FIDIC-EFCA Consulting Engineering Industry Survey

European Union
2016 update

3% increase in demand in 2016.

Fees amount to 9.8% of investment.

All but 3 countries to have positive growth in 2016.

Government investment generates 11.4% of demand.

The demand for consulting engineering services arises from public and private investment in construction and industry (mainly plant, equipment and intellectual property, notably research and development - R&D).

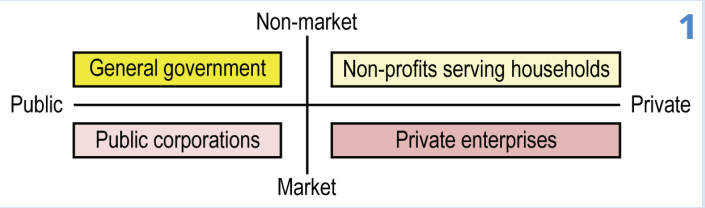
Gross Fixed Capital Formation (GFCF) representing changes in capital stock as opposed to investment in economic terms measures construction and industrial investment.

Public and private investment is split between the market and non-market sectors (Fig. 1).

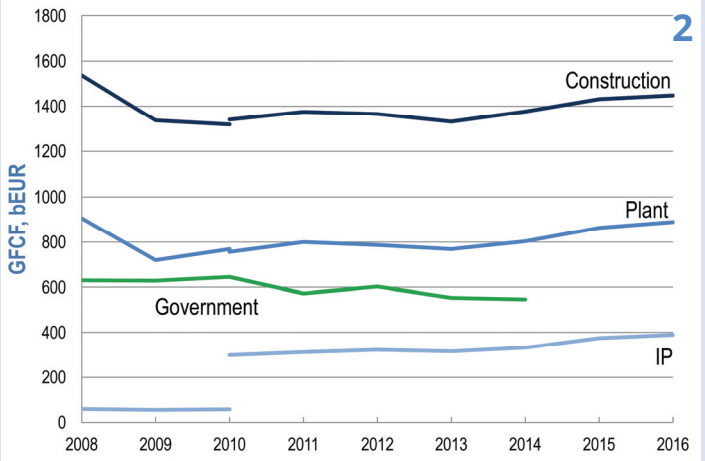
For consulting engineering services, private non-market investment by non-profit organisations is small and is usually combined with public non-market investment by government.

In the European Union 28 countries, market sector investment in construction and plant have regained their pre-financial crisis levels (Fig. 2). Investment by government on the other hand has decreased since 2010.

The construction investment requiring consulting engineering services (Fig. 3) comprises not only the investment in new-build buildings and infrastructure taken from national accounts but also investment in maintenance and renovation (M&R).



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

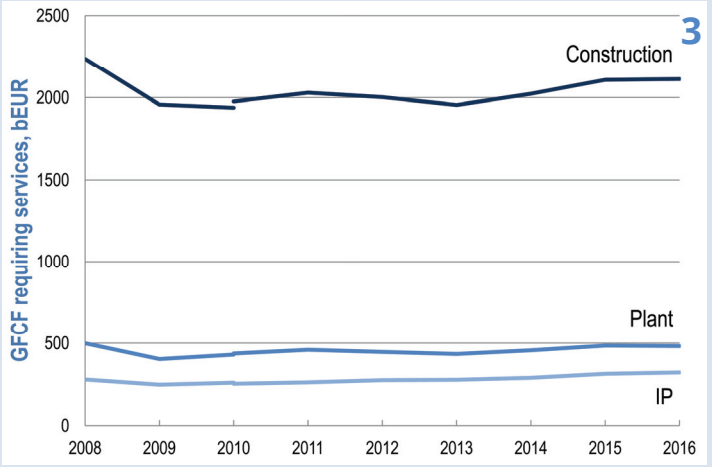


EU28 market-sector investment in construction, plant and intellectual products. The government investment is the sum of GFCF and capital transfers.

Separate factors are applied for each country for M&R investment in buildings (both dwellings and other buildings) and infrastructure. Buildings and infrastructure M&R average 30 and 55% respectively of new-build investment.

