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J.P.Morgan Global Manufacturing PMI™

Global manufacturing downturn continues at end of 2022 as output and new orders fall further

Key findings

Output falls across US, China, euro area and Japan

Job losses registered for second successive month

International trade volumes fall

December saw the downturn in the global manufacturing sector continue. Although the rate of decline in production eased slightly, the level of new business fell at a sharper pace. The four-largest industrial economies – mainland China, the US, the euro area and Japan – all saw output and new work contract.

The J.P.Morgan Global Manufacturing PMI™ – a composite index produced by J.P.Morgan and S&P Global in association with ISM and IFPSM – fell to a 30-month low of 48.6 in December and remained below the neutral mark of 50.0 for the fourth straight month. Excluding the lows registered during the early months of the global pandemic, the current PMI reading is the lowest since the first half of 2009.

Later-than-usual releases dates meant that December manufacturing PMI data for Kazakhstan and Thailand were not available for inclusion in the global numbers. Japan flash data have been used as a substitute for the final data due for release later this week.

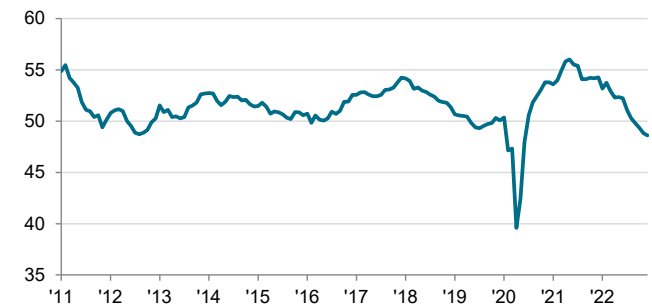
Only seven out of the 29 nations for which December data were available had a PMI reading in expansion territory – India, Russia, Mexico, Colombia, Indonesia, the Philippines and Australia. The US, the UK and Brazil were the largest nations ranking towards the lower reaches of the PMI league table.

Global manufacturing production declined for the fifth successive month in December, although the rate of contraction was slightly slower than November's 29-month record. The trend in demand fared worse, with new orders falling at the quickest pace for over two-and-a-half years and new export business declining to one of the greatest extents since mid-2020.

Data broken down by sector suggested that the downturn in production was centred on the intermediate goods industry, as output rose slightly in both the consumer and investment goods categories. All three sub-sectors saw new order

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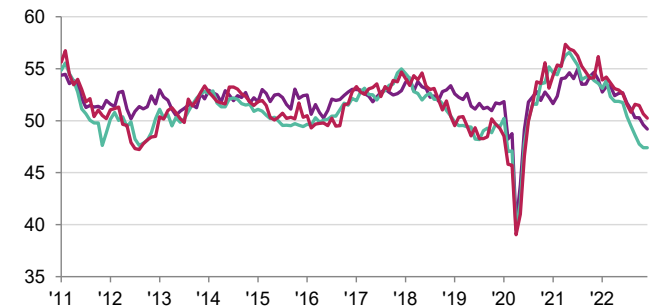
sa, >50 = improvement since previous month



Source: J.P.Morgan, S&P Global.

- Consumer Goods PMI
- Intermediate Goods PMI
- Investment Goods PMI

sa, >50 = improvement since previous month

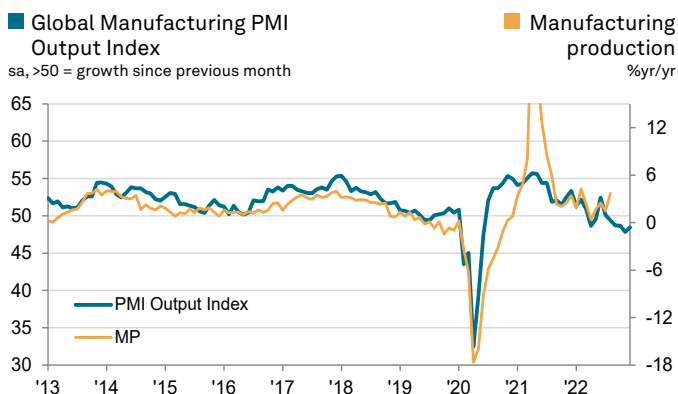


Source: J.P.Morgan, S&P Global.

Index summary

sa, 50 = no change over previous month. *50 = no change over next 12 months.

