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Down to earth

Brexiteers need to respect gravity models of international trade

From the print edition | Finance and economics
Sep 29th 2016, 15:42

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st-Brexit identity, government ministers are racking up the air miles. Theresa May, the prime minister, thinks Britain "should become the global leader in free trade." Officials are discussing trade deals with a range of Asian and Middle Eastern countries. Daniel Hannan, a prominent Leave campaigner, even suggested in the *Sun* newspaper that he wanted Britain to join NAFTA, an intra-American trade agreement. The Brexiteers have spent less time wooing the EU, to which Britain sends roughly half its exports. Indeed, given promises made during the campaign to restrict the free movement of EU labour, reaching a post-Brexit trade deal may prove difficult.

The focus on achieving trade agreements outside Europe may seem a smart move. The EU's economy is weak: its demand for British exports has been depressed for years. Britain's membership of the customs union prevents it from making trade deals with fast-growing economies such as India and China, where Savile Row suits and Scotch whisky find ready markets. Brexiteers say that if Britain quit the EU it could forge new deals wherever it liked, boosting trade even without a new agreement with the EU.

That may sound reasonable, but mainstream economists argue that turning away from the EU, far from boosting Britain's trade, would restrict it. The so-called "gravity model", concocted in the 1960s by Jan Tinbergen, a Dutch Nobel-prize winner, makes two simple points about the geography of international trade. First, the bigger the GDP of the countries involved in a bilateral trading relationship, the more they trade with each other. Larger economies have more demand for goods and services and offer more products, supplying a broader range of consumers.

Second, the farther away two countries are from each other, the smaller the volume of trade. That is partly related to transport costs: sending a parcel from Britain to France costs half as much as sending one to India. Cultural and linguistic differences also come into it. Exporters have a better feel for nearby markets and can meet suppliers more easily. According to official data only about 2% of Britain's exports go to India (population 1.3 billion), much less than is sold to tiny Belgium (population 11m).

The implications of the "gravity" model for a post-Brexit Britain seem to be clear. The EU is a trading bloc roughly the size of America and it happens to be on Britain's doorstep. That explains why Britain has always traded heavily with the continent. It also suggests that trade deals with far-flung places may not compensate Britain for restricted access to such a market.

However, that is not the end of the story. Brexiteers have studied gravity models and insist that they have been "long discredited". Their critique rests on two points. First, says Patrick Minford of Cardiff University, gravity models are simple "associations" rather than causal relationships. Indeed it is even possible that the statistical relationship between GDP and trade volumes suffers from the problem of "endogeneity". Large trade volumes may cause large GDP, rather than the other way around.

This critique appears misplaced. A paper from Shang-Jin Wei, then of Harvard University, looked for a clean variable—one that runs from GDP to trade, but not the other way round. Mr Wei used data on population (since it is unlikely that lots of trade causes a large population). After correcting for the endogeneity problem, the gravity effect still held. Furthermore, according to Swati Dhingra of the London School of Economics, gravity models do a good job of predicting actual trading relationships today.

The second Brexiteer criticism of gravity models is that geography may not matter as much as it once did. As emerging-market economies continue to outgrow the rich world, their increased pulling power may override distance. It will only be a few years before China's GDP (as measured in dollars) exceeds the EU's.

As those economies grow, British trade with emerging markets will certainly increase. However, size alone does not make a faraway country an enormously attractive trading partner. Britain exports far less to America than it does to the EU. Moreover, for the foreseeable future, GDP per person in places like India and China will be lower than the EU's, points out John Springford of the Centre for European Reform, a think-tank. It will be many years before these countries' citizens are rich enough to demand the same sorts of goods and services from Britain as the EU does.

In one other way, however, geography may matter less than economists assume. The logic of gravity models may be sound when applied to trade in goods, which cost a lot to move around, but its applicability to trade in intangible services is surely a little more suspect. After all, a website-designer or a financial adviser in London can deliver her services to a Chinese client costlessly and instantly over the internet. Britain is one of the world's most service-intensive economies and is becoming ever more so.

With a bump

The gravity effect does indeed appear to be smaller for services. But it is still strong, according to a report on Brexit by the IMF. The reasons for this link are less explored in the literature, though shared time-zones and languages are likely to be important. A paper on Brexit from the National Institute of Economic and Social Research, another think-tank, also notes that much services trade is a by-product of goods trade. If Britain's exports and imports of goods declined, Britain's services exporters would also suffer.

In the long term, better communications and cultural homogenisation may mean that international trade is less and less at the mercy of proximity. But for now, the central premise of Tinbergen's model still holds for a post-Brexit Britain. Exploring trade deals with Asia and the Middle East is all well and good. But if Britain really wants to be a global leader in free trade, it needs to work with its closest, biggest neighbour.

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