For the plant and equipment component of industrial investment, investment in information and computing technology (ICT) equipment and software that does not generate a demand for consulting engineering services is removed. The OECD database on fixed asset investment in various sectors then gives the market investment requiring consulting engineering services (it is 65% of industrial investment for the EU28).

For the intellectual property(IP) component of industrial investment, following the capitalisation of R&D in national accounts starting in 2008 the IP investment requiring consulting engineering services is given by the R&D product in national accounts' supply-use tables published by Eurostat (the average IP investment requiring services in the EU28 amounted to 7% of total GFCF in 2010).



The EU28 market-sector investment in construction and industry (plant and IP) requiring consulting engineering services. Investment in software and ICT has been removed. The construction investment includes M&R and only part of the plant investment (averaging 65% in the EU28) requires consulting engineering services.

Fees

The market demand for consulting engineering services is the percentage of the investment requiring these services that is spent on consulting engineering fees.

Fees for construction and industrial investments are obtained by benchmarking the market demand to the supply of consulting engineering services obtained from supply-use tables.

Full details are available on the survey website.

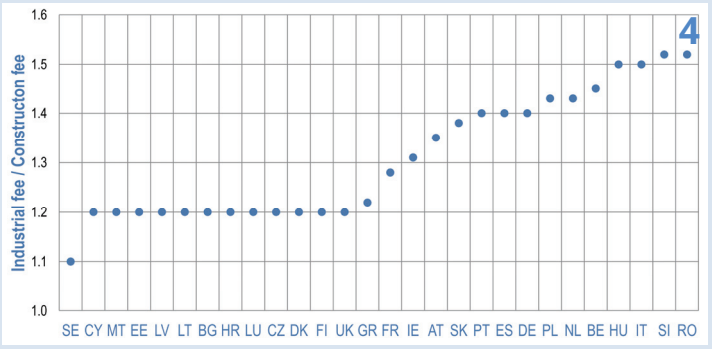
These services are for specific classified activities in architecture and engineering, R&D, mining support, industrial design, and security investigation and landscaping.

For some countries there is sufficient data to estimate the difference between fees for construction and industrial activities, as indicated in Fig. 4.

Where data is insufficient for detailed curve fitting, the construction fee is multiplied by the average factor of 1.2 to give the industrial fee.

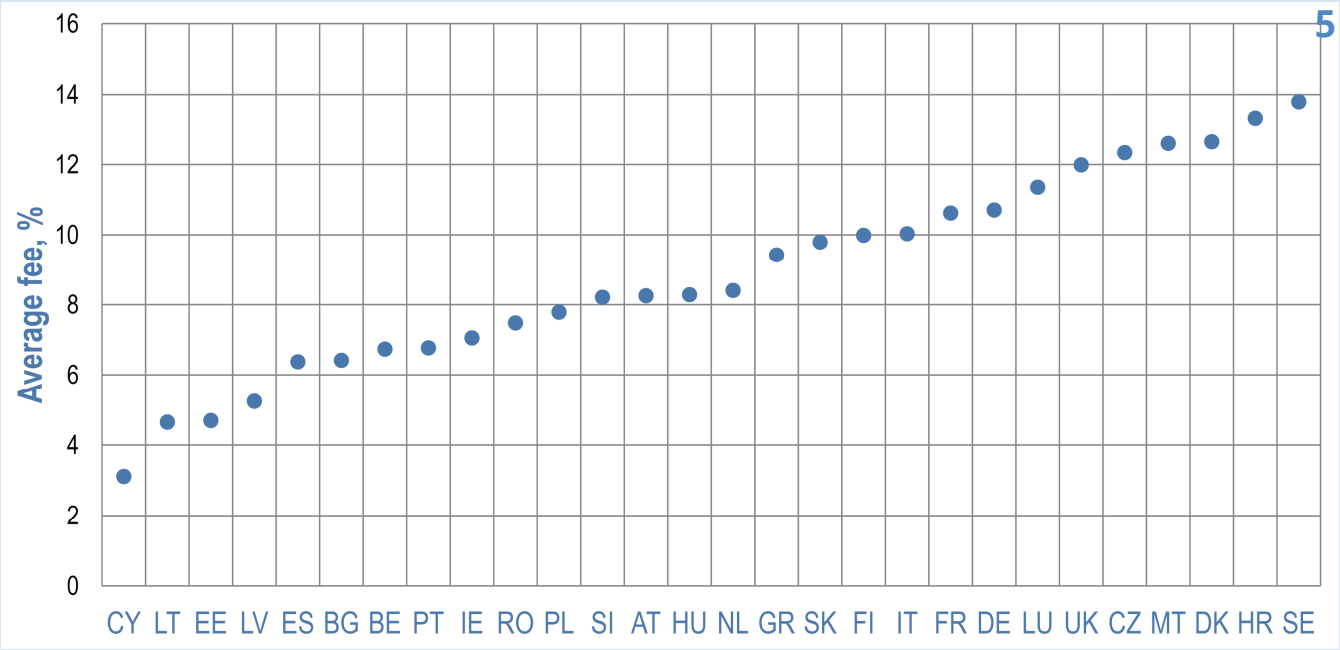
For the few countries that have reported supply-use tables for several years, benchmarking indicates that the fee levels varied by a few percent over the period 2008 - 12. In general, however, it can be assumed that fee levels remained constant at the 2010 level.

