

06.09.2018

THE IMPACT OF BREXIT ON UK INVESTMENT*

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The vote to leave the EU has already had an impact on the UK economy. The sterling depreciation and the consequent rising in inflation has squeezed household's real income growth and consumption has slowed gradually. Investment decisions seem to have been also affected by the outcome of the 2016 referendum, as the rate of growth of investment during 2016-2017 has been lower than in the post-crisis recovery, but not as much as most analysts and international organisations expected¹. This note reviews several pieces of information in order to assess to what extent Brexit has affected investment in the UK and the channels involved.

1 Stylized facts of UK investment

During the first years of XXI century, before the financial crisis, the UK gross fixed capital formation showed a weak pattern² that mainly reflected developments in business investment. Residential investment was also very weak in the three years before 2008 (table 1). The slowdown in total investment in 2016-2017 compares favourably with the 2000-2004 period, especially if we consider that UK GDP average growth has been much lower over the two last years. This is a first sign of the unexpected resilience shown by investment as compared to historical patterns.

When looking at the breakdown by asset type, most of the recent slowdown in investment is explained by the fall in ICT equipment and other machinery that began before the referendum (possibly after 2015 elections when it became clear that this would actually take place). The slowdown has been fairly general also affecting net acquisitions of transport equipment and other buildings and structures (chart 1, left). Residential investment has been a remarkable exception. It has kept growing at a higher rate in 2016-2017 than the average in the post-crisis recovery. The increase in housing starts in the quarters before the referendum supported housing investment over 2016 and 2017, given the usual lags in house building. Recent information on new housing orders suggests that residential investment might keep growing at a good pace. According to a Bank of England survey³, housing starts are supported in part by demand from first-time buyers using the *Help to Buy* equity loan scheme promoted by Cameron's government. Since the referendum general government also contributed to support total investment (chart 1, right). All in all, the weakening of business investment seems to be the item responsible for the decline in investment growth; therefore, the analysis in this box is mainly focused on this component of gross capital formation.

¹ Latest IMF forecasts for UK investment are lower than for major advanced economies.

² That weakness started before the 2001 terrorist attacks.

³ See Bank of England (2018).

Investment is linked both to developments in the UK GDP (chart 2) and to global economic developments given the wide internationalisation of UK-based companies and the integration in European value chains. Therefore, the investment-GDP link may become blurred in some periods, as in 2000-2004 when the start of the European Monetary Union and expectations of EU enlargement spurred investment outflows –in the form of foreign direct investment mainly (table 1)-. These flows help explain the fall in business investment in the UK during that period⁴; but global activity can also be a major support business investment in the UK.

When capacity utilisation is high business investment plans tend to accelerate. As shown in chart 2 (right) larger increases in UK gross fixed capital formation coincide with periods of high capacity utilisation (low percentage of companies operating below capacity). The degree of spare capacity in manufacturing is currently at historical low levels which would suggest a higher investment growth than the observed one since 2016 and points to a possible Brexit-related effect. Nonetheless, the pick-up of some types of capital goods in the second half of 2017 - information and communication technology (ICT) equipment and other machinery and intellectual property products- (chart 1, left) would be consistent with this limited spare capacity.

The relative cost of capital may have also played a role in explaining the weak performance of business investment in the UK over the past years. The relative cost of capital to labour – defined as the ratio of the user cost of capital⁵ to labour costs – declined in the UK up to 2007, mainly due to the fall of the relative price of investment goods (which benefitted from technological advances) and the steady increase in labour costs. After the crisis, both real interest rates and the relative price of investment goods bottomed out in the UK and other advanced economies, whereas wage costs edged down significantly, boosting more labour-intensive production technologies. Even though the relative cost of capital to labour kept fairly stable, UK business investment recovered after the crisis and evolved fairly in line with demand expectations and the relative price of productive factors, as shown by simulations made with a small econometric model⁶, although in the last two years simulated investment was above the observed data pointing to a possible Brexit effect.

