Global | Commodities
Precious Metals

Special Report

Date
29 August 2014

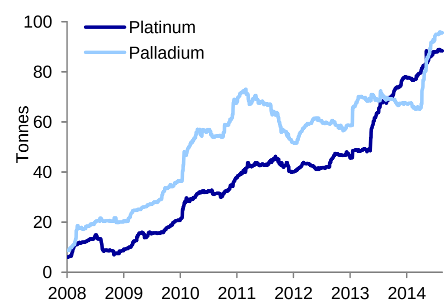
PGMs: Rhodium The Come Back Kid

Grant Sporre
Research Analyst
(+44) 20 754-58170
grant.sporre@db.com

Michael Lewis
Strategist
(+44) 20 754-52166
michael.lewis@db.com

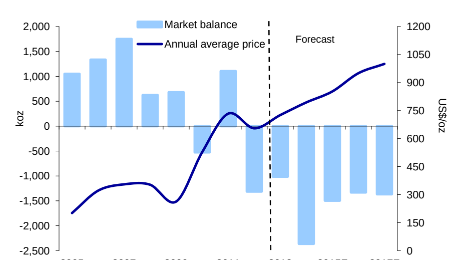
- There has been a significant divergence of performance within the precious metals complex over the past 18 months.
- On the one hand, gold and silver prices have been trading lower while on the other PGM prices have been more robust, with palladium prices hitting their highest levels since February 2001.
- Unlike parts of the energy and industrial metals complex where supply growth has been strong, production growth in the PGM sector has been weak with strike action in South Africa inflicting significant costs to the complex.
- We estimate that platinum palladium and rhodium production in South Africa will be down 29%, 37% and 26% respectively in 2014 compared to our estimates at the start of the year. Moreover, we see a permanent reduction in South African productive capacity following strike action.
- As a result, South African PGM production is unlikely to return to pre-strike levels and consequently we view market deficits in platinum, palladium and rhodium as being larger and more durable than before.
- Within the complex, we view fundamentals as strongest in palladium. However, a more constructive outlook for rhodium is also appearing.
- In terms of palladium demand, the US and China remain the dominant players. In China, PGMs will play a significant role in reducing the country's pollution problem. The combination of low car penetration compared to other more developed markets and increasing emissions standards will mean that China will be the largest single source of increased autocat demand for the PGMs.
- The increasing penetration of gasoline engines in Europe would also suggest that upside risks for palladium demand may even exist in the event of a European recovery.
- Whilst the medium term outlook for palladium remains robust, we think the risks of a price correction, greater than the "usual" USD100/oz magnitude is rising. Investor net longs are at a near-term high, and we have seen the first signs of palladium outflows of the ETF. We think the catalyst to a sharp liquidation in net longs on the Nymex and further ETF outflows could potentially be weaker-than-anticipated China vehicle sales growth, especially given the tough comps in H2.
- There is also an increasingly strong fundamental picture emerging for rhodium. Not only is rhodium the most effective of the PGM group at treating NOx emissions it is also benefiting from the rapid gains in palladium prices, which will increase the appeal of rhodium on a price comparison basis. While rhodium inventories are high currently, they are forecast to fall modestly over time and hit critically low levels by 2016.
- While rhodium ETFs have enjoyed fresh inflows, the scale of holdings relative to market size and above ground inventories is relatively low compared to the other PGMs. Consequently, we see room for more inflows into rhodium ETFs, particularly if the scale of inflows into platinum and palladium markets is a reliable guide.

Figure 1: Holdings in platinum and palladium ETFs



Source: Bloomberg Finance LP

Figure 2: Palladium market balance



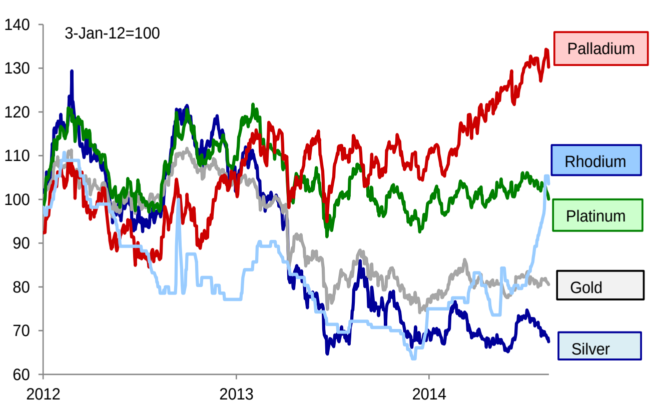
Sources: Deutsche Bank, Johnson Matthey, Bloomberg Finance LP

In this article, we explore prospects for the PGM sector. Unlike gold and silver which have been contaminated by their close ties to the US dollar, the S&P500 and US real interest rates, PGM prices have historically exhibited a low correlation to financial markets and instead been more focused on internal supply-demand fundamentals and investment flows. This appears to be substantiated in the relatively mixed performance across the sector over the past 18 months with gold and silver being dragged lower while the performance of the PGM sector has been more robust with palladium prices now at their highest levels since February 2001, Figure 3.

