Roch Dunin-Wasowicz November 19th, 2018

Cultural, administrative, and economic proximity between the UK and Canada should be good for trade

Estimated reading time: 5 minutes

Economists place considerable emphasis on the role of (geographic) distance in explaining the pattern of international trading relationships. Using a metaphor from Newtonian physics, trade and foreign direct investment (FDI) between countries are often seen as being driven by the forces of gravity, encapsulated in the relative size of

their markets and the distance between their economies. Moreover, as shown in a previous brief, geographic distance is expected to have non-linear effects; as countries become further away, their trading relationship is expected to become less intense at an increasing rate. Building on that, in this post, ***Saul Estrin, Angelina Borovinskaya, Christine Cote****, and* ***Daniel Shapiro*** *provide a more fine-grained perspective on gravity effects which takes into account administrative and economic differences as well as cultural factors. They argue that cultural, administrative, and economic proximity between the UK and Canada should be good for trade.*

This blog explores the implications for policy-makers seeking trade diversification for countries which are relatively distant geographically, such as the UK and Canada, but which are similar in other dimensions of distance. The discussion focuses on the decision to internationalise from the perspective of the firm rather than as an aggregate for the country. While gravity effects significantly influence patterns of both trade and FDI, a more firm-level orientation brings into sharper focus the differences as well as the similarities between these two mechanisms for engaging in the global economy.

Distance and the Liability of Foreignness

Economist have tended to view geographic distance as the driver of gravity effects in trade and FDI (Anderson and van Wincoop, 2003; Blonigen, 2005). For example, Figure 1 shows a well-known illustration of this, from Leamer's (2007) critical review of Friedman's (2005) book, *The World is Flat*. Results from a number of studies show the average geographic distance effect to around unity; thus, doubling geographic distance more or less halves trade (e.g. Disdier and Head, 2008). Economists tend to focus on geographic distance because it captures the frictions and transactions costs associated with international trade, a significant proportion of which can be directly associated with transportation costs. However, regressions of trade flows on both

distance and transport costs still show a significant coefficient on distance, although the magnitude of the effect is lower. This implies that distance is a proxy for both transport and other costs. Indeed, it is estimated that geographic distance explains around 45% of the variation in transport costs between countries (Krugman and Obstfeld, 2018).

Figure 1: Gravity effects applied to Germany

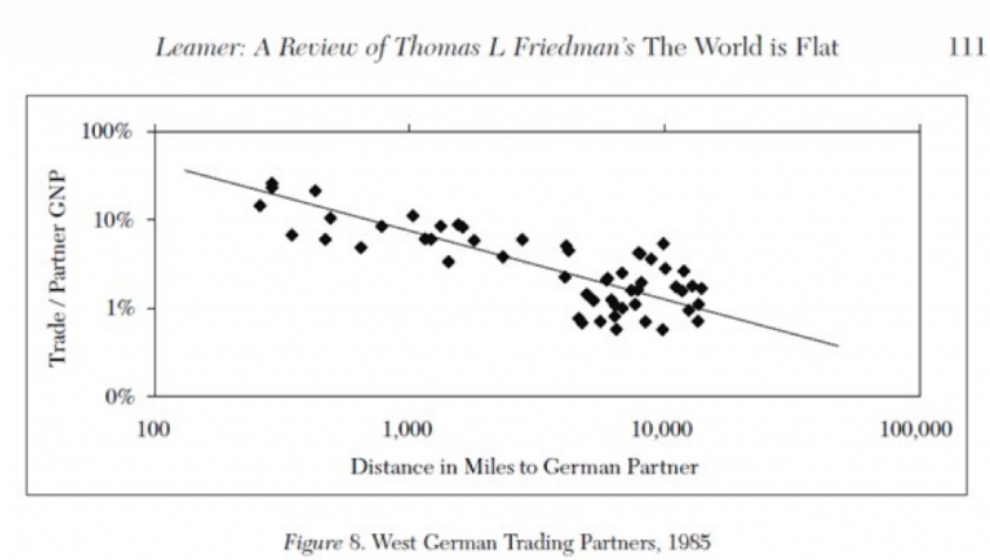


Figure 8. West German Trading Partners, 1985

The literature is well aware that geographic distance is not the only factor explaining trade. Thus, for example, we observe in Figure 1 that there is increasing heterogeneity of outcome as distance increases, suggesting that the impact of transport costs is not the only factor driving trade, especially in more distant locations. Analysts have therefore developed "extended gravity models" to capture some of the most important other factors determining bilateral trade patterns. The additional factors which have been found to have significant effects are summarised by Anderson and van Wincoop (2003) as including tariffs, transportation costs, currency policies, WTO membership, language and colonial ties, information barriers, and contracting costs. For example, Rauch and Trindade (2002) found significant gravity effects from informational differences and Rose (2005) analysed the impact of WTO membership. Researchers have also considered the impact of common borders (Anderson and van Wincoop, 2003), institutions (Bevan and

