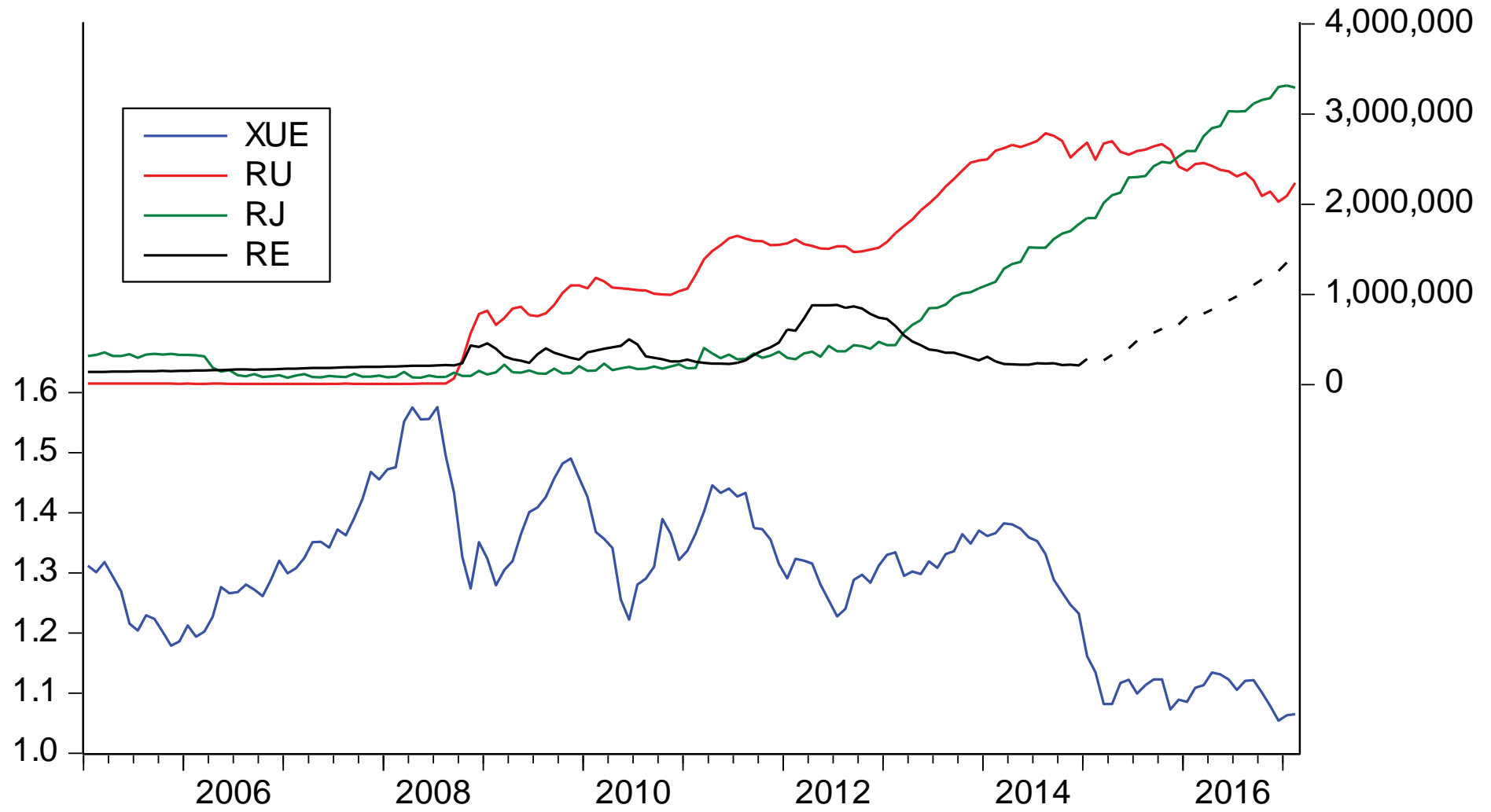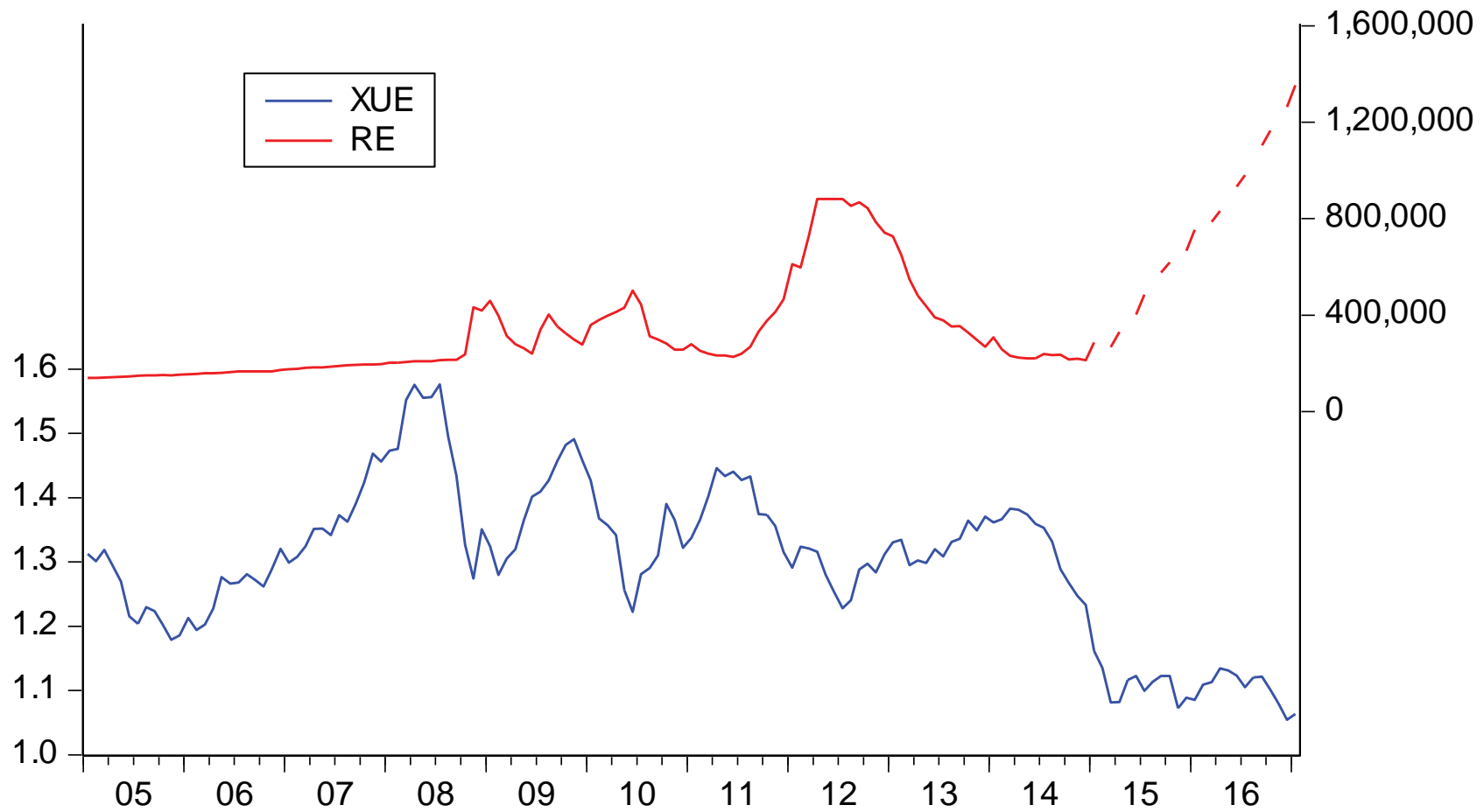