Steel in the European Union in the wake of the global economic crisis

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1. Introduction

The European steel sector is in crisis. This is not a new diagnosis, to be sure, but in recent years the crisis has become multidimensional. Once a sector linked to national production, at most regionally organised, steel is now a transnational industry. During the recent economic downturn and in its aftermath, pressures related to global market integration, increasing overcapacity and the emergence of new Asian competitors have become even more pronounced. These pressures have been compounded by shrinking European demand, rising energy prices in the European Union (EU) and uncertainty regarding future energy price developments.

The most dramatic effect of the 2008 economic downturn was, first of all, a fall in demand and a severe production decline, which hit the European steel sector after it had experienced an unforeseen boom in profits and production due to new demand from China. The severe decline caused an immediate loss of about 66,000 jobs in the EU. Second, steel companies lost equity base and reduced their investments, which puts the future of the European steel industry in jeopardy. The sector is confronted with the simultaneous effects of low demand and overcapacity on the globalised steel market. The resulting challenges – the need for capacity reduction and restructuring – have been known and practiced in the industry for decades. The current situation is more difficult compared with previous years, however, due to rising raw material prices, rising energy costs, stricter environmental regulations in the EU and increased competition from non-EU producers. In principle, the crisis has not turned the sector 'upside down', but has rather amplified trends that were discernible even before the downturn. However, the depth of the slump, in particular a long-lasting decline in demand, has put the sector under considerable stress. The reactions of European policymakers and business representatives resemble those of earlier crises and have involved attempts by the EU to introduce new supranational regulations and to

implement company restructuring programmes. What is new in terms of business strategy is the increased use of whipsawing (the organization of competition between plants in the context of production allocation and collective bargaining with the aim of extracting labour concessions – Greer and Hauptmeier 2015) and social dumping.

This chapter is structured as follows. It begins with an overview of past trends in European steel, including the fact that it was the first sector to be governed by supranational regulation. The core of the chapter analyses the impact of the 2008 economic crisis on production and employment, foreign direct investment and the dominant business model followed in the industry. The last section concludes and discusses the sector's future prospects.

2. Steel in Europe: national, transnational, global

Thirty years ago, Europe was the world's largest steel producer. The steel industry used to be nationally regulated and nationalised but since the 1970s, it has slowly become privatised. Since the mid-1990s a major process of concentration, privatisation and transnationalisation has turned it into a globalised sector. Currently the largest steel producers in the EU are multinational companies ArcelorMittal and Tata Steel, followed by the German ThyssenKrupp and the Italian Riva Group.

In its heyday, steel was the first sector in Europe to become subject to supranational regulation. The creation of the European Coal and Steel Community (ECSC) in 1952 was aimed at reducing competition between steel companies located in different European countries (Houseman 1991). This was fairly successful initially when increasing demand encountered increasing production within the ECSC. For two decades, the steel sector in western Europe expanded and proved relatively crisis-proof (Buntrock 2004). The expansion of steel, however, led to overproduction and Europe faced the problem of price dumping. Already in 1967, the European Commission warned against further investments, as capacities were already considered very high. At the same time, imports from emerging markets were rising and steel was being increasingly substituted with other materials. In the early 1980s, capacity utilisation was only about 56 per cent, which led to severe financial problems for many steel plants (Buntrock 2004). National governments stepped in offering high subsidies to prevent plant closures and potential

job losses in locations where unemployment was already high. In some cases, the steel mills were even nationalised.[1]