Estrin, 2004), and free trade agreements (Baier and Bergstrand, 2007) on trade. However, while these formulations successfully extend the notion of distance in gravity equations, their inclusion is typically *ad hoc.* Moreover, these extended gravity models focus on establishing the significance of a particular factor such as WTO membership or free trade agreements, but rarely the impact of these additional gravity effects on the relationship between trade and geographic distance.

The international business (IB) literature has taken a rather different approach to the question of barriers to trade and FDI. Firms that are considering internationalisation are argued to face a *liability of foreignness* when they seek to transfer their competitive advantages from a domestic to a foreign location (Zaheer, 1995). This liability can be viewed as a cost asymmetry, in the sense that a foreign firm must incur additional costs to make or sell its output in a foreign location that a local firm would not incur (Hymer, 1976). For exports, these costs have often been viewed primarily as representing the costs of shifting goods to more distant locations, plus additional expenses to meet local standards, to pay tariffs and to adjust to local norms and traditions. However, when attention is turned to FDI, which requires the firm to set up or acquire subsidiaries in new jurisdictions, these latter factors have been analysed more thoroughly. Thus they have been argued to arise for example from unfamiliarity with the overseas business environment, from differences in language, laws, culture, and politics. Subtler issues include the organisational complexities of coordination across different geographies, a lack of information networks or political influence in the host-country, and difficulties for the overseas firm to appeal to buyers with different tastes. This notion of liability of foreignness has been the fundamental assumption driving theories of the multinational enterprise (MNE) (Dunning, 1977; Caves, 2007). To overcome these cost asymmetries between their home and overseas markets, MNEs are argued to need to provide their foreign subsidiaries with powerful firm-

specific advantages, such as brands, technologies, patents, or organisational or managerial capabilities.

This additional set of factors influencing trade and FDI have once again tended to be considered in an *ad hoc* way with researchers seeking to establish the relevance of one or another barrier in a gravity model. However, Ghemawat (2001; 2007) has proposed an organising categorisation, *the CAGE framework*, into which the various possible indicators of bilateral differences between home and host economies can be categorised. It is to this framework that we next turn.

Measuring dimensions of the Liability of Foreignness: the CAGE framework

Ghemawat (2001) proposed a new framework to capture the heterogeneity in the concept of distance between countries. His idea was to "identify and prioritise the differences between countries that companies must address when developing cross-border strategies" (Ghemawat, ibid). He proposes that bilateral differences between countries, which firms must adjust to but which they may also be able to exploit, can be put into four broad categories: distance in culture (C), administration (A), geography (G) and the economy (E); see Ghemawat (2007, Chapter 2). Distance in culture (C-distance) is typically related to differences in language, religion, ethnicity, and especially social norms, as identified for example by Hofstede (1980). A-distance includes differences in measures of formal institutions such as legal systems, mechanisms for financial regulation, rules concerning labour market flexibility; in parts of the world, many of these are associated with colonial legacies. G-distance includes geographic distance but also the relative size of the economies, whether there are common borders, whether the country is landlocked, and even transport infrastructure. Finally, E-distance relates to the level of development measured for example by GDP per capita, but also to levels of inequality and the size of the economy.

A number of recent papers have established the empirical relevance of the three dimensions of distance in addition to geographic distance. For example, Xie et al. (2017), Nielsen et al. (2017), and Berry, Guillen and Zhou (2010) find evidence that indicators of all of the elements of CAGE distance exert negative and significant influence on bilateral FDI simultaneously. This confirms that when considering the decision to invest in subsidiaries overseas, firms take into account more than simply the geographic distance. There have also been more detailed studies of the impact of particular CAGE dimensions on both trade and FDI. Thus, using bilateral trade data, Head and Mayer (2014) find that, in addition to geographic effects from distance and common borders, cultural factors, such as colonial heritage and common language, play a significant role in determining trade flows. The impact of contiguity and common language on trade, in fact, are very similar, with coefficients around 0.5, these being about half the effects of colonial links. Turning to cultural factors, the positive effect of cultural similarities on trade is supported in work by Tadesse and White (2010) and Lee (2015). This is also consistent with evidence by Kedia et al (2015) and Ly, Esperanca and Davcik (2017) concerning the negative impacts of increasing cultural distance on FDI. There is also evidence that greater administrative and economic distance acts to reduce both trade (Bilgin, Gozgor, Lui, 2017) and FDI significantly (Bevan, Estrin and Meyer, 2004; Blanc-Brude, Cookson, Piesse and Strange, 2014). Indeed, Blanc-Brude et al. (2014) suggest that for location decisions within a country, geographic distance is less important than economic and administrative distance.

