

# **International Competitiveness and Monetary Policy**

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## Summary: A Benchmark Model with a Twist

- Great paper!
- Paul and Giancarlo (PG) set up a simple, two-country model of international monetary interdependence with endogenous product creation subject to sunk costs and sticky prices.
- Producer entry takes place in the “manufacturing” sector, where firms compete in monopolistically competitive fashion.
  - As standard in the New Keynesian literature, monopoly power is the stepping stone for introducing price stickiness.
- All goods produced in this sector are traded internationally under producer currency pricing.
- This part of the model is essentially an open economy version of Bilbiie, Ghironi, and Melitz’s (2008, *NBER Macro Annual 07*) benchmark New Keynesian model with producer entry.
- The crucial twist introduced by PG in the model is that the differentiated goods sector is not the only goods producing sector in the economy.
- Each country also features a non-differentiated production sector with perfectly competitive firms and flexible prices.

## Summary: Results

- In this environment, monetary policy affects the economy also by altering the pattern of country specialization between the differentiated and non-differentiated sectors.
  - This happens both over the business cycle and in the long run, as the model is such that long-run money neutrality does not hold.
- Firms in the differentiated sector make sunk commitments to entry and take pricing decisions subject to uncertainty.
- This leads them to charge higher markups of price over marginal cost to hedge against the consequences of productivity shocks.
- A policy of price stability (and flexible exchange rates) that replicates the flexible-price allocation results in lower markups, larger output demand (and therefore market size), and a larger number of differentiated producers than passive policies that do not close output gaps.
- If a country unilaterally pegs its exchange rate, failing to close the gap relative to the flexible-price allocation, its pattern of production becomes skewed toward the non-differentiated sector, as business creation happens disproportionately in the country that pursues price stability—and by doing so creates a larger home market for its manufacturers.

## Summary: Results, Continued

- Importantly, the efficient policy of price stability is consistent with boosting competitiveness of the differentiated, “manufacturing” sector (relative to non-differentiated output) by generating lower markups.
- This also tends to lower the relative price of individual, differentiated traded goods for given prices charged by foreign competitors.
- But the overall terms of trade of the country strengthens as a consequence of the expansion in differentiated variety.
  - Larger producer entry also has implications for relative labor costs, as in Ghironi and Melitz (2005, *QJE*).
- An extensive empirical section provides evidence in support of the main testable prediction:
  - Countries that peg their exchange rates tend to specialize in non-differentiated sectors, while the opposite is true of countries that pursue inflation targeting policies.
  - Effects are quantitatively significant.

## Beautiful!

- Why?
- It reconciles New Keynesian international macroeconomics with the traditional policy thinking that it is beneficial to bolster competitiveness of the “manufacturing” (differentiated) sector.
  - The traditional “terms of trade externality” of New Keynesian international macro that pushes policy toward contraction never gained real traction in policy circles.
- The paper achieves this reconciliation by considering a mechanism (endogenous product creation) that has been receiving increasing theoretical attention and empirical support as an important driver of both fluctuations and macroeconomic policy incentives.
  - Bilbiie, Ghironi, and Melitz (2012, *JPE*) and references therein.
  - On monetary policy incentives in this class of models: Auray and Eyquem (2011, *IF*), Bergin and Corsetti (2008, *JME*), Bilbiie, Fujiwara, and Ghironi (2014, *JME*), Cacciatore, Fiori, and Ghironi (2013, NBER WP), Cacciatore and Ghironi (2012 WP), Cavallari (2013, *JIE*), Etro and Rossi (2014a,b WPs).

## Beautiful! Beautiful!

- In fact, the idea that the nominal exchange rate has an impact on producer entry decisions and that, in turn, these can contribute significantly to the effects of monetary policy over medium and long-run horizons goes back at least to Baldwin and Krugman (1989, *QJE*).
  - Russ (2007, *JIE*) also provides valuable insights in this area.
- PG's paper is an important contribution to (and builds on) a growing literature that, in PG's words, by "integrating trade and macro models can bring the literature closer to addressing core concerns shaping the policy debate."
- To add an example, the ongoing policy debate on structural market reforms and the role of traditional macro policy in managing transition dynamics triggered by reforms is an example of a pressing policy concern on which this class of models can shed light by incorporating the micro-level features of the economy on which reforms impinge directly.

