



SETTING INDICATORS

FOR AN AMBITIOUS
EU INDUSTRIAL STRATEGY



#INDUSTRY4EUROPE



Preliminary Remarks

The aim of this Joint Paper is to propose a short list of indicators that can be used to both assess the health of the European industry and monitor the progress made by the EU on the implementation of its industrial strategy. The indicator list is composed of two sections: the headline indicators and those linked to the pillars of the Joint Reaction Paper previously presented by Industry4Europe. The indicators are simple and intended to be applied in combination to answer specific questions that may be relevant for different scenarios.

The role of indicators in delivering an industrial strategy

The selection and use of indicators should be a critical tool, designed to both highlight success points and reveal weaknesses that require remedial action through a revised strategy. The use of a single indicator has limited value and responsible interpretation should come from indicators used in combination.

The use of an indicator such as employment is important, however presentation in isolation yields no insight into productivity, skills level and potential negative societal changes. This is particularly relevant as digitisation and automation change the nature of employment, which could undermine priorities without careful assessment.

While not listed as a specific indicator, sustainability is an important cross-cutting factor. Indicators are able to assess the growth of the EU circular economy, creating products that can lead market developments internationally and maintain the EU's reputation for sustainable innovation. This list of indicators reflects the long term, multi-pillared priorities of the European Union and role of industry in achieving those priorities. Europe has clearly stated priorities for the 2015-19 period, which will evolve and mature towards 2030. These include:

- Jobs, growth and investment
- Energy union and climate
- Deeper and fairer internal market
- Balanced and progressive trade policy to harness globalization

Indicators for use within the EU and for tracking the EU against global competitors

The recommendation of the Industry4Europe coalition is that indicators have the primary mission to assess the performance of the EU as a whole and, whenever possible, in comparison to other

geographical competitors in the world (China, US, Japan, South Korea, BRICS). It is crucial for the EU to understand its position within the global market place and, as with above, individual indicators only paint a partial picture. With rapidly emerging markets and competing countries such as China moving quickly into innovation spaces, the EU must design and implement long-term strategies armed with full knowledge of how well those strategies are working.

It advises caution on methodologies that seek to compare data from different sources for the same indicator (e.g. EUROSTAT vs UN vs OECD). Where data is known to be unreliable or weak from a specific source, it should be recognised and excluded. In particular, EUROSTAT data used to support indicators should be as up to date and complete as possible.

Comparison of countries' performance within the EU is not the priority for the Industry4Europe coalition and should only be undertaken internally and after robust EU-wide indicators and trends have been established.

Indicators to measure flow through the innovation value chain

Europe's industrial development to meet long-term priorities relies on a flow of innovation through the value chain and, for that, each step of the value chain needs to operate effectively. The indicators proposed can be used from early in the value chain to assess skills being developed, through to transfer of technologies into industry and their transformation into economic return.

It is not the intention of Industry4Europe to propose specific details for the indicators. It will recommend overall indicator themes and explain the importance of their application. After which, experts within indicator development shall agree the optimum models for best outcomes within the context recommended by Industry4Europe.

Headline indicators for assessing Europe's overall industrial performance

1. Employment

Employment is an essential indicator, with value not only in direct employment, but also as an indicator of indirect contribution. For example, within the pharma sector 1 skilled job creates 4 indirect jobs across the value chain, while in the construction sector, the multiplier effect is such that one direct job generates 2 indirect jobs.

As an indicator, it would have added value for EU priorities if applied in combination with additional indicators, especially relevant within the assessment of continuing industry modernisation. It should not be used as a stand-alone figure, as this gives no depth of understanding of the success or otherwise of industry policy or EU development. As already stated, changes in employment viewed in isolation may disguise changes in productivity or skills levels indicative of inherent weaknesses that should be addressed rather than ignored under the banner of positive headline employment numbers.

2. Contribution to GDP

The scope here should cover both manufacturing and services linked to manufacturing (within bands of skills levels). This will allow the mapping of where GDP contributions originate, and the evolution of skills, productivity and employment associated. It may not be a highly accurate indicator. For example, if non-manufacturing sectors under-perform as a % of GDP, manufacturing automatically increases, regardless of whether it has improved or not. It may be more accurate to include 'sub-indicators' including:

- Share of worldwide production by entities headquartered in the EU (because this shows the current position and state of European manufacturing)
- Competitiveness values
- Innovation indicators

These last two sub-indicators reflect the strength of the industry and indicate how future-proof the European manufacturing sector is.

3. Industrial productivity

This is an important indicator that should be used in combination with employment and skills development. Increased productivity may indicate declining employment within a sector, as

automation and high throughput technologies reduce direct employment. In the same instance, increasing employment in a sector may indicate stagnant or declining productivity, with reduced investment or skills development. Economic Return on investment factor is an integral part of this indicator. For example, robot density in manufacturing could be a focus strongly indicative of advancing economic development and a good comparison for the EU at global level.

4. Investment into EU industry and within industry (R&D and modernization)

Investment appears within the EU as a strong indicator of industry confidence, both into companies and by companies in their R&D spending and their sustainable development.

