Comment

Luis A. V. Catão: Being a newcomer to the literature on monetary policy and commodity price shocks, it is both an honor and a hefty responsibility to comment on yet another thought-provoking, clearly written, and certainly very timely contribution by Jeffrey Frankel to this literature.

Having learned from Frankel's previous work how monetary policy in industrialized countries can greatly impact global commodity prices (Frankel 2008), this paper takes both global monetary policy and commodity price shocks as exogenous and asks, instead, which monetary policy regime is best equipped to manage such shocks. The context is that of a small open emerging market (SOEM) that specializes in the production and export of one or a handful of commodity goods of which it is a price-taker in world markets.

The Case against Standard Inflation Targeting and in Favor of the Producer Price Targeting Alternative

The main contention of the paper is twofold: that strict inflation targeting (IT)—based on an explicit and pre-announced quantitative annual target for CPI and low or null weight on the output gap—can be highly destabilizing for such a SOEM, and that product- or export-price targeting rules could do better. To see why, consider a SOEM that imports much of the food or oil it consumes, where that food or oil accounts for a substantial share of the consumer price index. This economy may be either a producer and net exporter of other commodities (like nonenergy minerals) or a producer and net exporter of services (for example, Caribbean tourism) and manufactured goods (like many countries in Asia, for instance). A rise in the world price of oil or food entails a terms-of-trade (TOT) deterioration, all else constant. As food and oil weigh heavily on the domestic consumption basket, CPI inflation will rise.

Suppose that the central bank adopts a strict Taylor rule on headline CPI. Higher CPI inflation would call for a rise in the policy-controlled short-term interest rate, lowering consumption and appreciating the nominal exchange rate (E). If the country is a price-taker in the world market for its exports, the appreciation would put a downward pressure on home goods' prices and hence on profit margins. Falling domestic consumption and squeezed profits would reinforce the contractionary impact of the TOT deterioration on output and employment—the converse would happen when global oil or food prices rise and this economy's TOT improves. In this sense, this Taylor rule would tend to exacerbate the procyclicality of this SOEM to TOT shocks.[1] Some support for the contention that IT regimes operate in this fashion is provided in table 1 of the paper: in economies that are officially under an IT regime, the correlation is negative. In other words, when TOT deteriorates (improves) the real effective exchange rate—REER—appreciates (depreciates). In short, the more volatile the world relative price of commodities, so goes the argument, the worse is the trade-off between output and inflation stabilization engendered by strict CPI IT.

Once exchange rate targeting and hard pegs are out of the way as viable alternatives for many countries for reasons thoroughly discussed in the paper, other alternative rules gain further luster. One alternative would be to target core CPI inflation, where "core" means that volatile flex-price goods like food and oil are typically purged from the index. While this is actually practiced by some SOEMs, like Korea and South Africa, it is not problem-free. For one thing, the purging may be construed by the public as nontransparent and thus detract from policy credibility, as noted in the paper. In addition, in countries where food (processed and unprocessed) accounts for 30 to 50 percent of CPI, one might wonder what such a "purged" CPI stands for.[2]

The focus of the paper is on three producer-based price targeting alternatives—namely, Peg the Export Price (PEP), Peg the Export Price Index (PEPI), and product price targeting (PPT). PEP amounts to stabilizing the domestic currency price of the country's main exporting commodity (for example, copper in Chile), whereas the PEPI would stabilize the export

1. A similar mechanism is applicable to the SOEM, which produces and exports commodities (including food and oil) but imports mainly manufactured goods, and where manufactured goods weigh heavily on CPI. When world manufacturing prices rise relative to commodity prices, TOT deteriorates and domestic CPI inflation rises—calling for a monetary tightening—which reinforces the negative impact of the TOT on output and employment.

