

RMB revaluation and China's foreign trade

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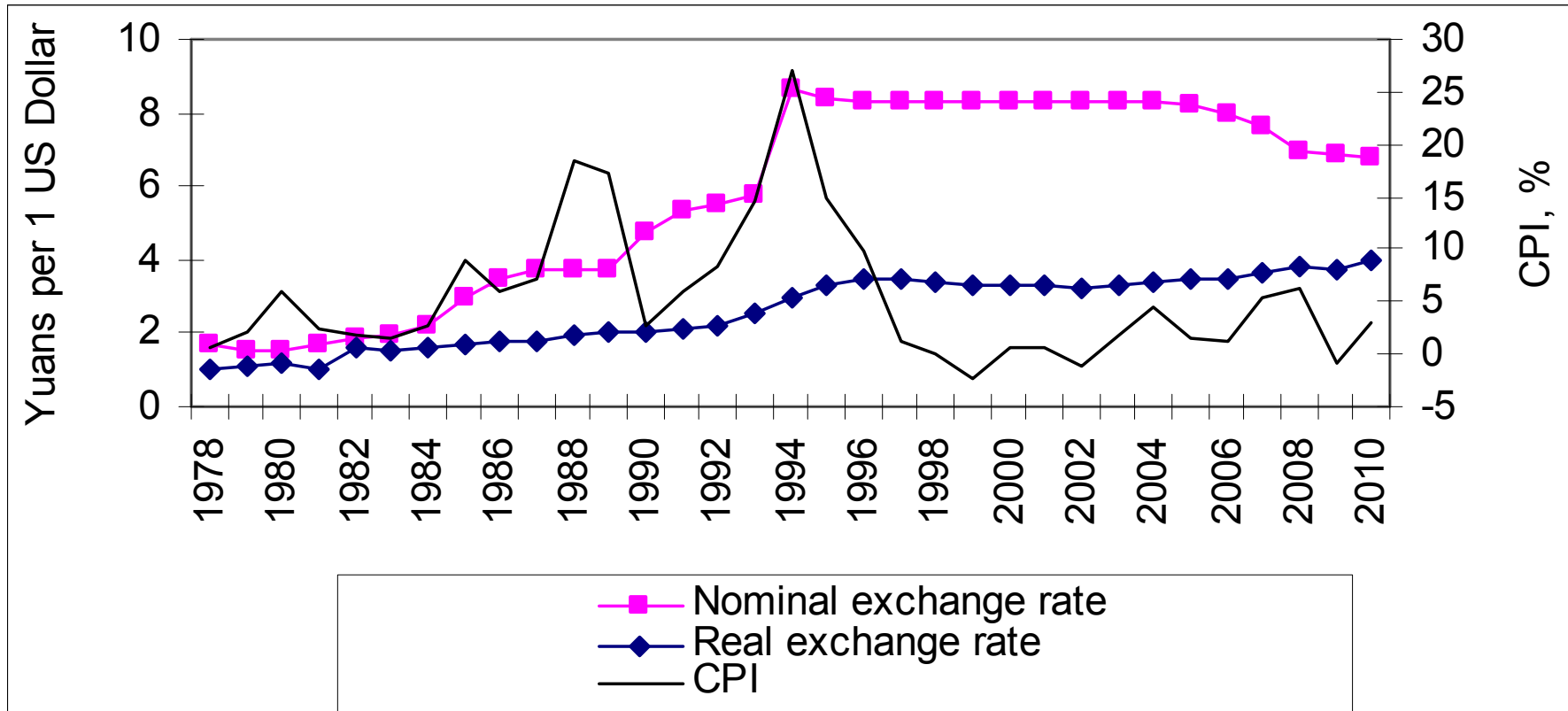
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Research question: Does yuan appreciation have a measurable impact on China's main trading partners' balance of trade?

