De-Industrialisation II

W. Stanners

Abstract: Is industrial production relatively in decline? No, it is not. This note displays the evidence that for the last 40 years, in the 6 largest economies of the world, industrial production has kept pace with total output.

De-Industrialisation II

W. Stanners

How can well-being or prosperity be measured? How can one group of people be compared with another in regard to those qualities? Of course, these measurements are not possible in any strict terms, but often official statistical tabulations of, typically, gross domestic product (GDP) per head of population, are used, generally without much in the way of caveat.

What has industrial production got to do with well-being and prosperity? Well, of course, there are what used to be called factories, usually in undesirable pockets of the country. But it is well known that this activity is in decline, and matters less and less. So much so that the Industry Editor of a major financial newspaper could write: "There is no reason why Britain should not close its manufacturing capacity. But importing all manufactured goods would cause a huge current account headache". This view flows from the frequently remarked, and correct, fact that industrial production accounts for an ever declining fraction of employment, and of GDP, the normal well-being indicator.

In the bibliography will be found references to two earlier working papers, in which it is shown that the standpoint quoted above is by no means confined to journalists, and in which an attempt is made to re-balance this perception. Although it is hoped that anyone reading those papers will notice that the author appreciates fully the enormous complexity of the matters being dealt with, he would not draw back from the bald statement which on re-reading is found in one of them: “Wealth is nothing but things”. In other words, a measure of the production of things (including, of course, food) is the primary measure of well-being.

It is not intended here to go again over the ground of defending this view. It is hoped any one interested will go to the papers cited. The aim is to present a number of graphs which show that official indices of industrial production are quite closely aligned with those for GDP, over the very long period of the last 40 years. Although the author would contend that the production of things is the true measure of the distance in “well-being” which separates us from our pre-agricultural ancestors, and would maintain this even if it did not align with measures of GDP (both measures are full of ad hoc recipes and procedures), it is undeniably comforting that what are regarded as the primary and secondary measures more or less coincide. It gives a reassurance that those involved in the logically hopeless task of adding apples and pears have done an adequate job. It also may make it easier to convince an audience trained to despise the “material” that it is indeed the “material” which makes possible the thought and culture which are generally taken to be the essence of progress.

The proximate origin of this note is the fact of noticing, in one statistical compilation (see the bibliography) covering the countries of the European Union plus Japan and the USA, for the period 1960 to 2001, two tables giving annual percentage change in GDP and in industrial production, both in real terms. It also gives tables of imports and exports of goods but this served only to show that imbalances there, relative to total production, could be ignored in the present context.

The countries selected for the survey reported below were: USA, Japan, Germany, France, Italy and UK. As a first example, the “best” case of Italy is taken (Fig 1).