One of the distinctive features of the PGM sector versus other parts of the commodities complex is the relatively subdued production growth outlook. Figure 3 examines supply growth across a number of metals markets from 2010 to 2016. It reveals that despite modest supply growth over the next few years, production levels for platinum, palladium and rhodium will be close to or below the levels that existed at the start of the decade. In contrast, supply growth across the industrial metals complex is significantly stronger with production of aluminium, copper and lead over 20% higher by 2016 compared to 2010 levels.

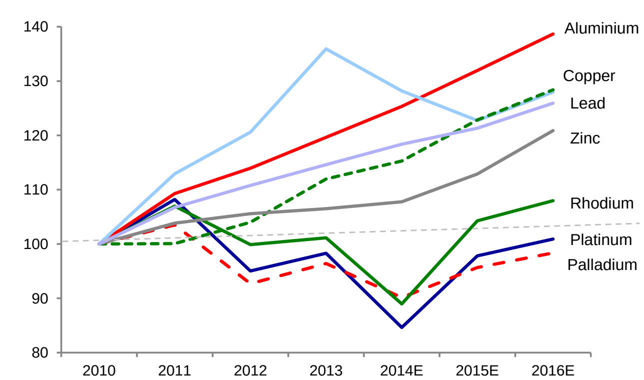
The lackluster outlook for supply growth across the PGM sector has been aggravated by strike action in South Africa. The PGM sector has significant exposure to South Africa with around 56% of world production of platinum and rhodium occurring in the country. Even though South Africa's share of palladium production is relatively low at 27%, if we include Russian production this figure rises to 62% of global supply. While an embargo on Russian commodity exports appears a low-probability event, events in Ukraine may have also played a role in increasing market concern towards trade-related supply disruptions.

Figure 3: Precious metals performance since 2012



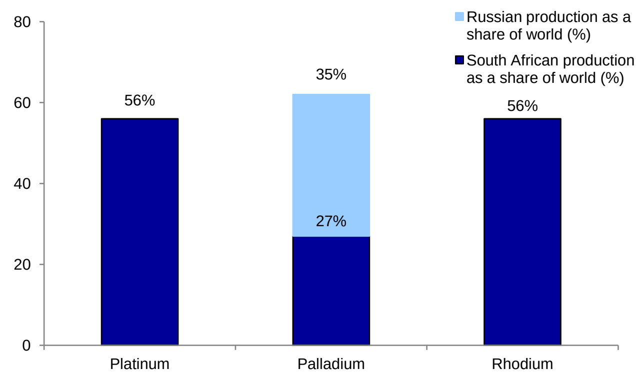
Sources: Deutsche Bank, Bloomberg Finance LP

