



Precious Metals Markets - Review and Outlook

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Wolfgang Wrzesniok-Roßbach,
Heraeus Metallhandelsgesellschaft mbH

Heraeus

Content

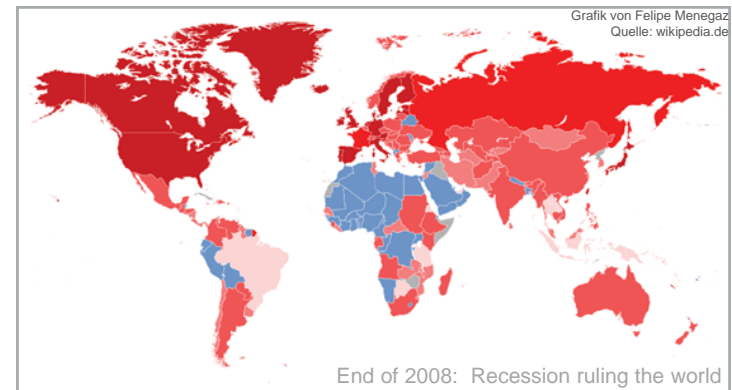
- **Precious Metal Prices: The Sky is no Limit?**
- **Pushed into background? Questions of Supply and Demand**
 - Gold
 - Platinum
 - Palladium
 - Minor Platinum-metals
- **About Ohhhs and Oh-Yeahs – The Macro Aspects**
 - Politics and Society
 - Resources Production
 - Investors
 - Technology and Innovation
- **Precious Metals: Quo vadis?**

Again no end in sight?
Development of Precious
Metals Prices in 2009

What affected Precious Metals Prices in 2009?

■ Precious Metals Prices early December 2008 und One Year later:

▪ Gold	811	1,226 (3 rd Dec.)
▪ Silver	10,25	19.43
▪ Platinum	850	1,506
▪ Palladium	190	389
▪ Rhodium	975	2.800
▪ Dollar/Oil	1,2925/52,50	1,5140/77,50



- **November 2008: Crisis's news accumulating fast. Banks were just saved, the automotive industry faced a dramatic collapse. Companies pull emergency brakes and stop production, sell inventory. Reduced working-hours introduced across the board.**

What affected Precious Metals Prices in 2009?

- **Politicians and central banks were not just sitting around: State-backed stimulation programs were introduced at a rapid pace, interest rates slashed drastically, safety measures for banks and insurance companies arranged.**
- **Thousand Billion dollars were made available within a few months to save the global economy from a complete collapse.**
- **The question is: who will bear the brunt one day of paying back these debts?**

Stimulation Programs (excerpt):

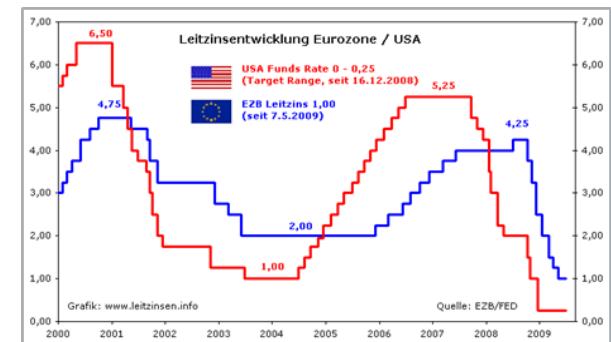
USA, February 2008: 152 bn. USD

USA, January 2009: 787 bn. USD

GER, November 2008: 50 bn. Euro

China, November 2008, 457 bn. Euro

Worldwide 2008/2009: 2.000 bn. USD



What affected Precious Metals Prices in 2009?

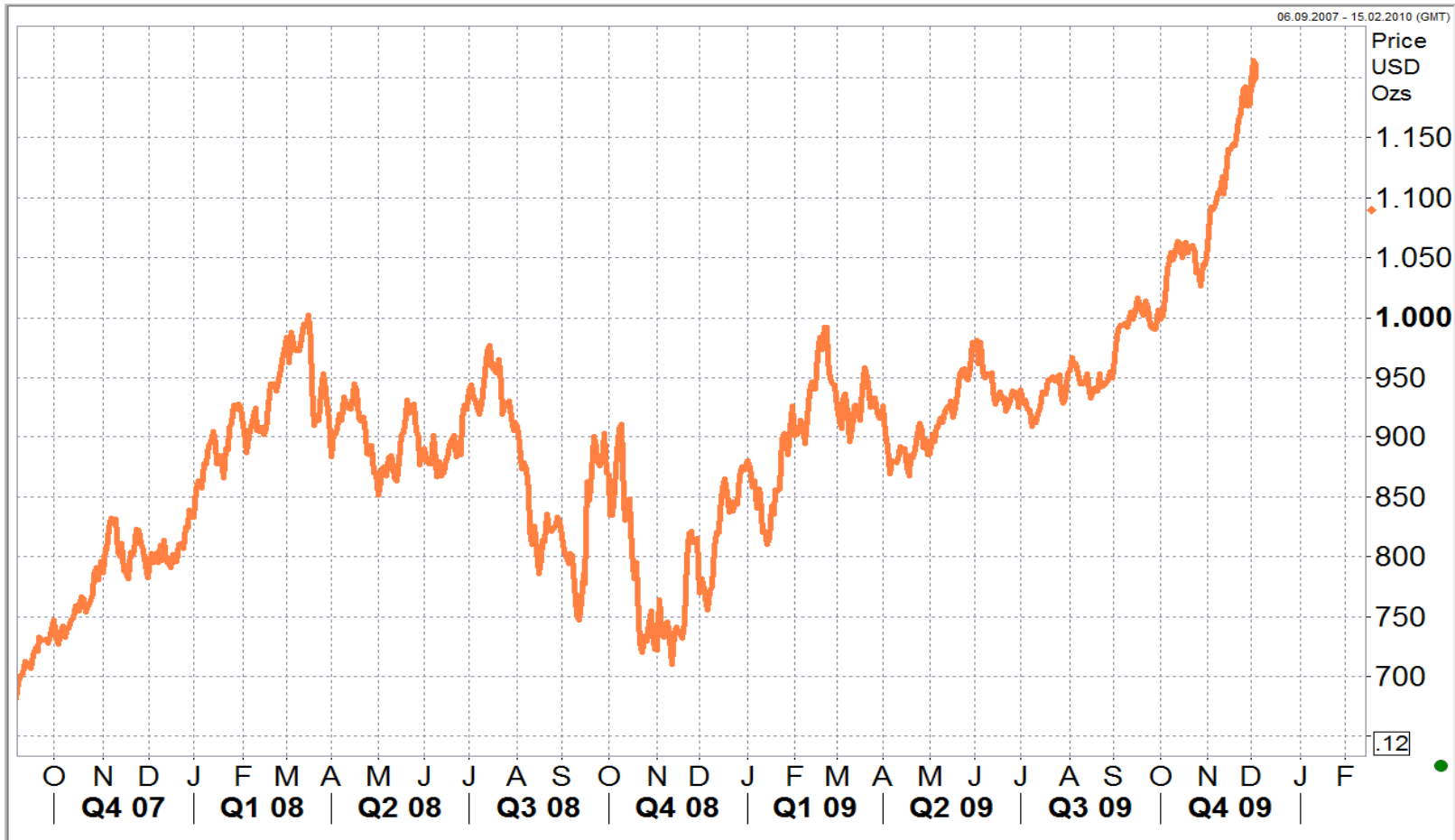
- **One year ago precious metals thus gave a split picture: starting in summer the industrially used platinum-metals and silver went into an unprecedented downward spiral.**
- **Gold fared not much better, though for different reasons and showing a higher volatility in both directions. In the end the yellow metal got support from physical demand which eased some of its pain.**
- **Main reason for the collapse of (white) industrial metals was missing demand, with speculators selling their plus-positions adding to the woes. Between July and November speculative plus-positions of exchange-traded industrial precious metals (incidentally gold too) more than halved.**

And at the End of 2009?

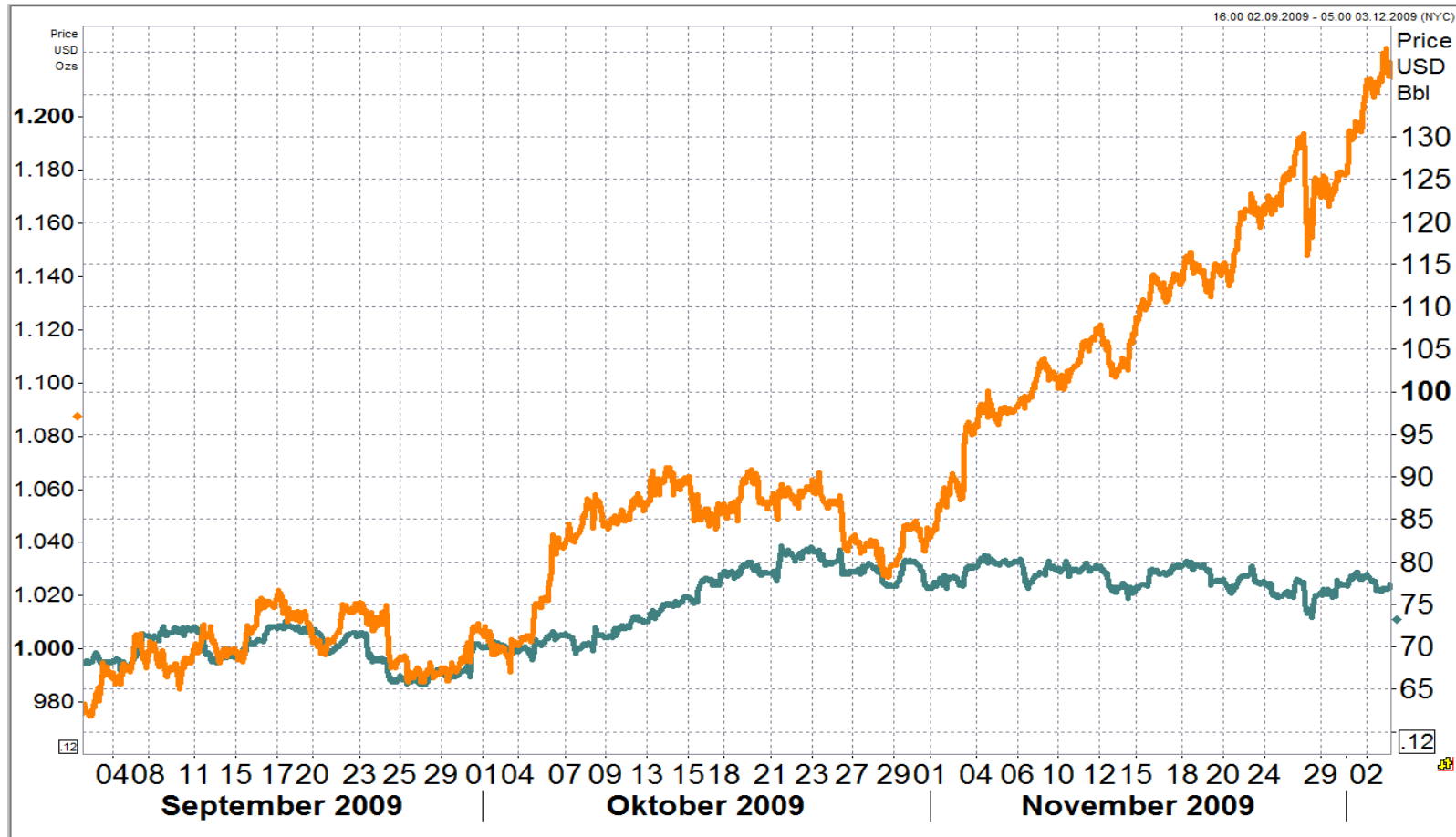
- **One year after reaching their cyclical lows, precious metals present themselves again in a magnificent condition.**
- **Gold even reached at the beginning of December a new all-time high of \$ 1,226. And the “white” metals followed suit. So far they have not reached the exaggerated price levels seen in spring 2008; however, compared to the lows of last autumn, their value rose massively (platinum +95%, silver +113%, rhodium +138% and palladium +148%*).**
- **There were different reasons for the gains. In the case of gold it was mostly buying interest by investors and speculators and buybacks of hedging positions by the producers; in case of the platinum group metals and silver it was the increase in industrial demand.**

