Economy

How to interpret the PMI indexes in 2020?

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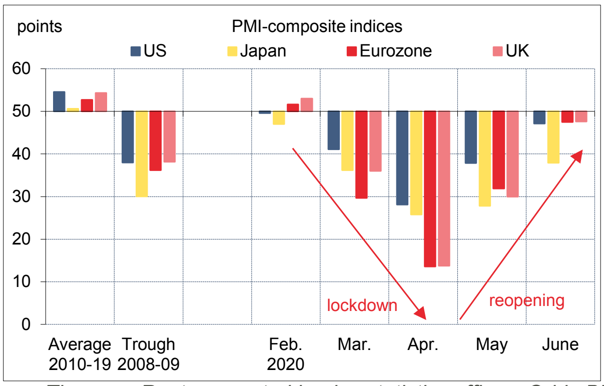
After record falls in March and April in Europe and the US, purchasing managers' confidence picked up in May and again in June. The fall is not far from being erased, but this does not mean that the shock to the real economy has been fully overcome. The coronavirus crisis was so brutal that it (temporarily) undermined the historical relationship between confidence levels and the pace of activity. The business climate is rebounding as the epidemic has receded from its peak, allowing economies to gradually reopen. For the time being, the risk to the recovery remains primarily a health risk.

Lockdown = Recession/Reopening = Recovery

According to preliminary data, the purchasing managers' confidence indexes rose sharply in June for the second month in a row (left-hand chart). After a historic drop in March-April, a period of maximum lockdown, the rebound is spectacular. In the US and the eurozone, 89% of the drop in the PMI Composite index is erased, in the UK 85% (only 57% in Japan). **At the global level, on the basis of the partial data available, the composite PMI index should be around 47 points in June, the same level as in February. In April, at its trough, it had fallen to 27 (vs a previous low of 38 in November 2008).**

Under normal circumstances, we can see a robust relationship between the level of the PMI index and the pace of activity in the short term (say, over a month or three months). Hence the widely accepted idea that a PMI describes an expansion phase if it is above 50 and a recession if it is below 50. This relationship weakened in the coronavirus crisis, as the shock was so atypically strong and affected the various branches of the economy in a differentiated way. Business climate indices of the PMI type are not in fact designed to capture the intensity of the shock (**see inset p.2**).

Composite PMI (1) sequential change **(2) estimated activity growth (deviation from the trend)**



PMI-composite vs GDP growth as a deviation from trend*

		February	March	April	May	June
	PMI-composite	51.6	29.7	13.6	31.9	47.5
Eurozone	GDP growth m/m%	0	-10	-19	16	8
	GDP growth y/y%	0	-10	-27	-16	-9
	PMI-composite	50.7	35	17.4	32.3	45.8
Germany	GDP growth m/m%	0	-6	-11	7	2
	GDP growth y/y%	0	-6	-16	-10	-8
	PMI-composite	52	28.9	11.1	32.1	51.3
France	GDP growth m/m%	0	-13	-25	23	13
	GDP growth y/y%	0	-13	-35	-20	-10
	PMI-composite	49.6	40.9	27.0	37.0	46.8
US	GDP growth m/m%	0	-4	-11	7	2
	GDP growth y/y%	0	-4	-15	-9	-7

* based on estimates by central banks and national office of staticitics

Sources: Thomson Reuters, central banks, statistics offices, Oddo BHF Securities

In the current situation, the rules of interpretation need to be reviewed. The relation between PMI levels and present-day growth obviously no longer holds[1]. These indices are generally south of the critical 50-point threshold, which should signal an ongoing contraction, albeit at a slower pace than in March or April. Yet, all signs point to a rebound in activity when lockdown began being eased in May. **At present, sequential trends in PMIs are sending out a positive sign for the cycle, but do not tell us anything specific about the pace of GDP growth. For this, it is better to look at**

[1] *As was generally the case for all economic data during lockdown, the quality of the PMI surveys might have decreased. This would give a greater margin of inaccuracy than normal (lower response rate and survival bias of respondents).*

estimates based on high-frequency big-data pertaining, for instance, to the mobility of economic agents or credit card transactions. (RHS table).

