ScotiaMocatta
Precious Metals 2015 Forecast
Silver

December 2014

Executive Summary

• Silver prices spent the first eight months trading sideways above $18.20/oz, but have since extended the downward trend, reaching a recent low of $14.25/oz.

• The fundamentals are fairly sound, ETF buying has returned after light redemptions last year and investors remain committed buyers of coins and bars.

• The mainstay of the fundamentals is the commitment of investors; while this remains the case the market looks oversold.

• Low prices are expected to improve the fundamentals by reducing scrap supply while boosting demand, mainly from investors, but we also expect trade restocking.

• Prices look oversold, we are looking for a stronger 2015.

Introduction

The retreat in Silver prices has continued this year with prices falling to a low so far of $14.25/oz, down 26.8 percent from the start of the year. Prices have now retraced 86 percent of the gains seen during the mega-bull-run to the 2011 peak at $49.81/oz from the 2008 low at $8.49/oz. Prices are now back at levels where they were trading before the financial crisis and before quantitative easing (QE) was introduced. The fundamentals of Silver are not in bad shape, indeed they are expected to tighten as lower prices reduce the amount of scrap reaching the market. Given scrap accounts for 19 percent of supply a reduction in availability from this source could have a big impact. On the demand side, whereas industrial use is fairly stable, jewellery and investment demand are expected to benefit from the lower Silver price. Prices, however, are being pulled back more by bearish sentiment rather than actual bearish fundamentals. It seems something of an aberration that may not last too much longer. The funds’ positions on Comex have become polarised again, and although the longs could be liquidated there seems no appetite for that, while the large gross short position may well be more likely to cover now they are sitting on a large profit. With the December contract coming to an end next month it may be that shorts start to cover in the weeks ahead. For now we feel the downside is getting stretched, especially with the Gold / Silver ratio having been out to 1:75 and as such we expect a rebound and consolidation at higher numbers. The worry is that Gold might fall further, but it too is also looking oversold even if it is out of favour. On balance, we feel there is considerable more upside than downside potential and any weakness from here may well end up being seen in a downward spike. For 2015, we would look for prices to spend most of the time in the $16/oz to $22/oz range.
DEMAND FOR SILVER
Demand for Silver can be broken down into two sub-groups, fabrication and investment. Fabrication demand is when Silver is converted into a product in its own right such as a piece of jewellery, or when Silver is used in a component, such as a semiconductor, a chemical compound, nanoparticle, or solder. Investment demand for physical Silver involves buying investment bars, coins, or Exchange Traded Funds (ETFs). The split between how much each sub-group consumes varies from year to year; in 2013 fabrication demand accounted for 77 percent of the demand for Silver, while investment demand accounted for 23 percent.

FABRICATION DEMAND
Fabrication demand covers Silver’s use in industry (65% of fabrication demand), jewellery manufacturing (23%), photography (6%) and silverware (6%). In 2013, fabrication demand climbed 2.5 percent to 25,972 tonnes, according to data from the World Silver Survey; this followed a 4.8 percent fall in 2012. Fabrication demand in 2013, although up from 2012, remained below the average of 26,745 tonnes consumed each year between 2004 and 2013. In 2014, demand is likely to weaken slightly as the pullback in Gold prices sees Gold jewellery regain market share and as the electronics industry uses other cheaper metals where possible. Apparent demand may also fall as lower Silver prices have prompted some destocking.

One reason that industrial production is struggling to see year-on-year growth is due to ‘thrifting’, where industry is using less Silver per unit manufactured and also due to the continuing decline in Silver’s use in photography as digital technology continues to take market share.

Looking forward into 2015, the outlook is positive, but perhaps not as strong as we would have expected six months ago as the growth outlooks for Europe and China have deteriorated in the second half of 2014. But countering expectations for slower global growth is the potential to see apparent demand for Silver to rebound as users may take advantage of the low price to restock.