Index	Nov-22	Dec-22	Interpretation
PMI	48.8	48.6	Deterioration, faster rate
Output	47.8	48.5	Decline, slower rate
New Orders	46.7	46.3	Decline, faster rate
New Export Orders	46.2	46.1	Decline, faster rate
Future Output	57.9	59.8	Growth expected, better sentiment
Employment	49.9	49.7	Decline, faster rate
Input Prices	59.2	56.8	Inflation, slower rate
Output Prices	56.2	54.6	Inflation, slower rate

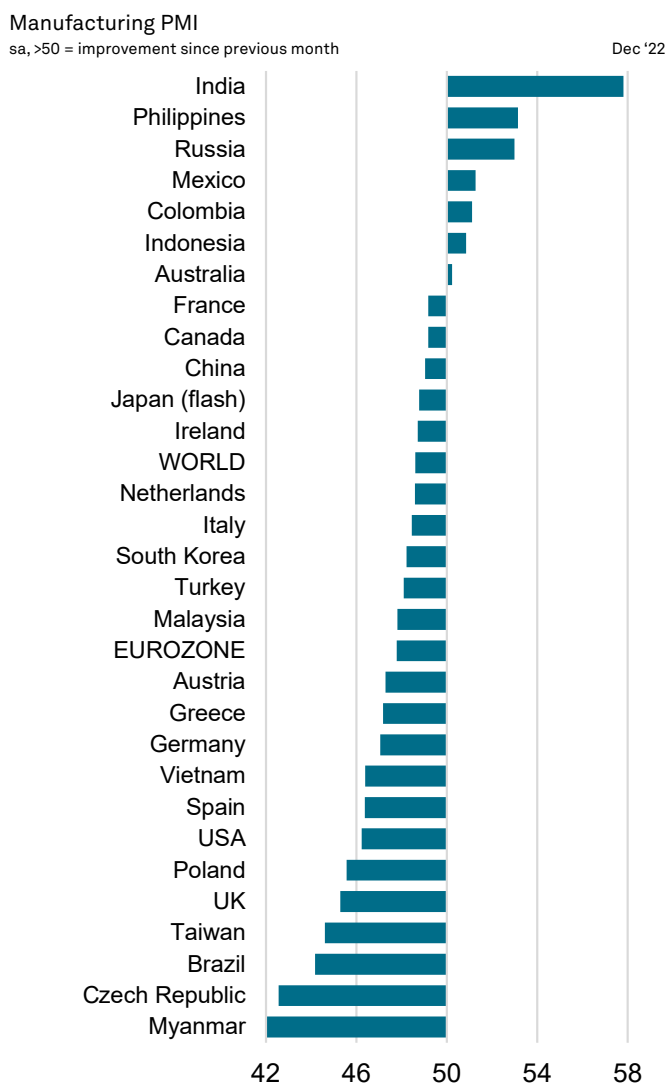


inflows deteriorate, with the steepest reduction again at intermediate goods producers.

The downturn in industry was reflected in the labour market, with manufacturing jobs cut for the second month running. The rate of decline was only slight, as losses in nations such as China, Brazil and the UK were partly offset by gains in the US, the euro area and Japan.

There were also signs that the outlook for production volumes may be stabilising, as business optimism rose to a four-month high and the cyclically sensitive new orders-to-finished goods inventories ratio edged higher. Post-production stocks fell for the first time in seven months, while input inventories declined for the second month in a row. Part of the reason for the reduction in the latter was a sharp drop in purchasing activity at manufacturers, as companies continued to dispose of safety stocks built up in response to supply disruptions earlier in 2022.

There was also better news of the prices front, as rates of inflation in both input costs and output charges eased to 26- and 24-month lows respectively. Increases in both price measures remained steeper (on average) in developed nations compared to emerging markets.



Contact

Bennett Parrish
Economic & Policy Research
J.P.Morgan Chase Bank
New York
bennett.parrish@jpmchase.com

Katherine Smith
Corporate Communications
S&P Global Market Intelligence
T: +1 (781) 301-9311
katherine.smith@spglobal.com

Rob Dobson
Director
S&P Global Market Intelligence
T: +44 1491 461 095
rob.dobson@spglobal.com

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Survey methodology

The J.P.Morgan Global Manufacturing PMI™ is produced by S&P Global in association ISM and IFPSM.

Global manufacturing PMI indices are compiled by S&P Global from responses to monthly questionnaires sent to purchasing managers in survey panels in over 40 countries (see table, right for full coverage), totalling around 13,500 companies. These countries account for 98% of global manufacturing value added*.

Survey responses are collected in the second half of each month and indicate the direction of change compared to the previous month. A diffusion index is calculated for each survey variable, at the country level. The index is the sum of the percentage of 'higher' responses and half the percentage of 'unchanged' responses. The indices vary between 0 and 100, with a reading above 50 indicating an overall increase compared to the previous month, and below 50 an overall decrease. The indices are then seasonally adjusted.

Indices are calculated for the following variables: output, new orders, new export orders, future output, backlogs of work, employment, quantity of purchases, suppliers' delivery times, stocks of purchases, stocks of finished goods, input prices and output prices.

Global manufacturing indices are calculated by weighting together the country indices. Country weights are calculated from annual manufacturing value added*.

The headline figure is the Global Manufacturing Purchasing Managers' Index™ (PMI). The PMI is a weighted average of the following five global indices: new orders (30%), output (25%), employment (20%), suppliers' delivery times (15%) and stocks of purchases (10%). For the PMI calculation the Suppliers' Delivery Times Index is inverted so that it moves in a comparable direction to the other indices.

Underlying survey data are not revised after publication, but seasonal adjustment factors may be revised from time to time as appropriate which will affect the seasonally adjusted data series.