*Basis: high seen at the beginning of December

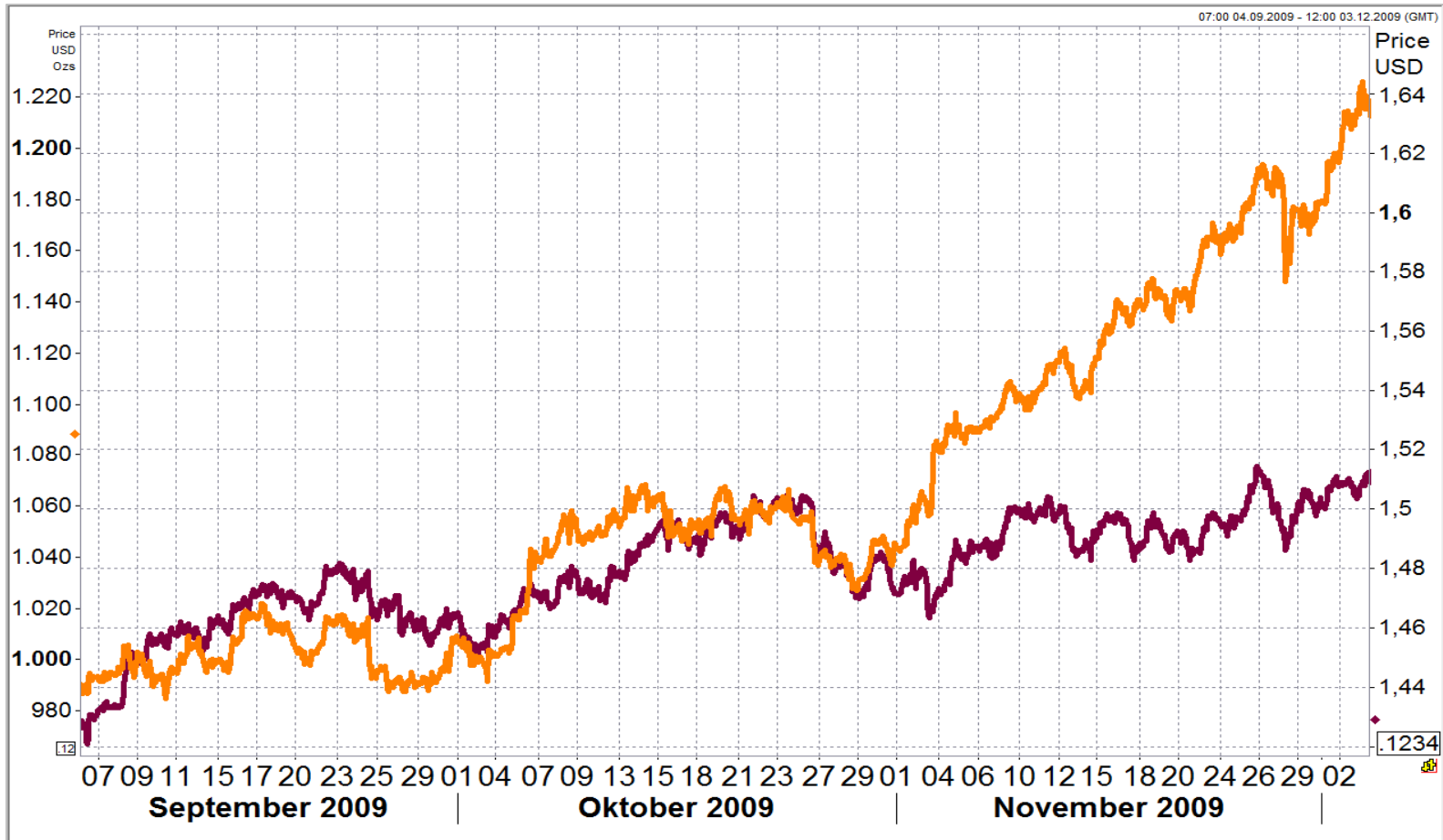
Gold – Roller-coaster Ride and a new Record



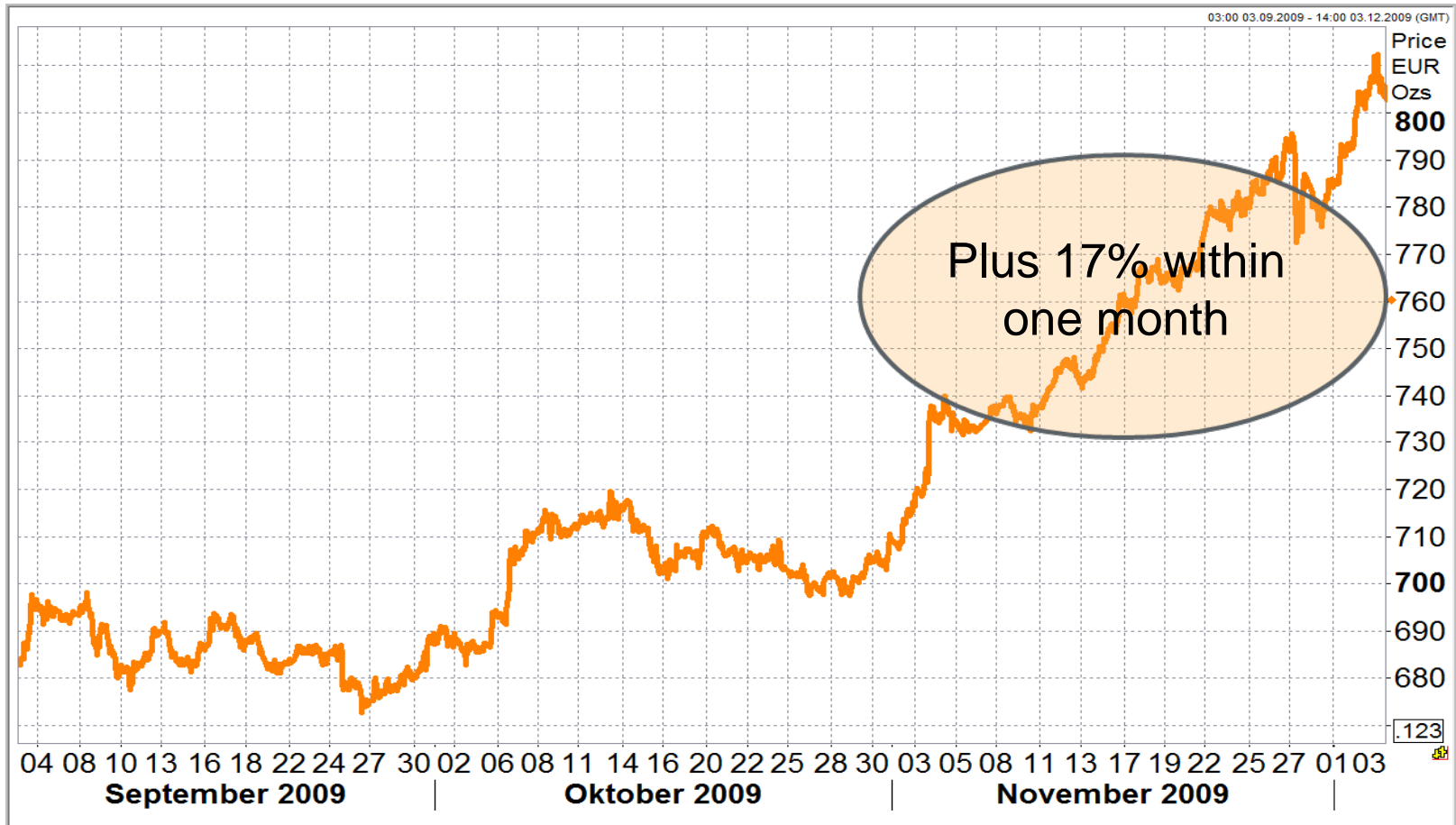
Q3: No longer Hand in Hand: Gold and Oil price