Jewellery
Demand for Silver from the jewellery industry declined in 2011 and 2012 as high prices and economic hardship weighed on demand, but the pull-back in prices last year and a more optimistic outlook for global growth at the time saw demand recover to 6,183 tonnes, from 5,642 tonnes in 2012, a rise of 9.6 percent according to the World Silver Survey. Demand was particularly strong from India, where restrictions on importing Gold led to a jump in local Gold premiums, which then led consumers to switch to Silver. As a result, jewellery demand climbed 29 percent to 932 tonnes. China’s appetite for Silver jewellery was also strong as organic growth for jewellery continues to expand as the workforce becomes more upwardly mobile. Greater penetration of jewellery stores into the less developed regions has also boosted demand. Jewellery fabrication demand in the country reportedly grew 11 percent in 2013, to 1,955 tonnes, and the process of organic growth combined with lower prices bodes well for strong retail demand and that is expected to prompt jewellery manufacturers to restock in the months ahead.

Interestingly, even though Silver prices fell sharply, the fall in Gold prices did see some switch in interest to Gold jewellery from Silver pieces in the more advanced economies. For instance, in the US, manufacturers used 17 percent less Silver to make jewellery as they switched over to make Gold items, which offered bigger margins. In North America as a whole demand for Silver from the jewellery industry climbed 11 percent to 709 tonnes, but this was purely on the back of increased demand from Mexico, where Silver jewellery fabrication jumped 45 percent to 381 tonnes. With Mexico’s exports only rising 9 percent to 84 tonnes, it suggests strong growth for domestic jewellery consumption, which is in line with the trends seen in other emerging countries. Although US manufacturing may not have made as much Silver jewellery last year, sales of Silver jewellery increased 12 percent, with the
increase being made up by a pick-up in imports. By comparison Gold jewellery sales climbed 16 percent.

Thailand and Italy are important manufacturers of Silver jewellery but both have suffered in recent years as they have lost market share. In Thailand’s case, fabrication demand for jewellery dropped to a low of 588 tonnes in 2012, from around 1,010 tonnes annually in 2004 to 2007 (before the financial crisis), but it picked up slightly last year to 622 tonnes. In Italy, Silver demand from the jewellery industry fell to 470 tonnes in 2012, from 1,063 tonnes in 2004, but it also picked-up slightly to 495 tonnes last year. Over the last ten years both countries have lost market share to China and India while Thailand might be able to compete on a labour cost basis again, it seems Italy is likely to struggle to recapture market share. So in terms of Silver demand to make jewellery we see lower levels of demand growth in mature economies and a pick-up in emerging economies.

Looking forward, lower bullion prices are likely to have positive and negative implications for Silver jewellery demand. On the one hand lower prices are likely to increase affordability for retail buyers in emerging markets, but at the same time with Gold and Platinum prices falling, Silver is likely to lose some market share as Gold and Platinum pieces become more affordable. On balance though, we expect continuing organic growth to boost Silver jewellery demand, especially in emerging economies.

Industrial Demand
Industrial demand for Silver was basically flat last year at 16,678 tonnes, compared with 16,631 tonnes in 2012, according to our calculations using data from the World Silver Survey. This was mainly as a result of the economic hardship being felt in Europe and a lack of confidence in other areas, either due to subdued domestic demand, or as their exports were being affected by weak demand from Europe. In addition, the fact that Silver thrifting reduces usage per item had a counteracting effect on the growth in demand for Silver-containing components. The only countries seeing growth in actual tonnage used were China, where demand grew nine percent to 5,590 tonnes and Japan, where growth was 1.7 percent higher at 2,275 tonnes.

Silver’s use in the electrical and electronics industries accounts for around 44 percent of Silver’s industrial use in 2013 and semiconductor sales make a good barometer to gauge how the industry is doing. Data from the Semiconductor Industry Association (SIA) shows that worldwide sales of semiconductors were at record levels in the third quarter 2014 and were up 5.7 percent over the second quarter and up eight percent on the third quarter 2013. Growth has been particular strong for smartphones, tablets and automotive components. Forecasts for 2015 are for growth of 3.3 percent, according to World Semiconductor Trade Statistics (WSTS). Silver’s use in rechargeable and non-rechargeable batteries is also gaining ground from both a performance and environmental perspective. Although they are expensive, they have a high power-to-weight attribute and are well suited to make inroads into the market to power laptops, tablets and mobile phones and to gain market share from lithium batteries. Given the size of this new market for Silver-alloy batteries, demand from this sector is expected to show rapid growth.