Figure 4: Supply growth across the metals sector



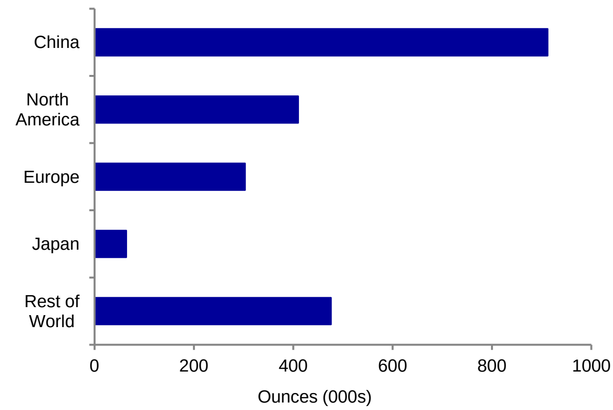
Sources: Deutsche Bank, Wood MacKenzie

Figure 5: PGM exposure to South Africa



Sources: Deutsche Bank

Figure 6: Palladium demand growth linked to autocats by region from 2013 to 2020



Sources: Deutsche Bank, JMAT, Bloomberg Finance LP

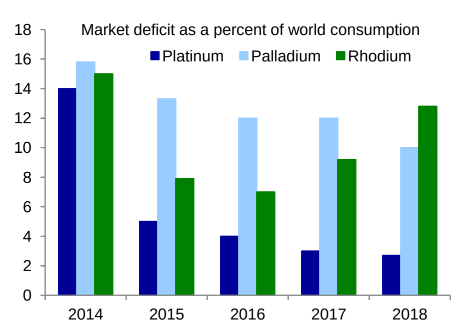
Alongside subdued supply growth, the PGM sector enjoys strong demand side trends. Indeed palladium and rhodium are closely tied to the fast growing gasoline markets of the US and China. Increased gasoline penetration in Europe will also skew upside risks to palladium demand in the event of an eventual recovery in European demand. However, of the group, China is set to be the major driver of tightening physical fundamentals across the PGM sector and specifically palladium and rhodium. This will be driven by efforts to balance the growth in car ownership with combating the country's pollution problem.

We estimate that the combination of low car penetration compared to other more developed markets and increasing emission standards will mean China will be the largest single source of increased autocat demand for palladium, rhodium and even platinum between now and the end of the decade. Figure 6 shows that between 2013 and 2020 global palladium demand growth for autocats will rise 2,166,000 ounces of which China will represent just under 1,000,000 or 44%. The equivalent figures for platinum and rhodium are 23% and 30% respectively.

While inventories are high across the PGM complex, market deficits over the coming years alongside increased ETF inflows will push inventory to consumption ratios down to critically low levels. Last month in the Commodities Quarterly report we attempted to establish which markets would experience significant inventory drawdown in response to market deficits and at what point inventories would hit levels that could trigger a more rapid appreciation in PGM prices. We showed that platinum inventories would only fall to 2007 levels by the end of the decade, but depending on ETF flows and how tightly this metal is held, the physical squeeze could occur as soon as next year. For palladium, inventories were estimated to drop to 2001 levels by 2018, but if ETF flows continued then physical tightness could start to take hold in 2016. A similar timeframe was seen for the rhodium market.

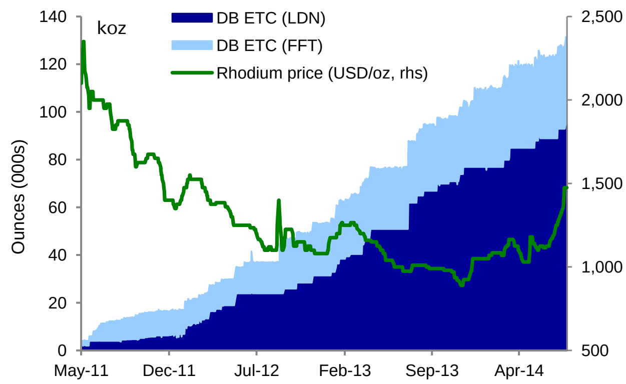
However, we find that ETF flows have been relatively modest into the rhodium market up until now. Indeed compared to market size and above ground inventories, there remains considerable room for more inflows if the platinum and palladium markets are a guide, Figure 9. Indeed the rapid price gains in palladium will increase the attractiveness of rhodium added to which rhodium is the most effective PGM at treating NOx emissions.