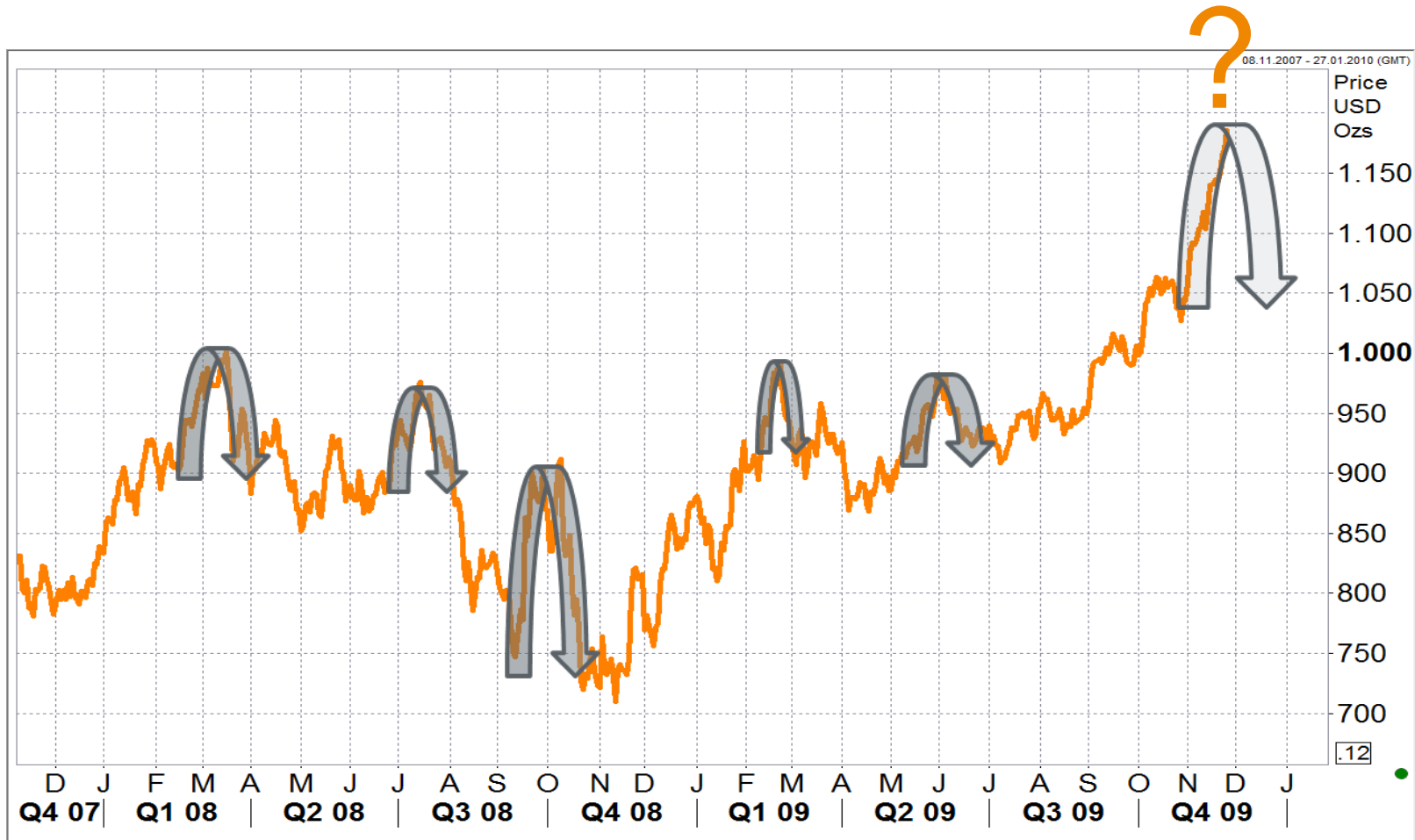
Q3: No longer Hand in Hand: Gold and the Dollar



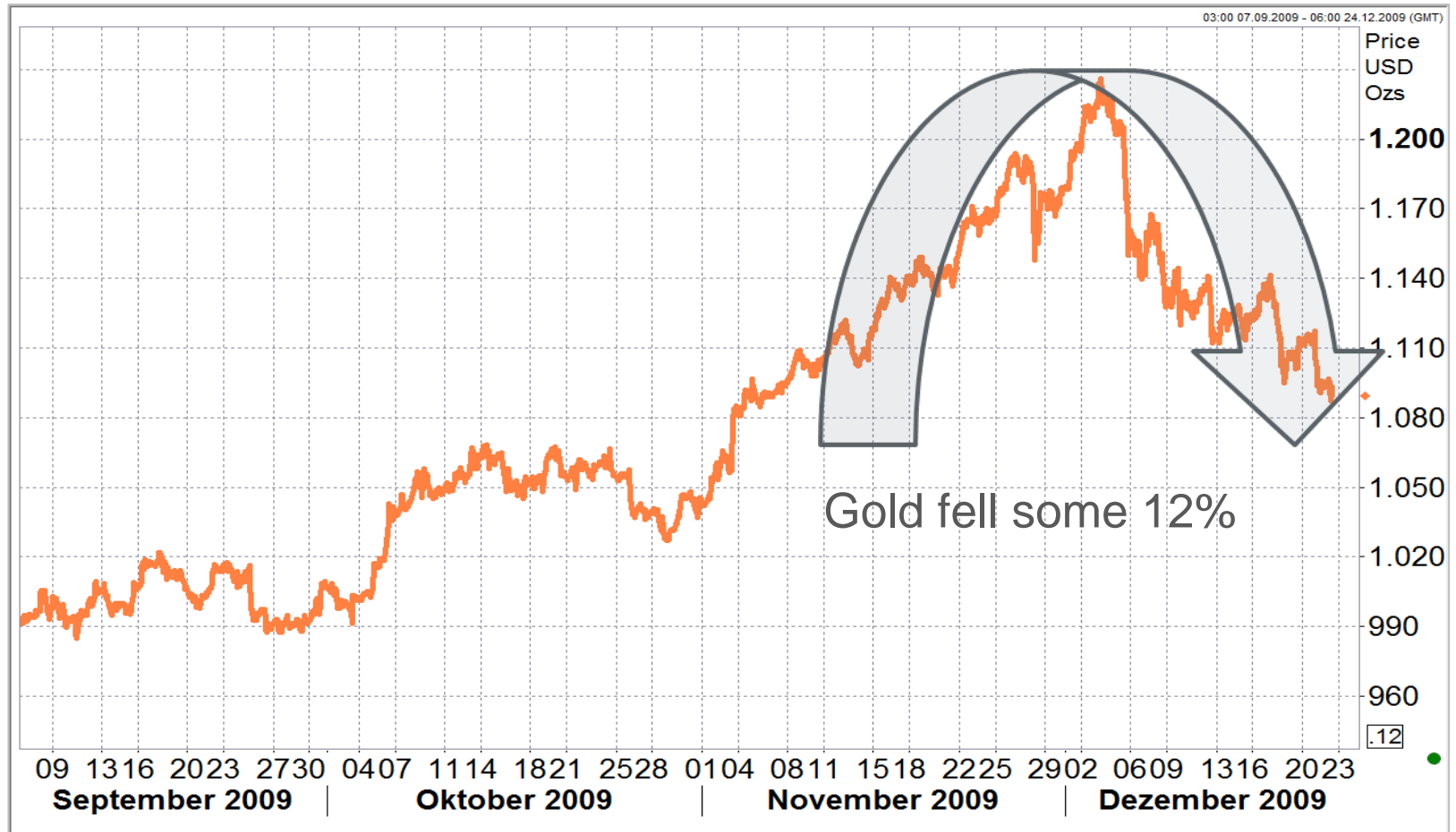
LIFTOFF ! Gold Price in Euro rises too ...



Like so often before – Just another Bubble?

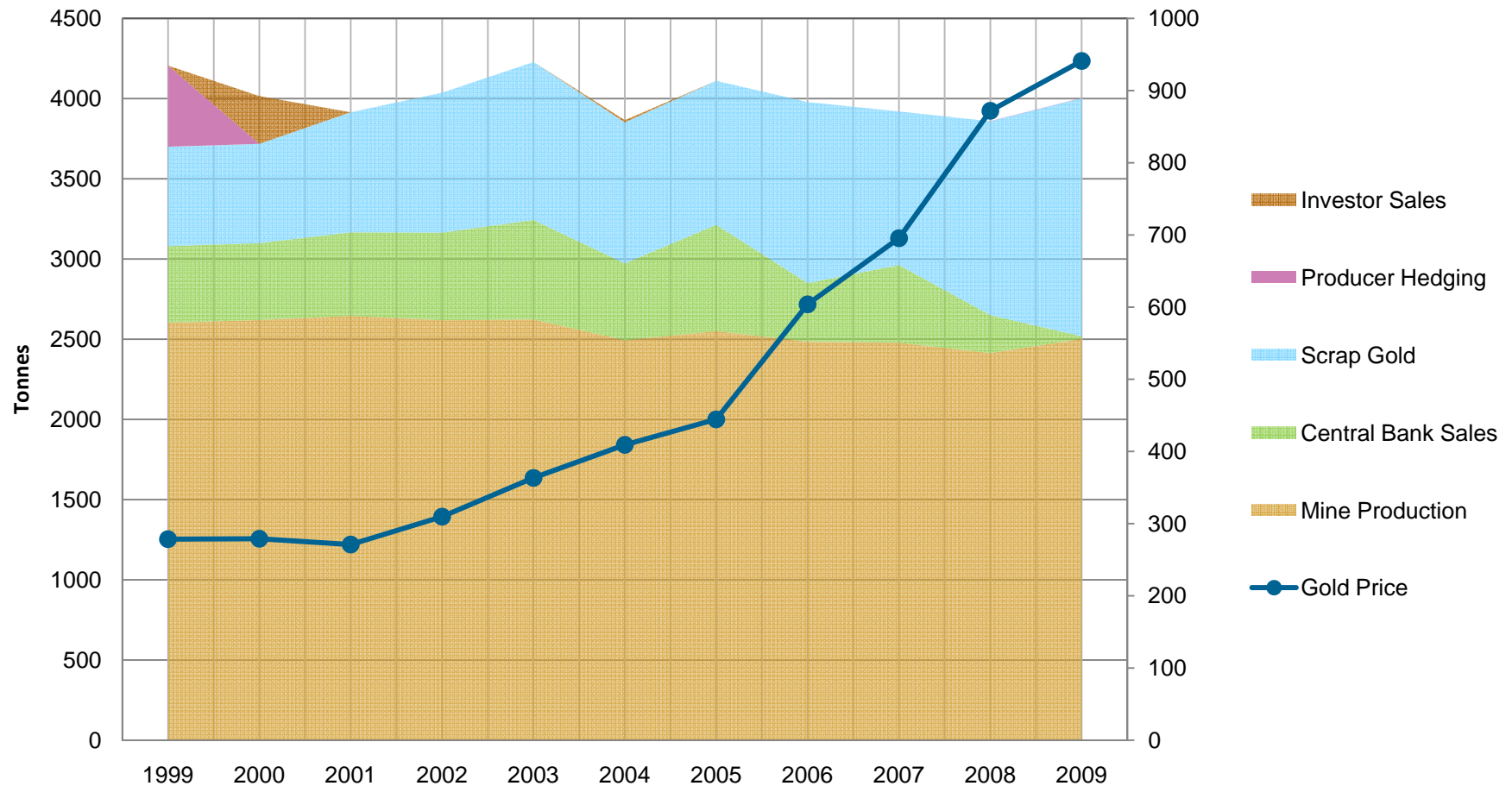


December: It was bound to happen...

