

Comments on “Oil and Global Adjustment,” by Brad Setser

The author is to be commended for pulling together a great many interesting facts and observations. The paper discusses many important issues, and we could obviously spend a lot of time discussing them. Rather than reviewing and addressing all of these, however, I thought it might be useful to focus on what I think are some of main issues and then to offer some of my own thoughts, particularly in terms of where my perspective may differ from the author's.

The starting point, of course, is that oil exporters have seen their external balances surge in response to the rise in oil prices. Slide 1 shows the combined trade balances for a selection of developing countries that export oil. The black line shows oil prices. Clearly, as oil prices have soared, so too have the trade surpluses of the oil-exporting countries.

The next graph (slide 2) splits the trade balance into exports, the red bars, and imports, the blue bars. Spending on imports has clearly picked up strongly over the past few years, but at least as of the middle of last year, it still had a long way to go to close the trade deficit. If you stare closely at this graph, it is apparent that spending on imports reacts with a lag to a rise in export receipts.

This point is more easily seen in the slide 3, which shows the dynamic response of imports to a 10 percent rise in exports, based on the historical data for OPEC since 1973. Initially, imports are sluggish, but after a year or so, they rise 3 to 4 percent and after a couple of years they rise about 6 percent.

This profile suggests that we should expect further increase in the imports of oil-exporting countries, at least for another couple of years. Indeed, as the author notes in his paper, spending currently appears to be rising very quickly and the current account balances of the oil exporters are expected to fall significantly. Adjustment is underway.

Much of the paper addresses how this adjustment might have started sooner and gone further by now under different exchange rate arrangements and/or different fiscal policies. In evaluating these different policies, the author makes a lot of appraisals. Most of them are quite sensible, but they are not sufficient to draw firm conclusions. As the paper makes clear, there is a good deal of variation across countries in how they have responded to increases in their oil revenues. It would be quite useful to see how these differences correspond to different macroeconomic outcomes. The author does some of this, but I think a more systematic approach to reviewing what has happened in the past and in the current episode would be very informative, either through cross-country empirical analysis or more structured case studies. This seems to be a potentially fruitful topic for future research.

So adjustment appears to be underway. Governments are spending more of their revenues and real appreciations of exchange rates are spurring imports. But is this a good thing? Should the oil-exporting countries rapidly ramp up spending on imports and eliminate their trade surpluses?

The author notes that the surpluses of the oil exporters are contributing to global imbalances. Clearly, the rise in oil prices has had a very substantial negative effect on the U.S. current account balance, so it's hard to argue with that. But then, the paper seems to argue that the goal of policy should be to increase spending in the oil-exporting countries in order to reduce their surpluses. This view makes a lot of sense if the rise in oil prices has indeed delivered a permanent wealth shock. Not doing so would needlessly and unfairly limit the welfare of the current generation of citizens. This also assumes that the economy can handle rapid increases in spending without giving rise to internal imbalances or excesses.

My main problem with this perspective is that I am not willing to say that the rise in oil export revenues is permanent, at least not all of it and probably not even a large chunk of it. There remains tremendous uncertainty about the future course of oil prices as well as oil demand.

Slide 6 is meant to convey the range of uncertainty for oil prices at the end of this year on the part of options and futures market participants. It shows an options-derived probability density function for the December 2007 crude oil futures contract. Clearly, a wide range of outcomes is supported, with the two-thirds confidence interval running from about \$45 per barrel to \$75 per barrel. It is possible that oil producers have a clearer idea of where oil prices will be than market participants, as their supply decisions can have a direct bearing on oil prices. So this distribution may differ from that perceived by the oil producers. But there are many uncertainties beyond their control, and I think it is still a reasonable representation of the uncertainty associated with oil prices, even from their perspective.

In slide 7, I combine options-derived measures of uncertainty for oil prices along with some reasonable assumptions about the volume of oil exports to come up with this fan chart for oil revenues. The dark grey region denotes the two-thirds confidence band, which in 2008 runs from about \$550 billion to about \$1 trillion. The light grey region is the 95 percent confidence band, which runs from about \$400 billion to \$1.2 trillion. With this wide of a range, one cannot rule out a quick reduction in trade surpluses or even moves into deficits.

An additional source of uncertainty about oil revenues comes from the response of oil demand to higher prices, as oil revenues obviously depend on quantity as well as price. To illustrate this point, I'll show you some recent work from three of my colleagues at the Federal Reserve Board, Martin Bodenstein, Chris Erceg, and Luca Guerrieri. They examine the effects of a permanent rise in oil prices in a DSGE model. In so doing, they illustrate, among other things, how external adjustment following an oil price shock

depends on the long-run elasticity of oil demand. They consider three cases: low, medium, and high price elasticities.

