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A Resurgence of US Manufacturing – Evidence and Wishful Thinking

The US manufacturing sector is currently experiencing its most significant upswing in 35 years, leading many politicians and economic analysts to claim that the US economy is being re-industrialised. While the notion of a renaissance of the industrial sector does not seem far-fetched, given that the US is experiencing a shale gas and oil boom, this will not necessarily translate into significantly higher outputs. Upon closer examination of some of the key indicators, it becomes evident that the facts do not yet bear out the claim of a resurgence of manufacturing in the US. Therefore, it may be premature to identify US industry as a newly superior global competitor to the EU.

In recent years, the US manufacturing sector has been attracting increasing levels of interest from politicians and researchers. In this year's State of the Union Address, President Barack Obama referred to "manufacturers" no fewer than seven times. Economic analysts are also devoting more and more interest to the notion of a re-industrialisation of the US economy. And this is why: in terms of its proportion of nominal GDP, the US manufacturing sector is currently experiencing its most significant recovery in 35 years.¹ Moreover, in the recent past, there have been numerous examples of US companies moving some of their production capacities from low-wage countries back to the US. Among them are both major industrial corporations including General Electric, which moved its washing machine production from China to Kentucky in 2012. Boeing, Ford and Google also feature on the list. Nevertheless, with the total number of cases standing at a low level, there is a certain contrast between cases identified and the intensity of the public debate on a presumed re-industrialisation of US manufacturing. While this notion of a renaissance of the industrial sector does not seem far-fetched at all, given that the US is experiencing a shale gas and oil boom into the bargain, this does not necessarily mean that it will actually translate into significantly higher outputs from the old

and new factories between Chicago and San Francisco. Upon closer examination of some of the key indicators, it transpires that the facts do not as yet manifestly bear out the notion of a resurgence of manufacturing in the US. Therefore, it may be premature to identify US industry as a new challenger and superior competitor to the EU in the global markets.

The United States can boast the strongest manufacturing output in total figures worldwide. Manufacturing accounts for 70 per cent of private R&D spending and 60 per cent of US exports.² However, the sector has been steadily losing relevance within the US economy in relative terms. In 2009, manufacturing accounted for just 11 per cent of total value added to the United States' nominal GDP, down from 18.6 per cent in 1983 and 28.3 per cent in 1953 (see Figure 1). A second significant sign of a decline comes in the form of the unparalleled loss of employment the sector experienced up to 2010. Between April 1998 and January 2010 alone, the US manufacturing sector shed 6.2 million workers, i.e. more than a third of its workforce. So it would seem that there are clear signs of a decline. However, it is not this simple.

First, for the purpose of ascertaining a specific sector's contribution to economic growth, the real value added by this sector is a much more reliable indicator than nominal value added. In terms of real value added, the US manufacturing sector's contribution has been stable for decades. Manufacturing accounted for 11.8 per cent of real value added to GDP in 1987 and for 12.4 per cent in 2012 (see Figure 1). In the years between, the figures

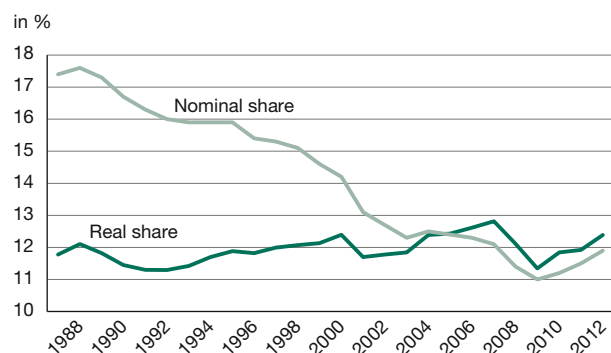
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1 Morgan Stanley Global Research: US Manufacturing Renaissance – Is It a Masterpiece or a (Head) Fake?, Morgan Stanley Blue Paper, 2013, p. 14.

2 McKinsey Global Institute: Game changers: Five opportunities for US Growth and Renewal, July 2013, p.14.

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Figure 1
Nominal and real shares of manufacturing in total US value added



Source: Bureau of Economic Analysis; own calculations.

were largely stable, with only minor fluctuations. In other words, for the past 25 years, the US manufacturing sector has largely been growing in parallel with the overall US economy. We therefore need to look at how it was possible for the real value added by the sector to remain stable while its nominal value slumped so dramatically.

