Impact of the real exchange rate on output and inflation in Vietnam

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Rationale and Purpose

- No published studies on this issue in Vietnam and other transition economies

- An important and controversial topic

To examine how the changes in the real exchange rate affect output growth and inflation in Vietnam

Outline of Study

- Introduction
- Exchange rate arrangements in Vietnam
- Literature reviews
- Theoretical explanations
- Empirical methodology and data.
- Results
- Conclusion

I. Exchange rate arrangements in Vietnam

- ✓ *Before March 1989:* A multiple exchange rate system (*with three-tier exchange rate system*), fixed exchange rate policy

- High trade deficit

- The large difference in the official and parallel exchange rate

→ *caused problems for the government budget*

promoted illegal activities in the black market

I. Exchange rate arrangements in Vietnam

- ✓ *Mar 1989 - Feb 1999:* VND has been pegged to the USD with several discrete realignments.

- The official exchange rates were unified into a single rate.
- Commercial banks were allowed to set exchange rates for their own transactions within a band of 5% (*this band change according to economic situation)*
- Establish some facilities: two transaction floors, inter-bank FE market
- The official ERs followed the rates of free market but were still at levels that overvalued the VND

↓

ER policy played an important role on controlling inflation, attracting FDI, and encouraging domestic currency deposits

I. Exchange rate arrangements in Vietnam

- ✓ *From Feb 1999:* ER system was reclassified as a crawling peg

- effective in the following day, an average inter-bank rate of exchange would be official ER.
- trading band was narrowed to 0.1% *(extended to 0.25% for spot transactions since 2002)*
- both official and parallel exchange rates remained stable and the differences between them were narrowed
- ER has de facto been pegged to the US dollar in recent years, then REER has appreciated by about 4.5 percent since the end of 2004 (IMF)
- the import coverage of reserves has remained low (8.5 weeks)

↓

understand the role of exchange rate policy
in the macroeconomic system in the reform period.

II. Empirical literature reviews

- *Impact of RER on output*:

- negative: Sheehey (1986), Rogers and Wang (1995), Terence and Pentecost (2001)

- negative or positive effect in the short-run but neutral in the long-run: Edwards (1986), Kamin and Klau (1998), Terence and Pentecost (2001)

- positive (*both the short and long run*): Vo *et al*. (2000),Terence and Pentecost (2001)

- *Impact of RER on inflation*:

- significant: Kamin (1996), Dornbusch *et al.* (1990)

- insignificant: Dornbusch *et al*. (1990), Kamas (1995)

II. Empirical literature reviews

- ***Impact of RER on both output and inflation***

- Klau (1998): 22 Sub-Saharan countries (80-96), output(+), inflation(+)

- Kamin and Rogers (2000): Mexico (81-95), output(-), inflation(+)

- Odusola and Akinlo (2001): Nigeria, output (mixed), inflation(+)

- Berument and Pasaogullari (2003): Turkey (87-01), output(-), inflation(+

↓

The results are varied as
different analysis techniques and data samples are adopted

III. Theoretical explanations

- Theoretical explanations of interrelationships between real exchange rate and output and inflation

- *Real exchange rate determination – output and price level*

$$RER = E\,\frac{P^*}{P}$$

- *Impact of exchange rate on inflation*

  + Supply side

  + Demand side

- *Impact of exchange rate on output*

  + Positive effect

  + Contractionary effect

III. Theoretical explanations

- Theoretical framework of the core model developed by Kamin and Rogers (2000)

- *The illustrative model:* include 12 endogenous variables and 3 exogenous. The relations between these variables are illustrated by the 12 equations

- *Core model*: 3-equation system: 3 endogenous and 1 exogenous (output, real exchange rate, inflation, and the U.S. interest rate)

estimate the interrelationships: output, RER and inflation

determine the robustness of the core model result and causation channels between RER and output as well as RER and inflation

