FIDIC-EFCA Consulting Engineering Industry Survey

Europe
2019 update

3% per annum. increase in demand since 2010.

The median fee for construction is 9.3%.

Given very positive official investment forecasts, all but one country to have a positive growth in demand in 2019.

Public / private and market / non-market breakdowns to be available.

Introduction

The FIDIC-EFCA survey focusses on identifying the total demand in Europe for consulting engineering services.

The demand for these services arises from public and private investment in the market and non-market sectors (Fig. 1) in construction and industry (mainly plant and intellectual property products - IPP, notably research and development - R&D).

Some 50% of the demand is met by the consulting engineering sector comprising firms whose main business is to supply consulting engineering services. Firms from other sectors meet the remainder of the demand.

For consulting engineering services, non-market investment by non-profit organisations serving households (see Fig. 1) is small and is usually combined with public non-market investment by government.

Underlying investment weak

Gross Fixed Capital Formation (GFCF) representing changes in capital stock as opposed to investment in economic terms is used to measure investment.

The Deutsche Bundesbank has reported (Fig. 2) that investment in the 28 European Union (EU) countries in terms of nominal GFCF at current prices decreased significantly during the global financial crisis from the highest point in 2008. Growth of GFCF resumed in 2013.

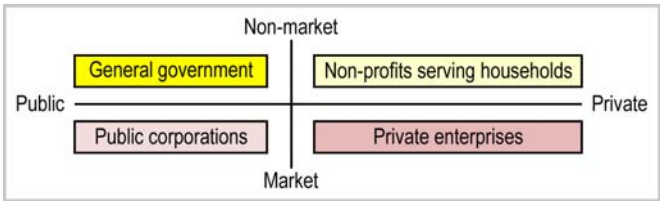

Fig. 1 - The *System of National Accounts* groups enterprises according to control (private, public) and market criteria (market, non-market).

Fig. 2 - Nominal GFCF (upper; log scale, bEUR) and the investment ratio (lower) for the EU28 countries (1998-2016). Source: Deutsche Bundesbank, 2016.

The survey

Owning to data limitations, one non-EU Member State is not included, namely Croatia, and of the European non-EU28 countries, only Norway is included. The survey update therefore covered 28 countries with 94% of the Gross Domestic Product (GDP) in 2018 of the 44 United Nations designated European countries excluding Russia. The update is limited to the 10-year post-recovery period that followed Europe's adoption of the UN's 2008 *System of National Accounts*.

GFCF growth since 2010 to approximately the 2004 level is fairly impressive (Fig. 3). However, continuation of the essentially constant investment ratio, namely the expenditure on GFCF as a percentage of nominal Gross Domestic Product, shown in Fig. 2 paints a disturbing trend.

Given this macroeconomic context, it is clearly important to establish the demand for consulting engineering services.

As illustrated in the Appendix summarising the methods used to determine the total demand, the survey uses national accounts to estimate a) the investment in terms of GFCF that creates a demand for consulting engineering services, and b) the use of these services as given by supply-use tables. For each county, the demand over several years is adjusted to fit the use to obtain the percentage of the investment that is invested in consulting engineering services (e.g., Fig. 4).

A simple model is used to fit use to demand, namely that the percentage of the investment spent on consulting engineering services is 20% higher for industrial investment than for construction investment (the two percentages correspond to the fees paid for services in the two sectors). The survey's advantages stem from the use of national accounts rather than business accounts and the fact that the demand for services can be forecasted reliably.