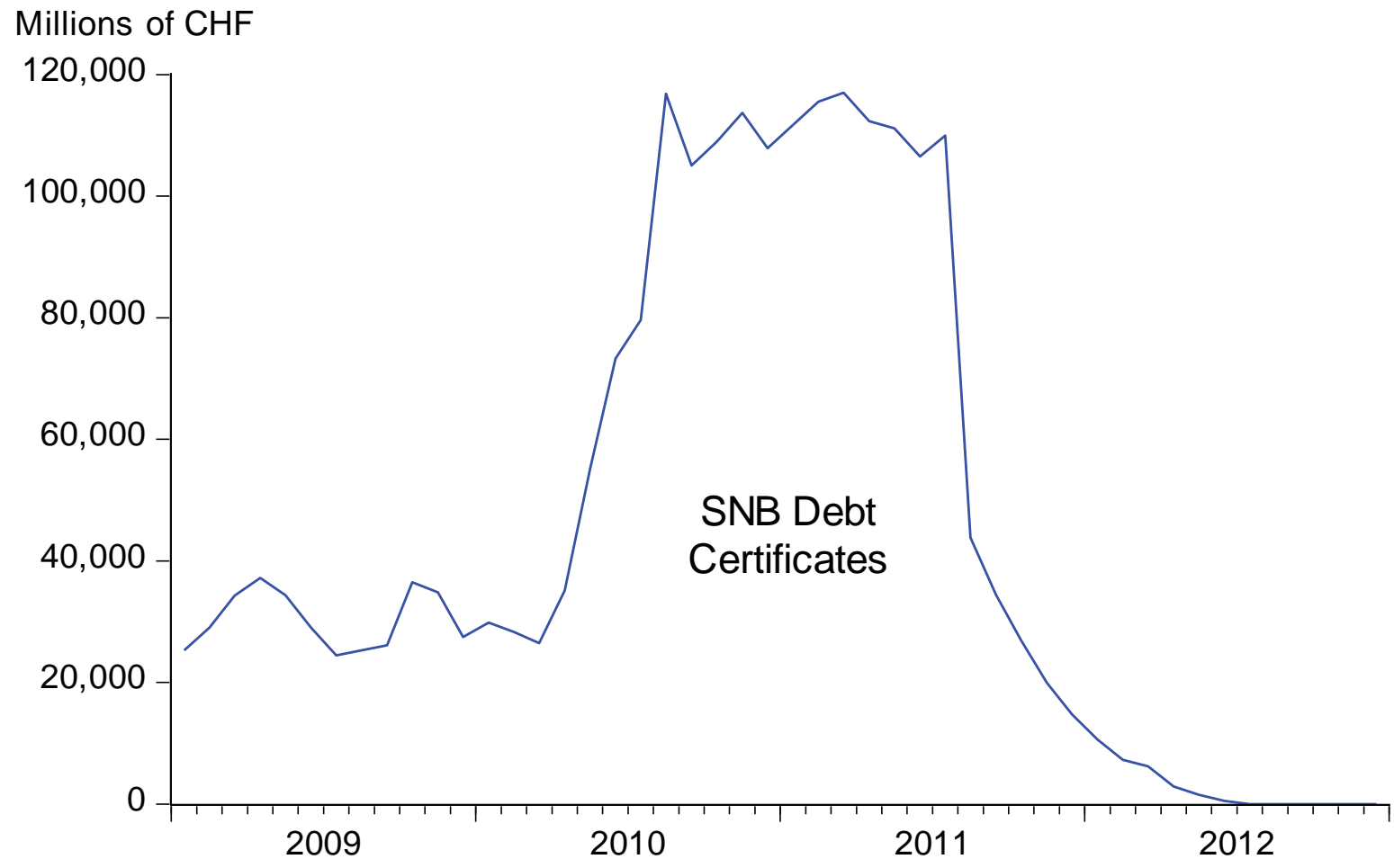
The Euro-Dollar Exchange Rate and Reserve Balances at the ECB

