

Risk Management in Customs

Benefits of Customs Reform: The Evidence from Albania

Research into the economic impact of a customs reform in Albania shows the promise of the broader trade facilitation reform efforts that are gaining momentum in developing countries worldwide. The research summarized in this note finds that significantly reduced rates of physical inspection of import shipments in Albania reduced the length and variability of customs clearance times and increased import flows. Moreover, the reforms induced changes in the composition of trade and favored imports from preferential trading partners in the European Union.

Evaluating trade facilitation reform

Developed country governments and international aid agencies have devoted substantial resources to supporting trade facilitation reform in developing countries.¹ From 2006 to 2011, for example, governments and donors disbursed over \$1.2 billion in official development assistance to support trade facilitation efforts (WTO 2013). Substantial additional commitments have been made since 2013 when the World Trade Organization's Trade Facilitation Agreement was signed in Bali. Despite these sizable expenditures, there is very little hard evidence about the impacts of specific trade facilitation reforms.

The World Bank Group has begun to conduct evaluations of trade facilitation reforms. The Investment Climate Impact Program and the Trade and International Integration Unit of the Development Research Group (both World Bank Group organizations) are evaluating risk

management reforms in customs and other technical agencies in the Western Balkans in conjunction with the South East Europe Trade Logistics Project. This note summarizes the findings of the two-year study, "Trade Effects of Customs Reform, Evidence from Albania," which combined field research with the use of administrative customs data (Fernandes, Hillberry, and Alcántara 2015).

In recent years, the Albanian customs authority has employed risk management systems to dramatically reduce the number of physical inspections it conducts. Risk management combines information technology with statistical targeting procedures to sharply reduce the frequency with which goods are physically inspected. Reduced numbers of inspections lower the time that a typical shipment spends under the control of border agencies. The research in the World Bank study is the first to evaluate the

Ana M. Fernandes,
Russell Hillberry, and
Alejandra Mendoza
Alcántara

This note is the result of collaboration between the World Bank Group's Trade and Competitiveness Global Practice and the World Bank Research Group. Ana M. Fernandes and Russell Hillberry are senior economists, and Alejandra Mendoza Alcántara is a consultant, all with the World Bank Group.

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trade impacts of sizable changes in inspection probabilities by a customs agency (Fernandes, Hillberry, and Alcántara 2015). It thus provides a case study for understanding the link between reduced inspections and increased trade. The Albanian experience can provide insights as to how the broader Trade Facilitation Agreement reform efforts may fare.

Fewer inspections reduce clearance times

Albania is pursuing membership in the European Union (EU) and has undertaken substantial reforms in many areas of policy to satisfy important preconditions for entry. Because the EU allows free movement of goods among member states, one of the preconditions for Albanian membership is substantial improvement in Albania's ability to manage the flow of imported goods. A central component of the reform efforts in pursuit of this goal has been the adoption of modern risk management systems in customs. With EU technical and financial assistance and oversight,² Albania has rapidly improved its risk management capabilities, leading to a sharp decline in the number of inspections conducted by Albanian customs.

From 2007 to 2012, the period covered by the World Bank Group study, the share of Albania's import consignments that were physically inspected fell sharply, from 43 percent to 12 percent. The average time spent in customs also declined, and the value of imports increased. The operational methods employed in risk management—especially the practice of conducting many physical inspections at random—offer an opportunity to establish causal links among changes in inspection regimes, in customs clearance time, and in import outcomes.

Drawing meaning from the data

The objective of the study was to evaluate the impacts of the substantial reduction in physical inspections by the Albanian customs authorities on time spent in customs and on import activity. The Albanian customs agency provided administrative data tracking individual import transactions for the period of the study. This highly disaggregated data included a numeric identifier for each importing firm, a “harmonized system” eight-digit product code, the exporting

country, the inspection type (a simple check of documents or a physical inspection), the date of the submission of administrative documents, the date of the release of goods from customs, import value and weight, and penalties paid for customs infractions. The study used the data to investigate year-to-year changes in the probability of physical inspection, time spent in customs, and the value and composition of imports.

The methodology used for the analysis was developed by economists Christian Volpe Martincus and Alejandro Graziano of the Inter-American Development Bank, and Jerónimo Carballo of the University of Maryland and described in a forthcoming article (Martincus, Carballo, and Graziano 2015). The methodology allows the effects of reduced inspections on customs clearance time to be isolated from other effects on clearance time and trade patterns, such as shipment characteristics used by the risk management system, demand shocks, or changes in tariffs.³ This isolation allowed the analysis to estimate causal impacts of reduced clearance times on import levels and on the composition of imports.