As a matter of fact, according to the ECSC Treaty, states were officially prohibited from subsidising the steel industry, and access to outside funding for investment was restricted. All firms were obliged to communicate their investment plans to the High Authority, the predecessor of the European Commission, and later to the European Commission itself. The European Commission was even allowed to settle the minimum and maximum prices of steel and introduce production quotas. These powers were not used during the 1950s and 1960s, and states regulated – and often subsidised – their individual industries as they saw fit. It was in the 1970s that the European Commission first began to use the power granted it in the ECSC Treaty, introducing several industrial policy plans, each one more interventionist than the last. The objective was to distribute the hardship of reduced demand for steel equally across the regions but also to prevent high transfer payments, such as those in the agriculture sector (Eckart and Kortus 1995). Externally, the European Commission initiated and established anti-dumping taxes also in order to apply pressure to make other countries restrict their exports to Europe (Houseman 1991). In line with the so-called Davignon Plan, it introduced a code on aid (Buntrock 2004), defining conditions under which companies were allowed to receive state support. With regard to subsidies, states did not follow the code on aid and the Commission did not really sanction misbehaviour, but retrospectively allowed the subsidies and prolonged deadlines (Eckart and Kortus 1995). Politically, the Davignon Plan represented a cornerstone of European industrial policy. In a medium-term perspective, it was not only to ensure capacity reduction and prohibit state subsidies, but also to help guarantee the single market, modernise assets, reanimate the market and protect steel-production regions by creating a social policy to assist redundant steelworkers and their communities (Houseman 1991). From an economic point of view, as an attempt to hinder market mechanisms, control prices and organise competition, it was not successful, mainly because the member states did not respect the instruments and supranational decisions and continued to subsidise their steel economies.

1. In France, two state firms, representing up to 90 per cent of the industry, merged into one, called Usinor. A total of 57 per cent of the sector was nationalised in Belgium and 36 per cent in the Netherlands (Conrad 1997). In the UK, 14 large private steel companies were consolidated into British Steel, which led to the renationalisation of 76 per cent of British steel production.

They were unable to prevent the dramatic downsizing of the 1980s: during the last quarter of the twentieth century, the industry lost more than 50 per cent of its jobs (see Table 1 below).

Table 1 **Employment loss of the largest EU steelmakers in the EU15, 1975–2005 ('000s)**

	1975	1980	1985	1990	1995	2000	2005
Germany	232	197	151	125	93	77	72
Italy	96	100	67	56	42	39	39
France	158	105	76	46	39	37	37
UK	194	112	59	51	38	27	22

Source: World Steel Association (2004)

In a nutshell, the supranational industrial policy failed. Notwithstanding the ECSC's supranational coordinating bodies, the bulk of the problems that emerged in the sector were tackled nationally and employment losses could not be prevented. The only benefit of the programmes was that 'nobody was fired': all workers left the industry with special programmes guaranteeing 'socially responsible restructuring'.

The socially responsible approach in western Europe was in stark contrast to the type of restructuring that took place in central and eastern European steel industries in the context of their EU accession in 2004 and 2007. The old EU member states were afraid of a further increase in overproduction and the lower prices of steel in central and eastern and in south-eastern Europe. Hence, EU15 steel lobby groups convinced politicians to make accession conditional on the privatisation and downsizing of central and eastern European steel companies. As early as 1993, the EU set out its special interest in the steel industry in additional protocols to the Europe Agreement with Poland and Czechia, stating that those two countries would have to follow the obligations laid down by the European Steel Aid Code and limit state aid. In addition, EU steel producers lobbied for the greatest possible reduction of the candidate countries' production capacities as part of any state aid agreement. Particularly strong pressure came from France, Italy and Spain, which claimed, for example, that Poland would have to curtail exports when answering increasing Polish demand (Keat 2000). Another rationale, if not publicly revealed, of the EU and its steel lobby groups was to prevent increased competition on the European steel market after accession (Trappmann 2013).

Despite the lobbying, Poland and Czechia were granted opt-outs from the European Steel Aid Code for a transitional period of restructuring on condition that restructuring was linked to capacity reduction, and depending on the viability of firms under normal market conditions at the end of the restructuring period. These periods ended on 31 December 2003, with restructuring to be completed in December 2006. Thus, right from the beginning, the Commission defined mechanisms intended to weaken the competitiveness of the accession countries' steel industries. Due to protracted negotiations on the exact modalities of the sector's restructuring it was a long time before the competition chapter of Poland and Czechia's accession negotiations could be closed. In the end, the restructuring terms were precisely defined in Protocol No. 8 to the Accession Treaty, also referred to as the Steel Protocol.

Even though only Poland and Czechia – as the largest steel producers in central and eastern Europe – were covered by the Steel Protocol, employment reduction was a top priority in other CEE countries and monitored by the EU as well. In Romania, the industry's privatisation was conditioned on restructuring of companies before the investor Lakshmi Mittal would buy it. In the Galati steel mill, employment reduction took place, even though the privatisation agreement stipulated that employment at the plant would be protected for five years. At Siderugica in Hunedoara, the workforce was reduced from 8,000 to 2,000 employees before Mittal acquired the company in 2003. Mittal promised that this would be the full extent of job losses but then he reduced employment even further. In effect, in 2009, only 700 workers were working at the plant (Varga 2011). Slovakia was an exception in this regard; following US Steel's acquisition of the largest steelworks in Košice, the employment level could be maintained until 2010 (Sznajder and Trappmann 2014).

