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# **INTERNATIONAL RECYCLING OF PETRODOLLARS**

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## **Abstract**

The continued rise in oil prices since 2002 has resulted in a significant increase in export revenue for oil exporting countries. This increase in the price of oil and other commodities means that OPEC countries and Russia have received, between 2003 and 2006, a windfall of 1.3 trillion dollars with respect to their export level in 2002. This paper analyzes, using the limited data available, the recycling of these resources back to the world economy through the trade channel, via higher imports, or the financial channel, via an increase in the net external asset position of these countries. Our results show that around 50% of the windfall revenue has been used to increase imports, while the rest has been directed towards international reserve accumulation and other improvements in the net asset position of these countries. Comparing the current oil price increase with previous ones, such as those resulting from the tightening of oil supply in the 70's, we find that the trade channel has been more important in the current episode than in previous ones. This can be attributed to (i) the perception of a more permanent increase in the price of oil in the context of rising demand, and (ii) the gradualism of the current oil price increase, which has allowed a stronger response from imports.



## 1 Introduction

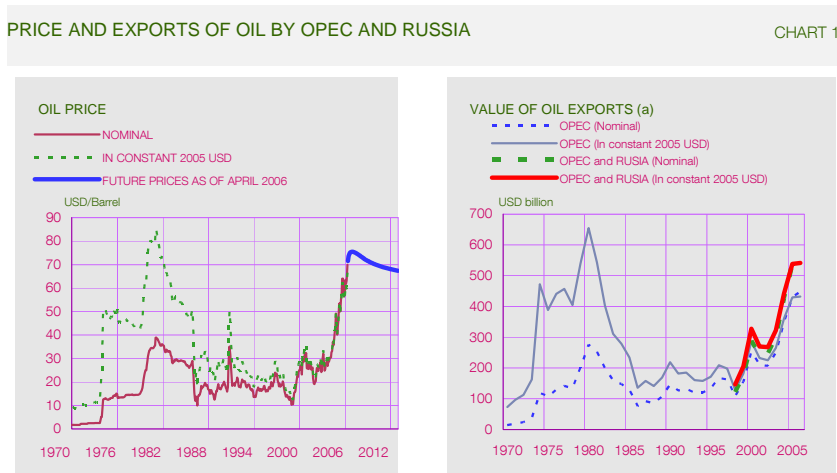
The steady and significant increase in the price of oil since early 2002 has brought it to historical highs in nominal terms in the third quarter of 2005 and once again in January 2006 when Brent crude oil reached a price of 68USD per barrel, more than tripling its January 2002 price (chart 1).<sup>1</sup> Although, in real terms, oil has not yet reached its historical maximum of 1980, the current increase has translated into a significant improvement in the terms of trade of oil exporting countries. As a whole, oil exporting countries received around 700USD billion in 2005 for their exports (a 73% increase from 2001) of which around 80% corresponded to OPEC countries and Russia. In this note, we analyze, using the limited amount of data available for these economies, the recycling of these resources via trade and financial channels and compare it to previous oil prices increases.

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1. For a more detailed analysis of the causes and consequences of the oil price increase see, for instance, Ruiz (2004).

## 2 Recent evolution of export revenue in the main oil exporting countries

The increase in the price of oil since 2002 represented a significant increase in export revenue for oil exporting countries. As chart 1 shows, the real value of total exports by OPEC countries and Russia has not yet surpassed its 1979 level even though forecasts by different international institutions and futures' markets suggest that the current increase in oil prices might be more permanent than in previous episodes.



Sources: Energy Information Administration (Department of Energy, USA), OPEC, IMF, and Datastream.

a. EIA's forecast for 2006. Data for Russia only available after 1998.

The price of natural gas has traditionally been highly correlated with the price of oil because of the indexing of its contracts to the price of oil. However, and in contrast with the usually low correlation between the price of oil and that of other raw materials, the increase in the price of oil during this episode has been accompanied by an increase in the price of other raw materials, especially industrial metals. This unusual behaviour reflects the importance of strong global demand for raw materials as one of the leading explanatory factors behind the oil price increase. This simultaneous increase in the price of oil and other raw materials justifies the inclusion of exports of other goods in the present analysis given its importance, especially for Russia.<sup>2</sup>