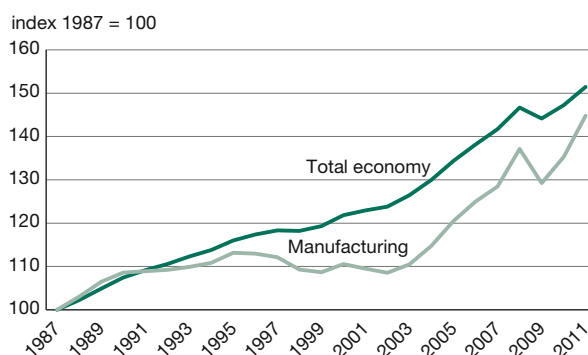
The answer lies in the relative prices paid for the output of the manufacturing industries. If dollar prices rise more slowly than nominal GDP while the real output of a given sector keeps pace with real GDP growth, the inevitable consequence will be that the sector in question will lose ground in terms of its relative contribution to nominal GDP.³ It follows from this that prices for manufacturing output must be rising more slowly than those paid for goods and services in other industries. This cause-and-effect chain has been borne out empirically. A comparison of the price indices for total gross added value on the one hand and gross added value for the manufacturing sector on the other shows that, between 1987 and 2011, prices for manufactured goods rose considerably more slowly than those for any other type of goods (see Figure 2). From 1997 to 2012, the manufacturing price deflator rose a mere 2.5 per cent in total. The price deflator for overall GDP rose by 34 per cent.⁴ This in turn means that the supposed manufacturing decline is partly attributable to price effects that have very little to do with actual output.

One explanation for this development is likely to be found in the boom of the financial sector during this period and

³ N. Feinman: The decline of US manufacturing: fact or fiction?, Deutsche Bank (DB Advisers), Frankfurt a.M., 2011, p. 1 f.

⁴ N. Sheets: Is a Renaissance in U.S. Manufacturing Forthcoming?, Citi Research Economics, 31 May 2013, pp. 4, 10.

Figure 2
Price indices for manufacturing and total value added



Source: Bureau of Economic Analysis; own calculations.

the resulting strong nominal rises in salaries and prices for services in the financial industry. The reforms under way in the US banking sector, however, may lead to a reversal of this trend. Another explanation could be found in a collapse of the price index for computers and the electronics sector.⁵

Second, with a view to the employment losses, we need to ask how the manufacturing sector succeeded in increasing its real output in parallel with overall US economic growth despite laying off millions of workers in the past decades. The answer to this is rising labour productivity. Data provided by the US Bureau of Labor Statistics confirms that the manufacturing sector has been achieving above-average growth rates in its value added per hour for decades. From 1990 to 2000, the average annual increase was 4.3 per cent. This rose to 6.1 per cent from 2000 to 2007 before falling to 3.8 per cent from 2007 to 2011. This strong performance is largely due to extraordinarily high levels of productivity growth in the computer and electronics sectors.⁶ In terms of productivity growth, the manufacturing sector was not matched by any other industry. This rise in productivity among manufacturers has translated into a reduction of unit labour costs, which explains the fall in relative prices. Moreover, some of the productivity growth recorded in the statistics might be due to the fact that some less skilled workers formerly employed in the industrial sector moved to the financial services sector during the financial market boom.

⁵ Ibid.

⁶ S. Houseman, T. Bartik, T. Sturgeon: Measuring Manufacturing: Problems of Interpretation and Biases in the U.S. Statistics, W.E. Upjohn Institute for Employment Research, Washington DC, 2013, p. 2.

