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Comments on Bergin and Feenstra, “Pass-Through of Exchange Rates and Competition Between Mexico and China”

It is a genuine pleasure to be here today to comment on an interesting and extremely topical paper. I should note at the outset that these comments are my own and do not necessarily reflect the views of Federal Reserve.¹

The Bergin-Feenstra paper is a great starting point for this conference. It addresses an issue of considerable importance to policymakers, and it combines sophisticated theoretical modeling with careful empirical research.

This chart, drawn from work by my colleagues at the Federal Reserve Board, Marazzi et. al. (2005), shows that in a regression for non-oil import prices, the coefficient on foreign prices measured in dollars has declined substantially in recent years. This is important, as it implies—if true—that changes in the dollar have had a declining effect on U.S. consumer prices, real net exports, and hence economic activity.

Marazzi et.al. showed that categories of imports experiencing larger increases in Chinese shares were also those exhibiting larger declines in pass-through. The Bergin-Feenstra paper builds on this finding. It starts by assuming the United States imports differentiated goods from just two countries, Mexico and China. It then analyzes what happens when the dollar falls against the peso while remaining pegged against the Chinese RMB. The theoretical modeling is quite sophisticated, and I am happy to let my co-discussant Tim Kehoe critique the details, since Tim taught me mathematics for economists when I was in grad school, and was better at teaching it

¹Rob Vigfusson provided useful comments and advice.

than I was at learning it.

What I'd like to do is skip to the main results and highlight a particularly interesting aspect of the analysis, the distinction between bilateral and multilateral passthrough. Bergin and Feenstra show, plausibly enough, that Chinese competition reduces the rise in import prices from Mexico induced by a given fall in the dollar against the peso—in other words, Chinese competition reduces bilateral passthrough for Mexican imports. Equally plausibly, the rise in Mexican prices allows the Chinese to raise their import prices, even though the RMB-dollar exchange rate is unchanged.

The paper then turns to multilateral passthrough, which is the ratio of the change in aggregate import prices P_m to the change in the multilateral dollar index E_m . Assuming the dollar-RMB exchange rate is unchanged, the denominator—the change in the multilateral dollar index—is merely the share of Mexican imports in total US imports times the change in the dollar/peso exchange rate. The numerator, the change in aggregate import costs, is the change in Mexican and Chinese import prices, multiplied times their respective shares in US imports. The point here is that if Chinese prices don't change, then, looking at the bottom equation, as long as bilateral Mexican passthrough BP is less than one, then so, too, will be multilateral passthrough MP . But if Chinese prices rise sufficiently, then aggregate import prices can rise by more than the multilateral dollar index. Therefore, and this is worth emphasizing, multilateral passthrough MP can exceed unity, even if bilateral passthrough BP is less than unity.

This brings us to the key theoretical result in the paper. Multilateral passthrough is less than unity when S_x , the per-firm share of Mexico in total US imports, exceeds S_y , the per-firm share of Chinese firms. Now, I more or less understand the mechanics driving this result. When

the dollar falls against the peso, aggregate passthrough is minimized when Chinese competitors have low per-firm shares, so that the overall Chinese share is small and thus the multilateral dollar rises more. But that said, the notion of a per-firm share in imports is a very fuzzy concept—it's not something for which we generally have data. The notion that this per-firm share reflects bias in consumer preferences is even fuzzier—I'm not sure why a bias toward Mexican goods would increase their per-firm share, nor is it clear that Chinese firms suffer from anti-Chinese bias. I would urge the authors to think a little more about how to translate this mathematical condition into real-world issues.

I'd now like to raise a second concern with Bergin and Feenstra's theoretical result. The authors acknowledge that their framework is similar to a simpler model developed in Dornbusch (1987), in which the presence of import-competing producers in the United States is what lowers passthrough for the foreign producers. Now, in the Bergin-Feenstra model, U.S. firms don't produce the imported good, and this helps simplify the analysis. However, the premise of the paper is that the rise of China has increased the share of producers for the U.S. market whose exchange rates against the dollar are fixed, and this has helped reduce passthrough. But this premise may be incorrect. Between 1990 and 2006, the share of aggregate imports in U.S. GDP rose 4.3 percentage points. 1.9 percentage points of that reflected higher Chinese imports, but that merely replaced one set of producers tied to the dollar—U.S. firms—with another set—Chinese firms. By contrast, the additional 2.3 percentage points coming from other foreign producers genuinely represented a shift in market share toward floating exchange rate producers. The bottom line is that, overall, the share of floating-currency producers in the U.S. market has probably risen, and this should have acted to boost—rather than lower—passthrough.

A final consideration on the theoretical side is that in Bergin and Feenstra's model, there's nothing special about China, except that it pegs to the dollar. China's low costs and its competitive threat to other producers is irrelevant. But an alternative scenario, suggested in Marazzi et al, seems plausible: that Chinese competition would restrain other foreign producers—who want to retain market share—from raising prices when the dollar moved against them, but would induce them to reduce prices when the dollar moved in their favor. In this world, China's cost advantage matters and leads to asymmetric passthrough, depending on whether the dollar is rising or falling.

Turning to the empirical work, the approach is reasonable, it is carefully implemented, and the result that Chinese competition lowers passthrough seems plausible. I have just a few comments.

First, in several of the regressions, the sign of the coefficient on the level of the China share—in red—is positive and significant. From a real-world perspective, it is hard to understand how greater Chinese competition should boost import prices. In work I did with Marazzi and Schindler a few years ago to model U.S. import prices, the coefficient on the level of the China share was essentially zero, but the coefficient on the change in the China share was negative and significant, indicating that growing Chinese exports were lowering U.S. import prices. The authors might consider adding the change in the China share as a control variable.

Second, and more importantly, I was wondering whether several variants of the equation could be tested to distinguish between different reasons for China's impact on passthrough: first, Bergin and Feenstra's view that China's impact comes from its fixed exchange rate alone, and second, the alternative view that it comes from China's highly competitive, low-cost position. One way to address this would be to add as an explanatory variable the exchange rate interacted

with the import share of other countries that also have fixed their exchange rate against the dollar.

If Bergin and Feenstra are right, then the coefficient on that additional term should be similar to that on the China interaction term. A second test would be to separate dollar appreciations from dollar depreciations in the China interaction term. If Bergin and Feenstra are right, then the coefficients on these terms should be similar. Conversely, if it is really China's competitive position that is reducing passthrough, then that effect should be stronger for dollar depreciations—which raise costs for other foreign producers—than for dollar depreciations—which lower costs for foreign producers.

To conclude, Bergin and Feenstra have written an interesting, careful, and analytically rigorous paper that considerably enhances our understanding of exchange rate passthrough. I don't think they've written the final word on the role of China in this passthrough, however. I would welcome extensions of their model that take into account both the role of U.S. domestic producers and of China's role as a competitive deterrent to prices increases by other producers.