Indian gold refining capacity jumped in recent years, encouraged by a favourable import duty framework. There are now 30 organised refineries, with a combined capacity in excess of 1,450t. Looking ahead, the refining industry faces some challenges and is likely to enter a period of consolidation.

**India’s gold refining landscape**

**India is reliant on imports and recycling to meet gold demand**

India is dependent on gold imports, either in refined or doré form, to meet its needs. Gold imports account for around 85% of total supply, and the refining sector plays an important role in taking these imports and putting them in a form suitable for India’s gold industry. For example, either re-casting imported 1kg bars into smaller bars for onward delivery to jewellers, or refining doré into purer gold. The refining industry also recycles old gold jewellery, which accounts for around 15% of supply.

**The refining sector has grown in recent years**

India’s long-established refining sector has seen a sharp rise in new capacity in recent years. The organised refining landscape has grown sharply from a mere three or four refineries in 2013 to 30 in 2015, taking the total capacity above 1,450t. The majority of refineries have an annual capacity of less than 50t (Chart 37).

While Rajesh Export’s refinery, with a capacity of 350t, is India’s largest, MMTC-PAMP is India’s only gold LBMA-accredited refiner, gaining its certification in 2014. It is likely that other refineries in India will follow MMTC-PAMP’s lead, especially as the gold monetisation scheme develops. It is also likely that a small number of operations will soon reach the minimum threshold of 10t of annual gold refining production. But this is just one criterion that must be achieved to become LBMA-accredited. Others include: a net worth of at least £15m; a minimum of five years of operations, three of which must have achieved the minimum production output; satisfying Know Your Customer (KYC) tests and, finally, the ability to implement the LBMA’s Responsible Gold Guidance.\(^\text{109}\)

The informal sector accounts for a sizeable volume of capacity. By definition, this is extremely difficult to estimate, but we would not be surprised if the informal sector had a further 100–200t\(^\text{110}\) of refining capacity, taking India’s refining capacity overall to 1,600–1,700t.

\(^{109}\) London Bullion Market Association.  
\(^{110}\) Metals Focus.

![Chart 37: India’s refining landscape](source: Metals Focus; World Gold Council)
Tax incentives have encouraged doré imports
The expansion of the organised sector has been supported by a favourable government stance, including the bullion/doré import duty differential. But much of this additional capacity remains under-utilised, largely because of the difficulty in sourcing doré and the limited availability of recycling material. It is likely Indian refineries are operating at only 15%–20% of their capacity and although some 26 refineries imported doré in 2015, over 90% of imports were concentrated among just six refineries.

Today, the Indian refining landscape can be divided between two distinct zones: the Domestic Tariff Area (DTA) and the Excise Free Zone (EFZ). Refineries based in DTAs are liable to pay countervailing duty (CVD), as well as excise duty, whereas those operating in EFZs just pay the CVD; they do not pay excise duty.

Figure 1: A stylised illustration of the doré/bullion import differential
Spurred on by these tax incentives, around half of new capacity since 2014 has been concentrated in EFZs; as of 2015 just 16 refineries operate outside of the EFZ. This is explained by the headline import duty differential between refined gold and doré. Until early 2016, this differential was around 2%: basic custom duty (BCD) on refined gold of 10% compared with 8% CVD for doré. As a result, refineries were able to import doré at 8%, in contrast to the 10% rate at which permitted banks or nominated agencies could import refined gold. Since the FY2016–17 union budget (in which the import duty on doré was increased to 8.75%), that differential has shrunk to 1.25%. Nevertheless, the incentive remains.

When assessing the margins made by refiners, excise duty must be considered (Figure 1). All products manufactured in India attract excise duty, which for gold is 9.35%. This means that a refinery in the DTA is liable to pay 9.35% on its finished product. The government, however, allows the excise duty to be offset against the 10% import duty and so refineries in the DTA pay 9.35% as the import duty, giving them a differential of 0.65%. In contrast, refineries in the EFZ are exempt from the excise duty and so pay an 8.75% import duty, thus maintaining a 1.25% differential. In order to rationalise the duty differential between the DTAs and the EFZ, the government has levied an entry tax of around 0.2% in Uttrakhand – the region where most of the refineries under the EFZ operate. The duty differential, along with the extremely low cost of refining (of around US$2–3 per ounce), leaves refineries with a margin of between 0.65%–1.25%, depending on the zones in which they operate.

