Highlight of the week: The ETF premium in the gold price

- **Base metals insight (page 2):** Chinese steel consumption far outstrips consumption of any other country and this raises concerns that Chinese consumption is excessive and not sustainable. However, when weighted with GDP, it appears that Chinese consumption is in line with countries such as Russia. In absolute terms, China consumed almost six times more steel than Russia. However, measured in terms of kilograms of steel consumed for each thousand dollars of GDP produced by that country, China consumes 33 kg of steel and Russia 29 kg. This is very close to each other and indicates Chinese consumption might not be excessive at all.

- **Precious metals insight (page 12):** Standard Bank estimates that ETF’s currently account for US$205 in the US dollar gold price. This premium has increased from US$24 in June 2004 to where it stands now. The gold price without the ETF premium, or the “clean” gold price indicates that if demand for ETF’s would disappear, the gold price will fall to US$470 per oz. At this level only 70% of all gold production will be profitable in the long run on a total cost basis.

- **Energy insight (page 20):** Apart from the political tensions surrounding the Nigerian elections, two other major oil producers in Africa will go to the polls soon. Algeria will hold parliamentary elections on May 17th and Angola will hold elections in September. Both these countries have been working towards establishing a stable political environment but remains risky. Algeria has been the target of bomb attacks as recent as last month, with more attacks promised by militants. Angola has held its last election in 1992, the only democratic election since 1975. Together with Nigeria, these three countries account for 7% of world crude output.

- **Macroeconomic insight (page 24):** In China, despite the high economic growth rate, inflation remains well under control with the inflation rate coming in at 3% y/y for April. This rate is achieved despite recent appreciation of the yuan against the dollar to slowdown growth. However, there is a murmur in the market that asset prices, especially equities, are overvalued in China. The last time, in February this year, when there was a sharp correction in equity prices most commodities followed suit. But the Chinese equity market remains small relative to the Chinese economy and a correction is unlikely to have long lasting effects.
On Tuesday this week China released data indicating that Chinese steel exports in April were up 33% from March. China is the world’s largest consumer of steel, the largest producer of steel and a major exporter of steel. Chinese steel consumption grew from less than 12,500 tonnes in January 2000 to more than 43,000 tonnes in April this year resulted in production capacity being increased dramatically. This steel production and consumption is obviously only part of a far greater industrial boom in China that is important for many metals. With this dramatic rise in Chinese steel consumption and production the question remains whether this is a temporary demand boost from China or if China is simply catching up with the rest of the world’s steel consumption.

Compared to other economies in the world, China’s steel consumption is a large outlier. In 2000 the US was still consuming more steel than China. Since then China has not only surpassed the US steel consumption, but it consumes a similar amount of steel to the US, Japan and Russia combined. Of course, China has a population size of almost four times that of the US. But although its population is large, it still remains a poor country relative to the likes of the US, Japan, Russia and even South Africa.

In order to determine if indeed China is only going through a temporary phase of high steel consumption or playing catch-up to consume on par with other countries, we calculate the kg of steel consumed for each thousand dollars of GDP produced by that country.

Since countries in different development stages are likely to consume steel at different rates, we compare Chinese steel consumption per thousand dollars of GDP produced with that of the US, Russia and Japan. This covers developed economies such as Japan and the US as well as developing economies with a good industrial production base such as Russia and China.

Upon using this consumption measure for steel an interesting picture emerges. In 2006 China consumed 33kg of steel for every thousand dollars of GDP it produced. This has increased from 25kg of steel for a thousand dollars of GDP. Since 2004 this has been stable at levels just above the 30 kg level. Russia is consuming steel at almost the same level as China for every thousand dollars of GDP. In 2006 Russia was consuming 29kg of steel per thousand dollars, while the US and Japan was consuming 12kg and 18kg respectively.
Base metals insight: (continued)

The most important fact that emerges from this analysis is that although China is consuming in absolute terms much more steel than Russia, Japan and the US, when weighted by GDP, Chinese consumption seems to be more in line with consumption in other countries. The high consumption of Russia and China is expected given that these economies still have some way to go before they achieve the same industrial development stage that the US and Japan are currently experiencing. In summary, Chinese steel consumption far outstrips consumption of any other country.

