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Excerpt
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# 1 Stylized facts 1948–1990

On 18 October 1952, a British weekly published a survey on the performance of the West German economy since the Second World War. Its general message was plain: unconditional acknowledgement of a wholly unexpected economic recovery, the so-called German miracle, and warm praise for the sound economic policies that had brought it about. On 15 October 1966, the same paper carried another survey of this type called 'The German Lesson', in which the acknowledgement and praise of fourteen years earlier had become a quite enthusiastic – although not uncritical – celebration of the virtues of an export-orientated economy German style, with its excellent industrial relations and its reasonable macroeconomic policies. For all occasional caveats, West Germany appeared as a shining counter-model to the Britain of the day, with its economy inflicted by sclerotic diseases and maltreated by macroeconomic stop-and-go shocks. On 7 May 1988, about six weeks before the fortieth anniversary of the West German currency reform, the same paper published a leading article on the state of the West German economy. Under the highly suggestive headline 'Wunderkind at 40' and below a front cover showing a fat middle-aged man, unmistakably German in appearance, the article conveyed the picture of a rich, saturated and stodgy economy with not much zeal for growth and not enough flexibility for structural change left over from the days of its youth; the prospects for the future were painted in somewhat gloomy colours, and there was no talk any more of an enviable German model.[1]

These three judgements by outside observers give an impressionistic outline of what may be called the fading German miracle. In this first chapter, we shall evaluate whether, by and large, the statistical facts on the economic performance of West Germany bear out this picture. In doing so, we shall focus on three aspects of this performance, namely economic growth, structural change, and macroeconomic stability. The

[1] For the three articles, see *The Economist*, 'The German Economy – Divided it Stands' (18 October 1952); 'The German Lesson' (15 October 1966); 'Wunderkind at 40' (7 May 1988).

chapter will be essentially descriptive, with no attempt to establish an economic explanation of historical developments. Of course, all facts are theory-laden, and the selection and presentation of statistics is never independent of some prior theoretical prejudice. Hence it should not be surprising if some later economic interpretation is foreshadowed in the sketch of facts we present below.

## *1 Economic growth*

Figure 1 shows the average annual growth rate of real gross domestic product (GDP) in West Germany from the currency reform in mid 1948[2] until 1990. If one abstracts from the pronounced cyclical movements which the graph reveals, the time span of forty-two years may be conveniently divided into five distinct periods (1948–50, 1950–60, 1960–73, 1973–80 and 1980–90), with each period having a lower average annual growth rate than the preceding one.

Clearly, the most exceptional of these periods was 1948–50, with growth rates above 15 per cent p.a. This was the time of a drastic reorganization of the domestic structure of production in the aftermath of the currency reform and the comprehensive freeing of prices in June 1948. At a virtually constant level of employment until spring 1950, most of the observed output growth was due to an increase in working hours and to the productivity gains of repairing the war-damaged capital stock and reshuffling resources from less to more efficient uses. This speedy recovery from the early post-war misery was the first stage of the German miracle, but it hardly delivers a sensible performance standard for intertemporal or international comparisons. It should and will be treated as exceptional.

The 1950s were the second – and arguably the main – stage of the German miracle: from 1950 to 1960, real GDP grew by an average of 8.2 per cent p.a., a higher rate even than at business-cycle peaks in later years. Only once in this period, during the downturn of 1958, did the growth rate drop below 6 per cent p.a. At some time in the late 1950s and early 1960s, the trend growth of real GDP seems to have slowed down significantly.

[2] The immediate post-war period from May 1945 to June 1948 is excluded for two reasons. First, it was a time of almost complete price and production controls by the Allied authorities of occupied Germany, with the economy moving from a virtual standstill of production to a modest utilization of the – badly damaged – capital stock. To call this process 'growth' would be misleading; it was more like an initial restarting (and repairing) of the economy's machinery. Second, there are no national accounts statistics available for this period, and the commonly used index of industrial production gives a partial and fairly distorted picture of total economic activity. For details on this period, see Chapter 2 below.