Little evidence of a turnaround in value added

Since 2009, however, it would appear that the long-term downward trend of the industry's nominal value added has been reversing. Even though it only edged up slightly from 11 per cent in 2009 to 11.9 per cent in 2012, this recovery marks the sector's most significant increase in 35 years.⁷ It is, however, questionable whether this is really the start of a lasting resurgence of manufacturing. As any diagram depicting the nominal value added to GDP across the different sectors will illustrate, any increase in a given sector's contribution must, by definition, result in falls in one or more other sectors – we are dealing with a textbook example of a zero-sum game. In this case, the nominal value added by the financial sector fell by 0.9 percentage points between 2009 and 2012, i.e. by the exact share that was gained by the manufacturing sector. Similarly, the public sector's contribution diminished by 0.8 percentage points in the same period, a consequence of the tight budget situation in the US public sector. All this suggests that the presumed resurgence of the manufacturing sector is at least partly attributable to the weak performance of certain areas within the service sector.⁸

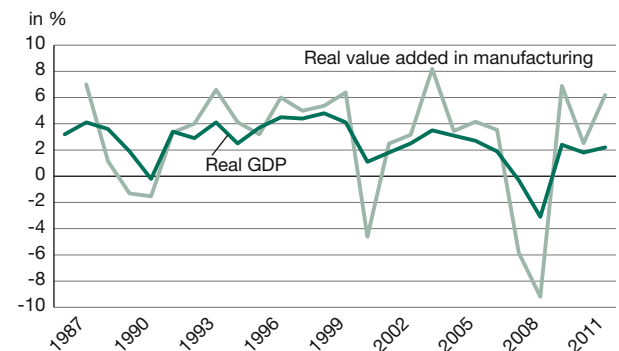
There is another explanation for the rise of the nominal value added by the sector. It has to do with the development of prices. As illustrated in Figure 2, from 2009 onwards, the price index for manufacturing output has been moving closer to that of the overall economy. In other words, there is less divergence between relative prices. This in turn is reflected in a positive trend for the nominal value added by the sector.

All in all, a large part of the trend reversal is attributable to effects that tell us very little about the sector's actual output.

Other indicators show a mixed picture

As pointed out above, a good way of ascertaining a sector's real growth is to compare its real value added to the development of real GDP (Figure 3). Here we find that the manufacturing sector grew at an average of 3.3 per cent per year between 1992 and 2007 (adjusted for 2001, a year of crisis), which is slightly below real GDP growth in the same period (4.6 per cent). This situation reversed in 2010. Between 2010 and 2012, the manufacturing sector increased its value added by 5.2 per cent per year,

Figure 3
Value added in manufacturing and real GDP, year-on-year change



Source: Bureau of Economic Analysis; own calculations.

whereas real GDP grew by no more than 2.1 per cent. These figures illustrate that, in recent years, the manufacturing sector grew twice as fast as the overall economy.

However, this increase has to be regarded primarily as a recovery from the decline experienced by the sector during the crisis of 2008/09. During this period, the real economy contracted by 3.4 per cent, whereas manufacturing shrank by more than four times as much (-14.4 per cent).

The absolute figures confirm that the fast growth enjoyed by the manufacturing sector since 2009 provides little evidence of a lasting resurgence: as of 2012, when it recorded \$1.68 trillion in real value added, the manufacturing sector has not quite returned to its pre-crisis 2007 level of \$1.69 trillion. According to estimates, nearly 80 per cent of the recovery can be attributed to a rebound in US demand during the recovery. Thus, the bulk of the observed resurgence is simply cyclical.⁹ It should be noted, however, that goods exports have already reached levels considerably above pre-crisis levels. Accordingly, external demand could have contributed positively to manufacturing performance.¹⁰

Real output saw a similar development, as illustrated by the Federal Reserve's Industrial Production Index.¹¹ Adjusted for crisis years (1991, 2001, 2008/09), real output

7 Morgan Stanley Global Research, op. cit., p. 14.
8 T.J. Duesterberg: The Manufacturing Resurgence: What It Could Mean for the U.S. Economy – A Forecast for 2025, Aspen Institute, Washington DC, 2013, p. 1.

9 This is in line with N. Sheets, op. cit., p. 2; and International Monetary Fund: United States Staff Report for the 2013 Article IV Consultations, 2013, pp. 5, 9.
10 N. Sheets, op. cit., p. 9.
11 The Industrial Production Index measures the real output of all manufacturing, mining, and electric and gas utility establishments located in the United States. See Federal Reserve: Federal Reserve Statistical Release – Industrial Production and Capacity Utilization, 15 May 2013, www.federalreserve.gov/releases/g17/.