The EU28 average fees in 2010 for construction related investment and for construction and industry related investment varied considerably between countries (Fig. 5): they were 8.9% and 9.6% respectively of the investment requiring consulting engineering services.



The ratio of the fee for industrial-related investment to the fee for construction-related investment for the EU28 countries. Where there is insufficient data for a detailed curve-fitting analysis, the EU28 average of 1.2 was assumed.

The average fee in 2010 for construction and industry related investment.



Demand

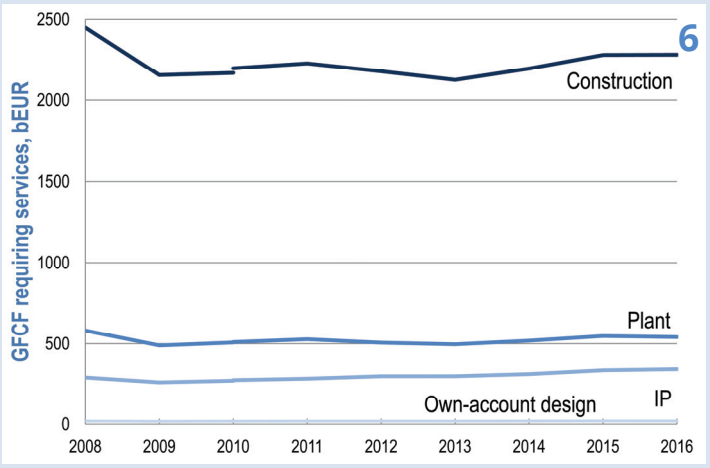
National accounts only give the market demand for consulting services that are traded. The EU INTAN project has estimated the investment in own-account design carried out by enterprises outside the architecture and engineering sector. For the major EU economies, 31% of this investment can be classified as investment leading to a market demand for consulting engineering services. There is also own-account design in the non-market sector which amounts to 25% of market sector investment.

Also not included in national accounts is the non-market demand arising from government investment in health, education, transport, utilities, and housing as reported in Eurostat's *Classification of the Functions of the Government* (COFOG) database. In this case, investment includes GFCF and capital transfers.

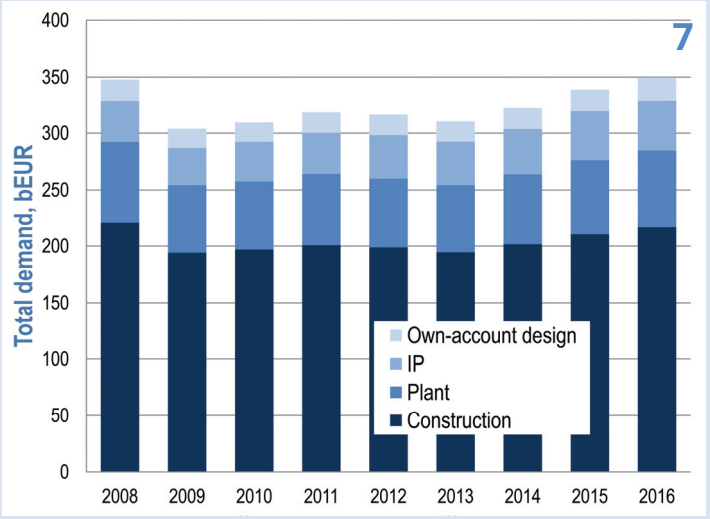
Fig. 6 gives the total investment (private and public, market and non-market including own-account design) requiring consulting engineering services. Figs 7 and 8 give the demand and demand shares generated by this investment, making the reasonable assumption that fee levels are the same for market and non-market investment.