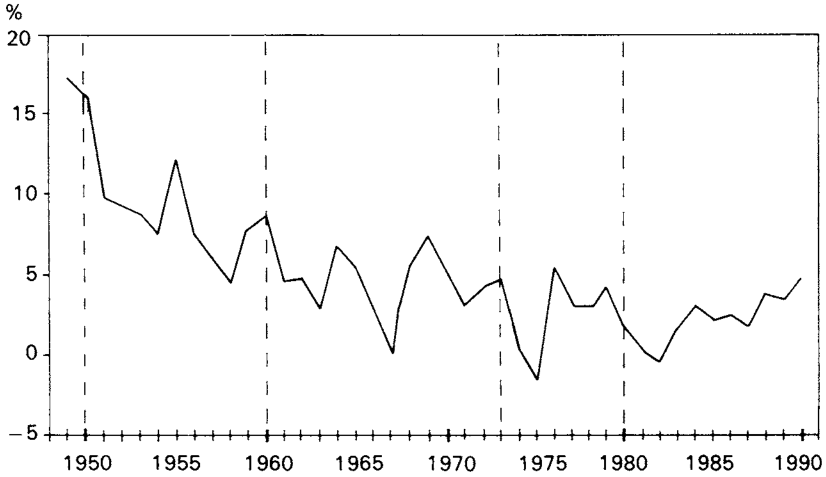


Figure 1. Growth of GDP in West Germany 1949–90.
*Notes*: Average annual growth rate of GDP at constant prices. For 1949 annualized growth rate relative to GDP in second half of 1948; for 1948/9–1959/60 excluding the Saar and Berlin.
*Source:* Statistisches Bundesamt; own calculations.

If the boom year 1960 is taken as a plausible endpoint of the miraculous post-war growth dynamics, it is easy to recognize the following thirteen years up to 1973 as a period of a still very satisfactory growth performance (around 4.4 per cent average annual increase of real GDP), but also of quite violent business fluctuations. This period covers the first genuine recession with (slightly) negative growth (1966/7) and the very powerful recovery thereafter.

As in many other industrialized countries, the oil price shock in the boom year 1973 marks an economic watershed between the still golden 1960s and early 1970s and the much more troubled later years. From 1973 to 1980, average growth stood at a meagre 2.2 per cent p.a., with the deepest post-war recession in 1974/5 leading to significantly negative growth and the later recovery being on the whole much more moderate than in earlier times. Whether the second oil price shock around 1980 and the ensuing recession of 1981/2 really indicate the beginning of a new period with still lower trend growth than before may be open to doubt, since the unusually long and slow recovery after 1983 gained momentum towards the end of the decade. From 1980 to 1990, GDP grew at an annual average of 2.1 per cent, only marginally less than in the period 1973–80. In any case, it is indisputable that trend growth slowed down after 1973 and did not recover to prior levels until the late 1980s. Hence, viewed as a whole,

Table 1. *Growth performance of selected countries 1950–89*[a]

| | 1950–60 | 1960–73 | 1973–80 | 1980–9 |
|---|---|---|---|---|
| West Germany[b] | 8.2 | 4.4 | 2.2 | 1.9 |
| France | 4.6 | 5.6 | 2.8 | 2.1 |
| Italy | 5.6 | 5.3 | 2.8 | 2.3 |
| United Kingdom | 2.8 | 3.1 | 0.9 | 2.7 |
| United States | 3.3 | 4.0 | 2.1 | 3.0 |
| Japan | 8.8 | 9.6 | 3.7 | 4.2 |

*Notes:* [a] Average annual growth rate of gross domestic product (for the United States and Japan: gross national product) at constant prices.
[b] For 1950–60 excluding the Saar and Berlin.
*Sources:* Statistisches Bundesamt (for West Germany), OECD (for all other countries 1960–89), and *The Economist* (1985) (for all other countries 1950–60); own calculations.

the historical pattern of West German economic growth from 1948 to the late 1980s appears to be quite compatible with the picture of a gradually fading miracle.

