

Comments on “The Costs and Benefits of Leaving the EU: Trade Effects” by S. Dhingra, H. Huang, G. Ottaviano, J.P. Pessoa, T. Sampson, J. Van Reenen
Prepared for *Economic Policy*

August 2017

Gino Gancia¹

Brexit is one of the main economic events of recent years. Britons’ vote to leave the EU will affect the well-being of people in the UK and in other countries. It poses new challenges to EU institutions. And it is going to be a testing ground for economic theory. This paper is about the first and the third points. Its goal is to estimate the welfare effects of Brexit focusing on trade flows and fiscal transfers using state-of-the-art methodologies in the literature. To this end, the paper employs two different approaches, one structural and one based on reduced-form estimates.

The structural approach uses a modern quantitative trade model in order to quantify the welfare effects of Brexit. This method delivers a range of estimates depending on the counterfactual scenario considered, from a soft Brexit, in case the UK remains in the Single Market like Norway, to a hard Brexit, if trade between the UK and Europe continues according to the WTO rules. In the former case, the UK suffers a welfare loss of 1.3% while in the latter the cost is approximately twice as high. A key advantage of the structural approach is that the model can be used to provide a decomposition of different effects. This exercise shows that the welfare loss due to the increase in tariffs is rather small. The welfare loss due to the increase in non-tariff barriers is higher, but still moderate. However, the increase in non-tariff barriers is more difficult to quantify. Finally, there is a cost due to missed future opportunities of further EU integration. This is the lion's share of costs, accounting for more than half of the total effect. But it's important to recognize that there is significant uncertainty around it. Overall, it seems fair to say that easy-to-quantify effects are rather small. On the other hand, however, all these estimates are likely to be a lower bound of the true economic costs of Brexit.

To see why, it is important to understand how the gains from trade are computed. In an influential paper, Arkolakis, Costinot and Rodriguez-Clare (2012) showed that in a class of models commonly used by trade economists, two statistics are sufficient to quantify the gains from trade: the elasticity of trade to the variable cost of trade, for short the trade elasticity; and the share of a country’s expenditure allocated to domestically-produced goods. The beauty of the formula is that, with these two statistics at hand, one can compute the gains from trade without knowing the counterfactual. In other words, there is no need to know the

¹ Queen Mary University of London, CREI and CEPR. Mile End Road, London E1 4NS, UK.
Email: g.gancia@qmul.ac.uk

autarky equilibrium in order to quantify the gains from trade. This is a remarkable result, but how general is it?

In many trade models, the elasticity of trade volume to the variable cost of trade is linked to the slope of the marginal benefit curve. This is intuitive: if a small increase in the cost of trade eliminates a large amount of trade, i.e., if the trade elasticity is high, it must be that the vanished trade was not so valuable. The special result is that combining CES demand and Frechet or Pareto productivity distributions implies a constant slope of the marginal benefit curve. In turn, this means that the trade elasticity is sufficient to compute the value any, not just marginal, changes in the volume of trade. In other words, the trade elasticity contains all the information needed to know how autarky would look like. This is a very convenient property, but it is also a rather special one.

In reality, there are many reasons why the trade elasticity may not be constant and this may introduce biases in computing the gains from trade. First, existing estimates of the trade elasticity are *marginal* estimates and may overstate its *average* value. The reason is that as the variable cost of trade increases, the adjustment is initially driven by the most elastic sectors or firms. As trade costs keep rising and the volume of trade falling, then it'll be the least elastic sectors that drive the adjustment. And indeed there is evidence that the trade elasticity varies significantly across different sectors and may well vary within sectors (e.g., Caliendo and Parro, 2015). Second, the trade elasticity is not a deep structural parameter: it depends on preferences and technology and it may depend on technological decisions. For instance, in Bonfiglioli et al. (2017a,b) we show that lower trade opportunities induce firms to choose more homogeneous technologies generating a higher trade elasticity. This leads to an amplification effect. In the case of Brexit, a falling volume of trade may induce a higher trade elasticity and therefore even lower gains from trade.

One may still think that existing estimates can be taken as local approximation. Even if correct, these local estimates would be accurate to evaluate small changes only. The question then is whether Brexit can be considered as a small shock. This is unclear, since the paper predicts the total volume of trade to fall by more than 12% in the UK.

For these and other similar reasons, in the literature there is no clear consensus on the right value of the trade elasticity. For instance, in a recent survey paper, Costinot and Rodriguez-Clare (2014) show that the gains from trade for the UK can range from 3% to over 23% depending on the details of the model used.

Given the centrality of the trade elasticity, the paper could try to do more on it. One possibility could be to estimate the trade elasticity using data for the UK. Although the model forces the trade elasticity to be the same for all the countries, given the focus of the paper, it would probably be better to get the UK right. Second, for the service sector, the paper uses an agnostic value equal to five. Given that there is no strong justification for this choice and that trade in services, and especially financial services, can be very important for the UK, it would be advisable to experiment with other values. Finally, the trade elasticity also depends on the share of intermediates in production. The paper could then take into account the observation that intermediates are becoming increasingly important: the diffusion of global value chains and the fall in the labor share are just two examples of this trend. Once more, a growing share of intermediates will generate bigger losses from Brexit.

In sum, quantitative trade models are elegant and tractable, but their results are sensitive to assumptions. Moreover, there is still limited evidence that these models produce the right counterfactuals. To lend more credibility to the results, it would be useful if the paper could show that the model does a good job at describing trade flows in the UK economy.