India’s legislative landscape: controls on growth in refining and responsible sourcing of doré

The government has two legislative areas that are designed to protect and enhance the reputation of Indian refiners and the country’s jewellery export industry. The first concerns the rules for setting up a refining operation. These include, but are not limited to: pollution control licences; a charter engineer certificate of capacity justification; and registration with the appropriate bodies, e.g. State Department of Industries/Small Scale Units and recognised trade bodies. If the refinery wants to import doré, it needs approval from the Director General of Foreign Trade.

The second relates to guidelines that must be followed when sourcing doré for refining. These include, but are not limited to: ensuring the goods are sourced directly from the country where the doré is produced; a minimum weight of 5kg per bar; the inclusion of both a packing list and an assay certificate, to be issued by the mining company and the latter to be provided to the Deputy Commissioner of Customs and an assay certificate issued by the mining company and provided to the Deputy Commissioner of Customs by importers.

The aim of this legislation is to help the industry establish a chain of custody. For refiners, the aim is to ensure that the imported doré is genuine rather than, recycled gold or manufactured doré. Many in the industry believe that in time this legislation could increasingly reflect international standards. This would benefit those Indian refineries that choose to apply for LBMA accreditation. The government is also mindful of the potential reputational issues that jewellery exporters may face in the future if they use gold that is not responsibly sourced. The legislation aspires to protect against this.

Products offered by Indian refineries

Product offerings by global refineries can be distinguished between speciality products (such as precious metals chemicals including gold potassium cyanide and other salts) and general products, including kilo bars, minted bars and investment bars. Very few refineries in India offer speciality products.

The majority of Indian refineries produce larger bars or 100g cast bars for use by jewellers and other precious metal manufacturers. Some also offer 100g minted bars to jewellers.

Over the years, Indian consumers have become increasingly aware of a growing range of investment products available globally. This in part reflects high profile promotional campaigns by banks, e.g. ICICI, HDFC, Indian Bank, which – before the restrictions were imposed – offered imported minted and investment bars. This in turn has encouraged Indian refineries to enhance the quality of their minted bar offering, both in terms of purity and packaging.
Some of the most common investment products offered by these refineries include 2g, 5g, 8g, 10g and 50g bars and coins. The premiums on these bars and coins can vary from 2%–8%, depending on the refinery and the product offering. But in general, the higher the denomination, the lower the premium. Premiums also vary depending on the distributor; direct purchase from the refiner attracts a lower premium than when buying from a bullion dealer. Premiums are higher still when gold is purchased through a financial intermediary.

Finally, refineries can also offer minted bars and investment bars made available as blanks. Blanks are basically round or rectangular shaped gold or silver coins and bars, to which the seller adds their name.

Recycling trends

Recycling is an important source of supply for jewellers

Recycled gold plays an important role in India’s gold supply, fulfilling around 15% of Indian jewellery fabrication needs since 1990.

Payout rates offered by retailers differ according to the type of old gold jewellery being sold. A customer would typically receive 100% of the weight of the gold content for hallmarked 22k jewellery. The payout rate used by the jeweller, however, will not be the gold price itself. It will typically be around 5%–7% below the jeweller’s selling rate.

If the gold being sold back by the consumer is not 22k purity the payout rate will fall as the caratage decreases:\textsuperscript{111} 21k typically receives 85% of the weight of the gold content; 20k 82%; and 18k 75%. These rates vary across the country, according to the type of jeweller and the bargaining power of the seller. Consumers in rural India sometimes receive lower payout rates, usually between 80%–85% for 22k. This is largely because awareness of caratage in rural India is relatively low; 18% of rural Indian respondents to a consumer survey we conducted in early 2016 said they did not know the caratage of their jewellery.

