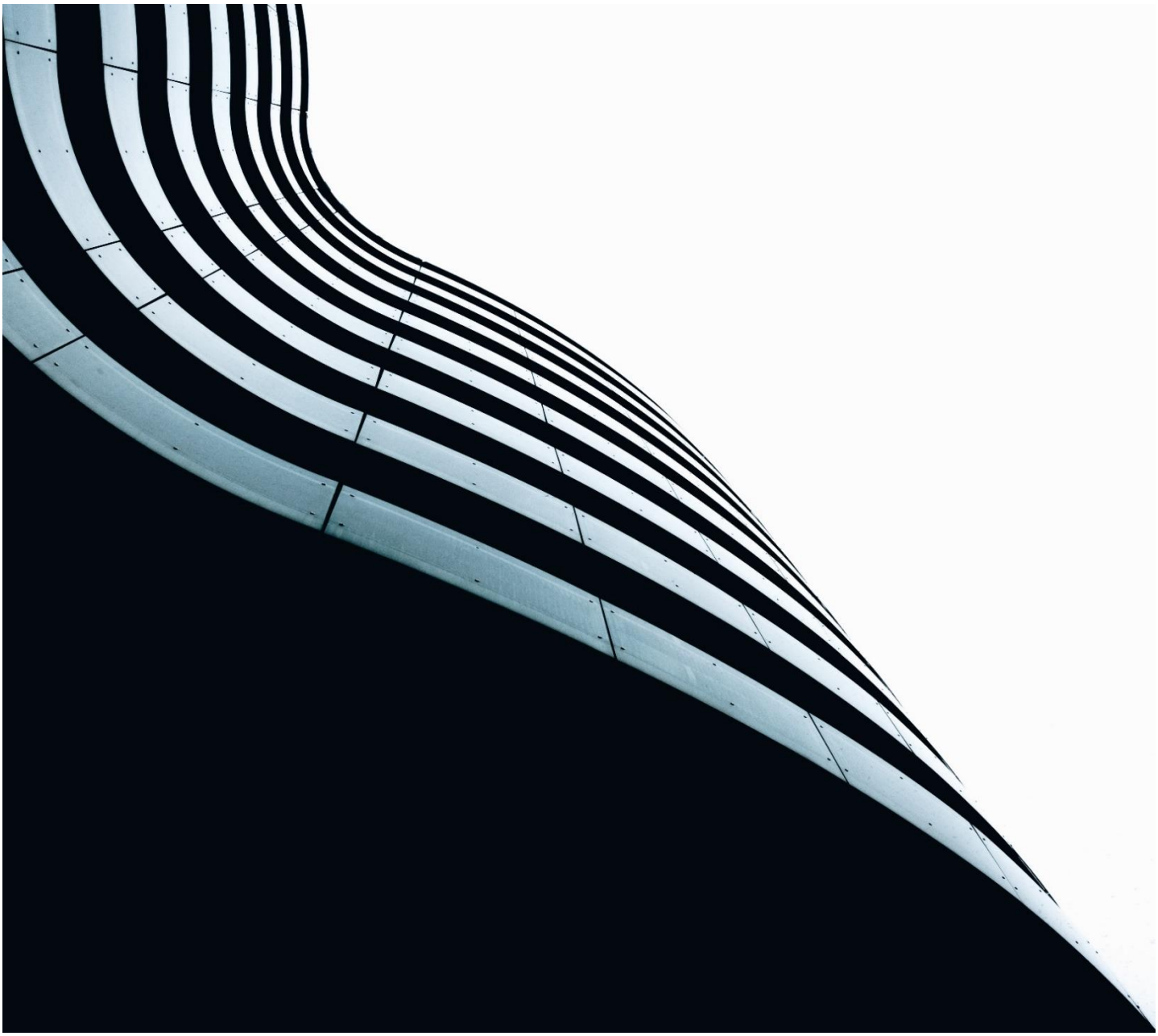
Interpreting PMI™ data

Exploring the inter-relationships of selected economic indices from the PMI surveys