This conclusion receives support from an international comparison of growth performances. Table 1 presents the average annual GDP growth rates of the six largest industrialized countries for the periods 1950–60, 1960–73, 1973–80 and 1980–9. For the 1950s, the general message is unambiguous: economic growth in West Germany was outstanding, much faster than in the United Kingdom, the United States and France, but also significantly faster than in Italy, which is usually regarded as another country with an economic miracle at that time. Only Japan slightly outperformed West Germany, but Japan in the 1950s was just on the verge of becoming a modern industrial society and still had a vast catch-up potential to tap, presumably much more so than West Germany. The change from the 1950s to the 1960s is most remarkable: while Japan, France, the United States, and to some extent even the United Kingdom entered a golden age with higher growth than in the previous decade, West Germany faced a quite dramatic growth deceleration which pulled it down to a poor fourth rank of the countries in the table. Only Italy experienced a slowdown as well, but it was clearly minimal compared to West Germany's. Thus, by the 1960s, the long-term growth dynamics had already become weaker in West Germany than in its continental EEC partner countries, and it has remained so up to the second half of the 1980s.

In the period 1973–80, growth rates dropped sharply in all countries relative to earlier years, but the prior growth ranking in Table 1 is mostly preserved, with the growth rate in West Germany being again slightly

Table 2. *The growth of output, inputs and productivity 1950–89*

| | 1950–60[a] | 1960–73 | 1973–80 | 1980–9 |
|---|---|---|---|---|
| (i) Real GDP | 8.2 | 4.4 | 2.2 | 1.9 |
| (ii) Active labour force | 3.3 | 0.3 | 0.0 | 0.3 |
| (iii) Labour volume | 0.9 | −0.8 | −1.0 | −0.3 |
| (iv) Labour productivity | 7.3 | 5.2 | 3.2 | 2.2 |
| (v) Capital stock | 4.8 | 6.1 | 3.8 | 2.8 |
| (vi) Capital productivity | 3.4 | −1.6 | −1.6 | −0.9 |
| (vii) Joint factor productivity | 6.9 | 3.0 | 1.6 | 1.2 |

*Notes:* (i) gross domestic product at constant prices; (ii) number of employed persons (incl. self-employed); (iii) number of hours worked by active labour force; (iv) gross domestic product at constant prices divided by number of hours worked; (v) gross fixed capital (excl. non-commercially used housing) at constant prices; (vi) gross domestic product at constant prices divided by capital stock as defined in note to (v); (vii) weighted productivity of labour and capital as defined in notes to (iv) and (vi), with weights being 0.7 for labour and 0.3 for capital.

[a] Excluding the Saar and Berlin.

*Sources:* Statistisches Bundesamt and Bundesanstalt für Arbeit; own calculations.

higher than in the United States. In the 1980s, however, the picture changed again and the relative decline of West Germany reached its nadir: while the United Kingdom, the United States and, to a lesser extent, Japan, managed to accelerate the growth of their economies, all continental European countries fared even worse than before, with growth rates now between 1.9 and 2.3 per cent p.a.; among the EEC countries West Germany found itself at the lower end, lagging behind France, Italy, and the United Kingdom. Hence, after all, the fading German growth miracle seems to be a case not only of absolute slowdown in historical terms, but also of relative decline by international standards. Only recently, in 1989/90, does the West German economy seem to have regained a higher rank in the growth league. Whether this indicates a trend reversal or merely a transitory deviation remains to be seen.

By definition, an economy's output growth is due to an increase either of factor inputs or of factor productivity. Table 2 shows average annual growth rates of labour input, the capital stock, and various measures of productivity for the West German economy in the four relevant periods. As to labour input, the table indicates that the active labour force (including the self-employed) increased quite fast in the 1950s (by 3.3 per cent p.a.) and much slower thereafter. In terms of labour volume (i.e. the total number of hours worked), the 1950s are the only one of the four periods with an increase, since the sharp rise of the number of persons employed was sufficient to overcompensate the reduction of working hours per employee (largely because of longer holidays and a shortening of the working week). From the early 1960s onwards, the labour volume decreased quite steadily. With these trends in mind, it does not come as a surprise that the overall slowdown of output growth has been somewhat more dramatic than the slowdown of labour productivity growth, which actually declined from 7.3 per cent p.a. (1950–60) and 5.2 per cent p.a. (1960–73) down to 3.2 per cent p.a. (1973–80) and 2.2 per cent p.a. (1980–9).