Consumers may get a better deal in the not too distant future. Developments in hallmarking – as outlined in Chapter 10 – will provide consumers with greater certainty over the caratage of their jewellery. Refineries such as MMTC-PAMP and Bangalore Refinery, as well as the gold loan company Muthoot, have set up recycling collection centres in major towns, sometimes in conjunction with jewellers. If successful, recycling collection may become more organised, efficient and higher profile. Increased transparency in this part of the market could see consumer payout rates rise.

Indian recycling

Recycled gold has accounted for around 15% of Indian jewellery fabrication since 1990

Recycling definitions

Before we delve into the detail, a distinction needs to be made between two types of recycling: gold sold for cash and gold exchanged for gold. In many price-sensitive markets – such as China, Turkey and India – consumers often exchange their gold jewellery, bars or coins, for new pieces of gold jewellery. The only cost to them is the making charge. This can provide a significant flow of gold. For example, in Chapter 2, we discussed how in the run up to the wedding season many families will exchange gold that has been accumulated over many years for new pieces of wedding jewellery.

Gold sold for cash, on the other hand, is the recycling estimate we report in Gold Demand Trends. This represents the supply of gold to the market as a result of people selling their gold, and plays an important role in understanding supply and demand dynamics.

In this section we touch upon both types of recycling to provide as complete a picture of the recycling market as possible.

Jewellery is the largest source of recycling

There are three sources of gold recycling: jewellery, manufacturing scrap, and end-of-life industrial products. Jewellery scrap is the largest segment, accounting for 90%–95% of all recycled gold. This is sourced from individuals (either selling gold for cash or exchanging it for new gold), or pawn brokers and gold loan companies selling gold used as collateral for defaulted loans.

\textsuperscript{111} Metals Focus, discussions with a cross section of prominent retail jewellers across the country.
While some major cities have a small number of gold scrap aggregators that collect from the public, individuals wishing to recycle their gold typically use their local jeweller for these transactions. As the majority of jewellers run their own melting shops, they often take old jewellery from pawn brokers or money lenders as well. Although pawn broker default rates are extremely low by international standards, we estimate they may be as high as 10%–15%. Gold loan companies also auction gold jewellery that has been pledged, but on which customers have subsequently defaulted – usually between 1%–2% of their total assets (see Chapter 7). This can be bought either by jewellers or by refiners.

Manufacturing, or process, scrap is largely the wastage that occurs from manufacturing gold jewellery or investment products. Since most jewellery is manufactured either by standalone or organised manufacturers, or by retail jewellers themselves, and is typically high carat, the wastage is often recovered and processed by jeweller manufacturers. Rarely does it flow to refineries.

Industrial recycling accounts for a very modest share of total Indian gold scrap supply. Even so, three points are worth making. First, in keeping with other markets, Indian collectors have experienced a decline in the grade of material being processed, as the precious metal content in, for example, old mobile phones and printed circuit boards, continues to fall. Second, the bulk of this material is treated overseas and tends not to re-enter the Indian gold market. Finally, where precious metals are recovered from old industrial products domestically, it is largely an informal industry.

Chart 38 captures all three of these types of recycling. It is a broader definition for recycling than we use in Gold Demand Trends; it also includes old gold that is exchanged for new gold and subsequently refined, as well as imported jewellery due to be recycled. This broader definition gives a better sense of the total volume of recycled gold flowing through India’s refineries and manufacturers, rather than just the call on the market as measured by our narrower, Gold Demand Trends’ definition.

Chart 38: Total Indian old gold recycling,* 2010-2015

* This is a broader definition of recycling than that used in Gold Demand Trends. This includes recycling of imported jewellery scrap, recycling generated by manufacturing and also scrap sourced from the retail trade where old jewellery is exchanged for new jewellery (where the customer, therefore, pays only a labour charge, as well as any difference in the weight between the two pieces).