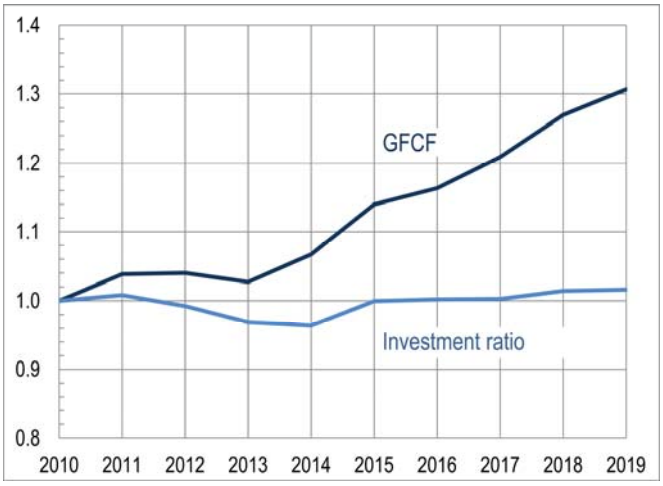

Fig. 3 – The GFCF and the investment ratio for the 28 survey countries since 2010, normalised to the 2010 values.

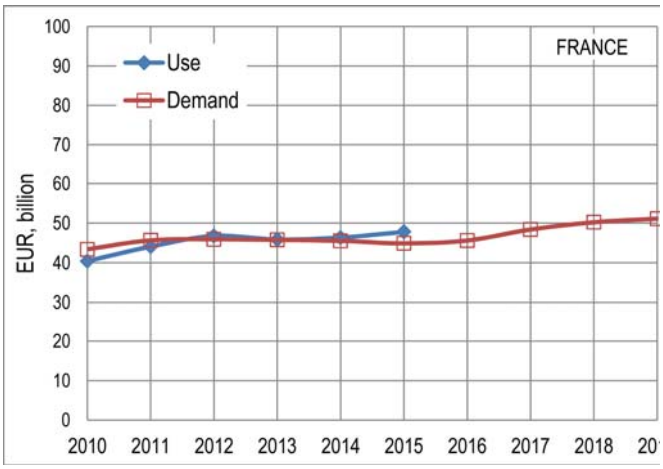

Fig. 4 - The demand (in red) for consulting engineering services in France generated by investment in construction and industrial mainly plant and intellectual property) activities was adjusted to fit the use (in blue) of this investment calculated from Eurostat supply-use tables. Fitting involved adjusting the percentage of investment requiring consulting engineering services that was spent on these services. Once the demand was fitted to the actual use, the demand for later years is given by extending the demand curve. The process is repeated for all 28 survey countries

An encouraging picture

The total investment (GFCF) in construction and industrial activities (plant and IPP comprising R&D, mineral exploration and own-account in-house design) requiring consulting engineering services in the 28 survey countries increased significantly during the 10-year period following the global financial crisis (Fig. 5).

The corresponding total demand for services (Fig. 6) increased from bEUR 266 to bEUR 337 (an increase of 27% or 3% p.a.) over the 10-year survey period.

The amounts of the construction and industrial investment spent on consulting engineering services increased by 27% and 25% respectively over the 10-year period (Fig. 7).

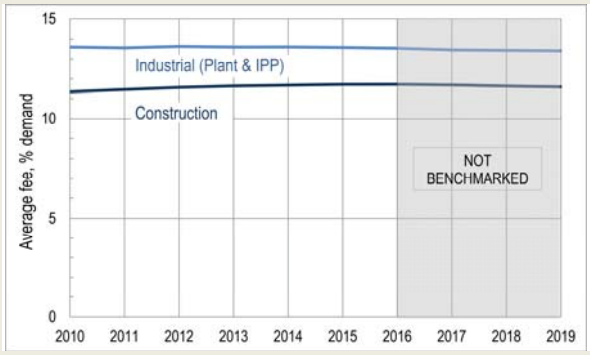

Fig.8 – The average fees for consulting engineering services in the construction and industrial sectors.

The percentages of the construction and industrial investment spent on consulting engineering services each year is given in Fig. 8. These amounts correspond to the average fees for consulting engineering services supplied to the construction and industrial sectors. The year-on-year variation of these average fees never exceeded 1.6%.

