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# Petrodollars, emerging markets and vulnerability

- **The phenomenon of “Petrodollar recycling” as it affects global markets today is probably best quantified by comparing the very large recent current account surplus of oil exporting countries with their “normal” level. On this basis it appears that the pool of Petrodollars available for recycling exceeds USD 1 trillion, and growing rapidly. For Middle Eastern oil exporters alone, this pool is close to some USD 600 bn.**
- **International banks are not being used for financial intermediation in the same way as they were in the 1970s; these days, Petrodollars are being channelled directly into asset markets, with both indirect and direct benefits for emerging economies’ cost of capital.**
- **This helps to yield the overall conclusion that Petrodollars are a benign influence on the cost of capital for developing countries. Paradoxically, therefore, that one source of emerging markets’ financial vulnerability these days would be a sharp and sustained fall in oil prices. That said, the relationship between emerging markets asset prices and the price of oil is probably not linear: very high levels of the oil price could be associated with greater global event risk, and hence put downward pressure on investors’ risk appetite**

## Executive Summary

- There have been increasingly frequent references during the past year or so to the influence on financial markets of “Gulf liquidity” or “Petrodollars”. Predictably, a body of literature has developed in response to this, which focuses mainly on the relationship between the surpluses of oil-producing countries and the question of global imbalances. In spite of the growth of this literature, however, few attempts have been made to look specifically at the link between Petrodollar recycling and its impact on developing countries’ financial position. This note is an attempt to do that. Although the conclusions are tentative, the following points stand out of the analysis.
- First, the phenomenon of “Petrodollar recycling” as it affects global markets today is probably best quantified by comparing the very large recent current account surplus of oil exporting countries with their “normal” level. On this basis it appears that the pool of Petrodollars available for recycling exceeds USD 1 trillion, and growing rapidly. For Middle Eastern oil exporters alone, this pool is close to some USD 600 bn.
- Second, international banks are not being used for financial intermediation in the same way as they were in the 1970s; these days, Petrodollars are being channelled directly into asset markets, with both indirect and direct benefits for emerging economies’ cost of capital. Having said that, the behaviour of Middle Eastern oil exporters is characterised by a kind of “regional bias”, which has particularly supported the asset markets of countries such as Egypt, Lebanon, Jordan, the Maghreb and Turkey.
- Third, a central factor in considering the impact of Petrodollars on emerging economies is the effect that higher energy prices have on the external financing requirements of developing countries. Here, too, there is an important difference between what is taking place today and what happened in the 1970s. Then, the external financing requirements of developing countries were large and very negatively affected by the supply-shock that caused oil prices to increase. These days the rise in energy prices appears to be driven more by a demand-shock that has helped to lift commodity prices across the board. Since developing countries are net commodity-exporters, the external financing position of emerging economies has, overall, not deteriorated along the lines evident in the 1970s. On the contrary in fact: developing countries are these days net exporters of capital, and so external financing requirements are very limited, albeit with some notable exceptions.
- Fourth, even for countries such as Turkey, Hungary and South Africa – which exhibit large external financing requirements - it seems that what they have lost on the current account of the balance of payments – through higher energy costs – they have more than gained on the capital account, in the form of a greater availability of financing.
- This helps to yield the overall conclusion that Petrodollars are a benign influence on the cost of capital for developing countries. Paradoxically, therefore, that one source of emerging markets’ financial vulnerability these days would be a sharp and sustained fall in oil prices. That said, the relationship between emerging markets asset prices and the price of oil is probably not linear: very high levels of the oil price could be associated with greater global event risk, and hence put downward pressure on investors’ risk appetite

## Measuring Petrodollar recycling

Measuring the pool of Petrodollars available for recycling is a relatively straightforward process, in spite of the fact that no Gulf state publishes its International Investment Position (IIP), which is the most comprehensive statement of a country's net foreign assets. The best way of assessing the scale of Petrodollars is the increase in the current account surplus of large oil-producing economies, since it is this surplus that in any case is the primary source of financing for any build-up in a country's net foreign assets.