- *For investment in EU industries* - foreign direct investment is an indicator of the attractiveness of EU industries, focused on long-term presence in the EU, rather than acquisition and removal.
- *For internal investment by EU industry* - Gross domestic expenditure on R&D as a percentage of GDP (reported at EU level), plus number of researchers per 1000 employees are valid to assess R&D progression. Investment into technology infrastructure (i.e. laboratory facilities and eco-friendly facilities) and advancing equipment (i.e. production lines automatization) reflects the progression of the sector as a whole, indicating long-term growth within Europe.

On the sectoral side, capital intensity is considered as a strong indicator potentially reflecting the loss of attractiveness. It is also a key driver of future competitiveness: the more investment the region attracts, the more competitive it becomes (and vice versa). Capital spending (as % of added value) is a key factor measuring the EU industrial competitiveness broken down by key sectors.

Indicators linked to specific policy pillars of an EU industrial strategy

In its Joint Reaction Paper *For an ambitious EU industrial strategy: Going further* published in October 2017, the Industry4Europe coalition identifies key policy recommendations based around 6 key thematic pillars which are the cornerstone of an impactful EU industrial strategy:

1. Business-Friendly Environment and Governance
2. Skills & Training
3. Research and Innovation
4. Access to Finance
5. Internal Market
6. Trade and International Market Access

Defining a limited set of indicators will prove essential to ensure that progress is made in all these important policy chapters. Reflecting the pillars within the Joint Reaction Paper, the headline indicators above may be applied across all pillars, in addition to specific indicators that are linked to each pillar.

1. Business-Friendly Environment and Governance

- *Assessment of red tape reduction and EU legislation effectiveness*
In 2007-2014, the European Commission High-Level-Group on Administrative Burdens came up with recommendations to reduce red tape, e.g. to measure the total net cost or benefit of new legislative proposals (impact assessments) or the number of EU infringement procedures against Member States.
- *Average energy prices for industrial producers*
As mentioned in our Joint Reaction Paper, “sustainable access to resources and energy at a competitive price” is key for the European industry. Advanced manufacturing technologies offering the possibility to develop production systems which are cleaner, less labour and resource intensive and more circular (where the production and consumption system is designed to cycle resources, reducing waste and dependence upon raw materials).

2. Skills & Training

It is vital to ensure that industry has the required pool of skills and to react to, and anticipate,

structural societal challenges (such as digitalisation and demographic changes) when designing curricula and lifelong learning policies.

- *Number of graduates in STEM*
We already know that it is essential to put the emphasis on skills related to Science, Technology, Engineering and Mathematics (STEM) when it comes to preparing tomorrow's workforce.
- *Investment in training within industry and improvement of attractiveness*
Reflecting ongoing investment into skills development and life-long learning to ensure continued employment and adaptation to industry evolution in Europe.

3. Research and Innovation

As the engine of the EU's industrial development, innovation is an important indicator and should reflect patents, start-ups/spin offs, mid-caps and licensing into EU industry (vs global, which may indicate that it is not the EU industry and citizens taking benefit of tax payer funded research).

- *Number of Public expenditures in industrial R&D*
Financing into commercial R&D from national and EU funding programmes as an indication of applied and translational research.
- *Number of patents per year from EU industry and research plus licensing deals into EU vs global entities from universities*
Both industry and university patent numbers are an indication of early stage and maturing innovation, while license deal indicate type and destination of innovation moving into commercial development. Patents linked to industry 4.0 will be a valuable focus (automation and robotics, transmission of digital information etc.).
- *High tech start-ups*
Continuing to track start-ups and their progress is a key indicator, linked to public and private innovation platforms in place at regional, national and EU level.
- *Number and type of innovations brought to the market*
Development and use of indicators for sustained/continuous innovation, disruptive innovation and transformative innovation.

4. Access to Finance

- *Private investment secured into high tech or manufacturing organisations*
- *Public investment into high tech or manufacturing organisations through vehicles such as the European Investment Bank*

- *EU and regional funding accessed by SMEs for modernization, scale up or uptake of Key Enabling Technologies*

5. Internal Market

- *Indicator assessing how much the MEAT principle (Most Economically Advantageous Tender) has been implemented in Public Procurement in Europe*
The 2014 EU revised framework on Public Procurement provides that more established and transparent qualitative, innovation-related, social and environmental criteria (i.e. the MEAT principle) should become determining factors in the choice of a contractor. As highlighted in the Industry4Europe Joint Reaction Paper, “this approach should be promoted and implemented properly”, hence the need for an indicator to monitor the progress in this respect.

6. Trade and International Market Access

- *European exports flows and world market share*
These could be assessed by value and volume and, when possible, should assess increases in exports linked to investment in advanced technologies and skills. Export value should be compared to product value of the EU sector and the trade balance for that sector should be assessed.
- *Foreign market accessibility rate*
As mentioned in our Joint Reaction Paper, “protectionist measures, tariff and non-tariff barriers tend to increase on international markets, thus reducing market access and business opportunities for European opportunities”. It is therefore essential to measure the progress made by the EU on fostering international market access for its industry, within the drive to create a level playing field for the EU and other global regions.

List of Signatories







A series of yellow five-pointed stars of varying sizes are arranged in a diagonal line from the bottom right towards the top right of the page. The stars are semi-transparent and overlap each other.

This Joint Paper has been co-signed by 111 industrial Associations – representing the wide variety of manufacturing sectors in Europe – brought together in the framework of the broader Industry4Europe coalition. The logos of the Signatories can be found on pages 10, 11 and 12.



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