Table 2 **Employment reduction of the largest steelmakers in central and eastern Europe, 1990–2006**

	1990	2004	2006
Poland	147,000	30,928	30,388
Czechia	93,000	25,914	n.a.
Romania	n.a.	65,000 (2000)	23,301 (2008)

Source: HIPH for Poland; OS Kovo for Czechia, and European Commission (2009) for Romania

Despite the controversy surrounding the role of the EU in guiding the restructuring process in steel sector in the new EU member states, it has to be acknowledged that privatisation and FDI inflows have led to the modernisation of central and eastern European steel mills, which would otherwise not have been competitive vis-á-vis western European and non-EU sites. Technologies implemented were new and gave central and eastern European facilities a competitive edge over other European sites: when further capacity reduction took place within transnational companies in the aftermath of the 2008 downturn, the high-tech-equipped sites were spared from closure.

3. Challenges due to the 2008 financial and economic crisis

3.1 Demand, capacities and employment restructuring

The financial and economic crisis has put considerable pressure on the European steel sector. First, and most dramatically, European demand has shrunk as a consequence of the downturn in steel-consuming industries, such as construction and the automotive sector, as well as the reduction of local public investments. In 2009, automotive production in the EU decreased by 40 per cent and that in construction by 10 per cent compared with previous years (Perlitz 2009). On a global scale demand has increased, but this is due only to an increase in Chinese demand that is served regionally. Experts on the sector assume that European demand will not recover to the pre-crisis level and thus that the competition for sales will intensify and the capacity reduction will become an economic and political goal (interviews with experts from the sector).

Second, there is overcapacity in the EU steel sector, currently estimated at approximately 80 million tonnes, compared with total EU production capacity of 217 million tonnes. The EU is not alone in this respect: globally, the industry is considered to have approximately 542 million tonnes of excess capacity, with 200 million tonnes in China alone (EU 2013). All in all, as a consequence of the fall in demand for steel and increased imports EU steel production is still only at 73 per cent of the pre-crisis level (see Table 4 below).

Table 3 **Demand for steel before and after the crisis ('000 tonnes)**

	2007	2011	2013
Germany	45,992	45,141	41,500
France	19,147	16,304	14,566
Spain	27,500	14,000	11,337
Italy	38,102	28,089	23,044
UK	14,570	11,048	9,690
Poland	14,002	11,659	11,241
Czechia	7,599	6,985	6,675
Romania	5,957	4,025	3,522
Latvia	564	622	230
USA	120,381	101,000	106,300
Japan	85,900	69,600	70,900
China	435,860	667,930	771,729
CIS	65,264	62,688	67,055
EU	219,064	170,852	153,286
World	1,328,888	1,519,643	1,648,127

Source: World Steel Association (2014)

Table 4 **European steel production before and after the crisis ('000 tonnes)**

	Pre-crisis production in 2007	Production in 2013
Germany	48,550	42,645
Italy	31,553	24,080
France	19,250	15,685
Spain	18,999	14,252
UK	14,317	11,858
Poland	10,632	7,950
Czechia	7,059	5,171
Romania	6,261	2,985
EU 27	210,185	166,208

Source: World Steel Association (2014)

The low production rate eventually resulted in employment cuts and even site closures. Approximately 7 per cent of jobs in the sector have been destroyed in the aftermath of the 2008 crisis.