This raises the concerns that Chinese consumption is excessive and not sustainable. However, when weighted with GDP, it appears than Chinese consumption is in line with countries such as Russia. In absolute terms, China consumed almost six times more steel than Russia. However, measured in terms of kilograms of steel consumed for each thousand dollars of GDP produced in the country, China consumes 33kg of steel and Russia 29kg. This is very close to each other and indicates Chinese consumption might not be excessive at all.

GDP per capita

Sources: Bloomberg, Standard Bank Group

Chinese steel imports and exports

Sources: Bloomberg, Standard Bank Group
Copper

LME copper stock continued its downward trend of previous weeks. On Wednesday stock reached a low for 2007 at 141,100 tonnes. Despite this continuous decline in copper stock levels, the copper price retreated, as expected, from the highs of last week reaching US$7,660 on Wednesday. This decline in price levels resulted in a parallel downward shift of the forward curve, which also tested the historical high levels.

The short net speculative position also remains at an annual low at slightly more than 8,000 contracts. This was the result of both long and short speculative positions increasing, with the long positions rising faster than the shorts.

At a macro level China announced on Tuesday that it’s imports of copper and copper products rose 61% in the first four months of this year. This explains in part the 21% increase of the copper price so far this year. These massive imports are expected to result in stockpiling in China and explains the recent copper price decline despite LME stocks declining. This stockpiling is evident from rising stock levels on the Shanghai exchange.

The copper price ignored stock levels this week. But if the decline in stock levels persist we should see copper recovering somewhat. However, we suspect that the downward correction will continue for a few more days.

In summary, LME stock levels continued its decline this week. After last week’s highs, copper prices retreated ignoring the lower movements in stocks on the LME. However, there appears to be copper stockpiling in Shanghai that will put copper price under pressure for now.
Copper: (continued)

Standard Bank copper market conditions indicator

Sources: Bloomberg, Standard Bank Group

forward curve

Sources: Bloomberg, Standard Bank Group

Forward spread (forward price — cash price)

Sources: Bloomberg, Standard Bank Group

Volatility

Sources: Bloomberg, Standard Bank Group

LME stock vs. Cash price

Sources: Bloomberg, Standard Bank Group
Aluminum

Aluminum LME stocks remain near a high for this year at 835,850 tonnes on Wednesday. Not surprisingly the price remained in a fairly tight range during the week ranging between US$ 2,847 and US$ 2,825. Aluminum has moved very little from a month ago, making it the worst performer during the previous 30 days.

Although the metal followed copper down from last weeks prices, the forward curve remains high across all maturities. The forward/cash spreads continue to trade within its historical ranges. With the lower prices, volatility also declined somewhat.

Similar to copper, aluminum also seems to have found direction in the general bearish sentiment during the week towards base metals. We maintain our view that aluminum is fairly priced at this stage.

In summary, aluminum followed copper down from last week’s highs. We maintain our view that aluminum is fairly priced but will come under pressure from a slowdown in the US and the motor industry in particular.

Sources: Bloomberg, Standard Bank Group

Price movement

Thousands of USD per tonne

Sources: Bloomberg, Standard Bank Group

LME Stock

Tonnes (Thousands)

Sources: Bloomberg, Standard Bank Group

Consumption and production

Millions of tonnes

Sources: Bloomberg, Standard Bank Group
Aluminum: (continued)

Standard Bank aluminum market conditions indicator

Sources: Bloomberg, Standard Bank Group

Forward curve

Sources: Bloomberg, Standard Bank Group

Forward spread (forward price — cash price)

Sources: Bloomberg, Standard Bank Group

Relative performance (last 30 trading days)

Sources: Bloomberg, Standard Bank Group

Volatility

Sources: Bloomberg, Standard Bank Group

LME stock vs. Cash price

Sources: Bloomberg, Standard Bank Group
Nickel

The recent decline in LME stock has turned around with stock levels increasing to 4,872 tonnes on Wednesday. This is 426 tonnes higher than last week’s low. Since stock levels remain very tight, the nickel price is expected to remain volatile and sensitive to changes in stock levels.

The price of nickel declined from US$51,000 last week Wednesday to US$50,450 this Wednesday. Despite this slowdown the forward curve remains at historic highs with the forward spreads steep.

The data released out of China this week that steel consumption remains very high should support nickel prices for the time being. Standard Bank believes that Chinese steel consumption will continue its upward path in the foreseeable future.