Some one-half of own-account design is for construction related investment, so construction related investment accounts for 66% of the total demand.

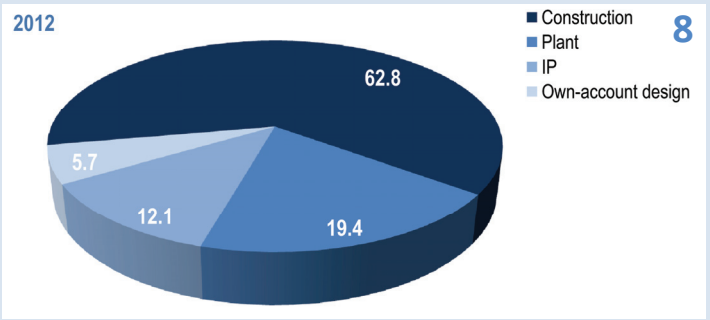
The demand shares for the total demand for the period 2008-15 indicate a continuous decrease in the construction and plant related demand (Fig. 9) with a more important increase



The EU28 total investment (market and non-market) in construction and industrial activities requiring consulting engineering services. As for the market-sector investment (Fig. 4), construction investment includes M&R and only part of the plant investment (averaging 63% in the EU28) requires consulting engineering services.



The total EU28 demand for consulting engineering services arising from investment in construction, industry (plant and IP) and own-account design.

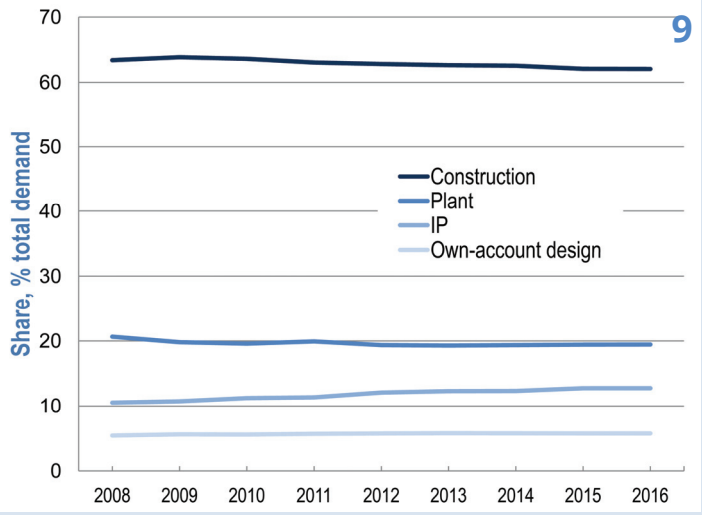


The shares in the total demand for 2012.