As shown in the left side of slide 9, the evolution of real oil demand in the United States depends directly on the value of the long-run price elasticity. It is well known that the short-run price elasticity for oil is very low, even close to zero, so that a 50 percent permanent increase in oil prices initially to a substantial rise in the value of oil imports and real quantities change little. But thereafter, quantities adjust. In the low elasticity case (the blue line), real quantities change little over time—this is close to the Leontief case. As a result, nominal oil imports are permanently higher and oil exporters experience a permanent rise in export revenues. If the long-run price elasticity is unity, however, as would be the case in a Cobb-Douglas world (the red line), then the subsequent fall in quantities is sufficient to return expenditures on oil to the baseline value. In this case, the rise in the revenues of oil exporters is temporary even if the rise in oil prices is permanent. Unfortunately, it is hard to pin down the long-run price elasticity for oil demand as adjustment to oil prices is such a slow moving process and as the span of available data is quite limited for this purpose.

As shown in slide 10, these different cases also have important implications for external adjustment more generally. In the low-elasticity case, in which the value of oil imports is permanently higher, satisfying the inter-temporal budget constraint requires that the non-oil trade balance move sharply toward surplus in order to pay for the imported oil. This happens through a large depreciation of the importing country's terms of trade (which, in the slide is shown as an upward movement). On the other hand, in the unitary elasticity case, as the surge in nominal oil imports is temporary, non-oil trade need not respond much to satisfy the inter-temporal budget constraint, and the terms of trade change little.

To conclude, it is not clear to me at least that the rise in export revenues is permanent. There is great uncertainty about the evolution of oil prices and oil demand. History also suggests that the increase in oil prices may not persist indefinitely, as previous booms in commodity prices have consistently been reversed. Moreover, in light of growing concerns about global warming, public policy around the world may get serious about curtailing the use of fossil fuels. While it is hard to imagine getting by without significant quantities of oil at present, the world could look very different in a decade as resources are increasingly devoted to alternatives.

I do not think it too conservative for oil exporters to continue to devote a substantial portion of their export revenues to accumulating additional foreign assets, at least for the time being. There is simply too much uncertainty about their future revenue stream to act as if the elevated export earnings are permanent. I also believe they should endeavor to develop their non-oil economies in order to provide productive opportunities for their populations and to prepare for the eventual transition away from oil.

It's not clear that this is happening, however, and I would not be surprised if in a few years we find ourselves criticizing the oil exporting countries for being profligate spenders who squandered their riches.

Workshop on Policy to Reduce Global Imbalances

Outlook for the Oil Exporters

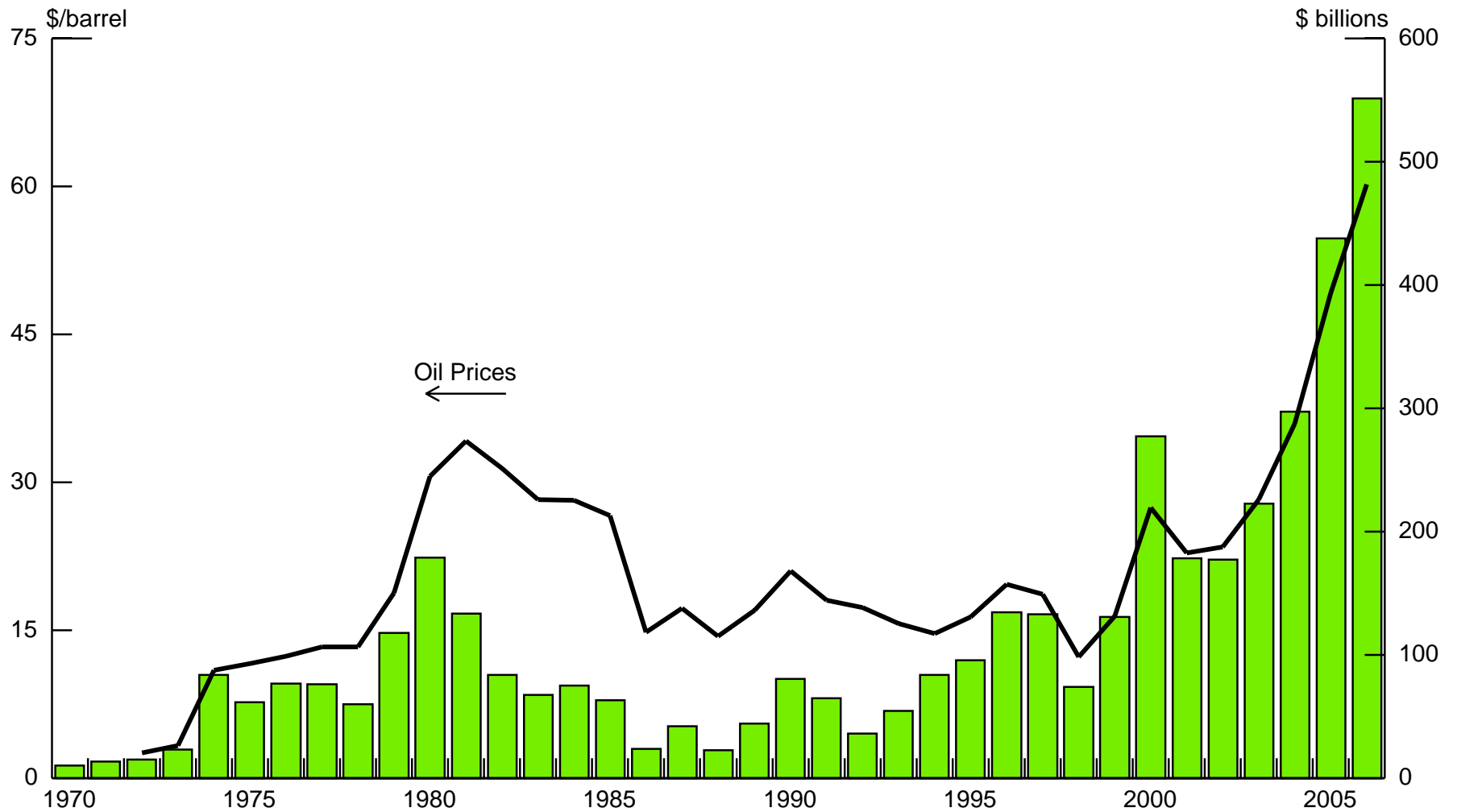
Comments on “Oil and Global Adjustment,” by Brad Setser