IV. Methodology and Data

- VAR approach: core model

$$x_t = \sum_{i=1}^{k} A_i x_{t-i} + \sum_{i=1}^{k} B_i z_{t-i} + \Psi D_t + \varepsilon_t \qquad (1)$$

where x_t is a vector of 3 endogenous variables: *LIO* (log of real industrial output), *LCPI* (log of consumer price index), and *LRER* (log of real exchange rate); z_t is a vector of exogenous variable, *USINT* (nominal United Stated interest rate); D_t is a vector of deterministic components; A_i and B_i are matrices of coefficients; ε_t is error term

lternative model 1: *Money supply* variable is added to core model

lternative model 2: *Trade balance deficit* variable is added to core model

IV. Methodology and Data

- Data

- Core model: 160 observations monthly data: January 1992 to April 2005
- Alternative 1: 1995 January to 2005 April
- Alternative 2: 1998 January to 2005 April

V. Results

- ✓ **Unit root test:** all series are integrated of order one
  → possible existence of long run relationship

- ✓ **Cointergration test :** existence of long run relationship
  however, insignificant

- ✓ **Cross correlation:** positive (1992-2005 and 1999-2005)
  negative (1992-1999)

  direction of causality: output, inflation → real ER *(full sample)*
  real ER → output, inflation *(sub-samples)*

- ✓ **Granger causality test:**

  Full sample (1992 - 2005): real ER ← output, inflation
  Sub-sample 1 (1992 - 1999): real ER ↔ inflation
  Sub-sample 2 (1999 - 2005): real ER ↔ output
  US interest rate → real ER, inflation

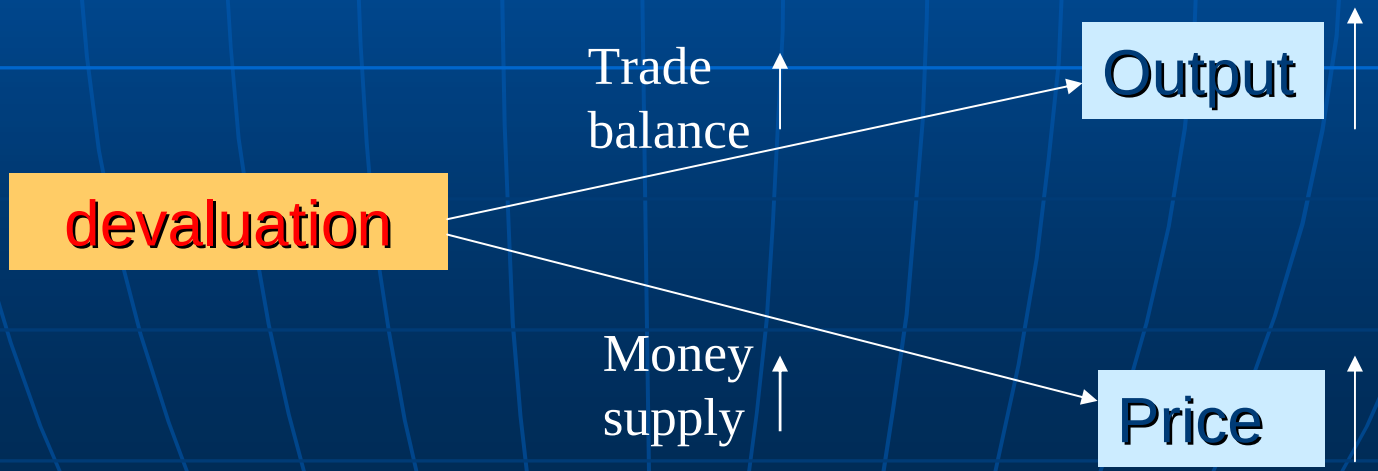
V. Results

Variance decompositions: Core and alternative models

Main source of variation in output and price are "own shock" (90%)

ER shock accounts for a higher proportion in the variation of output than that of price (7-8% for output growth but only 3-4% for inflation)

- **Impulse response functions:**



Conclusion

- should move to a more flexible exchange rate regime
- should take change of US interest rate into consideration in planning and carrying out monetary policies.
- should improve competitiveness in long run mainly via other factors than exchange rate adjustment

Thank you

for

your attention