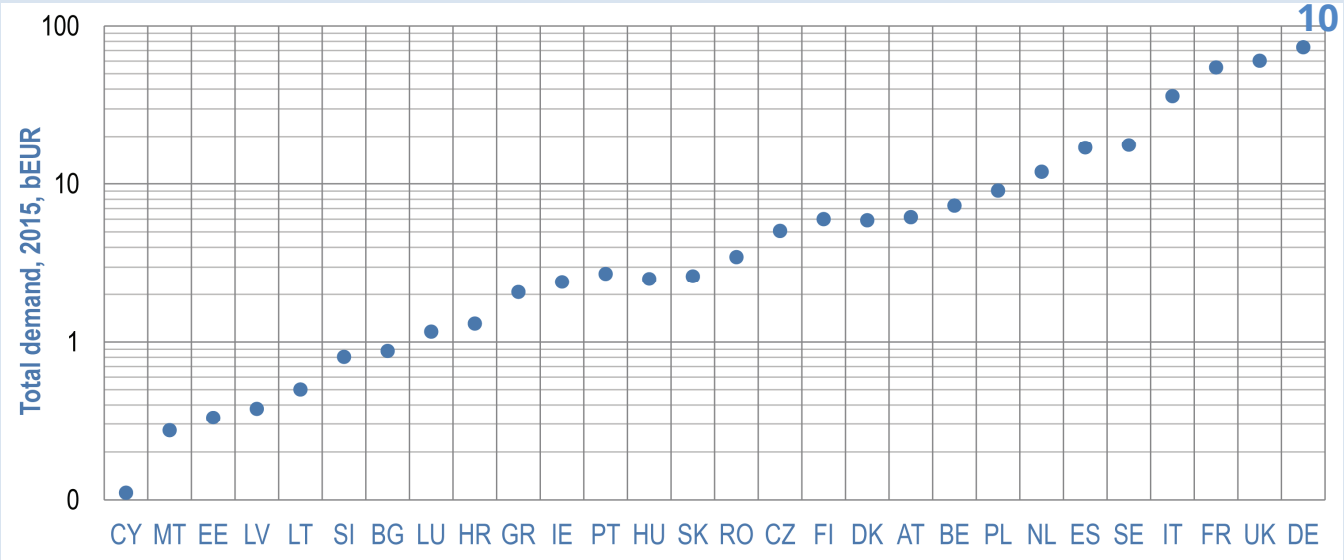
in the demand related to IP (mainly R&D) investment.

Indeed, if the R&D related demand is removed the increase in the total demand (Fig. 6) arising since the slump in 2009 is reduced by one-half.

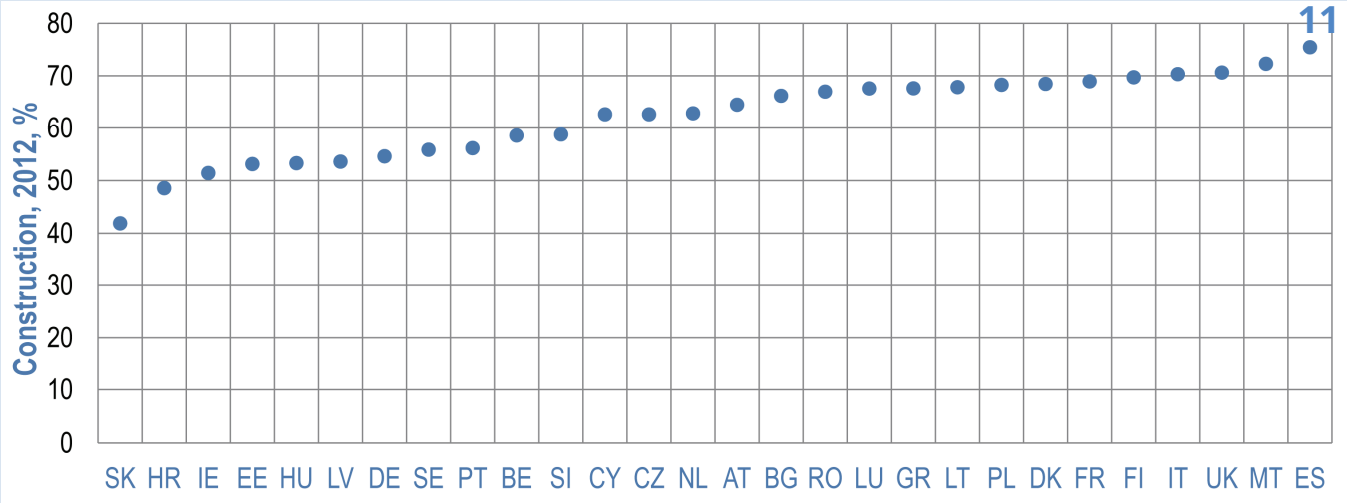
The total demand in 2015 for each of the EU28 countries varied by close to three orders of magnitude (Fig. 10) while the share of the total demand in 2012 generated by construction related investment varied between 40 and 75%, with an average for the EU28 of 62% (Fig. 11).



The shares of the total demand for 2008-15.

