

# Analysis of the Industrial Production Index (IPI) of the EU in 2020

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## Introduction

The industrial production index (IPI) which is sometimes called industrial output or volume index is a business cycle indicator (the ups and downs of economic growth over time) which measures monthly changes in the price-adjusted output of industry. In this article we will go through the industrial production index measured in the European Union (EU) last year.

In simple words, countries in order to analyse their IPI must have the details of their industry's gross output as well as the inputs used in the production of those outputs. For some countries those data may not be available on a monthly or even quarterly basis, and therefore, in practice, suitable alternative values for the measurement of the production index are used. Additionally, there are multiple industrial factors whose changes considerably impact the calculation of the industrial production index which should be taken into consideration. These factors include changes in type and quality of commodities, changes in materials of inputs, changes in stocks of finished goods and services, and work in progress, changes in processing tech, the technical relationships between inputs and outputs, and last but not least, services including assembly of production units, repairs and planning.

Within the industry, these factors consist of gross production values, production quantities data, turnover, work, raw material and energy input. These data can be different in sectors and verticals. For instance, in construction those data can be consumption of typical raw materials, energy and labour as inputs and production quantities, production values and sales values as outputs. It is notable that, all of these values must be deflated values.

## EU Industrial Production Index Overview

In the last two decades, the total industrial output has been on a reasonably steady growth path. Before the financial and economic crisis, the average annual growth of the industrial production index between 2000 and 2007 in the EU-28 had been about 1.7%. The production level reached its highest value in April 2008 and then for one year it continuously went down by more than 22 percent points until April 2009. In Spain, for instance, the IPI dropped by nearly 27 percent point. Afterwards, a moderate dynamic recovery was placed only for about two years, but again in May 2011, IPI collapsed. The EU's average IPI for 2013 was almost equivalent to its level in 2003. Afterwards, the IPI had a slight but stable increment until the index value nearly reclaimed its pre-crisis position by the end of year 2017. **The IPI has been stagnated for two years within year 2018 and 2019 until last year when the whole world faced the pandemic crisis.**

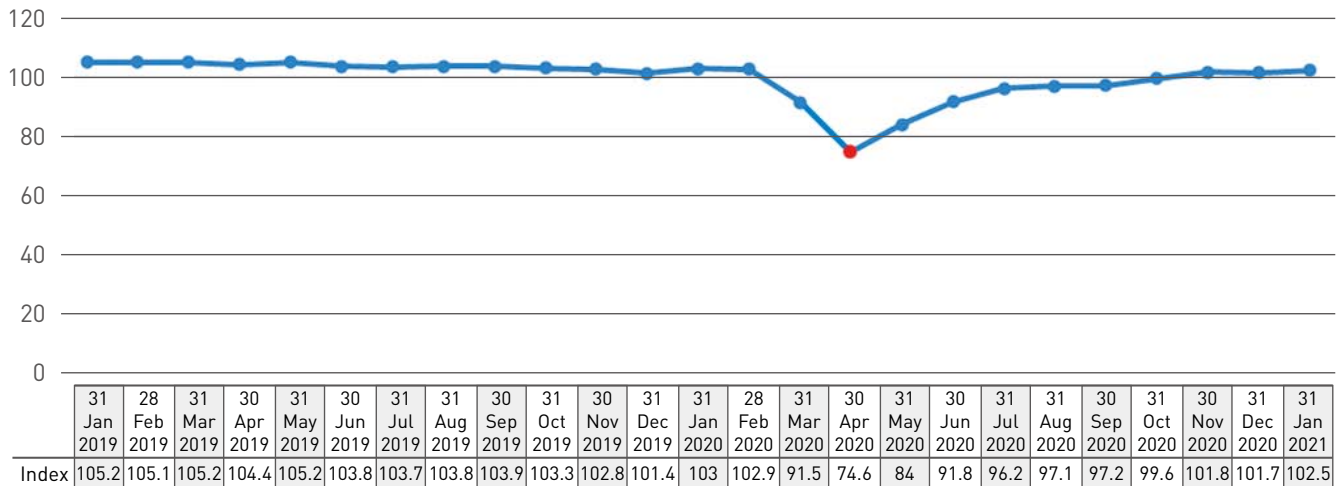
## Covid-19 Crisis and Industrial Production Index

**The Covid-19 crisis in 2020 hit the whole world and caused an enormous fall in industrial production, globally and regionally especially for durable consumer goods and capital goods such as machinery and tools. Although in the subsequent months the industrial production index moderately recovered, in the first half of 2020, the production of durable consumer goods reduced by more than a quarter between February and April.** The private sector economy fell in April where the region's four largest powers recorded depression extremely worse than those seen during the 2008 financial crisis. The EU's Industrial Production Index (IPI) for the last 2 years has been illustrated in the chart on the next page. This chart exhibits how Covid-19 crisis has drastically reduced the IPI value in March, April, and the following months.