In summary, nickel prices remain very vulnerable to stock levels. Recent data suggests steel consumption will continue to remain high and this should support nickel. The metal is expected to persist in a deficit this year.
Nickel: (continued)

Standard Bank nickel market conditions indicator

Forward curve

Relative performance (last 30 trading days)

Volatility

LME stock vs. Cash price

Sources: Bloomberg, Standard Bank Group
Although zinc followed the base metal complex lower this week, it remains the top performer over the past 30 trading days. Zinc prices broke through the US$4,000 levels on Monday to trade at US$3,852 on Wednesday afternoon. Forward prices are of last week’s highs trading at more comfortable levels.

Similar to the price of zinc stock levels, on the LME also declined to a low for the year, which was recorded on Wednesday at 82,800 tonnes. The stock levels started to decline in late April and until now showed little sign of a turnaround.

Similar to nickel, the news that Chinese steel production and consumption show little sign of a slowdown should support current levels for zinc.

In summary, zinc prices are expected to remain under pressure from the general bearish sentiment towards the complex. However, the current low levels of zinc and high steel consumption should support zinc in the interim.
Zinc: (continued)

Standard Bank zinc market conditions indicator

Sources: Bloomberg, Standard Bank Group

Forward curve

Volatility

Sources: Bloomberg, Standard Bank Group

Relative performance (last 30 trading days)

Sources: Bloomberg, Standard Bank Group

LME stock vs. Cash price

Sources: Bloomberg, Standard Bank Group
It’s good times for precious metals. The US economy is under pressure, the US dollar is depreciating and countries such as China are providing good support for commodities in general. As a result of the high commodity prices, inflation pressures are abound but interest rates outside the US are still relatively low. These conditions create a good investment environment for the traditional safe haven of gold.

Lately, many exchange traded funds (ETF’s) appeared on the radar that allow investors to invest in physical gold as opposed to gold company stocks. Although company stock prices have tracked the gold price closely over time, ETF’s have the advantage that the investor does not need to worry whether management of a company is good, or whether workers at a mine will go on strike. It provides the best opportunity to invest in physical gold without buying gold company stock or jewellery.

Since the launch of most ETF’s in 2004, the amount of gold held by them has increased dramatically to over 600 tonnes of gold. By far the biggest ETF in terms of physical gold holdings have currently in excess of 150m oz of gold. This has grown three fold in less than three years. With total demand for gold estimated at 3,900 tonnes in 2006, the 600 tonnes held currently by ETF’s accounts for 15% of total gold demand. Any change in this demand component will impact negatively on the gold price.

With the latest major slump in the jewellery consumption for gold much of the support for gold going forward must come from investors, mainly through ETF’s. However, for both gold investors as well as physical consumers, such as jewellers, it is important to understand the role of ETF’s and how much it contributes to the price of gold. It is also very important for gold producers to know what the “clean” price of gold is without ETF distortions. When current economic conditions for gold investment deteriorates in the future, the gold price will decrease to levels that are supported by other forms of demand.

Standard Bank calculates that the premium due to gold investment in ETF’s has increased dramatically with a sharp increase in the gold price at the beginning of 2006. This increase can be attributed to the gold demand from ETF’s. In fact, our estimates indicate that the “clean” gold price without ETF demand has remained fairly stable over time, ranging from US$370 per oz in June 2004 to US$470 in March 2007. The difference between the actual gold price and the “clean” price is our estimated premium driven by ETF demand. This premium started off small at US$24 in June 2004, but currently is estimated at slightly less than US$205.
From a producer hedging perspective it is important to note that when we compare the “clean” gold price with the 2006 cost curve for gold producers (as calculated by GFMS), at the current “clean” price of US$470 per oz, only 70% of gold production will be viable in the long run on a total cost basis.

In summary, it is estimated that ETF’s currently account for US$205 in the US dollar gold price. This premium has increased from US$24 in June 2004 to where it stands now. The gold price without the ETF premium, or the “clean” gold price, indicates that if demand for ETF’s would disappear the gold price will fall to US$470 per oz. At this level only 70% of all gold production will be profitable in the long run on a total cost basis.

Sources: Bloomberg, Standard Bank Group
Since our last report the gold price has retracted from the US$688.75 high of last week to US$664.35 on Thursday morning. Despite the pull-back, the forward curve remains at high levels.

With only a small short speculative position and most investors long, they will be looking for positive gold news before new participants enter the market and perhaps push the gold price higher.

