Monetary policy dependency in the periphery: the case of Turkey

(Part of my PhD project)

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Outline

- Background

- Research question

- Theoretical framework

- Research method and empirical results about Turkey

- Conclusion

Background

- Turkey adopted inflation targeting after the financial crisis in February 2001

    – Price stability as the official primary goal; floating exchange rate regime

    – A preparatory stage (2002-2005); explicit inflation targeting (2006-October 2010); modified inflation targeting (From Nov. 2010 onwards)

    – Inflation rates decreased to single digit levels, albeit inflation targets were missed in most years after 2006.

    – High growth rates were achieved

- Yet, Turkish economy has become one of the most fragile economies in the late 2000s and early 2010s (Krugman, 2014):

    – Rapid domestic credit expansion, accelerated household indebtedness, real exchange rate appreciation, deteriorated current account balance and high currency mismatch within the firm sector

Research question

- Research question

  - To what extent has Turkey's de facto monetary policy reaction function corresponded to its de jure inflation targeting form in the post-2001 period under such fragilities?

Theoretical framework

- Post Keynesian (PK) theory of monetary policy offers a realistic ground

  - No natural output level in the short-or long-run, no natural interest rate, endogenous money, exogenous interest rate, cost-push inflation (see Gnos/Rochon, 2007; Herr, 2013; Howells, 2003; Kaldor, 1985; Keynes, 1930; Moore, 1989)

- However, PK theory assumes „normality" in an economy

  - An economy that is free of fragilities such as: an internal or external political conflict, large banking system vulnerabilities, possibility of trans-border capital flow volatility, large exchange rate fluctuations, high inflationary environment, etc. (Sicsú, 2001).

  - Keynesian theory extensively concerns about the core country context and often does not consider the core-periphery division (Raul Prebisch's critique presented by Caldentey & Vernengo, 2013).

  - Periphery lacks most of the Keynesian „normality" conditions.

Theoretical framework (cont'd)

- Periphery context: bringing PK theory together with the "asymmetries" debate

    - Monetary and financial asymmetry debate

        (Andrade & Prates, 2013; Camara-Neto & Vernengo, 2009; Cohen, 2009; Fritz, Prates, & de Paula, 2014; Hausmann, 1999; Hausmann & Panizza, 2011; Hausmann, Panizza, & Stein, 2002; Herr, 2008; Herr & Hübner, 2005; Herr & Priewe, 2006; Kindleberger, 1967, 1970; Riese, 2004; Vernengo, 2006).

- Industrialization of the periphery did not eliminate the core-periphery division

    - "Technological dependency (the ability to generate autonomous technological innovations) although important, is subsidiary, and financial dependency (the inability to borrow in its own currency) is central" (Vernengo 2006, p. 563).

- „Abnormal" conditions in the periphery and asymmetries ➜ a narrow monetary policy space: dependency of the monetary policy

Theoretical framework (cont'd)

Monetary policy dependency channels in the periphery
(PK theory + "asymmetries" debate + empirical studies):