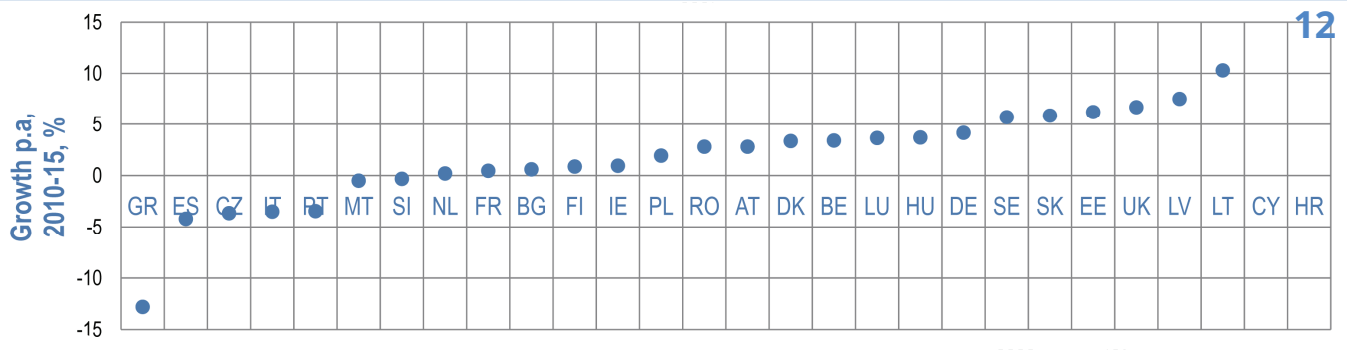


The total demand in 2015.



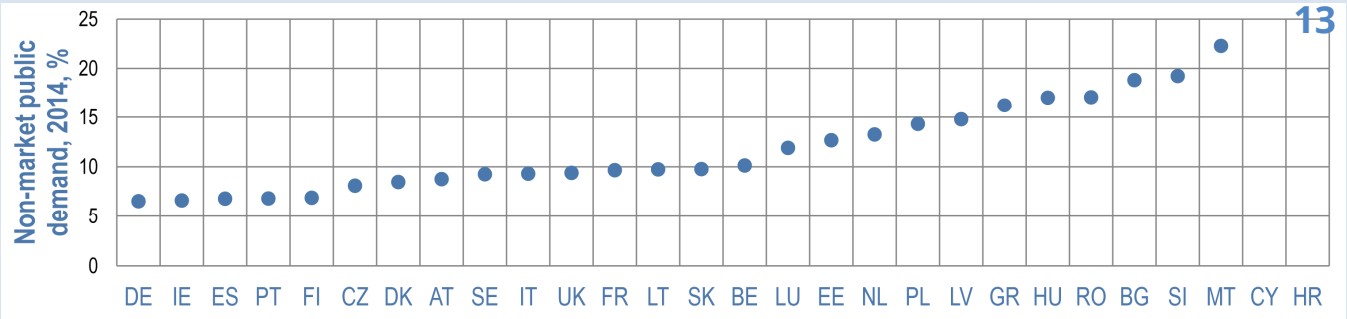
The share of the total demand in 2012 generated by construction investment.

The average annual growth rate in the total demand for the period 2010-15 (Fig. 12) varied from a negative amount in a few countries (Czech Republic, Greece, Italy, Portugal, Spain) to a healthy growth rate in excess of 5% in several countries. The average for the EU28 was 1.83%.



The average annual growth rate in the total demand for the period 2010-15. Not shown are Croatia and Cyprus owing to limited data.