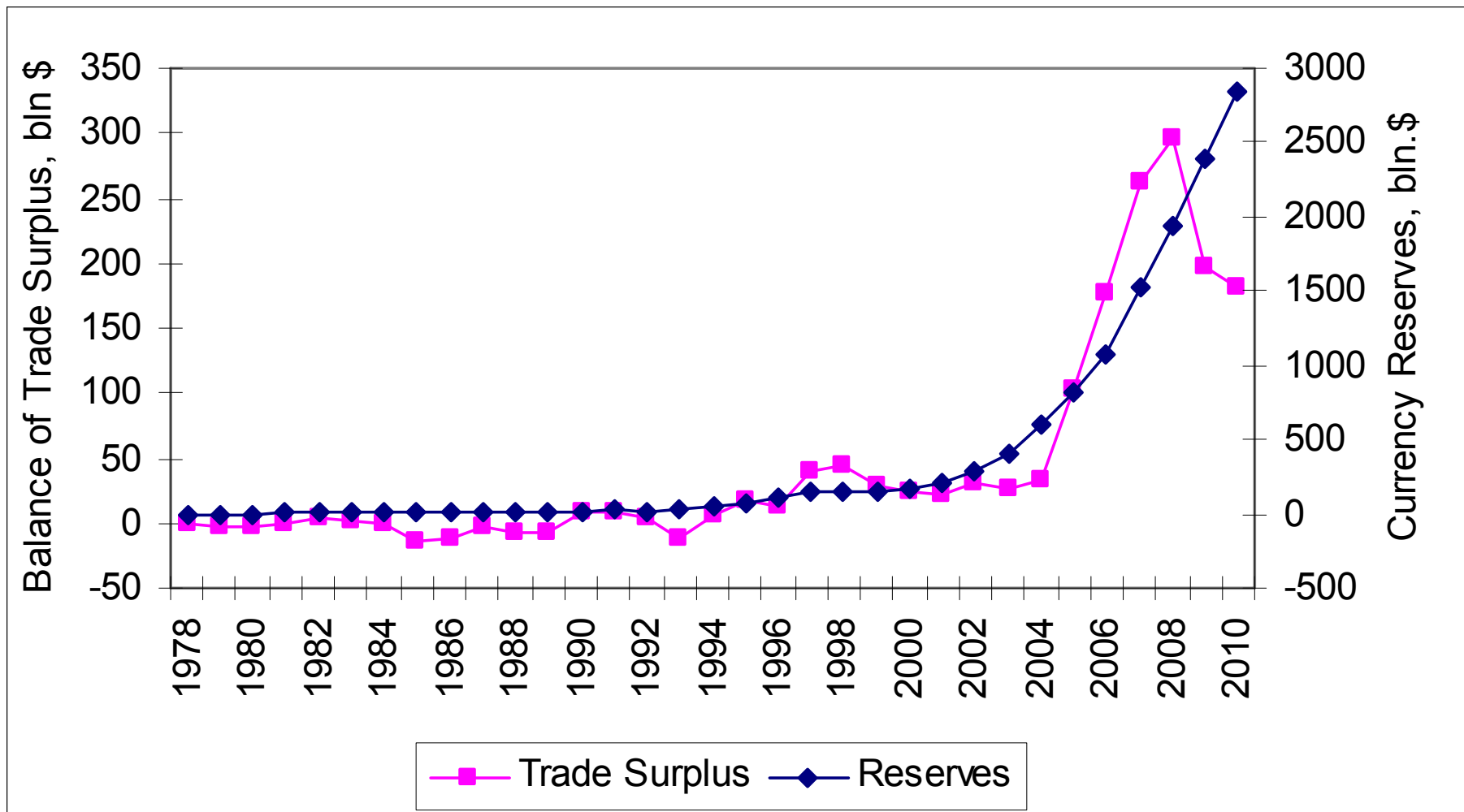
Methodology: Regression analysis of imports and exports of China's main trading partners prior and subsequent to RMB appreciation.

a.CRIZ – dummy variable; b.Rows – 13 countries.

Nominal and Real (on PPP) Exchange Rates of RMB per 1 US dollar and Dynamics CPI rate of China



China's Balance of Trade Surplus and Gold and Foreign Currency reserves



Share of Country (group of countries) in the Foreign Trade of China, %

		Exports	Imports
I group	EU-27	19,7	12,1
	US	18	7,3
	Hong Kong	13,8	0,9
	Japan	7,7	12,7
	RoK	4,4	9,9
	Taiwan	2,3	5,2
III group	ASEAN	8,8	11,1
	India	2,6	1,5
II group	Brazil	1,5	2,7
	Russia	1,9	1,8
	Australia	1,7	4,4
	Saudi Arabia	0,6	2,4
	Others	17	28

Estimation of RMB appreciation on China's foreign trade (quarterly 2004-2010):

$$\Delta IMP_i = \beta_{0i} + \beta_1 \Delta RATE_i + \beta_n \Delta X_{ni} + \varepsilon_i \quad (1)$$

$$\Delta EXP_i = \beta_{0i} + \beta_1 \Delta RATE_i + \beta_n \Delta X_{ni} + \varepsilon_i \quad (2)$$

i – country-trade partner of China, n – number of independent variables, IMP – imports, EXP – exports, β_0 – constant, $RATE$ – nominal rate of RMB per 1 US dollar, X_n – other factors, β_1 и β_n – value of factors, ε – errors.

