

Gold investment statistics commentary

Price, volatility and correlation performance during 2011

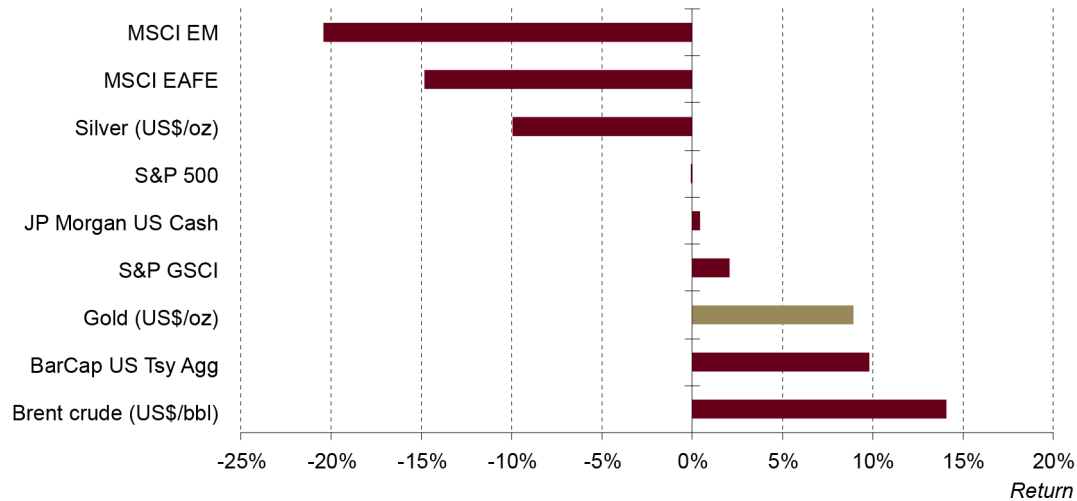
Overview

This brief commentary summarises gold's price performance in various currencies, its volatility and correlation to other assets from the perspective of global financial markets, describing the macroeconomic factors that influenced gold's behaviour during the year. In particular, it discusses major market events in 2011 which helped gold prices move up during the year and explains its observed correlation to equities during a period of US dollar appreciation. This commentary complements detailed gold investment statistics in multiple currencies regularly published on our website in spreadsheet form.

2011: Another positive year for gold

After a tumultuous year in financial markets around the world, gold was one of few asset classes to deliver positive returns (Chart 1). During 2011, the US dollar price of gold rose by 9% ending the year at US\$1,531/oz based on the London PM fix, marking the 11th consecutive year of price increases.¹ During the first part of January 2012, the price of gold continued its upward trend above the US\$1,600/oz level.

Chart 1: Relative price performance in 2011 for various assets



Source: Barclays Capital, Bloomberg, J.P. Morgan, World Gold Council

¹ Henceforth, gold prices reference the London PM fix unless otherwise noted.

Gold's price appreciation was generally higher in currencies other than the US dollar, especially in developing markets, with the exception of China, as they saw marked declines of their currencies against the US dollar in the latter part of the year (Table 1). Not surprisingly, the euro depreciated the most amongst developed countries relative to the US dollar, on the back of continuing sovereign debt issues, pushing gold prices up 11.6% in local terms during the year. Over the same period, gold also rose in Japanese yen terms, but only by 3.6% as Japan's currency was one of the few to strengthen against the US dollar. In developing markets, on one hand, the Turkish lira, Indian rupee and South African rand depreciated the most and gold's prices rose by approximately a third. On the other hand, as the Chinese yuan started to take a more important role in the international monetary system, it has experienced a consistent appreciation since June 2010. In turn, gold rose by a more modest 4.3% in local currency terms during the year.

