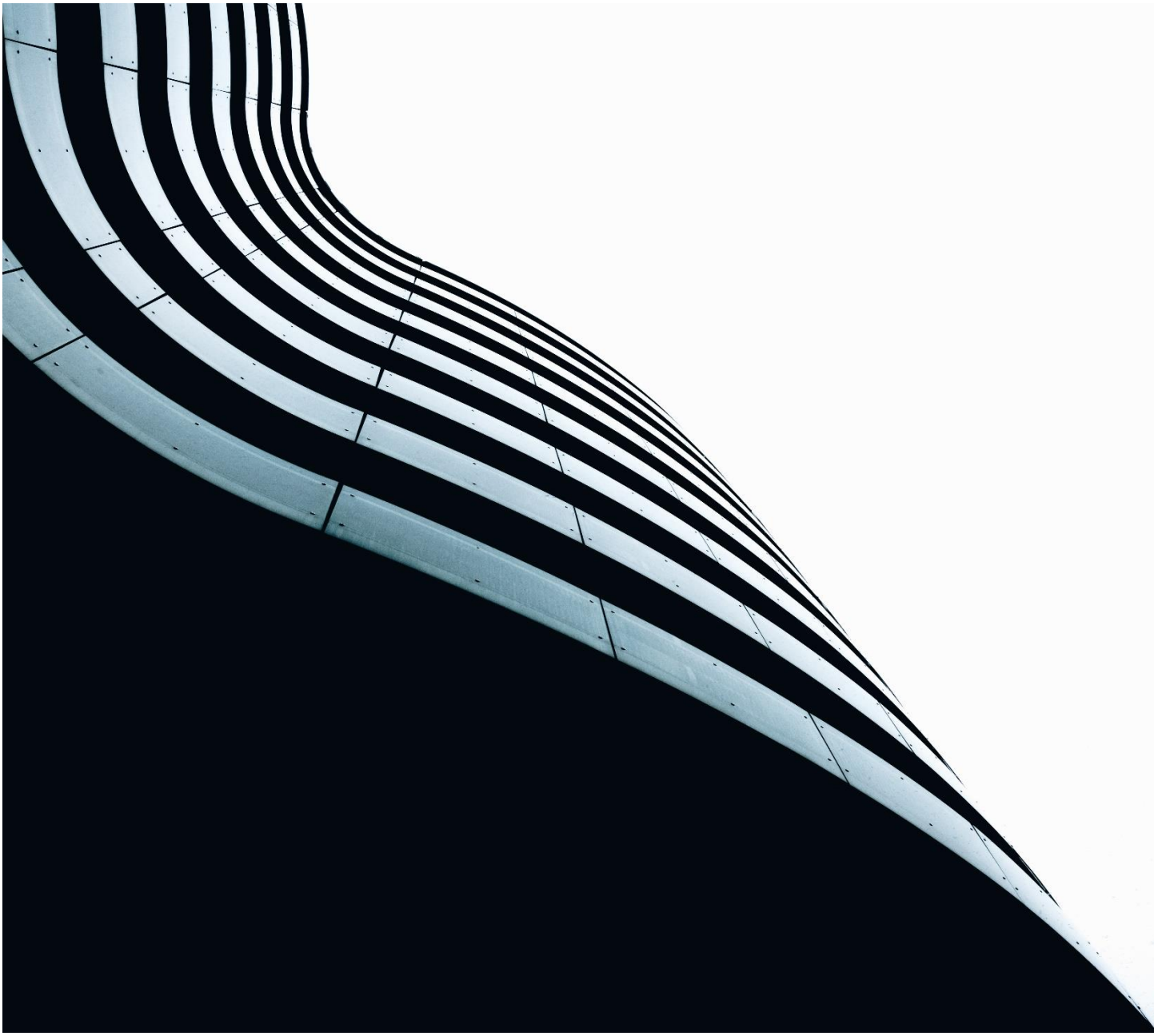
S&P Global PMI™

An introduction to the PMI surveys



PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

INTRODUCTION 3

METHODOLOGY 4

What S&P Global do and why we do it 4

Creating S&P Global PMI Data 5

Panel building 6

Data Collection 6

Data Calculation 7

Seasonal adjustment 7

COVERAGE: NATION 8

COVERAGE: SECTOR 9

COVERAGE: SURVEY INDICES 10

Coverage: Survey Indices – Headline Indices 12

Coverage: Survey Indices – Flash PMI Indices 13

PMI™

by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

Introduction

Welcome to the S&P Global PMI™ data, compiled by S&P Global. The following document provides a simple single source overview of S&P Global, the S&P Global PMI survey methodology and the data produced.

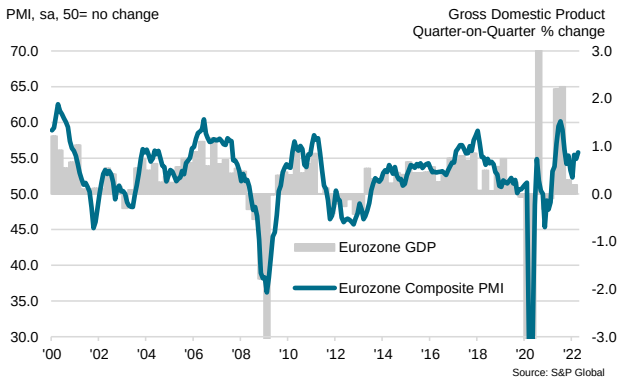
S&P Global is a global provider of some of the world's most influential business surveys, one example being the PMI.

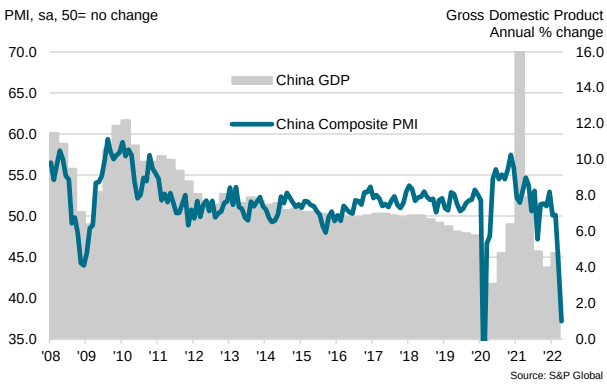
Our indicators are closely watched by the financial markets and help shape economic policy, by providing some of the earliest signals of economic performance.

The surveys form a key source of business intelligence for participants operating in the 'real' economy. Our data are presented in a clear, jargon-free format, allowing a swift understanding of current economic trends.

Purchasing Managers' Index™ (PMI™) series are monthly economic surveys of carefully selected companies. They provide an advance signal of what is really happening in the private sector economy, by tracking variables such as output, new orders, employment and prices across key sectors.

Before outlining the PMI methodology in greater detail, take a look at the charts below showing examples of the close relationship between the PMI survey indicators and official economic data. The PMI data – which are published earlier than the official data – clearly identify the turning points in the business cycle and closely track the rate of change in key economic variables such as gross domestic product (GDP). This proven track record is one of the many reasons why the PMI is so closely monitored.





PMI™
by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

Methodology

What S&P Global do and why we do it

The PMI methodology was developed to resolve issues caused by the following deficiencies and weaknesses in many official economic indicators:

- Inconsistent methodologies between nations and regions, making like-for-like comparisons between nations or regions difficult
- Infrequent releases and delays in publication
- Difficulties in providing coverage for the whole economy
- Frequent and ongoing revisions

These problems mean decisions are often made on the basis of data that subsequently change, providing the potential for policy and investment allocation errors.

The PMI methodology allows for rapid collection, processing, analysis and publication of data, providing a timely, accurate, reliable and internationally consistent series of global economic indicators.