Source: own drawing
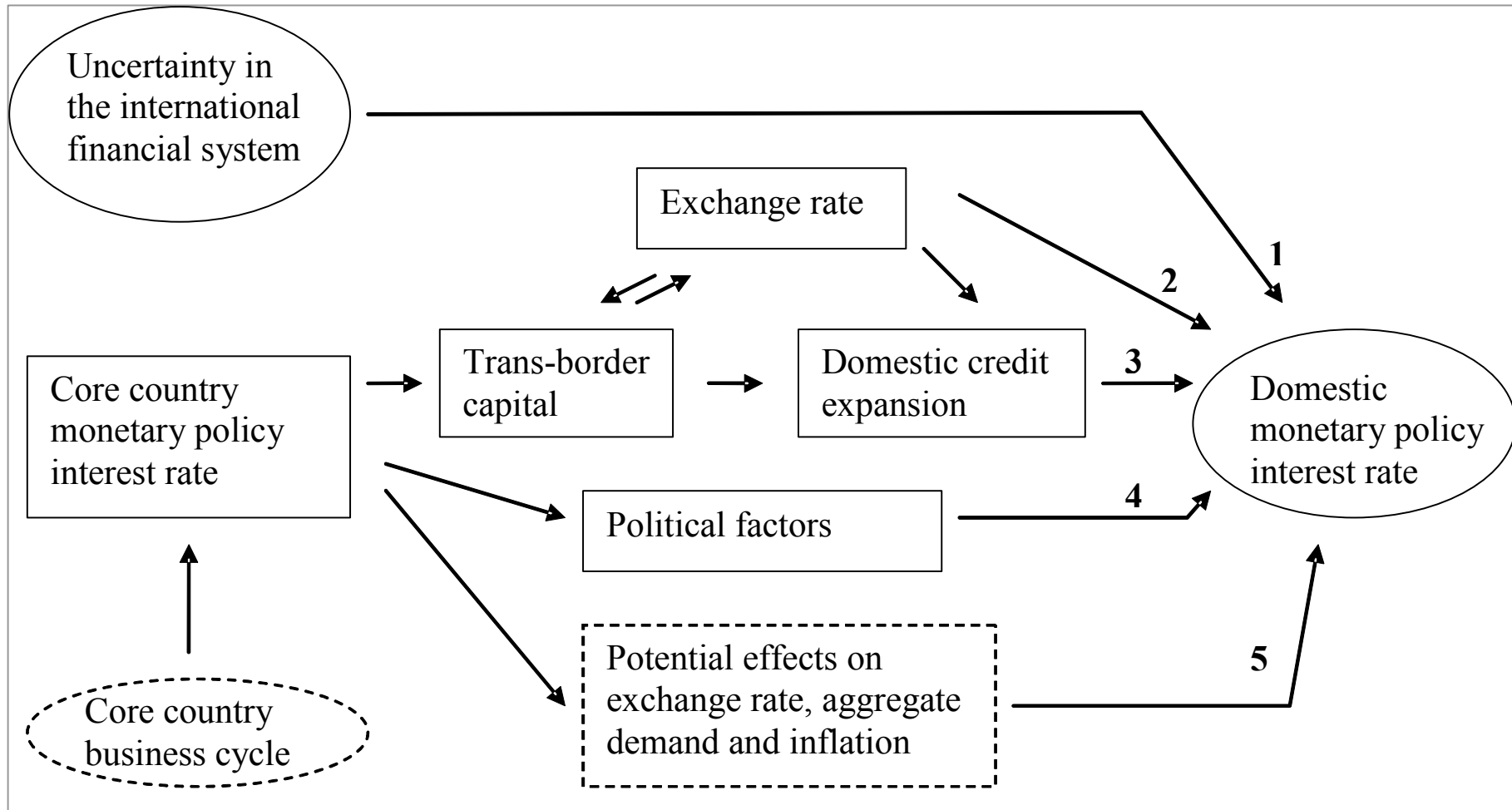
Theoretical framework (cont'd)

- Channel 1: Uncertainty in the international financial system

    - Keynes argued: "conventional valuation", meaning "anticipating what average opinion expects the average opinion to be" is the basis of decision making in the financial markets (Keynes, 1936, p. 156). This creates instability, because "[a] conventional valuation [...] is liable to change violently as the result of a sudden fluctuation of opinion [...]" (Keynes, 1936, p. 154).

    - Future returns on investments depend on the expectations of the investors which might be influenced by conventional judgment (Sawyer, 2012).

    - Interest rate smoothing, Eg.: Turkey's monetary policy in the period of 2002-2008 (Cömert et al., 2010)

Theoretical framework (cont'd)

- Channel 2: Exchange rate

  - Monetary asymmetry debate: periphery currencies are at the bottom levels of the currency hierarchy; periphery accumulates debt in foreign currency; exchange rate is significant for financial stability.

  - Major motives of monetary policy in the periphery for reacting exchange rate fluctuations: relatively high exchange-rate pass-through compared to the core; domestic financial stability; international trade competitiveness (Calvo & Reinhart, 2002; Filardo, Ma, & Mihaljek, 2011; Mihaljek, 2011; Mohanty & Klau, 2004).

Theoretical framework (cont'd)

- Channel 3: Domestic credit expansion facilitated by foreign capital inflows

  – Endogenous money view of the PK theory: "The supply of credit money is endogenously credit driven. Banks only lend to borrowers whom they believe can repay their debts." (Moore, 2003, p. 119).

  – "Global financial cycle": no trilemma, but dilemma (Rey, 2013, p. 1)

  – "The global financial cycle is not aligned with countries' specific macroeconomic conditions. In a number of countries, this can lead to excess credit growth (or alternatively to monetary conditions which are too tight)." (Rey, 2013, p. 17).

Theoretical framework (cont'd)

- Channel 4: Political factors

  - Political factors such as EU / EMU integration

  - Eg.: convergence of the interest rates of Croatia, Estonia, Hungary, Romania, Slovak Republic, and Turkey with the euro area interest rates from 1990s until 2005 (Kasman, Kirbas-Kasman & Turgutlu, 2007)

Theoretical framework (cont'd)

- Channel 5: Potential effects on exchange rate, aggregate demand and inflation

    - A change in a core country interest rate may signal a future change in exchange rate, inflation and aggregate demand (via trade links) (Sinclair, 2005).