The CAGE framework suggests that simple gravity effects based solely on geographic distance might be ameliorated when the three other dimensions of distance are taken into account (Head and Mayer, 2014). On that basis, the negative impact of geographic distance on international trade and FDI may be to some extent reduced if there were offsetting similarities between two countries with respect to culture,

administrative arrangements, or the levels of economic development. In this brief, we are primarily concerned with the prospects for Canada-UK trade and our assessment is influenced by extending the gravity model to take account of all four CAGE dimensions. We provide an illustration of this in the following section.

Image by Number 10, (CC BY-NC-SA 2.0).

Re-evaluating the Distance between the UK and Canada Using the CAGE Framework

In this analysis, we focus our attention on the principal trading relationships of Canada and the UK, and the possibilities for trade diversification and FDI between them. To simplify the analysis and facilitate diagrammatic representation, we consider the UK and its principal EU trading partner – Germany, as well as Canada and its main trading partner the – US.

In Table 1, we report a variety of possible measures of the CAGE dimensions for the countries of interest. We follow the literature cited above, in using the Hofstede measure (Hofstede, 1980; Berry, Guillen and Zhou, 2010; Beugelsdijk, Ambos & Nell, 2018) to indicate informal institutions or cultural variation. We further consider common language and religion as indicators of cultural similarity or difference. There are a variety of ways to think about formal institutions, and we, therefore,

provide several alternatives. La Porta, Lopez-de-Silanes, and Shleifer, (2008) developed an indicator of legal origins which captures important aspects of A-distance. There are also a variety of measures on the Heritage Foundation website for property rights, judicial freedom and governmental integrity, for which we take an average. On the same site, we also include their indicators of labour and capital market freedom, important areas of administrative efficiency in developed economies. Finally, in A-distance, following Ghemawat (2001) we report an indicator of colonial legacy as a dummy variable. For measures of geographic distance, we use the standard indicator – distance between capital cities – but also take into account the size of the country and whether the pairs of countries are neighbouring (dummy variable). Finally, in terms of economic distance, we consider GDP per capita (PPP), economic inequality (Gini coefficient), and economic size measured by GDP in current dollars.

Table 1: CAGE Values for UK, Canada, US, and Germany

CAGE Values		UK	Canada	UK	Germany	Canada	US	Source
Cultural	Common Language *	1	1	1	0	1	1	CIA
	Religion **	1	1	1	1	1	1	PEW
	Cultural distance (6 indices, Mahalanobis method)	1.33	1.33	6.15	6.15	0.98	0.98	Hofstede, 1980
Administrative	Legal Origin ***	1	1	1	0	1	1	CIA
	Property, Judicial, Government Integrity, average	88	81	88	78	81	76	Heritage Foundation
	Colonial legacy ****	1	1	0	0	0	0	CEPII
	Labour Freedom (Heritage Foundation)	74.4	71.3	74.4	53.3	71.3	80.0	Heritage Foundation
	Financial Freedom (Heritage Foundation)	80	80	80	70	80	91	Heritage Foundation
Geographic	Country size (Land Area, sq.km)	241,930	9,093,510	241,930	348,900	9,093,510	9,147,420	World Bank
	Contiguous *****	0	0	0	0	1	1	CEPII
	Distance between capitals, km	5,365	5,365	936	936	737	737	CEPII
Economic	GDP per capita, PPP, current int. $	43,268	46,704	43,268	50,638	46,704	59,531	World Bank
	GDP, $	2,622,433	1,653,042	2,622,433	3,677,439	1,653,042	19,390,604	World Bank
	Gini Coefficient ******	33	34	33	31	34	41	World Bank