There are four key elements to the methodology:

1. Standard questionnaire asked to key decision makers
    - Companies asked questions covering output, demand, prices, employment
    - Providing 'grass roots' level perspective on actual economic trends
    - Designed to produce timely information ahead of official data
2. Responses are provided simply on the basis if levels are higher, the same or lower than in the prior month
    - Allows rapid and accurate data collection
    - Quantitative responses ensure hard economic data...based on fact NOT opinions
3. Data are collected from structured panels, recruited and managed to ensure accurate representation of underlying economic structure

PMI™ by S&P Global

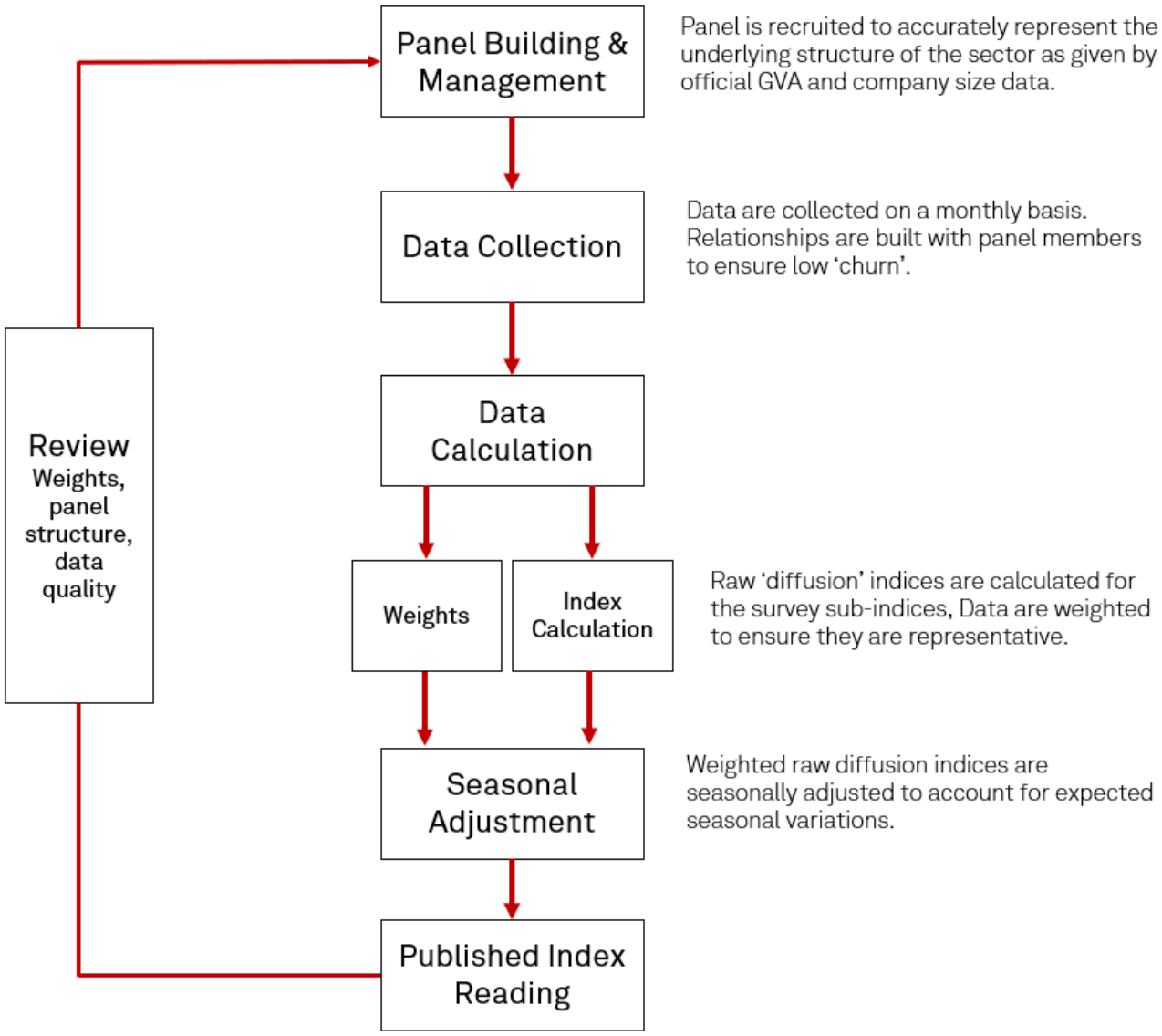
Copyright © 2023 S&P Global. All rights reserved.