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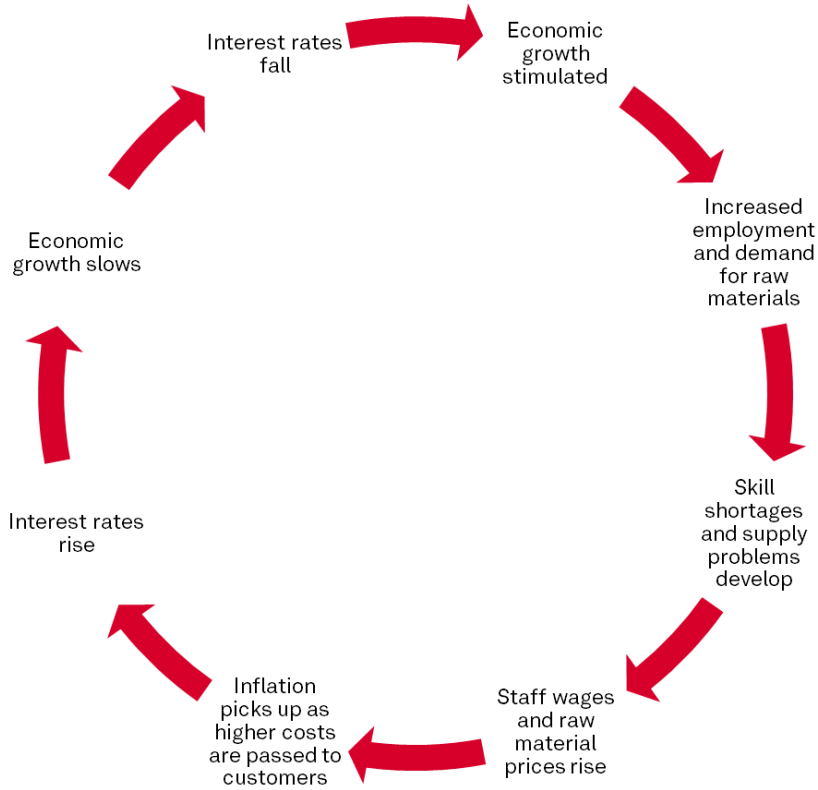
The boom-bust cycle

It helps to first consider a typical, albeit extremely simplified, pattern of events in a classic "boom-bust" business cycle. During a period of economic expansion it is typical for employment to rise (and unemployment to fall) and the demand for raw materials to increase. If employment and demand for raw materials rise at suitably fast rates it is then common for skill shortages and supply-chain bottlenecks to develop.

When demand exceeds supply, prices tend to rise. Wages and salaries and raw material prices will therefore begin to increase. Retail price inflation may then pick up as higher costs are passed on to the consumer.

The standard economic policy prescription for rising high street inflation is an increase in central bank base rates which, by raising borrowing costs to business and the consumer, restrains demand. Prices and economic growth then tend to grow at slower rates. When demand has slowed sufficiently, interest rates may be lowered again, thus stimulating economic growth.

Diagram 1: Boom-bust cycle



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PMI survey variables

The PMI surveys provide time-series variables relevant to a number of important stages in the above cycle, allowing analysts to ascertain the pace of economic growth, to see whether demand and supply imbalances are taking hold, and to see if prices are consequently rising. Most crucial is the fact that the PMI survey variables are available well in advance of comparable official data.

Several of the indicators are directly comparable for both manufacturing and services. For example, “business activity” in services is the direct equivalent of manufacturing “output” and “incoming new business” for the service sector is the direct equivalent of manufacturing “new orders”. Some indexes, on the other hand, are not produced for both sectors.

Many of these variables will of course be of importance not just to economic policy makers but also to those monitoring corporate performance and profitability. The behaviour of the variables is analysed on the following pages, with examples given for the eurozone manufacturing sector.

Manufacturing

- Output
- New Orders
- Employment
- Input Costs
- Output Prices
- Backlogs of Work
- Export Orders
- Quantity of Purchases
- Suppliers’ Delivery Times
- Stocks of Purchases
- Stocks of Finished Goods
- Future Output

Services

- Business Activity
- Incoming New Business
- Employment
- Input Costs
- Prices Charged
- Business Outstanding
- Business Expectations