2 Brexit-related factors affecting UK business investment growth

As the Bank of England has pointed out⁷, Brexit could affect investment through different channels. First, the anticipation of shifts in UK trade arrangements changes the incentives

⁴ See estimates in Berganza et al. (2016)

⁵ The user cost of capital is the combination of the relative price of investment goods, its depreciation rate, the real interest rate and taxes affecting investment.

⁶ The econometric model is a vector error correction model (VECM) which include UK business investment, UK GDP and the relative cost of capital in the UK (see Banco de España (2018)).

⁷ Bank of England (2018), 'Brexit and business investment', Box 3.

for businesses to invest. But while it may discourage companies exporting to the EU from investing in additional capacity, the anticipation of domestic substitution away from imports could encourage higher investment. Second, uncertainty around what shape final trade arrangements will take could lead companies to defer or cancel investment plans. Third, the Brexit-related fall in sterling may negatively affect investment by increasing the cost of capital goods, which have a high content of imports, but on the other hand, the sterling depreciation has pushed up exporters' margins and the rate of return on capital which creates an incentive to expand capacity, especially if spare capacity is low.

Three additional indirect channels of Brexit can also be mentioned. The first one goes through foreign direct investment. The fact that the UK is leaving the EU and the Single Market makes the country less attractive as a destination for foreign investment. The role played by the UK as a gateway for foreign direct investment into European markets may also become very diminished. To the extent that FDI inflows may end up expanding business investment, a shift of FDI inflows away from the UK might affect the growth of domestic business investment. Second, changes in the ability of workers to move to and from the UK may have some bearing on labour markets. In some sectors this may lead to changes in the relative price of capital and labour. Lastly, Brexit affects customers' decisions –consumers or companies- and expected demand.

A deeper look at some of these channels follows in the next paragraphs.

The uncertainty channel

Uncertainty about the outcome of Brexit negotiations and the future economic relationship between EU and the UK is expected to depress business investment. Both UK-based firms and foreign firms are waiting for more clarity before taking decisions on new capital projects. However, identifying specific uncertainty effects on investment growth is a complex task given the endogenous character of this variable and the difficulties of measuring it.

Information provided by surveys –such as the new Decision Maker Panel (DMP) of the Bank of England- indicates that Brexit is considered by businesses one of the top sources of uncertainty (almost 40% of firms) (chart 3). The percentage of firms which considered it as 'one of many sources' is, however, higher and if we add those that view it as 'not important' (almost 20%), we would conclude that about 65% of firms do not see Brexit as an especial source of uncertainty⁸. However, aggregate based-measures of economic uncertainty have pointed to a very high degree of uncertainty since the months previous to the referendum, though it is decreasing (chart 4, left). From the responses to the DMP survey the Bank of England estimated a drag of 3-4% on nominal investment growth since the referendum as a result of higher uncertainty. Other business surveys point to a negative effect on

⁸ The latest survey was undertaken before expectations on negotiations deteriorated over the summer.

investment from uncertainty about the UK future trade relationship with the EU, but they also show that around 50-70% of respondents expect either no effect or a positive one on capital decisions (chart 4, right). These responses suggest that the Brexit impact on investment may be fairly heterogeneous and affect firms in different ways depending on their specific economic conditions, as mentioned above.

Indeed, the gross capital formation breakdown by industry shows that the decline in the aggregate business investment rate of growth in 2016-2017 was very unevenly distributed. To try to control for idiosyncratic industry effects this rate is expressed in terms of deviation from each industry historical average growth excluding the crisis period⁹ (chart 5). The first salient feature is the sharp fall in mining and quarrying investment rate (including North Sea oil extraction) since 2014 when the oil price fell more than 50% seriously impairing its profitability. This fall may have contributed 2-2.5 pp to the decline in business investment. The slowdown in 2015 is accounted for by several industries with very volatile investment behaviour (energy, water supply, construction and transportation). In 2016 the investment growth was below the historical average in ten of the seventeen sectors which make up business investment. In 2017, the number of sectors below the average was lower while investment was growing clearly above its historical average in several industries (like manufacturing and financial services, which produce tradable products). Apart from mining, the most negatively affected industries in the period 2016-2017 were agriculture and some services activities.

