

## »» Business investment: waiting for Godot?

No. 168, 27. April 2017

Author: Dr Klaus Borger, phone +49 69 7431-2455, klaus.borger@kfw.de

Compared with the pre-crisis level of 2008, business investment has developed at a much slower pace than GDP. Currently (in 2016), enterprises invest EUR 370 billion in capital stock, or a mere 11.8% of GDP, which is only marginally more than in 2009, the year of deep recession. In 2008 the investment-to-GDP ratio was still 13.3%. In purely arithmetic terms, the decline of 1.5 percentage points represents an investment gap of some EUR 45 billion in prices of 2016, or one eighth of the current investment level. How concerned should we be about this?

Part of the decline is due to price effects. Since 2008 the prices of capital goods have risen much more slowly than the general price level (GDP deflator). In relative terms, investments have thus become increasingly less expensive, so for the same price-adjusted investment volume, companies today have to expend a much smaller proportion of economic output than eight years ago. Besides, since 2008 value added has tended to shift slightly more in favour of industries characterised by a below-average investment-to-GDP ratio in a cross comparison. A reduction in business investment driven purely by price and industry effects would be of very little concern in economic terms, at least when market mechanisms function properly.

But even analytically eliminating both effects still leaves an adjusted drop in the investment-to-GDP ratio of a significant 0.8 percentage points since 2008. That means a EUR 25 billion gap in business investment in current prices. This finding is puzzling given the many factors that currently favour investment – high capacity utilisation, low interest rates, a healthy business cycle, and a trend reversal in public investment. From a macroeconomic point of view, we identify two possible explanations that are not mutually exclusive: (1) the enormous extent of global political uncertainty that is causing businesses to hold off on new projects; and (2) the changing composition of capital goods in the course of digitisation. While investment typical of the digital economy, such as expenditure on intellectual property, is definitely growing strongly, the shrinking expenditure on classic physical capital such as machinery and buildings as the remaining heavyweights is reducing the aggregate. In order to strengthen business investment, economic policy should therefore eliminate uncertainty swiftly, especially in Europe, and effectively promote the digital transformation.

### **Business investment is a crucial long-term growth factor**

Business investment is *the* key factor of Germany's

sustainable growth success, as it is in any other economy. We define it as non-governmental investment in machinery and equipment (including vehicles), commercial construction and other products. The latter essentially include expenditure on intellectual property, that is, research and development, copyrights, databases and software, which is growing in importance in the digital world.<sup>1</sup> Currently (in 2016)<sup>2</sup> business investment has a share of 59% in total gross fixed capital formation, which also includes investment in private residential construction (30%) and investment by general government (11%). Capital stock cannot grow and be renewed unless businesses invest in it sufficiently, which in turn is a prerequisite for more productivity and economic growth. If business investment remains stubbornly weak, however, an economy puts its material prosperity at risk in the long term.

### **Investment-to-GDP ratio remains at 2009 crisis level**

Because of this fundamental importance, the reasons German business investment has trended much weaker than gross domestic product (GDP) compared with the pre-crisis level of 2008 must urgently be explored. Businesses raised their nominal investment spending by only 9.0% between 2008 and 2016 – quite a modest increase compared with nominal GDP, which grew by 22.3% during the same period and thus around two and a half times more strongly. Consequently, at EUR 370 billion, businesses are investing only 11.8% of GDP in capital stock, just marginally more than during the great recession of 2009 (11.7%). In 2008 the business investment-to-GDP ratio was still 13.3%.<sup>3</sup>

In purely arithmetic terms, the 1.5 percentage point drop from the pre-crisis level of 2008 represents an investment gap of some EUR 45 billion in prices of 2016, or one eighth of the current investment level. With this statistically undisputed finding, the question that has been hotly debated for quite some time now remains topical: how concerned should we be about this?

