PETRODOLLARS AND GLOBAL IMBALANCES

OCCASIONAL PAPER NO. 1
FEBRUARY 2006



BY T. ASHBY MCCOWN, L. CHRISTOPHER PLANTIER, JOHN WEEKS

DEPARTMENT OF THE TREASURY • OFFICE OF INTERNATIONAL AFFAIRS

Department of the Treasury
Office of International Affairs
Occasional Paper No. 1
February 2006

Petrodollars and Global Imbalances

T. Ashby McCown, L. Christopher Plantier, John Weeks

DISCLAIMER

This is the first in a series of Occasional Papers from the Treasury Department's Office of International Affairs. These papers will examine international economic issues of current relevance in an effort to identify underlying trends and issues for policymakers. These papers are not statements of U.S. Government, Department of the Treasury, or Administration policy and reflect solely the views of the authors.

* The authors thank their Treasury colleagues, especially Kurt Schuler, for their helpful input and suggestions.

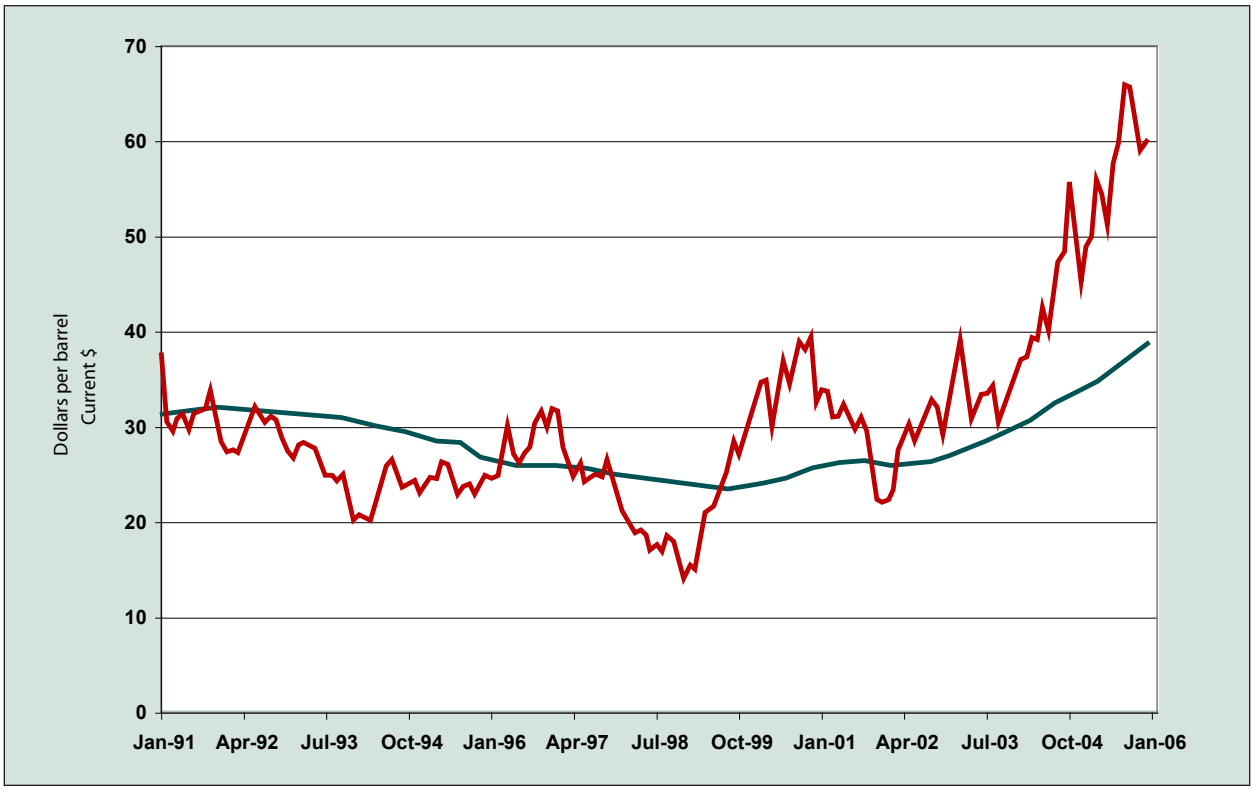
OVERVIEW AND SUMMARY

In December 1998, the price of high-quality crude oil briefly fell below $11 a barrel as financial crises in Asia, Russia, and Brazil dampened demand. Adjusted for inflation, the price was the lowest since 1973. As the world economy recovered and grew, the price of oil rose markedly, peaking at almost $70 per barrel in 2005 before ending the year at $61 per barrel. Today, the price continues to hover at around $65.