The incentive to expand capacity after sterling depreciation

The fall in sterling may have encouraged some firms to produce domestic substitutes for imported goods and services and increase investment to expand capacity. But the fact that import penetration – the share of demand satisfied using imported goods and services- has continued to rise suggests that the import-switching mechanism has not been very significant.

In those sectors with a high share of export-oriented production, the depreciation has supported not only competitive gains in foreign markets and the growth in exports, but has also allowed exporters to increase their profit margins¹⁰. An indicator of the change in margins is the differential growth between producer prices and unit labour costs in manufacturing which widened in 2016-2017 (table 2). This type of reaction is not specific to the last two years. In previous periods when sterling experienced a sharp depreciation, like at the beginning of the financial crisis, unit margins widened in tradable sectors¹¹. A high share of British exporters set the price of their products in foreign currency and tend to align

⁹ The average rate is computed over the period 1997-2014, excluding the crisis period (2008-2009).

¹⁰ The fall in sterling has not been fully passed through to export prices in foreign currency terms.

¹¹ See Sastre (2016).

them more with those of competitors than with their own labour costs. The increased profitability in sectors producing tradable goods and services during periods of sterling depreciation helped reduce job losses and boost foreign direct investment in those sectors.

When comparing the sectors that widened their margins with those that experienced a positive deviation in investment growth (from average) in 2016-2017 there is no clear evidence of a positive correlation¹², apart from manufacturing which experienced both a widening in unit margins and a higher investment growth. Nonetheless, some recent analyses find evidence that suggests that increased market power and wider margins generally tend to affect positively business investment¹³ (table 3). In the case of Brexit, this incentive to invest may be offset by the expectation of lighter trading links with the EU, currently the main UK trading partner.

The foreign direct investment channel

The anticipation that the UK is leaving the EU and the Single Market implies a negative shock to trade and financial openness that makes the country less attractive as a destination for foreign investment. The participation of the UK in the European value chains is expected to be hampered. These expectations might have already affected decisions on geographical allocation of investment by international investors and multinationals, as suggested by the fall in net inflows of foreign direct investment (FDI) and equity (chart 6) and evidence shown in van Limbergen et al. (2018). This response is fairly different from that observed in the recovery period after the crisis when the sterling fall boosted exporters' profitability and FDI inflows to the UK, as mentioned above.

3 Conclusions

The weakness of business investment has been a major factor behind the slowdown of aggregate investment in the UK during 2016-2017. There are signs that business investment growth declined due to Brexit-related effects, but as pointed out before not all effects linked to Brexit are negative. In fact, some manufacturing sectors may have benefitted from the increased profitability that depreciation provides thus giving support to expand capacity. The high level of capacity utilisation may have also played a role. Among the most negatively affected activities are agriculture and services industries like commercial distribution and professional and administrative activities. The fall in investment in the mining industry (North Sea oil extraction) has also had a very significant negative contribution to the change in business investment.

¹² Scarce data availability of unit labour costs by industry limits the comparison.

¹³ See Haldane (2018).

Information on the perception of companies about Brexit as a source of uncertainty indicates that the effect of Brexit-related uncertainty on investment could be somehow overstressed. A large share of UK-based companies (many of them domestically oriented) seem to consider Brexit only as one of many sources of concern. Nonetheless, uncertainty effects might be more relevant for international firms which may have started to relocate geographically their investments.

