

Emission-intensive industries

After lagging behind for two years, in 2010 emission-intensive industries once again recorded higher growth in output than other sectors.

In the whole period from 2000 to the outbreak of the economic crisis, the total output of emission-intensive industries¹ in Slovenia grew faster than the output of other manufacturing industries. The gap vanished in 2008, when there was a decline in emission-intensive output, primarily as a result of lower aluminium production, while production in other industries increased. The decline in the output of emission-intensive industries deepened in 2009, as did the decline in other industries. With a general increase in output in 2010, there was an above-average increase in emission-intensive output again for the first time in two years,² while the share of value added (VA) of emission-intensive industries in total manufacturing increased to 24.2%. Slovenia has one of the highest shares of emission-intensive industries in value added in manufacturing in the EU³ (see Figure). Given the greater significance of emission-intensive industries and greater energy intensity in manufacturing in Slovenia than in the EU as a whole, emissions trading is likely to have a greater effect⁴ on production costs and consequently, on performance and competitiveness than in other countries of the EU. To reduce exposure to higher costs, it is therefore crucial for Slovenia to continue reducing energy intensity and to proceed with technological restructuring in emission- and energy-intensive industries.

¹ According to the World Bank methodology and the categories in the Standard Classification of Economic Activities, emission-intensive industries include: the manufacture of chemicals and chemical products; the manufacture of paper and paper products; the manufacture of basic metals; the manufacture of cement, lime and plaster; and the manufacture of other non-metallic mineral products.

² The increase in the output of emission-intensive industries in 2010 was based on strong growth in the manufacture of basic metals and in the chemical industry. In the manufacture of other non-metallic mineral products (lime, plaster, etc.), output continued to shrink due to low demand from the construction sector, while the manufacture of paper, similar to that in the EU, recorded more modest growth than the manufacturing sector as a whole.

³ In 2009, these industries generated 22.8% of total value added in manufacturing in Slovenia (compared with the EU average of 18.8%); in addition, in Slovenia manufacturing also has a higher share in total value added in the total economy (19.6%; compared with the EU average of 14.8%). The share of the chemical industry is particularly high compared with the EU average. The shares of the manufacture of non-metallic products and the paper industry are also higher.

⁴ The adopted climate and energy package and the emission trading system are likely to have a double effect on the costs for businesses: direct costs due to the purchase of allowances and indirect costs paid through higher electricity prices.

In 2010, Slovenia recorded a larger decline in energy intensity in manufacturing than in the previous year, but with regard to the substantial reduction in 2006–2008, the 2010 results remain modest. Decomposition⁵ analysis of energy consumption in manufacturing shows that the higher consumption of energy in 2010 mainly resulted from higher output. In a year of a renewed increase in production activity, the positive contribution of this factor was to be expected (in 2009 this contribution was strongly negative). The increase in energy consumption in 2010 was again partly the result of a structural effect (an increase in the share of value added of sectors that consume more energy per unit of value added). The increase in energy consumption due to the structural change in manufacturing is attributable to high production activity in the energy-intensive manufacture of basic metals in 2010 (26.1% growth in value added, compared with a 7.4% increase in value added in manufacturing as a whole). In 2007–2009, the structural effect made a negative contribution to energy consumption in manufacturing, largely owing to low production activity in the manufacture of other non-metallic mineral products, a sector strongly tied to construction activity. The decline in energy consumption in 2010 was only due to lower energy intensity within individual industries, which is an important indicator of qualitative changes. The impact on the improvement (i.e. decline) in the energy intensity of individual industries was relatively modest compared with the 2006–2008 period, albeit much more favourable than in 2009. Given that lower energy intensity in manufacturing is, in most cases, linked to the replacement of old technology by more efficient technology, which requires investment, the slowdown in 2009 and 2010 can also be attributed to the lower possibilities of such investment in a time of financial and economic crisis; moreover, a portion of energy consumption is fixed. Final energy consumption⁶ per unit of value added in total manufacturing (reflecting both the effect of energy intensity of individual industries and the structural effect), which declined at an average annual rate of 1.3% in 2001–2004, actually increased in 2005 (by around 2%). A favourable shift was then recorded in 2006–2008, with energy intensity declining by around 7.5% on average each year. In 2009 and 2010 the decline in final energy consumption per unit of value added in manufacturing slowed: it dropped by 0.9% in 2009 and by 2.6% in 2010.