Table 1: Gold performance in various currencies¹

	Last price	2011		Q4 2011 %QoQ	Full year 2011	
	31 December 2011	Maximum	Minimum		% YoY	% Vol ²
US\$/oz	1,531.00	1,895.00	1,319.00	-5.1	8.9	21.0
GBP/oz	994.22	1,188.31	822.24	-3.6	8.9	20.5
EUR/oz	1,182.97	1,354.73	963.25	-0.4	11.6	21.7
CHF/oz	1,441.74	1,634.80	1,242.63	-0.4	9.5	24.0
JPY/oz	118,974.01	146,957.25	108,165.60	-3.9	3.6	21.6
CAD/oz	1,564.22	1,878.32	1,314.72	-6.3	11.1	20.9
AUD/oz	1,511.35	1,803.04	1,308.25	-8.3	8.9	22.1
RUB/oz	49,161.63	56,463.05	39,051.83	-4.6	14.4	21.9
TRY/oz	2,935.23	3,354.53	2,078.42	-1.7	34.4	22.9
CNY/oz	9,672.09	12,110.00	8,700.12	-6.3	4.3	20.7
INR/oz	81,150.65	91,237.23	60,364.04	2.7	28.8	19.7
ZAR/oz	12,531.24	14,592.20	9,172.44	-2.4	33.8	25.4

¹ All statistics based on the London PM fix in US\$/oz adjusted by the appropriate exchange rate.

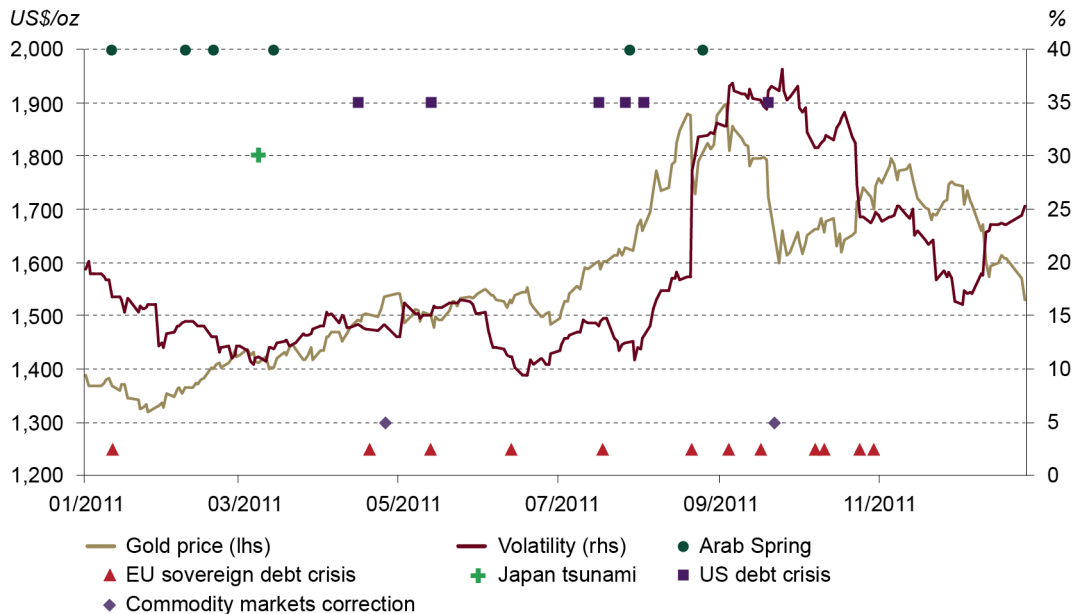
² Annualised volatility based on daily returns.

Source: Bloomberg, London Bullion Market Association, World Gold Council

Further statistics and comparisons between gold and other assets in various currencies can be found on the investment statistics page.

True to its role as a vehicle for diversification and risk management, gold outperformed a large majority of assets, including oil, on a risk-adjusted basis during a year of marked uncertainty and increased volatility. However, gold's performance was not all smooth sailing throughout the year, particularly during the latter months. A cursory look at the events that unfolded during the year helps to identify what factors influenced gold's performance in 2011 (Chart 2).

Chart 2: Gold price (US\$/oz), London PM fix



Source: Bloomberg, LBMA, World Gold Council

Between January and August and particularly during the summer, further deterioration of Greek finances and its potential ripple effect on larger EU member countries coupled with the possibility of a technical default by the US on its government debt, helped push gold prices higher.