Removing the highest and lowest outliers, namely the fees for Sweden and Cyprus which have historically been anomalous, gave a median fee of 9.3% of investment for the construction sector. This is in the expected range given by industry surveys.

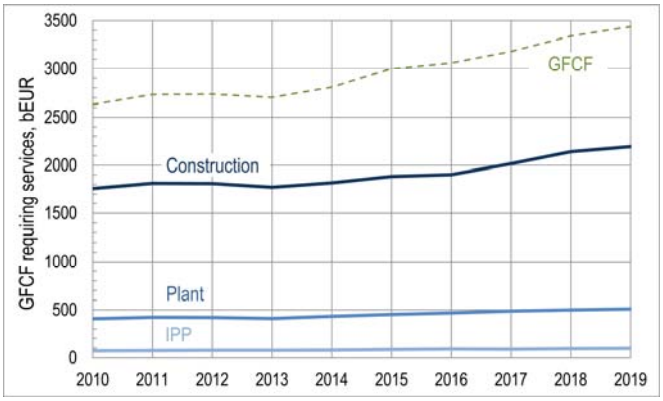

Fig. 5 - The investment (GFCF) in construction and industrial (plant and IPP) activities requiring consulting engineering services in the 28 survey countries. Also shown is the total GFCF.

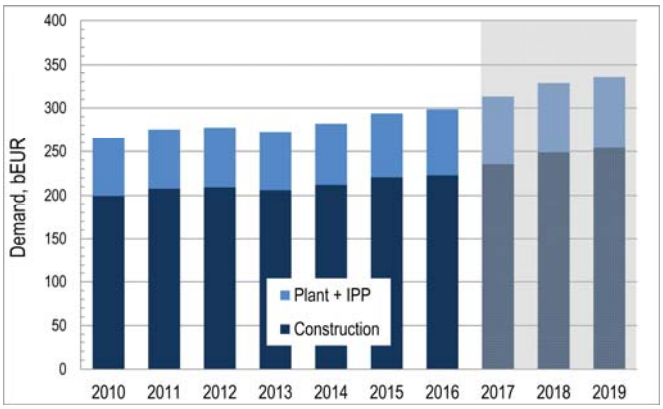

Fig. 6 – The total demand for consulting engineering services generated by investment in construction and industrial activities. Values in the grey area to the right were obtained by extrapolating values benchmarked to actual use.

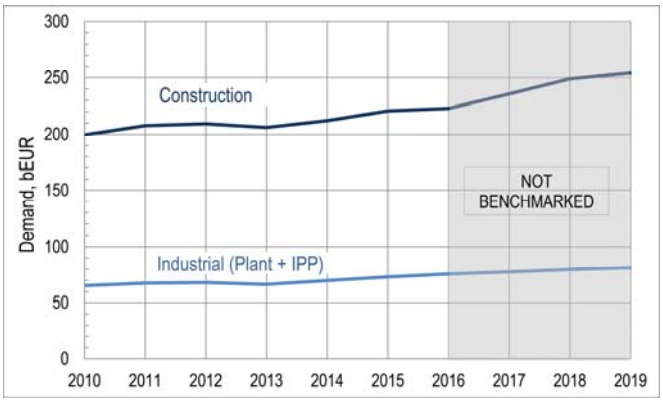

Fig. 7 – The demand for consulting engineering services generated by investment in construction and industrial activities.

A stable industry profile

Plotting the path for the growth in demand (Fig. 9) shows that a decrease in demand only arose if there was a decrease in investment (as in 2013). This result implies that the demand for consulting engineering services was fully accounted for and was not "leaking out" into sectors that were not included in the survey owing, for example, to changes in the classification of services that are considered to be part of consulting engineering.

Plotting the demand that is generated within each of four different fee levels (Fig. 10) indicated that it was only countries having the two highest fee levels (11-14% and more that 14% of investment) which profited from the growth in demand. This result confirms an earlier report that most of the consulting engineering industry's expansion takes place in countries that enjoy above average fees.