Data out of South Africa this week showed that the country’s gold production fell 9.5% in March 2007 compared with the previous month, and 10.8% compared with March last year. South Africa, the world’s top gold producer, produced 291.8 tonnes of gold in 2006. This has steadily been decreasing for the past decade.

We maintain our position on the US dollar, despite the recent pull back of the euro. Soon the Fed will start decreasing rates and the ECB will be increasing them. This will result in a drastic narrowing of the interest rate spread. Furthermore, the European Monetary Union’s Q1:07 GDP is expected to come in at 2.9%, more than twice that of the US Q1:07 GDP growth figures, which will provide more reasons for Euro strength.

**In summary, despite the recent pull-back of gold, we believe that investor sentiment towards the US dollar will keep interest in gold alive.**
Gold: (continued)

Standard Bank gold market conditions indicator

Gold price vs. WTI crude price

Sources: Bloomberg, Standard Bank Group

Relative performance (last 30 trading days)

Sources: Bloomberg, Standard Bank Group

Forward curve

Volatility

Gold price vs. USD/Euro

Sources: Bloomberg, Standard Bank Group
Platinum group metals

Platinum, followed by palladium, remain the top performers for the past 30 days, with price increases beating that of other precious metals.

However, as expected platinum retracted from a high of US$1,341 on Monday last week to US$1,314 on Thursday morning. Palladium followed suit and traded at US$359 on Thursday, $18 down from the high of US$377 reached on Monday last week. Despite platinum retracting more than palladium the platinum/palladium spread remains at high levels trading well above the mean spread of the last three years and the 30 days average.

From a macro perspective, fundamentals remain positive for PGM’s with all data from Europe pointing to good economic and industrial growth. As a result of the bullish sentiment towards PGM’s the net speculative position remains substantially long.

In summary, conditions for platinum and palladium remain bullish with economic fundamentals supporting demand. This bullish sentiment is enhanced by investor interest in the metals.
Platinum group metals: (continued)

Standard Bank platinum market conditions indicator

Sources: Bloomberg, Standard Bank Group

Platinum volatility

Sources: Bloomberg, Standard Bank Group

Platinum forward curve

Sources: Bloomberg, Standard Bank Group

Platinum relative performance (last 30 trading days)

Sources: Bloomberg, Standard Bank Group

Platinum speculative positions (COMEX)

Sources: Bloomberg, Standard Bank Group

Forward spread (forward price — cash price)

Sources: Bloomberg, Standard Bank Group
Platinum group metals (Palladium): (continued)

Standard Bank palladium market conditions indicator

Sources: Bloomberg, Standard Bank Group

Palladium volatility

Sources: Bloomberg, Standard Bank Group

Palladium forward curve

Sources: Bloomberg, Standard Bank Group

Palladium relative performance (last 30 trading days)

Sources: Bloomberg, Standard Bank Group

Palladium speculative positions (COMEX)

Sources: Bloomberg, Standard Bank Group

Forward spread (forward price — cash price)

Sources: Bloomberg, Standard Bank Group
Platinum group metals: (continued)

Platinum demand and supply

Sources: Johnson Matthey, Bloomberg

Palladium demand and supply

Sources: Johnson Matthey, Bloomberg

Rhodium demand and supply

Sources: Johnson Matthey, Bloomberg

Truck sales

Sources: Bloomberg, Standard Bank Group

Car sales

Sources: Bloomberg, Standard Bank Group
Energy insight: More African crude producer elections

With the Nigerian elections and its associated political unrest still hanging over the crude oil market we look at other elections in Africa that might disrupt the oil market in the near future.

Although Nigeria is the largest oil producer in Africa, with an estimated share of 3% of world crude production, it is closely followed by two other countries in Africa that will be holding elections soon. Algeria, which produces an estimated 2.5% of world crude oil, will go into parliamentary elections on May 17th. Angola, which produces an estimated 1.3% of world crude will hold scheduled parliamentary elections in September. Combined Nigeria, Angola and Algeria produce almost 7% of world crude.

After more than a decade of conflict and violence, mainly driven by religious extremism, Algeria’s political system has stabilised to some extent. Its medium- to high-risk rating implies that although the base scenario is that elections should not be disrupted, there is a reasonable chance that some violence may occur during this period. Religious extremist groups remain a large security threat to the country. Attacks by extremists killed six and injured many more as recently as the April 11th. Hence, any disruption of oil supplies by extremists cannot by discarded. What makes Algeria even more strategic is that it is also the fifth-biggest producer of natural gas in the world. Algeria’s major export is oil and most of it is exported to the US.