The long term outlook for Silver’s use in industry is exciting. There are numerous new applications for the metal that have potential to make a big difference to demand – in time. Many of these new applications are using nano-technology where tiny amounts of Silver are used per application, but they have potential to be used extensively. In addition, because the amount of Silver per application is so small, demand is likely to remain price inelastic. In the years ahead, we expect Silver’s industrial use to grow as a percentage of total demand, especially once the amount of Silver used in each item has been optimised. During the years of strong economic growth between 2004 and 2007, industrial demand was growing at an average of 7 percent per annum; we expect to see similar, if not higher, growth rates down the road. For 2015, given only a mildly bullish outlook for global growth, we expect
industrial demand to remain relatively subdued, but a tailing off of ‘thrifting’ and relatively low prices should boost apparent demand.

**Solar power – Photo voltaic cells**

The solar power industry is an important growth area for Silver as most photo voltaic (PV) cells use crystalline silicon cells that have a Silver component in the form of Silver paste. As the sunlight hits the silicon cell it generates electrons and the Silver paste is used as a conductor to collect the electrons to form an electric current. The average solar panel uses around two-thirds of an ounce of Silver, which makes the Silver content an important factor in the cost of the PV cell. Global PV Silver demand is expected to rise between 5 to 10 percent in 2014 after what has been a volatile period for demand in recent years. Silver demand from this industry jumped from 30 tonnes in 2002 to an estimated 1,843 tonnes in 2011, before dropping to around 1,595 tonnes in 2012 as government subsidies in Europe were cut, as an oversupply of solar panels was worked off and as new technology meant less Silver paste was needed for each PV cell. Last year, although 10 percent more PV cells were produced, the amount of Silver consumed fell to 1,260 tonnes.

So whereas there is a massive recovery in the roll-out of solar power projects, the reduced loadings of Silver have seen the amount of Silver used decline. This diverging trend may be getting close to reversing as we expect an increase rate of PV demand, while the ‘thrifting’ of Silver per PV cell may have gone as far as it can.

China, India and Saudi Arabia all have aggressive plans to build solar power capacity, as do Japan and Germany as they reduce their dependence on nuclear power. This year’s geopolitical unrest has also acted as a reminder that countries are at risk if they become too reliant on imported energy. All in all, this means the outlook for Silver demand from the solar energy industry is second to none, but it is an area that needs careful watching as demand could take off even faster. Conversely new technology using substitute materials could in time change the market’s dynamics.

**Photographic demand**

Use of Silver in the photographic industry peaked in 1999 at around 7,000 tonnes. Between 2000 and 2009, the decline in Silver’s use was accelerating as seen by the falling black line on the chart opposite. There was a blip during the financial crisis/recession when the rate of decline slowed as the weaker economic growth environment slowed the conversion to digital photography in the medical and film (motion picture) industries. Photography accounts for some six percent of fabrication demand, down from 24 percent at its peak before digital photography started to make inroads. In 2013, photographic demand for Silver fell seven percent to around 1,568 tonnes. Silver’s main use in photography nowadays is for x-rays. Most medical establishments are using digital x-rays where possible, but they are prohibitively expensive so as medical care expands in the developing world, medical establishments are often opting initially to install second-hand conventional x-ray machines and this is keeping photographic demand for Silver alive. The rate of fall in Silver’s use in this industry has been decelerating since 2010 with demand falling 7 percent in 2013, compared with an average of a 12 percent drop in the ten years to 2012. Overall, we would expect photographic demand for Silver to continue to drop, albeit at a slower pace now.
New applications
Silver’s new applications are diverse and are being used in health, electronics and transport/packaging. Many of these new applications, including smart tags (RFIDs) and Silver antibacterial applications, use nano-technology with each unit using a tiny amount of Silver. Until these applications have widespread use their impact on Silver demand is likely to take time to be felt. That said, it was not too long ago that Silver PV cells were in this ‘new applications’ category and now they are consuming significant quantities of metal. Silver’s antibacterial properties means more Silver is finding its way into a wide range of products including: consumer products (like socks, towels and sheets), medical products (equipment, bandages and ointments) and office, public and household equipment (like telephones, photocopier buttons, hand rails, door handles and kitchen utensils).

