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Some Puzzles Related to Exchange Rate Pass-Through

Ottawa, 5 May 2008

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Outline

- The pass-through conundrum
- What is exchange rate pass-through?
- Why do we care about it?
- Some recent empirical evidence
- Why has pass-through declined?
- Potential pitfalls of reduced-form models
- Some concluding thoughts

The Pass-Through Conundrum

- Pass-through appears to have been declining through time
- Several theories have been advanced to explain this
- These include: improved monetary policy, the changing composition of trade, and globalization
- Why reduced-form estimates of pass-through are potentially misleading
- Conclusion -- Pass-through has not disappeared, it is just hiding

What Is Exchange Rate Pass-Through?

- Direct effect of exchange rate moves on domestic prices
- The Law of One Price (LOP) and why it is usually broken, $p_d = ep_f$
- LOP and absolute PPP over exchange rate cycles (Baldwin and Yan)

What Is Exchange Rate Pass-Through?

- Producer currency pricing (PCP) versus local currency pricing (LCP)
- Reduced-form estimates of exchange rate pass-through (ERPT)

$$(p_i) = \mu_i + \beta_i \ln(MC) + (1-\beta_i)\ln(pc_i / e_i)$$

- Export price pass-through as the obverse of import price pass-through

$$\ln(ep_i) = \mu_i + \beta_i \ln(e_i MC) + (1-\beta_i)\ln(pc_i)$$

Why Do We Care about Exchange Rate Pass-Through?

- Movements in relative prices and allocative efficiency
- Correcting trade imbalances (e.g. the unsustainable U.S. deficit)
- Choosing between fixed and flexible exchange rates (Devereux and Engel; and Dong)

Why Do We Care about Exchange Rate Pass-Through?

- Understanding inflation dynamics
- Setting monetary policy and the disappearing Phillips curve

$$\pi_t = \pi^e + \lambda(gap)_t + \gamma(\Delta \ln p_i e_i) + \varepsilon_t$$

Some Recent Empirical Evidence

- Estimates of ERPT using import price data -- Table 1 (Campa and Goldberg)
- Some practical problems with import price data (Bailliu and Fujii)
- Estimates of ERPT using CPI data -- Table 2 (Gagnon and Ihrig)

Some Recent Empirical Evidence

Overview of the results:

(1) Sizable differences between countries

(2) ERPT is smaller in CPI tests than in import price tests

(3) ERPT appears to be declining over time

Why Has Exchange Rate Pass-Through Declined?

- Improved monetary policy and inflation targeting (Taylor)
- Collateral damage: Disappearance of the Phillips curve (Demers)
- Shifts in the composition of trade (Campa and Goldberg)
- Globalization and the emergence of China (Morel)
- Multinationals and off-shoring (Lai and Secrieru)

Potential Pitfalls of Reduced-Form Models

- Reduced-form models as a black box
- Advantage of larger structural models (Murchison)
- Monetary policy reaction functions and diminishing ERPT
- Evidence from stochastic simulations with a DSGE model -- Table 3
- Supporting evidence from an estimated DSGE model (Bouakez and Rebei)

Some Concluding Thoughts

- Balance of evidence suggests that ERPT has declined
- Improved monetary has probably played an important role
- The composition of trade and globalization have also been important
- The disappearance of ERPT may nevertheless be more apparent than real
- Flexible exchange rates still have a useful role to play

Table 1: Elasticities of Exchange Rate Pass-through into Aggregate Import Prices

Country	Elasticity	
	Short Run	Long Run
Australia	.56*†	.67*†
Austria	.21†	.10
Belgium	.21†	.68
Canada	.75*†	.65*†
Czech Republic	.39*†	.60*
Denmark	.43*†	.82*
Finland	.55*	.77*
France	.53*†	.98*
Germany	.55*†	.80*
Hungary	.51*†	.77*
Ireland	.16†	.06
Italy	.35*†	.35†
Japan	.43*	1.13*
Netherlands	.79*†	.84*
New Zealand	.22*†	.22†
Norway	.40*†	.63*
Poland	.56*†	.78*
Portugal	.63*†	1.08*
Spain	.68*†	.70*
Sweden	.48*†	.38*†
Switzerland	.68*†	.93*
United Kingdom	.36*†	.46*†
United States	.23*†	.42*†
Average	.46	.64

Note: * (†) implies that an elasticity different from 0 (1) at the 5% level.
Source: Campa and Golderg (2005)

Table 2: Long-run rates of pass-through

	Entire sample	First sample	Second sample
Australia	0.14 (0.07)	0.09 (0.08)	0.01 (0.04)
Austria	0.11 (0.07)	0.06 (0.10)	0.04 (0.02)
Belgium	0.20 (0.08)	0.21 (0.09)	0.02 (0.02)
Canada	0.37 (0.11)	0.30 (0.14)	0.04 (0.06)
Finland	0.01 (0.14)	-0.11 (0.21)	0.00 (0.03)
France	0.23 (0.12)	0.17 (0.07)	0.01 (0.03)
Germany	0.11 (0.04)	-0.13 (0.11)	0.12 (0.03)
Greece	0.52 (0.11)	0.28 (0.12)	0.27 (0.21)
Ireland	0.29 (0.09)	0.18 (0.11)	0.06 (0.04)
Italy	0.37 (0.12)	0.33 (0.09)	0.08 (0.06)
Japan	0.21 (0.09)	0.26 (0.12)	0.02 (0.02)
Netherlands	0.16 (0.07)	0.08 (0.11)	0.06 (0.03)
New Zealand	0.42 (0.10)	0.29 (0.09)	0.01 (0.05)
Norway	0.28 (0.15)	0.11 (0.17)	-0.05 (0.06)
Portugal	0.43 (0.08)	0.37 (0.08)	0.17 (0.16)
Spain	0.18 (0.09)	0.14 (0.07)	0.03 (0.03)
Sweden	0.02 (0.07)	0.05 (0.05)	0.02 (0.02)
Switzerland	0.15 (0.09)	0.18 (0.14)	0.07 (0.08)
United Kingdom	0.15 (0.05)	0.18 (0.08)	0.08 (0.05)
United States	0.27 (0.12)	0.19 (0.36)	0.03 (0.06)
Average	0.23	0.16	0.05
Inflation targeters	0.22	0.18	0.03
Non-targeters	0.23	0.15	0.06

Note: Standard errors in parentheses.
Source: Gagnon and Ihrig (2004)

Table 3: Exchange Rate Pass-through

	Pass-through (%. rel. to Θ = 1.0)		
Policy Aggressiveness (Θ)	**All Shocks**	**Just exchange rate shocks**	**All but price mark-up shocks**
1.00	1.00	1.00	1.00
1.10	0.56	0.81	0.83
1.25	0.22	0.65	0.70
1.50	~0.0	0.53	0.60
1.75	-0.19	0.50	0.55
2.00	-0.25	0.50	0.52
2.50	-0.28	0.53	0.49
3.00	-0.26	0.57	0.48

Source: Murchison (2005b)