In terms of site closures, the crisis has mainly hit companies and sites located in the old EU member states. The European Restructuring Monitor (ERM) reports five closures since 2009 of sites located in Spain,

Table 5 **Employment in the steel sector in the EU, 2008–2012**

	2008	2010	2011	2012
Germany	95,390	89,664	90,645	88,296
Belgium	16,931	14,212	14,197	13,319
Denmark	450	418	414	359
France	33,006	24,300	23,800	23,800
UK	22,996	18,864	18,471	19,500
Italy	39,388	37,140	36,898	36,131
Luxembourg	6,775	6,072	5,588	4,984
Netherlands	8,124	8,850	8,530	8,314
Greece	2,609	2,320	2,177	1,845
Spain	27,354	25,403	24,355	23,531
Portugal	708	251	200	180
Austria	14,491	13,579	13,380	13,530
Finland	11,000	10,150	10,485	9,100
Sweden	18,700	17,330	17,000	18,000
EU15	297,922	268,553	266,140	260,889
Bulgaria	8,300	4,710	3,425	2,950
Estonia	138	109	109	109
Croatia				200
Latvia	2,633	2,267	2,195	2,325
Poland	29,340	25,475	25,630	22,770
Romania	22,670	16,800	24,700	22,960
Slovakia	11,841	11,102	12,024	11,539
Slovenia	3,489	3,289	3,248	3,141
Czechia	21,505	18,020	17,172	15,799
Hungary	10,345	8,400	8,305	8,174
EU28	416,198	367,717	364,051	350,121

Source: Eurofer. Data made available by the German Steel Federation

Belgium, Austria and the United Kingdom. According to ERM, closures – which affected around 3,000 workers – were managed by social plans and with help of the European Globalisation Adjustment Fund. Internal restructuring led to the loss of another 13,000 jobs, mostly at Tata Steel, in the United Kingdom, ThyssenKrupp in Germany and ArcelorMittal in Spain. Reported reasons for internal restructuring were cost-cutting plans, financial losses and the decrease in demand. The ERM reports provide some insights into the restructuring processes. In the case of Germany, restructuring took place via social plans, in particular partial retirement, and thus no forced redundancies occurred. This was due to

the age structure of German steel sector employees (the average age at some plants is 50) and to the existence of productivity reserves that had not been used during the boom times. At Tata Steel in the United Kingdom, some units were closed already in 2011, but further redundancies were announced in 2012 for Wales, Yorkshire, West Midlands and Teesside due to overcapacity and shrinking demand. Restructuring occurred via cross-matching – that is, by putting out a 'call' for volunteers and then allowing those who are at risk of dismissal to move into the positions made vacant by those leaving voluntarily. Because of the ageing population, voluntary redundancy was often combined with early retirement. With its new manager for Europe, Tata has also hoped to increase its market share due to the price stability it ensured thanks to its acquisition of ore mines, which would make it independent from world market prices.

The ERM reports little restructuring activity among the new EU member states. Mechel Campia Turzii in Romania has started a restructuring programme due to the decrease in demand and Liepajas Metalurgas in Latvia went bankrupt in 2014 after failing to finance a restructuring plan of 52 million euros, despite being the country's largest employer (compare European Monitoring Centre on Change). It was bought by an Ukrainian investor KVV Group that won out over a Russian bidder and took over production in April 2015. Apparently, 500 out of the 1,300 redundant workers were recently rehired. While according to the Latvian Labour Office a substantial share of workers has already found new employment (Baltic Course 2015) trade unions claim that it is a serious problem in the port town, with no similar industry situated in the region (Lulle 2013). The biggest decrease in employment in the new EU member states occurred in Poland, Czechia and Bulgaria. In Poland this was linked not only to the economic crisis but also to the termination, in 2009, of the social package that trade unions had negotiated with Mittal when he bought the Polish steel company in 2003, which had guaranteed a no-redundancy policy until 2009. Immediately after the deal expired, Mittal initiated a voluntary departure programme and replaced core workers by agency workers (Trappmann 2013). In Bulgaria, the employment loss was due to the insolvency of the biggest steel producer Kremikovtzi in 2008. Kremikovtzi was the reason why Bulgaria requested an extension to the restructuring period initially laid down by the EU in the course of the country's EU accession negotiations as the company had not yet met its restructuring and viability target as established in the protocol to the Accession Treaty. Despite 220 million euros in state subsidies the

company became short of liquidity. It engaged in barter trade to obtain raw materials and requested advance payments from customers, which led to increases in raw material prices and lower sales (European Commission 2010).