Table 1 shows current account data – estimates for 2006 – for two groups of countries. The first is the set of surplus countries who export more than 1 million barrels per day of oil<sup>1</sup>, who together account for 56% of total oil output. The second is the set of Middle Eastern oil exporters, accounting for 32% of global output. The data compare the total current account surplus for the period 2002-2006 with the accumulated surplus for the period 1992-2001. To quantify the phenomenon of Petrodollars, it makes sense to subtract the 1992-2001 surplus from the 2002-2006 surplus. The reason for doing this is that there are always Petrodollars in the international financial system. What we are trying to do is to capture the recent phenomenon of Petrodollars, which is equal to the increase of energy-related surpluses compared to their “normal” level of the 1990s. For our larger sample of countries, that increase amounts to USD1.02 trillion; for the Middle Eastern oil exporters, it is USD 596 bn. The latter number is approximately what we refer to as “Gulf liquidity”; while the former number can be taken as a proxy for the broader phenomenon of “Petrodollars”.

**Figure 1. Current account balances and the "Petrodollars effect" (USD bn)**

	1992-2001 (1)	2002-2006 (2)	"Petrodollars effect" (2 less 1)
<b>Summary data</b>			
Total	383.1	1,399.8	1,016.5
Middle East	113.5	732.5	619.0
<b>Country data</b>			
Algeria	18.0	76.8	58.7
Bahrain	-0.7	5.5	6.2
Brunei	21.8	22.0	0.2
Iran	27.2	44.4	17.2
Kazakhstan	-6.4	0.3	6.8
Kuwait	55.5	112.1	56.5
Libya	20.1	52.0	31.9
Nigeria	-0.5	27.7	28.1
Norway	98.8	203.6	104.8
Oman	-2.2	14.5	16.6
Qatar	-4.9	46.2	51.1
Russia	132.6	326.8	194.2
Saudi Arabia	-38.9	302.6	341.5
United Arab Emirates	39.1	77.1	38.1
Venezuela	23.3	86.9	63.7
Yemen	0.3	1.3	1.0

Source: IMF WEO database

<sup>1</sup> The data exclude countries, like Mexico, which run overall current account deficits.

To put these numbers in the context of developing countries' asset markets, it is worth bearing in mind that the USD 600 bn of Gulf liquidity alone would be i) much more than enough to buy the outstanding stock of emerging markets' traded external debt (the market cap of Citigroup's ESBI index of emerging markets bonds is less than USD 250 bn); ii) enough to buy 25% of the emerging markets MSCI, with a current market cap of around USD 2.4 trillion; or iii) enough to buy 12% of the stock of US treasuries held by the public (currently USD 4.9 trillion).

It seems reasonable to assume that the influence of Petrodollars on global capital flows, and specifically on emerging markets' asset prices, will not disappear soon. In principle the future of oil exporters' current account surpluses will be some function of the price and output of energy together with the rate of import growth in each country. Easton and Setser (2006) note that imports of the major oil exporting countries have roughly doubled since 2000, but that hasn't been sufficient to prevent a dramatic rise in these countries' current account surpluses: only Iran exhibits a rate of import growth which is some kind of threat to its ability to accumulate current account surpluses. In all, Easton and Setser suggest that if oil prices remain at their 2005 level during 2006-2008 then the annual current account surplus of major oil exporters will remain above USD 300 bn. On the other hand, if oil prices were to fall to USD 55 per barrel, the annual aggregate surplus would fall to around one-half of its 2005 level. Meanwhile, the IMF's forecast for the 2007 current account surplus of large oil exporters – published in the September 2006 World Economic Outlook – is USD 610 bn based on an oil price assumption of USD75.5/bbl. Other things equal, a \$10/bbl change in the oil price assumption will change the current account surplus by approximately USD 80 bn.

In other words, Petrodollars look set to be a feature of global capital flows for the foreseeable future. There seem to be two main questions that arise from this. The first is the relationship between Petrodollar recycling and global risk aversion. While Petrodollar recycling acts as a source of upward pressure on emerging markets asset prices, risk aversion has the opposite effect. A second key issue is the relationship between Petrodollars and the overall external financing requirements of developing countries. Before addressing these questions, we turn to the general question of the link between Petrodollars and asset prices in emerging economies.