Angola was in civil war for 27 years since it gained its independence from Portugal in 1975. The war was formally ended in 1997, although fighting continued for another five years. Since 2002 Angola has been experiencing a period of relative stability. The country has a medium to high political risk rating, the same as Algeria, with a reasonable chance of some violence. The country has no track record of democratic elections to speak of. The election in September will only be the second democratic election for the country since independence with the previous election being held back in 1992. What is perhaps more worrying is that expansions in production capacity, that will be crucial to alleviate supply constraints in 2008 and onwards, might be delayed. Currently Angola’s oil production is 1.4m barrels per day. With no disruptions, this is expected to increase by 60% in 2008 to 2m barrels per day.

While the oil market has discounted in the interim the Nigerian elections of April 21st, as we head towards the end of the month, tensions should be rising again. All should come to a head on May 29th when the newly-elected president is to be inaugurated.
Energy insight: (continued)

If the new president doesn’t move fast to establish calm and peace with the opposition, the tensions in the Niger Delta is likely to continue for some months.

We might as well see oil disruptions from Nigeria and Angola running simultaneously towards the end of the year. This will increase volatility of crude, especially Bonnie Light spreads.

In summary, apart from the political tensions surrounding the Nigerian elections, two other major oil producers in Africa will go to the polls soon. Algeria will hold parliamentary elections on May 17th and Angola in September of this year. Both these countries have been working towards establishing a stable political environment but this remains risky. Algeria has been the target of bomb attacks as recent as last month, with more attacks promised by militants. The country has held its last election in 1992, the only democratic election since 1975. Together with Nigeria, these three countries account for 7% of world crude output.
WTI crude

WTI crude price moved in a fairly tight range over the past week. On Wednesday WTI traded at US$62.55 up US$1 from the US$61.55 a barrel a week ago.

Although the US crude stock has been steadily increasing over the past few months, the stock measured in weeks of consumption has been decreasing. However, it is still above the average of the past 10 years.

The WTI/Brent spread is still wide. After a recent pull-back in the spread it started to widen again with current values well below the 250 day average.

As with Brent, the spread between WTI and NY heating oil, as well as the spread between WTI and NY gasoline remains very wide despite little change on crude prices. This widening spread is courtesy of the recent increase in gasoline prices in the US to over US$3 per gallon. Refined products are under pressure after an unprecedented number of refinery accidents and maintenance outages in February and March — combined with drivers’ rising demand for fuel.

In summary, demand pressures remain low on WTI with most of the bottle necks experienced in refined products. Political tension in Nigeria will continue to provide temporary price spikes for crude.
WTI crude: (continued)

Standard Bank WTI market conditions indicator

Sources: Bloomberg, Standard Bank Group

Volatility

Sources: Bloomberg, Standard Bank Group

Forward curve

Sources: Bloomberg, Standard Bank Group

Spread (WTI crude — Brent crude)

Sources: Bloomberg, Standard Bank Group

Spread (WTI crude — NY Gasoline)

Sources: Bloomberg, Standard Bank Group

Spread (WTI crude — NY heating oil)

Sources: Bloomberg, Standard Bank Group
Macroeconomic insight

United States

US data releases remain mixed with both good and bad news for inflation and GDP growth continuing to appear. Retail sales data continue to show a slide in consumer spending. This slide is partly due to higher interest rates, but also due to the high energy prices. In May gas prices in the US increased by 8.7% from April to the highest level ever recorded of US$3.07 per gallon. Real consumption spending also appears to have slowed for the second month in a row indicating that Q2 growth is likely to be lower than Q1 growth.

Despite the high energy prices, inflation pressures on core inflation continue to ease. However, the Fed will not decrease interest rates before the pressures are firmly under control.

We maintain our conviction that the slowdown in the US is unavoidable, but a recession is improbable. We also maintain our position on the US dollar, despite the recent pull back of the euro. Soon the Fed will start decreasing rates and the ECB will be increasing them. This will result in a drastic narrowing of the interest rate spread. We see a US dollar at 1.41 at year end.

Europe and the UK

UK CPI was released on Tuesday. It came out in line with expectations at 2.8% y/y. This was lower than the shock figure of 3.1% for March, which saw the US dollar breaking above $2 against the pound for the first time in more than a decade.