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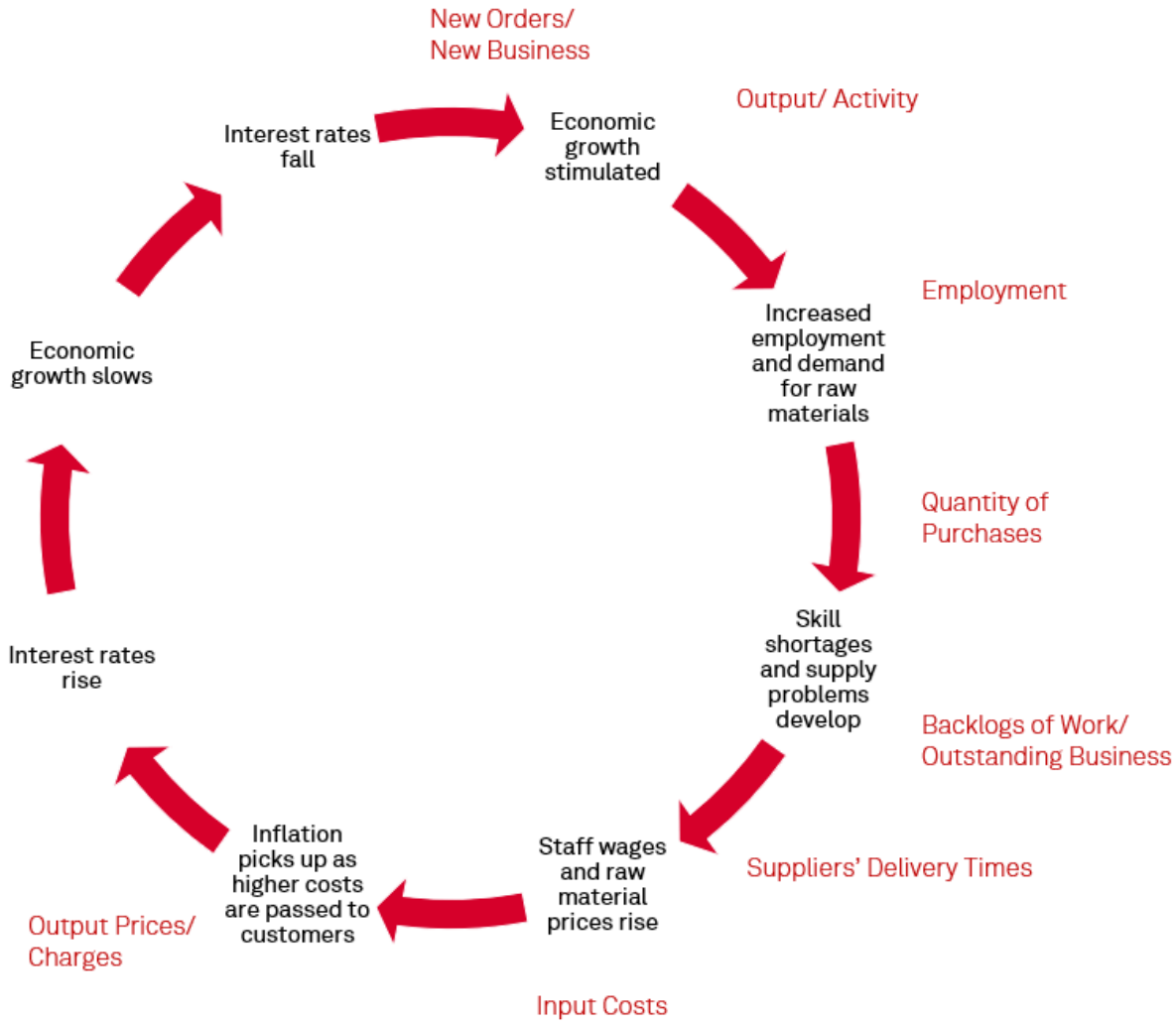
Diagram 2: Boom-bust cycle with PMI survey variables identified



Output, new orders & backlogs

Changes in new orders generally drive growth of economic output. PMI data can also help identify deviations in this relationship, such as leads and lags. These often occur due to delays in the adjustment of production to demand, especially in the manufacturing sector.

In the service sector, output is measured by business activity and new orders are measured through changes in incoming new business.

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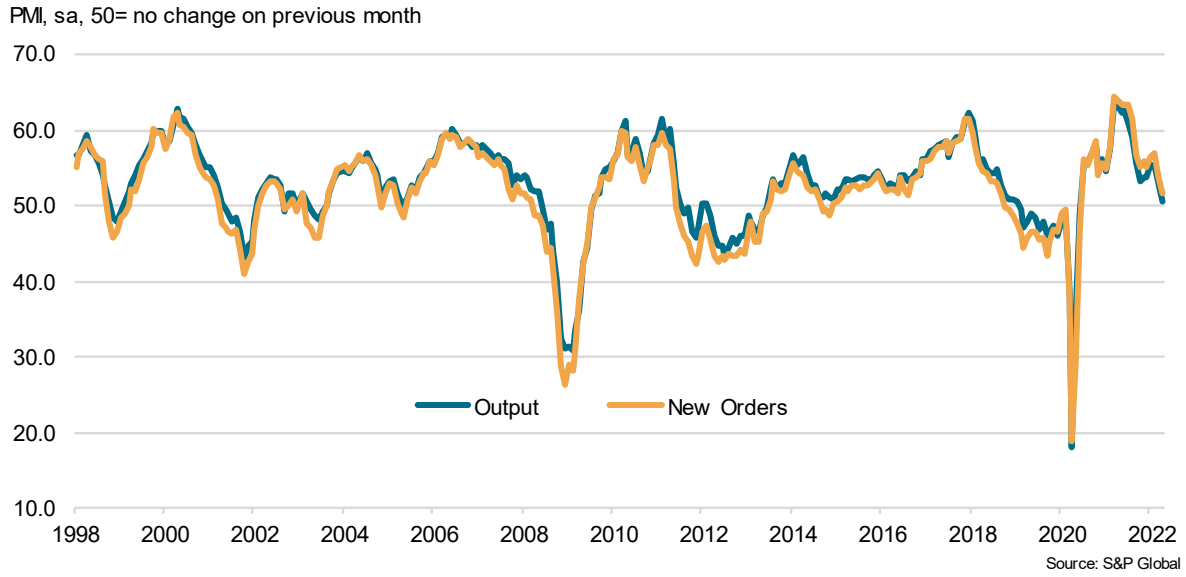
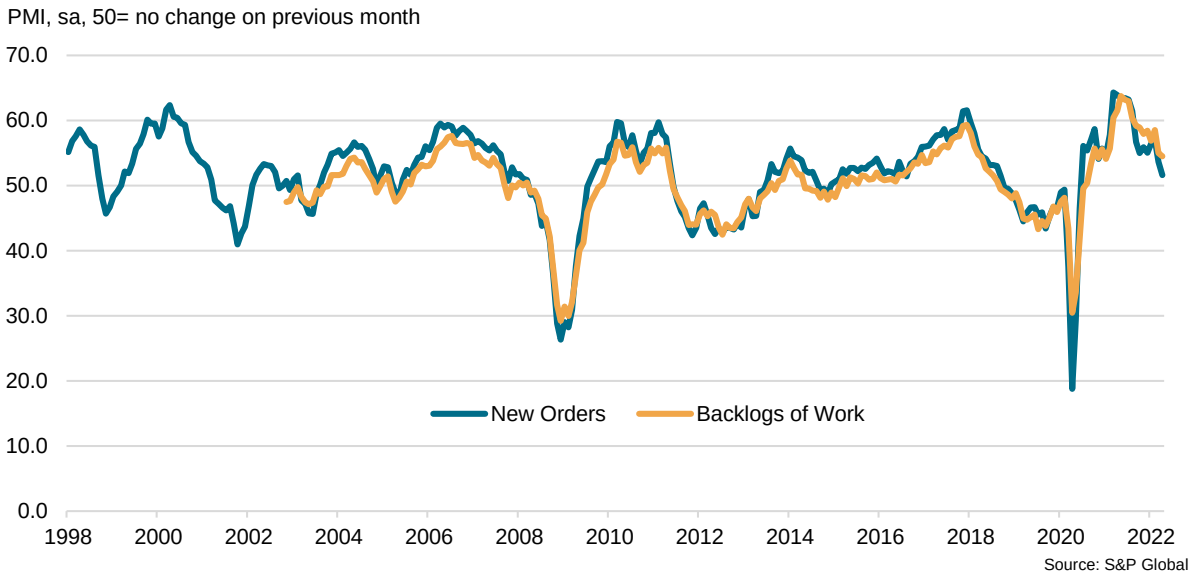
Chart 1: Eurozone Manufacturing Output & New Orders