Trevor Reeve
Federal Reserve Board
February 8, 2007

Slide 1

Oil-Exporting Developing Countries

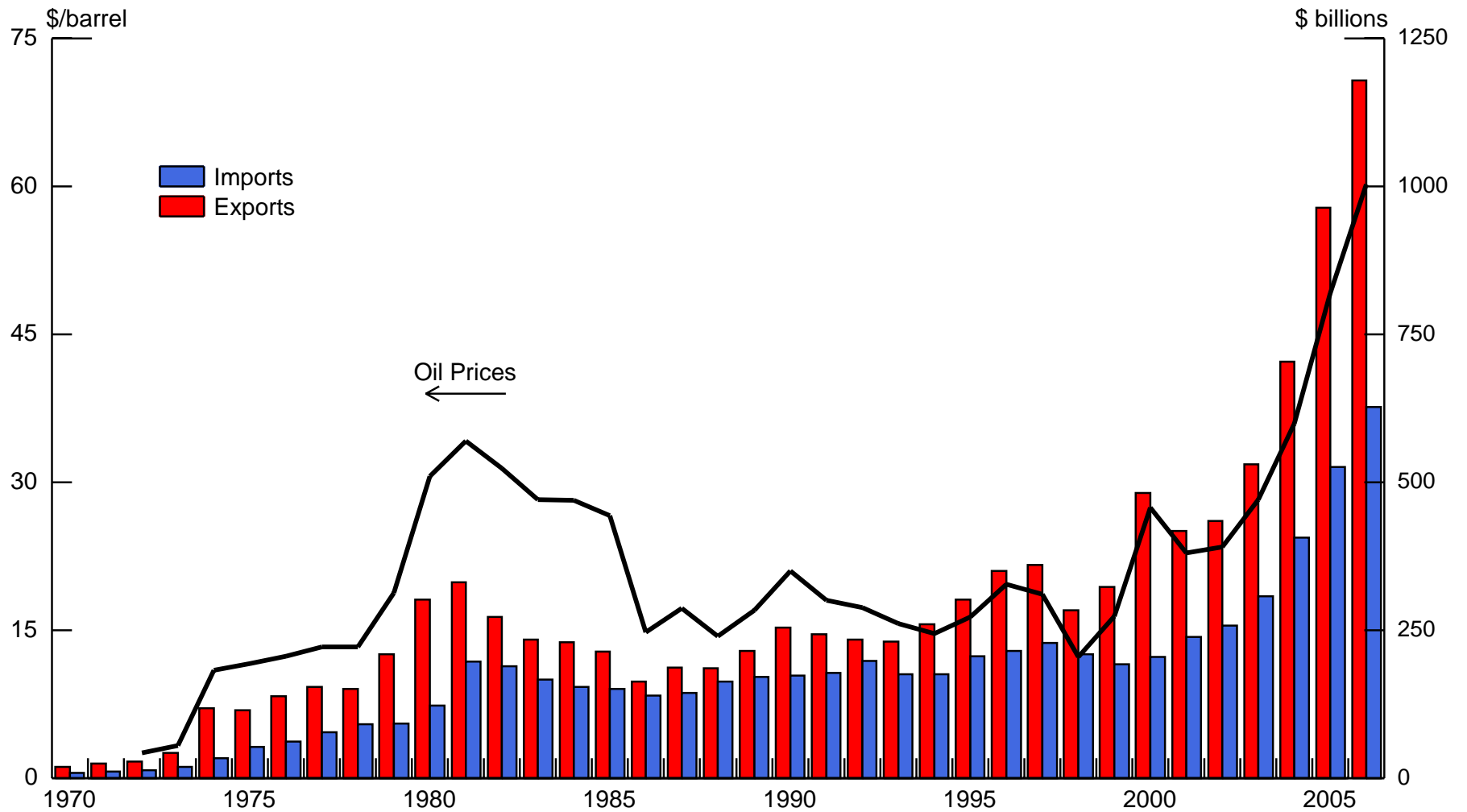
Trade Balance



Slide 2

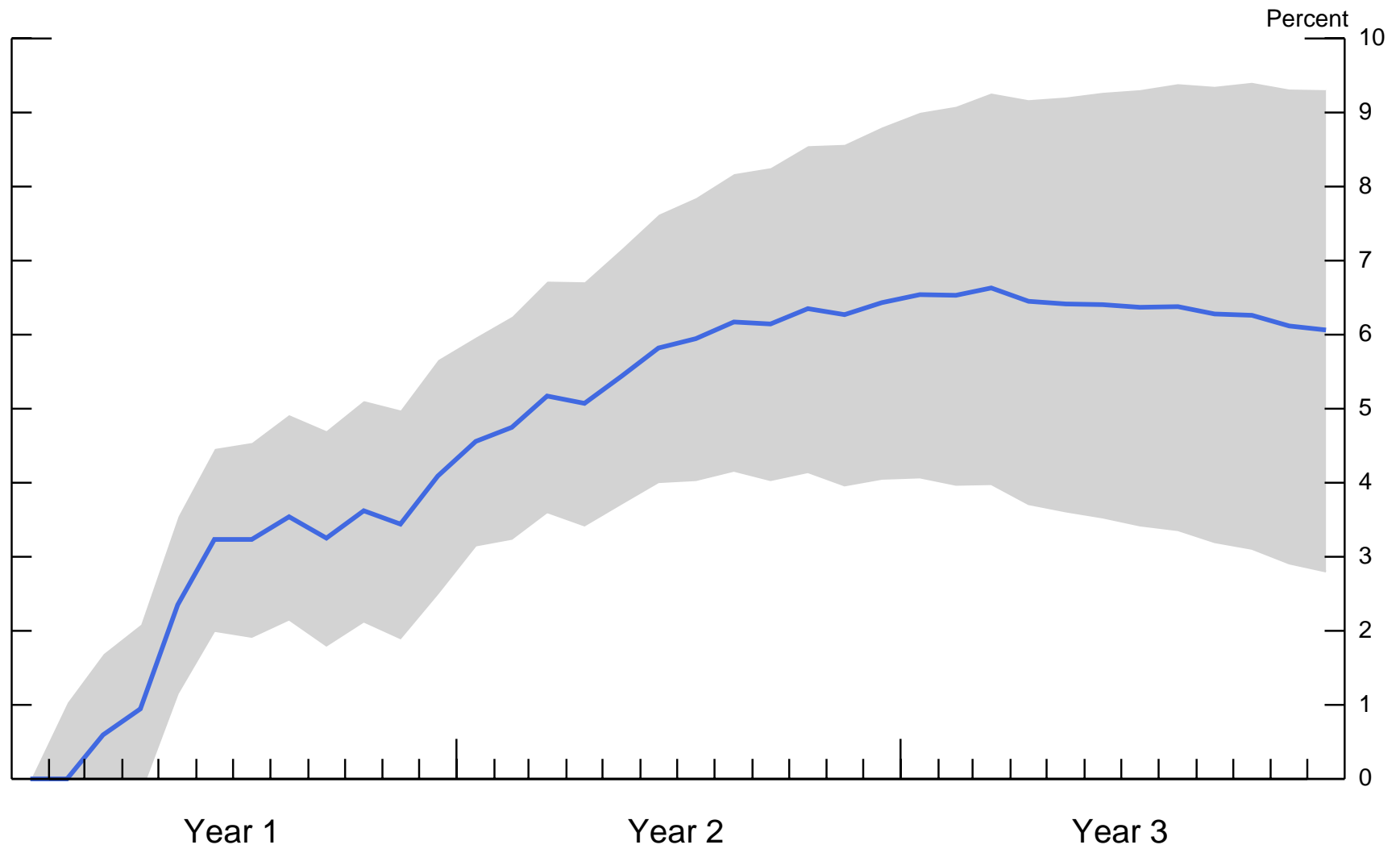
Oil-Exporting Developing Countries

Exports and Imports



Slide 3

Dynamic Response of Imports to a 10 Percent Rise in Exports (OPEC)



Adjustment is Underway

- Imports of oil-exporters should continue to rise given the increase in export revenues to date.
- Indeed, Setser notes that spending is rising quickly and current account surpluses of oil-exporters are expected to fall significantly.
- This could have happened even faster under different choices for exchange rates and fiscal policy.
- But is this a good thing?