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## Petrodollars and emerging markets asset prices

In principle, there are three channels through which Petrodollars affect developing countries' asset prices. These are:

- i) The "traditional route". This occurs when the investors of Petrodollars make deposits in the international banking system, which then on-lends the surplus funds to developing country borrowers. This is the "traditional" method of Petrodollar recycling in the sense that it was the dominant form of recycling in the 1970s and early 1980s.
- ii) The "indirect route". This happens when the investors of Petrodollars make large-scale purchases of "risk-free" assets, primarily debt issued by

the governments of developed countries. Since this has the effect of pushing down the global risk-free rate, it has the indirect consequence of putting downward pressure on risk premia in global markets. The consequent fall in spreads for risky borrowers creates benefits for developing countries.

- iii) The “direct route”. Finally, the investors of Petrodollars engage directly in the straightforward purchase of emerging markets assets, either on the account of the investment vehicles of oil-exporting economies, or on a sub-contracted basis, through the placement of funds with professional asset managers.

*The “traditional route” of Petrodollar recycling.* The standard story of Petrodollars in the 1970s was that oil exporters’ surpluses would be deposited in the international banking system, from which these surpluses were then on-lent both to oil importers specifically and to developing country borrowers generally. At first this lending reached oil-importing developing countries who needed to finance the balance of payments deficits caused by rising energy prices. Later in the 1970s an explosion of lending to almost all middle-income developing countries took place, including oil-exporters like Venezuela and Mexico. In any case, a large share of the recycling process was intermediated by the international banking system. The IMF (2006) suggests that in 1974, for example, over half the current account surplus of oil exporters was placed in bank deposits or money market instruments in developed markets.

**Figure 2. BIS position and current account data for Middle Eastern oil exporters, USD bn**

Current account surplus, 1977-1982	188
Change in assets held in BIS-reporting banks, 1977-1982	51
Change in net position vis-à-vis BIS-reporting banks, 1977-1982	38
Current account surplus, 2002-2005	438
Change in assets held in BIS-reporting banks, 2002-2005	87
Change in net position vis a vis BIS-reporting banks, 2002-2005	23
Current account surplus, 1977-1982	188
Change in assets held in BIS-reporting banks, 1977-1982	51
Change in net position vis a vis BIS-reporting banks, 1977-1982	38

Source: BIS, IMF

It seems clear, however, that the current phenomenon of Petrodollar recycling relies much less on the international banking system than used to be the case. Consider the data in table 2. During the period of the second oil shock, 1977-1982, Middle Eastern oil exporters generated a current account surplus of USD 188 bn. Of this, USD 51 bn, or 28%, was placed in BIS-reporting banks. During the same period these countries saw their *net* position with BIS-reporting banks rise by USD 38 bn. In other words, most of these countries’ deposits just stayed in the banking system, and was not lent back to the Middle Eastern oil exporters. The story in 2002-2005 is somewhat different. During this period, a much smaller fraction of these countries’ current account surplus was deposited in BIS-reporting banks, and much of the increase in deposits (USD 87 bn) was offset by loans taken from the banks by borrowers in the

countries themselves. In other words, it seems from the available data that the recycling of recent Petrodollars has largely by-passed the international banking system.

*The “indirect route”.* If the “traditional route” of Petrodollar recycling doesn’t help explain how oil surpluses affect emerging markets asset prices, then what does? First, consider the “indirect route” of recycling. This works due to the impact that Petrodollar liquidity has on risk-free yield curves, and more generally on assets in risk-free markets. If, for example, Gulf purchases of US Treasuries puts downward pressure on real interest rates in the US, this helps to reduce the cost of borrowing in emerging market economies too: the lower the risk-free rate, the lower is the relative risk premium. Of course this isn’t true in a linear sense: it is quite possible to imagine situations in which the risk free rate and the risk premium can move in opposite directions. Under normal circumstances, though – and under the circumstances of the past five years – a lower risk-free rate tends to be associated with a lower risk premium.

As easy as it is to make these general comments, though, it is almost impossible to say in any detail where exactly the Petrodollars are going. Data transparency in the Gulf economies for example is very poor by emerging markets standards, let alone by standards of developed countries. For that reason, therefore, the only real information that we can get at is from the Gulf economies’ counterparties. From this we can put together a partial picture, but by no means a complete one. The best counterparty data is produced by the US, but even this is outdated. The most recent complete US breakdown of foreign portfolio holdings (an annual survey) is for June 2005. Table 3 presents selected data from the 2005 and the 2000 Reports on Foreign Portfolio Holdings of US Securities, a joint publication of the US Treasury and the Federal Reserve.