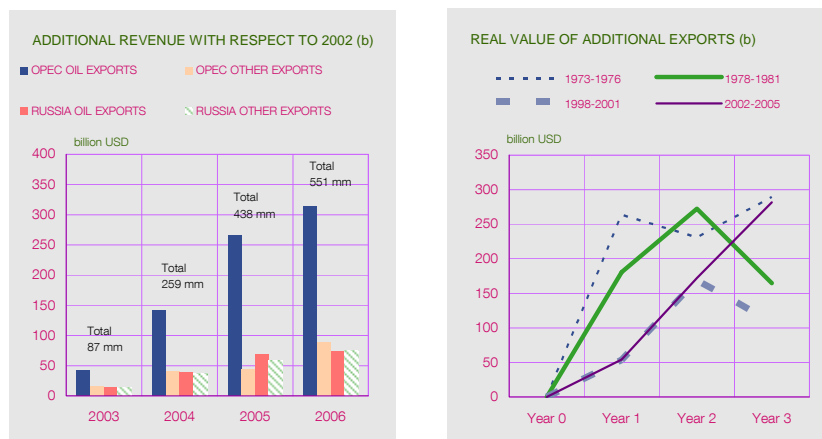
A possible measure of the export revenue windfall is the difference between the value of a country's exports and its value in a given base year. Since chart 1 shows 2003 to be the year where export revenue started to increase for OPEC countries and Russia, the rest of this note takes 2002 as the base year in the analysis of the current oil price increase. As shown in chart 2, the total value of exports by OPEC countries and Russia in 2003 was 87 USD billion higher than in 2002, a difference that kept increasing in 2004 and 2005. Estimations by the Energy Information Administration put the value of oil exports in these countries in 2005 at around 335 USD billion above its 2002 level, to which an

<sup>2</sup>. Exports of raw materials account for 85% of the total value of Russia's exports despite oil exports accounting for just 40%. This contrasts with OPEC countries where the share of oil exports in total exports is, for instance, 98% in Nigeria, 95% in Saudi Arabia, 90% in Iran or 82% in Venezuela.

additional 100 USD billion could be added due to the increase in the value of non-oil exports. This means that the total windfall between 2002 and 2005 was near 785 USD billion, a magnitude that would increase to close to 1.35 USD trillion according to forecasts for 2006.

## ADDITIONAL EXPORT REVENUE

CHART 2



Sources: IMF, OPEC, and Energy Information Administration (Department of Energy, USA)

- a. Energy Information Administration's forecast for 2006's oil exports.  
 b. Billions of constant 2005 USD over the first year in each episode (year 0).

The relative size of this windfall can be very significant or not depending on which magnitude we compare it to. For instance, the cumulative export windfall between 2002 and 2005 was equivalent to approximately 42% of the increase in global international reserves held in the same period. Nevertheless, comparisons with the value of the world equity or bond market reflect the big size of financial markets relative to real indicators such as exports from OPEC countries and Russia. For instance, the value of the windfall in these countries between 2002 and 2004 was only equivalent to 1.7% of the increase in worldwide stock market capitalization, to 4% of the increase in global public debt, or 3.2% of the increase in global private debt in the same period.

On top of the previous comparisons, referred to the size of resources transferred towards main oil exporters, it is important to highlight the negative contribution of oil to the current account balance of oil importers, such as most European countries, Japan and the United States. For instance, the contribution of net oil imports to the US trade deficit increased from 22% in 2002 to 31% in 2005, thus worsening of global imbalances in 2004 and 2005. This has also been reflected into an increased contribution of OPEC countries and Russia to the US current account deficit. Thus, United States' trade deficit with these countries accounted for 14% of its total trade deficit in 2005,<sup>3</sup> —up from 10% in 2003—, a percentage which is bigger than that for the Euro zone or Japan, though still below the 27% attributable to China.

<sup>3</sup>. The other two countries that also supply a substantial part of US oil imports are Canada and Mexico who do not belong to OPEC. Nevertheless, OPEC supplies around 50% of total US oil imports, while oil exports from Russia to the US represent a very small fraction of total US oil imports.



The relative size of the export windfall described above justifies the study of its recycling towards world markets. There are two channels through which this recycling might take place: (i) the trade channel, by increasing their imports from the rest of the world, and (ii) the financial channel, by improving these countries' net asset position. During the oil price increase of 1973 —and, to a lesser extent, in 1979— additional oil export revenue was mostly recycled via the financial sector, contributing to the development of the so-called Euromarkets and to the expansion of credit to emerging countries, eventually leading to the debt crisis of the early 1980's.

There are several important similarities and differences between the recent increase in the export revenue of OPEC countries and those of 1973, 1979, or 2000. Chart 2 shows that, for the current three-year period, the real increase in export revenue relative to the base year is similar to the two shocks of the seventies. Nevertheless, there are two important differences, which might influence how this additional revenue is finally recycled: the persistence of this additional revenue and the gradualism of the increase in export revenue.

SALDO DE LA BALANZA COMERCIAL DE ESTADOS UNIDOS

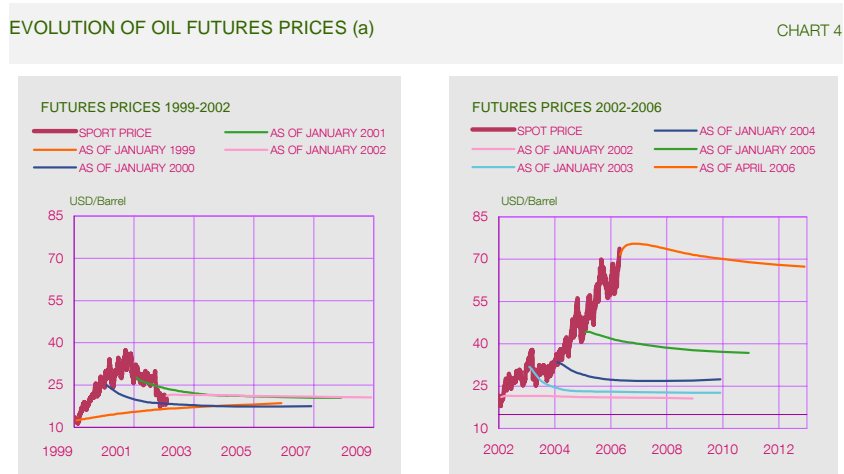
CHART 3



Source: Bureau of Economic Analysis (BEA).

a. Except Venezuela, included in OPEC.