Source: Metals Focus; World Gold Council

112 Metals Focus.
113 See Glossary in Appendices.
114 Metals Focus.
116 Recycled gold as defined in Gold Demand Trends measures gold sourced from fabricated products that have been sold or made ready for sale, which is refined back into bullion.
Key drivers of gold recycling in India

Despite being the fourth largest recycler in the world, India recycles remarkably little of its stock of gold (Table 21). In 2015 recycling represented less than 1% of total household gold stocks. But the above-ground stock of jewellery plays an important role in the level of recycling. We know India has a huge stock of gold – some 23,000–24,000t. This will only increase over time and as it does so we can expect the level of recycling to slowly rise too. We see this at a global level: over the past 35 years, as the global stock of jewellery has increased so too has the level of recycling.

But what else affects the level of recycling? Our econometric analysis revealed that a 1% increase in GDP pushes Indian recycling down 0.5%. It is intuitive that as people become richer they are less inclined to sell their gold. In other words, the volume of ‘near market’ jewellery stocks diminishes. We also see this in consumer research. Between 2013 and 2014 we surveyed over 10,000 Indian consumers and those with the highest level of income were the least likely to sell their gold (Chart 39).

Higher prices, however, boost recycling: a 1% price increase pushes up recycling by 0.7%. While this may be intuitive, we can delve into the topic in a little more detail. Prices can be broken down into three inter-related areas: prevailing price levels, the rate of change in prices, and consumer price expectations. At any given time, there are key price points which will act as buy or sell signals for consumers, although these will change as price expectations change. This in turn will be affected by price volatility. For example, recycling may not rise in line with gently rising prices, as consumers may expect prices to continue rising. But when prices jump, recycling will often jump too, as consumers take advantage of an unexpected price increase. When prices fall and are expected to weaken further, people sell gold in order to raise cash. They then use that cash to re-enter the market at a time they believe prices have bottomed out.

Table 21: Top six gold recycling countries*
2010–15 (tonnes) 117

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* This is the same definition of recycling used in *Gold Demand Trends*. It captures scrap generated in the country of origin, irrespective of where the material is refined. It excludes scrap generated as a result of the exchange of old for new jewellery at the retail level. It also excludes production/process scrap. This metric is therefore designed to capture the call on each respective gold market.

Source: Metals Focus; World Gold Council

117 Metals Focus, *Gold Focus 2016.*

Chart 39: Higher income households are less likely to sell gold jewellery

% of respondents who had sold gold in the past 12 months

Source: Kadence; World Gold Council
Outlook

India’s refining industry has gone through a remarkable period of change since 2010. Its capacity has increased by 750t over the past two years and the country has its first LBMA-accredited gold refinery; it is likely others will follow suit. This new-found capacity has generated a huge appetite for doré, from almost nothing in 2013 to just over 300t in 2015. This is a remarkable change in the dynamics of Indian imports. However, the latest change in duty structure will likely reduce this inflow of doré, as it is now more difficult for smaller refineries to source the material. There is overcapacity in the refining industry and we believe the sector will likely enter a phase of consolidation.

The threats to the industry are two-fold: sourcing sufficient doré to utilise the industry’s capacity, and protecting India’s refining and recycling reputation. The government is keenly aware of the threat to India’s reputation, and has put in place legislation and processes to protect and improve it. Over time, it is likely these will edge ever-closer to international standards.

A number of policies will continue to support recycling and refining. Another pillar of support is Prime Minster Modi’s “Make in India” campaign. The aim of this programme is to attract overseas investment and make the country a global manufacturing hub. One of the proposals from the jewellery industry is to develop a gold policy which includes, among other things, gold recycling. Finally, there is the gold monetisation scheme. Initially, we believe it will mobilise only a modest amount of gold. But over time, if the scheme is well structured, this could grow. Increased recycling levels will also, at the margin, support the refining industry.

Refining sector

![Diagram showing capacity increase from 2013 to 2015]

Capacity in the industry increased by 750t