- Resulting indices are also weighted to further ensure accuracy and representation

4. Underlying survey responses included in the indices are not revised after first publication

Creating S&P Global PMI Data

The methodology for creating S&P Global PMI data flows through a number of stages, starting from the initial building of the panel, through data collection and calculation and then the final publication of the latest readings. The following diagram outlines the process.



PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

Panel building

Structural economic indicators obtained from national statistics offices are used to construct a recruitment matrix by company size and sector contributions to overall sectorial gross value added (GVA). This matrix is then used to target recruitment of a representative sample of companies for the survey. The building of the panel may be undertaken either by an in-house panel manager at S&P Global or by a country local agency.

An example of a recruitment matrix is shown below:

ISIC Service Sector Classification	1-19 Employees	20-249 Employees	250+ Employees	Sector (%)
Hotels & Restaurants	9	7	3	4
Transport & Storage	8	15	18	8
Post & Telecommunications	0	25	0	5
Financial Intermediation	12	14	17	8
Renting & Business Activity	98	108	87	58
Other Services	24	28	34	17
Total	151	197	163	100

*Please note actual targets are more detailed by sector than illustrated

Data Collection

Data are collected either by an in-house panel manager at S&P Global or by a country local agency. Companies are asked a standard sector-specific questionnaire on a monthly basis. Questions are of the form, using output as an example, of:

"Is the level of output at your unit (in volume terms) higher, the same or lower than one month ago"

Companies are also asked to provide reasons (freehand) for the response given.

Data are usually collected during the middle two weeks of the month, so companies are asked to compare mid-month to mid-month. All responses are input into S&P Global Polling Engine database for data calculation and weighting purposes.

Details on the variables for which data are collected are included in section Coverage: Survey Indices

Copyright © 2023 S&P Global. All rights reserved.

Data Calculation

Individual company responses are weighted according to sector and company size contributions to overall sectorial gross value added based on the weighting matrix constructed in the same way as the recruitment matrix used when recruiting the panel. The weighting provides S&P Global with the weighted proportions of companies responding up, the same and lower.

The latest values for the sub-indices are then calculated using the following formula:

INDEX VALUE = (% 'up') + (0.5 * (% 'the same')) + (0.0 * (% reporting 'down'))

The resulting index values are therefore bounded between 0 (all companies respond lower) and 100 (all companies respond higher), with a theoretical no-change mark at 50 (all companies respond 'the same' or equal proportions respond up as do for down).

The resulting index is called a diffusion index, with values above 50.0 signaling expansion and below 50.0 indicating contraction. The distance from the 50 no-change mark signals the implied rate of change in the variable, the further from 50.0 the faster the rate of change indicated.

Note on interpreting the index

For example, take a movement in a PMI output sub-index from 55.0 in January to 52.5 in February. Although the level of the output index has fallen, it has nonetheless posted above 50.0 in both months. The correct interpretation is that the volume of output expanded in both January and February, but that the rate of increase was slower in February compared to January.

Seasonal adjustment

S&P Global PMI sub-indices are seasonally adjusted using a combination of the Census Bureau X-12 ARIMA method and an in-house method developed by S&P Global incorporating past adjustment factors and additional information on observed seasonality provided from panel members' responses.