What table 3 shows, for example, is that between 2000 and 2005 the US portfolio of Middle East oil exporters grew by a total of USD 65 bn. During the period 2001-2005 the total current account surplus of Middle Eastern oil exporters was around USD 485 bn. In effect then, 13% of the Gulf’s current account surplus during this period was invested in the US capital market. Mean while, Russia’s US portfolio rose by only USD 7 bn, compared to a total 2001-2005 current account surplus of USD 244 bn.

**Figure 3. Foreign holdings of US Securities, selected data (USD mns)**

	Total	Equity	Debt
<b>2005</b>			
Middle East Oil Exporters	136,427	82,472	53,954
Russia	14,416	227	14,190
<b>2000</b>			
Middle East Oil Exporters	71,352	42,555	28,797
Russia	7,146	336	6,810
<b>2005 less 2000 difference</b>			
Middle East Oil Exporters	65,075	39,917	25,157
Russia	7,270	-109	7,380

Source: US Treasury

Although this data provide a partial snapshot of the oil exporters' US portfolio, it is worth emphasising how difficult it is to be more specific conclusions about oil exporters' portfolio of foreign assets.

In the first place, hardly any country but the US breaks down the foreign ownership of their securities market in this way. And even if they did, an enormous problem arises as a result of what statisticians call "custodial bias". Portfolio managers often entrust the safekeeping of their securities to institutions in third countries. So, if a Gulf investor buys a US security through a custody account at a UK bank, that purchase will be recorded as a private UK purchase of US securities<sup>2</sup>.

This creates an enormous gap in our knowledge of how Petrodollars play their part in global capital flows. Given the growing role that Petrodollars play in international financial markets, the absence of transparency in the deployment of Petrodollars is an important gap in the information available to policymakers. Arguably therefore an attempt should be made to improve transparency in this respect: not only by encouraging oil-exporting countries to publish full International Investment Positions, but also by encouraging a greater degree of disclosure about who the ultimate owners are of securities issued in developed markets.

Although the international banking system is important in channelling Gulf liquidity through custody accounts, it seems that the Gulf's petrodollars are not quite being "recycled" by international banks as they were in the 1970s. At the same time, it seems safe to assume that Petrodollars have put downward pressure on risk-free rates in developed markets, although this is difficult to quantify due to the lack of data. Is there anything else that can be said about Petrodollar recycling as it exists in the 21<sup>st</sup> century?

*The "direct route"*. One of the most important features of recent Petrodollar recycling is the willingness of the owners of Petrodollars to take credit risk directly onto their own balance sheets. When banks are used as the primary vehicle for recycling, as was the case in the 1970s, the credit risk is located on the balance sheets of the banks that are intermediating the Petrodollars. What appears to be the case now, however, is that Petrodollars are invested directly in the asset markets of developing countries.

A look at the balance sheet of the Saudi Arabian Monetary Agency (SAMA) helps to show clearly the changing nature of Petrodollar recycling. Between December 2001 and December 2005, SAMA's assets increased by USD 197 bn, a number which closely matches the IMF's estimate of the Kingdom's aggregate current account surplus for that period. Of that increase in assets, USD 148 bn was invested in foreign securities, and only USD 39 bn was placed in the international banking system. This seems to support the evidence contained in the BIS data (Table 2, above) which suggests that net flows into the banking system are relatively small in the current period of Petrodollar-recycling.

One reason why net flows to international banks have been small is because of borrowing activity by, for example, Gulf residents. One way of interpreting this is that borrowing from international banks has been high in order to finance purchase of local

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<sup>2</sup> See BIS (2005)

assets. It is well known that stock market indices in Saudi Arabia, Kuwait and the UAE more than quadrupled between the end of 2001 and June 2005. Other asset markets in the Gulf region – particularly property – have also been affected by this liquidity.

Outside the Gulf, the emerging markets that have arguably been the most obvious beneficiaries of Gulf liquidity are those with geographic and cultural proximity to the Middle East: Egypt, Lebanon, Jordan, the Mahgreb and Turkey. Here again, though, the evidence is more anecdotal than statistical.