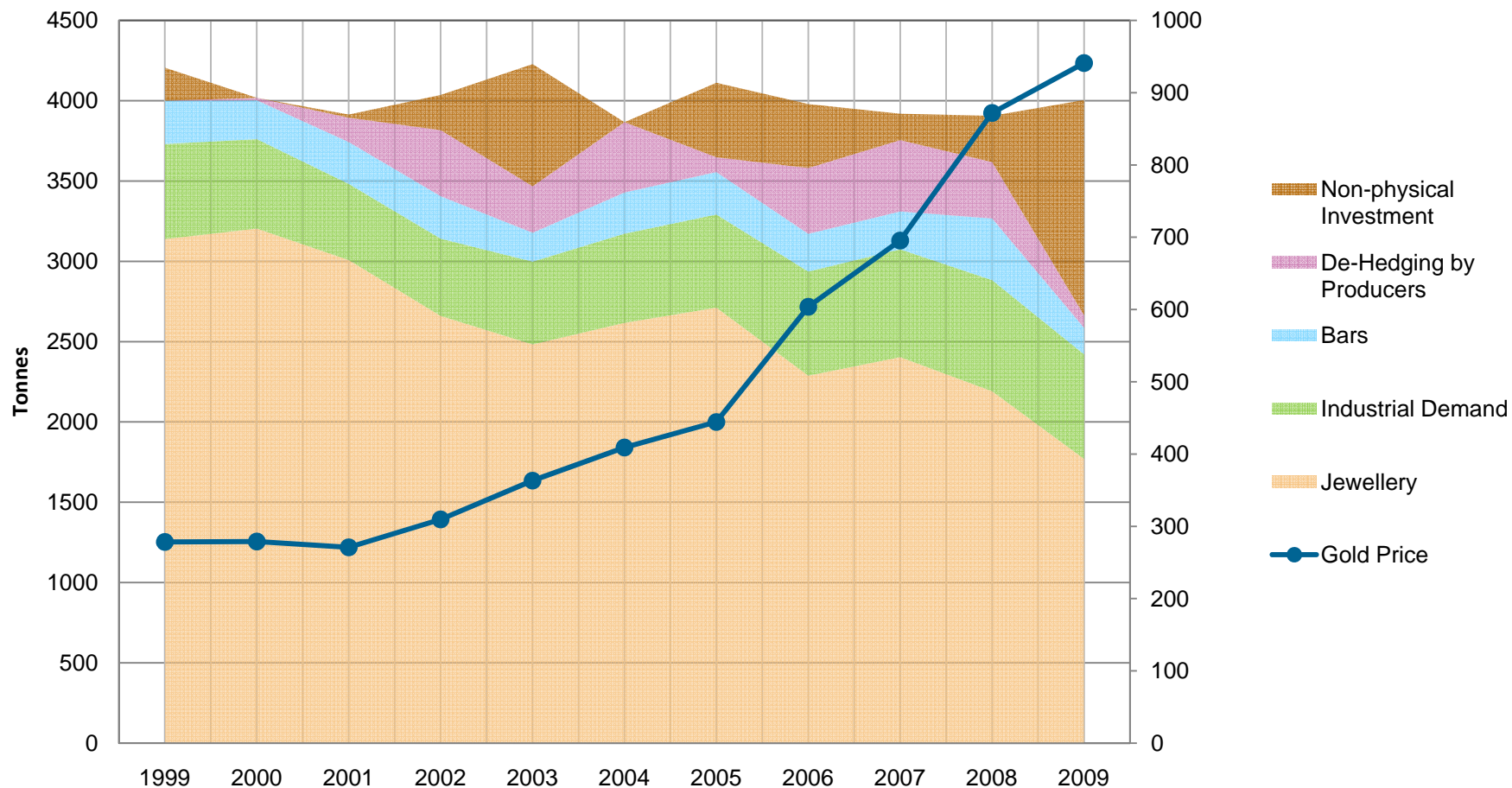


Pushed into background /
Questions of Supply and
Demand

Gold – The Supply Side



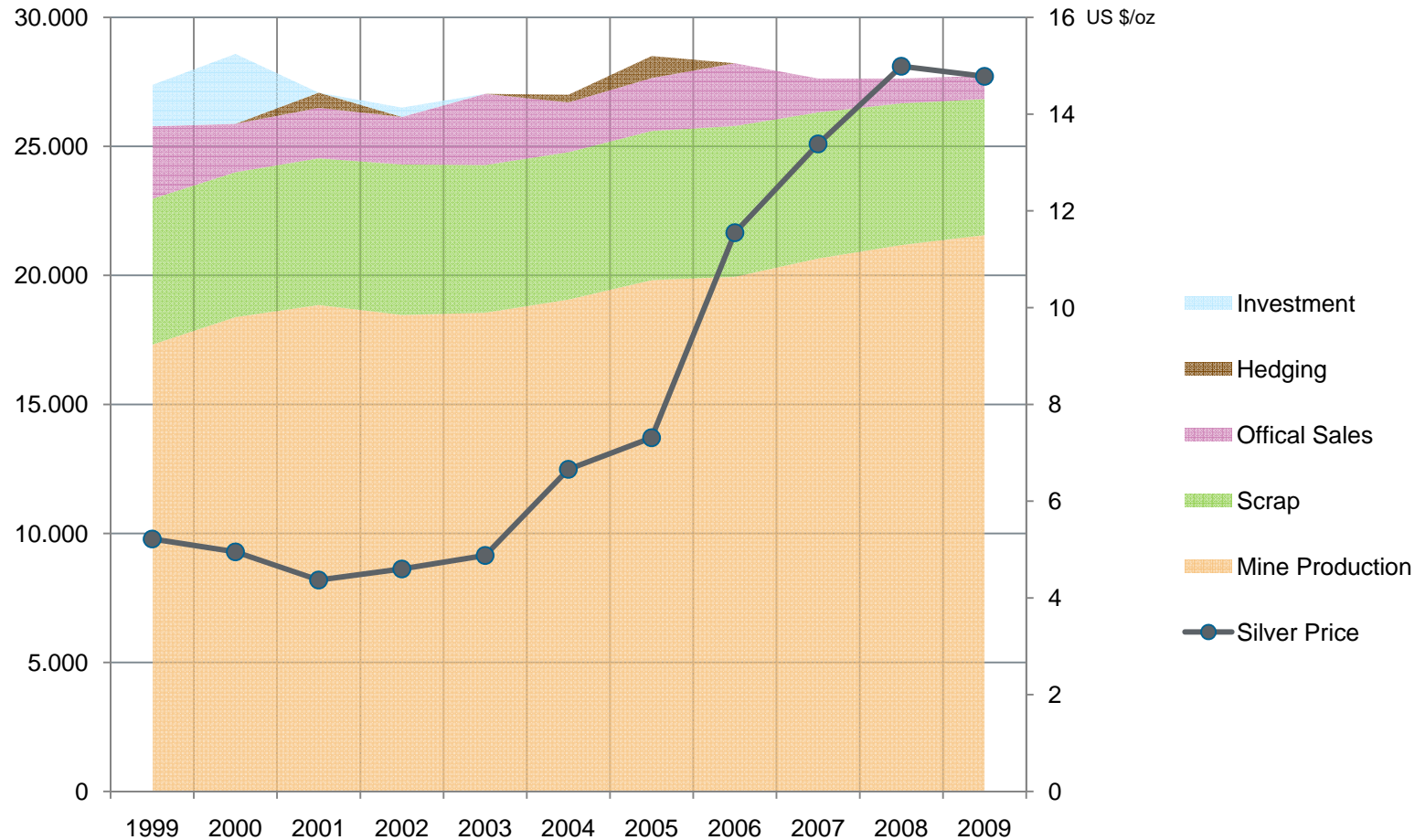
Gold – Demand



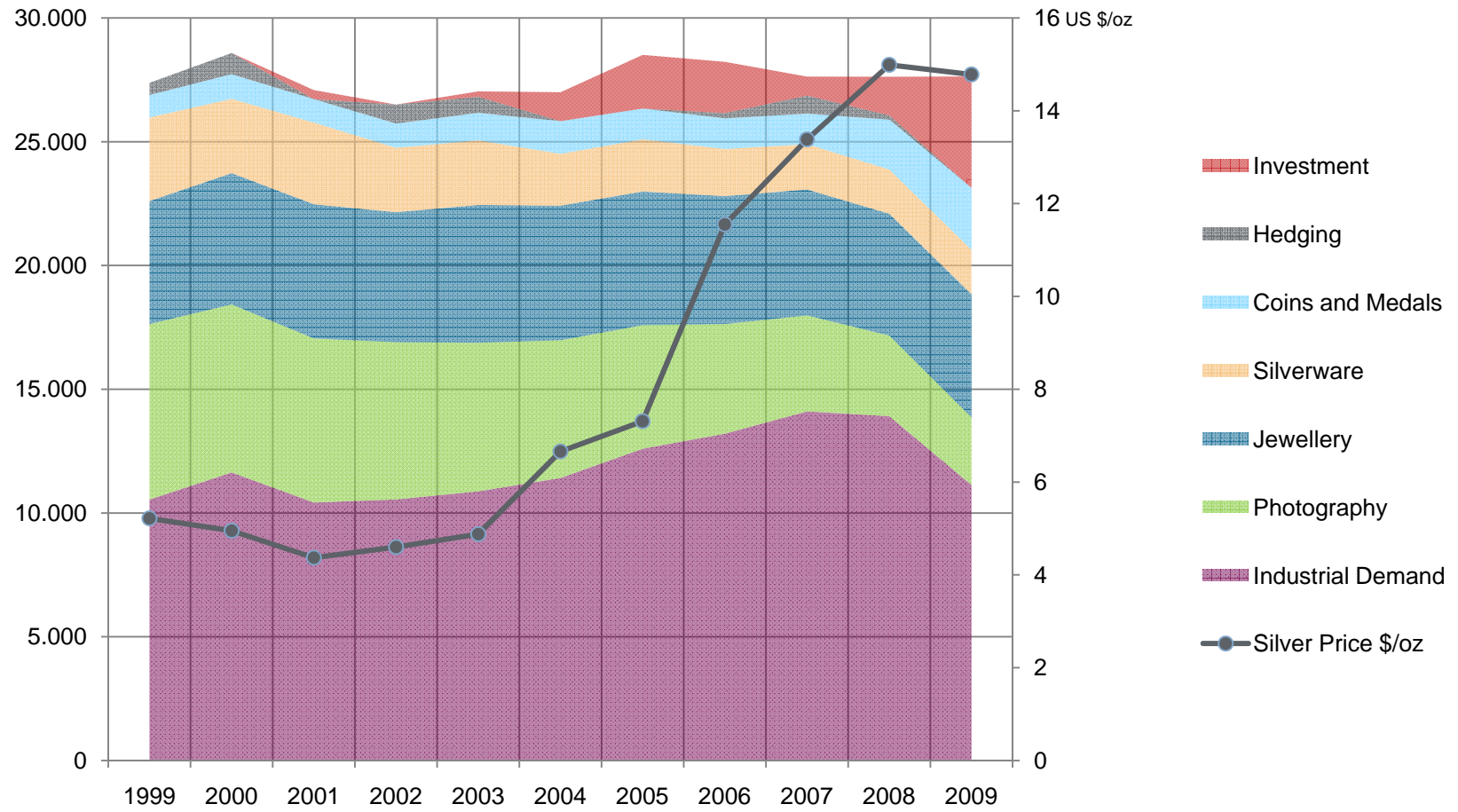
Gold – A look back into 2009

- **New mine production goes up first time since 2005; an estimated plus of almost 4 per cent to just above 2,500 tonnes. Simultaneously mining companies continue to de-hedge and reduce their existing forward-sales exposure. However in the first quarter of 2009 only 31 tonnes were bought back; in 2008 the de-hedging volume was 358 tonnes.**
- **The IMF starts its long contemplated sale of 403 tonnes; most likely the last of any large sales programmes.**
- **National central banks become buyers: China, India, Russia and Mauritius stock up on their gold reserves.**
