

Supply & demand data

Methodology note

Overview

The gold market is broad and complex, so producing statistics on demand and supply is challenging. But having such statistics is crucial to understanding the fundamentals of the market. The World Gold Council overcomes the complexity to produce a robust, comprehensive and well-researched series of global gold demand and supply data. We publish these data and supporting commentary in our quarterly Gold Demand Trends report.

1 Demand & supply data provider

Our core demand and supply data are provided by Metals Focus, a leading independent precious metals consultancy. Metals Focus meets our strict criteria for the provision of demand and supply data, which includes the need for an extensive global network, an experienced team, and a robust methodology. These elements combine to create a framework for collecting accurate, granular and transparent estimates for gold demand and supply.

2 Data collection framework

A strong and consistent framework is essential to the collection of robust, reliable and detailed statistics on global gold demand and supply. This framework contains four key elements:

2.1 Extensive contact network

A far-reaching network of contacts throughout the gold industry is an essential component of the data collection framework. This network needs to cover the entire supply chain, including, but not limited to: miners; scrap collectors; refiners; transport companies; bullion banks; bullion dealers; official mints; industrial users; jewellery manufacturers; retailers; and industry associations.

Field research should involve frequent communication with contacts. In particular, there is no substitute for face-to-face meetings, which improves the flow of proprietary, non-public information about gold flows.

Global coverage is essential. It is important to have analysts based in the large physical markets, such as India and China. And it is equally important to have a regular and extensive travel programme to all key markets.

2.2 Access to data from a wide range of publicly available/subscription-based sources

To obtain the best estimates, quantitative data from a variety of public and subscription-based sources must be combined with the private, confidential quantitative and qualitative information gathered through extensive field research.

This includes, but is not limited to: International trade statistics; central bank holdings; hallmarking statistics; ETF holdings; trade association disclosures; and the company reports of mining companies, jewellery retailers, and industrial fabricators.

2.3 An experienced team

An experienced team of research analysts will bring important benefits, including an understanding of the gold market's complexities, nuances around the data, and an awareness of how to conduct field research in the most effective and appropriate way, using sensitivity and discretion.

The team must have a broad skillset. It should include geology, economics and an experience of working in the gold industry, not just analysing it from afar.

2.4 Comprehensive clear, methodological approach

A clear methodological approach is required in marrying up and sense-checking the various inputs into the demand and supply data model. This requires an understanding of the limitations of each of the sources of information. Publicly available data must be interrogated for accuracy, integrity and completeness. An ability to correctly interpret such data in light of quantitative and qualitative information gleaned from private sources is essential.

A coherent team approach is similarly vital. Clear and constant communication across the research team, cross-referencing data points and information flow, ensures that data points are backed up by multiple sources and (given the global nature of the gold market) that the knock-on effects of any changes or developments in a sector or country are captured.

And finally, the data must be subject to consistent overview and approval.

3 Data collection process

Metals Focus' global gold demand and supply data series are constructed using a 'bottom up' methodology: supply and demand are established at the individual country level before being aggregated up to a global number.

The first step in this process is to measure the supply of gold for each country, which indicates the amount of gold available locally for jewellery, investment and technology. Data from various sources will feed into each of the three inputs into local supply: mine production, net bullion imports and recycling. Those sources will vary from market to market, but may include: trade data, information from refiners, banks, bullion dealers, exchanges, and scrap collectors.

Once supply has been assessed, an estimate can be made for jewellery fabrication, investment, technology and central banks.

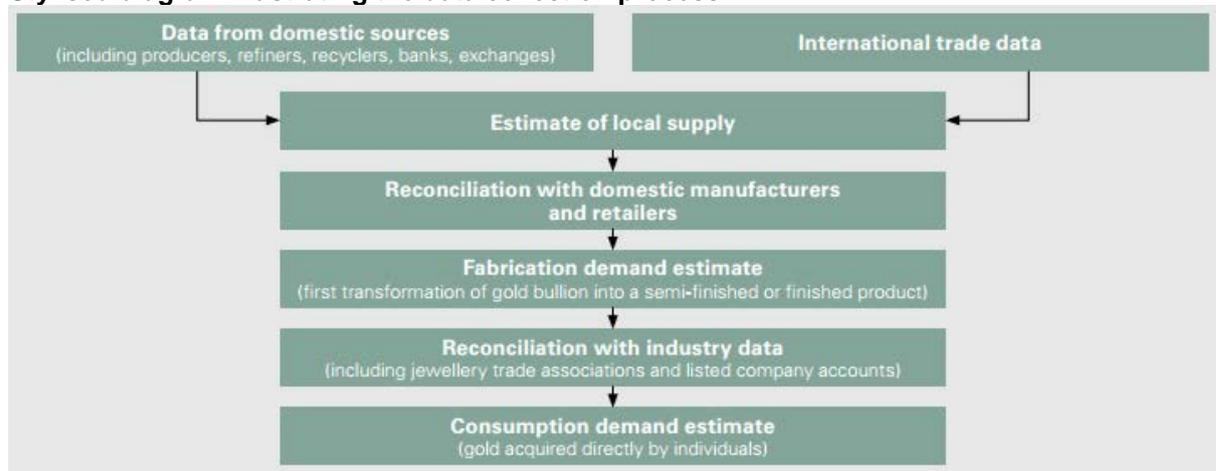
- Jewellery fabrication will be measured using information collected from a range of sources, including jewellery manufacturers, refiners, government trade statistics and – in some cases – banks. The next step is to combine various public and private data inputs gathered through field research to gauge developments at the wholesale and retail level and thereby reach an estimate for jewellery consumption.
- Technology fabrication is estimated using trade data alongside industrial indicators and information from industrial manufacturers, wholesalers and retailers of gold.
- Investment demand will be measured using information from mints, manufacturers, retailers, wholesale dealers, banks etc.
- And central bank demand is calculated using information from three different sources. Monthly International Financial Statistics produced by the IMF serve as an initial check for central bank transactions, but it is important to be aware that not all changes will