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Tables and charts

INVESTMENT IN DIFFERENT PERIODS (AVERAGE CHANGE)

(% annual)

TABLE 1
Weigh over Total Investment (1)

	2000 - 2004	2005 - 2007	2008 - 2010	2011 - 2015	2016 - 2017	2005 - 2007	2016 - 2017
Gross fixed capital formation	1.3	3.3	-3.9	3.0	2.0		
Business Investment	-1.2	5.1	-4.0	4.0	0.7	57	57
Dwellings (private & public)	3.6	-1.1	-7.5	3.7	5.9	22	22
General Government	6.9	11.3	7.8	-1.3	0.4	12	16
<i>Breakdown by asset type</i>							
Transport equipment	2.9	-0.3	-1.3	11.2	4.3	5	7
ICT equipment and other machinery	1.5	4.8	-4.9	3.6	-1.4	20	19
Dwellings	3.6	-1.1	-7.5	3.7	5.9	22	22
Other buildings and structures	-0.2	5.0	-3.8	2.5	1.6	35	33
Intellectual property products	0.9	4.5	0.2	1.0	0.9	19	18
<i>PRO-MEMORIA</i>							
Gross Domestic Product	2.9	2.8	-1.0	2.1	1.7		
Capacity utilisation (Manufacturing) (2)	64.0	56.7	64.3	51.6	49.0		
FDI net inflows into UK (% GDP) (3)	-1.9	1.3	-1.3	1.9	2.9		

(1) Average weighs in current prices. The sectoral weighs do not add 100 since dwellings do not include costs of ownership transfer. They are included in Other buildings and structures

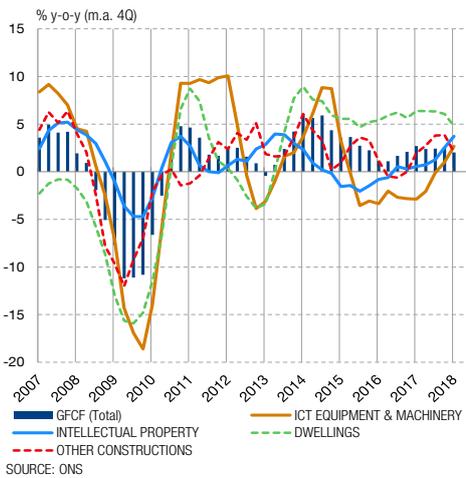
(2) Average % companies below capacity

(3) Annual (4Q) moving average. In 2017 FDI net inflows turned negative (outflows) amounting -3% GDP

SOURCE: ONS

CHART 1

INVESTMENT BY ASSET TYPE



INVESTMENT BY SECTOR

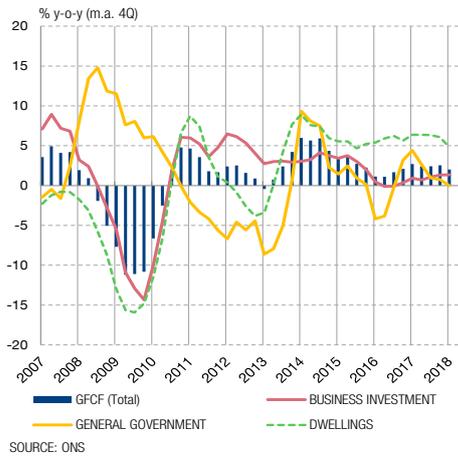
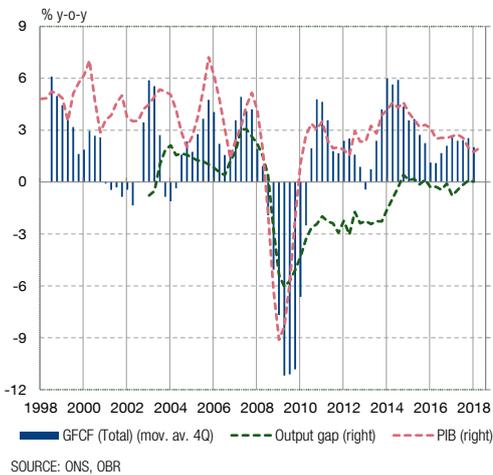