This sustained rise in prices has generated hundreds of billions of dollars of extra revenue for oil exporting countries (e.g. the Bank of International Settlements estimates $1.3 trillion to OPEC since end-1998). This Occasional Paper examines the major sources and uses of this windfall and its impact on global imbalances. The paper is not intended to be a comprehensive assessment of the petrodollar phenomenon, but rather to identify issues that warrant further examination. Key findings of our analysis suggest that:

- From 2002 to 2005, oil exporters appear to be spending proceeds from the oil windfall relatively evenly on increased imports and reserve accumulation, but import spending and the percentage spent on imports will likely rise over time.
- Some oil exporters are responding to the windfall by increasing reserves, retiring debt, and setting aside money for future generations, measures which should help insulate them from oil price volatility.
- Many countries are also channeling financing to productive investments intended to support growth, in contrast to the last oil boom. However in some cases, domestic spending increases have included hefty public sector wage hikes.
- The complexity and integration of financial markets make it difficult to assess fully where the oil windfall is being invested, though it is clear that domestic equity markets, and, to a lesser extent, real estate markets in the Gulf, are benefiting.
- Oil producers' current account surpluses have increased already large global imbalances.
- While inflation remains broadly contained in oil-exporting countries with pegged exchange rates, more flexible exchange rates would allow better control over domestic monetary conditions and promote efficient external adjustment.

Figure 1: Crude oil price in current dollars versus 5-year moving average



Sources: Energy Information Administration (oil price)

1. SOURCES AND USES OF PETRODOLLARS

Table 1 lists the 14 countries that exported at least 1 million barrels of oil per day in 2004, led by Saudi Arabia and Russia[1] These countries account for approximately 46% of global oil production. The data show that oil export revenues for the selected countries increased $410 billion (143%) from 2002 to 2005 and that major exporters increased their holdings of foreign reserves and imports by roughly the same amounts ($266 and $272 billion, respectively).[2] The lag of import growth relative to the pace of revenue increases likely reflects two major factors: 1) conservative oil price assumptions in national budgets (e.g., of about $30-$40 per barrel); and 2) capacity limitations (especially on capital investments).[3] The first reflects a prudent initial response to the uncertainty about the duration of the recent oil price increase and a desire to smooth changes in spending over the medium and long term; the second factor reflects the

[1] Full-year production figures for 2005 are not yet available; data through mid-2005 suggest that the numbers are only slightly higher. The period 2002 to 2005 is used since oil prices almost doubled over this period of time, and this time period reflects the more recent change in oil income.

[2] This calculation, however, excludes non-oil exports and does not include accumulation of other financial assets, so it is only illustrative in terms of how large changes in key macroeconomic aggregates are. Also, the doubling of aggregate foreign exchange reserves in Table 1 from 2002 to 2005 may be an underestimate since many central banks' net international assets rose more than official gross reserves.

[3] See Uribe, Martin (2005), "Habit Persistence" for discussion of habit formation in macroeconomic models, http://www.econ.duke.edu/~uribe/habit_persistence.pdf , and for the effects of uncertainty on the current account see Ghosh, Atish R. & Jonathan D. Ostry (1997), "Macroeconomic uncertainty, precautionary saving, and the current account", Journal of Monetary Economics, Volume 40, Issue 1, pp 121-139.