Credit rating agencies continued to revise down their outlook on sovereign debt while peripheral countries' deficits continued to widen. Portugal and Greece received bailout packages from the IMF and European stability facilities. Meanwhile, the crisis spread to other vulnerable countries including Italy, the third largest debt market in the world after the US and Japan; even France saw heavy selling in its sovereign debt. Credit spreads widened across the continent and speculation that banks would need to write down potential losses on many of their credit holdings increased. Dexia, a Franco-Belgian bank, was on the brink of collapse before Belgium and France decided to nationalise the bank, bringing back memories of Bear Stearns' collapse during the 2008 crisis. Simultaneously, the US debt ceiling was reached and long-drawn political negotiations meant that the limit was not extended until well into the summer, prompting Standard & Poor's to downgrade its debt by one notch: for the very first time, the US had lost its AAA rating. Consequently, market participants increased their bets on a third phase of quantitative easing (QE3) by the US Federal Reserve (the Fed) putting negative pressure on the dollar and equity markets. A detailed list of relevant 2011 events can be found in the Appendix at the end of this article.

In this environment, many investors saw gold as one of the few assets able to preserve capital and protect against tail risks, increasing their participation in the market especially during the summer. By early August, gold had broken the US\$1,800/oz level and reached a record high of US\$1,895/oz on the London PM fix on 6 September, having traded as high as US\$1,921/oz intra-day.

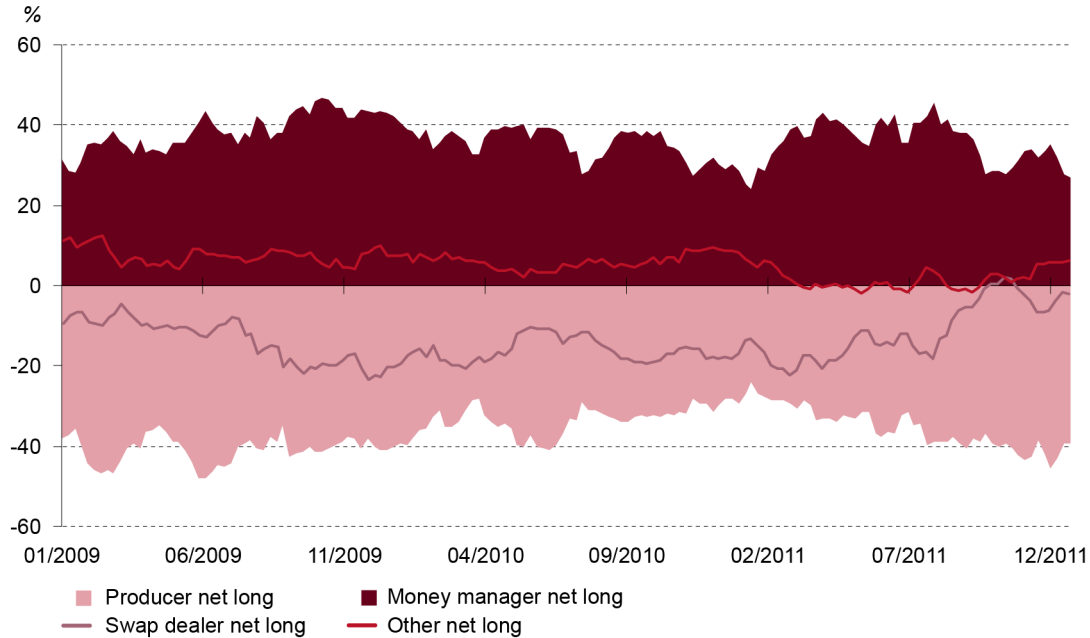
Following the Federal Open Markets Committee (FOMC) meeting of 21 September, the Fed announced its latest stimulus measure which effectively changed the composition of its securities portfolio by extending duration and by marginally changing the type of securities held. Designed to drive down long-term interest rates without increasing the central bank's balance sheet (or the monetary base), it took many investors by surprise. With hopes of further quantitative easing in the near term diminished, the US dollar promptly rallied – a trend that generally continued for the remainder of the year.

In the meantime, equity markets around the world continued to tumble. Fears of a disorderly default by an EU member, the increased likelihood of a double dip recession in Europe, signs of a stagnant economy in the US and the potential deceleration of big emerging market economies such as India and China, prompted investors across the globe to reduce exposure to equities and other assets. In many cases, investors simply cut their losses.

In turn, gold prices retreated, falling to the US\$1,600/oz level, in part due to a stronger US dollar and, in part, due to being one of the few liquid assets with positive returns which investors could use to cover some of their losses. This can also be seen on Chart 3, in which net-long positions by money managers fell from the highest level in August to an annual multiyear low by December. These positions are typically used as a measure of the more speculative/short-term end of investment demand as they are normally funded by levered positions.