CHART 2

INVESTMENT AND UK ACTIVITY



INVESTMENT AND CAPACITY UTILISATION

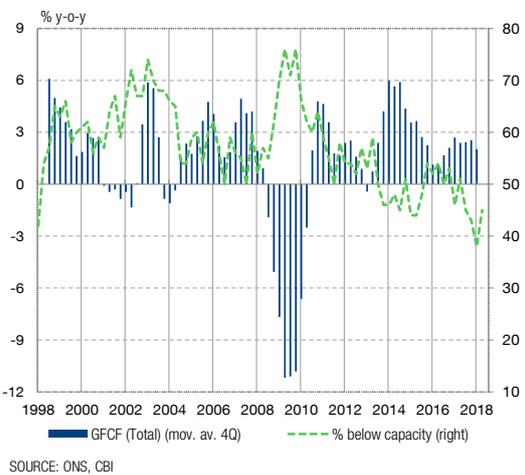
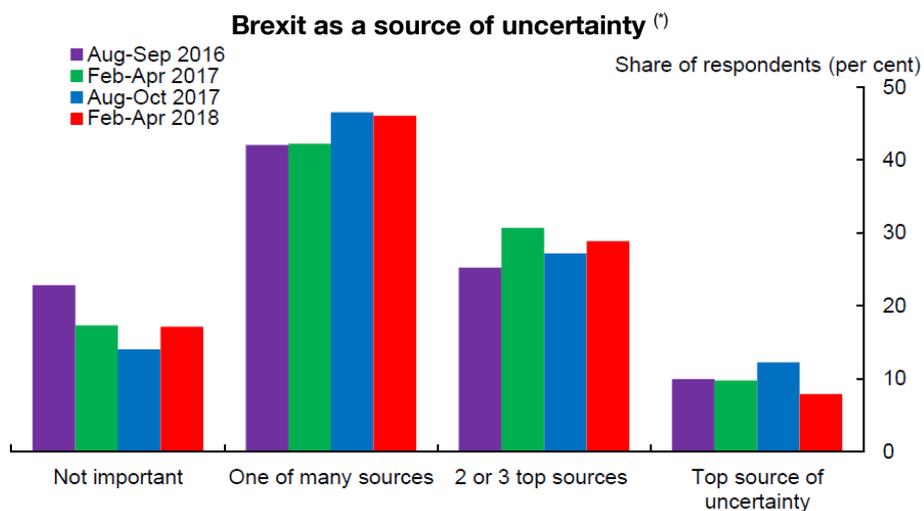


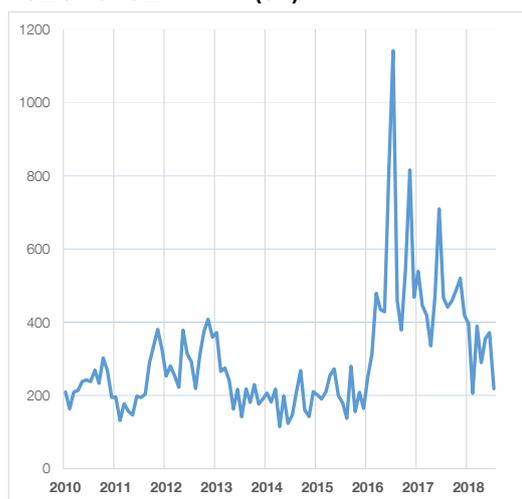
CHART 3



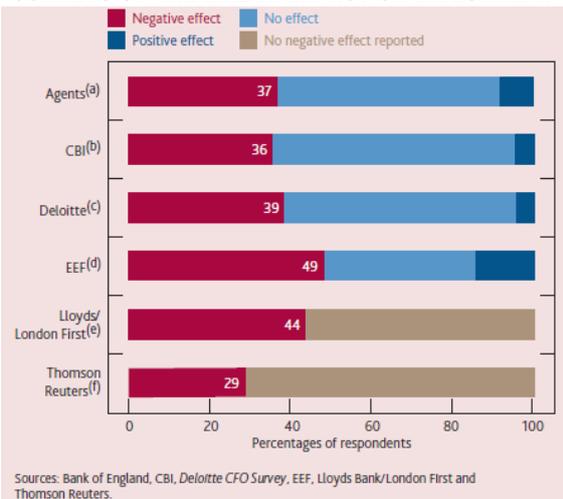
(*) Question: “How much has the result of the EU referendum affected the level of uncertainty affecting your business?”
 SOURCE: Decision Maker Panel, Bank of England (see Ramsden (2018))