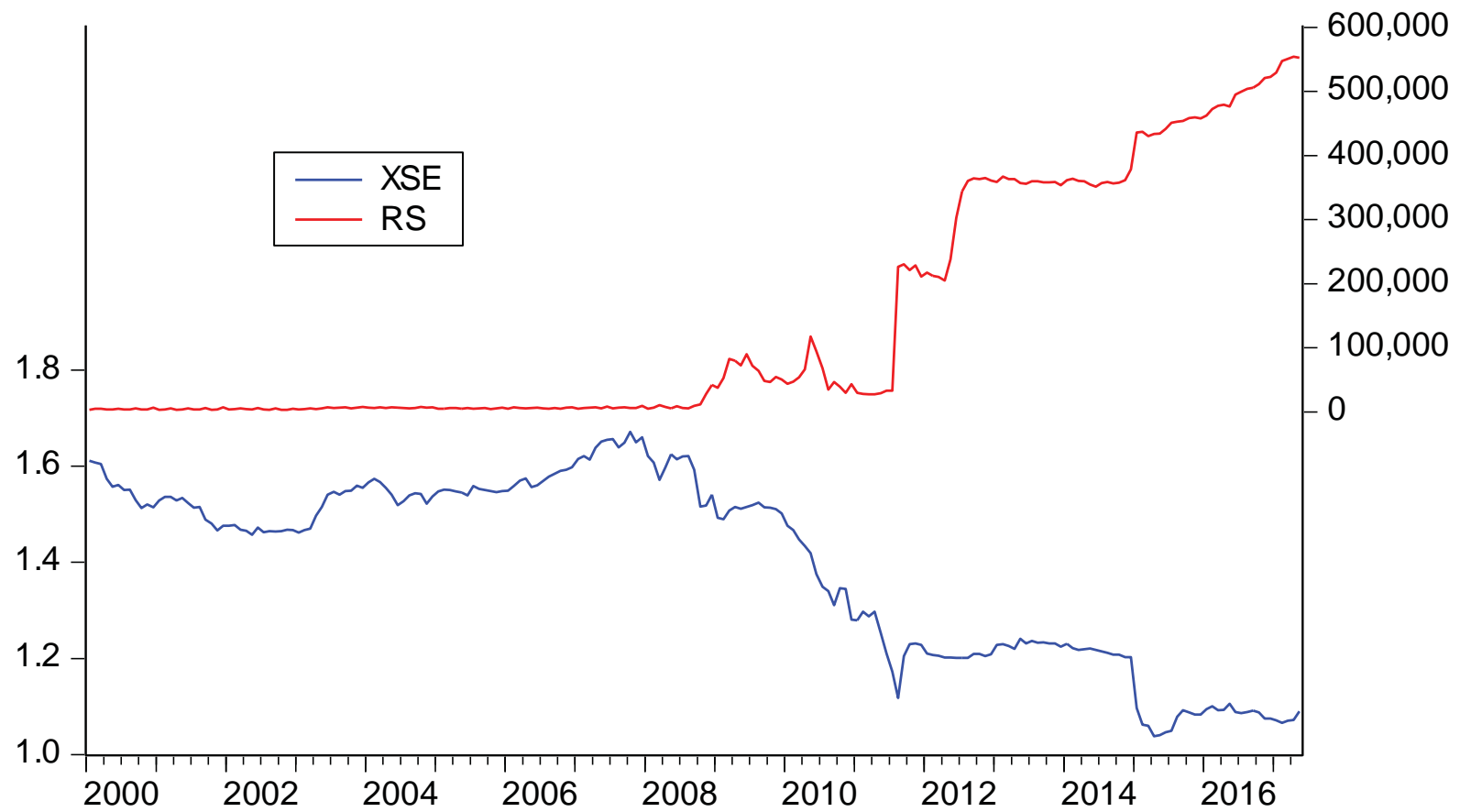Actual and fitted values from simple regression of X_{UE} on R_E