Backlogs of work/business outstanding vary according to the amount of new orders/incoming new business received by manufacturing/service sector companies. When new orders/incoming new business rises, supply imbalances can develop and backlogs of work/business outstanding accumulates.

Chart 2: Eurozone Manufacturing New Orders & Backlogs of Work



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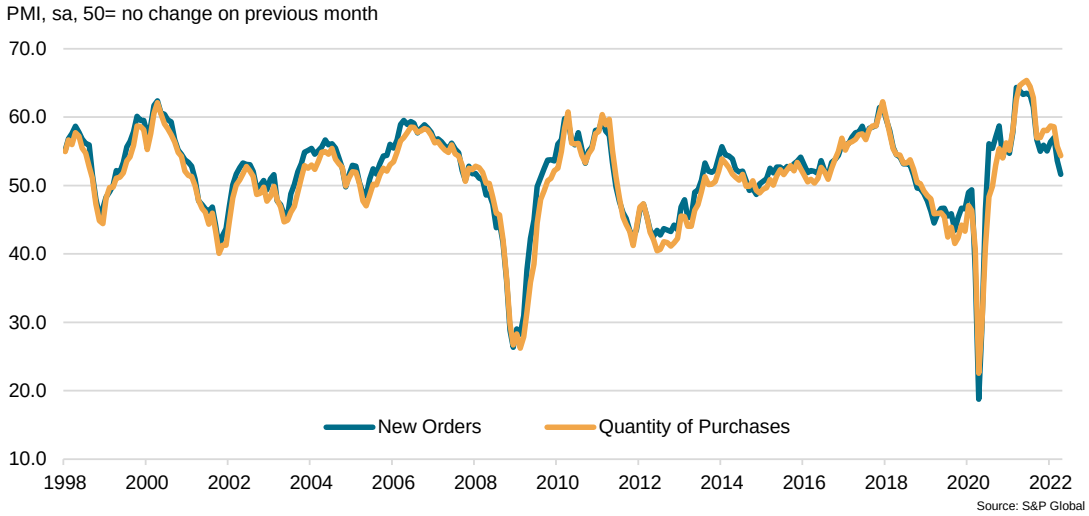
New orders, purchasing and supply chains