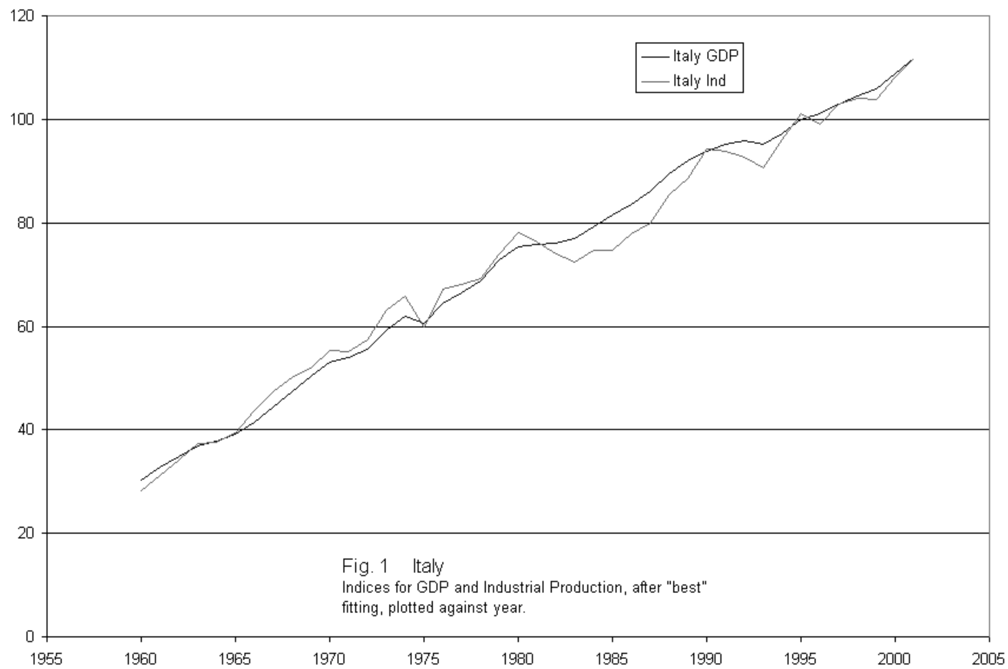

Fig 1.

The dark line is the real-terms GDP index for Italy. The value at 1995 is set at 100. The coloured line is the index for industrial production. Since the base is arbitrary, the latter has been adjusted to minimise the squared distance, in percentage terms, of this line from the GDP line. It can be seen that the alignment of the two lines is in visual terms rather good. In particular, they happen to begin and end more or less together, over this period of nearly 40 years.

The next figure (Fig 2) is for the biggest economy, the USA.

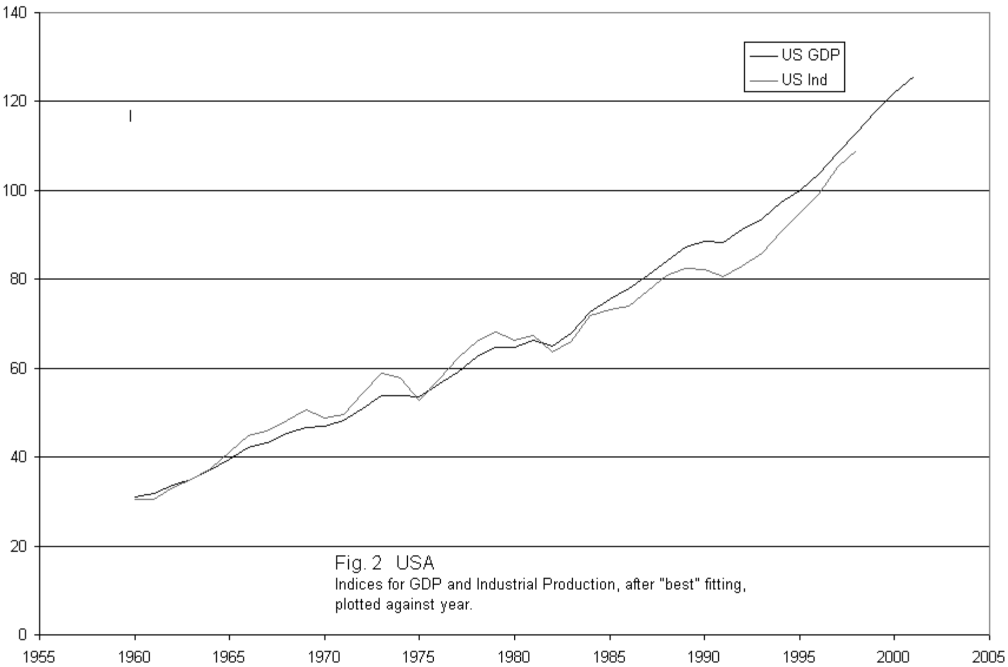

Fig 2.

The alignment in Fig 2 is less close than in Fig 1, but in visual terms the fit is still reasonably good.

Fig 3 gives the same sort of graph for all countries other than the USA. Since precision is not appropriate in this context, the weightings used in the aggregation were done according to GDP at around the mid-point of the period.

Fig 3.

The fit is good up to 1990. The apparent departure at this date derives from the data for Germany and France.

At this stage, it can be stated that the measures of GDP and industrial production stay fairly well in step over the 40-year period, for the USA and for the aggregate of the other major contributors to the world economy. For one country, Italy, the alignment is near perfect.

