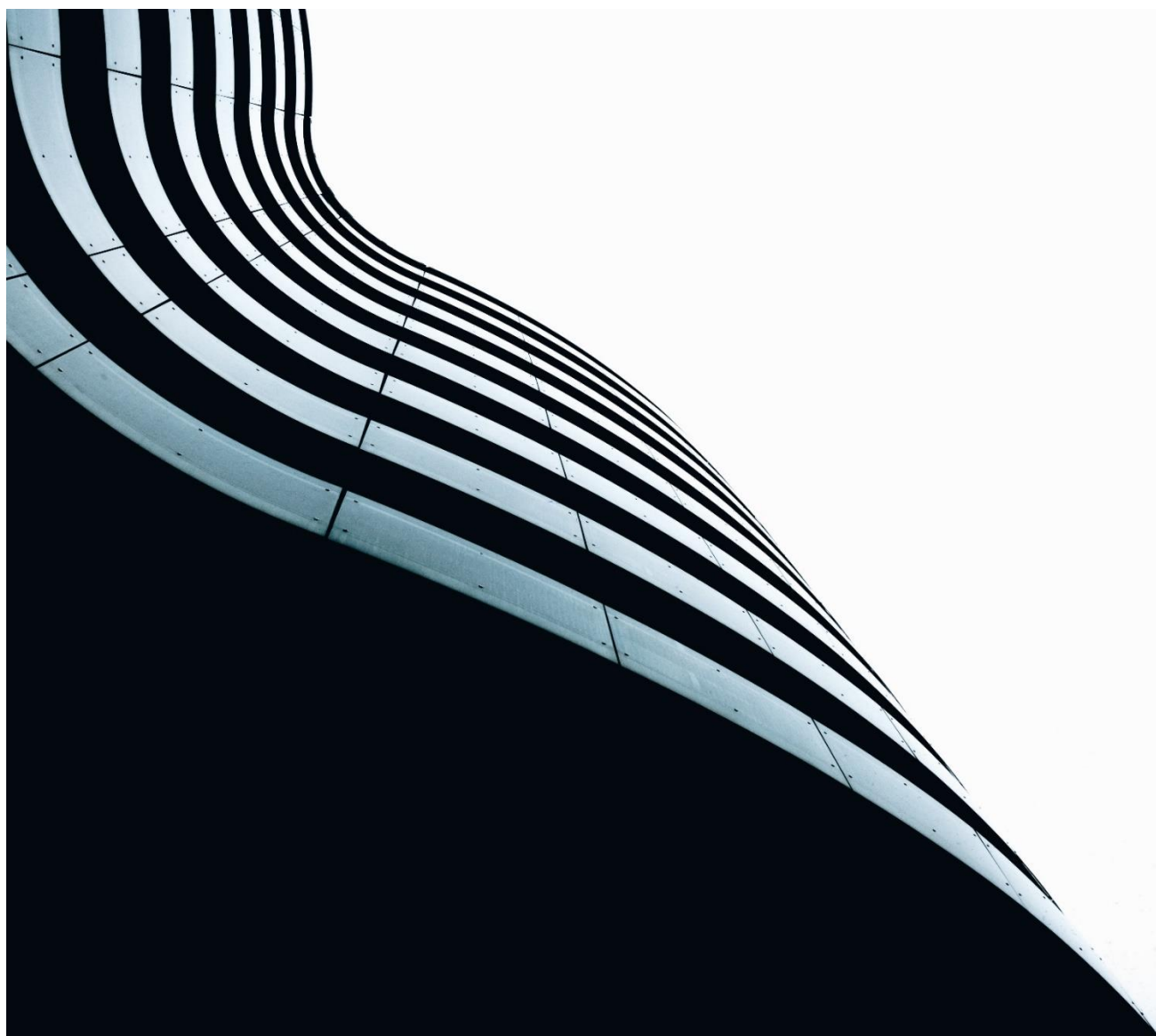


PMI™ Commodity Price & Supply Indicators

Unique and timely insights into supply delays for
key commodities, services and product groups



PMI™

by S&P Global

PMI™ Overview

Purchasing Managers' Index™ (PMI™) surveys have become key benchmark indicators of economic conditions in the world's largest economies and emerging markets. S&P Global conducts monthly surveys of private sector business conditions in over 40 economies worldwide, polling over 27,000 companies. The survey results generate PMI data that track changes in variables such as output, new orders, inventories, employment and prices.