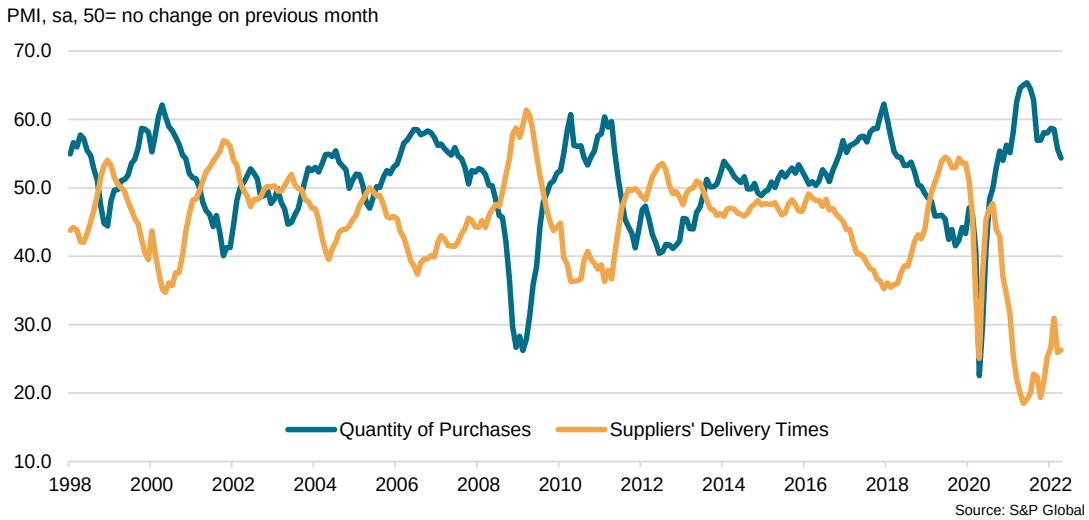
The amount of goods bought by manufacturers for use in the production process varies directly with the volume of incoming new business.

Chart 3: Eurozone Manufacturing New Orders & Quantity of Purchases



Supplier performance varies according to the amount of goods bought by manufacturers for use in the production process. When demand for inputs rises, capacity constraints develop and delivery times lengthen (the delivery times index falls below 50), resulting in an inverse relationship between purchasing and speed of supplier delivery.

Chart 4: Eurozone Manufacturing Quantity of Purchases & Suppliers' Delivery Times



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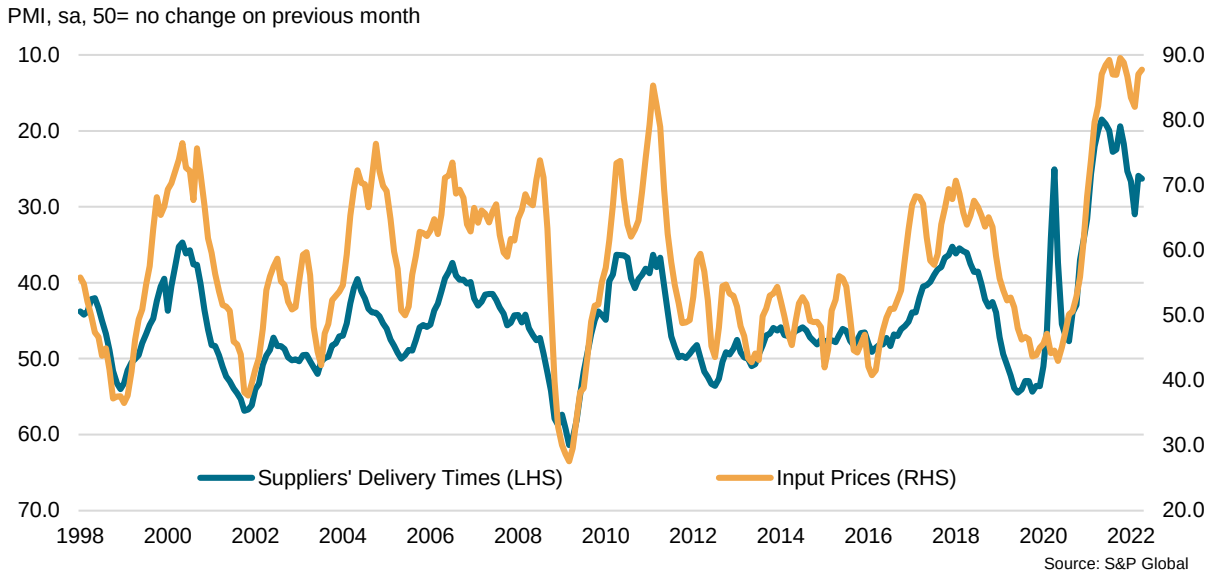
Supply chains and input prices