### **Capital goods are becoming relatively less expensive**

At least part of the decline can be put into perspective against significant price effects, which influence the business investment-to-GDP ratio, defined in nominal values, as much as the development of real investment and GDP volumes. Thus, from 2008 to 2016 the prices of capital goods have risen considerably more slowly, at 9.0%, than the general price level (GDP deflator: +14.1%). Investments are thus becoming relatively cheaper, so that for the same price-adjusted investment volume, companies today have to expend a smaller proportion of economic output than eight years ago. In other words, the nominal investment-to-GDP ratio, based on values, would have fallen even if the volume

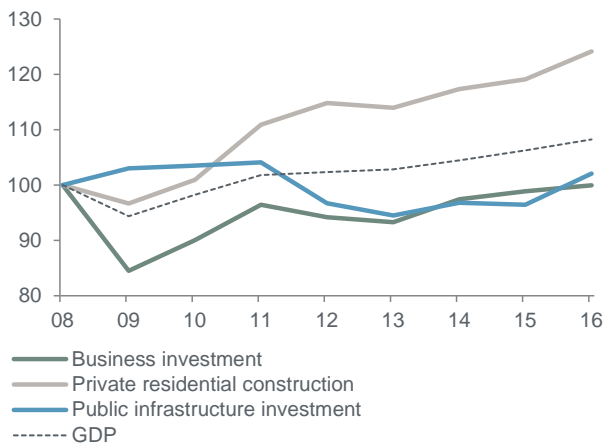
of investment had kept pace with the volume of GDP.

**Real stagnation for the last eight years**

But that is not the case either. The nominal increase in business investment expenditure is just enough to offset the rising prices of capital goods – in real terms, the volume of business investment in 2016 is only as high as eight years before, while GDP has since grown by 8.3%. The development of business investment thus remains even behind the trend of government infrastructure investment<sup>4</sup>, which, backed by a noticeable boost in 2016, managed to climb out of the deep and long trough of 2012 to 2015. Nonetheless, at the current margin infrastructure investment exceeds the level of 2008 by only a meagre 2.1% in real terms. The only major investment area with high momentum in the past eight years is private residential construction, which posted strong growth of 24.2% in real terms (Figure 1).

**Figure 1: Price-adjusted fixed gross capital formation**

Volume from 2008 to 2016, index 2008=100



Sources: KfW Research, Destatis

**Shifts in industry structure**

Another restricting factor, in addition to the price effect, is the change in the economy’s industry structure. Since 2008, value added has tended to shift slightly in favour of industries characterised by a below-average investment-to-GDP ratio in a cross comparison, the most prominent of which is the construction industry. By contrast, sectors that typically allocate an above-average share of their value added to investment expenditure have lost some of their share of value added (agriculture, mining, energy and water supply).

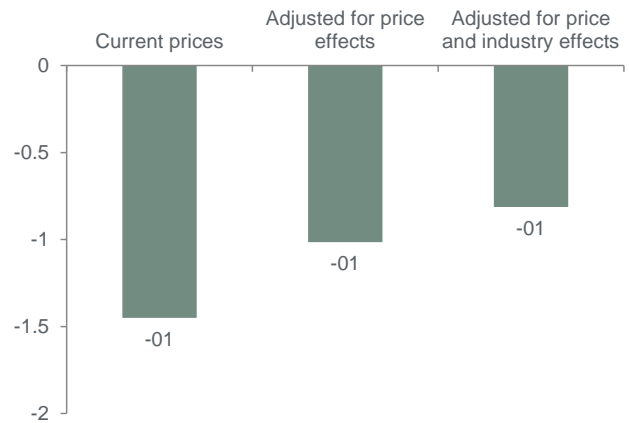
A reduction in business investment driven purely by price and industry effects would hardly be of concern in economic terms, at least when market mechanisms function properly, that is, when the markets adequately reflect preferences, production costs and relative scarcity in prices. This is our basic assumption. But even after analytically eliminating both effects, the adjusted drop in the investment-to-GDP ratio of 0.8 percentage points since 2008 remains considerable (Figure 2).