With respect to the first point, the present surge in the price of oil might be perceived as more permanent than previous increases (especially those in 1979 and, particularly, in 2000) as suggested by the recent evolution futures' prices, stable around \$60 per barrel until 2012. If the increase in export revenue —and, therefore, national income and, oftentimes, fiscal revenue— is perceived as permanent, its effect on consumption and imports should be higher compared to those cases where the increase was perceived as temporary. Judging by chart 1, one could think that the price increase in 1973 was more permanent than that in 1979. On the other hand, chart 4 shows how in 2000, futures markets reflected an oil price increase which was expected to be transitory, with the oil price reverting to a band between \$18 and \$22 per barrel. Contrary to that, in 2005 futures contracts reflected market expectations consistent with a permanent increase in prices. Thus, in theory, one could expect a higher propensity to consume and import during the current episode and that of 1973 than during those of 1979 and 2000.



Source: Bloomberg.

a. Price of West Texas Intermediate (WTI) oil.

The second feature of the current increase in oil export revenue in OPEC countries has been its gradualism, when compared to the episodes of 1973 and 1979 (see chart 2). This reflects a sustained increase in the demand for crude oil and an accommodating supply by OPEC, as opposed to the price increases in 1973 and 1979, which occurred in a context of sharp supply restrictions. The more gradual increase in oil export revenue over the last two years could allow, in principle, a larger recycling through imports than in previous episodes.<sup>4</sup>

4. There is anecdotal evidence that, for instance, the increase of imports in the 1970's might have been slowed down due to the lack of the necessary infrastructure to absorb the surge in demand for imports of goods in OPEC countries.

### 3 Recycling channels of oil export revenue

For a useful decomposition of how could additional revenue be recycled, it is useful to remember the accounting identity for the balance of payments, which, in a simplified way, can be expressed as follows:

$$X - M + CAP = \Delta Res \quad (1)$$

where  $X$  and  $M$  represent, respectively, the value of goods exports and imports,  $CAP$  represent net capital inflows (excluding changes in the holdings of international reserves) and  $\Delta Res$  is the variation in international reserves' holdings.<sup>5</sup> In order to analyze the recycling of export revenue, we need to consider to which extent is the export revenue used to increase imports of goods and services and to which extent it is channeled towards an improvement in the country's net external asset position. Dividing through the previous equation by total exports, we obtain a measure of the average recycling of export revenue:

$$1 = \frac{M}{X} + \frac{\Delta Res - CAP}{X} \quad (2)$$

average recycling = average commercial recycling + average financial recycling

The next two sections analyze the evolution of the average recycling via the commercial and the financial channel according to the decomposition shown above.

#### 3.1 Commercial channel

Even though, the value of total exports by OPEC countries has not yet surpassed, in real terms, its maximum levels achieved in 1980 (chart 5), imports by these countries have grown above its trend of the last years which has led them to levels slightly above those reached in the early 1980's.

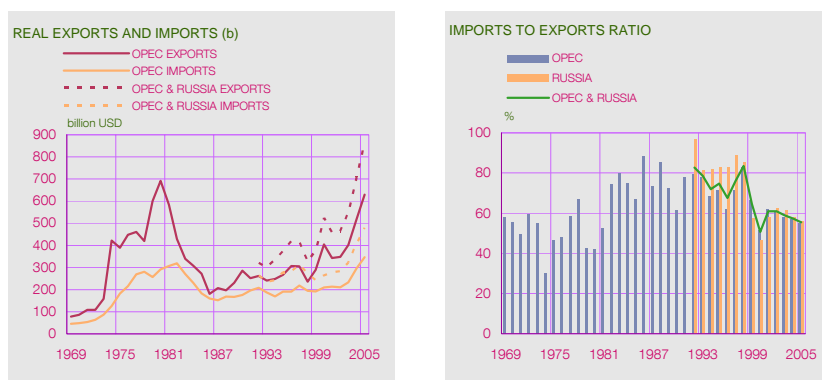
As described in the previous section, a possible measure of the average recycling of export revenues (which is different from the recycling of additional revenue, analyzed later in the note) via imports is the ratio between imports and exports. Chart 5 displays the value of this ratio for OPEC countries with data for Russia available only after 1992, the first year for which data is available for this country. These data suggest that the average recycling via imports in OPEC countries is, presently, around 60%, that is slightly above the level achieved during the two big oil price increase episodes of the 1970's. The value ratio tends to fall during oil price increase episodes due to the sudden increase in the value of exports that only slowly translates into an increase in imports. The evolution of the import to export ratio can be