- **Investors buy more physical gold: Germany becomes the largest market for coins and bars, globally the ETF demand increases, but mainly thanks to a strong first quarter.**

Silver – The Supply Side



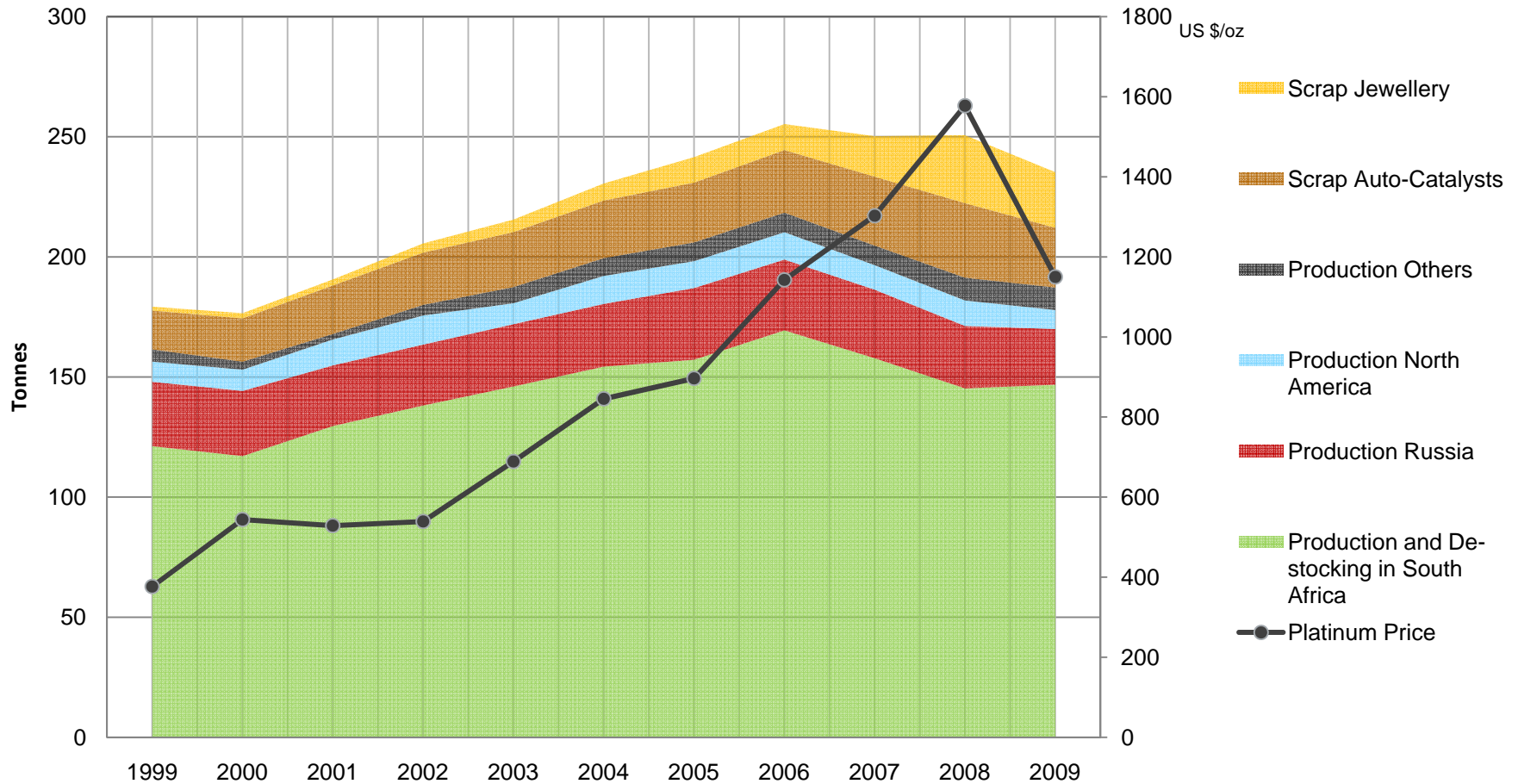
Silver – Demand



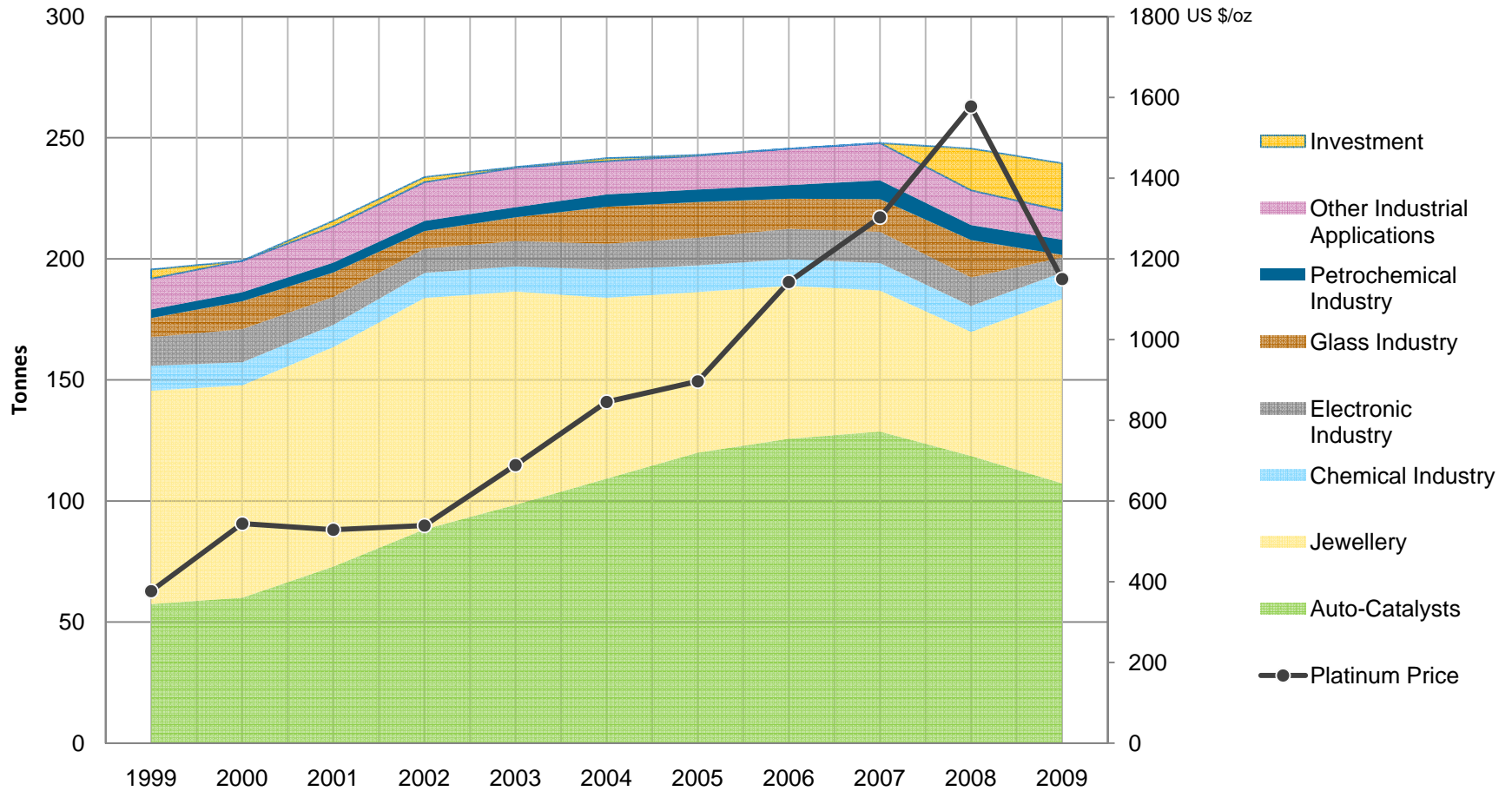
Silver – A look back into 2009

- **North and South America dominate primary silver production with a share of (just under) < 50 per cent; over 70 per cent of silver is mined as a by-product of base-metals and gold.**
- **Costs of production very difficult to quantify; production is by-and-large independent of silver price.**
- **2009 was an exceptional year: The financial and economic crisis lead to a dramatic fall in industrial demand by 11 per cent.**
- **New applications with potentially high consumption are currently being developed (photovoltaic, wound care).**