(Table 1) Oil revenues and uses in major oil exporters, 2002-2005 (Δ = change)

	Exports (mn bbl)	Oil export revenues (bn $)			Foreign reserves (bn $)			Imports (bn $)			Government debt to GDP (%)		
	2004	'02	'05	Δ	'02	'05	Δ	'02	'05	Δ	'02	'05	Δ
Saudi Arabia	8.73	63.7	153.3	89.6	20.8	23.5	2.7	29.7	55	25.3	97	41	-46
Russia	6.67	39.6	121.6	82.0	44.7	162.3	117.6	61.0	127.4	42.9	34.5	14.1	-20.4
Norway	2.91	34.5	52.9	18.4	32.1	42.5	10.4	52.6	83.0	30.4	36.1	46.6[b]	10.5
Iran	2.55	23.0	46.6	23.6	21.6	33.8	12.2	22.1	45.6	23.5	8.0	27.5	19.5
Venezuela	2.36	21.5	37.7	16.2	9.0	25.1	16.1	14.6	25.1	10.5	41.9	35.8	-6.1
UAE	2.33	16.6	45.6	29.0	15.2	19.9	4.7	37.5	63.0	25.5	6.6	6.9	0.3
Kuwait	2.20	14.1	39.0	24.9	9.3	9.5	0.2	8.1	11.1	3.0	32.5	17.1	-15.4
Nigeria	2.19	15.9	45.1	29.2	7.4	24.0	16.6	13.6	24.5	10.9	85.3	42.5	-42.8
Mexico	1.80	13.4	28.3	14.9	50.6	71.4	20.8	109.4	146.7	37.3	49.7	45.3	-4.4
Algeria	1.68	13.5	36.0	22.5	23.5	54.6	31.1	12.0	19.2	7.2	57.5	37.2	-20.3
Iraq	1.48	10.4	23.4	13.0	0.9	9.6	8.7	7.7	24.1	16.4	~800[a]	174	-626[c]
Libya	1.34	10.0	28.3	18.3	14.5	31.9	17.4	7.4	9.3	1.9	31.1	0.1	-31.0
Kazakhstan	1.06	5.0	18.4	13.4	2.6	7.5	4.9	11.6	22.5	10.9	17.6	12.1b	-5.5
Qatar	1.02	4.6	19.1	14.5	1.6	4.5	2.9	4.7	7.5	2.8	47	23.7	-23.3
Total	**38.32**	**286**	**695**	**410**	**254**	**520**	**266**	**392**	**664**	**272**	**NA**	**NA**	**NA**

Notes: Italics indicate members of OPEC (Organization of Petroleum Exporting Countries). a = 2003. b = 2004. c = Reduction results mainly from debt relief; Iraqi debt figures are subject to considerable uncertainty. mn bbl = millions of barrels per day; a barrel of oil is 42 gallons. NA = not available. UAE = United Arab Emirates. World oil production in 2004 was 72.48 million barrels per day in 2004. Iranian data on foreign reserves and imports are for the Iranian calendar year ending in mid March. Figures for 2005 are estimates except that foreign reserves are actual figures from the latest month available, typically October.

Sources: Exports: Energy Information Administration, "Non-OPEC Fact Sheet," June 2005. Oil export revenues: Energy Information Administration, "OPEC Revenues Fact Sheet," January 2006; Energy Information Administration, "Major Non-OPEC Countries' Oil Revenues, January 2006; IMF staff country reports. Foreign reserves: International Monetary Fund, International Financial Statistics database, December 2005. Imports and government debt to GDP: International Monetary Fund staff country reports, CIA World Factbook. Where these sources lacked information, national and other sources were consulted.

time needed for adequate planning, implementation and oversight of major public and private investments.

Table 1 also illustrates that many governments, including Kuwait, Qatar, Russia, and Saudi Arabia, have used additional oil export revenues to reduce government debt, thereby improving their cash flows going forward by lowering future interest payments. In addition, some countries have also used the additional oil revenue to save for future generations. Norway, for example, set aside $31 billion from end-Q3 2004 to end-Q3 2005, equal to about 11% of GDP in its Government Petroleum Fund (GPF). Russia has more than doubled the size of its stabilization fund since its inception in early 2004, which stood at about $43 billion as of end-2005.

At the same time, strong public pressure to increase wages is proving difficult to resist. In 2005, a number of countries increased public sector wages by double-digit amounts, including Saudi Arabia (15%) and UAE (25% for nationals).