As to capital, the picture is quite different: after having reached 4.8 per cent p.a. in the 1950s, the long-term growth rate of the capital stock peaked at 6.1 per cent p.a. in the period 1960–73, a time of very high saving and investment shares in gross national product. From this peak level, capital formation slowed down to 3.8 per cent p.a. (1973–80) and 2.8 per cent p.a. (1980–9), broadly in line with the deceleration of labour productivity growth. As a consequence, capital productivity – measured as GDP per unit of capital at constant prices – followed a most characteristic path: while it grew sharply in the 1950s by an average of 3.4 per cent p.a., it declined in the remaining three periods by an average of 1.6 per cent p.a. from 1960 to 1980 and 0.9 per cent p.a. from 1980 to 1989. Apparently, a process of capital deepening, which had set in with the investment boom in the 1960s, pulled down capital productivity in the face of a gradually shrinking labour volume.

To isolate those factor productivity gains (or losses) that are due to technical progress and structural change, not just to some sort of capital (or labour) deepening, a measure of joint factor productivity must be used. Needless to say, any such measure is very crude, as it involves a weighted average of capital and labour productivity growth, with the appropriate weights depending on the parameters of the production technology in the economy. Making some standard assumptions of the growth accounting literature,[3] we arrive at the numbers in Table 2 for the four relevant periods. As it turns out, the growth of joint factor productivity slowed down quite dramatically from 6.9 per cent p.a. in the 1950s to 3 per cent p.a. in 1960–73, 1.6 per cent p.a. in 1973–80, and 1.2 per cent p.a. in 1980–9. If the respective growth rates of labour productivity are recalled, it becomes clear that – on the statistical grounds of growth accounting – almost half of the labour productivity growth since 1960

[3] Following Maddison (1987), pp. 658ff., we assume a Cobb-Douglas technology with constant returns to scale and constant factor shares in value added. Numerically, we assume the labour share to be 70 per cent and the capital share to be 30 per cent. Note that the results in the table are quite robust with respect to changes of the numerical assumptions in the empirically relevant range.

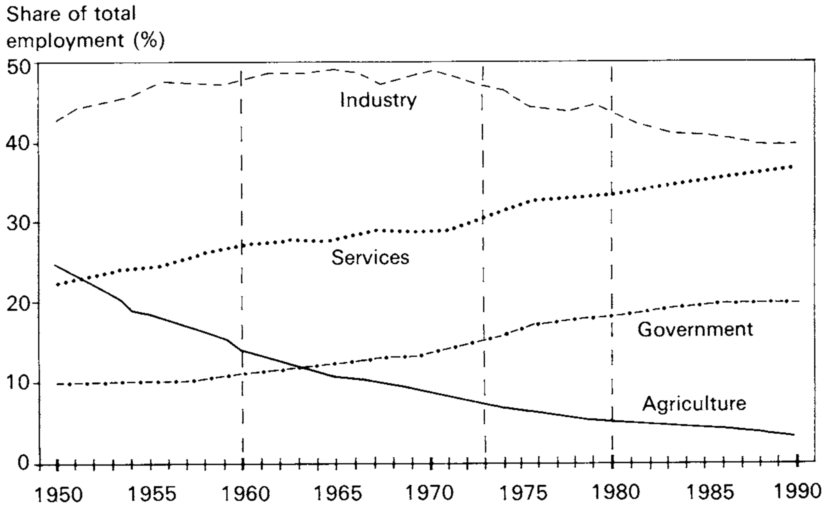


Figure 2. Structural change of the West German economy 1950–90.
*Notes*: Agriculture including forestry; industry including construction; services including trade and transport; government including social security administration and private non-profit organizations; for the years 1950–9 excluding the Saar and Berlin.
*Source:* Statistisches Bundesamt; own calculations.

should be attributed to capital deepening, not to structural change or technical progress.