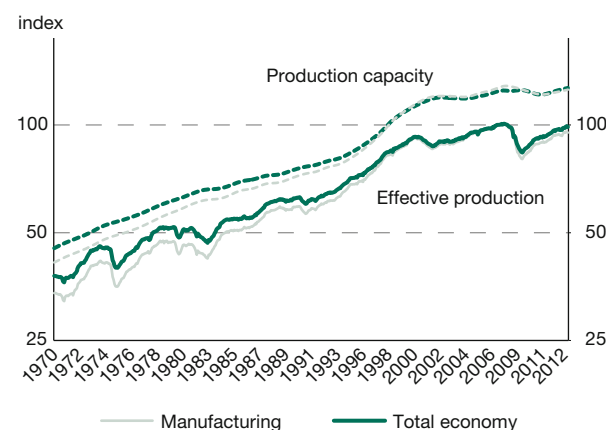
increased at a long-term average annual rate of 4.1 per cent between 1992 and 2007. However, between 2010 and 2012, the period that we are particularly concerned with here, real output only grew by 3.7 per cent annually – a rate below the long-term average. Hence, this indicator does not point to a fully-fledged re-industrialisation of the manufacturing sector.

If the United States were experiencing large-scale re-industrialisation, this would be reflected in an expansion of production capacities in the manufacturing sector. As of yet, however, there is no evidence of such an expansion. According to the figures provided by the Federal Reserve, production capacities have been growing by a long-term average annual rate of 2.4 per cent since 1995 (Figure 4). However, the annual growth rates for the period from 2010 to 2012, i.e. the years that we are interested in as we explore the notion of re-industrialisation, are in part significantly lower than that. As a matter of fact, after decades of continuous, stable expansion, the past ten years have hardly seen any investment in additional production capacities at all. Moreover, if we look at the current rates of utilisation, we find that the manufacturing sector is not under pressure to expand its production capacities. Compared to the long-term average of 79.4 per cent between 1992 and 2007 (again, adjusted for the crisis years of 1991, 2001 and 2008/9), the average utilisation ratio for 2010 to 2012 was under par at 73.7 per cent.

The United States has succeeded in slightly increasing its share in the global export market from 8.9 per cent in 2007 to 9.1 per cent in 2011. The manufacturing sector, however, was not among the beneficiaries of this development. According to WTO statistics, the US global export market share for manufactured goods fell from 9.6 per cent in 2007 to 8.4 per cent in 2011.

The rise in the number of people employed by manufacturers in the US is often cited in support of the notion of the sector's resurgence. Between January 2010 and May 2013, the sector hired 507,000 employees (+4.4 per cent), which marks the most significant increase in the sector in 15 years. We must not forget, however, that the US is recovering from a crisis and that many sectors are currently experiencing a rise in employment figures. In fact, contrasted to other sectors such as corporate services (+12.9 per cent between August 2009 and April 2012) and leisure/hospitality (+8.8 per cent between January 2010 and April 2012), the manufacturing sector is comparatively weak. Furthermore, with 12.3 million employees as of April 2013, the manufacturing sector remains far below its pre-crisis employment level (13.7 million as of January 2008). What we are witnessing here is a moderate recovery from the wave of redundancies that swept the sec-

Figure 4
Effective output and production capacities of manufacturing and total economy



Source: Federal Reserve Statistical Release.

tor during the crisis, rather than convincing evidence of a re-industrialisation of US manufacturing. Nor does the labour data suggest any large-scale repatriation of production capacities.¹²

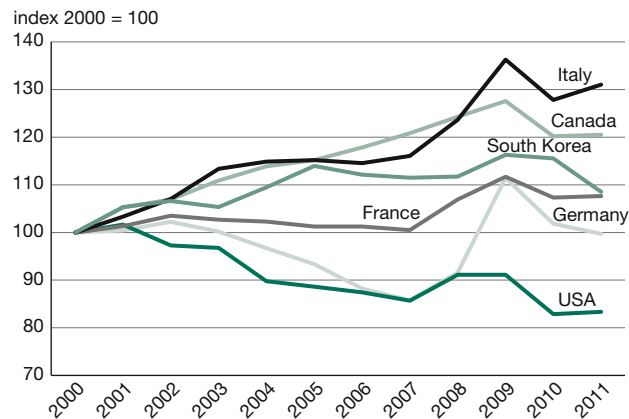
At present, the facts do not bear out the notion of a sustainable re-industrialisation of the US manufacturing sector. Overall, it is fair to say that the indicators looked at have been performing better since 2009 than they were in the years preceding the crisis, but the nature and the scale of these changes are indicative of a moderate recovery rather than of a new turnaround. As of yet, none of the indicators cited in support of the alleged re-industrialisation of the US provide evidence conclusive enough to confirm such a far-reaching claim.