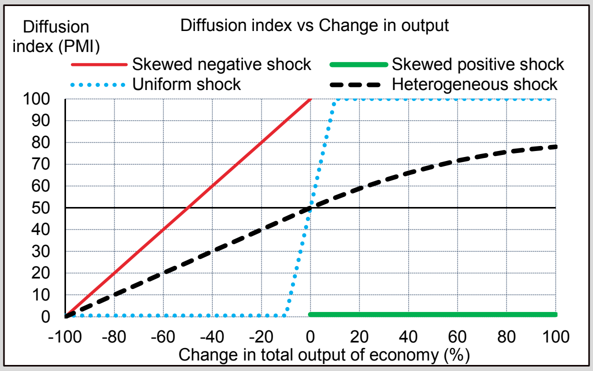
In the short term, assuming ongoing favourable developments in the health crisis, there is every reason to expect the business climate to continue improving. The PMIs might therefore break records to the upside over the next few months. Much of the rebound will probably be proportionate to the drop that preceded it. This should be borne in mind when comparing the different countries. The current PMI-composite hierarchy in developed countries (France > eurozone > US > Germany) does not, obviously, reflect the seriousness of the coronavirus crisis - quite the opposite, in fact.

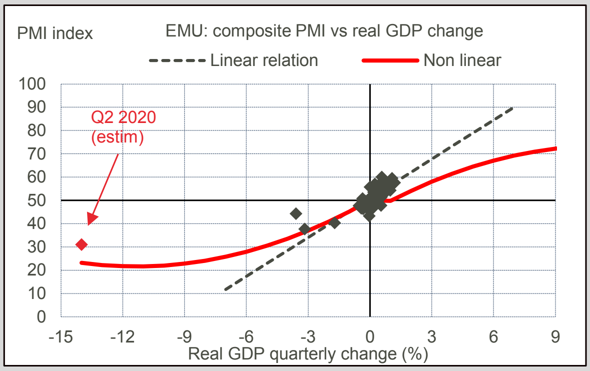
Focus: diffusion indices and rate of activity

The PMI (Purchasing Managers' Index) is a diffusion index, in other words it measures the extent to which its components contribute to its increase. Each month, a panel of companies is interviewed on the trend (growth/stability/decline) in business, headcount, order books, etc. A value of 1 is attributed to the proportion of responses indicating growth, 0.5 to those indicating stability, and 0 to those indicating a decline. The PMI index is the sum of these three elements, multiplied by 100. The PMI would stand at 100 if all the companies indicated growth and 0 if they all indicated a decline. If the proportion of businesses indicating growth and decline are even, the PMI stands at 50. This aim of this type of index is not to measure the scale of the variations.

In theory, the relationship between the level of a diffusion index and the rate of activity has no reason to be stable. To illustrate this, we can examine different examples of shocks to economic activity (**chart lhs**).

- Asymmetric shocks. In a skewed negative shock, half of companies see their activity unchanged and the other half see their activity completely disappear: the PMI index would stand at 50 but total output would have dropped by 50%. In a skewed positive shock, a single company sees its business boom while all the others moderately scale back their output: the PMI would be close to zero but activity could grow to a significant extent.
- Uniform shock. All companies could, for example, see a decline in activity of 1%, or an increase in activity of 1%. In the one case, the PMI would stand at 0, and in the other it would come to 100, whereas the underlying situation would be largely the same.
- A heterogeneous shock lies somewhere between an asymmetric shock and a completely uniform shock.





In practice, historically there has been a linear relation between the *level* of the PMI-composite index (manufacturing + services) and the *rate of growth* of real GDP. But, in the case of shock of exceptional size, this relation breaks down. For example, in Q2 2020 the eurozone PMI-composite index has an average value of 31 (rising from 14 in April to 48 in June) and the expected contraction in GDP is likely to be 15% q-o-q. To describe such a fall in activity using the linear relation, the PMI index would have to have a negative value, which by construction is impossible (**chart rhs**). The shock has made the system non-linear. This is a sign that the shock of the lockdown had much more heterogeneous effects than normal. Some sectors were practically at a complete standstill, such as automotive and hotels & catering. There is every reason to think that that will also be non-linearities in the recovery phase. Indeed, the reopening of the economy is not uniform across sectors. It is therefore to be expected that the recovery in the pace of GDP growth in Q3 will be stronger than the historical relation with the PMI indexes would suggest.

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