Time series variables are growth rates (ΔX). Estimated regressions describe the absence of multicollinearity and heteroscedasticity.

Others estimated factors of 1 and 2 regressions are: GDP; INV – fixed asset investments; INVINT – national fixed asset investments; MANUF – value of manufacturing output; MANUFFE – value of manufacturing output of FDI enterprises; CONSUMP – expenditure of final consumption; CONSUMPH – households expenditure of final consumption; CONSUMPG – government expenditure of final consumption; TRADE – internal trade; CONSTAX – consumption tax; TARIFF – average custom duty; M2 – monetary aggregate M2.

To estimate the impact of the financial crisis on imports and exports, the dummy variable, CRIZ, was used.

Factors impacting China's import rates, β_1 – growth rate of RMB per 1 US dollar (RATE)

	β_0	p_0	β_1	p_1	X_2	β_2	p_2	X_3	β_3	p_3	R^2	DW	P
CHINA_IMP	–	–	3,09	0,05	<i>GDP</i>	1,74	0,01	<i>CRIZ</i>	-0,22	0	0,82	1,71	0,03
EU_IMP	–	–	2,04	0,07	<i>M2</i>	1,49	0,01	<i>CRIZ</i>	-0,43	0	0,63	2,20	0,08
AUS_IMP	–	–	1,66	0,08	<i>INV</i>	1,53	0,00	<i>CRIZ</i>	-0,37	0	0,68	1,35	0,06
HK_IMP	-0,3	0,1	3,18	0,07	<i>CONSUMPG</i>	3,07	0,05	–	–	–	0,60	1,73	0,10
JP_IMP	–	–	2,17	0,03	<i>CONSTAX</i>	1,31	0,00	<i>CRIZ</i>	-1,22	0	0,74	1,64	0,03
KR_IMP	–	–	2,58	0,02	<i>MANUFFE</i>	1,08	0,00	<i>CRIZ</i>	-0,07	0	0,72	1,43	0,04
US_IMP	–	–	1,81	0,01	<i>INV</i>	0,90	0,00	<i>CRIZ</i>	-0,29	0	0,73	1,69	0,04
IN_IMP	–	–	-3,72	0,02	<i>TARIFF</i>	-10,9	0,01	<i>CRIZ</i>	-0,41	0	0,70	2,13	0,05
RU_IMP	–	–	2,73	0,06	<i>CONSUMP</i>	1,77	0,00	<i>CRIZ</i>	-0,23	0	0,73	2,27	0,03
ASEAN_IMP	–	–	3,83	0,04	<i>INV</i>	1,30	0,02	<i>CRIZ</i>	-0,42	0	0,62	1,54	0,08
SAR_IMP	–	–	-6,16	0,00	<i>TARIFF</i>	-8,21	0,00	<i>CRIZ</i>	-0,37	0	0,77	1,65	0,02
BR_IMP	–	–	-5,82	0,00	<i>TARIFF</i>	-9,33	0,02	<i>CRIZ</i>	-0,18	0	0,62	1,98	0,09
TW_IMP	–	–	5,33	0,04	<i>MANUF</i>	2,23	0,02	<i>CRIZ</i>	-0,19	0	0,82	1,86	0,03

Testing China's export rates, β_1 – growth rate of RMB per 1 US dollar (RATE)

t_1	X_2	β_2	p_2	X_3	β_3	p_3	R^2	DW	P
00	GDP	2,00	0	CRIZ	-0,27	0	0,89	2,09	0,00
02	GDP	2,29	0	CRIZ	-0,31	0	0,84	1,76	0,01
01	INVINT	1,23	0	CRIZ	-0,43	0	0,88	2,09	0,01
00	GDP	1,85	0	CRIZ	-0,20	0	0,90	2,54	0,00
05	GDP	1,18	0	CRIZ	-0,21	0	0,82	1,41	0,01
08	MANUF	1,67	0	CRIZ	-0,32	0	0,90	2,09	0,00
00	GDP	1,91	0	CRIZ	-0,20	0	0,89	2,47	0,00
05	GDP	3,33	0	CRIZ	-0,26	0	0,78	2,04	0,02
01	GDP	3,71	0	CRIZ	-0,65	0	0,83	2,22	0,01
00	GDP	2,01	0	CRIZ	-0,18	0	0,88	1,63	0,00
01	TRADE	2,41	0	CRIZ	-0,37	0	0,87	1,41	0,01
08	CONSUMPH	4,96	0	CRIZ	-0,68	0	0,80	1,67	0,02
02	GDP	2,34	0	CRIZ	-0,30	0	0,79	2,14	0,02

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