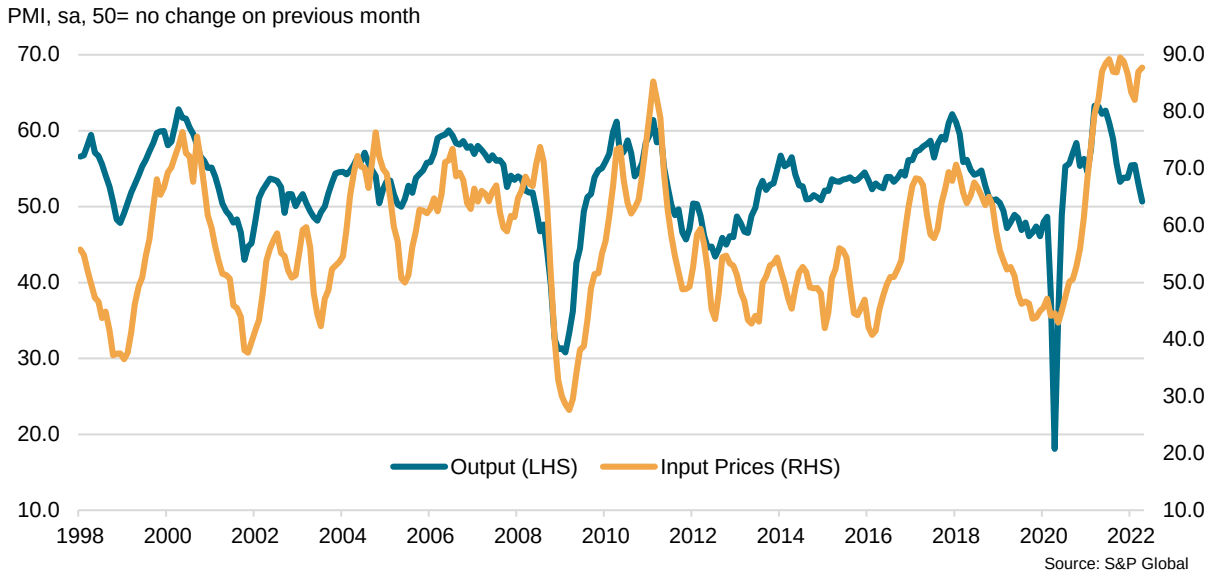
When suppliers become busier and bottlenecks arise, demand exceeds supply and a "seller's market" results, driving up input prices.

Chart 5: Eurozone Manufacturing Suppliers' Delivery Times & Input Prices



A direct relationship therefore exists between manufacturing output and raw material (input) prices. However, changes in input prices will lag changes in output.

Chart 6: Eurozone Manufacturing Output & Input Prices



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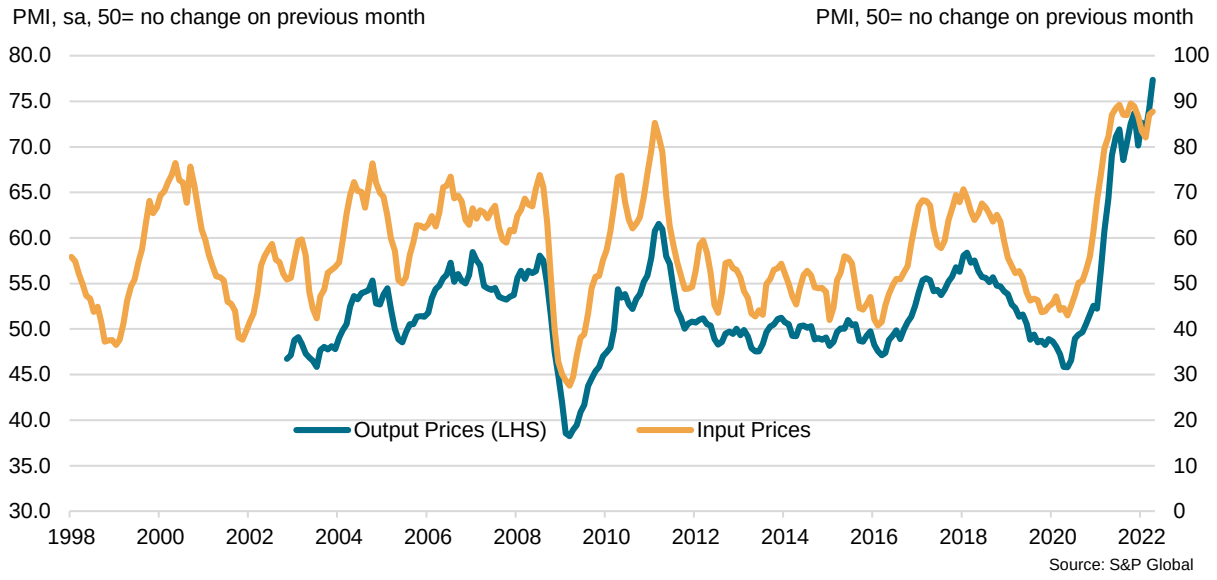
Input prices and output prices

A close relationship exists between input prices and output charges, as companies tend to raise the prices charged for their goods/services when the average cost of their inputs increases.

The differential between output charge inflation and input price inflation can provide information on firms' ability to pass on higher costs to clients (pricing power).

The differential between output charge inflation and input cost inflation is also a 'barometer' of pressure on profit margins in the manufacturing/service sectors.