Figure 7: Market deficits relative to global demand



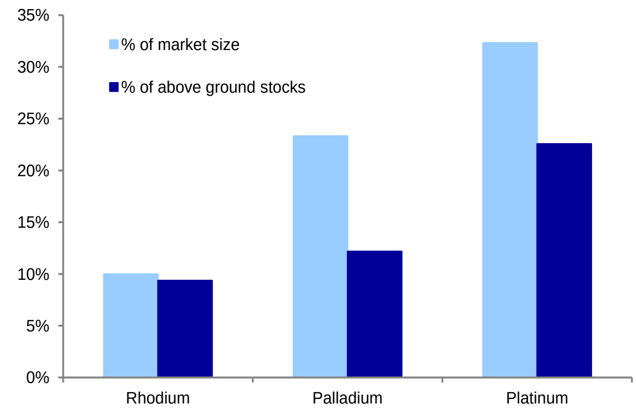
Sources: Deutsche Bank

Figure 8: Steady inflows into rhodium ETFs



Sources: Deutsche Bank, JMAT, SFA Oxford, Bloomberg Finance LP

Figure 9: The size of PGM ETFs relative to market size and above ground stocks

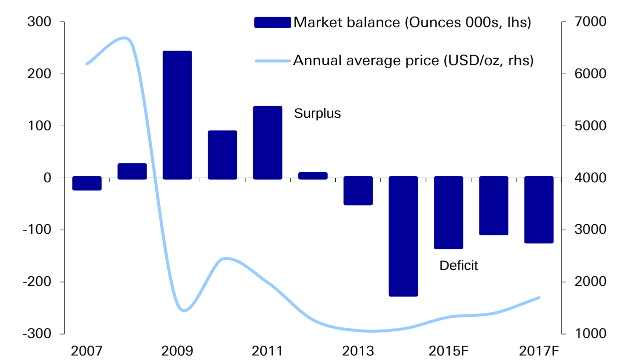


Sources: Deutsche Bank, JMAT, SFA Oxford, Bloomberg Finance LP

Short-term risks in palladium are building

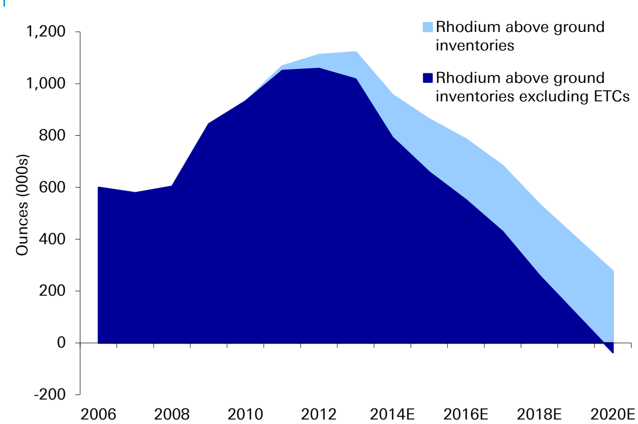
Relative positioning risks and potential portfolio adjustments may also be constructive towards rhodium but short term problematic for palladium. Indeed whilst we continue to believe in the long-term fundamentals of palladium, the market is prone to price corrections of around USD100/oz, or even USD200/oz as was the case in September 2011. Corrections of such magnitude have typically been driven by a sharp reduction in net speculative length on Nymex. Larger sell-offs, in order of USD200/oz have historically been a combination of both a reduction in speculative length and an outflows from palladium ETFs.

Figure 10: Rhodium supply-demand balance



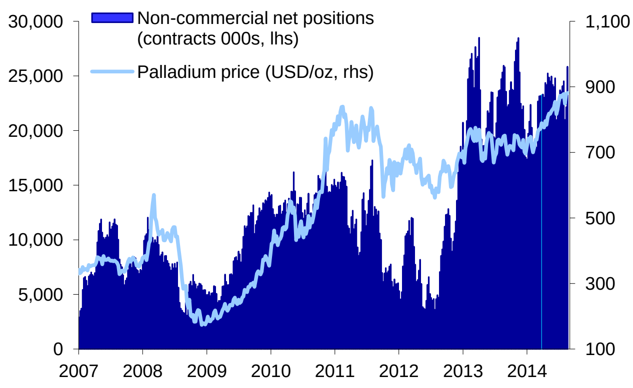
Sources: Deutsche Bank, LMAT, SFA Oxford, Bloomberg Finance LP

Figure 11: Autocats demand will drive the drawdown in rhodium inventories



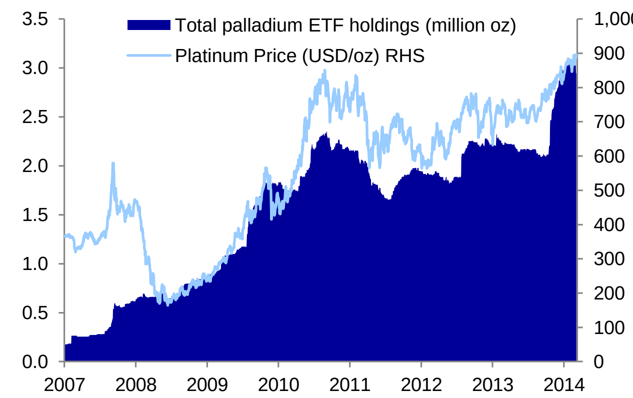
Sources: Deutsche Bank, Thomson Reuters, GFMS