In all, gold's price pullback of 15% was labelled by some commentators as a break in gold's multi-year trend. On the contrary, a careful analysis of gold's historical performance shows that it has experienced various pullbacks over the last 10 years. Gold prices, as with any other freely traded asset, are set by many investors and consumers looking for prices they consider "fair" to transact. This "price discovery", in turn, naturally moves prices up and down. Our analysis shows that there have only been six previous instances in which the price of gold has fallen by more than 10% over the past decade and once the price has stabilised to a certain (typically new) level, it resumed its upward trajectory. Moreover, the price pullback experienced this last September was less pronounced than the pullback gold experienced during 2008. Even then, gold rose to finish the year with positive returns. Beyond the day-to-day market movements, the underlying gold price trajectory is based on its long-term supply and demand dynamics which remain robust.

Chart 3: COMEX net long on non-commercial and non-reportable positions by source as a percentage of open interest



Source: Bloomberg, World Gold Council

During the fourth quarter, in spite of a stronger US dollar, gold demand remained buoyant due, in part, to recurring concerns on the health of European finances and the regional economy, but also as other important components of the gold market came into play. Central banks, which have been predominantly net purchasers of gold since Q2 2009, increased their activity during 2011. Central bank net-buying is poised to have a record year, and many of these purchases happened during Q3 and Q4. Additionally, investment activity remained healthy as market participants continued to access the market whether through bars and coins or other vehicles. In fact, gold-backed ETFs, collectively, added 75 tonnes of gold between September and December alone (out of 153 tonnes during the full year).

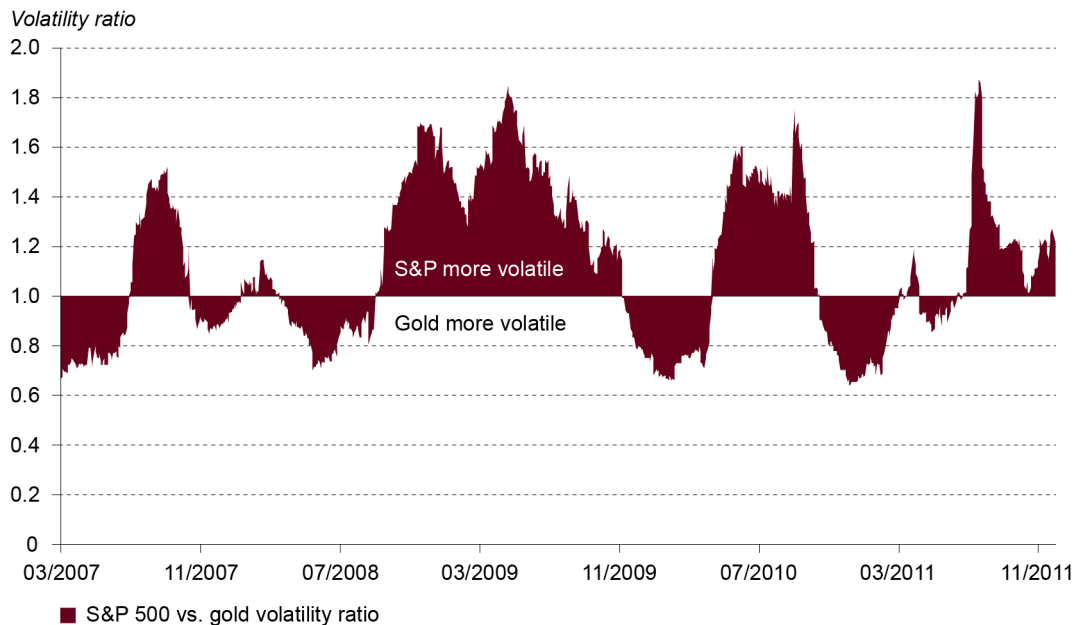
However, towards the year-end, gold prices came under pressure once more, influenced by profit-taking and the rebalancing of portfolios. Additionally, as a higher number of clearing houses, exchanges and banks included gold in the assets accepted as collateral, gold gained in prominence as an integral part of the financial and monetary system. Faced with margin calls on other positions, some investors sold gold to finance these calls, thereby putting further pressure on the price.

Volatility and correlation

Gold's consistent performance as a diversifier and vehicle to manage risk effectively, along with its more traditional role in capital preservation, are key to its importance in asset allocation as a foundation to a portfolio.