Given the optimistic official forecasts for the growth of investment in 2019 (Fig. 11) the demand for consulting engineering services is forecast to decrease in only one country in 2019.

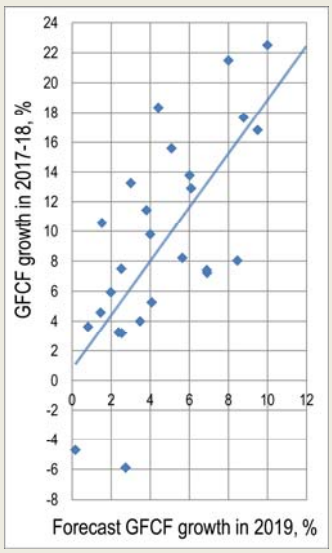

Fig. 11 – GFCF growth expectations – past growth is almost exactly correlated with OECD growth forecasts for 2019.

Further information

This 2019 update was carried out by Bricad Associates for the FIDIC-EFCA Consulting Engineering Industry Survey.

Website: survey.peterboswell.net

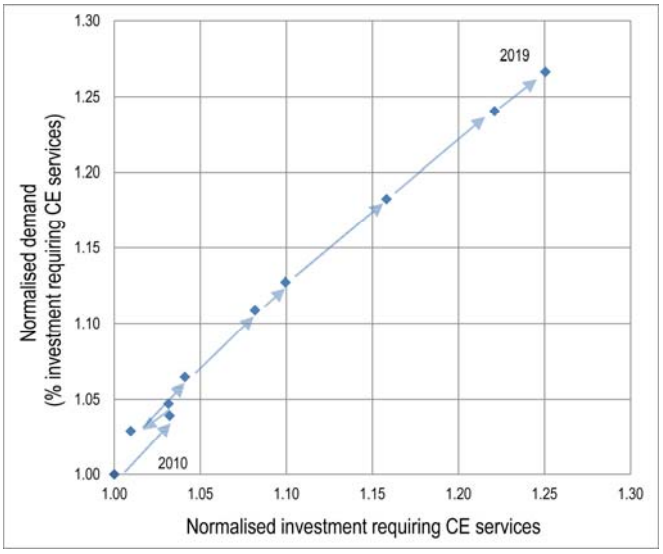

Fig. 9 –The normalised demand for consulting engineering services as a function of the normalised investment requiring these services over the survey period indicates that consulting engineering services were not being classified under industry activities that were not covered be the survey (see the Appendix for the activities covered).

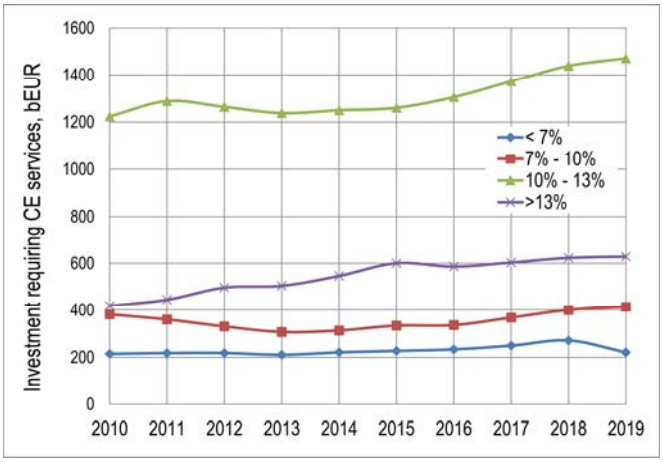

Fig. 10 – Over the survey period, only countries with fees within the two highest fee levels profited from the growth in demand.

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Released 4 May2019

APPENDIX: Summary of methods

1. Use from supply-use tables

A Eurostat use table for a country shows how goods and services classified into 59 products are used by each of 59 industries in intermediate consumption (i.e., for production).