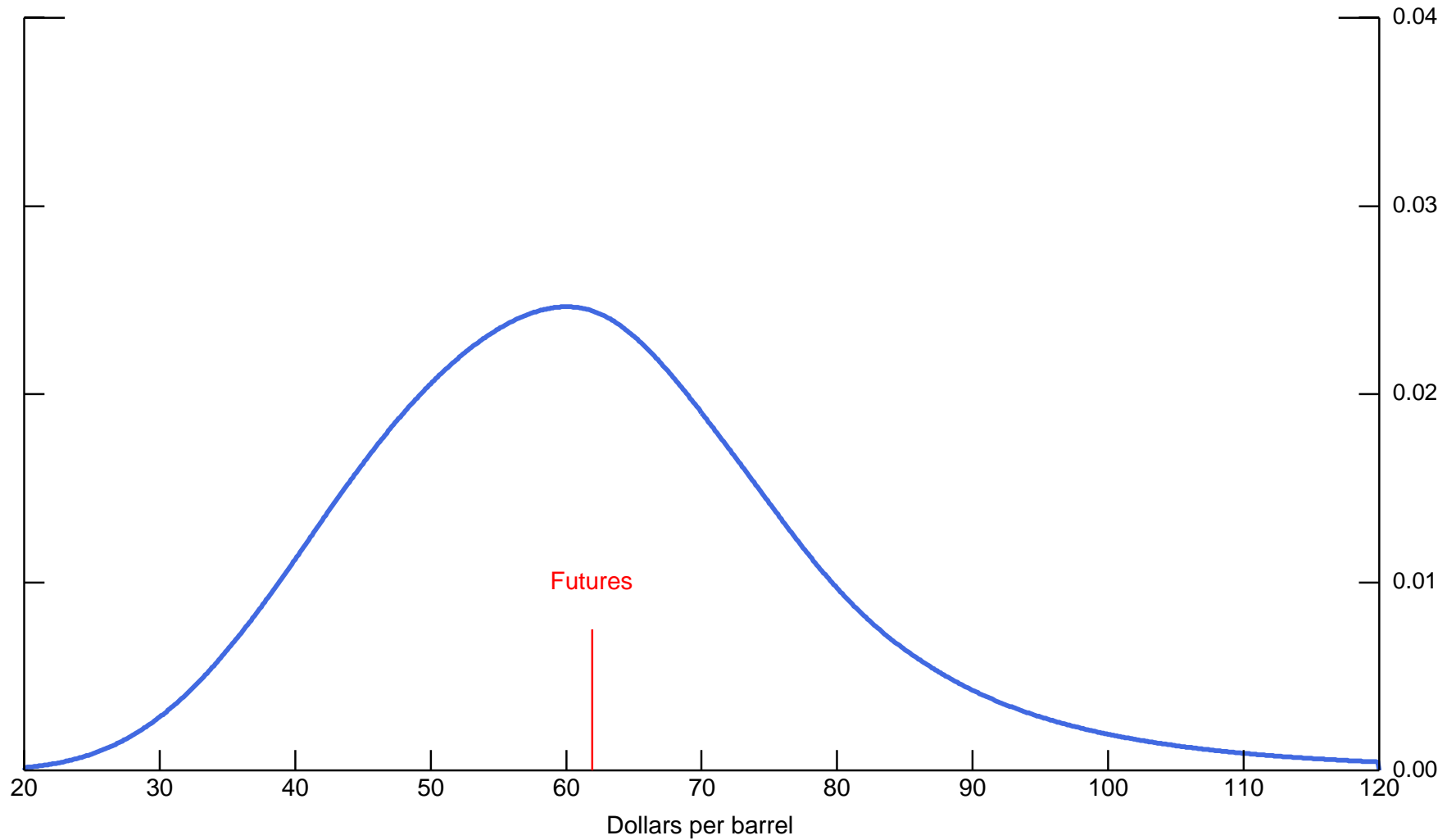
Setser's View as I See It

- The surpluses of the oil exporters are contributing to the problem of global imbalances.
- As such, the goal of policy should be to eliminate the oil-exporting countries' surpluses, i.e., increase spending on imports.
- This view is justified because the rise in oil prices has delivered a permanent wealth shock.