Establishing where oil revenue increases have been invested overseas is more difficult to determine. A recent study by the Bank for International Settlements (BIS), which examined the composition of financial assets held by OPEC countries, concluded that such flows are difficult

to track due to the complexity and integration of financial markets.[4] Specifically, the BIS said it was unable to account for almost 70% of an estimated $700 billion in OPEC's investable funds generated by the current increase in oil prices (1999 to 2005). This compares to 50% during the last windfall (1978 to 1982). The BIS study estimates that of the 30% that the BIS was able to account for, two-thirds has been deposited in BIS reporting banks (significantly lower than in the previous cycle). The remaining third has been used to purchase U.S. official and private assets and, to a lesser extent, German assets.

These figures do not capture the full magnitude of the petrodollar investments, as the BIS report covers only OPEC members, thus excluding some major oil-exporting countries, in particular Russia and Norway. U.S. Treasury International Capital Reporting System data to end-September 2005 indicate that oil exporting countries made net purchases of $158 billion of long-term U.S. securities since January 2003 and had net acquisitions of $113 billion of short-term U.S. securities and banking liabilities. More funds may have been placed in U.S. assets indirectly through foreign intermediaries (e.g., in Europe or Asia). Anecdotal evidence and historical experience suggest that oil producer investments are also going into construction loans, regional stock markets, private equity funds, and possibly hedge funds located outside the United States, which are difficult to track.

Overall, the macroeconomic situation in most oil exporting countries looks positive assuming oil

(Table 2) Key economic indicators in major oil exporters, 2003-2005

	Real GDP growth (%)			Growth of money supply (%)			Inflation (%)			Change in stock market index (%)		
	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005
Saudi Arabia	7.7	5.2	6.0	10.2	18.2	12.3	0.6	0.3	1.0	76.2	84.9	104.1
Russia	7.3	7.2	6.4	45.6	30.5	39.6	13.7	10.9	12.8	58.0	8.3	83.3
Norway	4.4	4.5	4.2	4.8	10.5	16.5	2.5	0.4	1.4	41.2	31.2	35.5
Iran	6.7	5.6	5.7	18.9	14.9	11.8	15.6	15.6	18.5	115.8	24.4	-24.3
Venezuela	-7.7	17.9	7.8	73.7	46.6	50.5	31.1	21.7	16.6	177.0	34.9	-31.9
UAE	11.3	8.5	5.6	23.8	38.7	45.0	2.1	4.6	6.0	45.4	172.3	142.1
Kuwait	9.7	7.2	3.2	26.4	21.6	24.3	1.0	1.8	1.8	101.7	33.8	78.2
Nigeria	10.7	6.0	3.9	29.6	8.6	31.4	14.0	15.0	15.9	69.7	13.1	2.7
Mexico	1.4	4.4	3.0	13.8	8.4	12.1	4.5	4.7	4.3	43.6	46.9	37.8
Algeria	6.9	5.2	4.8	14.6	33.2	39.9	2.6	3.6	3.5	NA	NA	NA
Iraq	-33.9	46.5	3.7	90.2	65.6	10.8	46.9	31.7	32.8	NA	NA	-29.7
Libya	1.9	4.5	3.8	6.3	21.7	22.6	-2.1	-1.0	1.8	NA	NA	NA
Kazakhstan	9.3	9.4	8.8	25.4	57.7	36.7	6.4	6.9	7.4	0.2	49.9	220.6
Qatar	8.6	9.3	5.5	79.3	29.4	43.7	2.3	6.8	3.0	69.8	64.5	70.2

Notes: NA = not available. Change in stock market index is in local currency terms. Algeria's stock exchange is excluded as too small to be informative. Figures for 2005 are estimates for real GDP growth and inflation, full-year data for stock market index, and 12-month change for latest available month for growth of money supply.

Sources: Real GDP growth and inflation: International Monetary Fund, *World Economic Outlook* printed volume and database, September 2005. Growth of money supply: International Monetary Fund, *International Financial Statistics* database, December 2005 .Stock market indexes: Bloomberg and Web site of Federation of Euro-Asian Stock Exchanges. Where these sources lacked information, national and other sources were consulted.