## Having Said This, Is Policy Really about Competitiveness in This Model?

- While PG put the spotlight on the implications of their model for the effect of monetary policy on competitiveness, I wonder if this is really the central driver of optimal monetary policy in their framework, rather than a by-product of other concerns.
- The following argument builds on the above-mentioned work I have done on optimal policy in this class of models.
- What are the sources of inefficiency and margins of adjustment they impinge on in PG's model?

## Sources of Inefficiency

1. In the presence of endogenous labor supply, monopoly power in the market for goods distorts the determination of the equilibrium amount of effort and output.
  - Goods being priced at a markup while leisure is not results in suboptimally low output.
  - This is the standard distortion in plain vanilla New Keynesian macro.
2. With endogenous production of differentiated and non-differentiated goods, markup heterogeneity across these two sectors distorts the allocation between these sectors in a similar fashion.
  - Differentiated goods priced at a markup while non-differentiated ones are not results in suboptimally low output of differentiated goods.



## Sources of Inefficiency, Continued

- 3a.** Price stickiness affects the labor supply margin as the wedge between real wage and marginal rate of substitution between consumption and leisure becomes endogenous to inflation (even in steady state, given the specification of price adjustment costs) and inefficiently time-varying.
- 3b.** Price stickiness also affects the cross-sectoral allocation margin by altering the steady-state markup in the differentiated sector (if inflation is not zero) and making it time-varying.
- 3c.** Finally, price stickiness introduces inefficiency in the product creation margin.

## Sources of Inefficiency, Continued

### 3c. Continued:

- With flexible prices, continuous Dixit-Stiglitz preferences imply that the welfare benefit of product variety is exactly aligned with the monopoly profit incentive for product creation (the markup), and there is no inefficiency in the product creation margin.
  - The Euler equation for product creation implied by the decentralized equilibrium coincides with that in the planner's optimum.
    - Grossman and Helpman (1991, MIT Press), Bilbiie, Ghironi, and Melitz (2008, NBER WP).
- Sticky prices break this alignment by causing the steady-state markup to differ from its flexible-price level (given the specification of nominal rigidity) and making the sticky-price markup time-varying.
- This introduces a time-varying inefficiency wedge in decentralized product creation.

## Sources of Inefficiency, Continued

4. Money in the utility function implies a monetary friction that, in and of itself, would push policy toward the Friedman Rule, but let us not focus on this friction.
- If trade costs are of a feature of “trade technology” that would constrain also a planner, these are the only sources of inefficiency in the model.
    - Other than introducing an additional source of markup heterogeneity, the modeling of the non-differentiated sector does not incorporate any source of inefficiency—in fact, in the basic version of the model, it implies efficient risk sharing even under financial autarky.

## Optimal Policy

- Under commitment, policy refrains from addressing the existence of a flexible-price markup that distorts the labor supply margin.
- Similarly, policy refrains from addressing the flexible-price distortion in the cross-sectoral allocation margin.
- Given the assumptions of the model about preferences, my understanding is that price stability is optimal because:
  1. It keeps the inefficiency wedge in labor determination constant at its flexible-price level (the flexible-price markup) eliminating costly fluctuations in this wedge.
  2. It does the same for the inefficiency wedge in cross-sectoral allocation.
  3. And this same flexible-price markup implies no inefficiency along the product creation margin because of its “divine” alignment with the welfare benefit of variety (i.e., under flexible prices there is no inefficiency wedge in this margin).

## Optimal Policy, Continued

- Therefore, it really seems that optimal monetary policy in this model is about wedge-smoothing (in the labor and cross-sectoral margins) and (sticky-price) wedge-removal (from the product creation margin) much more than it is about competitiveness.
- Then, since optimal policy does the optimal thing for the product creation margin in the differentiated goods sector, the pro-competitive effect highlighted by PG emerges as a by-product.
- I think the paper would benefit from a more explicit discussion of the sources of inefficiency and how they determine policy incentives, along the lines of Bilbiie, Fujiwara, and Ghironi (2014, *JME*), Cacciatore and Ghironi (2012, WP), and Cacciatore, Fiori, and Ghironi (2013, NBER WP).
- It would be especially valuable to discuss the role of assumptions on preferences in determining policy incentives.