Slide 6

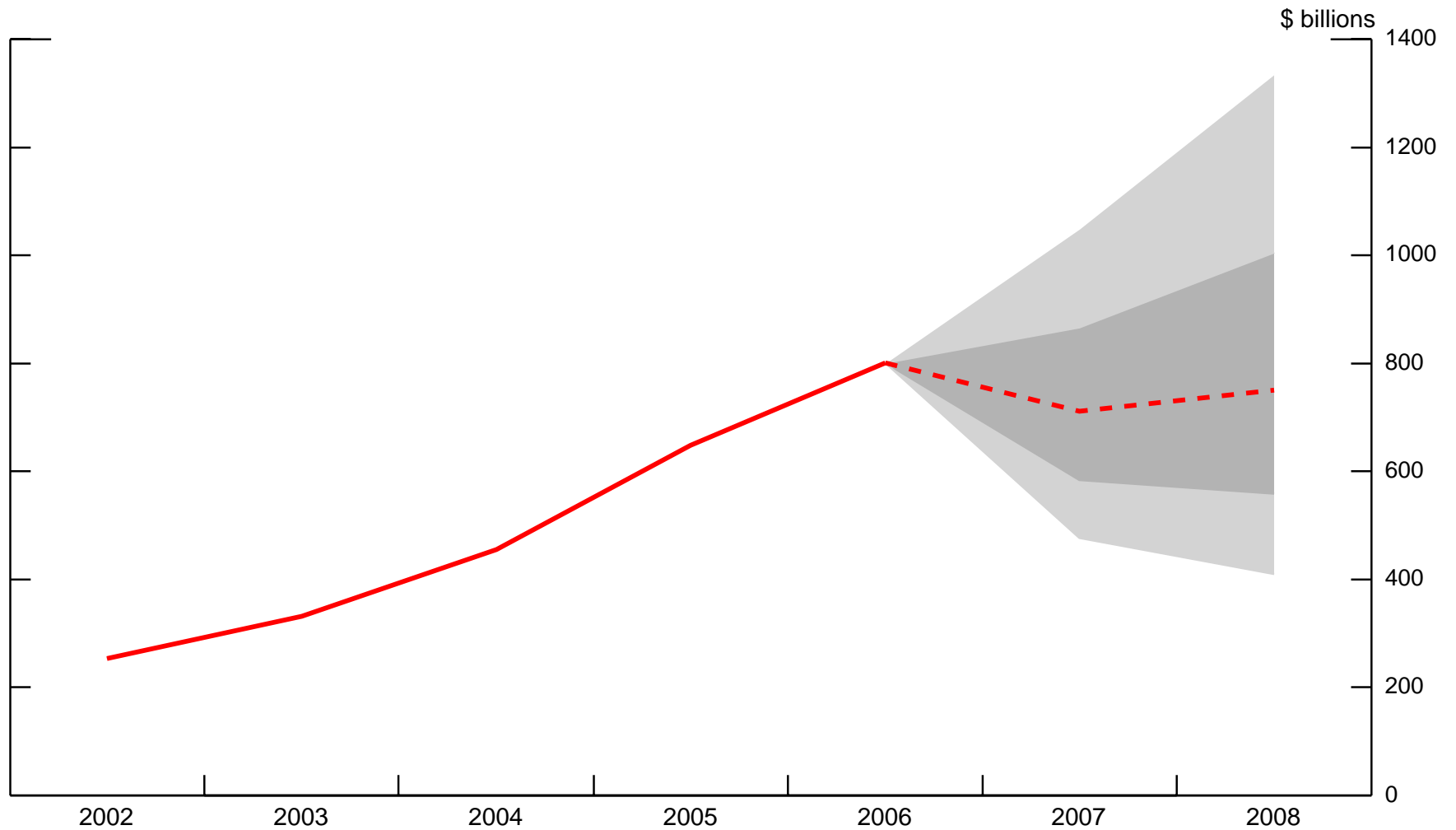
Uncertainty of Oil Prices

Implied Distribution from Options on December 2007 Futures



Slide 7

Uncertainty of Oil Export Revenues for Oil-Exporting Developing Countries



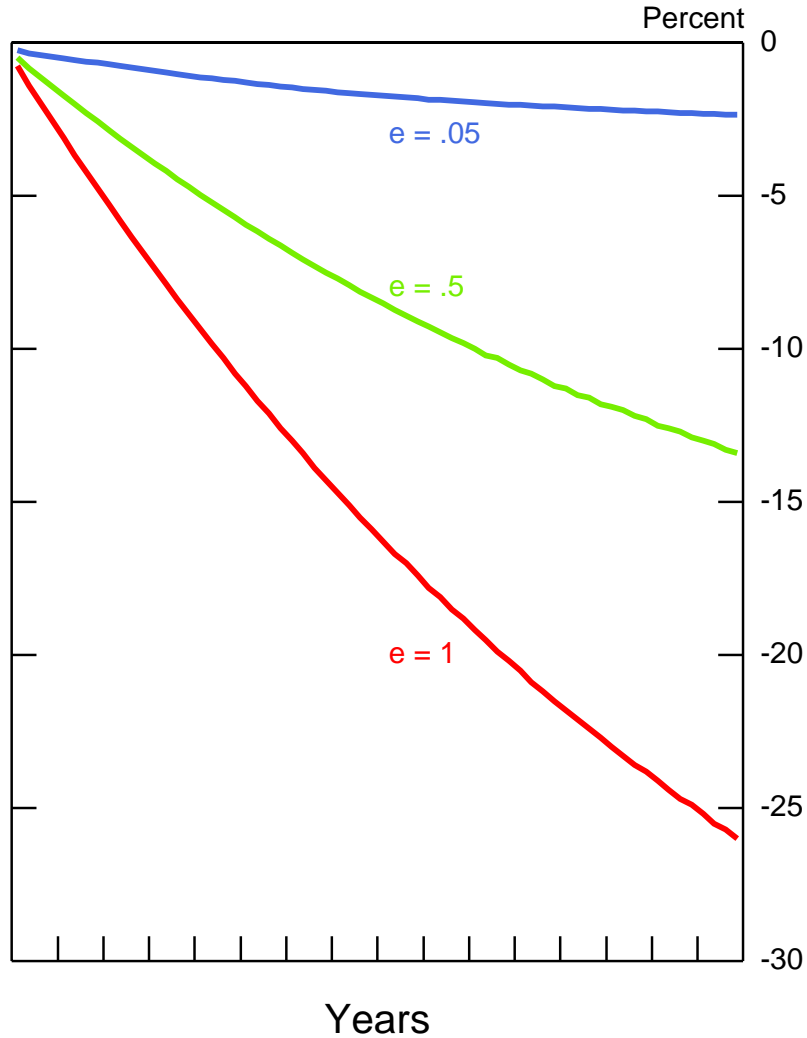
Uncertainty of Oil Demand

- Oil revenues depend on quantity as well as price.
- Bodenstein, Erceg, and Guerrieri (2007), “Oil Shocks and U.S. External Adjustment.”