The Swiss Franc Against the Dollar and the Euro

Reserve Balances and Foreign Currency Purchases by the SNB

SNB Debt Increase in 2010 and 2011

Reserve Balances (R_S) and Swiss Franc Euro Exchange Rate

|	X_{SE}	R_S
X_{SE} (-1)	1.24	-72096.0
	(6.9)	(-1.1)
X_{SE} (-2)	-0.305	-9489.1
	(-2.6)	(-0.089)
X_{SE} (-3)	0.17	-60825.5
	(1.5)	(-0.58)
X_{SE} (-4)	-0.099	95919.1
	(-1.4)	(1.4)
R_S (-1)	3.47E-07	1.02
	(4.3)	(13.8)
R_S (-2)	-3.76E-07	-0.107
	(-3.09)	(-0.95)
R_S (-3)	6.50E-08	0.031
	(0.52)	(0.27)
R_S (-4)	-2.68E-08	0.019
	(-0.33)	(0.25)
Constant	-0.0189	72404.2
	(-0.7)	(2.9)

Vector Auto-Regression: Franc–Euro Exchange Rate (X_{SE}) and SNB Reserves (R_S) (t-values in parentheses) **Two-way Granger causality**

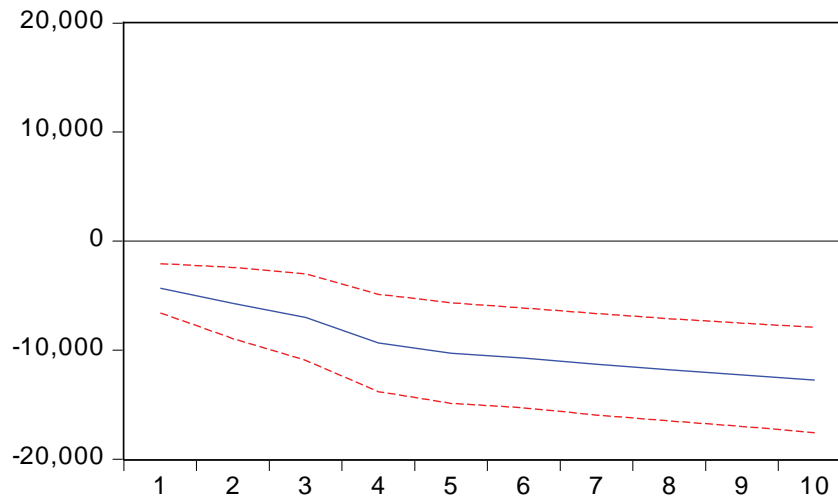Response to One Standard Deviation Shock ± 2 S.E.
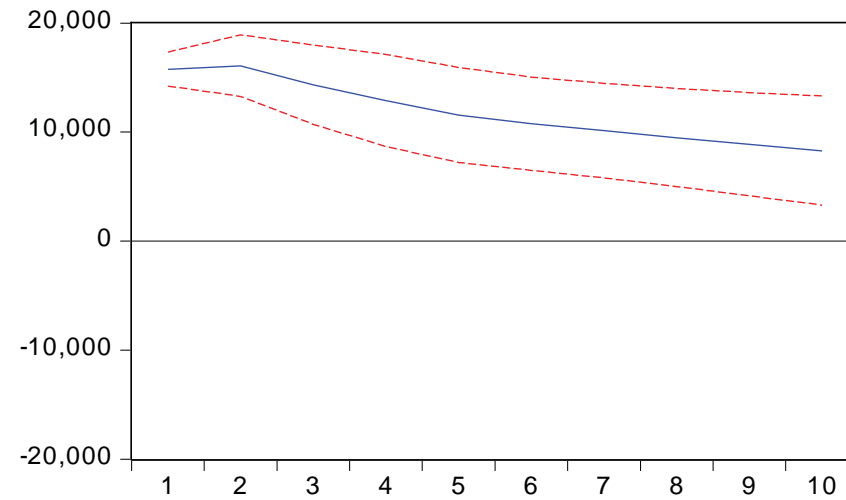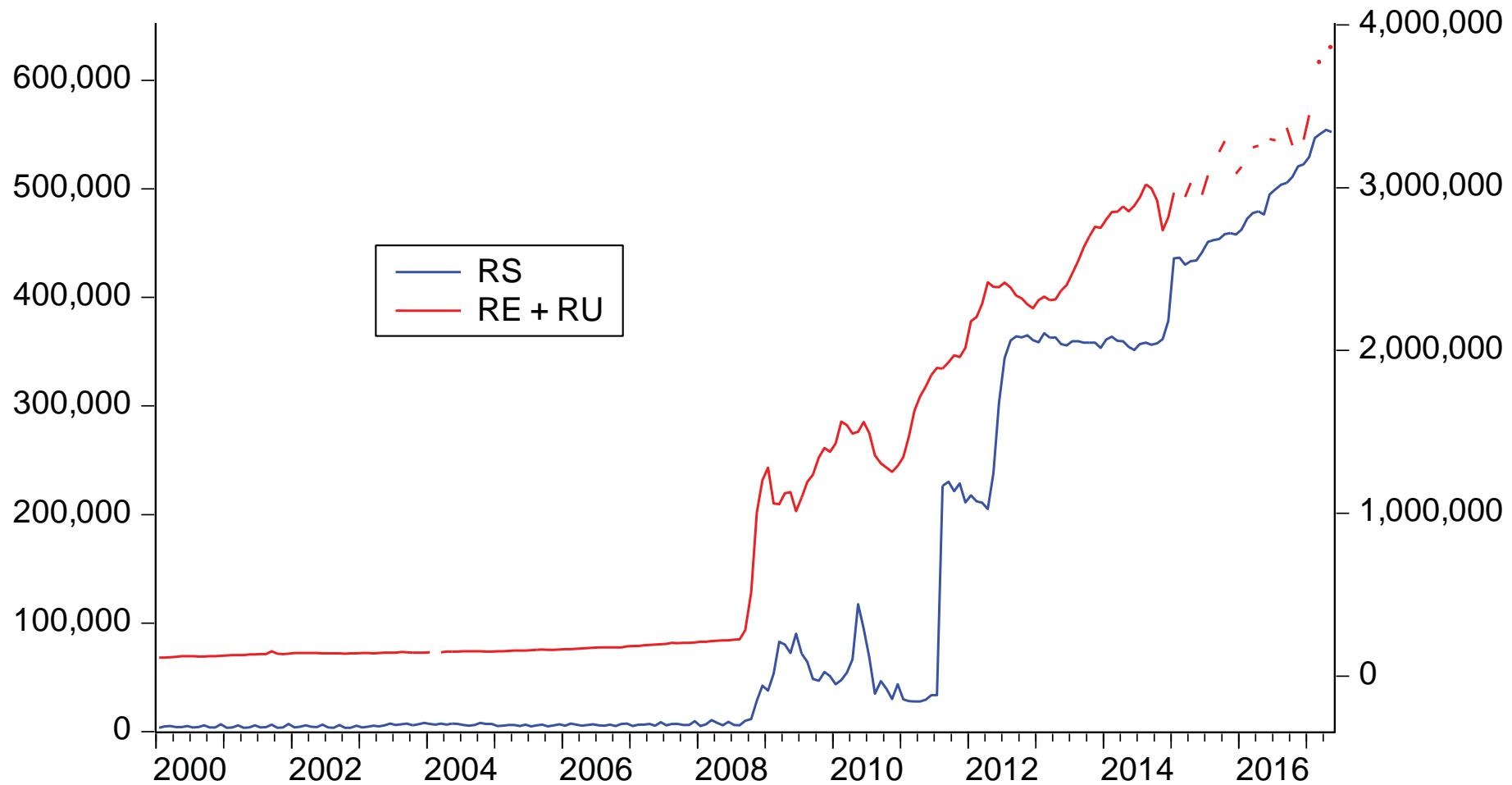
Response of XSE to XSE
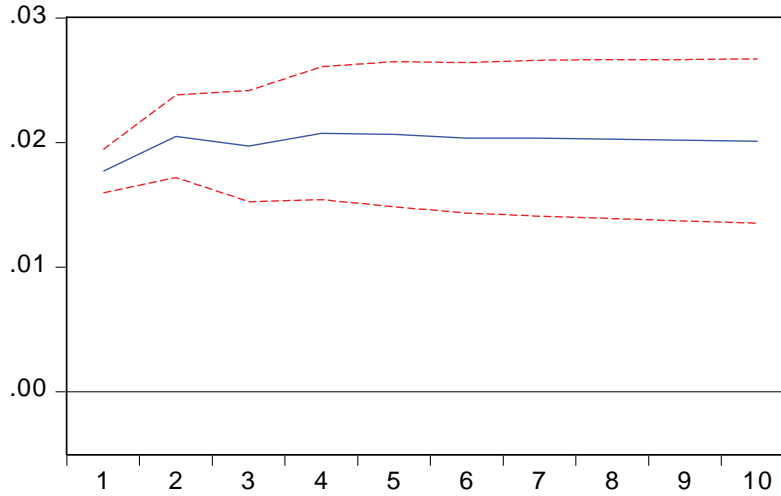
Response of XSE to RS
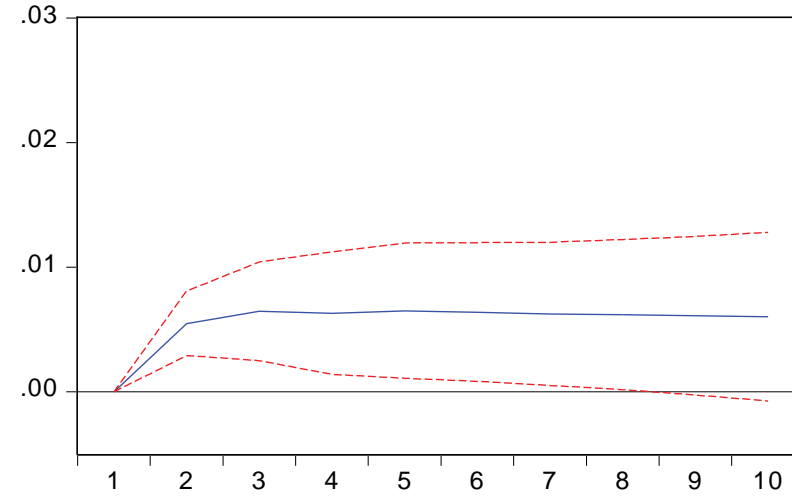
Response of RS to XSE

Response of RS to RS

Impulse Response Functions: R_S and X_{SE}

Reserve Balances: R_S and $R_E + R_U$

Policy Implications

- An International Monetary System Without "Competitive Devaluations"
  - Rules-based: based on policy rules in each country
  - Central banks would provide "enhanced understanding" of their policy strategies
  - Many calls for reform now; so it's an opportune time

- Global Normalization First
  - Gradual and predictable

- Then Reestablish Connection Between Policy Interest Rate and Reserve Balances

Concluding Remarks

- Comparison with debates & reforms over the years

- Friedman (1953), Nurkse (1944)

- Brunner (1980)
  - "The products emerging from our professional work reveal a wide range of diffuse uncertainty about the detailed response structure of the economy. . . ."
  - "A nonactivist [rules-based] regime emerges under the circumstances . . . as the safest strategy. It does not assure us that economic fluctuations will be avoided."
  - "But it will assure us that monetary policymaking does not impose additional uncertainties . . . ."

Thank you for your attention.

Next Karl Brunner Distinguished Lecture
Thursday, 20 September 2018