reflect an outright sale or purchase – for example, swap activity can appear as a change to central bank holdings.¹ A second vital source is confidential information regarding unrecorded sales and purchases. The final element in calculated net central bank purchases is analysis of trade flow data.

At various stages, these estimates will be cross-checked to eliminate discrepancies in the data, before being reconciled to produce a final, country-level balance.

Once a country-level balance has been determined, these numbers will be aggregated to arrive at a global total. The process of data reconciliation and cross-checking will be repeated, to ensure that any unexpected surpluses or deficits are either explained and verified, or eliminated through the iterative calculation process.

Stylised diagram illustrating the data collection process



4 Interpreting and using the data

4.1 Consumption vs fabrication

An important distinction to make in any discussion of gold demand is the difference between fabrication and consumption. The data discussed in Gold Demand Trends are measured on a consumption basis, but fabrication is a key metric in the process of measuring gold demand. We report both measures in our supply and demand data tables.

Gold *fabrication* is the first transformation of gold bullion or grain into a semi-finished or finished product (i.e. jewellery, coins, bars, semi-conductor etc.). Gold *consumption* represents final end-user demand, i.e. what is actually bought by consumers. At the country level, consumption is equal to fabrication plus net imports of finished/semi-manufactured jewellery, adjusted for changes in retail stocks. So the relationship between the two is explained as:

Fabrication + net imports - net increase in inventories = Consumption

Technology demand will always be measured on a fabrication basis (as it is not ‘consumed’ by end users as such).

¹ Such changes are identified in our central bank gold holdings data. For an explanation of the methodology behind our central bank statistics, please see ‘Methodology: Central bank gold holdings data set’

4.2 Accuracy

Given the opacity and complexity of the market, supply and demand statistics are best thought of as estimates, with some estimates being more accurate than others.

For example, data on inflows and outflows from gold-backed Exchange Traded Funds are very accurate. These products are transparent and the data is publicly available. Recycling, however, is a large, diffuse and opaque market. Estimates in this category come with more uncertainty and are more likely to be revised.

The data collection framework and process, however, are designed to ensure that each estimate is as accurate as possible based on the information available at that point in time.

4.3 Revisions

Revisions to statistics are common place and are to be welcomed as a sign of improved market intelligence. Many macroeconomic indicators, such as gross domestic product estimates, are revised. Gold statistics are no different. The first estimate of the supply and demand data will capture a certain amount of information. But over time new information may come to light which is incorporated into the data. The World Gold Council is committed to publishing the most accurate, up-to-date gold demand and supply data available. We are transparent with revisions to our data series, which will be updated to reflect any new information that comes to light or if new measurement methods are introduced.

5 Demand & supply time series

In 2014, after a thorough review of the world's leading gold market data providers, we made the decision to switch from GFMS Thomson Reuters to Metals Focus.

This created a challenge in taking two data sets and creating a single, consistent time series. We explain this challenge and our approach in detail in our note, *Creating a consistent historical demand and supply data series*, but in summary:

- Our data series from 1995 to Q4 2009 is exclusively GFMS Thomson Reuters
- From Q1 2010 to Q4 2013 the data undergo a *weighted transition*, where the two data sets are combined by progressively reducing the weight of GFMS Thomson Reuters data while increasing the weight of Metals Focus data.
- From Q1 2014 our data is exclusively Metals Focus

You can subscribe to our supply and demand data at <http://www.gold.org/statistics#supply-and-demand-data>, where you can also request to receive copies of our research, including Gold Demand Trends.