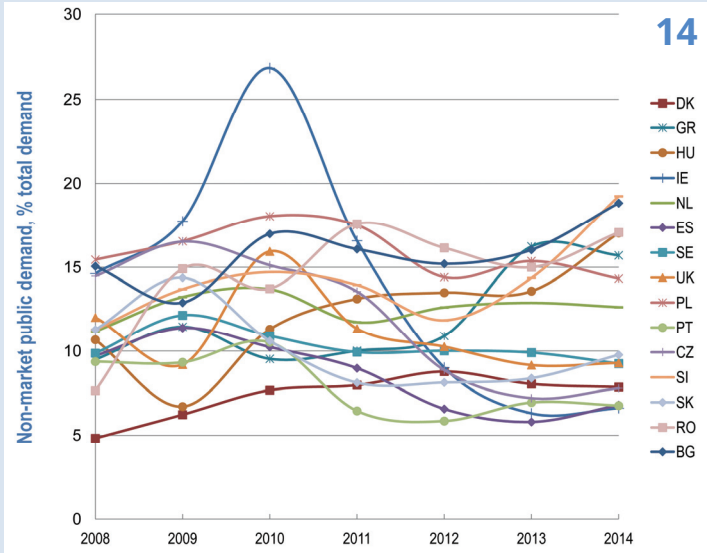
Non-market public demand



The share of the total demand in 2014 of the non-market public demand (essentially the demand generated by government investment). Not shown are Croatia and Cyprus owing to limited data.

Non-market demand is generated almost entirely by government investment. The share in 2014 of total demand that is generated by government investment varied considerably (between 6 and 23% with an average of 11.4%) across the EU28 countries (Fig. 13).

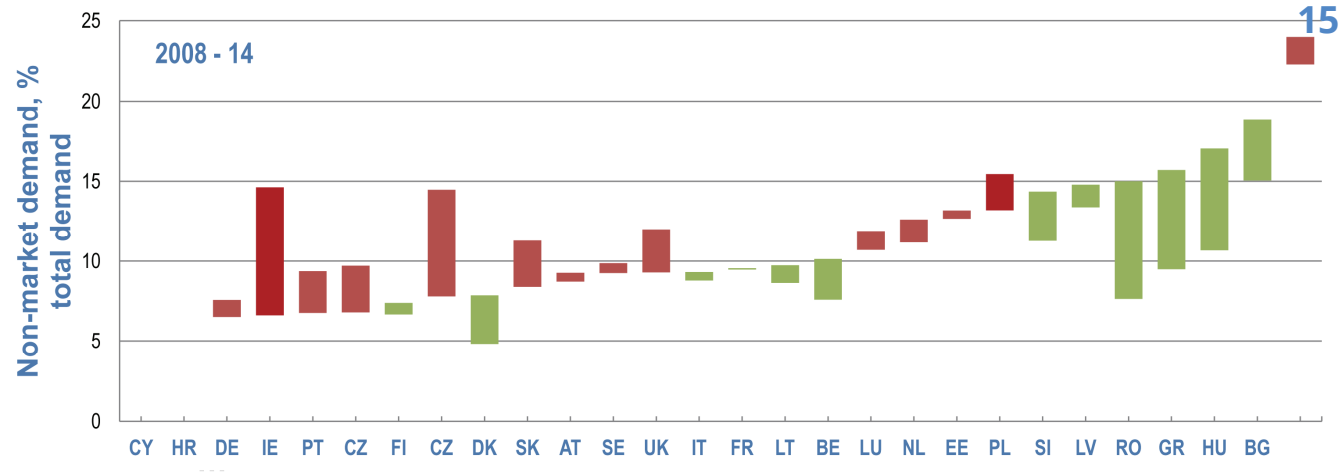
The share also fluctuated considerably in many countries during the financial crisis (Fig. 14). However, by 2014, most countries had regained a steady-state, although the level relative to the pre-crisis 2008 level had increased for some (e.g., Denmark) and decreased for others.



The non-market demand (as a percentage of total demand) arising from public investment (mainly by government). The demand fluctuated greatly in many countries during the financial crisis.

Fig 15. shows the change in the level of the non-market public demand between 2008 and 2014 for each of the EU28 countries. Only Hungary, Greece and Romania saw a change in the public demand of more than 5% over the period, while 14 saw the public demand decrease (by nearly 8% in the case of Ireland).

Over the period 2008-14, the non-market public demand as a percentage of the total demand decreased in 14 countries (red bars in the figure). For countries with an increased public demand (green bars), the increase was generally small with only three countries having increases of more than 5%. Not shown are Croatia and Cyprus owing to limited data.