## 2 *Structural change*

West German economic growth was accompanied by distinctive structural changes. Figure 2 shows the development since 1950 of the shares in total employment of four sectors:[4] agriculture, industry, services and the public sector. Some features of Figure 2 are worth noting: (i) agriculture suffered a sustained decline from about a quarter of total employment in 1950 down to well below 5 per cent in 1990. While this shrinkage went on throughout the sample period, its speed diminished markedly over time, with the bulk of the decline occurring prior to 1980, most of all in the 1950s and 1960s. (ii) Broadly speaking, industry passed through three stages. From 1950 until the early 1960s, its employment share grew from about 43 to 49 per cent. After some years of merely cyclical variation,

[4] To keep the presentation simple, we do not show sector shares in value added. By and large, they confirm the picture conveyed by the employment shares and the qualitative interpretation in the text.

Table 3. *Share of selected industries in total industrial employment*[a] *(%)*

| | 1950 | 1960 | 1973 | 1980 | 1989 |
|---|---|---|---|---|---|
| Construction | 16.2 | 15.6 | 15.2 | 14.3 | 12.3 |
| Mining | 9.9 | 6.4 | 2.6 | 2.6 | 2.3 |
| Manufacturing | 73.4 | 78.0 | 82.2 | 83.1 | 85.5 |
| Basic materials | 19.0 | 18.0 | 17.4 | 17.3 | 16.5 |
| Investment goods | 25.3 | 33.8 | 40.3 | 42.6 | 47.2 |
| Durable consumption goods | 23.2 | 21.0 | 18.8 | 17.7 | 16.3 |
| Non-durable consumption goods | 5.9 | 5.3 | 5.6 | 5.5 | 5.4 |

*Note:* [a] Excluding utilities, but including construction; employment excluding self-employed.
*Source:* Statistisches Bundesamt; own calculations.

the share began to decline in the early 1970s. From then onwards, it moved down quite steadily from about 49 to just below 40 per cent in 1990, the lowest level since the currency reform. (iii) The net winners of structural change have been private services and the public sector. The former expanded their share in total employment throughout the four decades, starting at 22.3 per cent in 1950 and arriving at well above 35 per cent in 1990. As in industry, the greatest upward leap occurred in the 1950s, but unlike in industry, the expansion continued in later years, albeit at a somewhat slower pace. In turn, the employment share of the public sector stagnated in the 1950s at around 10–11 per cent, but moved up most of the time thereafter from 11 per cent in 1960 to about 20 per cent in 1990.

The fact that industry's share in total employment did not decline until the early 1970s is quite unusual by international standards. In other advanced industrialized countries, the process of deindustrialization started earlier, usually in the late 1950s and early 1960s. To locate the centre of the peculiar dynamics of West German industry, we shall look at the structural change within industry itself. Table 3 presents the shares in total industrial employment of construction, mining and manufacturing as well as four branches of manufacturing in the five years 1950, 1960, 1973, 1980 and 1989 which make up the boundaries of our four relevant growth periods. The table shows quite clearly that, at all times, manufacturing was the engine of industrial growth, or at least a brake on its decline: the employment share of construction fell from close to 16 per cent in 1950 to about 14 per cent in 1980 and 12 per cent in 1989; mining shrank dramatically from a share of about 10 per cent in 1950 to 2.6 per cent in 1973 and stagnated thereafter; only the share of manufacturing climbed up continually, from about 73 per cent in 1950 to more than 85 per cent in 1989. Within manufacturing, the trend was also unambiguous: while the relative importance of basic materials and consumer goods industries declined, investment goods industries increased their share in total industrial employment from about one-quarter in 1950 to almost one-half in 1989.

### 3 *Macroeconomic stability*

In the so-called stability law of June 1967, the West German legislator declared four major macroeconomic targets to be achieved at any time. Roughly speaking, these targets are a steady path of growth,[5] full employment, price stability and external balance. How did the West German economy fare by these widely accepted standards?

*(i) Steady growth.* Cyclical fluctuations of output growth are a common feature of the last forty years of West German economic history, with the most violent movements taking place in the 1960s and 1970s (see Figure 1). However, the fluctuations of output growth rates are themselves no reliable indicator of cyclical business conditions since they reflect both long-run supply and short-run demand variations. Instead, Figure 3 presents a widely used measure of capital stock utilization of the West German economy.[6] If the level of the boom year 1970 is taken as the reference standard (1970 = 100), the figure shows that capital stock utilization varied from about 93 to 102. The extremely high levels of the early 1950s must be interpreted as altogether exceptional, another indicator of a sort of miracle: they should not be given too much importance in the overall picture.