This week GDP data for Q1:07 will be released for the EMU13 countries. The expected growth rate for the region is 2.9% y/y. The significance of this figure is that it is more than twice the 1.3% growth the US recorded during the same period supporting euro strength.

Asia

In China, despite the high economic growth rate, inflation remains well under control with the inflation rate coming in at 3% y/y. This is despite recent appreciation of the yuan against the dollar to slow down growth. However, there is a murmur in the market that asset prices, especially equities, are overvalued in China. The last time, in February of this year, when there was a sharp correction in equity prices most commodities followed suit. But the Chinese equity market remains small relative to the Chinese economy and a correction is unlikely to have long-lasting effects on the economy.

Recent trade data released this week did show that China, the world’s biggest steel exporter, consumer and manufacturer, exported 33% more steel in April than in March. In the past, China has tried to curb exports to boost local consumption of manufactured steel with little success. The Chinese government will introduce a further export license in 83 steel products from May 20 to curb exports further.

Apart from steel Chinese data indicated that China imported 61% more copper and copper products in the first four months of the year compared to the same period last year.
Relative performance: Commodity stocks

PGM Stocks (previous 250 week days)

Index

May-06 Jul-06 Sep-06 Nov-06 Jan-07 Mar-07

Sources: Bloomberg, Standard Bank Group

Gold stocks (previous 250 week days)

Index

May-06 Jul-06 Sep-06 Nov-06 Jan-07 Mar-07

Sources: Bloomberg, Standard Bank Group

Oil and energy stocks (previous 250 week days)

Index

May-06 Jul-06 Sep-06 Nov-06 Jan-07 Mar-07

Sources: Bloomberg, Standard Bank Group

Aluminum related stocks (previous 250 week days)

Index

May-06 Jul-06 Sep-06 Nov-06 Jan-07 Mar-07

Sources: Bloomberg, Standard Bank Group

Diversified mining stocks (previous 250 week days)

Index

May-06 Jul-06 Sep-06 Nov-06 Jan-07 Mar-07

Sources: Bloomberg, Standard Bank Group

Commodities — performance (previous 250 week days)

Index

May-06 Jul-06 Sep-06 Nov-06 Jan-07 Mar-07

Sources: Bloomberg, Standard Bank Group
**Additional Information/Figure explanations:**

**Standard Bank market conditions indicator:**

It’s a short to medium-term indicator that utilises a combination of short, medium and long run factors relevant to the commodity at hand to determine a fundamental price. Based on historical deviations of the actual price from the calculated fundamental price, the probability of further deviations is determined. The indicators show when a commodity is over valued, or under valued and due for a correction based on historical probabilities. When the figure shows neither overvalued or undervalued, it implies the commodity is fairly priced based on the estimated fundamental price and prevailing market conditions. The indicator is updated during the first week of each month. The indicator should not be used in isolation.

**LME stock vs. Cash price:**

The figure shows the correlation over time between LME stock and the cash price of the metal. In general, one would expect a negative correlation, i.e. if LME stock goes up, the cash price goes down. The closer to the number is positive or negative one, the stronger the correlation. Due to market noise this relationship breaks down from time to time. The figure will highlight temporary breakdowns in the LME stock/cash price movements. In general, the figure then indicates possible price corrections to come.

**LME stock on warrant:**

A warrant allows the carrier of the warrant to physical take delivery of the metal from an LME warehouse. A high percentage of total stock on warrant signals high turnover or metal availability to the market. When the percent of stock on warrant declines (and the percent of cancelled warrants increase), it signals less metal availability in the market. In general, a change in stock on warrant will result in an increase in price volatility.

**Historical volatility:**

Where historical volatility is calculated, the standard deviation is calculated using a 10 trading day window is used. An annualisation factor of 260 days is used.

**Car and truck sales:**

The following manufacturers are included in the figures used in this report: US — Ford, Chrysler, GM; Europe — VW, Mercedes, BMW, Volvo; Japan — Honda, Toyota, Nissan, Mazda; South Korea — Hyundai, Kia. In Europe, the diesel fuelled car penetration is 50%, while the US only has a 4% diesel-fuelled car penetration. In general trucks are powered by diesel engines.

**5% Historic upper/lower bound:**

The bounds show the values below and above which 5% of all observations lie based on the sample period under consideration.
# Research Strategy

## Robert J Van Eyden — Global Head

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### CEEMEA

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### South Africa

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