

Expediting Trade

Impact Evaluation of Serbia's In-House Clearance Program

Reforms of national customs agencies are supported by increasing amounts of development aid. However, there have been very few formal evaluations of their effectiveness. This note summarizes research about the impact of the In-House Clearance Program on participating firms in Serbia. The IHC program allows qualifying firms to clear customs from within their own warehouses rather than at the customs offices. Firms adopting the program experienced improved predictability of clearance times; however, the reform did not have an impact on median clearance times, inspection rates, or import values.

Customs reform is an area of substantial policy interest, but also one that has undergone few rigorous impact evaluations.¹ The research summarized in this note focuses on a particular customs reform, namely, the introduction of an In-House Clearance (IHC) program by the customs agency of Serbia.² The IHC program allows qualifying firms to clear customs from within their own warehouses rather than at the government customs offices. IHC programs are recommended under the Trade Facilitation Agreement (TFA) of the World Trade Organization (WTO). IHC is one of the components that can be included in Authorized Economic Operator programs, which have recently been implemented by more than 60 countries. However, IHC programs have not yet been formally evaluated.³ This evaluation offers a window into the likely consequences of these reforms for firms that adopt the program.

Although the program also exists for export shipments, this note focuses on import shipments because they are most likely to be substantively impacted by the program.

Reduced clearance times and increased predictability

The main incentive for importing firms to adopt the IHC program is to reduce clearance times and associated uncertainties. When customs clearance is conducted at firms' warehouses, IHC firms are not subject to congestion and other sources of delay — such as constraints on the working hours of customs personnel. In most cases, the shipment is cleared electronically and remotely within a half hour. Only occasionally do customs officers visit the firm's warehouse to conduct inspections of paper documents or the shipment. In principle, automated clearance

Russell Hillberry, Ana Margarida Fernandes, Claudia Berg and Alejandra Mendoza Alcántara

Russell Hillberry is an Associate Professor in the Department of Agricultural Economics at Purdue University. Ana Margarida Fernandes (afernandes@worldbank.org) is a Senior Economist in the Trade and International Integration Unit of the Development Research Group at the World Bank. Claudia Berg (cberg@imf.org) is an Economist in the Commodities Unit of the Research Department at the International Monetary Fund. Alejandra Mendoza Alcántara (amendoza1@worldbank.org) is an Impact Evaluation Specialist in the Trade and Competitiveness Global Practice of the World Bank Group.

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means that participating firms should experience shorter and less variable clearance times for the vast majority of their shipments.

The study also examines the effect of the program on inspection rates, which could also affect clearance times and the volume of trade. Based on evidence from the literature showing that both average time and uncertainty act as implicit trade costs, one hypothesis is that the IHC program should increase imports through a reduction in trade costs as a result of automated clearance and lower inspection rates.⁴

Even pre-program, participating firms import more

The Serbian customs agency implemented an IHC program in July 2011. The program is open to any firm that meets the qualification criteria. Qualified firms must be at exceptionally low risk for non-compliance with import regulations; they must post a bank guarantee with the customs agency, establish a suitable control system, and meet several other criteria. From 2011 to 2013, a total of 34 importing firms used the program, although only 21 firms participated in the program with sufficient duration and regularity to be included in this evaluation.

A comparison of import statistics for IHC-participating and non-participating firms prior to 2011 reveals important differences.⁵ The mean annual import value for IHC firms in 2010 was 27 times higher than for non-IHC firms. Compared to other Serbian firms, IHC firms are especially large importers of wood and paper products, as well as metals. Even prior to the introduction of the program, the firms that would later adopt the IHC program had median monthly clearance times of approximately 34 minutes less than that of non-IHC firms. IHC firms also had far fewer long-duration clearance times prior to the program. For example, 90 percent of IHC firm shipments in 2010 cleared in less than 3.6 hours. The corresponding figure for non-IHC firms was 70.4 hours, or about 2.5 days. IHC firms were also substantially less likely to be inspected than other firms, even prior to adopting the program. One reason for the lower inspection rate could be that the customs agency found those firms to be more compliant with import regulations than other firms — a characteristic that would

also make them good candidates for the IHC program.

Evaluating the program

To control for the unique characteristics of IHC firms, the study employs the “synthetic control method” to evaluate outcomes such as clearance times, inspection rates, and import volumes at the firm level. The outcomes of IHC firms are compared against the outcomes of “synthetic” firms constructed from the data on non-IHC firms. The data are weighted appropriately so that the actual and the synthetic firms match along various relevant dimensions. Data from the synthetic firms offer the most plausible outcome of what would have happened to IHC firms had they not adopted the program. The study used recently developed methods for pooling information across the 21 IHC firms to draw statistical inferences about the overall program impact.⁶ The synthetic control method is especially well suited to evaluations of treatments applied to a small number of units. Pooling across treated units improves statistical power, which is important in settings where the underlying data are very volatile and the treatment effect is weak.