Consulting engineering services comprise the M71.2 product (architectural & engineering activities) less some specific M71 services plus some services classified in Eurostat national accounts under other economic activities (see table).

The total intermediate 'direct' consumption by industries other than the prime industry is obtained for each product in the table. The amount for each is multiplied by a factor given in the table that corresponds to the percentage supplied by the consulting engineering industry. The final amount is the total use for each country that is plotted in a figure such as Fig. A1.

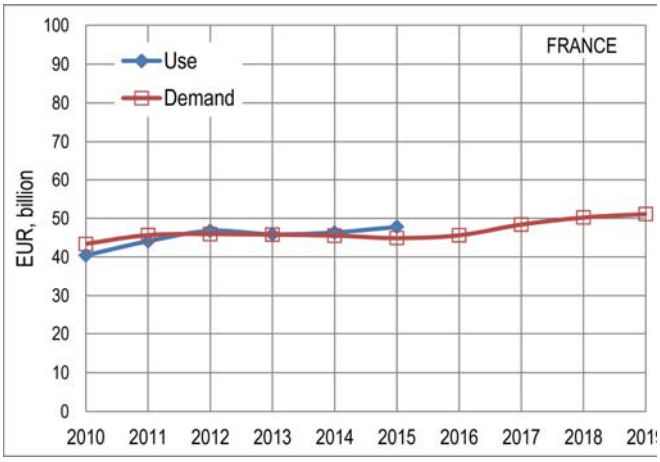


Fig. A1 - For each country surveyed, the investment-generated demand for consulting engineering services was calculated using the model illustrated in Fig. A2 below. The demand was then benchmarked by best-fitting the demand (in red) to the use (in blue) of consulting engineering services obtained from Eurostat supply-use tables for the construction and industrial activities listed in the table below.

Activity*	Product*	Consulting engineering industry	Factor**
M71.12	Architecture & engineering	100% of M71.12 share of M71 turnover.	72.0%
M72.19	R&D	100% of business share of total R&D expenditure in relevant sectors times M72.19 share of M72 turnover.	5.4%
B09.90	Test drilling	20% of share of B09 test drilling turnover.	1.4%
M74.10 M74.9	Specialised design Consulting	4% and 8% of share of M74.10 + M74.90 in M74+M75 turnover.	4.5%
N81.30	Landscaping	4% of M813 share of M80-M82 turnover.	0.3%

* Codes are those for Eurostat's NACE Rev. 2 economic activity and CPA product classifications.

** The listed values for the factors used to reduce the total use of each product by activities other than the prime activity are averages for the 28 survey countries for the period 2010-2015.

Turnover from Eurostat Structural Business Statistics database.

2. Investment-generated demand

The construction investment requiring consulting engineering services comprises the GFCF in new-build dwellings and other buildings and structures included in national accounts as well as investment in maintenance and renovation (M&R) that is not included because it does not prolong the life of a built asset. The survey therefore estimates the GFCF for new-build buildings and for infrastructure and applies factors for M&R.