3.2 European foreign direct investments

Aggregate data for investments in the steel industry are not available; similarly, individual companies refuse to reveal business data, citing commercial secrecy. Nevertheless, it is possible to describe broad trends in this area. A Deutsche Bank study on investments in energy-intensive sectors, which includes metal production, shows that companies have substantially reduced their capital stock (Deutsche Bank Research 2013). During the past 18 years, companies in the metal sector have invested more in their assets than they have amortised in only two years. The sites – according to the report's conclusion – will be soon worn out. Between 1995 and 2001, the net fixed assets in the industry decreased by 11 per cent, while in other sectors they increased. In this regard, some observers fear or even forecast the deindustrialisation of the EU.

Looking at the FDI flows into new EU member states, reliable data exist for the metal production sector originating from Germany (Table 6). Here the picture is clear: investment levels have declined since the outbreak of the crisis.

Table 6 **Foreign direct investments to 10 new EU member states from Germany, NACE 24–25 (including the manufacture of basic metals and of fabricated metal products, except machinery and equipment) (million euros)**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Germany	6	-14	11	121	195	103	-42	38	28	-67

Source: Eurostat (2014)

According to sector experts, some investments in the EU steel industry that were decided before the crisis have been completed, but new investments have not occurred (interview May 2015). This is a problem because some EU steel mills are already relatively old and thus face increasing repairs and maintenance costs (EY 2014); they would therefore need substantial investment to increase productivity. Since the

outbreak of the 2008 crisis, however, steel companies' strategy has instead focused on cost savings und restructuring. Companies are highly indebted and pressures for further consolidation have increased. ThyssenKrupp has sold its stainless steel segment to Outokumpu, a Finnish company, and its US steel plant to a joint venture of ArcelorMittal and Nippon Steel. Tata Steel has sold its long products segment to a financial investor. Similarly, ArcelorMittal has outsourced and capitalised its stainless steel segment, while Riva is trying to sell its plant in Taranto to ArcelorMittal.

Employers' associations in the steel sector stress the role of EU energy policy as a factor that might hinder future investments in the EU. They also argue that companies that forecast ever higher energy costs will become more likely to invest outside the EU (interview May 2015). The first steps in the latter direction can already be observed, and the trend can be illustrated by two big investment projects undertaken by ThyssenKrupp, a company that previously pursued a rather nationally-oriented investment strategy.

In 2007 ThyssenKrupp started to build a new site in the United States in the hope of market expansion and lower energy costs. With ThyssenKrupp Americas it was the largest European foreign direct investor in the steel segment. The investment was guided by two factors. First, the automotive market was supposed to expand in the United States and US steel was in depression, which made the investment look lucrative. Second, shale gas seemed cheaper than oil and therefore foreign direct investment in the United States was considered to ensure a cost advantage. ThyssenKrupp also built a steel mill in Brazil to gain access to raw materials, strategic seaside location and lower personnel costs, and to deliver raw steel to the US Alabama steel site. Neither of the investment projects proved successful, however. Instead, they consumed billions of euros and were considered a loss for the European corporation: the construction of the two sites alone, carried out between 2007 and 2011, cost 15 billion dollars. The economic crisis and the related fall in demand, coupled with operational problems, turned the investments into cost-spending projects, without bringing any returns. As a consequence, the management tried to get rid of the two plants. In 2014, it sold the US unit in Alabama to ArcelorMittal, but still has not found a customer for the Brazilian plant. In view of these losses and the overcapacity in Europe, in 2011 the management decided to diversify production and reduce the share of sales generated by steel. In addition to the American plant, the company also

sold its stainless steel segment. In 2013, only 20 per cent of sales were coming from steel, compared with 40 per cent in 2008 and 70 per cent in earlier years. The employees have accepted an in-house tariff agreement reducing working time by three hours until 2020, which meant that they will receive about 5 per cent less net income (interview May 2015).

Other steel producers also claim that following the customer is a major motive for FDI outside the EU, mainly in developing markets. But it is also the uncertainty about the future European energy policy that makes companies invest in countries with low energy costs. For instance, the Austrian Voest Alpine made its last major investment – of about 550 million euros – not in Austria or elsewhere in the EU but in the United States. The company expected an upsurge in demand from the US automotive industry, but it also justified its move by lower US energy prices. Voest invested in a new technology for hot-briquetted iron, a pre-product needed for steel that is not based on iron ore or coke but on gas, which is much cheaper in the United States. Even taking into account the costs of shipping it back to Austria, this product will cost the company 200 million euros less a year than the equivalent produced in Austria. Overall, during the past 10 years, two-thirds of Voest's investments have been to modernise and increase the efficiency of its Austrian steel mills and one-third have been invested in new production in Asia and the United States. The proportion is likely to change in the future given that Voest seeks to increase the share of sales made outside the EU. With the latter objective, the company is not alone in Europe.