** Country scores 1 if English is its principal language, and 0 if it's any other language*
*** Country scores 1 if it's principal religion is Christianity, regardless of the denomination*
**** Country scores 1 if its legal origin is common law, and 0 if it's civil law*
***** Country scores 1 if it has colonial legacy with its partner country and 0 if there is no colonial legacy*
****** Country scores 1 if it shares a common border with its partner country, and 0 if there is no border*
******* Gini coefficients are given for 2013*

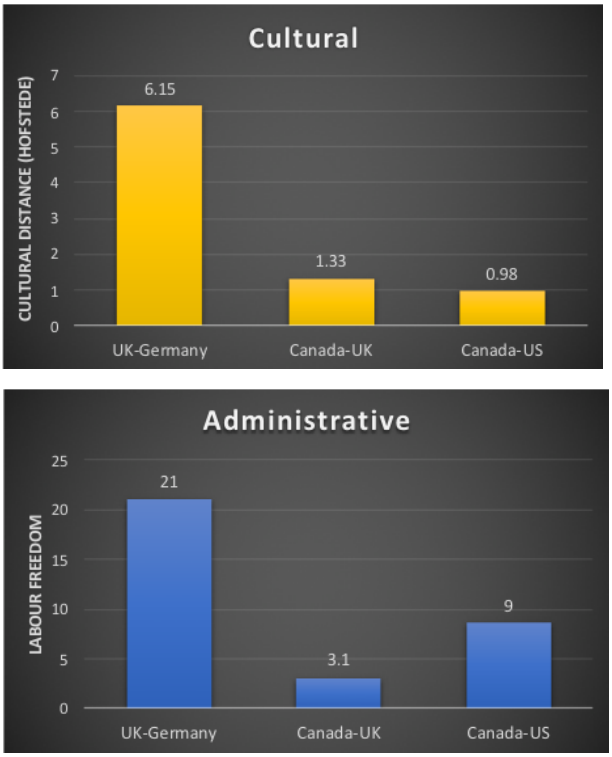
While not all the data in Table 1 always point in the same direction, they allow us to appreciate the complexity of distance within and between each category and suggest areas of potential trade-offs. To illustrate this, we develop a diagrammatic representation of distance effects which focuses on variation between rather than within categories. Thus,

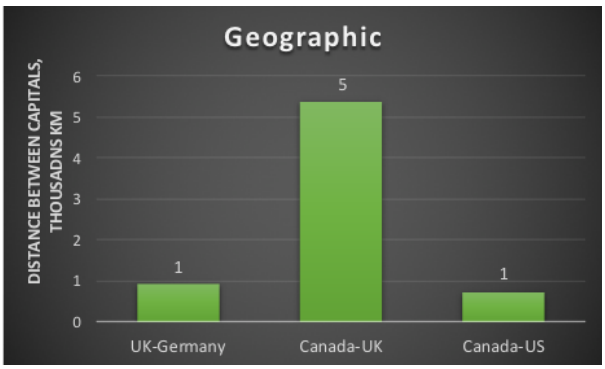
we select a single indicator from each of the CAGE dimensions, namely cultural distance for C-distance; labour freedom for A-distance; distance between capitals for G-distance, and GDP per capita (PPP) for E-distance. These data are plotted in Figure 2 below. The figure shows that from the perspective of geographic distance alone, the UK and Germany are close while the UK and Canada are distant. However, the picture is rather different when the other dimensions are taken into account. As advanced economies with well-functioning market systems, it is unsurprising that all three countries are actually quite similar in terms of administrative and economic distance, certainly much more than if we were including emerging market economies in the mix as well. However, in practice, in terms of labour market institutions and flexibility, the UK and Canada are both a little more similar to the US and slightly less similar to Germany. Similarly, when we turn to E-distance, though the differences remain modest, UK-Canada is a slightly closer pairing than UK-Germany or Canada-US. This would imply that there would be little difference in many aspects of the informational, contractual and legal obstacles to trade and FDI for firms contemplating trade or FDI from the UK to either Germany or Canada. Finally, when we turn to cultural distance, using Hofstede's (1980; 2010) six indices, we find a somewhat closer cultural affinity between the UK and Canada than between the UK and Germany, though Canada is even closer to the US than it is to the UK.