 - Examine effects of a permanent rise in oil prices in a DSGE model.
 - Adjustment depends on long-run price elasticity of demand (among other factors).
 - Consider three cases: low, medium, and high price elasticities.

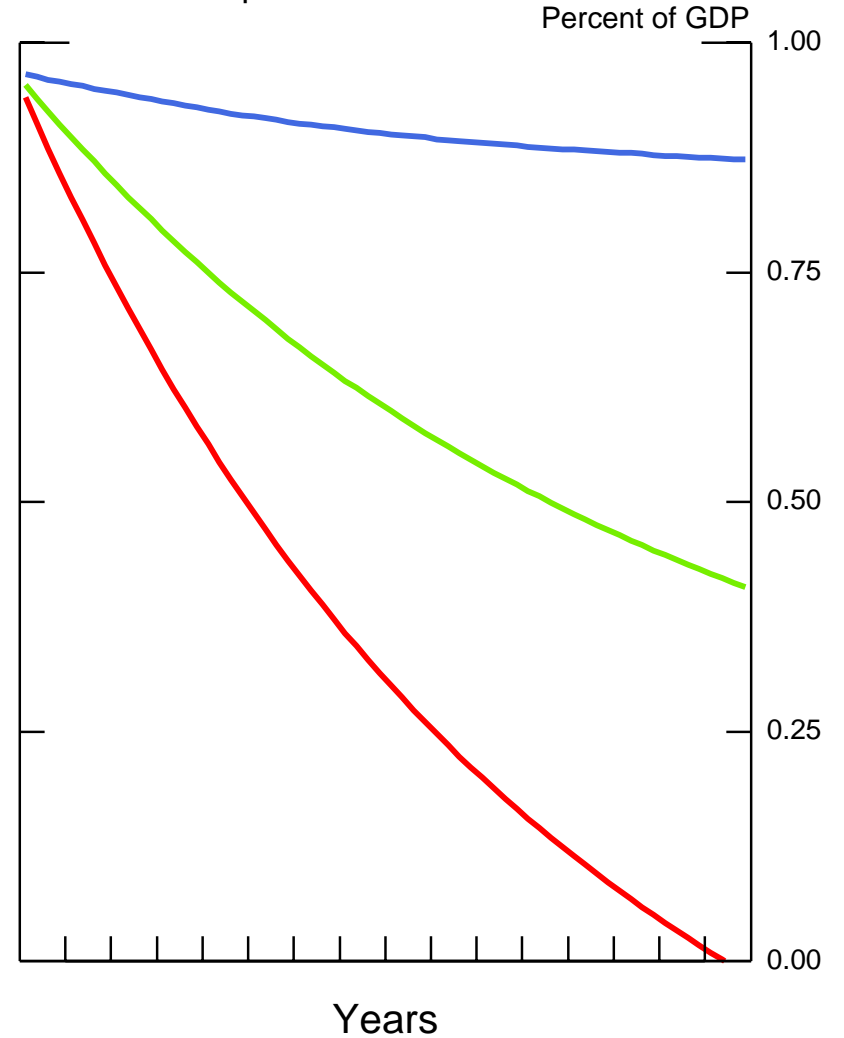
Slide 9

Evolution of U.S. Oil Demand in Response to 50 Percent Permanent Increase in Oil Prices