Platinum – The Supply Side



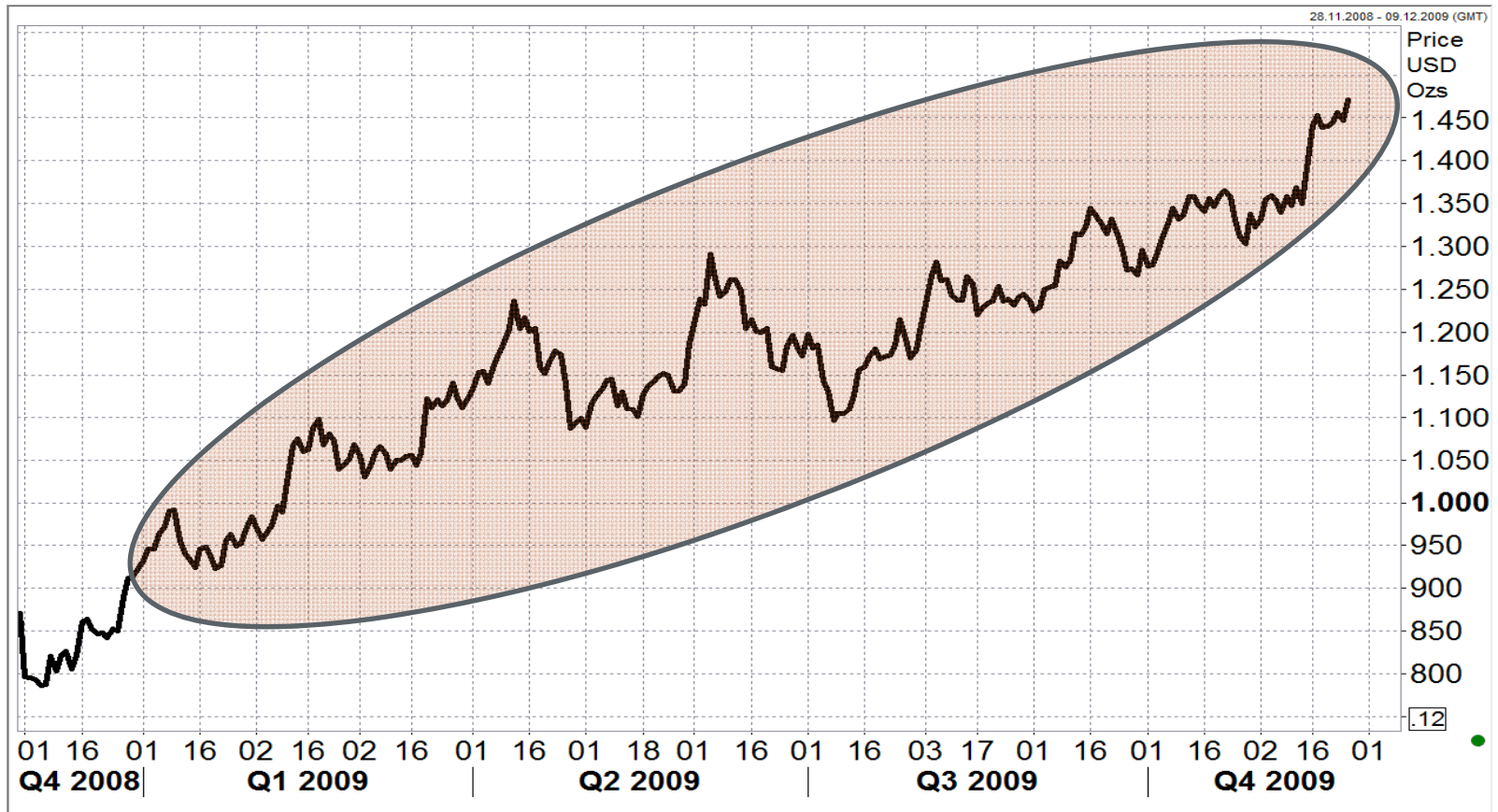
Platinum – Physical Demand



Platinum – A look back into 2009

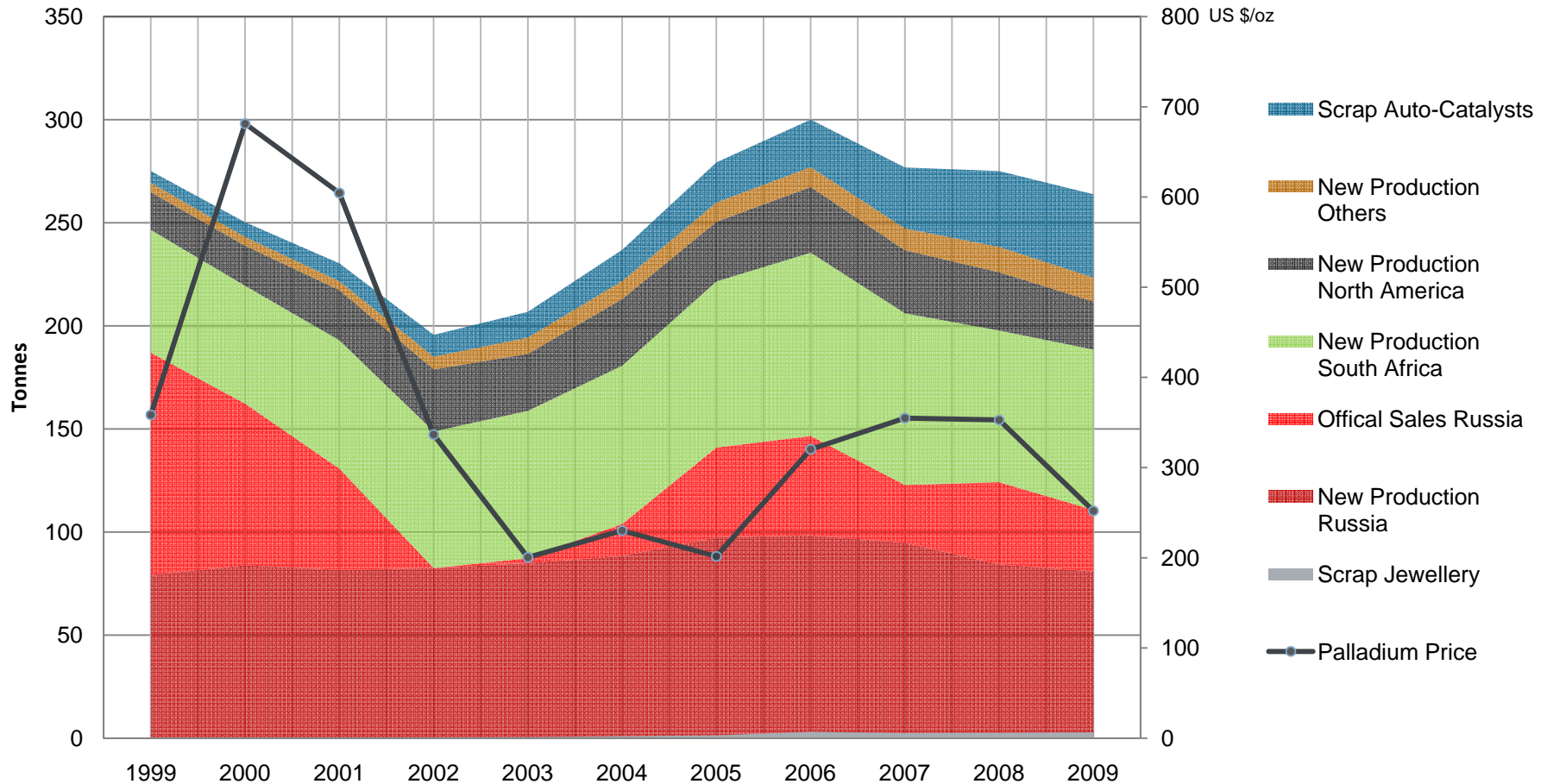
- **Industrial demand has shrunk by 35 per cent between 2007 and 2009.**
- **For the first time since 2003 jewellery demand for newly produced platinum almost equals that of the automotive industry.**
- **Share of diesel, and with it platinum loadings in auto-catalysts, in Europe falls considerably.**
- **New production in South Africa, among others due to strikes, sinks by 4 per cent; however stock-piles accumulated in 2008 were reduced. As a result global supply is up by 1.9 per cent.**
- **The physical platinum market for the first time since 1998 appears to be in a surplus – by 140,000 ounces. But....**

Platinum Price 2009

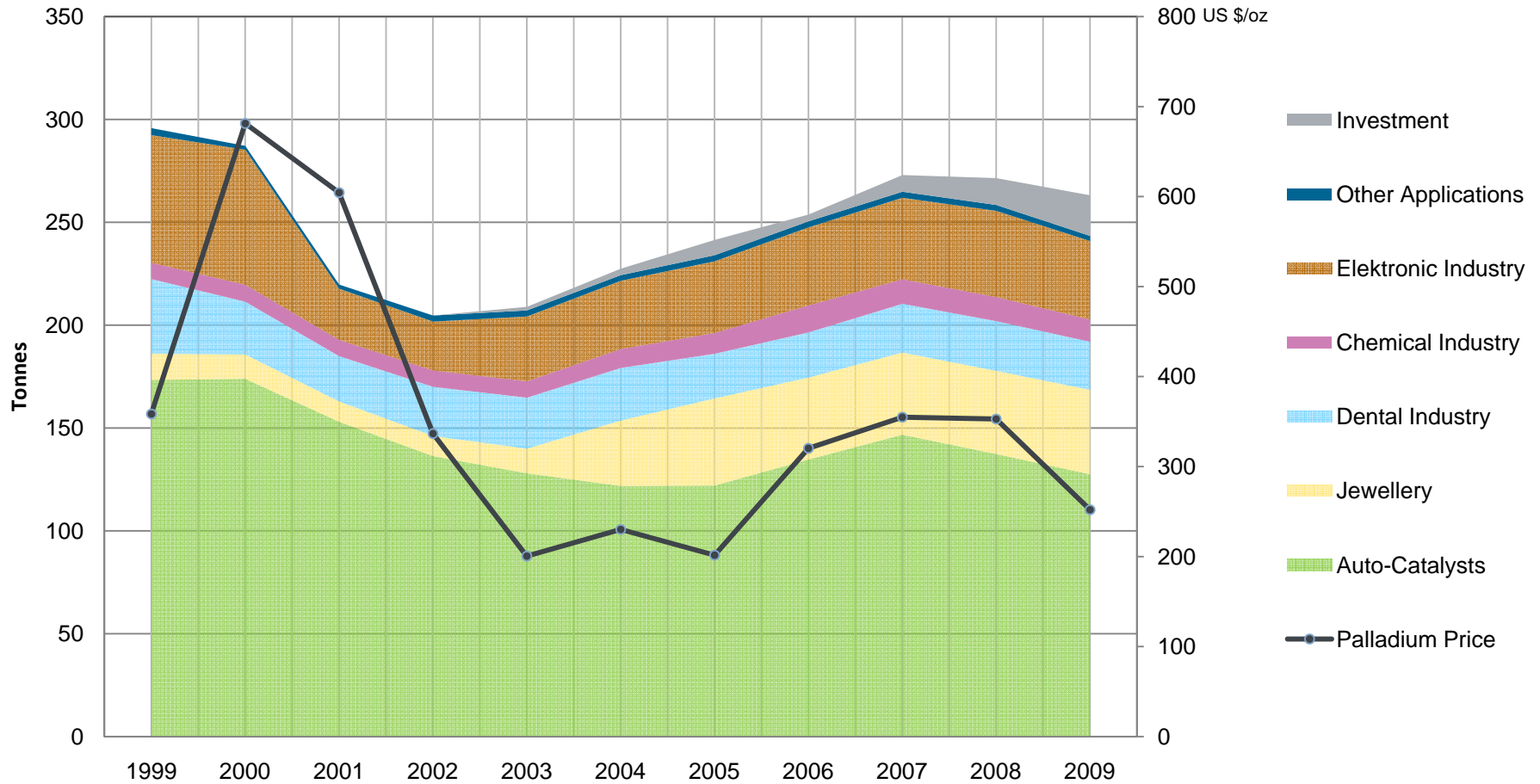


If there was net excess physical supply, then why has the price gone up?: The speculative positions on the forward-exchanges alone have gone up by 900,000 ounces this year!