The structural approach also suffers from other limitations. In particular, it is built on a static model and therefore misses potentially important dynamic effects, for instance through technological change. For this reason, the structural approach is complemented by a reduced-form approach. Combining existing estimates on the trade effect of the EU membership (from Baier et al., 2008) with the elasticity of income to trade (from Feyrer, 2009), the authors can quantify the overall income cost implied by Brexit. The effects computed in this way are significantly larger, with welfare losses of 6% or more. However the reduced form approach suffers from well-known identification issues. For example, since EU countries are not randomly selected, it is difficult to predict what their volume of trade would be, had they not joined the EU. Second, the elasticity of income to trade is estimated using a clever IV strategy exploiting the fact that air travel changed the cost of distance between country pairs. However, this raises the question of whether this elasticity is applicable to other countries, to different time periods and whether it applies to trade policy barriers as well.

The paper also studies some distributional effects of Brexit. Brexit may be costly on average, but could it help the poor who voted disproportionately for it? The answer seems to be no. The paper shows some evidence that distributional effects through lower immigration and through changes in relative prices are likely to be small. There is also the possibility that Brexit affects wage inequality. However, this possibility is dismissed on the ground that the UK and the EU are similar countries and that trade between similar countries should have small effects on factor prices. This conclusion may be premature, however, as there are many papers showing that trade between similar countries can also increase wage inequality through skill-biased scale effects (e.g., Epifani and Gancia, 2008, Burstein and Vogel, 2016) or through selection effects (e.g., Sampson, 2014, Helpman et al., 2010). Of course, a more detailed analysis of the issue is worth a paper on its own, but this caveat should be kept in mind.

In conclusion, this paper is a great example of how to use frontier economic research to address important policy questions. The main message seems to be that, no matter how you look at it, Brexit is an economic mistake. But then who made this mistake? UK voters? UK leaders? Economists? And ultimately, what explains Brexit? What lessons can be learnt for the future? Although we do not have clear answers, I will close with some remarks based on a recent paper (Gancia et al, 2017) in which we study the rise and enlargement of trade-promoting unions, such as the EU. The basic idea is that countries and economic unions emerge from the tension between the global markets and local political preferences. Applied to Brexit, the model yields three insights. The first is that the value of union membership is proportional to the economic ties between countries. While the UK trades significantly with the EU, it trades much less than other core countries such as Belgium, France or Germany, who may therefore be more reluctant to leave. Second, the model shows that globalization increases the incentive to create trade-promoting unions. Yet, if too much power is shifted to the union in other areas, tensions may arise, especially in countries with a strong national identity. This raises the concern that Europe might have gone too far, a possibility already advanced almost 20 years ago (Alesina and Wacziarg, 1999). Finally, the model shows that the

economic value of the EU is proportional to its size. Hence, the EU without the UK is going to be more fragile. By the same token, Brexit can also put pressure on UK borders, as it is already evident in Scotland.

A high uncertainty surrounds future scenarios, as much as the uncertainty about the cost and benefits of leaving the EU. Only time will tell. However, economists cannot afford to shy away from these questions. And this is just another reason to praise the paper that I had the chance to discuss.

REFERENCES

- Alesina, A. and R. Wacziarg (1999). "Is Europe going too far?" *Carnegie-Rochester Conference Series on Public Policy* 51(1), 1-42.
- Arkolakis, C., A. Costinot and A. Rodriguez-Clare (2012) "New Trade Models, Same Old Gains?" *American Economic Review*, 102(1), 94-130.
- Baier, S. L., J. H. Bergstrand, P. Egger, and P. A. McLaughlin (2008). "Do Economic Integration Agreements Actually Work? Issues in Understanding the Causes and Consequences of the Growth of Regionalism," *The World Economy*, 31(4), 461-497.
- Bonfiglioli, A., R. Crinò and G. Gancia (2017a). "Betting on Exports: Trade and Endogenous Heterogeneity" *The Economic Journal*, forthcoming.
- Bonfiglioli, A., R. Crinò and G. Gancia (2017b). "Trade, Finance and Endogenous Firm Heterogeneity" *Journal of the European Economic Association*, forthcoming.
- Burstein, A. and J. Vogel (2016). "International Trade, Technology, and the Skill Premium" *Journal of Political Economy*, forthcoming.
- Caliendo, L. and F. Parro (2015). "Estimates of the Trade and Welfare Effects of NAFTA" *Review of Economic Studies*, 82(1), 1-44.
- Costinot, A. and A. Rodriguez-Clare (2014). "Trade Theory with Numbers: Quantifying the Consequences of Globalization" vol. 4 of *Handbook of International Economics*, 197-261, Elsevier.
- Epifani, P. and G. Gancia (2008). "The Skill Bias of World Trade" *The Economic Journal*, 118, 927-960.
- Feyrer, J. (2009). "Trade and Income - Exploiting Time Series in Geography" NBER WP 14910.
- Gancia, G., G. Ponzetto and J. Ventura (2017). "Globalization and Political Structure" NBER WP 22046.
- Helpman, E., O. Itzhoki and S. J. Redding (2010). "Inequality and Unemployment in a Global Economy." *Econometrica*, 78, 1239-1283.
- Sampson T. (2014). "Selection into Trade and Wage Inequality" *American Economic Journal: Microeconomics*, 6 (3), 157-202.