Real Oil Demand



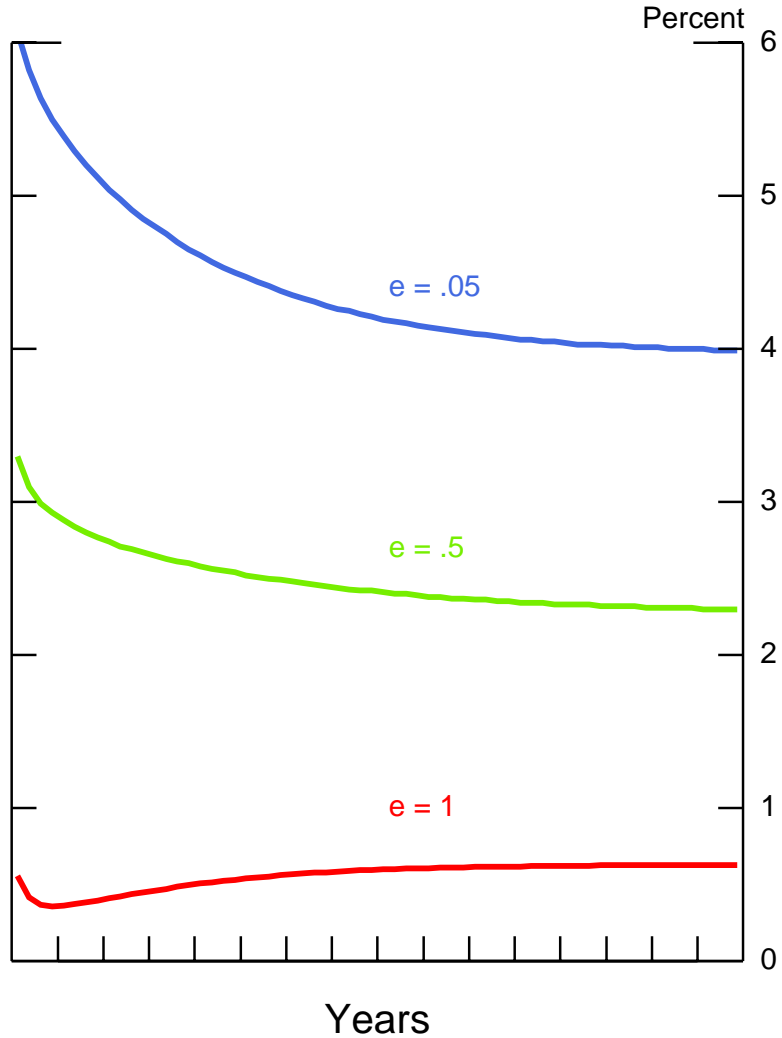
Nominal Oil Imports



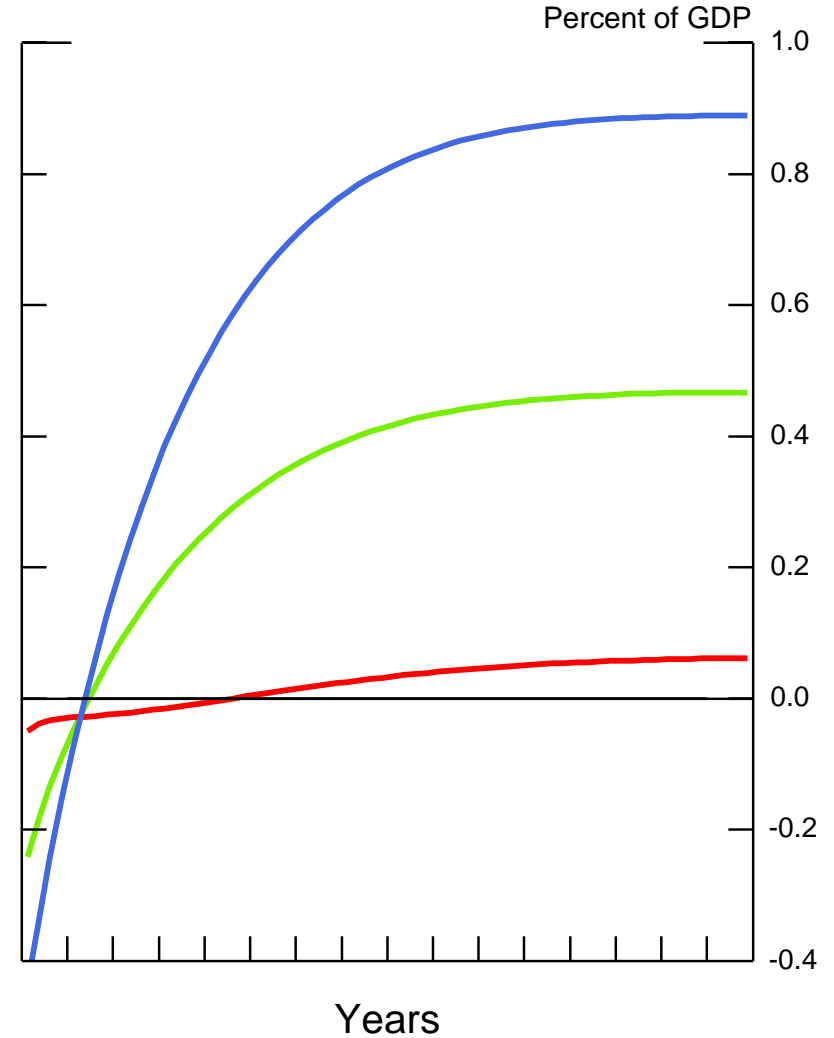
Slide 10

U.S. Non-oil Trade in Response to 50 Percent Permanent Increase in Oil Prices

Non-oil Terms of Trade



Non-oil Trade Balance



To Conclude

- It is not clear that the oil-exporters should view the rise in oil revenues as permanent.
 - There is great uncertainty about the future course of both oil prices and oil demand.
 - History is not on their side.
 - Neither is public policy toward fossil fuels.
- Oil exporters should continue to save part of their surpluses and focus on the development of the non-oil economy for the eventual transition away from oil.