The disaggregated data for countries other than the US and Italy show puzzling discrepancies. To show this, a different presentation is used, in which the percentage gap between the GDP and industrial production indices is plotted against time. Figure 4 repeats the above results for USA and ex-USA in this style.

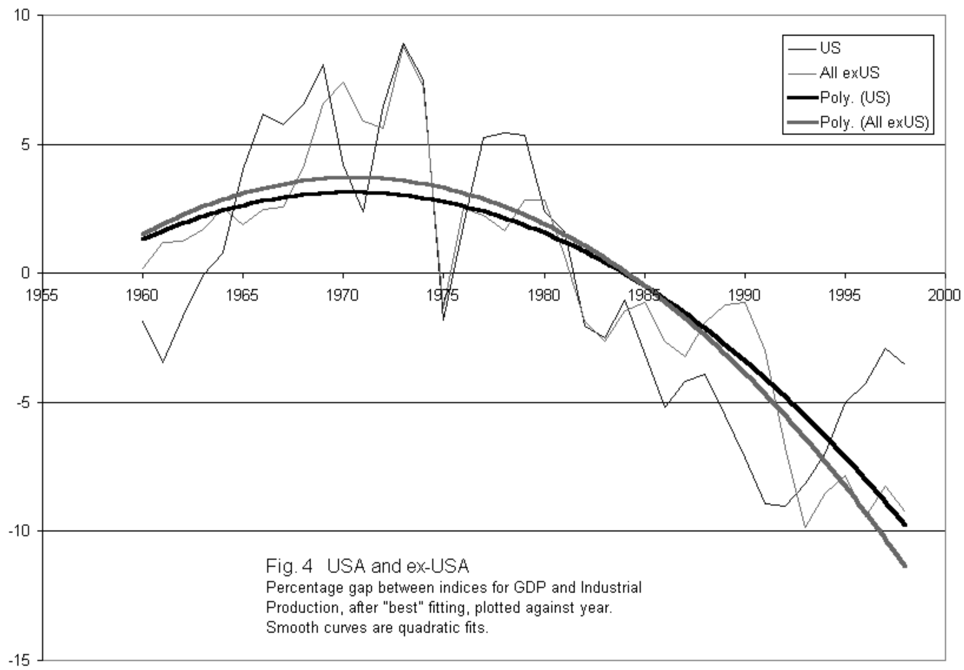

Fig 4.

This display shows that not only is the general “goodness of fit” similar for the US and ex-US (the trend curves are quadratics), but that the detailed structure agrees astonishingly well also. Even the departure beginning at around 1993 can be seen as not differing greatly from previous departures which later “rectified” themselves. Given the observation that the US line seems to start leading the ex-US one at around 1984, it may not be too fanciful to guess that the upward movement of the US curve from 1990 may lead both towards the zero-discrepancy axis. The word “astonishing” is used above, since it is difficult to envisage reasons why the statisticians of different countries should arrive at this result, given, as will be seen from the next figure (Fig 5), the (relatively) very large differences between the countries which make up the ex-US aggregate. And yet, the agreement with the US shown by their aggregated results seems too good to have been produced by chance.