[4] McGuire, P and N Tarashev (2005),"The International Banking Market", BIS Quarterly Review, December, pp 15–30.

prices remain firm, but it will remain important to use the oil windfall wisely. As evidenced by Table 2, many stock markets have done well in the last few years on the back of higher oil prices, improved fundamentals, and some petrodollars are staying closer to home. Despite high money growth and strong real GDP growth, inflation has also remained under control in most cases.

While inflation remains broadly contained in oil-exporting countries with pegged exchange rates, flexible exchange regimes would allow better control over domestic monetary conditions. Flexible exchange regimes would also permit the domestic economy to respond more rapidly and efficiently to changes in external financial conditions. For example, an appreciating currency under a flexible exchange rate would increase the real income of the residents of a country, by reducing the costs to them of both consumer and capital goods.

2. PETRODOLLARS EFFECTS ON GLOBAL IMBALANCES

Because of the prominence of energy in economic production processes, and the uneven global distribution of oil resources, a rise in the price of oil implies a substantial global redistribution of wealth and, hence, purchasing power. How changes in oil prices affect global imbalances depends in part on the time period considered, how quickly adjustments in demand and supply respond to price changes, and perceptions about the durability of the price change. Price spikes, for instance, probably have relatively small, in some cases negligible, effects on global imbalances. In this case however, the price increase has been sustained, and the impact on global imbalances has been significant. For example, the U.S. oil import bill rose from $104 billion in 2002 to $252 billion in 2005 and the current account surplus of Saudi Arabia increased from 6% of GDP to over 30% of GDP over the same period. Table 3 below shows the 3-year change in the estimated external positions of major regions.

As noted, in many oil-exporting countries import growth is lagging export growth because some oil exporters have chosen to increase saving and pay down debt and some face capacity limits that constrain import demand. As capital investment projects get underway and import growth and remittance flows accelerate, particularly for countries that rely on expatriate labor, some of these current account surpluses will fall. As noted in figure 2, this reflects past experience (e.g. Saudi Arabia) when spikes in oil prices were immediately followed by large surpluses that dissipated as import spending and remittance flows rose. However, this process of adjustment will not address the impediments that existed before the recent oil price increase, especially those factors contributing to the more persistent elements of global imbalances.

(Table 3) Changes in current account balances 2002 to 2005 (Billions of Dollars)

Advanced economies	2002	2005	Δ	Developing economies	2002	2005	Δ
United States	-475	-759	-284	Middle East	30	218	188
Euro area	49	24	-25	China	35	116	81
Germany	46	121	75	CIS (Russia, etc.)	32	105	73
Japan	113	153	40	Latin America	-16	22	38
Other	87	131	44	Africa	-8	13	21
				Emerging Asia excl. China	37	-6	-43
				Central and Eastern Europe	-25	-56	-31

Source: International Monetary Fund, World Economic Outlook, September 2005, pp. 242, 245, 257-9.

Figure 2: Saudi Arabia's current account balance versus real price of West Texas Intermediate Crude Oil

3. POLICY IMPLICATIONS

To the extent that oil exporters' revenues accumulate, global imbalances will be higher than otherwise and oil exporters will need to be part of the global adjustment process, just as emerging Asia, the United States, Japan and Europe need to play a role. The appropriate response for oil exporters will depend on each country's specific circumstances and prospects for future market conditions.

- Some lower income oil exporters can be expected to absorb all or most of their higher oil revenues through increased expenditure on imports.

- It is reasonable for countries such as Norway, Russia, and Oman, which anticipate a future decline in oil revenues, to prudently accumulate current revenues, and spread future expenditures evenly over time.

- For large oil producers with limited near-term absorptive capacity, it is sensible to increase saving and to improve their debt positions against the possibility of future lower oil prices. If oil prices remain elevated or rise, however, then policymakers in oil-exporting countries can be expected to increase spending. Ideally such spending would be concentrated in investments with high social rates of return in order to strengthen the economy, raise standards of living, and assist with global adjustment of external imbalances.

- If oil prices remain elevated, large oil exporters should consider the role that the choice of foreign exchange regime can play in the adjustment process.