3.3 International competition

In terms of competition from outside producers, China in particular is perceived as a threat to the European steel industry as it sells directly to the EU and surrounding markets. In addition, the prices of Chinese steel are very attractive thanks to subsidies for energy and water, low credit rates for investments and so-called 'export discounts', tax concessions introduced in an attempt to promote exports. Given that demand in Asia is satisfied locally and thus shrinking, producers from Russia or Turkey are also increasingly on the lookout for new customers in the EU. The war in Ukraine has further accelerated the need to export to the EU as demand from Russia, the traditional customer, has plunged. Imports to the EU compared with the level of own production are on the increase (Eurofer 2014). China, Russia, Turkey and Ukraine already account for 50 per cent

of all EU steel imports, delivering mainly to the construction industry. The imports from China are particularly contested by European steel producers due to the alleged use by the former of market-distorting subsidies;[2] an antidumping lawsuit in this area is currently being launched by the EU against China. Other countries are trying to increase the competitiveness of their steel products by imposing trade restrictions on steel products from other countries. These restrictive measures include tariff barriers and non-tariff measures (related notably to technical regulations and conformity assessment procedures), again undermining the competitiveness of EU products (European Commission 2013). Countries such as Russia or Brazil have pursued a strict market foreclosure strategy and demanded quotas for locally produced steel in steel consumption.

3.4 Raw materials

In the aftermath of the 2008 financial crisis, the provision of raw materials has become a considerable problem. Steelmaking depends on resources that are scarce in Europe and due to expanded production outside Europe the demand for these resources has increased, along with prices. The limited number of suppliers of raw materials, particularly of iron ore, has increased their power, which has disrupted traditional supply chains.[3] Moreover, raw material prices are now increasingly determined on the stock market, which results in severe short-term price fluctuations. From the long-term perspective, prices have risen considerably: if 1 tonne of iron ore cost 20 USD in 2000 and 50 USD per tonne in 1998, by 2010 it had risen to 150 USD. Scrap metal cost 100 euros per tonne in 2000 and 400 euros in 2010. The price for coking coal increased from 100 USD to 700 USD per tonne, and for iron ore from 100 USD to 500 USD. Furthermore, countries such as India, China, the Russian Federation and Egypt imposed export restrictions and export duties on raw materials, which contributed to further raise steel production costs in the EU.

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2. State subsidies make it impossible for companies to fail. Moreover, attempts to reduce capacities have so far been unsuccessful: while capacity is reduced in some places, it is increased elsewhere (Song and Liu 2012). The persistence of overcapacity led to a new export orientation: in 2014, China exported 80 million tonnes of steel (Bloomberg 2014), about 5 percent of world production.

3. For example China, a country with huge coal reserves, tried to limit its export quota of raw materials, which benefitted Chinese steel producers. The restriction of exports, however, was determined to be unjustified by the World Trade Organisation and had to be removed (Barkley 2012).

These changes in raw materials supply have had two dramatic consequences. First, steel producers have increasingly tried to purchase their own raw material capacities and to vertically integrate their operations by upstreaming in order to become less dependent. ArcelorMittal, the largest EU steel producer, purchased iron ore mines in the United States, Canada, South America, Africa, Ukraine, Kazakhstan and Bosnia, and coal mines in Kazakhstan, Russia and the United States. This strategy was initiated before the crisis, when Mittal had made huge gains and looked for potential investments. When steel demand decreased it compensated some of the losses with the revenues from its iron ore mines. ThyssenKrupp similarly embarked on an upstream strategy of buying mines, but decided to sell them when its financial problems became more acute. Second, steel producers have sought to an even greater extent to flexibilise their production process. With the fluctuation in raw material prices, long-term contracts with customers could not be sustained and have become shorter. Currently, production orders are made on a quarterly basis, which has led to an enormous need for flexibilisation of production. For workers, this has meant work intensification in peak times and greater job insecurity at times when orders are lower. Even though raw material prices have recovered slightly and now stand at the pre-crisis level, the shock of production volatility is still felt in the sector.