    - Eg.: reaction of domestic monetary policy rates to a foreign interest rate (US or Germany) by fourteen countries (developed and developing) between 1983 – 2000 (Sinclair, 2005).

Theoretical framework (cont'd)

Dependent Taylor-type reaction function in the periphery

$$i = f(i, pgap, ygap, e, i^f, f)$$ ➔ estimated for Turkey

i : domestic policy rate

$pgap$: inflation gap

$ygap$: output gap

e : exchange rate

i^f : an anchor core country short-term nominal interest rate

f : capital flows in proportion to GDP

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Method and empirical results

- Method

  - Two different perspectives:

    Backward-looking estimation: Vector Auto-regressive (VAR) model

    Forward-looking estimation: Ordinary Least Squares (OLS) method

  - Two periods:

    An entire period of inflation targeting: January 2002 – August 2013

    A sub-period: period before the modified inflation targeting that is between January 2002 – October 2010

  - Various robustness checks

Method and empirical results (cont'd)

Estimation results

Backward-looking model
Dependent variable: Δ in domestic interest rate

	Entire period 2002m4-2013m8	Sub-period 2002m4-2010m10
First lag of the Δ in domestic interest rate	0.222**	0.234**
Second lag of the Δ in domestic interest rate	0.100	0.095
First lag of the inflation gap	-0.027	-0.080
Second lag of the inflation gap	0.002	0.042
First lag of the Δ in output gap	0.015	0.405
Second lag of the Δ in output gap	2.913	2.920
First lag of the Δ in exchange rate (TL/USD)	3.367**	4.026***
Second lag of the Δ in exchange rate	1.059	0.844
Δ in Euro area one week repo rate	0.864*	0.745
First lag of the capital flows in proportion to GDP	0.010**	0.017**
Constant	-0.408***	-0.518***
Number of observations	*137*	*103*

Estimated by VAR model using Stata software. *Significant at 10 per cent level; ** Significant at 5 per cent level; *** Significant at 1 per cent level.

Method and empirical results (cont'd)

Forward-looking model
Dependent variable: Δ in domestic interest rate

	Entire period 2002m5-2013m8	Sub-period 2002m5-2010m10
First lag of the Δ in domestic interest rate	0.196**	0.171**
Second lag of the Δ in domestic interest rate	0.112	0.074
Third lag of the Δ in interest rate	0.112	0.075
Δ in expected inflation gap for the end-year	-0.033	-0.015
Δ in expected output gap for the end-year	0.006	0.018
Δ in expected exchange rate for the end-month (TL/USD)	7.680***	6.557***
Δ in Euro area one week repo rate	1.400***	1.280***
First lag of the capital flows in proportion to GDP	0.004	0.012**
Constant	-0.219	-0.417***
Number of observations	*137*	*102*

Estimated by OLS method using Stata software. *Significant at 10 per cent level; ** Significant at 5 per cent level; *** Significant at 1 per cent level.

Method and empirical results (cont'd)

Summary of the estimation results
Dependent variable: Δ in domestic interest rate

	Backward-looking		Forward-looking	
	Entire period	Sub-period	Entire period	Sub-period
Interest rate	++	++	++	++
(Expected) inflation gap				
(Expected) output gap				
(Expected) exchange rate	++	+++	+++	+++
Euro area interest rate	+		+++	+++
Capital flows in proportion to GDP	++	++		++
Constant	+++	+++		+++

+: significant at 10 per cent level;
++: significant at 5 per cent level
+++: significant at 1 per cent level.

Conclusion

- PK theory provides a realistic ground to approach monetary policy, but specifically concerns about the core countries

- „Asymmetries" debate complements the PK theory for approaching the periphery context

- Periphery monetary policy is financially dependent through various channels

- Turkey's de facto monetary policy does not correspond to its de jure inflation targeting form: inflation gap and output gap do not have much influence on the interest rate

- Decline in inflation might be attributed to the overall decline in inflation in the world

- Turkey's monetary policy is dependent on the euro area monetary policy moves

- Exchange rate is the major determinant of the interest rate in Turkey

- There is an indication that the modified monetary policy framework with capital controls and alternative policy tools enables a break with financial dependency

- Next step ➔ Whether exchange rate reaction is asymmetrical. 18

Thank you!