The cyclical pattern in the figure is easily discernible: recession troughs at the beginning of the sample period in 1949/50, and again in 1954, 1958, 1963, 1967, 1971, 1975, and 1982; boom peaks in 1953, 1955, 1960, 1965, 1970, 1973, 1979, and 1989/90. Particularly severe recession troughs fell in the years 1958 (at least relative to the unusually high prior peak level), 1967, 1975 and 1982, and the most marked booms in the mid 1950s,

[5] The law itself speaks of 'steady and adequate growth'. Whatever 'adequate growth' means, it is certainly not a genuine target of short-term macroeconomic stability. Having dealt with long-term growth above, we shall just leave it out at this point.

[6] If one defines the business cycle as a sequence of changes in the utilization of an economy's productive potential, and if one further assumes that, in the short run, this potential is constrained by the capital stock – and not the labour supply – it makes good sense to take the utilization of the economy's capital stock as a proxy for the state of the business cycle. Note that in periods of chronically full or overemployment, the labour supply – and not the capital stock – may become the relevant constraint. In fact, West Germany was in a state of full or overemployment most of the time in the period 1960–73; however, it still had a foreign worker supply in southern Europe to tap, so that the domestic labour supply constraint was not binding after all.

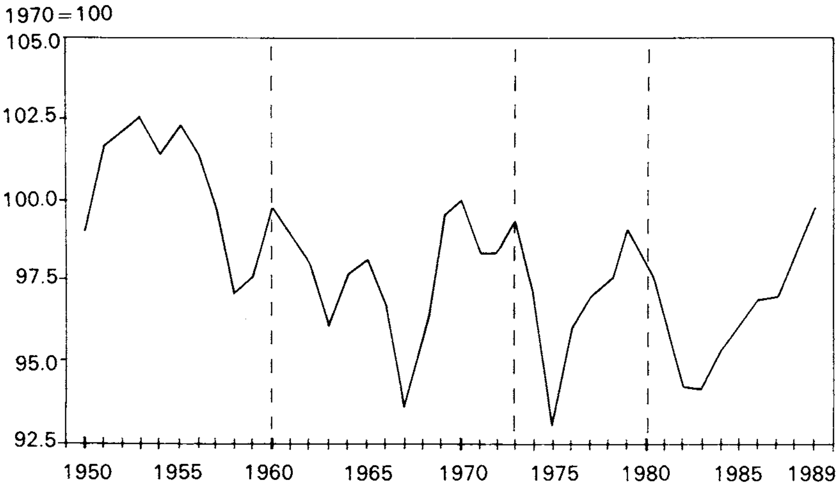


Figure 3. Index of capital stock utilization in the West German economy 1950–89.
*Note*: for 1950–9 excluding the Saar and Berlin.
*Sources:* for 1950–9: Deutsches Institut für Wirtschaftsforschung, Berlin (adjusted to the levels of later years); for 1960–89: Institut für Weltwirtschaft, Kiel.

in 1960, 1970, 1979, and 1989/90. With the possible exceptions of the long and forceful upswing in the early 1950s until about 1956 and the equally long, but much slower recovery after 1982, the cyclical fluctuations reveal quite sizeable amplitudes which did in fact translate into the fairly unsteady output growth pattern of Figure 1. Hence, as far as mere stabilization of the business cycle is concerned, the performance does not look very impressive.

*(ii) Full employment*. The West German unemployment record since the currency reform in mid 1948 may be divided into five major periods (see Figure 4): from mid 1948 to 1950, a sharp increase of the unemployment rate from below 5 to more than 10 per cent; from 1950 to 1960, a gradual and sustained decline from above 10 down to about 1 per cent, only briefly interrupted by the business downturn of 1957/8; from 1960 to 1973, a fairly constant minimal unemployment rate at about 1 per cent, with only one sharp temporary rise to 2.1 per cent in the recession around 1967; in 1974–80, a sharp rise from 1 up to 5 per cent in 1975, followed by stagnation and a meagre one percentage point decline towards the end of the 1970s; in 1980–90, another rise, this time from about 4 to over 9 per cent in 1983, followed by stagnation and – at the end of the sample