3.5 Environmental protection and energy policy

Another challenge to the steel industry is the need to address the issue of environmental protection. In relation to environmental issues, however, world regions pursue very different policies, with the EU being the strictest in forcing steel producers to buy EU CO_2 emission certificates, the price of which has risen steadily. As a result, the EU steel industry is confronted with higher energy prices than most of its international competitors, and given that approximately 40 per cent of total operational costs are energy costs, there are growing concerns that the EU's industrial base might be destroyed due to CO_2 efficiency rules. European steelmakers are particularly vocal in pointing out their huge competitive disadvantage and try to bargain for exemptions and the extension of lower emission prices. With the policy in place, they fear the loss of further 300,000 jobs (interview November 2010).

Some steelworks could work autonomously without using public energy supply as they have co-generation plants, but in these cases CO_2 emissions are often too high. The substitution of these energy sources would not only increase costs, but also require substantial increases in local energy supply. In Austria, for instance, the Voest Alpine steelmill needs 33 TWh of electricity per year, whereas the country's entire annual consumption is only 68 TWh. This indicates that the problem in case of substitution of the autonomously gained energy would be considerable.

To conclude, the challenges for European steel are immense. The sector has to obtain raw materials security; manage price volatility; improve cost competitiveness; manage cash flows; respond to weak demand; innovate new products or applications to attract new customers; optimise product portfolios to expand market access; and expand geographically (see also EU 2013).

4. Social dumping and employment flexibility in the wake of the crisis

In view of the changes and challenges facing the European steel sector, most companies had refined their strategic priorities even before the crisis. Putting increased emphasis on customer needs has had a knock-on effect for human resource management strategies based on training and employee responsibility, as well as more generally on working conditions. In most companies, new forms of work have had to be introduced and the relationship with customers, suppliers and employees has changed. The current financial crisis has accelerated restructuring and employment flexibilisation, whereas cost-cutting and productivity enhancement goals have become key for all producers. This section will present some features of the new post-crisis business model in the European steel industry, with particular focus on its employment effects. The account is based on research conducted by the author between 2009 and 2012 at one big multinational steel company (MNSC).

The production process at MNSC is planned globally and managed via benchmarks. The individual sites have to document every element of the production process: the use of raw materials, energy consumption, maintenance costs, the number of workplace accidents and personnel costs. As a result of the benchmarking process, MNSC's locations have become comparable in terms of their cost structures and they compete

with each other over production quotas and investments. The rivalry divides the plants into winners and losers: only the five top-performing units, due to their good reputation as cost-saving plants, receive new investments. Under these circumstances, even profitable locations are threatened with closure.

Cost-cutting pressures exerted under these conditions are an example of employer-driven social dumping. The use of the latter term is justified given that in the examined context, cost reduction is first and foremost achieved by lowering social and employment standards. In manufacturing sectors the most commonly used social dumping practices are relocations, measures aimed at increasing employment flexibility, benchmarking and inter-plant 'beauty contests' initiated by the management, which are also termed 'whipsawing' (Greer and Hauptmeier 2015).

At MNSC, social dumping has acquired a new quality with the financial crisis. Initially, for a number of months, production at MNSC was reduced to 20 per cent of capacity, implemented by means of production stoppages and temporary closures of some mills so that at times, only nine of MNSC's 25 blast furnaces in Europe were operating. This hit the central management hard, who subsequently decided that the company needed more flexibility in order to reduce fixed costs by 10 billion USD annually. The cornerstone of the new flexibility strategy was cutting labour costs during downturns. MNSC accordingly sought to decrease the workforce to 80 per cent of capacity utilisation per site, demanding that this should be implemented by increasing external flexibility, that is, by reducing the core workforce by 20 per cent and replacing it with agency workers or zero-hours contract workers.

Individual company sites tried to follow this new requirement in a variety of ways. The most labour-friendly solution was implemented in Germany, where no employment reduction occurred but some permanent workers were transferred to newly created internal subsidiaries providing services to different company divisions. Formally separate from the company, their transfer helped reduce the headcount at sites and thus comply with the central management's demands. In other countries, such as Poland, the number of workers was reduced to 80 per cent of capacity utilisation by means of dismissals, and those who left received just the minimum severance pay defined by law. Half the dismissed workers were rehired as agency workers with a guarantee that their salary would not be reduced in the course of the next two years. According to the local management,

this was an incentive for the employees to embrace cooperation with the temporary work agency.