⁵ GHG emissions in industry are generated in the production process (i.e. process emissions) or as a result of fuel combustion. This part focuses on emissions from fuel combustion, which represent the larger part of emissions from industry. The change in final energy consumption (energy consumption in TJ) in manufacturing is broken down into three sets of factors: change in output level, change in output structure and change in energy intensity within individual industries.

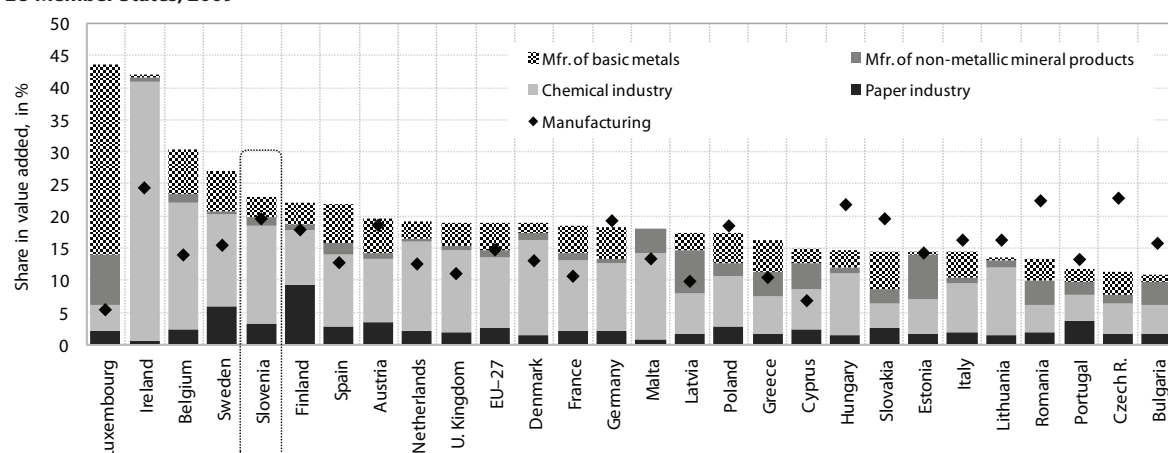
⁶ Energy consumption by activity, in TJ (SORS).

Table: Indices of growth in output and value added in manufacturing and emission-intensive industries

Real growth index	2000	2005	2006	2007	2008	2009	2010	2011
Value added in manufacturing	109.8	103.5	107.4	108.4	100.2	83.0	107.4	102.9
Output in manufacturing	107.1	104.0	106.2	108.5	102.6	81.3	106.6	102.6
Output in emission-intensive industries	108.2	104.2	112.1	114.3	93.7	81.2	108.9	102.7
Manufacture of pulp, paper and paper products	105.1	102.5	99.0	98.5	89.8	89.8	101.3	100.7
Manufacture of chemicals, chemical products and man-made fibres	110.4	107.6	113.0	121.7	101.0	85.8	114.7	102.4
Manufacture of other non-metallic mineral products	96.4	93.1	106.2	105.8	102.5	72.4	98.7	93.5
Manufacture of basic metals	111.9	103.2	119.6	106.7	68.6	70.3	109.5	111.1
Output in manufacturing excluding emission-intensive industries	106.8	103.9	104.8	107.1	104.7	81.3	106.1	102.6

Source: SI-STAT Data Portal – National accounts and Mining and manufacturing (SORS), 2012; calculations by IMAD.
Note: industrial-production indices were calculated from volume data until 2004, and from value data from 2005.

Figure: Share of emission-intensive industries in manufacturing and share of manufacturing in value added of the total economy, EU Member States, 2009



Source: Eurostat Portal Page - Economy and Finance – National Accounts, 2012; calculations by IMAD.