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5. It is important to point out that  $CAP$  is an aggregate that includes the balance of services, the balance of earned income, as well as current capital transfer together with the balance from the financial account (excluding the change in foreign reserves). Strictly speaking we should only consider the financial account balance when studying the recycling of exports via the financial channel but it is also true that this one represents the main component of the  $CAP$  aggregate.

attributed to the existence of a minimum import requirement by these countries (independent of the value of exports) which could also explain the existence of a certain degree of inertia in the volume of imports, attributable partly to demographic growth in OPEC countries. This factor coupled with the volatility in the volume and value of exports has meant a lower volatility for imports relative to that of exports.

TOTAL EXPORTS AND IMPORTS BY OPEC COUNTRIES AND RUSSIA (a) CHART 5



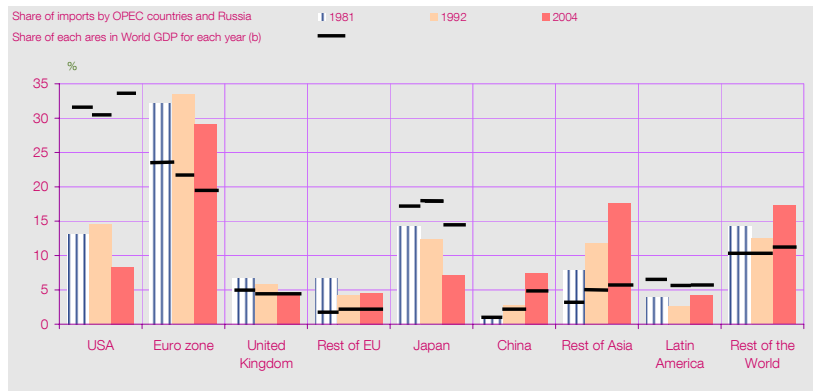
Source: IMF

a. Data for Russia available only after 1992. Data for 2005 corresponding to the annualization of data for the first nine months.  
 b. In constant 2005 USD.

The recycling of the windfall via imports favours mostly Asia and Europe, who have a share in imports by OPEC countries and Russia larger than that suggested by their share of World GDP (chart 6). It is particularly worth noting the rising penetration ratio of China and the rest of emerging Asia in the last 15 years into these markets, which has come at the expense of the United States, Japan and Europe. It is important, however, to keep in mind that the importance of OPEC countries and Russia in the global export markets remains not very large —accounting for between 3 and 6 percent of total exports for each of the regions in chart 6— so that the overall effect on external demand of these regions is likely to be relatively small. Thus, in 2004, the increase in exports to OPEC countries and Russia contributed in 0.1 percentage points to US export growth, in 0.5 to the Euro zone's export growth, in 0.3 to Japan's, and in 0.7 for China's export growth.

ORIGIN OF IMPORTS BY OPEC COUNTRIES AND RUSSIA (a)

CHART 6



Source: IMF.

- a. Percentage of total imports, excluding those originating in other oil-exporting countries. Data for Russia in 1981 corresponding to the USSR.
- b. World GDP computed using market exchange rates. Excludes OPEC countries and Russia.

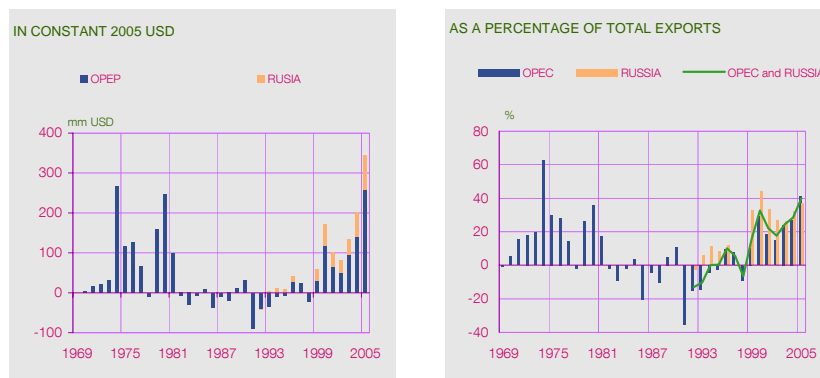
### 3.2 Financial channel

Other than being used to increase imports, the oil export revenue could be devoted to improving the net international asset position of oil exporting countries. Thus, the financial channel includes increases in the amount of foreign reserves held and net capital outflows which would be reflected in an improvement in the net asset position of these countries.

The huge increase in the nominal value of exports and imports means that the value of export revenue used to improve the international net asset position of these countries has reached historical maxima in nominal terms in 2004 and, again, in 2005 (see chart 7). Nevertheless, these resources, those not used towards increasing imports, have been, in real terms, below their historical maxima of 1979-1981 and similar to those of 1973-1975.

CURRENT ACCOUNT BALANCE OF OPEC COUNTRIES AND RUSSIA (a)

CHART 7



Source: IMF.