At first glance, it seemed that the swings gold experienced during the second half of the year had a negative effect on its key functions in a portfolio, by adding volatility and increasing correlation. However, a more careful analysis presents a very different picture. Gold's price volatility increased during August and October; however, gold's volatility rose less than that of the equity market – illustrated in the S&P 500 volatility – which is what typically occurs during periods of higher uncertainty in financial markets (Chart 4). As such, while gold prices were not immune to the effects of financial markets swings, its volatility was considerably more stable than that experienced by equities.

Chart 4: Volatility ratio between S&P 500 and gold (US\$/oz)*



* Computed using 63-day rolling volatilities on each of the assets.

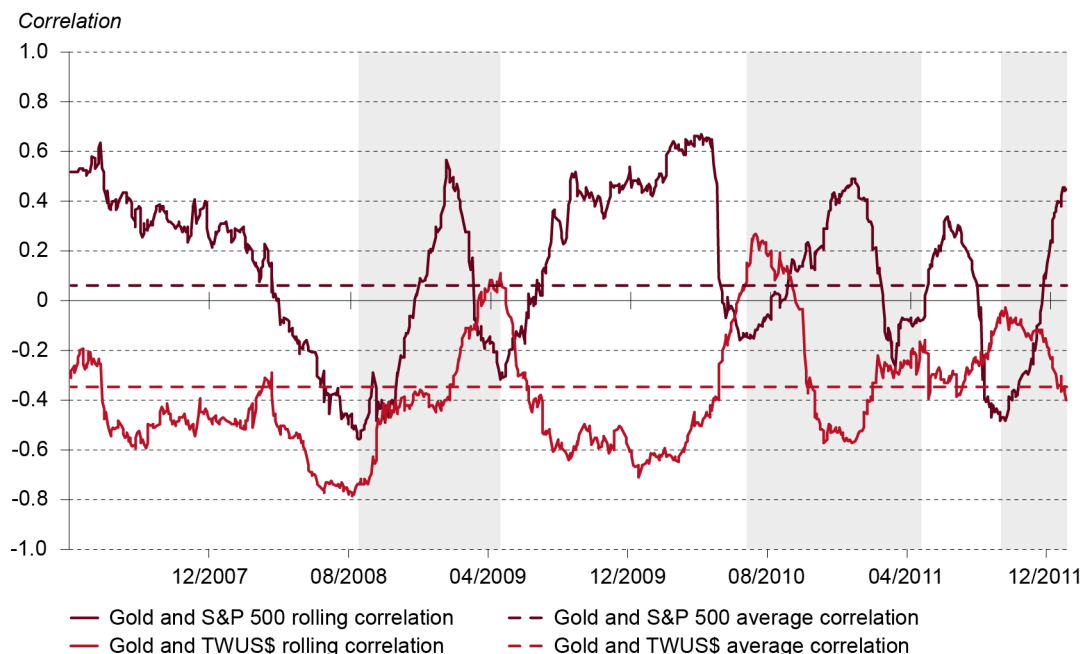
Source: Bloomberg, World Gold Council

Moreover, many market observers pointed towards an increase in gold's correlation to equities as a sign of less robust diversification. Our analysis shows that this is not necessarily true and while short-term changes in correlation could be observed, gold's long-term low correlations to most assets underpin its effectiveness as a portfolio diversifier.

First, gold is negatively correlated with the US dollar. In periods in which the US dollar depreciates, gold prices tend to rise. If this relationship was symmetrical, we would expect that as the US dollar appreciates gold prices would fall, but the negative correlation often weakens when the dollar is buoyant, making gold a particularly effective hedge (see "Commodity Prices and the Influence of the US Dollar" for further discussion of this quality). That said, in the short-term, upward pressure on the US dollar is likely to exert downward pressure on the gold price.

Second, equity markets were under pressure as well for a myriad of reasons which, in turn, increased the perception of synchronicity between gold and equities. In reality, while gold's correlation to equities did increase, it did not do so more than in previous periods. During financial markets crises experienced over the past few years, there has been an initial short-term period of "increased" correlation between gold and equities. This is because investors first seek cash (US dollars in this case), as they reduce risk in their portfolios. Subsequently, investors tend to re-balance their holdings and seek gold (and other real assets) to preserve wealth further. These actions tend to reduce gold's correlation to equities. As such, this period may not be any different from previous instances and gold may go back to its low long-term correlation to equities (Chart 5).

