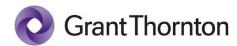


## Two Page Summary: Methodological Options for Estimating the Causal Impacts of the UK's Trade Remedies on Trade and Economic Performance

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## 'Two-page' Summary

- 1.1 This report aims to facilitate the Trade Remedies Authority's ("TRA") evaluations of its existing and future trade remedies. It does this by developing a framework that can assist the TRA to select the most suitable methodological approaches when it estimates the causal impact of the UK's trade remedy measures. The framework weighs the strengths and weaknesses of various methodological tools and guides the TRA to the most appropriate tool for analysis given the nature of the problem at hand.
- 1.2 The efficacy of the framework and the tools are tested using illustrative case studies comprised of various trade remedy measures recommended by the TRA. The case studies do not evaluate the true impact of the trade remedies in question. They aim to illustrate the application of the proposed framework to four main categories of trade remedies and highlight potential issues that may arise during impact estimation. The findings from the case studies and their implications for future applications of the framework and causal analysis in general are also explored.
- 1.3 The report is not intended to provide commentary or evaluate the impact of existing trade remedy measures, but instead aims to provide a toolkit and framework for the TRA to draw upon when undertaking future evaluations. The case studies contained in the report are wholly illustrative and in some cases based on synthetic data to help illustrate the analysis meaning that they should not be read as providing an assessment of the impacts of the remedies described.
- 1.4 There are two variants of the framework: a tabular format and a decision tree format. Despite being aesthetically different, both variants of the framework lead to consistent findings with respect to the recommendations for suitable approaches. For the sake of brevity, only the decision tree framework is illustrated and discussed in the text below, but the tabular framework is outlined in the main report.

## **Decision tree framework**

- 1.5 The decision tree expresses method selection as flow of thought; the method of choice is a terminal node that follows naturally from conditions that have been satisfied in previous nodes. It begins by considering fundamental features of the data and the prevailing context, and thereafter leads the user through more nuanced details such that the remaining set of viable models is more tailored to the situation at hand. The conclusions of the decision tree and those in Table 1 and Table 2 regarding model suitability in a given context are consistent as they are governed by the same principles.
- 1.6 Table 1, Table 2, and Figure 1 are not intended to be read prescriptively. It is not being proposed that a particular methodology be used with certainty and exclusivity, but rather, it is conditional on the necessary circumstances warranting it. It is to be read as general guidance for the contexts and constraints that make some methodologies more suitable for a given problem, and which methodologies may struggle with the data or context.

Has the remedy Quasi-experimental of interest Start changed Ex-post Non - quasi-experimental imposed duties? counterfactual modelling is Ex-post Yes Is data observed both not possible No No counterfactual before and after modelling is remedy initiation? not possible Counterfactual Yes modelling of a similar remedy Counterfactual applied elsewhere modelling of a Are there some units Is the data Yes similar remedy (commodities/firms) No Yes Are all affected observed for applied elsewhere affected by the several time simultaneously? remedy and others **Trade simulation** periods? that are not affected? modelling No Trade simulation modelling Is the effect of the No Diff-in-diff Yes remedy small relative Yes methodology to the data's volatility Unitmay be (e.g. due to structural level appropriate Bayesian time breaks, noise, etc.)? analysis series may be appropriate Caveats: No Aggregate Parallel trends Before-after analysis · Non-anticipation analysis: Event study may be No spillovers • Few Caveats: feasible restrictions Cross-country gravity Sufficient data Low model/cross-sector Less Synthetic control robustness analysis: interpretable method may be · Data availability Caveats: appropriate Low robustness Sufficient data Interrupted time Low robustness series analysis: Caveats: Granular data · Similar pre-· Few restrictions remedy outcomes Low robustness · Sufficient data No spillovers

Figure 1: Decision tree for methodology selection

Source: GT Analysis

- 1.7 The high-level take-away from the results is that the framework can be relied upon to choose causal approaches, from a suite of feasible methodologies, that are tailored to the nuances of the context. However, the framework should not be read prescriptively; the framework and its proposed methodologies should not be followed blindly and judgement is necessary. Further, the framework should not be interpreted as proposing a particular method be used with certainty and exclusivity. The framework is intended to serve as general guidance for the contexts and constraints that make some methodologies more suitable and others less so. In practice, it would be ideal to apply all of them and use the findings of each method to triangulate the most credible answer. This can be done by implementing multiple methodologies, where feasible, and then:
  - 1. Assessing the degree of similarity in their findings;
  - 2. Identifying potential factors that drive differences in results, should divergences arise;
  - 3. Evaluating the importance of each finding based on the merits and limitations of each approach in light of the context;
  - 4. Being transparent with any assumptions that have been made due to limited evidence:
  - 5. Being transparent with all shortcomings in the methodologies considered and caveat results; accordingly, and
  - 6. Coming to a reasonable and well-balanced conclusion.
- 1.8 The fourth point is particularly important when the TRA is led by the framework to use approaches that are less capable of producing causal estimates but are the most suitable due to time and complexity constraints. The framework has been endowed with the flexibility of proposing approaches that the TRA can use to deliver expedient results when there is a shortage of time, data or expertise. However, these approaches tend to be less able to produce causal findings when compared to more robust yet resource intensive alternatives. The TRA may wish to ensure that all results are caveated appropriately when endeavouring to use the framework to deliver results at pace. Furthermore, in cases where the TRA relies of purely theoretical approaches (e.g. Case Study 2) they should view the findings of these approaches as illustrative rather than precise and causal.
- 1.9 The other recommendations include ways in which the TRA can maximise and expand on their existing data to enable more robust causal analysis feasible in future. These recommendations include:
  - Collecting more granular data for longer time periods;
  - Encouraging more firms to participate in trade remedy investigations to capture detailed firm-level data; and
  - Maximising available data by incorporating data from previous investigations into a singular database that can be used in future investigations.



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