Figure 12: Non commercial net palladium positions on the Nymex



Source: Reuters, CFTC, Deutsche Bank

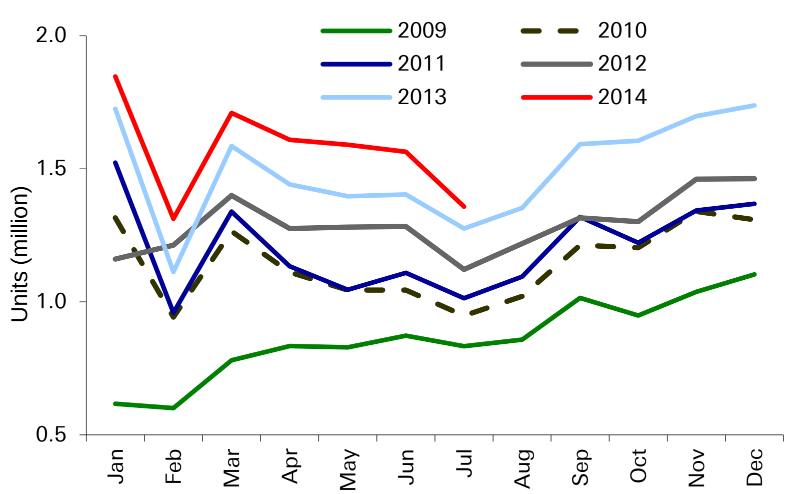
Figure 13: Total palladium ETF holdings (Moz)



Source: Bloomberg Finance LP, Deutsche Bank

One of the catalysts that precipitated the fall in palladium prices was the deceleration in Chinese auto sales in the second half of 2011, which was particularly weak on a year on year basis given strong sales figures in the same period a year earlier. Chinese auto sales have been very strong in the first half 2014, up 10.6% versus last year. Whilst we do not anticipate Chinese vehicle sales to correct sharply during the second half of this year, we are going to experience a period of tough comparisons compared to last year. Even if sales remain robust, we are likely to see only marginal growth in sales compared to 2013, Figure 14. The combination of long investor positioning, a period of strong ETF inflows and the potential of optically weaker Chinese vehicle sales raises the risk of a price correction, possibly more than the "usual" USD100/oz magnitude, is therefore a potential hazard.

Figure 14: Chinese passenger vehicle sales (monthly)



Source: CAAM, Deutsche Bank

Conclusion

Unlike gold and silver, the PGM complex has historically displayed a low correlation to US interest rates, the S&P500 and the US dollar. We believe this will prove beneficial to this part of the precious metals complex since gold and silver are likely to have contend with a turn higher in US real interest rates and advances in the US dollar over the coming year.

More importantly, physical fundamentals across the PGM sector are set to tighten further over coming years as supply growth in South Africa disappoints, and as the fast growing car markets in China and the US provide strong demand outlook for autocats in both markets. We expect this will be particularly beneficial to palladium and rhodium where we see market deficits persisting for longer.

Inflows into PGM ETFs also provide the potential to tighten physical fundamentals still further. Indeed on our assumptions inventories for platinum, palladium and rhodium are set to hit critically low levels from as early as next year and into 2016. Of the group, we would view rhodium as underpriced and where ETF holdings are small when measured versus market size and versus above ground inventories.

Figure 15: DB precious metal price forecasts

	2013	2014	2015	2016	2017	Expected %age change from current spot to 2017
Gold	1413	1258	1163	1150	1125	-13%
Silver	24	20	20	19	19	-4%
Platinum	1487	1467	1575	1650	1750	22%
Palladium	726	793	853	950	1000	11%
Rhodium	1067	1102	1325	1400	1700	28%

Source: Deutsche Bank (Forecasts published on 2 July 2014 in the Commodities Quarterly report)

Grant Sporre, (44) 20 754 58170
grant.sporre@db.com

Michael Lewis, (44) 20 754 52166
michael.lewis@db.com

Appendix 1

Important Disclosures

Additional information available upon request

For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at http://gm.db.com/ger/disclosure/DisclosureDirectory.eqsr

Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s). In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Grant Sporre/Michael Lewis

Regulatory Disclosures

1. Important Additional Conflict Disclosures

Aside from within this report, important conflict disclosures can also be found at https://gm.db.com/equities under the "Disclosures Lookup" and "Legal" tabs. Investors are strongly encouraged to review this information before investing.