Evaluation results

The impact evaluation finds that IHC-participating firms experienced improved predictability of clearance times for their import shipments as measured by the 75th and 90th percentiles of the firm’s monthly distribution of clearance times. Prior to adopting the program, IHC firms had 75 percent of their shipments cleared in less than 103 minutes. The study estimates that firms that adopted the program reduced that statistic by approximately 42 minutes, or a 41-percent reduction.⁷ The evidence for improved predictability was strong across several robustness checks. Further tests established that the estimated impacts on predictability were common across participating firms.

The study also assessed the effects of the program on inspection rates, median clearance times, and firm import values. For these variables, the evaluation procedure found no statistically significant effect of the program. As noted, the firms that adopted the program already had low

inspection rates and median clearance times *before* adopting the program. This may be why the program did not appear to provide the firm with any additional benefits beyond the reduced uncertainty.

Unmeasured systemic benefits

The primary rationale for a customs agency to implement an IHC program is to improve the operation of the overall customs clearance system by reducing congestion at customs clearance locations. Allowing low-risk shipments imported by qualified IHC firms to be cleared remotely reduces the number of transactions that must be handled at the official clearance facility. This systemic benefit is difficult to measure because there is no credible control group for the entire customs clearance system. Indeed, sizable systemic benefits would make it much more difficult to evaluate the effects of the IHC program on participating firms.⁸ As more firms adopt the IHC program, systemic benefits of the program become more likely. Systemic benefits are another reason to recommend the program, even though these benefits are extremely difficult to measure precisely.

Conclusion

In December 2013, WTO countries concluded TFA negotiations, which then set the stage for countries to adopt best practices for expediting the movement of goods, coordination between customs and relevant authorities, and provisions for technical assistance. From 2010 to 2014, donors disbursed over US\$1.3 billion in official development assistance for trade facilitation efforts, and substantial additional commitments have been made since then.⁹ In 2014, donors launched the Trade Facilitation Support Program to assist the nearly 50 countries that have committed to implementing reforms to align with the TFA.

Although trade facilitation is becoming a more relevant area of development policy, few rigorous studies have assessed the impact of trade facilitation reforms. Three key issues can be attributed to this knowledge gap, including: (i) the difficulty of applying experimental impact evaluation methods, such as randomized control trials; (ii) uncertainties during project implementation;

and, (iii) the fact that potential impacts are very likely to be reflected only in the long term.

This research contributes to furthering the knowledge about the impact of trade facilitation reforms. It proposes a feasible and rigorous method to evaluate customs reforms, taking advantage of the rich administrative data that customs offices routinely collect. This method will allow for evaluating specific reforms in different settings, thereby contributing to closing this important knowledge gap.

Notes

1. During the five years from 2010 to 2014, US\$1.3 billion of official development assistance was provided to support a somewhat larger set of trade facilitation reforms (Authors' calculations, Organisation for Economic Co-operation and Development (OECD), Query Wizard for International Development Statistics (QWIDS) database: <https://stats.oecd.org/qwids/>). Formal impact evaluations of trade facilitation reforms are limited to some studies of reforms in Latin American countries, notably by Carballo, Schaur, Graziano, and Volpe (2016a, 2016b); Carballo, Shaur, and Volpe (2016a, 2016b); as well as one by Fernandes and others (2015) concerning Albania.
2. In-house clearance may also be designated as an "off-site inspection" procedure because the inspection, if it occurs, takes place in the warehouse and not at the site of the customs office.
3. World Customs Organization (2016) provides details about the Authorized Economic Operator programs around the world. The only preliminary evaluation available of an authorized economic operator program is that by Carballo, Schaur, Graziano, and Volpe (2016b) for Mexico. It focuses on exports and offers preferential treatment to authorized firms, but does not appear to have included in-house clearance. By contrast, this study deals specifically with in-house clearance, and it focuses on imports to Serbia.
4. See especially Fernandes and others (2015), Hummels and Schaur (2013), and Volpe and others (2015) regarding the effect of time reductions on trade. Clark and others (2013) demonstrate that uncertainty over shipment arrival times reduces trade volumes. Concerning analyses of risk management programs, both Fernandes and others (2015) and Volpe and others (2015) find that time reductions due to reduced

inspections increase trade within the same year as the reduced inspections occurred.

5. This information was drawn from various tables within the study itself. For further details, see Fernandes and others (2016).

6. The synthetic control method was introduced by Abadie and Gardeazabal (2003) and Abadie and others (2010). Pooling methods employed in the study were developed by Dube and Zipperer (2015).

7. Numerous other factors could affect the 75th percentile statistic. The 42-minute time reduction is the causal effect of the IHC program. The study also investigated an additional measure of uncertainty, namely, clearance times at the 90th percentile. It found somewhat weaker effects attributable to the program.

8. The study investigated a narrow window around the introduction of the program in order to reduce the risks that the program effects would be measured incorrectly as a result of the systemic benefits.

9. For more information regarding trade facilitation efforts and aid, see the joint report by the WTO and OECD, *Aid for Trade at a Glance 2015*, available at: https://www.wto.org/english/res_e/booksp_e/aid4trade15_chap4_e.pdf.

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Telephone:
001 202 473 6649
Email:
jdato@worldbank.org

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