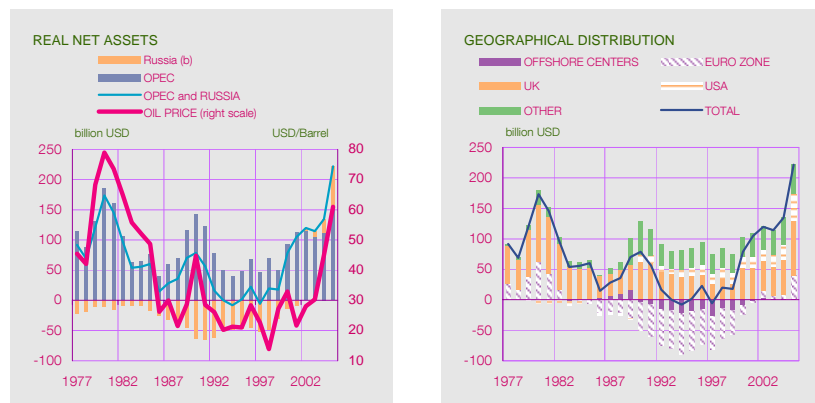
- a. Constant 2005 USD. Data for Russia available only after 1993.

Data from the Bank for International Settlements (BIS) show a significant increase in the net asset positions of oil exporting countries vis-à-vis BIS reporting banks. This is a result of the highly positive correlation between the price of oil and the net asset positions of these countries. Chart 8 shows that the net asset positions of oil exporting countries are at their historical maximum even though, in real terms, current positions are very similar to those

reached in 1980. It is important to point out that despite the big increase of deposits held by oil exporting countries, these only amounted to about 3% of total deposits in BIS reporting banks as of January 2005. This is in contrast with the maximum value of 13% for this ratio that was achieved during the price increase episode that began in 1979.

#### NET ASSETS OF OPEC COUNTRIES AND RUSSIA IN BIS-REPORTING BANKS

CHART 8



Source: BIS and BEA.

a. End-period data, except the third quarter in 2005, in constant 2005 USD, adjusted for exchange rate movements.

b. Data for Russia before 1993, corresponding to the USSR.

The reduction in the relative importance of oil exporting countries in total bank deposits is the result of the combination of two main factors: (i) the diversification of assets by oil exporting countries towards other (non-banking) assets, and (ii) the increasing importance of deposits by other emerging economies, especially those in Asia since the 1997 crisis.<sup>6</sup>

The currency composition of deposits of OPEC countries and Russia displays a big change between 2002 and the first months of 2005. It is especially revealing the reduction in the euro share in these countries' deposits relative to the dollar since early 2004, which does not seem to be related to the evolution of the price of oil. A recent survey by the BIS (2005) cites the relative stabilization of the dollar/euro exchange rate and the increase in the short-term interest differential in favour of the dollar as the potential explanatory factors for this shift. Along these lines, this study also finds that, from 2004 onwards, there has been an increase in the sensibility of the currency shares in bank deposits of oil exports to the interest rate differential.

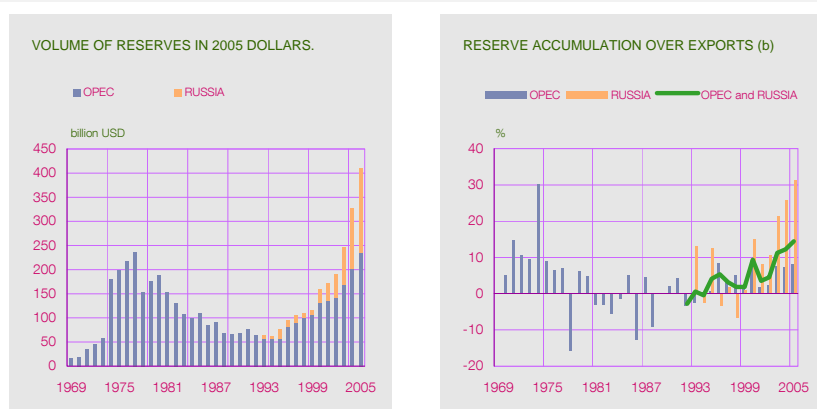
The geographical distribution of OPEC countries and Russia's net assets reveals the traditional and still big importance of the United Kingdom as a financial centre for these countries (chart 8). However, it is worth noting the substantial improvements in the net asset position of these countries vis-à-vis the Euro zone, which has gone from net liabilities of \$54 billion in 1998 to over \$30 billion of net assets in 2005. It is also worth pointing out the big increase in the net asset position of these countries vis-à-vis the United States with the position improving from net assets of around \$16 billion in 1998 to close to \$43 billion in 2005.

<sup>6</sup> The net asset position of countries in emerging Asia reverted from net liabilities of around 220 USD billion in 1997 to net assets of 97 USD billion in 2001, a level which has subsequently declined to 35 USD billion in the third quarter of 2005.