PMI surveys are based on fact, not opinion, and are the first indicators of economic conditions published each month. The data are collected using identical methods in all countries, so that international comparisons can be made between, for example, manufacturing in Brazil and Russia by using the monthly data.

The indexes achieve considerable press coverage on a regular basis and are widely used by economists and analysts in financial institutions, industry and commerce. Notably, central banks in the European Union, United States and Asia use PMI data to help guide monetary policy.

PMI surveys have established highly-regarded track records for accurately anticipating changes in economic conditions in key economies, including the US, the United Kingdom, Germany, France, Italy, Japan, Hong Kong SAR and the eurozone.

Key benefits

PMI surveys have been developed in order to provide analysts with an accurate and timely dataset which helps them to better understand economic conditions. In many cases, the advantages offered by PMI data overcome deficiencies in official economic data. These advantages include:

Frequent publication

PMI surveys are published monthly. National accounts data, from which the most comprehensive and important measure of economic activity – gross domestic product – is derived, are generally published only quarterly.

Timely publication

PMI surveys are published on a timely basis just after the reference period. In contrast, a significant period of time often elapses before official data are published. For GDP, the delay may be several months. PMI data provide figures several weeks in advance of comparable official monthly output data, and several months ahead of quarterly national accounts data.

Not subject to revision after first publication

Unadjusted PMI data are not revised after first publication. In comparison, official data are frequently subject to revision, and phrases such as 'the economy grew faster than first thought' remain commonplace in press articles and analysts' briefing notes.

International comparability

PMI surveys are conducted internationally using a consistent methodology. By comparison, a further problem associated with official data is that not all statistical bodies compile data using identical methodologies. For example, a great deal of effort in terms of harmonization of methodologies was required among the national European statistics offices in order to obtain a consistent measure of eurozone GDP.

Commodity Price & Supply Indicators

Data calculation

PMI™ Commodity Price & Supply Indicators are derived from S&P Global's monthly Purchasing Managers' Index™ (PMI) business surveys. These surveys are highly regarded worldwide for providing accurate and timely data on economic trends.

The manufacturing PMI survey covers variables such as output, order books, employment, purchase prices, and suppliers' delivery times, with monthly data collected from approximately 10,000 companies worldwide.

When questioned about suppliers' delivery times, companies are also asked to list any specific items that have been in short supply each month. These lists of items are transformed into Supply Shortage Indicators (SSIs), which show the development of supply pressures relative to long-run trends.

When questioned about purchase prices, companies are also asked to list any specific items that have increased or decreased in price each month. These lists of items are transformed into Price Pressure Indicators (PPIs), which show the development of price pressures relative to long-run trends.

Supply Shortage Indicators (SSIs):

SSIs are calculated from the number of purchasing managers that report a specific item to have been in short supply during the survey month. An adjustment is made each month to allow for any month-to-month variation in the total number of survey respondents. Indices are presented as a multiple of the long-run average from 2005 - 2020.

An index value of 1.0 means that supply shortages are in line with the long-run average.