Palladium – The Supply Side



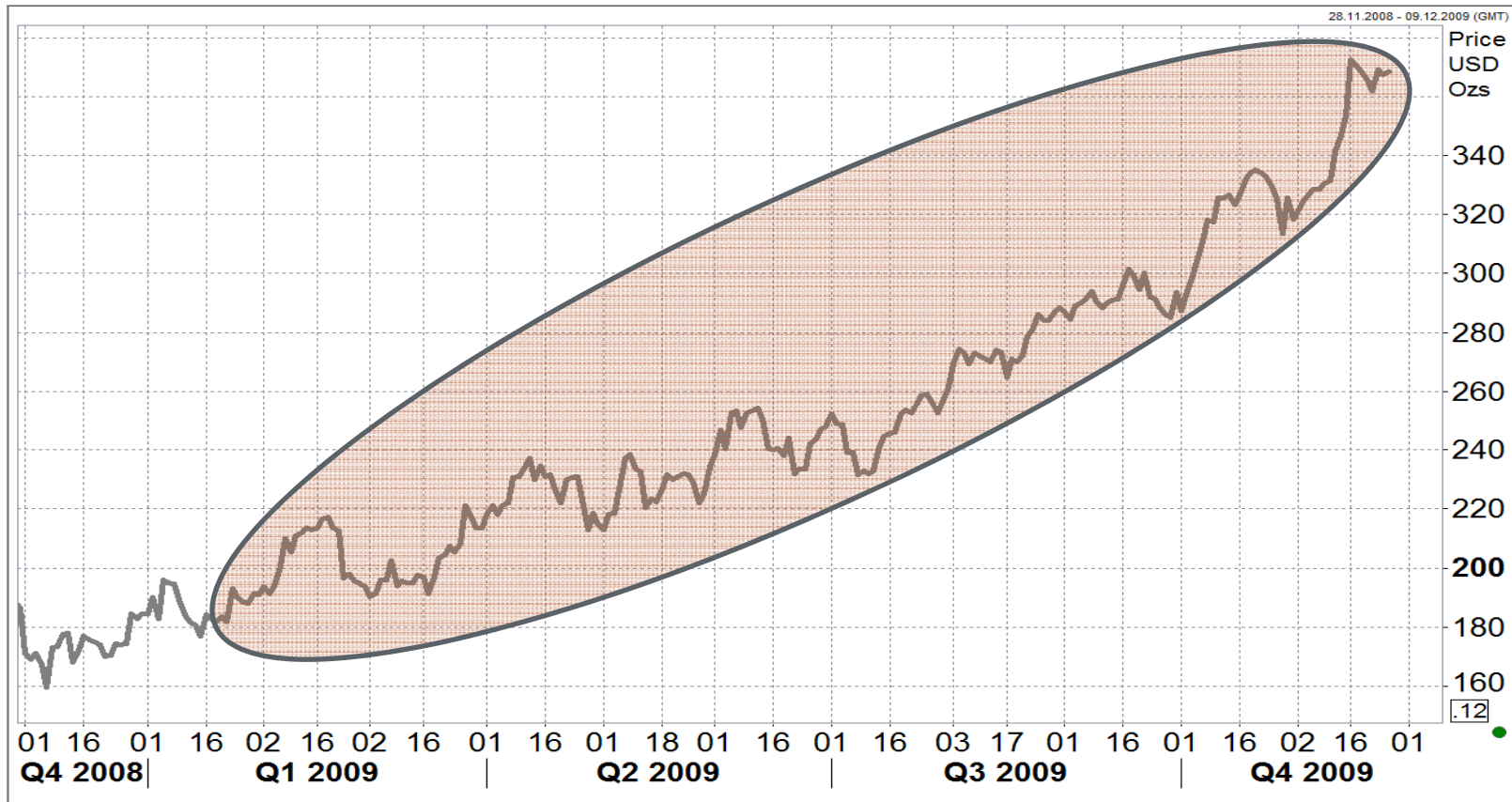
Palladium – Physical Demand



Palladium – A look back into 2009

- **The closure of the Lac-des-Iles palladium mine and some nickel mines in North America lead to reduced supply from this part of the world.**
- **But: industrial demand in 2009 fell even more. Losses in the USA and Japan were only partly compensated by the boom in China's automobile market. In Europe demand for petrol-driven vehicles was up strongly. Hence overall palladium demand was more-or-less stable.**
- **Global jewellery demand for palladium, in contrast to platinum, was only mildly positive.**
- **In total the physical palladium market appears to be in a surplus – by up to 650,000 ounces. But ...**

Palladium Price 2009



Also in case of palladium the speculative positions on the forward-exchanges have gone up by 900,000 ounces this year. This explains the price development shown above.

“Minor” Platinum Metals –A look back into 2009

- **Rhodium fell by 90 per cent between July and December 2009 and then remained at the low level for a long period. That it did not go up again quicker was due to a series of reasons:**
 - **Speculators were sitting on metal that they still had to sell.**
 - **Due to the economic crisis end-users in the automobile industry, confronted with missing fresh demand, had enough metal on stock to meet their requirements. Additionally insolvent US-automobile manufacturer might have sold stocks.**
 - **Due to lack of demand the mines also had de-facto built up stocks in late 2008 which had to be sold off first before any upward effect on price could be exerted.**
- **Since October the metal has rallied strongly, due to sustained demand from Asia, but also because European auto-manufacturers have hedged some of their future requirements in the forward market.**
- **Iridium hardly moved last year. Ruthenium on the other hand has doubled in the last few weeks, also driven by strong demand from Asia.**

About Ohhhs and Oh-
Yeahs –
The Macro Aspects

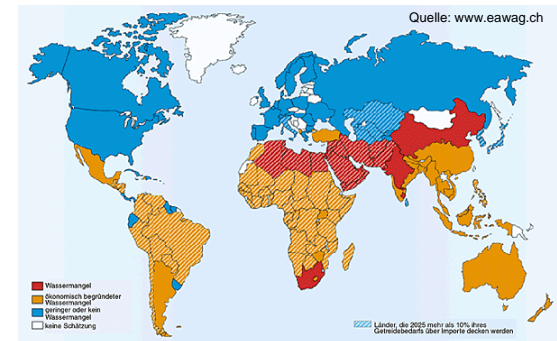
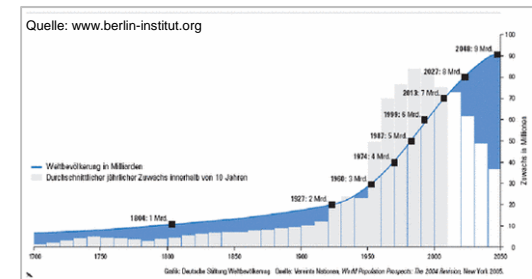
Politics and Society

— **World population will continue to rise and in average get richer. It will consume more (pro Pt-metals/silver) and have a greater need to protect its net-worth (pro gold).**

— **High on the daily wish-list are:**

- Food, water and health
- Electronics and personal mobility

— **Politics in more and more nations will bring the finiteness of resources on the table and at the same time the environmental damage being caused and the costs of reducing it.**



The Production of Raw Materials

- **Not only “Peak Oil”, “Peak Everything” is coming, including “Peak Precious Metals” too. Production can hardly keep up with demand.**
- **New abundant resource reserves are getting more and more difficult to find. It will be more energy-intensive, complicated and expensive to exploit them. There is not an enough-qualified work-force and often sites are lacking the infrastructure. For example, the new Pascua-Lama gold mine in the Andes is at an altitude of up to 5,200 meters.**
- **And the average cost of producing one ounce of gold is already at \$ 608; platinum at least at \$ 800. And Stillwater produces palladium at \$ 344 an ounce.**
- **State interference will get more frequent. Nationalisation (e.g. Russia – see Norilsk) and state-backed takeovers of mining companies using foreign-exchange reserves will increase (refer to China’s politics in Africa and Australia).**

Investors

- **Inflation fears in view of State deficits will play a role for many decades to come.**
- **Private-, institutional- and official investors will concentrate much more strongly on diversification of assets.**
- **Commodities, especially gold, will play a much larger role in this process. And after Lehman Bros. “physical ownership” will be a very important aspect.**
- **Investment in property will lose some of its flavour, in view of the demographic change in parts of Europe and because of past exaggerations in other parts of the world.**

Technology and Innovation

- **Without new technologies – and many using precious-metals – e.g. for alternate energy production, water-purification etc, servicing the ever increasing world population will be impossible.**
- **As far as the automobile industry goes, there will be no abrupt change in technology. Hybrid vehicles also have catalytic converters; electric-only cars won't be around till 2020 on a larger scale and fuel-cell vehicles not before 2030. In conventionally powered automobiles the trend towards smaller petrol-driven engines will continue. The diesel-motor could well remain under pressure.**
- **The usage of platinum and ruthenium in hard-disc drives might decrease as other technologies might increasingly gain market share. However increasingly more complex electronic devices with even more resistors could keep demand for ruthenium stable.**

And Now What ?
Precious Metals: Quo
Vadis?