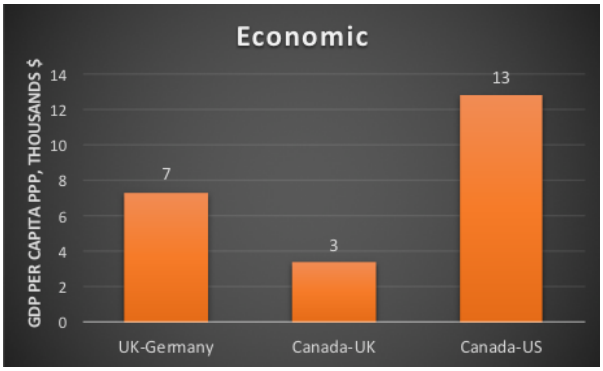
Thus, applying the CAGE framework to the UK, Canada and their main trading partners, we obtain a more nuanced picture than when we consider geographic distance only. Geographic distance in a gravity model strongly suggests that the UK should focus its trading efforts on neighbouring EU countries such as Germany while Canada should for the same reasons concentrate on the US market. However, cultural, administrative, and economic proximity may to some extent offset this logic. Indeed, both literature and the CAGE framework applied to the UK and Canada indicate that bilateral trade and FDI between the two

economies should be relatively high. Despite this, their state of economic relations is quite different from what one may anticipate. For example, the UK's share of goods and services exports to Canada accounts for only 2%, while imports are approximately 1% (Ward and Webb, 2018). Evidently, the trade and FDI relationship between the two economies leaves room for improvement, which brings us to the next section – policy recommendations.

Figure 2: An Illustration of CAGE Distance







Conclusions and Policy Recommendations

In this brief, we have sought to delve deeper into what distance could mean in a gravity model. When it is interpreted in terms of geography, the policy conclusion for the prospects of successful trade diversification between the UK and Canada, even post-Brexit and given issues in NAFTA, would seem to be very pessimistic. However, extending the notion of distance to take account of the CAGE dimensions leads us to a more nuanced conclusion.

Thus, our analysis suggests that the impact of geographic distance on trade and on FDI are not the same; distance effects are both greater deterrents to FDI and lead FDI to be less volatile in the face of external shocks. Second, a richer framing of the concept of distance opens up the possibility that countries can be more distant in some dimensions, for example geography or culture, and less so in others such as administrative norms or levels of economic development. As yet, there has been insufficient research addressing the trade-offs between these dimensions of distance, but it seems likely that because distance represents the enhanced costs of doing business in foreign locations, similarities in some dimensions will offset to some extent differences in

others. As such, one might expect the prospects for trade between culturally, administratively, and economically similar countries like the UK and Canada to be potentially higher than suggested by consideration of geographic distance alone.

This argument has opened up some interesting avenues for policymakers to consider. Geographic distance is of course not sensitive to policy interventions, but some of the other measures are, notably administrative and economic distance. Undertaking an analysis of key administrative factors from the perspective of trade and especially FDI with the objective of identifying areas in which administrative arrangements between potential partners could be more closely aligned might be a valuable policy initiative. Furthermore, we have noted in another brief that approximately 45% of British exports are in services, around 5% of which go to Canada. Conversely, 48% of Canada's total exports are in services, around 6% of which go to the UK. There is also evidence that geographic gravity effects are less pronounced for trade in services than trade in goods. Indeed, Lendle, Olarreaga, Schropp and Vézina (2016) suggest that trade in services through the internet is hardly subject to gravity effects at all. On the other side, cultural and administrative similarities seem likely to be particularly important for trade in services. All this suggests there is considerable upside potential for Canada and the UK in trade in services which policymakers could help stimulate. For example, there could be a considerable role for policymakers in disseminating knowledge to make the relevant parties aware of the implications of the CAGE distance factors for trade. The UK and Canada already offer advice on exporting, but the official websites could also have a section on CAGE and indicate for which countries firms have the greatest similarity using the three non-geographic dimensions as well as a list of bilateral trade agreements/countries along the lines already used by the Department for International Trade.

This post represents the views of the author and not those of the Brexit blog, nor the LSE. The authors gratefully acknowledge suggestions from Klaus Meyer.

***Saul Estrin** is Professor of Management at the London School of Economics.*

***Angelina Borovinskaya** is Research Assistant at the Department of Management (LSE).*

***Christine Cote** is Senior Lecturer in Practice at the Department of Management (LSE).*

***Daniel Shapiro** is Professor of Global Business Strategy at the Beedie School of Business, Simon Fraser University, and co-editor, Multinational Business Review.*

About the author

Roch Dunin-Wasowicz

Posted In: #LSEThinks | Economics of Brexit | Featured

Related Posts

Economics of Brexit