In terms of the industrial groups, if we compare the 3 major industrial categories' IPI during the Covid-19 crisis, the production of non-durable goods was slightly more stable than other groups. The production of capital and intermediate goods decreased tremendously in March and April but then recovered in the subsequent months. The third major industrial group, energy products, faced the recession but not to the same extent as other product groups did. However, the recovery of this group was comparatively slow.



## 2019-2020 EU's Industrial Production Index (IPI)



## Industrial Production Index Development by Country

Since the Covid-19 control orders varied among countries in the region in respect of timing and severity, it was to be estimated that the effects on industrial production would also differ. During the peak months of the crisis, Italy, Slovakia, Cyprus, and Hungary faced enormously high negative rates of change. Subsequently these countries indicated high rates during the recovery months since May.

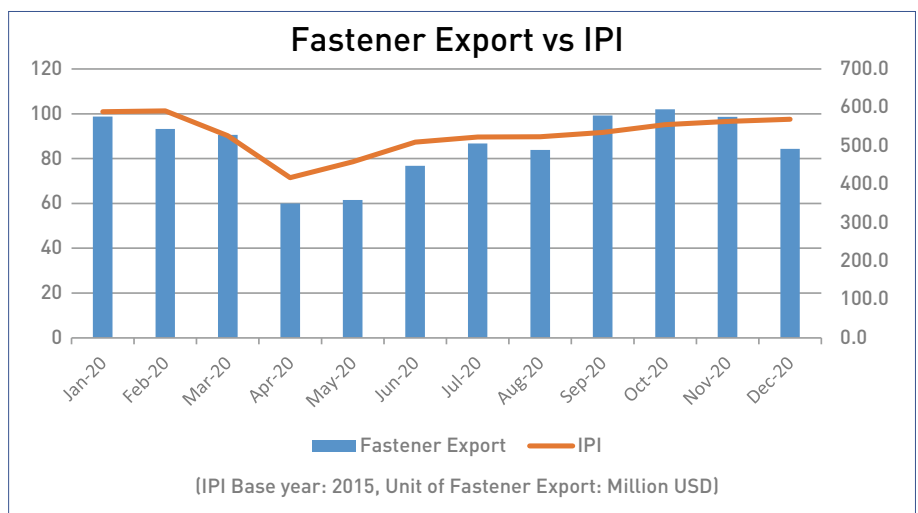
Last year, the general growth since May 2020 was largely adequate to recover most losses during the most serious stage of the crisis. Accordingly, ten countries consisting of Ireland, Greece, Lithuania, Poland, Belgium, Croatia, Lithuania, Slovakia, Denmark, and Sweden have regained and surpassed the production level before the crisis. Industrial production in Ireland was even one third higher than the pre-crisis. Several other countries were almost close to the 100% while countries like Malta, Bulgaria and Germany were still more than 5% away from the production level before the crisis. Overall, as stated earlier the recovery has been quite robust for durable consumer goods (103.3 %) and for intermediate goods (100.1 %) and capital goods (100.1 %). The production level for energy was close to recovery (99.2 %) while the level for non-durable consumer goods was still relatively low (96.3 %).

## German Industrial Production Index and the Fastener Industry

To wrap up this article, the Industrial Production Index of the world's fourth largest and the EU's largest economy, Germany, has been studied. As a result of the Covid-19 crisis the country's Industrial production fell by 3.8 % YoY in Jan 2021, following a rise of 1.2% YoY in Feb this year and similar to almost every other country in the EU, German Industrial Production Index (IPI) nosedived dreadfully in April last year, by 24.416% YoY, as explained in the previous section. The IPI collapse can be translated into poor performance of overall industrial sectors in Germany such as fasteners, machinery, tools, etc.

For a better illustration, the data from German fastener exports in year 2020 have been compared with the country's IPI within the same year. The right figure contains a bar chart which shows the values of fastener exports from Germany to the global market (in million USD) and a line graph which exhibits German Industrial Production Index in 2020. As expected, the bar chart and the line graph follow a similar trend and both have their minimum values in April while facing steady growth between May and July.

As stated, the IPI is an important indicator of performance of the industrial sector and the economy as a whole. The above figures simply show how industrial performance in various sectors and the Industrial Production Index are inter-related.



**Sources:** 1. Eurostat database and publications

2. Trade Map, Trade statistics for international business development