INVESTMENT DEMAND
ETF investors have generally remained committed to Silver despite the plunge in price. This is in stark contrast to what is happening in Gold; on the surface this seems most peculiar, but it suggests that institutional investors over the years have opted to invest in Gold ETFs more than they have in Silver ETFs, which have been adopted by the retail investor. However, it is hard to comprehend why Silver investors have not been spooked by the redemptions in Gold, especially when Silver prices tend to follow Gold’s lead and have overtaken Gold on the downside as can be seen by the Gold / Silver ratio climbing to 1:75 from around the 1:55 level in 2012, before the correction in bullion prices got underway. As things stand, as of mid-November 2014, the combined holdings in the Silver ETFs we follow stood at 19,793 tonnes, up from 19,172 tonnes at the start of the year and down only 1.4 percent from the peak holding of 20,073 tonnes seen in early October 2014. Whereas the accumulation of Silver in ETFs in the early days helped absorb a large part of the market surplus, the relatively small increases since 2011 mean that the ETFs are not absorbing much metal now and that means there is more supply around to weigh on prices.

What is surprising is that given the supply surplus, which requires investor buying to absorb the surplus, investors have so much confidence in the market. This is especially so considering that the pull-back in price has seen 84 percent of the 2008 to 2011 gains eroded. The fact ETF investors have not sold their holdings is remarkable. With holdings in Silver ETFs near record highs it does suggest robust confidence in the outlook for Silver demand down the road. Needless to say, there are concerns in the market that redemptions could follow and that could then really send prices lower, but if redemptions have not been triggered by now, then it seems unlikely they will be spooked by further price weakness. All in all, it seems that ETF investors like the long term outlook for demand.

Funds - polarised
Funds have been very active in Silver this year, and as the waves on the chart opposite show, the shorts have been doing a lot of the
work. The funds’ position has been net long all year, but in June it got to within 768 contracts of switching to being net short as seen by the grey area on the chart. This happened in June when the market became extremely polarised, which ended in a short-covering rally that led the longs to get even longer as seen by the blip higher in the black line. Having short-covered, the shorts piled in again to hold a record gross short position that they still hold at the time of writing. Indeed the gross long position, although off the highs, is still extremely long, especially considering how low prices have become. Given the large gross short and long positions, the market is polarised again and that suggests that either the longs will ‘throw in the towel’, but if they have not done so already, perhaps they won’t, or the shorts will cover. Given the shorts are in the enviable position of sitting on large profits we feel there is greater potential for them to take their profits and that will then trigger a short-covering rally. The alternative is that they hold out for even lower prices in the hope the longs liquidate, but we feel that may be wishful-thinking. Looking forward, it is difficult to predict what the funds will do, but we would be wary of short-covering given prices are already low and the size of the short camp. Either way we expect volatility to pick-up and would not be surprised to see some fast market moves.

SUPPLY
Silver supply in 2013 came from mine output (80%), scrap (19%) and net government sales (<1%). The biggest change to supply came from the decrease in scrap that had accounted for 24 percent in 2012.

Mine output rose 3.4 percent in 2013, to a new record of 25,493 tonnes, according to the World Silver Survey. Primary Silver mines provided 29 percent of mined metal (23 percent of total supply), 38 percent came from by-products of lead and zinc, 20 percent from copper mines and 13 percent from Gold mines. The largest increases in mine output were from Peru, China, Australia and Guatemala, while the biggest decline was seen in Poland. Mexico held on to its position as the world’s largest producer of Silver, having overtaken Peru in 2010, while Peru and China were all but equal in second place. Most of China’s Silver mine output is a by-product from its lead-zinc and copper mining, all of which have been growing rapidly in recent years.

In 2014, output growth is expected to slow to one percent from around three percent seen last year, with the ramp up at the Escobal primary Silver mine in Guatemala and at Cerro de Pasco in Peru.