For further information on the PMI survey methodology, please contact economics@ihsmarkit.com.

The J.P.Morgan Global Manufacturing PMI provides the first indication each month of world manufacturing business conditions. The data enable decision makers in the financial world and in government to make better judgements much earlier than would otherwise be the case. The wide coverage of the indices, together with their speed of production, accuracy and direct comparability, make them unmatched as economic indicators. They provide truly "must have" information for financial institutions of all kinds and for major corporations world-wide.

* Source: World Bank World Development Indicators.

About J.P.Morgan

JPMorgan Chase & Co. (NYSE: JPM) is a leading global financial services firm with assets of \$2.3 trillion and operations in more than 60 countries. The firm is a leader in investment banking, financial services for consumers, small business and commercial banking, financial transaction processing, asset management and private equity. A component of the Dow Jones Industrial Average, JPMorgan Chase & Co. serves millions of consumers in the United States and many of the world's most prominent corporate, institutional and government clients under its J.P. Morgan and Chase brands. www.jpmorganchase.com.

About S&P Global

S&P Global (NYSE: SPGI) S&P Global provides essential intelligence. We enable governments, businesses and individuals with the right data, expertise and connected technology so that they can make decisions with conviction. From helping our customers assess new investments to guiding them through ESG and energy transition across supply chains, we unlock new opportunities, solve challenges and accelerate progress for the world.

We are widely sought after by many of the world's leading organizations to provide credit ratings, benchmarks, analytics and workflow solutions in the global capital, commodity and automotive markets. With every one of our offerings, we help the world's leading organizations plan for tomorrow, today. www.spglobal.com.

About ISM

Institute for Supply Management® (ISM®) serves supply management professionals in more than 90 countries. Its 50,000 members around the world manage about US\$1 trillion in corporate and government supply chain procurement annually. Founded in 1915 as the first supply management institute in the world, ISM is committed to advancing the practice of supply management to drive value and competitive advantage for its members, contributing to a prosperous and sustainable world. ISM leads the profession through the ISM Report On Business®, its highly regarded certification programs and the ISM Mastery Model®. www.instituteforsupplymanagement.org

About IFPSM

The International Federation of Purchasing and Supply Management (IFPSM) is the union of 48 National and Regional Purchasing Associations worldwide. Within this circle, about 250,000 Purchasing Professionals can be reached. IFPSM facilitates the development and distribution of knowledge to elevate and advance the procurement profession, thus favourably impacting the standard of living of citizens worldwide through improved business practices. The term procurement is taken to embrace purchasing, materials management, logistics, supply chain management and strategic sourcing. IFPSM is a non-political, independent and non-profit oriented International Organization. www.ifpsm.org

About PMI

Purchasing Managers' Index™ (PMI™) surveys are now available for over 40 countries and also for key regions including the eurozone. 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. ihsmarkit.com/products/pmi.html.

Data sources

Region	Producer	In association with
Australia	S&P Global	–
Austria	S&P Global	Unicredit Bank Austria / OPWZ
Brazil	S&P Global	–
Canada	S&P Global	–
China (mainland)	S&P Global	Caixin
Colombia	S&P Global	Davivienda
Czech Republic	S&P Global	–
Denmark	DILF	Kairoscommodities
Egypt*	S&P Global	–
France	S&P Global	–
Germany	S&P Global	BME
Greece	S&P Global	HPI
Hong Kong SAR ¹ *	S&P Global	–
Hungary	HALPIM	–
India	S&P Global	–
Indonesia	S&P Global	–
Ireland	S&P Global	AIB
Israel	IPLMA	Bank Hapoalim Ltd
Italy	S&P Global	–
Japan	S&P Global	au Jibun Bank
Kazakhstan	S&P Global	Tengri Partners
Kenya*	S&P Global	Stanbic Bank
Lebanon*	S&P Global	BLOMINVEST Bank
Malaysia	S&P Global	–
Mexico	S&P Global	–
Myanmar	S&P Global	–
Netherlands (The)	S&P Global	Nevi
New Zealand	Business NZ	Bank of New Zealand
Nigeria*	S&P Global	Stanbic IBTC Bank
Philippines (The)	S&P Global	–
Poland	S&P Global	–
Russia	S&P Global	–
Saudi Arabia*	S&P Global	–
Singapore*	S&P Global	–
South Africa*	S&P Global	–
South Korea	S&P Global	–
Spain	S&P Global	AERCE
Switzerland	procure.ch	Credit Suisse
Taiwan	S&P Global	–
Thailand	S&P Global	–
Turkey	S&P Global	Istanbul Chamber of Industry
UAE*	S&P Global	–
United Kingdom	S&P Global	CIPS
United States ²	S&P Global / ISM	–
Vietnam	S&P Global	–

*Indices calculated from manufacturing responses extracted from survey panels covering the entire private sector economy.

¹Hong Kong is a Special Administrative Region of China.

²US data compiled by ISM pre-February 2010 and by S&P Global post-January 2010.

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