2. Short-Term Trade Ideas

Deutsche Bank equity research analysts sometimes have shorter-term trade ideas (known as SOLAR ideas) that are consistent or inconsistent with Deutsche Bank's existing longer term ratings. These trade ideas can be found at the SOLAR link at http://gm.db.com.

3. Country-Specific Disclosures

Australia and New Zealand: This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act respectively.
Brazil: The views expressed above accurately reflect personal views of the authors about the subject company(ies) and its(their) securities, including in relation to Deutsche Bank. The compensation of the equity research analyst(s) is indirectly affected by revenues deriving from the business and financial transactions of Deutsche Bank. In cases where at least one Brazil based analyst (identified by a phone number starting with +55 country code) has taken part in the preparation of this research report, the Brazil based analyst whose name appears first assumes primary responsibility for its content from a Brazilian regulatory perspective and for its compliance with CVM Instruction # 483.
EU countries: Disclosures relating to our obligations under MiFiD can be found at http://www.globalmarkets.db.com/riskdisclosures.
Japan: Disclosures under the Financial Instruments and Exchange Law: Company name - Deutsche Securities Inc. Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, Type II Financial Instruments Firms Association, The Financial Futures Association of Japan, Japan Investment Advisers Association. This report is not meant to solicit the purchase of specific financial instruments or related services. We may charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. "Moody's", "Standard & Poor's", and "Fitch" mentioned in this report are not registered credit rating agencies in Japan unless "Japan" or "Nippon" is specifically designated in the name of the entity.
Malaysia: Deutsche Bank AG and/or its affiliate(s) may maintain positions in the securities referred to herein and may from time to time offer those securities for purchase or may have an interest to purchase such securities. Deutsche Bank may engage in transactions in a manner inconsistent with the views discussed herein.
Qatar: Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may only undertake the financial services activities that fall within the scope of its existing QFCRA license. Principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.
Russia: This information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.
Kingdom of Saudi Arabia: Deutsche Securities Saudi Arabia LLC Company, (registered no. 07073-37) is regulated by the Capital Market Authority. Deutsche Securities Saudi Arabia may only undertake the financial services activities that fall within the scope of its existing CMA license. Principal place of business in Saudi Arabia: King Fahad Road, Al Olaya District, P.O. Box 301809, Faisaliah Tower - 17th Floor, 11372 Riyadh, Saudi Arabia.
United Arab Emirates: Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may only undertake the financial services activities that fall within the scope of its existing DFSA license. Principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Professional Clients, as defined by the Dubai Financial Services Authority.

Risks to Fixed Income Positions

Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor that is long fixed rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or the liquidation of positions), and settlement issues related to local clearing houses are also important risk factors to be considered. The sensitivity of fixed income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates - these are common in emerging markets. It is important to note that the index fixings may -- by construction -- lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. It is also important to acknowledge that funding in a currency that differs from the currency in which the coupons to be received are denominated carries FX risk. Naturally, options on swaps (swaptions) also bear the risks typical to options in addition to the risks related to rates movements.

David Folkerts-Landau
Group Chief Economist
Member of the Group Executive Committee

Guy Ashton
Global Chief Operating Officer
Research

Marcel Cassard
Global Head
FICC Research & Global Macro Economics

Richard Smith and Steve Pollard
Co-Global Heads
Equity Research

Michael Spencer
Regional Head
Asia Pacific Research

Ralf Hoffmann
Regional Head
Deutsche Bank Research, Germany

Andreas Neubauer
Regional Head
Equity Research, Germany

Steve Pollard
Regional Head
Americas Research

International Locations

Deutsche Bank AG
Deutsche Bank Place
Level 16
Corner of Hunter & Phillip Streets
Sydney, NSW 2000
Australia
Tel: (61) 2 8258 1234

Deutsche Bank AG
Große Gallusstraße 10-14
60272 Frankfurt am Main
Germany
Tel: (49) 69 910 00

Deutsche Bank AG
Filiale Hongkong
International Commerce Centre,
1 Austin Road West,Kowloon,
Hong Kong
Tel: (852) 2203 8888

Deutsche Securities Inc.
2-11-1 Nagatacho
Sanno Park Tower
Chiyoda-ku, Tokyo 100-6171
Japan
Tel: (81) 3 5156 6770

Deutsche Bank AG London
1 Great Winchester Street
London EC2N 2EQ
United Kingdom
Tel: (44) 20 7545 8000

Deutsche Bank Securities Inc.
60 Wall Street
New York, NY 10005
United States of America
Tel: (1) 212 250 2500

Global Disclaimer