Price Outlooks: A wide Range on Offer

Gold 1500
Klaus Kaldemorgen
DWS

Palladium 450
Analysten JP Morgan

Gold 1400
Analysten Scotiabank

Gold 7000
Uwe Bergold
Rohstoffspiegel, Nov. 2009

Gold 2000
Aaron Smith
Superfund

Silver 18,10
Participants LBMA-
Conference Edinburgh

Palladium 476
Participants LBMA-Conference
Edinburgh

Platinum 1629
Participant LBMA-Conference
Edinburgh

Platinum 1600
Calyon Analysts

Silver >20
GFMS

Gold 800
Nicholas Koutsoftas
GE Asset Management

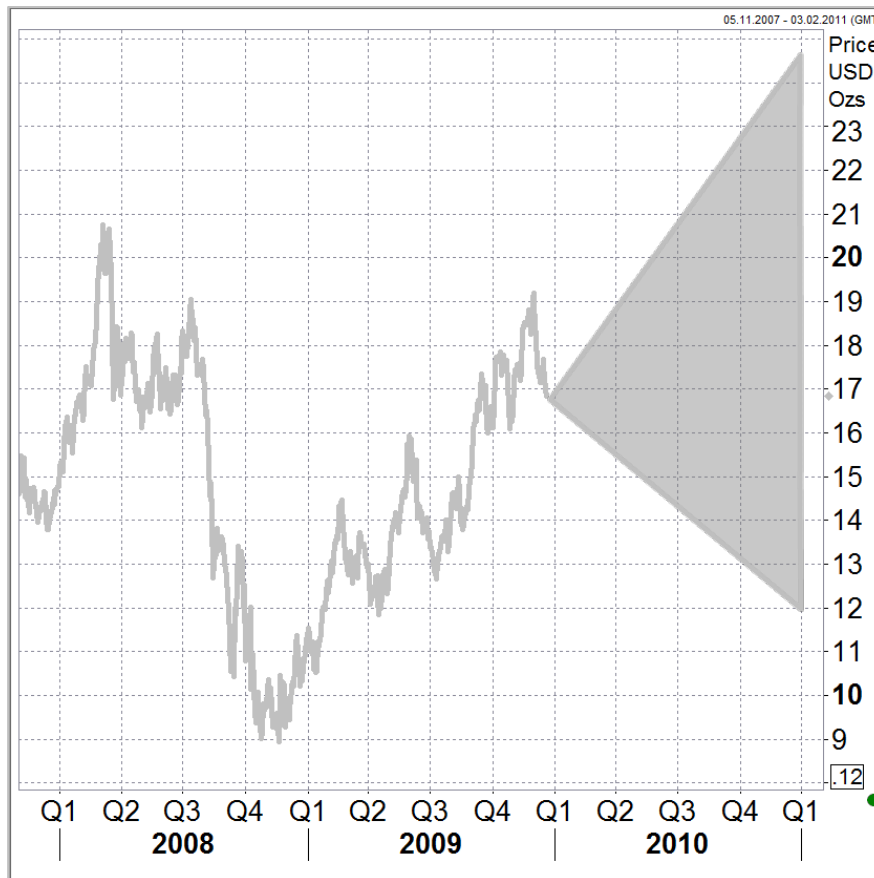
Gold 1181
Participants LBMA-Conference
Edinburgh

The Heraeus Outlook: Gold 2010



- **The upward trend, despite recent setback, should initially stay intact.**
- **Any rally should continue to be driven by investors, and they will prefer investing in physical metal.**
- **A change in the overall positive attitude could happen once the low interest-rates in the USA and Europe changes. Any bigger hike here is not to be expected before 2011.**
- **The meanwhile very high costs of production increase the possibility of sustained relatively high prices.**
- **Next year we expect gold trading in a range between \$ 1,050 an \$ 1,375 an ounce. Average price for 2010: \$ 1,175 an ounce (2009 around \$ 965; 2008: \$ 872; 2007: \$ 696).**

The Heraeus Outlook: Silver 2010



- **Anything seems possible again in 2010, the high volatility is likely to stay.**
- **The metal will continue to rely on the guidance from gold and thus from a weak dollar; from the for the time being low interest rate environment and from the resulting flood of liquidity in the financial markets. All these factors will ensure further buying interest by investors and speculators.**
- **Next year we see silver trading between \$ 12 and \$ 25 an ounce. The average price forecast for 2010 is: \$ 16.50. (2009: e \$14.65; 2008: \$ 14.99; 2007: \$ 13.38).**

The Heraeus Outlook: Platinum 2010



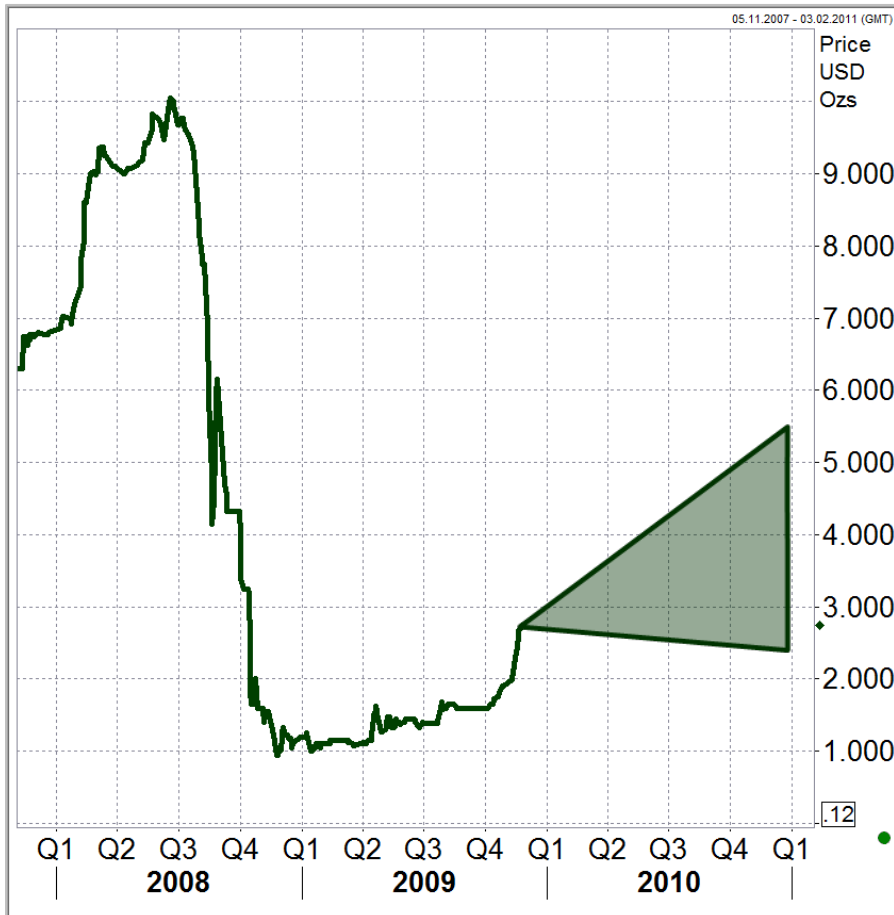
- In the coming months platinum could face some difficulties.
- Demand from the automobile sector should stay cautious for the time being; in Europe no quick recovery is to be expected. Longer-term some support will be provided by new requirements like emission regulations for heavy commercial vehicles.
- Production is expected to remain stable in the coming years, thanks to new mines in South Africa. Short-term production problems, e.g. due to strikes and or electricity outages (World Cup 2010), should not have a bigger effect on price.
- We expect platinum to rather move sideward in 2010 with some short-lived slumps. Average price for 2010: \$ 1,400 (2009: \$1.150, 2008: \$1.578).

The Heraeus Outlook: Palladium 2010



- **Palladium continues to be well supported.**
- **Industrial demand for emission-cleansing needs should increase. The Chinese market is likely to continue to boom, the USA will to some extent recover and Europe will continue to see a higher portion of petrol-driven vehicles.**
- **Additionally smaller “engines” (e.g. motorcycles in China) will also need to be fitted with emission-reducing catalysts.**
- **We see palladium trading in a range between \$ 300 and \$ 475 an ounce next year. The expected average price for 2010: \$ 375 (2009: around \$252; 2008: \$353).**

The Heraeus Outlook: Rhodium 2010



- **The outlook for rhodium should improve further in the coming 12 months.**
- **Demand from the automobile industry will continue to grow, however it should be noted that a considerable part of this future demand has already been hedged as far out as 2011.**
- **Fresh demand will come from the “small motor” sector, e.g. motorcycles.**
- **Additionally demand from the chemical and the glass industries should also rise.**
- **We expect the price to go up next year and the metal to trade between \$ 2,500 and \$ 5,500 an ounce. (Average 2009: ≈\$ 1,501; 2008: \$6,584; 2007: \$6,187).**

More Need for
Information?

Interesting Websites about the Topic of Precious Metals

- www.heraeus-trading.com (Homepage of the Heraeus Trading Group)
- www.precious-metal.com (Alternative link to the Heraeus Trading - Homepage)
- www.heraeus-edelmetallhandel.de (Homepage of the Heraeus Trading Group; German)
- www.thebulliondesk.com (News, information and prices)
- www.goldseiten.de (News, information; German)
- www.lbma.org.uk (The London Bullion Market Association; Gold and Silver)
- www.goldfixing.com (London Gold Fixing)
- www.lppm.org.uk (The London Platinum and Palladium Market)
- www.gold.org (World Gold Council; historic information, statistics)
- www.ipa.com (International Platinum Association)
- www.eurofx.de (Reference prices vor currencies)

Your Partner in Precious Metals

Heraeus Metallhandelsgesellschaft mbH

Heraeusstr. 12 – 14

63450 Hanau, Germany

Phone: + 49 (0) 61 81 / 35-275

Fax: + 49 (0) 61 81 / 35-94 44

E-Mail: edelmetallhandel@heraeus.com

**Internet: www.heraeus-
edelmetallhandel.com**

Reuters Dealing: HERA

Heraeus Precious Metals

Management LLC

540 Madison Avenue

New York, NY 10022

Phone: + 1 (212) 752 2180

Fax: + 1 (212) 752 7141

E-Mail: hpm@heraeus-inc.com

Web: www.heraeus-trading.com

Reuters Dealing: HPM

Heraeus Ltd.

Room 2112/2113, 21/F, Peninsula Square

18 Sung On Street

Hunghom, Kowloon (Hong Kong)

Phone + 852 2773 1733

Fax + 852 2773 1090

E-Mail: sales@heraeus.com.hk

Web: www.heraeus.com.hk/

Reuters Dealing: HLHK

**Heraeus Materials Technology
Shanghai Ltd.**

1 Guang Zhong Road

Zhuangioa Town, Minhang District

201108 Shanghai

Phone: + 86 (21) 3357 5675

Fax: + 86 (21) 3357 5699

E-Mail: Linda.hu@heraeus.com

Web: www.heraeus-trading.com



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All prices shown are interbank market bid prices, all charts unless stated otherwise are based on .

The supply and demand figures shown in the publication are based on information provided by GFMS (www.gfms.co.uk), by Johnson Matthey and on own estimates. All charts are based on data provided by Thomson Reuters (www.thomsonreuters.com).