While it is true that international reserves held by OPEC countries and Russia have more than doubled between 2001 and the third quarter of 2005, it is important to point out that, in real terms, international reserves held by OPEC countries are still slightly below the level they reached in the mid-1970's (chart 9). The process of reserve accumulation has been particularly spectacular in Russia where reserve accumulation, measured as a share of total exports, has proceeded at a similar rate as that of OPEC countries during the 1973 episode.

Nevertheless, the recent increase in the holdings of international reserves by oil exporting countries has taken place in a context of global accumulation of reserves, which have gone from \$2.3 trillion in 2003 to over \$4.1 trillion in the third quarter of 2005 with a significant portion of this increase attributable to countries in emerging Asia. This implies that, despite the big increase in international reserves held by oil exporting countries, their share of the total amount of reserves has only gone up to 9% in 2005 from 7% in 2000, a much lower figure than those seen during the 1970's when they account for almost 30% of total international reserves. In terms of reserve accumulation, OPEC countries and Russia accounted for 14% of the total increase in reserves during the 2002-2004 period which is large but still dwarfed by the 67% share of the total increase in the period 1973-1976.

INTERNATIONAL RESERVES OF OPEC COUNTRIES AND RUSSIA (a) CHART 9



Sources: BIS and BEA.

- a. End-period data, except the third quarter in 2005, in constant 2005 USD, adjusted for exchange rate movements.
- b. Change in international reserves as a percentage of total exports.

Simultaneously with the increase in foreign reserves, some oil exporting countries have channeled a portion of the oil export windfall towards the re-purchase of their own outstanding foreign debt. For instance, Russia has reduced its stock of external debt from 58% of GDP in 2000 to around 36% in 2004 with an even more impressive reduction in public debt, which moved from about 44% of GDP in 2000 to only 18% in 2004. In the United Arab Emirates, public debt as a share of GDP went from 26% in 2000 to 15% in 2004. In Saudi Arabia, the central government has used a significant portion of the additional oil export revenue to reduce its indebtedness, which has gone from 86% of GDP in 2000 to 63% in 2004 with an additional reduction expected in 2005 to 46%.

While most of the countries analyzed have formally established stabilization funds to channel an important part of the additional oil export revenue, the discipline with which each country has followed its own usage rules for these funds has varied widely. Thus, many of them have been used in a discretionary way to finance public spending or reinvestments

in the energy sector (Venezuela, Saudi Arabia, Nigeria, and Algeria) or to pay for domestic subsidy programs to refined oil products (Venezuela, Iran, Algeria, Nigeria, and Saudi Arabia).



#### 4 Recycling of additional revenue and comparison with previous episodes

The analysis in the previous section, while useful to give us a sense of how oil exporters use their export revenue, does not give us the full picture on how the additional revenue generated by an oil price increase is being recycled. To this effect, we return to our initial balance of payments identity  $X-M+CAP=\Delta Res$  and analyze the variation in each component with respect to a given base year:

$$1 = \frac{dM}{dX} + \left( -\frac{dCAP}{dX} + \frac{d\Delta Res}{dX} \right) \quad (3)$$

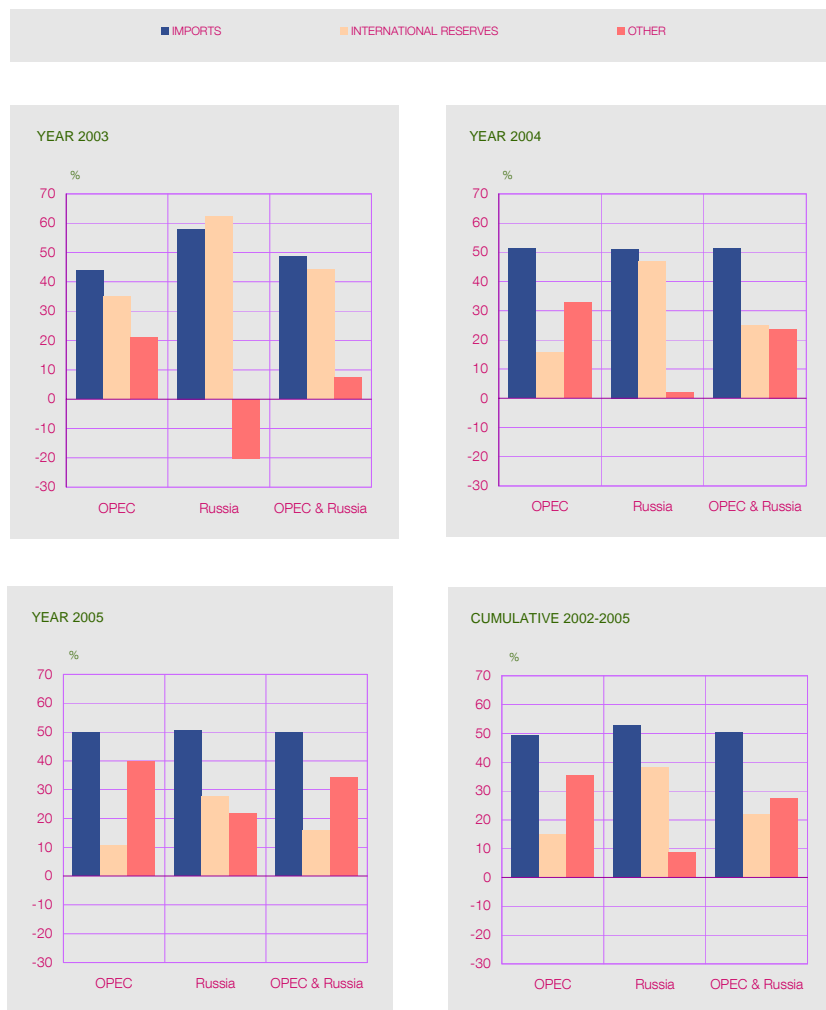
recycling of additional revenue = recycling via the commercial channel + recycling via the financial channel