CHART 4

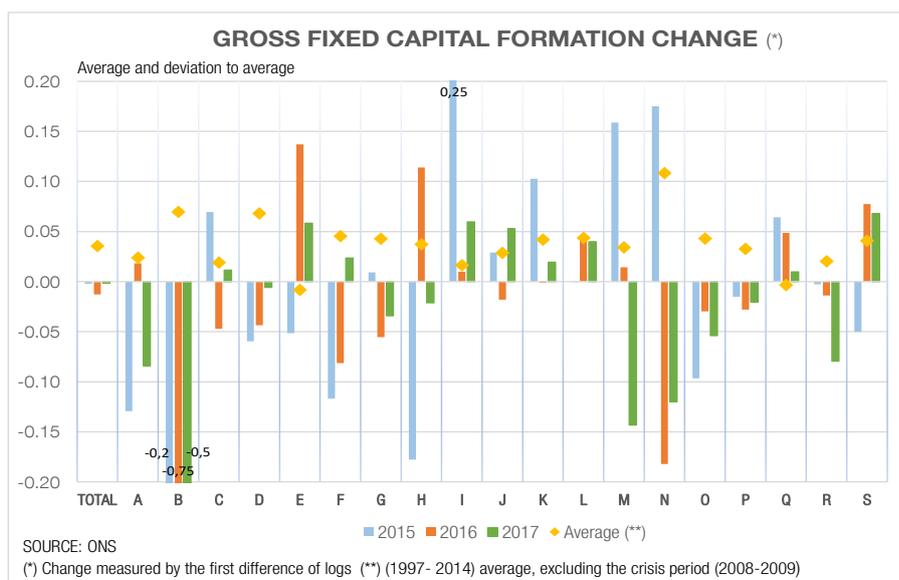
POLICY UNCERTAINTY (UK)



SURVEYS OF THE BREXIT IMPACT ON INVESTMENT



SOURCE: EPU, Baker et al. (2016) and Bank of England (2018), Box 3 'Brexit and business investment',



(SIC 7): **A** (Agriculture), **B** (Mining), **C** (Manufacturing), **D** (Electricity and gas), **E** (Water supply), **F** (Construction), **G** (Wholesale and retail trade), **H** (Transportation), **I** (Accommodation and food services), **J** (Information, and communication), **K** (Financial and insurance activities), **L** (Real estate), **M** (Professional and technical services), **N** (Administrative and support services), **O** (Public administration and defence), **P** (Education), **Q** (Human health and social work); **R** (Arts and entertainment), **S** (Other service activities)

TABLE 2

CHANGE IN MARGINS (UK)

(%average annual change)

	2003 - 2007	2007 - 2010	2010 - 2015	2015 - 2017
Unit margins				
C. Manufacturing	-0.5	12	17	2.6
F. Construction	-11	-4.3	0.9	5.7
J. Information and communication	0.1	14	-0.6	2.3
K. Financial and insurance services	0.1	14	-0.9	-14
M & N. Professional, technical and administrative services	0.4	0.6	0.2	0.2

TABLE 3

MARK-UP IMPACT ON INVESTMENT

	Investment rate	Innovation rate
Log mark-up	0.095*** (0.027)	0.023*** (0.009)
Log mark-up squared	-0.041** (0.017)	-0.018** (0.008)
TFP distance	-0.002 (0.006)	-0.000 (0.002)
Log mark-up * TFP distance (interaction term)	-0.011 (0.012)	-0.007** (0.003)
Log mark-up squared * TFP distance (interaction term)	0.018 (0.012)	0.009*** (0.003)
Firm fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
N	21874	7386
R ²	0.058	0.057

Sources: Thomson Reuters Worldscope and Bank calculations.

Notes: Standard errors in parentheses; * p < 0.10; ** p < 0.05; ***p < 0.01

SOURCE: ONS, Haldane (2018.) table 2

CHART 6