Re-industrialisation of the US economy – a claim fuelled by hope

Compared to some of its main competitors, the US manufacturing sector is in a rather comfortable situation. According to data made available by the US Bureau of Labor Statistics, the US manufacturing sector achieved considerable reductions in its unit labour costs between 2000 and 2011, while in many competing advanced economies unit labour costs rose appreciably. Moreover, energy prices in the US are below the global average, giving US manufacturers a competitive edge. As a result of the shale gas and oil boom, prices for natural gas, natural oil and electricity are considerably lower in the US than in the economies it competes with.

¹² N. Sheets, op. cit., p. 10.

Figure 5
Real unit labour costs in the manufacturing sector



Source: US Bureau of Labor Statistics.

Despite the fact that US manufacturers have become more competitive in international markets, they have so far been unable to benefit from their competitive edge. During the past few years, neither their export share nor their production capacities have grown above the average. Whilst there are some examples of companies relocating production capacities to the US, this development is not yet strong enough to be picked up by the indicators analysed here.

Therefore, the claim of a re-industrialisation of the US economy is fuelled by hope and overly enthusiastic optimism driven by the developments in the US energy markets. The US manufacturing sector's cash holdings are high, leaving significant capacity for future capital investments.¹³ Whether or not US manufacturers will be able to derive a significant benefit from this will ultimately depend on the proportion of their total production costs that consists of energy costs, as well as on various other factors, including the fiscal framework, infrastructure and the energy policies adopted by other countries.

There is no doubt that low energy prices are a powerful cost advantage for those manufacturing industries that are particularly dependent on energy, e.g. chemicals, petroleum refining and products, and primary metals. As to their share of US manufacturing, estimates range from seven per cent of overall industrial production to one-third of manufacturing value added.¹⁴ Against this

¹³ Ibid, p. 17.

¹⁴ J. Hatzius: The US Manufacturing Renaissance: Fact or Fiction?, Goldman Sachs Global Economics, US Economics Analyst 13/12, 2013, p. 5; N. Sheets, op. cit., p. 18.

background, any analysis of relative relevance is inherently filled with uncertainty due to a broad range of assessments.

There are at least some important preconditions for a near-term capacity expansion of the US manufacturing sector that have been met. A more depreciated exchange rate and significant increases in labour costs in emerging markets may add to a favourable environment for a US manufacturing resurgence.¹⁵

The question remains whether both of these trends will continue and whether they will lead US manufacturing in the same (positive) direction. Continuing real appreciation in emerging economies could lead to weaker growth, which could be a drag on US manufacturing exports. A continuing depreciation of the US dollar cannot be taken for granted, given the ongoing problems in the euro area and unsolved structural problems in Japan.

Finally, there are a variety of factors that influence whether a renaissance of US manufacturing can take hold, and not all of them are mutually reinforcing. According to a recent Morgan Stanley poll-based survey, domestic growth levels, transport costs and the domestic tax burden play major roles, while the importance of low energy prices and higher wages in China is overestimated.¹⁶

To sum up, there are good reasons to assume that conditions are favourable for a further rebound of US manufacturing. However, it seems premature to call this process a renaissance. Indicators show mixed evidence, and not all preconditions for a sustainable expansion have been met yet.

For European competitors, and German companies in particular, this is both good and bad news at the same time. While the energy price advantage could pay off at the expense of some energy-intensive European industries in the medium term, a broad-based US manufacturing renaissance could offer many new opportunities for those European (especially German) companies which are market leaders in machinery and equipment production.

¹⁵ International Monetary Fund, op. cit., p. 6. The IMF model suggests a 0.8 per cent increase in US industrial production following a one per cent decrease in US unit labour costs vis-à-vis other G7 economies, a 0.2 per cent increase following a one per cent real effective exchange rate depreciation and a 1.5 per cent increase in manufacturing production should the natural gas price gap between the US and other G7 economies double.

¹⁶ Morgan Stanley Global Research, op. cit., pp. 5 ff.