where  $dY$  represents the variation in variable  $Y$  with respect to the base year of choice. Equation (3) shows that additional revenue from exports ( $dX$ ) can be channeled into additional imports ( $dM$ ), an acceleration in the accumulation of international reserves ( $d\Delta Res$ ) or a reduction in net capital inflows ( $dCAP$ ) either via an increase in international assets, a decrease in international liabilities or a combination of both.

Chart 10 shows the decomposition of additional revenue in OPEC countries and Russia according to their usage. Given the meager quality of the financial data available, we consider a decomposition into only three possible uses: (i) increases in imports, (ii) acceleration in international reserve accumulation, and (iii) a category we label "Other" which includes the balance of the rest of the financial account in the balance of payments, the balance of services account as well as the balance on transfers and income. Aggregating the windfall for OPEC countries and Russia, the cumulative increase in imports between 2003 and 2005 with respect to 2002 accounted for about 51% of the additional export revenue while the increase in the accumulation of international reserves accounted for around 28% of the export windfall. The remaining 19% of the windfall has been recycled via the net outflow of resources from these countries, mainly through the financial account.<sup>7</sup>

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7. Presently there are no data on the decomposition of the different concepts of the balance of payments for all OPEC member countries until year 2004. However, using available data for Russia, Saudi Arabia, Kuwait and Venezuela (which represent around 60% of the additional export revenue of those considered in chart 10) we can estimate the contribution of each component in the balance of payments to the "Other" category. The 28% that is assigned to this category in the accumulated 2003-2004 column could be decomposed in around 7 percentage points of other components of the current account (especially to the balance of services) and 21 percentage points to the financial account of the balance of payments. Using this more sophisticated decomposition, we can say that around 60% of the additional export revenue has been recycled through the commercial channel (in a broad sense) while the remaining 40% via the financial channel.



Sources: BEA, IMF, and BIS.

a. Percentage of the export windfall relative to 2002. Data for 2005 corresponding to the first nine months.

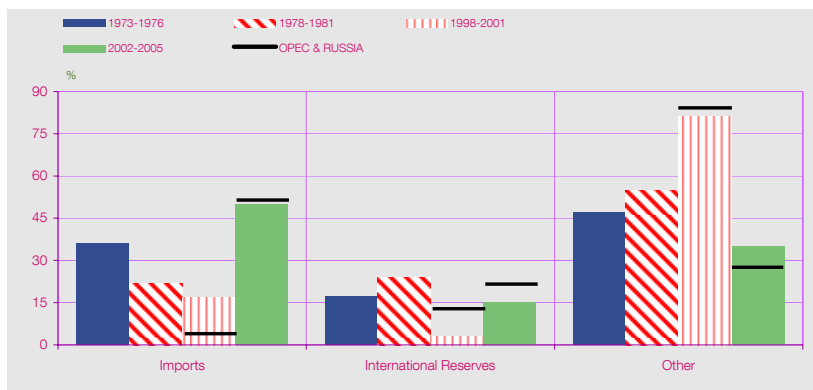
Our estimates for the recycling of additional export revenue via the commercial channel are broadly in line with recent estimations by the IMF (2005 and 2006) for countries in the Middle East and central Asia. The IMF (2005) study estimates that around 50% of the additional oil export revenue between 2002 and 2005 has been used to finance an increase imports in these countries, although IMF (2006) reduced that estimate to around 36%.<sup>8</sup> Our estimates are, however, slightly below those obtained by the OECD (2005) using time series data between 1997 and 2004.

In particular, the OECD estimates suggest that around 60% of the additional export revenue in OPEC countries would translate into higher imports within the next two years. It is

<sup>8</sup>. The estimates put forth by the FMI in the World Economic Outlook in April 2006 assume, unlike we do in our analysis, that (i) the increase in non-oil export revenue does not represent a positive income shock these countries, and (ii) that the marginal propensity to import out of the rest of items in the current account is equal to 100%. Both assumptions combine to generate a lower estimate of the importance of the commercial channel in the recycling of the export revenue windfall than the one we present for the 2002-2005 episode, even though It is worthwhile pointing out that these assumptions were not as important for other oil-price increase episodes when the increase in non-oil export revenue was not as significant..

important to keep in mind that the estimations performed in this article include only the contemporaneous effect accumulated over the first years following the oil price increase. This means that the lagged effects on imports of the big increase in export revenue in 2004 and 2005 might not have been fully realized yet.