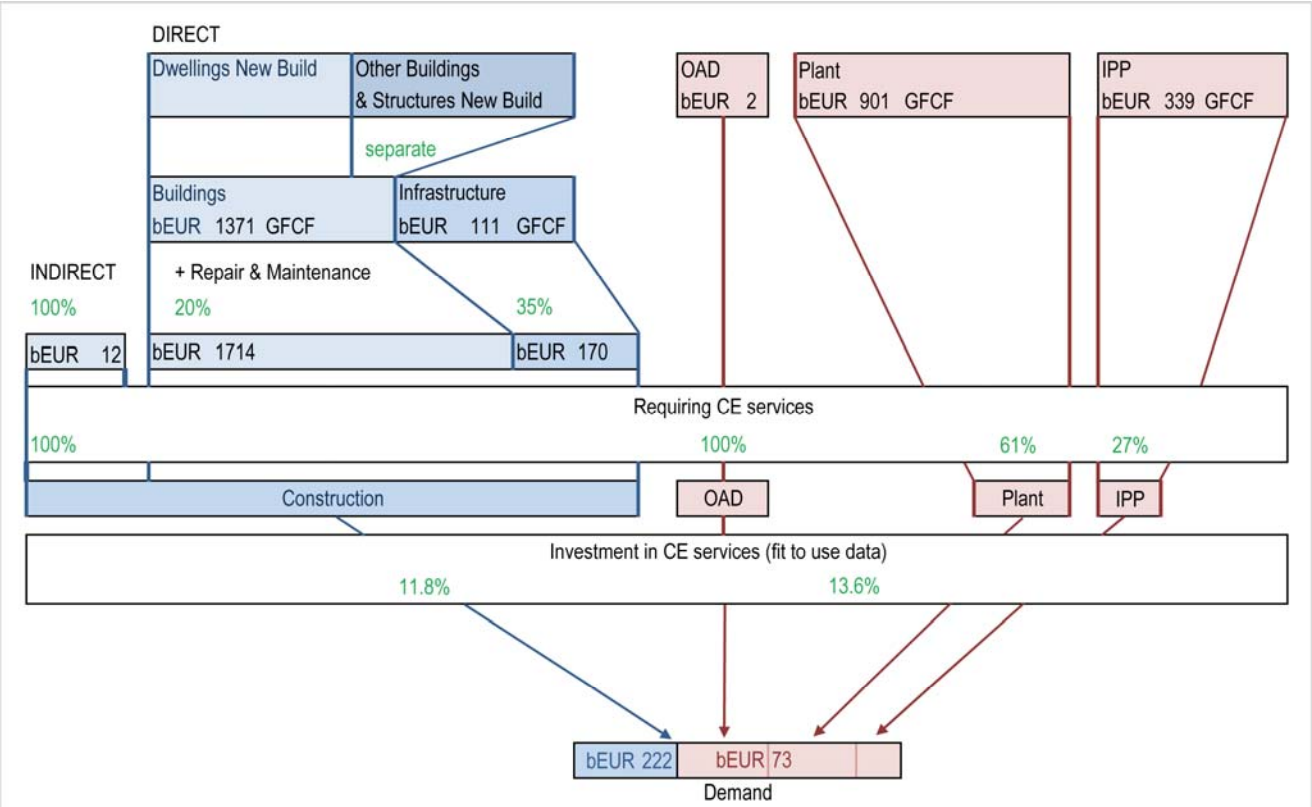
For plant investment, investment in computing hardware that does not generate a demand for consulting engineering services is removed. The remainder is then multiplied by a factor corresponding to the investment requiring consulting engineering services.

For investment in intellectual property products, the GFCF for R&D is reduced by a factor which reflects the fact that the consulting engineering industry is able to meet the demand for applied R&D in specific industrial sectors.

Added to the IPP investment is the consulting engineering industry's investment in own-account in-house design and the demand arising from the investment in mineral exploration, both expressed as a percentage of new-build construction GFCF. The investment data is then fitted to the use data by multiplying the construction investment by a percentage corresponding to the fee for consulting engineering services and adding an equivalent percentage that is 20% higher for the plant and intellectual property investment.

Finally there is indirect investment in the M71 product that is not revealed directly in supply-use tables. This investment is assumed to be generated by investment in construction (Buildings and Other Structures

Fig. A2 – The model used to calculate the demand for consulting engineering services. The various components of GFCF from national accounts are multiplied by factors given in the table above to obtain the percentage of each investment that is invested in consulting engineering services.



The amounts in Euro and the indicated values of the various factors (in green) are for the year 2015. The sizes of the various elements are not to scale. OAD = Own-Account Design.