

The construction industry's productivity problem

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EVER since the financial crisis, the world has been plagued by weak productivity growth. One explanation is that in uncertain times firms are keener to take more people on to the payroll than to invest heavily in new equipment. The construction industry has been afflicted by such problems for decades. Since 1995 the global average value-added per hour has grown at around a quarter of the rate in manufacturing. According to McKinsey, a consultancy, no industry has done worse.

Things are especially dismal in rich countries. In France and Italy productivity per hour has fallen by about a sixth. Germany and Japan have seen almost no growth. America is even worse: there, productivity in construction has plunged by half since the late 1960s. This is no trifling matter. The building trade is worth \$10trn each year, or 13% of world output. If its productivity growth had matched that of manufacturing in the past 20 years, the world would be \$1.6trn better off each year.

One source of the industry's productivity problem lies in its fragmented structure. In America less than 5% of builders work for construction firms that employ over 10,000 workers, compared with 23% in business services and 25% in manufacturing. Its profit margins are the lowest of any industry except for retailing. It is also highly cyclical. During the frequent downturns that afflict the industry, any firm that invests in capital, and thereby raises its fixed costs, is vulnerable. By contrast, companies that employ lots of workers without investing much can simply cut their workforces. A few building firms are experimenting with new techniques, from 3D printing and drones to laser-scanning and remote-controlled cranes (see article). But the trade as a whole is reluctant to spend money on the sorts of technologies, from project-management software to mass production, that have revolutionised so many other industries.

The clients of construction firms have every interest in lower bills and speedier completions. But private-sector customers are themselves too fragmented to catalyse change. Governments are another story. The public sector accounts for 20-30% of total construction spending in America and Europe. As both a large customer and a setter of standards, it has the clout and the means to encourage the industry to improve.

First, governments can mitigate the industry's boom-and-bust problem by smoothing out their spending on construction projects. Too often public investment is cut during downturns to find budgetary savings. Greater certainty about future work will give firms confidence to invest more in technology. Providing greater clarity about proposed projects can also help. Britain's National

Infrastructure Pipeline, an assessment of planned spending by both the public and private sector, has boosted investment in the tunnelling business because companies can see more clearly what projects lie ahead.

Second, governments can encourage the spread of mass production by harmonising building codes. The growth of companies making prefabricated houses can be stymied by the cost of adapting their designs for specific jurisdictions. This is true not just across borders but within them. American counties and municipalities employ up to 93,000 different building codes between them. Standardising rules ought to mean bigger production runs and higher returns.

Can they fix it?

Public-sector contracts can also be designed to nudge companies to adopt new technologies and to co-ordinate with each other more efficiently. Too many construction jobs are still mapped out with pen and paper. Britain, France and Singapore now require bidders for public-sector contracts to use a process called “building information modelling”, a type of digitised construction plan, in the hope that once they have invested in the relevant software, it will be used in private-sector projects, too. Building sites are often home to many contractors and subcontractors. Structuring public-sector contracts so that these firms share in a bonus if projects come in on time and under budget is another example of good practice.

The world has an annual \$1trn shortfall in infrastructure spending. Those projects that are given the green light tend to come in late and over budget. If the construction industry could build more for less, investors, citizens and customers would benefit. Governments can help lay the foundations.