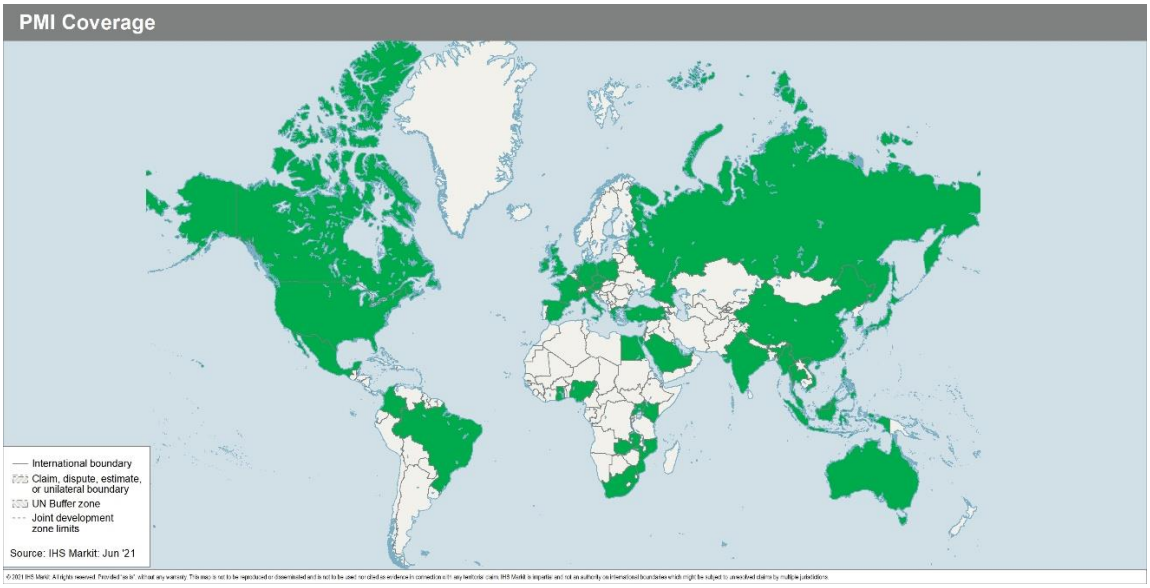
PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

Coverage: Nation

Purchasing Managers' Index (PMI) surveys are now available for more than 40 countries and for key regions including the Eurozone.

Together these countries account for over 86% of global gross domestic product (GDP), providing a true, internationally consistent indication of global economic trends based on fact, not opinion. They are the most closely-watched business surveys in the world, favoured by central banks, financial markets and business decision makers for their ability to provide up-to-date, accurate and often unique monthly indicators of economic trends.



S&P Global publishes PMI data for the following regions (correct as of January 2021):

Australia
Austria
Brazil
Canada
Mainland China
Colombia
Czech Republic
Egypt
France
Germany
Ghana
Greece
Hong Kong SAR
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Lebanon
Malaysia
Mexico
Mozambique
Myanmar
Netherlands
Nigeria
Philippines
Poland
Qatar
Russia
Saudi Arabia
Singapore
South Africa
South Korea
Spain
Taiwan
Thailand
Turkey
Uganda
United Arab Emirates
United Kingdom
United States
Vietnam
Zambia

PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

Coverage: Sector

The following table outlines the manufacturing, services and whole economy surveys produced by S&P Global (correct as of January 2021):

Manufacturing	Services	Whole Economy	Construction
Australia	Australia	Egypt*	France
Austria	Brazil	Ghana	Germany
Brazil	China (mainland)	Hong Kong SAR	Ireland
Canada	France	Kenya	Italy
China (mainland)	Germany	Lebanon	United Kingdom
Colombia	India	Mozambique	
Czech Republic	Ireland	Nigeria	
France	Italy	Qatar*	
Germany	Japan	Saudi Arabia*	
Greece	Kazakhstan	Singapore	
India	Russia	South Africa	
Indonesia	Spain	Uganda	
Ireland	United Kingdom	United Arab Emirates*	
Italy	United States	Zambia	
Japan		*Non-oil*	
Kazakhstan			
Malaysia			
Mexico			
Myanmar			
Netherlands			
Philippines			
Poland			
Russia			
South Korea			
Spain			
Taiwan			
Thailand			
Turkey			
United Kingdom			
United States			
Vietnam			

PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

Coverage: Survey Indices

The list of indices available for the manufacturing and service sector surveys is shown below. Reading across the columns of each row of the table shows the comparable index types for each sector and which indices for manufacturing and services are weighted together to calculate the composite readings.