Seen in isolation, at 0.5 percentage points the price effect ‘explains’ a much larger share of the decline in the invest-

ment ratio in current prices than the industry structure effect (0.2 percentage points<sup>5</sup>). The moderate industry effect is conclusive because the structural shares of the two heavy-weights among economic activities, manufacturing and services<sup>6</sup>, in total economic value added have changed only slightly since 2008 and their respective industry-specific investment ratios are almost the same as well.

**Figure 2: Business investment ratio**

Change in 2016 on 2008, percentage points



Sources: KfW Research, Destatis

**Even the adjusted investment gap is wide**

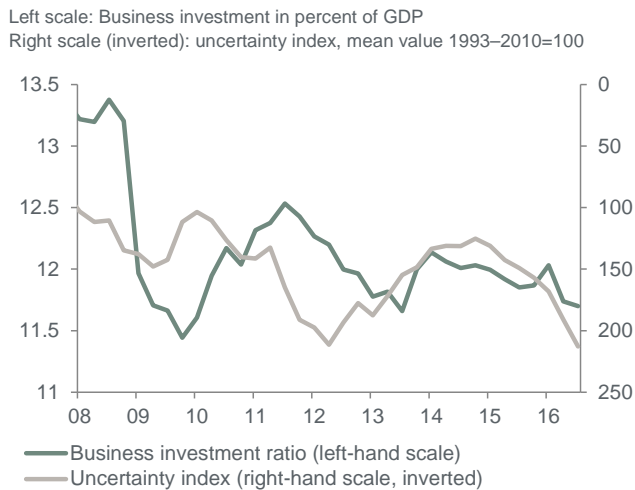
The adjusted decline in the business investment-to-GDP ratio of 0.8 percentage points between 2008 and 2016, in current prices, translates into roughly EUR 25 billion less investment in the year 2016 compared with the level before the financial and economic crisis of 2008. This is puzzling particularly considering the many factors that are actually very good for business investment – such as high capacity utilisation, low interest rates, a healthy business cycle and the trend reversal in often complementary public investment. This is presumably due to a whole range of factors. At the level of businesses, they range from occasionally negative perceptions of location quality to ageing business owners, which we have found to weigh significantly on German SMEs’ propensity to invest in particular.<sup>7</sup> From a macroeconomic point of view, two main explanations are possible that are not mutually exclusive. Rather, these influences exist in parallel and their effects overlap, which combined with the previously detailed price and industry effects ultimately result in what in our view has been a chronically weak investment ratio in the past years.

**Great political uncertainties**

The main concern is the enormous extent of global political uncertainties. At least since the election of Donald Trump as US President in November 2016, the fear of growing national isolation already triggered by the Brexit vote last summer has reached a global dimension. Since then the spectre of a more protectionist global trade system has been hanging like a sword of Damocles over the export nation Germany, which is also facing the difficult situation in Turkey, the Middle East conflict and, despite economic progress, the continuing fragile situation in Europe. Important elections will be taking place in 2017 in France, Germany and – perhaps – also in

Italy, from which anti-European forces may emerge more strongly. So it is understandable that businesses hesitate to launch new projects in such an environment and, despite favourable borrowing conditions, prefer to wait and see whether and in what way the currently confusing situation clears up.