Looking forward, although the Silver price has fallen significantly, with the bulk of Silver mine product coming from by-product sources, the low Silver price on its own is unlikely to lead to production losses. Indeed, most of the cutbacks in base metals in recent years have happened in aluminium, which does not affect Silver, although strikes and production stoppages in other base metals will have impacted on mine production to some extent. With total cash costs averaging around $9.27/oz according to the World Silver Survey, most primary Silver mines still have a profit margin, but if prices hold down around the $15/oz level or drop below, then some of the higher cost mines may see their margins squeezed. Whether they cut production remains to be seen, especially as the relentless weakness in recent years may well have encouraged vulnerable producers to hedge. On balance, we expect Silver mine output to edge higher as some new operations come on stream, notably at
Fresnillo’s Saucito II mine (capacity 260 tonnes per annum) and Hochschild Mining’s Immaculada mine in Peru, both of which are set to ramp up production in the fourth quarter this year (2014).

**Supply from Scrap**

Scrap supply dropped last year for a number of reasons; firstly because prices were falling, but also as the economic slowdown in Europe and other countries halted there was less distress selling of Silver items for scrap. Data from the World Silver Survey points to a 24.1 percent drop in scrap supply to 5,966 tonnes, which was the lowest since 2001 and accounted for 19 percent of Silver supply, down from 24 percent in 2012.

The biggest fall in scrap supply was seen in India, where supply dropped to 169 tonnes from 771 tonnes in 2012. The reason for the drop was that prices fell to levels that were considered too low. What scrap was made available was industrial scrap from electrical appliances and the electronics industry. To some extent it also seems likely that after years of high Silver prices a lot of the old scrap had been already cashed-in. This seems to be a theme seen across countries and considering the surge in schemes encouraging ‘cash-for scrap’ in recent years it is not surprising that there is less old scrap around. In addition, as scrap collectors had become used to higher Silver prices it would not be surprising to find out that scrap collectors are holding on to scrap until prices recover.

The dynamics of the scrap market are ever changing; regulations governing the recycling of electronic waste have increased the amount of scrap in those countries where regulations have been introduced.

Looking forward, we feel it will take a considerable rebound in Silver prices to see scrap levels recover, especially scrap from households. Industrial scrap is likely to recover into a moderate price rebound as companies will no doubt be keen to realise money tied up in scrap and we would also expect a steady pick-up in supply as tighter environmental legislation about recycling electronic goods spreads geographically.

**Government stocks continue to fall**

Sales of government-held stocks since 2011 have been lower, averaging 283 tonnes compared with an average of around 1,660 tonnes between 2003 and 2010. As has been the case since 2007 most of the official sales have come from Russia, but the fact sales dropped in 2011, when average prices were at a record high, suggests that Russia’s stockpiles have either been depleted, or in line with its Gold buying for its official reserves Russia may have decided that Silver would complement its Gold holdings. With China and India also absent from selling Silver, it seems likely that what sales have been made are to do with the disposal of old coin stocks. In line with less central bank selling of Gold and indeed their switch to buying, we would not be surprised if government sales of Silver stocks remained subdued.

**Producer hedging**

Despite falling Silver prices the global hedge book dropped a net 1,065 tonnes in 2013, as producers delivered into hedges or de-hedged and by year-end the delta-adjusted hedge book stood at a mere 467 tonnes. The fact that some hedges that were closed out still had a life out to 2018 suggested that producers were optimistic that the prices would not fall too much further, which they have ended up doing. Fresh hedge selling was limited and we feel that was because producers had been holding out for higher numbers, such as $25/oz, which were only seen briefly in August; the year before the level some producers had been looking for was $35/oz. Looking forward into 2015, given the price
weakness we would initially expect some relief producer selling from high cost producers into rallies towards $18/oz – that is unless sentiment turns decidedly more bullish.

Balance
The Silver market has been in a supply surplus - where supply is greater than fabricated demand - since 2006, which has meant investment demand has had to absorb the balance. The emergence of the Silver ETFs in 2006 initially helped absorb much of the surplus with average gains of around 3,400 tonnes between 2007 and 2010, but from 2011 onwards the inflow into ETFs waned and the market has become more dependent on offtake of coins and investment bars. Bar and coin offtake between 2007 and 2010 averaged 3,677 tonnes, which was similar to the inflow into ETFs, but whereas increases in ETF holdings have dropped to an average of around 750 tonnes since 2011, investment interest in bars and coins has increased, averaging around 6,200 tonnes between 2011 and 2013. In 2013, supply was around 31,700 tonnes and fabricated demand was around 26,000 tonnes, leaving a surplus of some 5,700 tonnes. Net ETF redemptions added a further 80 tonnes to supply, but this was more than absorbed by 7,639 tonnes of demand for bars and coins. This suggests an overall supply deficit where supply is less than the sum of fabricated demand plus investment demand.