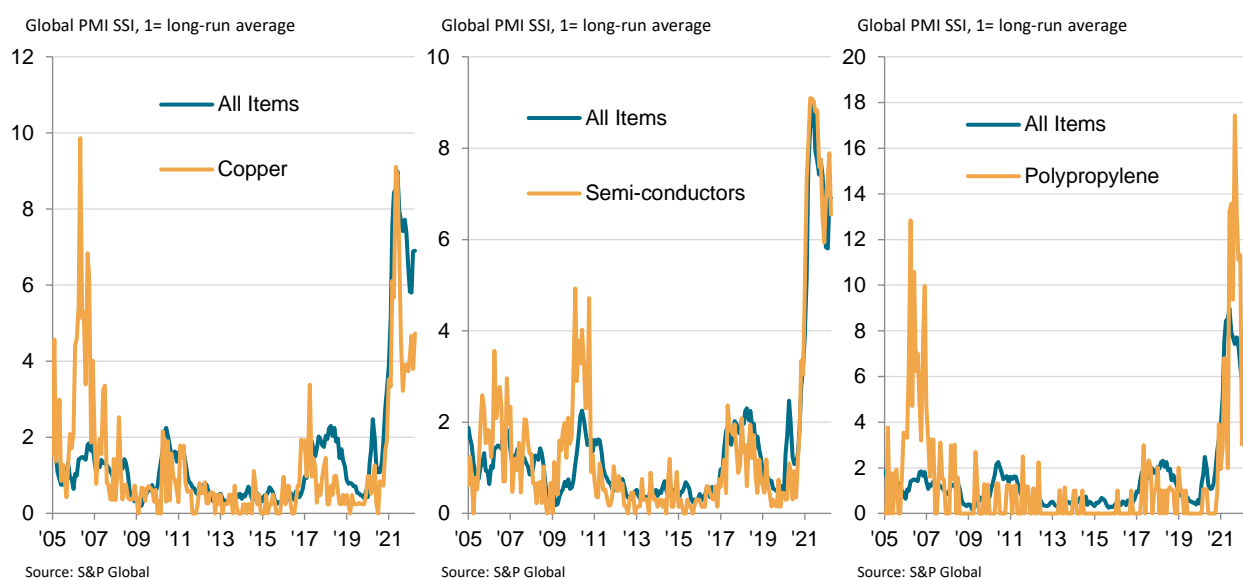
Any figure above 1.0 indicates that supply shortages are above the long-run trend, and the higher the figure the greater the number of shortages relative to the average. For example, an index value of 3.0 would signal that reports of supply shortages in the reference month are three times the normal amount.

Any figure below 1.0 therefore indicates that supply shortages are below the long-run trend, and the lower the figure the fewer the number of shortages relative to the

average. For example, an index value of 0.2 would signal that reports of supply shortages in the reference month are one-fifth of the normal amount.

Data are not revised after first publication.

No significant seasonality has been detected in the main SSIs hence the SSIs are not seasonally adjusted.



Price Pressure Indicators (PPIs):

PPIs are calculated from the number of purchasing managers that report a specific item to have been up in price during the survey month (less the number reporting an item down in price). An adjustment is made each month to allow for any month-to-month variation in the total number of survey respondents. Indices are presented as a multiple of the long-run average from 2005 - 2020.

The index is based such that a value of 1.0 means that price pressure is in line with the long-run average.

Any figure above 1.0 indicates that price pressure is above the long-run trend, and the higher the figure the faster the rate of increase relative to the average. For example, an index value of 3.0 would signal that reports of price increases in the reference month are three times the normal amount.

Any figure above 0.0 but lower than 1.0 indicates that price pressure is below the long-run trend, and the lower the figure the slower the rate of increase relative to the