For example, the Manufacturing Output Index is the direct equivalent of the Services Business Activity Index and these two indices are weighted together to calculate the Composite Output Index. (Return to section Data Collection for more information on the weighting process).

The headline index from each survey type is shown in red text.

Important clarification: The headline Composite Output Index is a weighted average of the headline Services Business Activity Index and the Manufacturing Output Index. The headline Manufacturing PMI is NOT used in the calculation of the Composite Output Index.

Manufacturing	Services	Composite (M + S)
Output	Business Activity	Output
New Orders	New Business	New Orders
Employment	Employment	Employment
Input Prices	Input Costs	Input Prices
Output Prices	Prices Charged	Output Prices
Backlogs of Work	Outstanding Business	Backlogs of Work
Future Output	Future Activity	Future Output
New Export Orders	New Export Business	New Export Orders
Suppliers' Delivery Times		
Quantity of Purchases		
Stocks of Purchases		
Stocks of Finished Goods		
Purchasing Managers Index™ (PMI™)		

PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

The table below outlines the index coverage for the whole economy and construction surveys:

Whole Economy	Construction
Output	Total Industry Activity
New Orders	New Orders
Employment	Employment
Overall Input Prices	Input Prices
Output Prices	
Backlogs of Work	
Future Output	Future Activity
New Export Orders	
Suppliers' Delivery Times	Suppliers' Delivery Times
Quantity of Purchases	Quantity of Purchases
Stocks of Purchases	
Purchase Prices	
Staff Costs	
Purchasing Managers Index™ (PMI™)	
	Housing Activity
	Commercial Activity
	Civil Engineering Activity
	Sub-contractor Use
	Sub-contractor Availability
	Sub-contractor Quality
	Sub-contractor Rates Charged

PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

Coverage: Survey Indices – Headline Indices

For each survey type (manufacturing, services, whole economy and construction), S&P Global have defined a concept called the headline index. A headline index is the seasonally adjusted index within that survey which is most closely watched by the markets. The value of the headline index, unlike the values of other sub-indices, will appear on the press releases published by S&P Global.

Survey Type	Headline Index
Manufacturing	Purchasing Managers' Index™ (PMI™)
Services	Business Activity Index
Whole Economy	Purchasing Managers' Index™ (PMI™)
Construction	Total Industry Activity Index

For services and construction, the headline index is therefore based on a single question asking if levels activity are higher, the same or lower than in the previous month.

For manufacturing and whole economy surveys, a separate derived index is assigned headline status. This index is called the Purchasing Managers' Index™ (PMI™) and is calculated as a weighted average of the following sub-indices:

Index	Weight
New Orders	30%
Output	25%
Employment	20%
Suppliers' Delivery Times*	15%
Stocks of Purchases	10%

* The Suppliers' Delivery Times Index (SDTi) is inverted, i.e. 100-SDTi, when included in the headline PMI

PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.

Coverage: Survey Indices – Flash PMI Indices

For certain nations and sectors, S&P Global also produce a “flash” estimate approximately one week before final results are published. The flash estimate is calculated in exactly the same way as the final published data, except the sample is an early cut of the data comprising only 80%-85% of the final sample.

Flash manufacturing, services and composite indices are currently available for:

- Australia
- Eurozone
- France
- Germany
- G4
- Japan
- United Kingdom
- United States

PMI™ by S&P Global

Copyright © 2023 S&P Global. All rights reserved.