RECYCLING OF EXPORTS WINDFALL IN OPEC COUNTRIES CHART 11



Sources: BEA, IMF, and BIS.

a. Percentage of exports windfall relative to the initial year in each period.

In order to compare the importance of the different recycling channels to that in previous episodes, chart 11 shows the use given by OPEC countries to the export windfall in the years following the oil price increase episodes of 1973, 1979, 1998, and 2002. For the sake of temporal consistency, data for Russia are excluded from the graph above since they are only available for the 2002-2005 episode. In each episode considered, the export windfall is defined as the additional export revenue with respect to the first year in the period, considered the base year. As it is evident from chart 11, recycling via imports has been higher in the 2002-2005 episode than in any of the three previous ones, probably as a consequence of (i) the perception of higher degree of permanency in the oil price increase, (ii) the more gradual pattern of the increase, and (iii) the improvement in the trade infrastructure which has allowed imports to grow as a result of the increase in income. This higher recycling via imports is consistent with the article by Barrel and Pomerantz (2004) who find that the response of imports to an increase in export revenue would have accelerated since the mid 1980's.

On the other hand, international reserve accumulation has also been an important recycling channel —it amounts to around 15% of the windfall— even though its importance was smaller than in the previous episodes of the 1970's (17% in 1973-1976 and 24% in 1978-1981). However, if we include data for Russia in the current episode, this ratio becomes 22% making this channel more important in the current episode than in the 1973-1976 and 1998-2001 episodes and only slightly below the 1978-1981 episode.

Finally, even though the fraction of the windfall recycled via capital flows is not very different from that of the 1970's, it is important to keep two factors in mind: (i) including Russia, this percentage falls to 28%, and (ii) unlike in the 1970's a bigger share of the additional export revenue has been used to reduce external debt in oil exporting

countries instead of being used to improve the net asset position of oil exporting countries in the international banking system.<sup>9</sup>

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**9.** In a similar fashion to the exercise performed in footnote 6, we could estimate the contribution to the financial account balance and the rest of concepts of the balance of payments of the “Other” component in chart 11 using available data on balance of payments for a few OPEC countries in each of the episodes considered in this graph. The contribution of the financial account to the “Other” category would go up progressively over time going from 65% for the 1973-1976 episode to 98% in the 2002-2004 episode. This means that recycling through the commercial channel (in a broad sense) for the periods 1973-1976, 1978-1981, 1998-2001 and 2002-2004 would be, respectively, around 52%, 38%, 36%, and 52% of the additional revenue meaning that the rest would have been recycled via the financial channel (reserve accumulation and a negative balance on the financial account). The evolution of the recycling via the commercial would, therefore, present a similar profile as the one depicted in chart 9 even though the percentages for 1973-1976 and 2002-2004 would be more similar.

## 5 Conclusions

The increase in export revenue in OPEC countries and Russia has meant an inflow of resources for these countries larger than that of any previous oil price increase episode even though, in real terms, this revenue only reached in 2005, a level similar to that in 1980. Taking as a reference the export revenue these countries received in 2002, we estimate that the OPEC countries and Russia experienced a total export windfall of around \$785 billion between 2003 and 2005.

In the last three years, 51% of the total windfall in OPEC countries and Russia was devoted to financing increases in imports by these countries. The rest of additional resources were recycled via the financial channel, either through international reserve accumulation (22%) or via the improvement in the net position of other assets (28%). This increase in net external assets has included a significant reduction in the stock of foreign debt of some of the main oil exporting countries such as Saudi Arabia and Russia. It is important, however, to take into the possible existence of lagged effects between the increase in export revenue and the increase in imports meaning that the estimate for the recycling via the commercial channel presented in this article might, in the medium run, be larger and more in line with the OECD (2005) estimates.

The current breakdown of the export windfall among the different recycling channels contrasts sharply with that of the 1973 and 1979 oil price increase episodes, when the commercial channel absorbed, on average, only 28% of the total windfall. This difference can most likely be attributed to the perception of higher degree of permanency of the oil price increase and the more gradual revenue increase in the current episode relative to previous episodes. This increase in export windfall recycling via the commercial channel has been especially beneficial for Europe and emerging Asia, the areas with the most weight in the geographical distribution of imports by OPEC countries and Russia.

## REFERENCES

- BARRELL, R., and O. POMERANTZ (2004). *Oil Prices and the World Economy*, NIESR Discussion Paper 242.
- BIS (2005). *Quarterly Review*, December.
- FMI (2005). *Middle East and Central Asia Regional Economic Outlook*, September.
- (2006). "Oil Prices and Global Imbalances", Chapter II of the *World Economic Outlook*, April.
- OCDE (2005). *Economic Outlook 78*, December.
- RUIZ, J. (2004). "Una valoración de la evolución reciente del precio del petróleo", *Boletín Económico*, December, Banco de España.