In other European countries, the management's social-dumping pressure has also resulted in the increase of external flexibility and new forms of flexibility, but also in redundancies and site closures, mainly in Belgium and France. In response to the declining demand from the automotive industry, a coke plant and production lines for finished products in Belgium were closed in 2013; as a result, 1,300 workers lost their jobs. Thanks to government intervention, no forced redundancies occurred in France, but the closure took place through the use of early retirement schemes and redeployment after training programmes for new investments, such as the production of Usibor or food cans. All in all, the management justified the closures with the need to reduce capacity and sustain the most profitable sites.

5. Conclusions and outlook

The current problems of the European steel sector lie mainly in worldwide overproduction, which results in low capacity utilisation, increasing imports from emerging markets and persistently low demand. The European steel sector faced a similar situation in the 1980s, when capacity utilisation was at 56 per cent in the EU. In the 1980s, politicians reacted promptly, granting state aid to the sector and even renationalisating it in some countries; the primary aim back then was to safeguard jobs and the industrial base in Europe. The expiry of the ECSC treaty in 2002 nurtured a debate on whether the EU should continue to consider the steel sector as a special case and pursue 'managed restructuring' as a policy paradigm, or regard external competition as a positive factor that facilitates restructuring processes. The latter 'non-intervention paradigm' prevailed and ended the 'managed restructuring' era: it no longer focused on the protection of the EU market, but rather on its opening up for foreign markets (Sedelmeier 2002).

Eleven years after the expiry of ECSC, a new policy paradigm came to the fore. Recent plant closures that had attracted public attention, as well as the increasing number of job losses alarmed European policymakers. In July 2012, a High-Level Roundtable (HLR) was set up by the Vice-President of the Commission and Commissioner for Industry and Entrepreneurship in cooperation with the Commissioner for Employment

and Social Affairs with the aim of seeking possibilities to boost the industry's development, not at least because several other industries depend on steel production. In order to minimise the negative social impacts of the crisis on the steel industry, the EU proposed a 'European Steel Plan'. As part of the Plan, in 2013 the Commission adopted the so-called Action Plan for a Competitive and Sustainable Steel Industry in Europe, which advocated additional financial support for technological innovations that would help reduce the dependence on costly raw materials. It also called for a comprehensive trade strategy involving various trade policy tools guaranteeing European steel producers access to third-country markets.

The Action Plan represents an important step in acknowledging the difficulties faced by the sector. However, it does not signify a return to the 'managed restructuring' paradigm, as it is just a soft law instrument advising common action.[4] In its current shape the Action Plan is far from an attempt to control market mechanisms of the kind undertaken in the 1980s, when production capacities were allocated across European regions equally in order to safeguard employment. Today regions are competing for production on the basis of cost efficiency, and employment has been reduced solely to a cost factor. In this regard, it is notable that while the Action Plan tries to improve regulatory conditions for the industry, it does not offer mechanisms to protect employment. One could therefore call this new paradigm 'the coordination of competitive environments': even with a new supranational European sectoral policy, it remains a considerable challenge for steelworkers to protect their interests in the new post-crisis situation in the face of harsh competition between individual locations and management's lack of local attachments.

It seems crucial for the future of European steel that investments are made to modernise plants and to compete technologically with developing countries. Given the composition of costs in steel production – the large share of raw material and energy prices – it seems worth investing in research and innovation in order to find cheaper alternatives to the existing raw materials, as well as for the production process. In

4. A window of opportunity for more interventionist policies opened up only for a very short period of time in the late 2000s. Following the outbreak of the crisis, national states stepped into safeguard employment by offering labour market instruments that would allow companies to cut labour costs without making workers redundant. Short-time working schemes were introduced by many EU countries, and were particularly generous and widespread in the German metal sector.

principle, research and innovation are areas in which the European Union has strengths, which suggests that if business, research and politics continue to cooperate, the relocation of steel outside the EU can be prevented. However, recent trends indicate that companies are primarily interested in cost reduction and not in innovation. Moreover, if the sector fails to offer stable employment and employment security, it will be the task of European policymakers to lay down basic conditions to keep the sector in line with European values concerning decent work.

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