2. See Catão and Chang (2010) for cross-country data on food weights in headline CPI.

price index (that is, not one but all commodities in the export basket). PPT is broader: the policy goal would essentially consist of stabilizing the domestic producer price index (PPI) once the latter is computed of value-added weights instead of gross sales weights, as in the old-fashioned PPI. It is straightforward to see that either of these alternatives could go some way toward mitigating the procyclical "bias" of CPI IT that Frankel cites: when TOT deteriorates, the exchange rate automatically depreciates to stabilize the domestic price of exports or output. If wages and nontradable prices are sticky, it follows that domestic relative prices and producers' profit margins are also stabilized. Hence the effects of TOT volatility on output and employment are offset via exchange rate fluctuations.

Another Look at Targeting Choice Criteria

What are the downsides of those producer price targeting rules? One is clearly practical implementation. To fully stabilize PEP or PEPI in domestic currency, the government has to be adjusting the nominal exchange rate to the short-term gyrations of those prices (or else intervening directly in the respective commodity markets). To the extent that such gyrations can be extreme—even on an intra-day basis—this would likely require rather frequent intervention and sizable buffer stocks (of foreign exchange rate reserves or of physical commodities); this could certainly be very expensive in a world of near-zero interest rates on "safe assets." In addition, in the case of PEPI, one would need to have real-time statistics on the index on a daily or weekly basis, which most countries do not typically produce.

But my main reservations are of a more conceptual nature. Specifically, it is not clear to me that any of those three price-level targeting rules would emerge as winner on the basis of broader standard criteria for choosing a targeting rule. In what follows, I elaborate on this point and conclude that, all in all, broad CPI inflation targeting still stands as the best compromise choice for many, if not most, SOEMs.

A first consideration in this connection is that any optimal targeting rule is bound to depend on the welfare objectives of the policymaker. Standard economic theory says that typically the benevolent policymaker should want to maximize the consumption of the representative citizen, reduce volatility of consumption, and minimize labor effort. Combining the first and last objective, and assuming that production is proportional to employment, implies that one really wants to maximize the ratio of consumption to domestic output (C/Y)

and reduce the variability of *C*. A lot of the discussion in the paper assumes that stabilizing the domestic relative price of commodities is the key, purportedly because it helps minimize output volatility, though this connection is not established in the numerical simulations across policy rules in the second part of the paper. At any rate, especially in a small open economy with nontrivial financial market integration with the rest of the world, consumption and output will not necessarily move one to one. Moreover, standard economic theory says that one typically wants to maximize the level of consumption and minimize its volatility, rather than minimize the volatility of relative prices and output per se.

Once this broad welfare objective is agreed upon, the follow-up question is: Which main imperfections stand in the way? The answer will depend on the type of economy. On this issue—as well as that of the policymaker's welfare function—I think that the paper would benefit from a less terse discussion. So I will try to fill in for some of that discussion here with a rather stylized typology.

Consider first the case of an economy that produces and exports sticky price–types of goods, like manufactures and services, and is a net importer of other commodities, notably food and oil, which have a high weight in its CPI basket relative to that of its (advanced) trading partners. Very small open economies that export mainly services like tourism as well as those that export mainly manufacturing (like China and much of Asia and some Eastern European countries) would readily fit into this category. These are the "worst-sufferer" cases modeled in Catão and Chang (2010): when primary commodity shocks hit, and imported food and oil prices rise by more than the export price, the country's TOT deteriorates, CPI inflation rises, and the REER tends to appreciate (since the rise in domestic inflation outstrips that of foreign inflation because of the higher weight of oil and food in CPI). So inflation and output (through the contractionary effects of falling TOT and an appreciating REER) are both badly hit. The key question in this context is: What are the main imperfections that would tip the balance away from CPI IT toward PPT, PPI, or PEPI?