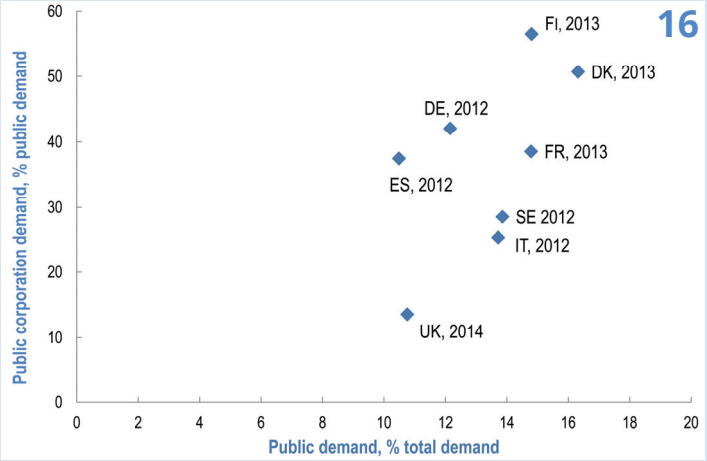


Public corporations

Public corporations (often called state-owned enterprises) meeting market criteria supply consulting engineering services in the market as primary and secondary products that are included in national accounts (Fig. 16). They also invest in own-account design.

The extent to which private sector market providers are possibly hampered by public corporations can be gauged from the market demand generated by public corporations.

National accounts do not report GFCF and related investment measures by institutional sector so the demand generated through investment by public corporations is estimated from the public corporation contribution to the market sector investment. This contribution usually needs to be estimated using capital expenditure in company accounts and financial statements.



The share of the demand for consulting engineering services generated by public investment that originates in market-sector public corporations. Reliable estimates of public corporation investments are only available for a few EU28 countries.

For the relatively few EU countries that report reliable estimates of public corporation investment, the percentage of the public sector demand that arises from investment by public corporations varies between 15 and 55% (Fig. 16). This suggests that possibly unfair competition may be a more important issue in some countries.

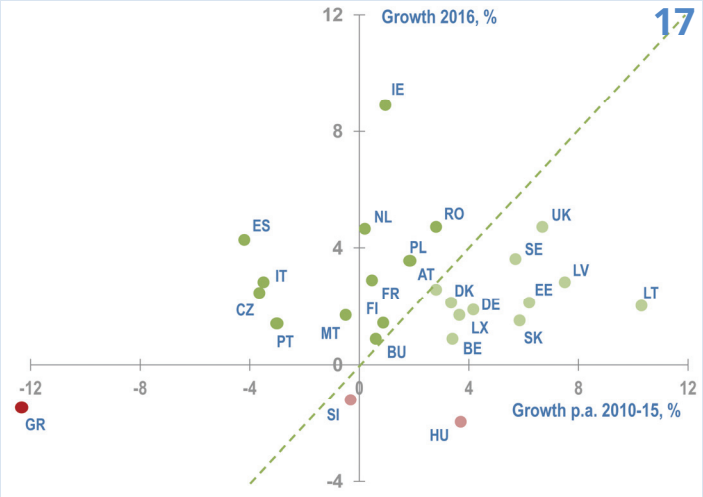
However, drawing hasty conclusions is unwise since there are statistical differences related to the institutional set-up for providing infrastructure and public services.

For instance, an infrastructure facility may be financed and provided by a public corporation in one country (thus showing up as private investment in national accounts), while in another country it is financed directly from local government budgets (thus showing up as public investment).

2016 forecasts

The forecast growth in the total EU28 demand in 2016 using European Commission forecasts is 3% with all but three countries (Fig. 17) showing a positive growth.

However, for the countries with positive growth in 2016, the growth rate is expected to decrease relative to their annual growth rate for 2010-15 in one-half of the countries (Fig. 17).



Countries above the horizontal line are forecast to show a positive growth in the demand for consulting engineering services in 2016. Those above the diagonal will have a growth rate above their annual growth rate for 2010-15. Not shown are Croatia and Cyprus owing to limited data.

Further information

This 2016 European Union update was carried out by Bricad Associates for the FIDIC-EFCA Consulting Engineering Survey as part of a larger, specially commissioned regional survey. The results are made available without charge to FIDIC and EFCA Member Associations.

The results and a detailed Background Note are available on the survey website, survey.peterboswell.net

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