So far in 2014, the ETFs have accumulated some 621 tonnes; coin sales started on a slightly weaker footing, but in recent months sales are reported to be booming on the back of the price weakness and we expect a similar size surplus between supply and fabricated demand. All of this suggests that the market might well end up being in a bigger overall deficit this year when investment demand and fabricated demand are taken into account, as this year has seen the holding in ETFs grow, whereas last year they shrank. In addition, lower prices are expected to have further reduced scrap supply so it would not be surprising to see supply drop and demand rise. Looking forward, given the size of the surplus between supply and fabricated demand (excluding investment demand), the market will remain dependent on continued investor interest, but we would expect further supply constraint in the form of less supply from scrap, while lower prices are likely to boost investment demand and prompt restocking by fabricators. All of which bodes well for the market’s fundamentals.
Technical
The sell-off continues with prices catching up with the dominant down trend line. After 18 months of finding support above $18.20/oz, prices broke lower in September and have now fallen to a low of $14.25/oz, down 71 percent from the 2011 peak. Prices have also retraced 86 percent of the 2008 to 2011 gains. As the dotted horizontal line shows, prices are now back in the lower area of the former high ground where prices were trading before the financial crisis and before QE. This might mean prices have now washed-out all the froth caused by QE and therefore perhaps prices are back at levels that reflect the fundamentals more. From a technical analysis standpoint, although prices are looking oversold, the down trend dominates. That said, the stochastic indicators are converging to cross higher, which might lead to some price strength; previous positive crosses over the past 18 months have led to $2-$5/oz rallies. It would take a move back to and consolidation above $18.20/oz to suggest Silver prices have found a base.

Conclusion and Forecast
Given that the supply and demand fundamentals generally seem in good shape with investment interest more than absorbing the supply surplus, it is odd that prices have sold off as much as they have. Falling prices are more than likely encouraging fabricators to buy on an as needed basis and to run down inventory. In addition to that, the growing size of the fund gross short position is no doubt weighing on prices. So for now the tide is going out for Silver as buying pressure is weak while selling pressure is strong, but the more oversold prices become the more impact scale down investor buying is likely to have. In addition, we would expect supply to start to tighten as lower prices prompt scrap collectors to hoard more material. These trends are then likely to see the tide turn and as the market dynamics go into reverse, prices are likely to rally as fabricators restock, investors buy and funds cover shorts. The recent accelerated sell-off seems to be stretching the elastic band to the downside and once the tide turns we would expect it to snap back.

With ETFs holding just shy of 20,000 tonnes and with cumulative coin and bar sales since 2010 amounting to some 23,000 tonnes, the market would be susceptible to any loss of investor good-will. For now, our view is that if investors have not ‘thrown in the towel’ yet after so long and so severe a downtrend, then they are unlikely to do so. This suggests they are in for the long term. Needless to say there is no guarantee that investors will remain committed and as such, there is no room for complacency.

The steadfastness of long term investors does suggest there is still concern about the monetary system and taking into account all the debt that has been accumulated over the past five years and the fact the QE baton has been passed to Japan from the US and that the ECB may go down the same track, this view may be warranted.

In summary, while investor interest remains robust, especially amongst coin and bar investors, it does look as though the Silver market is in a slight deficit. Although it is hard to understand why prices have fallen so far if this is the case, it might be that the weakness in Silver prices has a lot more to do with weakness in Gold where the low level of physical interest and relentless ETF redemptions are weighing on sentiment. Silver weakness is then being driven by short-selling in the market where buyers are waiting on the sidelines. If this is the case, as we think it is, then we should expect a significant rebound once a base is seen to be in place. There is a lot of focus on Gold reaching $1,000/oz; whether it does or not remains to be seen, but with so much negativity in the market, now may be the time to prepare for a rebound that could surprise on the upside. We expect Silver prices to establish a base in the $14/oz to $15/oz range and to be capped around the $23/oz range.
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