For Turkey, for example, there are plenty of stories about the influence of Gulf liquidity. The most visible of these is the purchase of a Saudi-led consortium of a 55% stake in Turk Telekom for USD 6.55 bn. The transaction will also lead to further investment of USD 3.5 bn over a six to seven-year period. In addition, Dubai International Properties signed an agreement in October 2005 to invest USD 5 bn in tourism, transport and energy projects in Istanbul. More recently, deals are emerging in the financial sector too. Dubai Islamic Bank has bought Turkey's MNG bank for USD 160 mn, and the attraction of the fast-growing Islamic finance sector is likely to draw in further capital inflows from the Gulf.

In Egypt, to take another example, the balance of payments benefits from Gulf liquidity in a number of different ways. In the first place the Egyptian current account has benefited from a higher level of workers' remittances which come primarily from the Gulf (although technically these are not capital inflows, since they would be recorded as outflows from the current account of the source countries).

The IMF's forecast in the September 2006 World Economic Outlook indicates that the 2006 current account surplus in the Gulf was close to USD 282 bn – based on an oil price assumption of USD69.2/bbl – compared to USD 183 bn in 2005. In other words last year's surplus alone will have amounted to nearly one half of the cumulative surplus during the period 2001-2005.

Arguably, the link between Petrodollars and emerging markets asset prices is simply a "subset" of a more general relationship, namely that between the stock of global foreign exchange reserves and emerging markets asset prices: since the rise in global foreign exchange reserves has accumulated substantially on the balance sheets of developing countries, it is a natural consequence of this that their asset prices should have risen. While there are many explanations for the rise in developing countries' foreign reserves, one interpretation is that the rise in energy prices appears to be driven more by a demand-shock that has helped to lift commodity prices across the board. Since developing countries are net commodity-exporters, the external financing position of emerging economies has, overall, not deteriorated along the lines evident in the 1970s.

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## ■ Petrodollars and external financing requirements

The focus of the discussion so far has been on the impact of Petrodollars on the capital account of emerging economies' balance of payments. Yet the impact of higher energy prices on the current account has to be considered, since it is only by analysing



the entire balance of payments that one can generate conclusions about the impact of Petrodollars on emerging markets' asset prices and cost of capital.

In principle one might think about Petrodollar-recycling as having a neutral impact on the asset prices of an oil-importing developing country: the rise in energy prices creates pushes up the external financing requirement, and this increased financing requirement is simply matched by the inflow of Petrodollars through the capital account. Since the net balance of payments impact is zero the impact on asset prices could also be zero. To some extent this simple model may have gone way towards describing the net effect of Petrodollar recycling in the early 1970s, but it is highly unsatisfactory now. The fact is that emerging markets on the whole are now net exporters of capital, a very unusual phenomenon in the history of developing countries' international financial position.

Figure 4. Developing countries' external financing indicators (USD bn)

	1978-1982	1995-1999	2004-2006
1. Average annual current account balance	-34.5	-60.1	23.4
2. Average annual central bank reserves, year-end	41.5	253.6	515
3. Average annual amortizations of external debt	-24.5	-122.6	-155.6
Vulnerability indicator $((1+3)/2)$	142%	72%	26%

Source: Institute of International Finance; author's calculations. The countries aggregated are: Argentina, Brazil, Colombia, Mexico, Uruguay, Venezuela, Thailand, Philippines, Indonesia, Malaysia, Nigeria, Poland, South Africa and Turkey

This point is made clear in Table 4, which gives summary indicators for external financing for a group of emerging economies. While the annual average current account balance for this group of countries was a deficit of USD 34.5 bn in the 1978-1982 period, this had turned into an average surplus by the middle of this decade. This in turn has helped to finance the much-discussed increase in emerging economies' foreign exchange reserves, such that the average year-end stock of reserves in this group of countries has reached a level exceeding USD 500 bn. As a result, the overall vulnerability of emerging economies' financial position has fallen dramatically, as is well-known. Table 4 makes this clear by providing a summary "vulnerability indicator", which creates a ratio by comparing countries' *uses* of foreign exchange (the sum of the current account deficit and the amortisation of external debt) with central bank reserves, a proxy for *sources* of foreign exchange. For the selected group of countries the level of vulnerability has fallen dramatically, such that the group's external financing needs account for just over 25% of their stock of foreign exchange reserves.