Chart 5: Correlation* on gold (US\$/oz), the S&P 500 and the trade-weighted US\$



* Computed using 63-day rolling correlations when applicable.
Shaded regions represent previous crises in which the correlation between gold and equities has initially increased to subsequently revert back to its long term average.

Source: Bloomberg, World Gold Council

Conclusion

Gold had another positive year, ending 2011 9% higher in US dollar price terms and rising even further in most currencies. In spite of an interim increase in volatility, which affected all financial markets, gold outperformed a large number of asset classes – reinforcing its role as a foundation asset in portfolio construction. Gold provided liquidity when investors needed it the most, acting as a risk management vehicle. It also served as a currency hedge throughout the year, in particular against the US dollar. While such inverse relationship pushed gold prices down toward the end of 2011, in part driven by profit taking and portfolio rebalancing, we believe gold fundamentals of supply and demand remain robust. We expect gold market participants, within its various sectors (including investment, central bank activity, jewellery and technology consumption), will continue to support its demand.

Appendix

Table 2: Summary of major market events during 2011

Date	Event	Theme
14 January	Tunisian government falls after 23 years in power	Arab Spring
11 February	Egyptian president Hosni Mubarak resigns after widespread protests, military retains control of Egypt	Arab Spring
22 Feb – 14 Mar	Uncertainty over Libyan oil output causes crude oil to rise 20%	Arab Spring
17 March	2011 Libyan civil war, UN votes to create a no-fly zone over the country	Arab Spring
31 July	Government clamp on free press intensifies in Syria as hundreds are killed	Arab Spring
28 August	Libyan rebels took control of the nations capital overthrowing Gaddafi's government	Arab Spring

Date	Event	Theme
29 April – 6 May	A serious correction in most commodity markets especially silver due to increased margin requirements	Commodity markets
24 September	CME raises gold, silver, copper margin requirements	Commodity markets
11 March	A 9.1 magnitude earthquake and tsunami hit Japan with over 16,000 casualties	Japan tsunami

Date	Event	Theme
14 January	Fitch cuts Greek debt to 'junk' status	EU sovereign debt crisis
23 April	European Commission shows that Greece's budget deficit increased to 13.6% of GDP	EU sovereign debt crisis
16 May	EU agrees to a 78 billion euro rescue package for Portugal provided by EFSM, EFSF and IMF	EU sovereign debt crisis
16 June	The EU's economic officials reached deals with IMF to avoid a Greek default contingent upon austerity	EU sovereign debt crisis
21 July	The Council of the European Union reached an agreement on measures aimed at solving the Greek debt crisis	EU sovereign debt crisis
24 August	French government passed deficit cutting measures after growth slows	EU sovereign debt crisis
7 September	Finance ministers of the EU countries and IMF approve the second of the bailout installments for Greece	EU sovereign debt crisis
19 September	S&P downgraded Italian sovereign debt along with seven other banks two days later	EU sovereign debt crisis
10 October	Belgium nationalised Dexia Bank that had been holding too much sovereign debt	EU sovereign debt crisis
13 October	S&P cut Spain's long term credit rating by one notch from AA to AA- with a negative outlook	EU sovereign debt crisis
27 October	The EU announced a writedown of Greek bonds, a re-cap of European banks and an increase in the EFSF to €1 trillion	EU sovereign debt crisis
1 November	The Greek PM Papandreou announced a referendum on the new Eurozone debt deal which shocked European markets	EU sovereign debt crisis

Date	Event	Theme
18 April	S&P rating services revised its outlook on US debt to negative on fiscal deterioration	US debt crisis
16 May	The US debt ceiling is reached, treasury secretary Geithner issued a debt issuance suspension period	US debt crisis
19 July	The cut cap and balance act failed to gain two-thirds majority in congress, continuing the debate	US debt crisis
29 July	Budget Control Act of 2011 passed, a Republican bill that immediately raised the debt ceiling by 900 billion	US debt crisis
5 August	S&P lowers the credit rating of the US from AAA to AA+, deciding that the budget plan did not address the debt issue	US debt crisis
21 September	Fed announces operation twist in order to extend the duration of their bond holdings	US debt crisis