For one thing, stabilizing PPI should clearly be important since this SOEM has a sticky price distortion, which lowers output under higher PPI inflation. This, however, would call for a monetary tightening, rather than the monetary loosening entailed by the PEP and PEPI rules advocated in the paper. Would output suffer much in the short run? This depends on the intratemporal substitution elasticities. If there is sufficient home bias, and the home good is relatively nonsubstitutable abroad, like a Caribbean Island or some specific

manufacture or service, then the attendant nominal exchange rate appreciation would not hit output too hard. In fact, a nominal appreciation would allow the country to better explore the so-called "TOT externality"—in the way that countries with some monopoly power over their exports impose "optimal tariffs." CPI-based IT would also call for tightening but just more aggressively since CPI inflation goes up by more than PPI inflation. If this economy is shut down from global financial markets, consumption is all the more protected by the TOT improvement associated with the currency appreciation since $C = (Ph/P) * Y$, where Ph/P is the relative price of the home good, which rises on TOT. By appreciating the REER and hence raising Ph/P, the policymaker lifts up C/Y, which is what standard economy theory tells us to maximize.

Conversely, assume instead that the economy is highly integrated with international capital markets. Then, a REER appreciation following the nominal appreciation would hurt consumption in the short run, but in the long run, simulations in Catão and Chang (2010) find that CPI targeting in fact does slightly better than PPI in lowering REER volatility. Since under (near) complete markets stabilizing the REER is tantamount to stabilizing consumption, CPI-based IT would have an edge through this mechanism. In contrast, PEP and PEPI would exacerbate REER volatility: by stabilizing export and producer prices in domestic currency, the price of food and oil (which weigh high in the consumption basket) would tend to soar, destabilizing consumption. Moreover, if the economy is sufficiently integrated within world capital markets and is also a price-taker in world commodity markets, its producers should be able to hedge themselves against commodity price shocks, rather than relying on monetary policy to do the job (at the expense of other objectives and of shifting volatility elsewhere in the economy). Diversifying such a country-specific TOT risk in world capital markets is simply likely to be cheaper.

Last but not least, if the food and oil price shock is persistent enough, and the central bank's credibility is low, such a credibility "distortion" would only reinforce this point: depreciating the currency in response to the negative TOT shock, as entailed by the Frankel PEP rule, could result in a potentially costly loss of credibility. The upshot is that, judged by a broader set of criteria beyond mere stabilization of output in the short run, the trade-offs between PPI and CPI IT are complex; but the shortcomings of PEP and PEPI are also quite apparent.

Let me now briefly consider two final cases in my typology of SOEMs. One is the country that basically produces and exports key staples, like meat, wheat, or soybeans—in short, a country that "produces what it eats" (to use the famous phrase of Diaz-Alejandro referring to early twentieth-century

Argentina). In this case, the domestic fix-price distortion is absent (since all commodities are essentially flex-price goods), so stabilizing PPI is no longer as attractive. But also note that in this economy PPI and CPI will tend to co-move tightly since much of what average citizens consume (food) is what they also produce. In this case, the Taylor rule on either PPI or CPI targeting will not deliver markedly distinct outcomes. In particular, the standard Taylor rule on CPI inflation goes in the countercyclical direction advocated by Frankel: as world food prices go up and TOT improves, CPI inflation also rises, calling for a monetary tightening and a currency appreciation. This will help stabilize both domestic producer prices and CPI inflation, thereby mitigating cyclical overheating. But, again, one may still argue that CPI may in fact have an edge over PPI inflation targeting insofar as it helps stabilize the price of the overall consumer basket (which includes imported manufactured goods), and not just the producer basket. To the extent that the welfare objective of the policymaker is to minimize volatility of overall consumption, stabilizing the whole basket—rather than just part of it—would be preferable.