The significantly improved current account position of emerging economies means that the impact of Petrodollar-recycling on their cost of capital is bound to be positive: it is marginally unlikely that any Petrodollar-financed inflow to emerging economies will be needed to finance deficits. In a global sense, it is possible to argue that the recycling of Petrodollars should have an invisible impact on asset prices, since the rise in the assets of oil exporters are perfectly offset by the fall in assets of oil importers. So why should emerging markets asset prices benefit? One reason might be that the owners of Petrodollars have a predisposition to invest in emerging markets because of the improvement in balance sheet indicators across emerging economies. Another

possibility is that the rise in Petrodollars has increased the willingness of other investors to take leveraged bets on emerging markets.

Of these two possible explanations, the former is more compelling. Unlike the 1970s the rise in energy prices over the past 5 years appears to be driven essentially by a demand-shock that has helped to lift commodity prices across the board. Since developing countries are net commodity-exporters, the external financing position of emerging economies has, overall, not deteriorated along the lines evident in the 1970s. On the contrary: developing countries are these days net exporters of capital, and so external financing requirements are very limited, albeit with some notable exceptions. This in turn may have produced a greater propensity to invest Petrodollars in an asset class which is benefiting from global growth and stronger commodity prices.

Of course there are notable individual emerging economies whose large current account deficits have been adversely affected by the rise in energy prices over the past few years. The most obvious examples are Hungary, Turkey and South Africa. There are others, of course - particularly among the converging European economies - but none with any systemic importance.

**Figure 5. The impact of higher oil prices on 3 economies (% GDP)**

	2003	2004	2005
<b>South Africa</b>			
Actual current account deficit	1.1	3.4	4.2
Current account deficit at 2003 oil prices	1.1	3.9	3.6
<b>Hungary</b>			
Actual current account deficit	7.9	8.4	6.8
Current account deficit at 2003 oil prices	7.9	8.1	5.9
<b>Turkey</b>			
Actual current account deficit	3.3	5.2	6.4
Current account deficit at 2003 oil prices	3.3	4.4	4.3

Source: Citigroup

Table 5 provides an indication of the impact that higher oil prices have had on the current account of these countries' balance of payments. Of the three, the country with the most obvious sensitivity to higher energy prices is Turkey, whose 2005 current account deficit would have been some 2 percentage points of GDP lower if oil prices had stayed at their 2003 level.

The fact is though that even in these three oil-importing emerging economies, the negative impact of rising energy prices has been more than offset by net capital inflows, a fact which is evident both from the rise in foreign exchange reserves that each country has witnessed; as well as from the sustained decline in the country-risk premia that each has enjoyed. While this net capital inflow isn't by any means due entirely to the inflow of Petrodollars, the point is that the rise in energy prices has not, in net terms, been consistent with an overall drain on the balance of payments.

The idea that Petrodollars are positively associated with emerging markets asset prices underwent something of a test in the first two weeks of 2007, when the oil price briefly fell towards USD 50/bbl. This period was associated with downward pressure on some emerging markets' asset prices, which then recovered in the second half of

the month as the oil price increased back towards USD 60/bbl. One interpretation of this is that as oil prices fall, investors are likely to sell emerging markets assets in anticipation of a lower stock of Petrodollars available to support asset prices in the future. This episode could lend support to the overall conclusion of this analysis, which is that Petrodollars are, by and large, a source of support to emerging markets' asset prices.

Having said that, the relationship between the oil price and emerging markets asset prices may not be a linear one. While very low oil prices could undermine investor sentiment towards emerging markets, it is equally true that very high oil prices might do the same if market participants associate very high prices with greater geo-political risk, or with an inflationary threat that could require a sustained rise in interest rates. One of the paradoxes of financial markets in the early 21<sup>st</sup> century is that the deployment of Petrodollars may make the world *look* like a less risky place – in the sense that risk-premia have been subject to downward pressure – while the shift in purchasing power towards oil producers may, in some objective sense, increase the level of unmeasured risk to the global financial order.

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## Disclosure Appendix

### ANALYST CERTIFICATION

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