Chart 7: Eurozone Manufacturing Output Prices & Input Prices



Source: S&P Global

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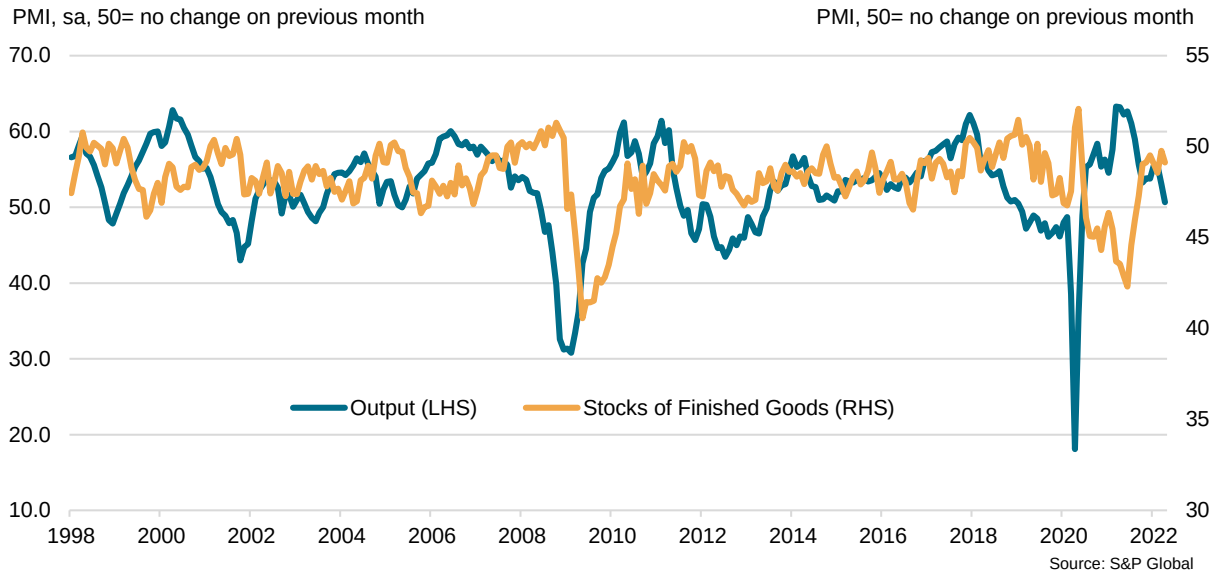
Stocks of finished goods

Changes in stocks of finished goods lag changes in output...

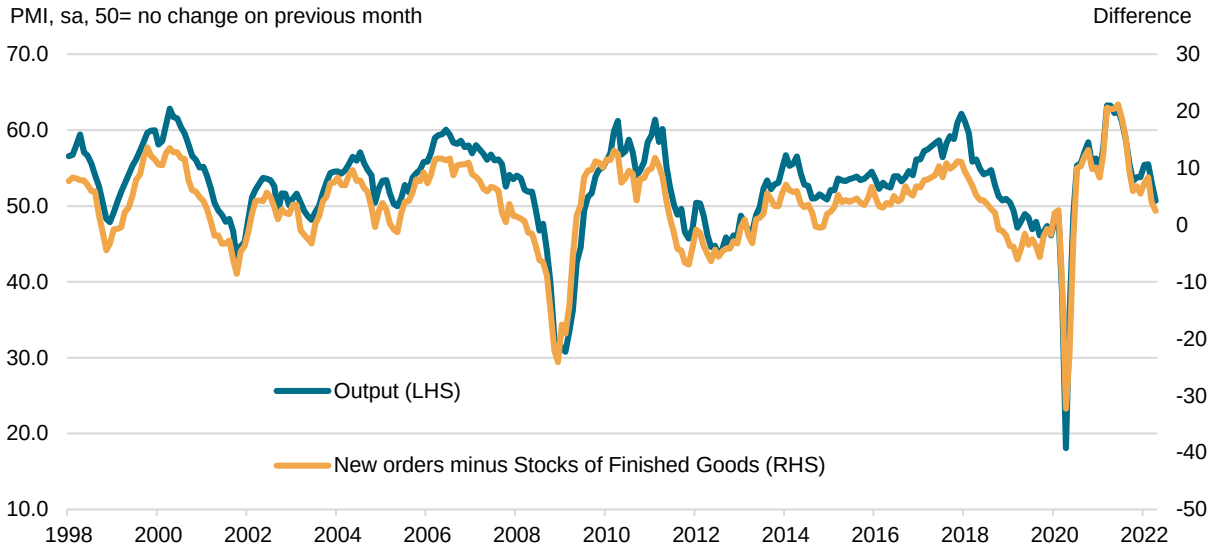
Chart 8: Eurozone Manufacturing Output & Stocks of Finished Goods



Source: S&P Global

...with output driven by changes in order books less changes in stock levels.