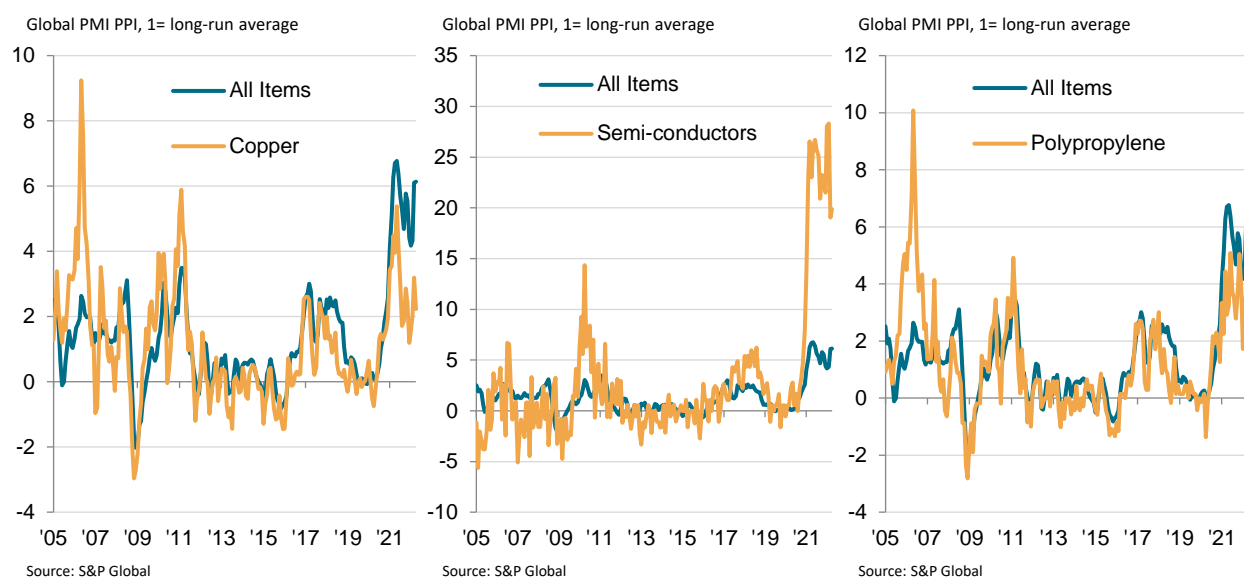
average. For example, an index value of 0.2 would signal that reports of price increases in the reference month are one-fifth of the normal amount.

A value of 0.0 means that prices are stable during the reference month.

Any figure below 0.0 indicates that reports of price declines exceed reports of rising prices, and the lower the figure the greater the degree of negative price pressure. For example, an index value of -3.0 would signal that reports of price declines in the reference month are three times the normal amount of price pressure.

Data are not revised after first publication.

No significant seasonality has been detected in the main PPIs hence the PPIs are not seasonally adjusted.



Coverage

Historical data for the S&P Global PMI™ Commodity Price & Supply Indicators extend to January 2005.

Indices are calculated from responses to the following 15 manufacturing PMI surveys: Brazil, Canada, China, France, Germany, India, Ireland, Italy, Netherlands, Russia, South Korea, Spain, Taiwan, UK, US.

Each month's results are adjusted by survey response numbers, which accounts for different start dates across the national PMI surveys that feed into the global supply shortages dataset and any other variations in response rates.

Figures are published at the global level.

Items covered: Supply Shortage Indicators (SSIs)

The headline index is the 'All Items Index'. In addition, individual indices are published for the following 20 items and groupings: Semiconductors, Electrical Items, Oil, Transport, Chemicals, Polymers, Polyethylene, Polypropylene, PVC, Rubber, Timber, Paper, Packaging, Food, Textiles, Aluminium, Copper, Iron, Steel, Stainless Steel.

Items covered: Price Pressure Indicators (PPIs)

The headline index is the 'All Items Index'. In addition, individual indices are published for the following 26 items and groupings: Semiconductors, Electrical Items, Oil, Transport, Chemicals, Polymers, Polyethylene, Polypropylene, PVC, Rubber, Timber, Paper, Packaging, Food, Textiles, Aluminium, Copper, Iron, Steel, Stainless Steel, Electricity, Energy, Gas, Paint, Cartons, Polystyrene.

All Items Index

A headline All Items Index is available for both the Supply Shortage Indicators and the Price Pressure Indicators. All Items indices are calculated as follows:

All Items Supply Shortage Index: the sum, across all constituent items, of the number of purchasing managers that report a specific item to have been in short supply during the survey month.

All Items Price Pressure Index: the sum, across all constituent items, of the number of purchasing managers that report a specific item to have been up in price during the survey month (less the number reporting an item down in price).

The constituent items included in the sum are the same for both headline indices:

- | | | |
|--------------------|-----------------|-------------------|
| - Semiconductors | - Polypropylene | - Textiles |
| - Electrical Items | - PVC | - Aluminium |
| - Oil | - Rubber | - Copper |
| - Transport | - Timber | - Iron |
| - Chemicals | - Paper | - Steel |
| - Polymers | - Packaging | - Stainless Steel |
| - Polyethylene | - Food | |