Finally, there is the case of a country that produces and exports nonfood, nonoil commodities and that imports the rest, including possibly oil. In this case as well, the fix-price distortion is no longer present, so stabilizing PPI is not particularly attractive from the view of mitigating that distortion. Yet, this seems to be the context in which the Frankel criticism of standard IT is most pertinent. Suppose that world price of manufactures or oil rise by more than the country's export price, so that its TOT deteriorates.[3] Because CPI inflation will rise, standard CPI IT will call for tightening, inducing a currency appreciation. In this case, the IT rule tends to exacerbate the contractionary impact of the TOT deterioration. PEP and PEPI, in contrast, tend to do a better job at shielding output but only insofar as domestic costs (notably wages) are sticky and do not respond to the rise in CPI inflation. But the PEP and PEPI will fail, once again, in terms of stabilizing the cost of overall CPI since the goods that this economy exports have limited weight in CPI. So, what PEP and PEPI are doing is basically shifting volatility across traded goods and, in particular, trading-off the volatility in producer prices versus the volatility in the price of consumption. If there are real rigidities of the type modeled in Blanchard and Gali (2007), real wages will respond to this rise in CPI, and rising wage costs will compress profits and production once PEP and PEPI

3. Although historically commodities' prices tend to co-move closely, the commodity lottery may play out so that if global commodity prices rise, the price of the country's main import commodity (say oil) rises by more than the country's export price. So, its TOT will deteriorate.

stabilize producer prices. In this case, one might do much better by sticking to CPI IT and placing not too low a weight on the output gap. In short, when advocating the superiority of PEP and PEPI, even in this more favorable case, care must be taken to focus on the main distortion(s) that policy aims to mitigate.

Further Pros of CPI Inflation Targeting

In addition to transparency, I would like to round up my defense of CPI IT with three other pluses that are worth restating here.

One is that, unlike price level targeting, standard IT does not require one to take a stand on what is trend versus what is cycle: CPI inflation is typically stationary. This is a nontrivial problem with PEP and PPT *level* targeting that I found missing in the paper's discussion. Supposedly, a SOEM policymaker would like to stabilize domestic commodity prices around fundamental or trend levels so as to avoid wild and potentially very disruptive corrections in producer prices and in the nominal exchange rate down the line. Implicit in Frankel's discussion, it seems to me, is the assumption that the U.S. dollar spot commodity price is close to that fundamental value, but his own early work indicates that this is not always the case. At any rate, I believe the paper would benefit from a more upfront discussion of the trade-offs between inflation versus price *level* targeting.

Second, history teaches us that the political economy of stabilizing export prices is a tricky one. Doing away with price shocks to exporters would mitigate the risk of their going out of business, but such a policy rule may detract from needed structural change, which may be painful in the short run but beneficial in the longer run. It may create political distortions via the consolidation of powerful export lobbies. Brazil's pre–World War II experience with coffee provides an illustration (Furtado 1963): coffee producers tilted policy so as to favor a depreciation during falling world coffee prices (largely resulting from their own overproduction), thus "socializing the losses" among urban consumers. In contrast, during rising coffee prices and improved TOT, they would lobby for pegging the currency, thus "privatizing" the benefits of the bonanza. This arguably protracted structural adjustment and diversification away from coffee. Besides, such a policy was clearly regressive insofar as poorer urban classes were the ones hit the hardest by the rising prices of tradable staples other than coffee, following the devaluation bouts. While the political mileage of countries in this day and age of mass democracy

and greater institutional transparency may vary in this regard, one should perhaps be mindful of such political economy pitfalls.

To conclude, I ask permission to put on my multilateral IMF hat and highlight another nontrivial benefit of broad CPI inflation targeting—namely that of mitigating the externality problem—that, if all IT central banks were to take imported inflation as given and accommodate it as implied by PPI or some "commodity purged" CPI IT, global commodity prices would be less anchored; this would be less conducive to keeping global inflationary pressures at bay. Conversely, if there is a worldwide food undersupply, and all food exporters stabilize food prices rather than allowing them to rise relative to the prices of other goods as entailed by PEP and PEPI type rules, this may curb the needed expansion of global food supply.

All in all, I am inclined to think that many SOEMs and the world at large are better off by sticking to an old wisdom, "If it ain't broken, don't fix it." Broad CPI inflation targeting may perhaps be dented here and there, but it is not yet broken.

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