Chart 9: Eurozone Manufacturing Output & New Orders minus Stocks of Finished Goods



Source: S&P Global

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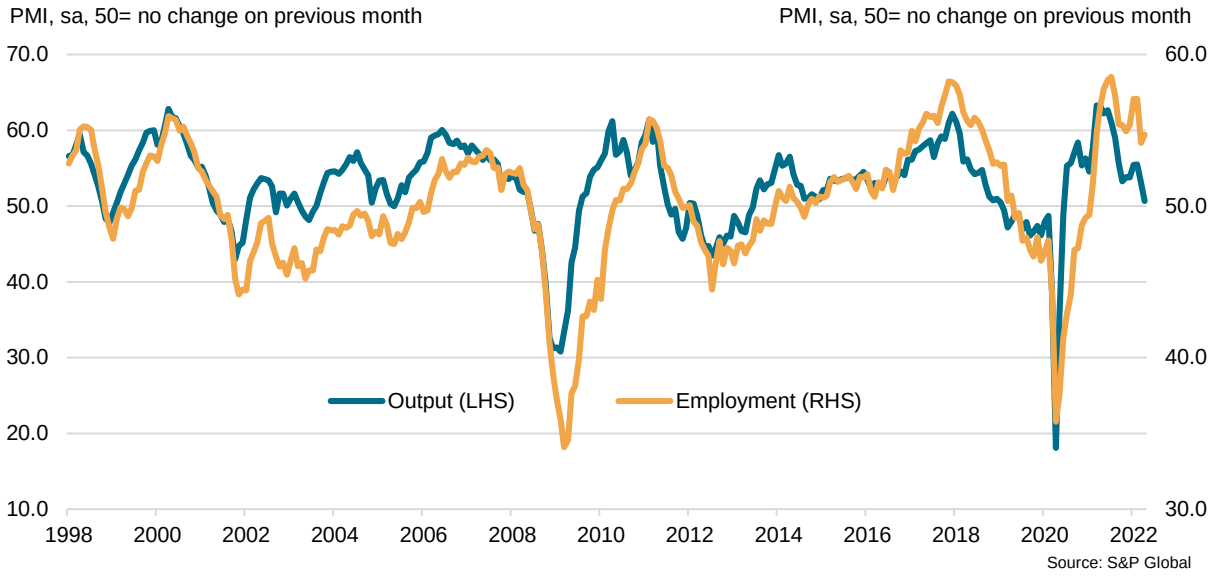
Employment

Employment directly correlates with changes in output (or business activity in the service sector). Any divergences in the relationship provide important information on capital:labour intensity and productivity growth.

Over time, output will tend to grow at a faster pace than employment as industry becomes increasingly capital intensive and reduces hours worked per unit of output. If employment grows at a faster pace than output, productivity will decrease.

Chart 10: Eurozone Manufacturing Output & Employment



Source: S&P Global

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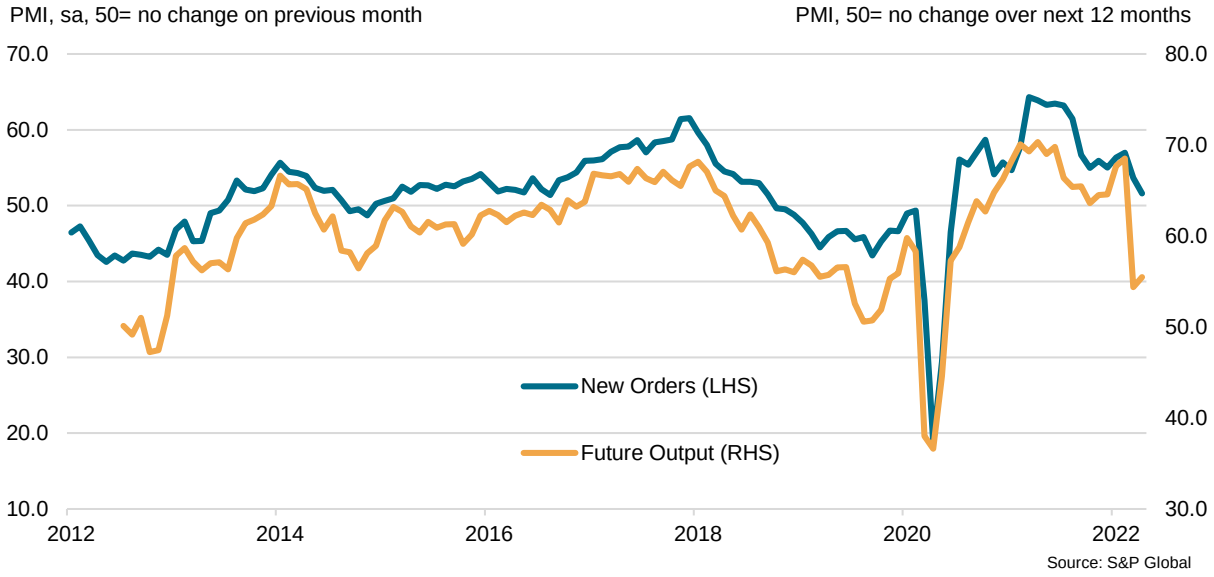
New orders and future output

New orders and output expectations are closely correlated. If new order growth strengthens, firms are likely to become more optimistic regarding projected output levels, and vice versa.

Chart 11: Eurozone Manufacturing



Source: S&P Global

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