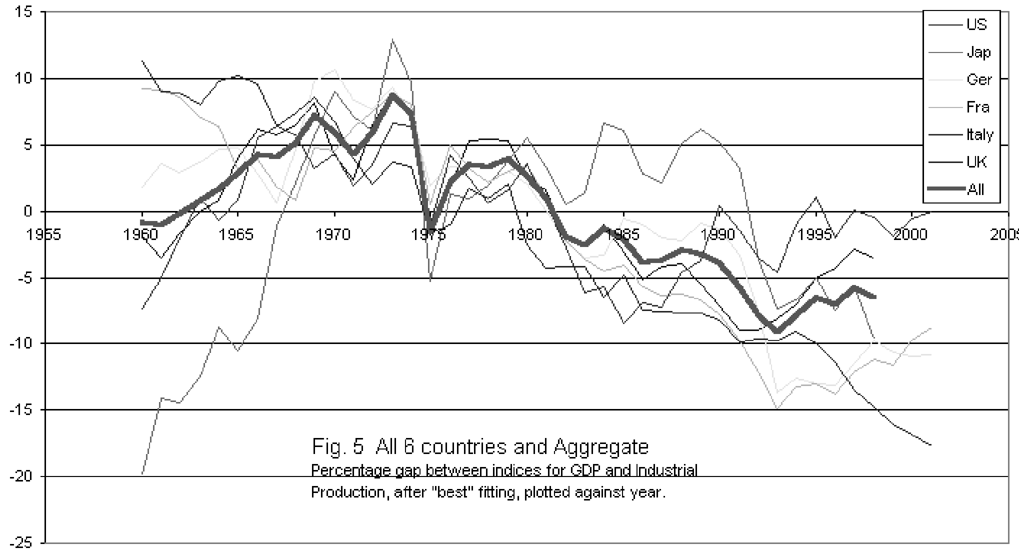

Fig 5.

The reader should not strain too much to decipher this figure. The heavy line is the GDP-weighted aggregate of all data sets. The striking lower discrepancy on the left is due to Japan, whose line is markedly convex downwards. The UK traces almost a straight line from top left to bottom right. France is fairly similar. The main point is that US data follow the aggregate line quite well, which is the same as saying that, as has already been seen, the aggregated ex-US data do too (the US weight is less than half the total).

It may be concluded that the indices of industrial production produced by the different teams of statisticians do in general march in step with the GDP statistics produced by the same teams. Where the disaggregated data fail to do so might usefully spur the national teams concerned to find out why*.

The fact that there are constant direct or implied references to industrial decline, by journalists, politicians and academics seems to be due to the preoccupation of these classes with industrial employment, “value added”, and GDP-fraction, all of which *are* in continual decline. The reason for *those* declines is, of course, quite obvious, namely the fact that the industrial sector is amenable to rapid improvements in productivity, so that more and more is produced by fewer and fewer. The GDP-fraction of any sector is roughly the employment fraction of that sector (given that the incomes of those involved in all sectors are roughly the same), so industrial output can perfectly well go in step with GDP while constituting a continuously decreasing fraction of it in value added terms. To put it in another way, the industrial output gets relatively cheaper. One of the papers cited quotes Baumol as finding the “bleak picture” that the prices of services must get continuously relatively higher – the same observation made from the “glass is half empty” standpoint!

The above is not intended to provide a proof of anything. It seems to the author to be virtually a tautology, i.e., not to require proof, to state that our well-being depends, not just to some extent, but entirely, on the production of things, so that if it had been found that industrial production indices did not keep pace with total welfare indices, the conclusion would rather be drawn that the ad hoc judgements and procedural recipes for producing the indices were in some way inadequate. Equally, those who think otherwise would be right to regard the fact that they do align rather well as not necessarily providing decisive support for the position advocated here.

However, it is hoped that the facts displayed above may at least convince everyone who reads them, to be sceptically alert, when they hear any allusion to "de-industrialisation" or industrial decline**.

Footnotes.

* The extraordinary disparateness of disaggregated (national) relationships between GDP and industrial production is shown by the following tabulation of the ratio of GDP index to industrial production index for 1998 when each is set to 100 for 1960. They are given in descending order of this ratio. The numbers are rounded to avoid giving an unwarranted appearance of precision :

	GDP	Ind	GDP/Ind
UK	250	190	1.3
France	340	270	1.2
Germany	290	260	1.1
All-exUS	360	330	1.1
USA	360	360	1.0
Italy	340	370	0.9
All	360	390	0.9
Japan	670	760	0.9

To the author, the spread in the value of the ratio suggests large and persistent national differences in methodology.

** By chance, on the day (19th July 2001) this note was posted, the national UK newspaper "Daily Mail" carried a story headlined, "Industrial UK edges closer to extinction"!

Bibliography

Stanners, W. 1996. De-industrialisation, ewp-dev/9601001

Stanners, W. 1998. Abstractions, things, wealth, and deindustrialization, ewp-mac/9804003

European Commission, 2000. European Economy No. 70