## External Competitiveness with Endogenous Export Entry

- All goods produced in the differentiated sector are traded in PG's model—in other words, there is not an endogenous margin of determination of what is traded and what is not.
  - There is not a meaningful margin of export market penetration separate from the margin of domestic entry: All differentiated goods producers are automatically also exporters.
- The competitiveness effect of monetary policy is really about the relative price of differentiated goods versus non-differentiated ones, and what optimal policy implies for the composition of production across the two sectors in each country and the relative composition across countries (especially when one of them is not pursuing the optimal policy).
- But if I think about an extensive margin, *external* competitiveness effect of policy, I naturally think of an effect that would facilitate export entry by a wider subset of domestic producers in an environment in which there is an endogenous decision whether to export or not.
- Bolstering competitiveness (along the extensive margin) would mean that policy engineers an outcome in which a larger fraction of manufacturing producers also export, in addition to selling domestically.
- This concept of extensive-margin export competitiveness seems closer to policy debates than that in PG.

## External Competitiveness with Endogenous Export Entry, Continued

- Such extensive-margin export competitiveness is a central ingredient in Cacciatore and Ghironi (2012, WP).
- Like PG, our model features endogenous entry into differentiated domestic production under monopolistic competition.
- Unlike PG, our model does not feature the within-country, cross-sectoral reallocation at the heart of PG's competitiveness mechanism.
- But our model does feature endogenous export entry by heterogeneous producers (as in Melitz, 2003, *Econometrica*, and Ghironi and Melitz, 2005, *QJE*).
- This implies a “within-sector” extensive margin of external competitiveness (“tradedness within the tradeable sector”) rather than an “across-sector” margin as in PG.
- This “within-sector” margin is consistent with Bernard, Eaton, Jensen, and Kortum's (2003, *AER*) evidence that only 21 percent of U.S. manufacturing plants actually export, and evidence of fluctuations in this margin in other studies.

## Endogenous Export Entry and Monetary Policy

- Nominal rigidity implies that monetary policy affects export entry decisions, and therefore country competitiveness along the extensive dimension.
- Differently from the frictionless labor market of PG, our model also incorporates search-and-matching frictions in labor markets.
  - Besides the policy relevance of unemployment, labor market frictions contribute to the model's success at replicating features of the international business cycle, including stronger cross-country comovement with increased trade integration.
- As an example of how our within-sector competitiveness margin and labor market frictions combine to affect optimal monetary policy, consider the following.
- With low trade integration, the model implies that it is optimal to use positive inflation to boost job creation closer to the efficient outcome.
- A positive inflation target accomplishes this by eroding steady-state markups and by shifting bargaining power toward firms.



## Endogenous Export Entry and Monetary Policy, Continued

- Trade integration implies fiercer competition for domestic producers from increased export entry, and reallocation of market share toward the more efficient producers as in the standard Melitz model.
- Average firm productivity increases endogenously.
- In an environment of labor market frictions, this makes job matches more valuable to firms and boosts job creation.
- As a consequence, the optimal inflation target is reduced, as there is less need of inflation to bring employment closer to efficiency.
- The within-sector, extensive margin of export of the Melitz structure is central to this result.
  - See the paper for other results.
- Our paper and PG thus complement each other by highlighting the importance of different extensive margins of external competitiveness and their implications for monetary policy.

## Conclusion

- This is a great paper, and I learned much from reading it.
- I view it as one of the starting points of a blossoming literature that answers a “call for research” issued by Paul Krugman in 1995 in a Princeton University Press book edited by Peter Kenen:

“I would like to know how the macroeconomic model that I more or less believe can be reconciled with the trade models that I also more or less believe. [...] What we need to know is how to evaluate the microeconomics of international monetary systems. Until we can do that, we are making policy advice by the seat of our pants.”

- The results by PG and others in this literature, and the nature of ongoing policy debates, highlight the importance and the promise of integrating micro-level producer dynamics into models of macroeconomic policymaking.