**Figure 3: Uncertainty hampers investment**



Sources: KfW Research, Destatis, Economic Policy Uncertainty

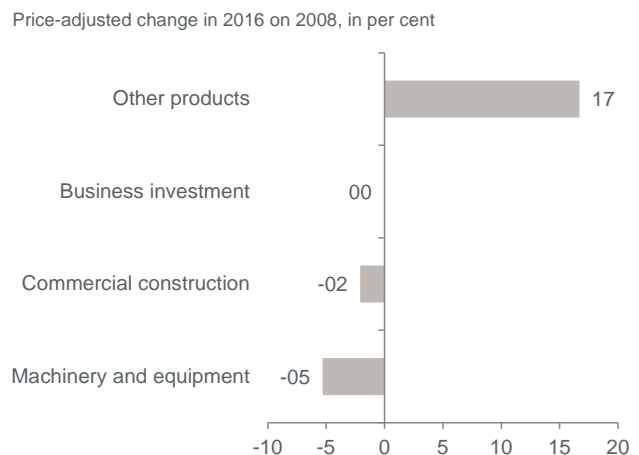
Figure 3 shows this empirically by comparing the business investment ratio with an index of economic policy uncertainty<sup>8</sup> systematically derived from press reports. What is particularly striking are the periods of 2011/2012 and from 2015. Both periods are characterised not only by a noticeable decline in the investment ratio despite decent economic growth but also by a strong increase in uncertainty. The integrity of the euro area was increasingly at stake from 2011 at the latest, until ECB President Draghi issued a clear commitment to the euro in mid-2012 with the three words ‘whatever it takes’, while the currency union’s institutions were being strengthened at the same time. The ongoing challenges listed above – some of which were anticipated in surveys – have been mounting since around 2015 and in the meantime have lifted the index to a new all-time high.

**Digitisation requires different investments**

Our second possible explanation for the investment weakness, however, is less gloomy. It sees the declining investment ratio as a temporary consequence of structural change towards a digital knowledge economy. As an economy becomes more digital the structure of its capital goods components, which combined make up aggregate business investment, changes. It is true that shrinking expenditure on classic physical capital such as machinery and buildings reduces the aggregate. However, the ‘immaterial’ investments that are typical of the digital economy and are statistically captured as ‘other products’ are definitely growing strongly (Figure 4). These opposing changes in the individual capital goods components just balanced each other out from 2008 to 2016 so that the volume of business investment in that period stagnated. But to the extent that the dynamically growing ‘other products’ continue to gain importance, they will lessen the decelerating

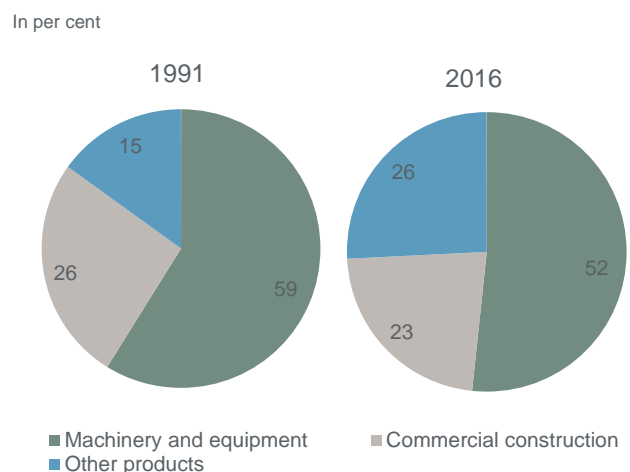
influence of the previous heavyweights on the total aggregate in the future.

**Figure 4: Business investment components**



Sources: KfW Research, Destatis

**Figure 5: Business investment structure**



Sources: KfW Research, Destatis

The very long-term view shows most clearly how much ‘other products’ have gained in importance (Figure 5). Whereas they still had the smallest proportion of business investment in 1991, at 15%, they have relegated commercial construction to last place since 2004, and by an increasing margin. They currently represent a good one fourth of business investment. Equipment still makes up around half, but their structural share is also declining noticeably. We expect the strong trend towards digitisation to deliver disproportionately high growth rates in ‘immaterial’ capital goods in the coming years as well – accompanied by an intensifying growth impact on overall business investment.

**Need for economic policy action**

In a nutshell: is waiting for business investment to recover just as futile as waiting for Godot? In our view, it would be wrong to give an all too pessimistic answer to this question, especially since digital capital goods will take a growing proportion of investment activity in the future. In addition, last year’s boost to public investment is encouraging because it complements private projects in many cases. But policy-

makers can do even more to strengthen business investment. They should give top priority to containing the enormous increase in global risks. A common and coherent response to the Brexit vote and to the new isolationist path of the USA should mitigate the uncertainties relatively quickly, at least in Europe. This will be all the more relevant if the remaining member states also commit to a common future in a credible manner and develop a convincing strategy for the

EU and the monetary union. Irrespective of this, economic policymakers still have the important task of actively pushing forward and facilitating the digital transformation, not just by providing appropriate, comprehensive digital infrastructure. Complementary educational offers also have to be expanded and the workforce has to be won over in shaping the digital transformation. ■

<sup>1</sup> Conceptually, national accounts also include livestock, cultivated plants and expenditure on mineral exploration as 'other products'. In Germany, however, these investment components are practically negligible.

<sup>2</sup> Unless otherwise stated, we use the following data source here and in the following: Destatis (2017), Volkswirtschaftliche Gesamtrechnungen, Inlandsprodukt, Erste Jahresergebnisse 2016 (*National accounts, domestic product, first annual results 2016* – our title translation), Fachserie 18, Reihe 1.1 (published in January 2017).

<sup>3</sup> The business investment-to-GDP ratio of 2008 is at once representative of the long period from German unification to the outbreak of the financial and economic crisis. The average ratio of the years 1991 to 2008 was exactly 13.3% as well.

<sup>4</sup> For pragmatic reasons of data availability, we use government investment expenditure on non-residential construction as an indicator of infrastructure investment.

<sup>5</sup> For reasons of data availability, the industry effect on the variation of the business investment-to-GDP ratio over time can only be approximated. The breakdown of gross fixed capital formation by economic activities provided in the national accounts does not contain all necessary subclasses (groups of goods, institutional sectors) we would need for an exact definition of business investment, private residential construction and government investment at the level of the main economic activity groups. In order to come as close as possible to our concept of business investment, we leave out of the calculations the main economic activity groups real estate activities (NACE 2008: L) and public services, education and health (NACE 2008: O to Q). In other words, we assume that private residential construction is very largely an economic activity of the main group real estate activities and that government investment very largely takes place in the main economic activity groups public services, education and health. Furthermore, it needs to be taken into account that the data typically lag behind in such very finely detailed statistics in the national accounts, such as the breakdown of gross fixed capital formation by economic activities (tables 3.2.9 and 3.2.10 in Fachserie 18, Reihe 1.4). The relevant time series for our analysis were available only up to the year 2015, which makes further assumptions necessary and contributes to the fuzziness in calculating the industry effect.

<sup>6</sup> Without the main economic activity groups real estate activities as well as public services, education and health.

<sup>7</sup> Cf. Schwartz, M. and J. Gerstenberger (2015), Ageing in SMEs is putting a damper on investments, Focus on Economics No. 85, KfW Economic Research, Frankfurt am Main.

<sup>8</sup> As an uncertainty index we use the monthly time series for Germany of Economic Policy Uncertainty ([http://www.policyuncertainty.com/europe\\_monthly.html](http://www.policyuncertainty.com/europe_monthly.html)). In order to eliminate short-term volatility, Figure 3 depicts moving twelve-month averages. Conceptually the index consists of a systematic evaluation of press articles dealing with the topic of policy-induced economic uncertainty in two key media relevant for the country under review (Germany: Handelsblatt, Frankfurter Allgemeine). In order to identify these articles, relevant terms were chosen for the three connotations *economics* ("economy", "economic"), *politics* ("regulation", "central bank", "deficit" and similar) and *uncertainty* ("uncertain", "uncertainty") in the relevant national language. An article was not considered unless it contained at least one term of each subgroup. The number of articles so identified was counted and standardised on the basis of the total number of monthly articles in the same media. The index value of 100 reflects the mean value of the standardised number during the period of 1993 to 2010 for Germany. For more details on the methodology see <http://www.policyuncertainty.com/media/BakerBloomDavis.pdf>.