Reduced delays mean increased trade

The key message is that Albania customs reform had statistically significant short-term positive effects on imports. The inferred cost savings to the private sector were modest but real.

- The median number of days a shipment was expected to spend in Albanian customs fell by 7 percent when the probability it would be inspected dropped below 50 percent. This was the case for about 21 percent of the shipments in the sample during the period 2007 to 2012.
- A 7-percent reduction in median days in customs generated a 7-percent increase in the value of annual imports by a particular firm of a particular product from a particular source country. This estimate of the causal relationship between time in customs and imports gives a sense of the order of magnitude that can be attributed to this type of reform even though the ratio would not always be one-to-one as it was here.
- The reduction of inspections had an impact on import value that was roughly equivalent to an across-the-board tariff reduction of approx-

imately 0.36 percentage points, the study estimates. The implied cost savings, however, are much larger than for a tariff cut of that size. The estimate suggests that the reforms saved the private sector approximately \$12 million in 2012 in reduced trade costs.

- The decline in customs clearance time related to improved inspections practices led to stronger growth in imports from high-income countries and from preferential trading partners, especially EU members, primarily because imports from the EU were more sensitive to time savings than imports from other high-income countries.⁴
- Separate results for 2007–09 and 2010–12 indicate that the sensitivity of customs clearance time to inspections falls over time, while sensitivity of imports to customs clearance time rises. The first finding suggests that as reforms proceeded, the time required to process goods subject to random inspection fell. The second finding *may* indicate that firms rearranged their supply chains in a manner that made their imports more time-sensitive, as the firms came to understand that the probability of a delay in customs had fallen substantially.⁵
- The reforms increased the quantity of imports and average unit prices, as well as the number of shipments per year. The increase in average unit prices likely reflects increases in the quality of goods imported into Albania.
- There is evidence of reform-induced growth along extensive margins of trade, defined as the number of importing firms (per product-country pair) and the number of source countries (per firm-product pair).
- Lower inspection rates reduced the *variability* of time spent in customs (not only the expected *amount* of time spent in customs), which in turn led to significant import growth. Declines in inspections apparently reduced uncertainty about the time spent in customs, and this had a beneficial impact on imports.
- There is little evidence to suggest that the reforms had differential impacts on imports of time-sensitive goods or on differently sized firms.

Conclusion

This study is the first to evaluate the trade impacts of sizable changes in inspection probabilities by

a customs agency. Evidence on the effects of risk management in border inspections is valuable because many developing countries are planning to implement risk management reforms as one of their commitments under the 2013 Bali Agreement. The study's estimate that the increase in imports due to the reform is roughly equivalent to the effect of a 0.36 percentage-point tariff cut provides a useful way to compare risk management reforms and other trade policy changes.

The Bank Group study estimated that the reform saved the Albanian private sector approximately \$12 million in 2012, or about \$4.33 per Albanian citizen. Annual savings of roughly that magnitude should be expected going forward if risk management continues to operate smoothly. These estimates represent the benefits of the reform. A full cost-benefit analysis would weigh these against the costs of implementation. In many developing countries—including Albania—the budgetary costs of reform are partially offset by international aid flows.

The Albanian customs agency was able to sharply reduce its inspection rate in a short period of time. While several factors likely contributed to this success, low (and falling) Albanian tariffs may have been a particularly important factor. Low tariffs reduce the incentive for tariff evasion and the harm to the government of successful evasion. One lesson for other governments considering this reform is that risk management in customs will likely be more successful when preceded by tariff reductions. A study of similar risk management reforms in a high-tariff environment would be useful to further assess the importance of low tariffs for success.

Finally, in Albania and elsewhere, other agencies also inspect imports, including agencies that certify compliance with food safety, animal health, and environmental protection standards. Relative to the customs agency, these technical agencies oversee trade in fewer products, but they have very different enforcement objectives and inspect at much higher rates. In many developing countries, the adoption of risk management systems by these and other technical agencies that operate at national borders has not yet been fully implemented. While the estimates in the study offer some insights into the likely trade effects of risk management reforms in technical

agencies, the reforms to Albanian customs that drove the variation used in the study's analysis are similar in nature only to that which would be required of a country that was newly integrating risk management into its customs agency—not its technical agencies. Therefore the context is sufficiently different to warrant additional studies that focus specifically on the effects of reform in technical agencies.

Notes

1. Trade facilitation refers broadly to the infrastructure, institutions, regulations, policies, procedures, and services that allow firms to conduct international trade transactions in either goods or services on time and at low cost.
2. Other international organizations, including the World Bank Group, also provided technical and financial support for the reforms.
3. The specific econometric methodology used is a two-stage least squares instrumental variables estimation model that includes fixed effects for importing firms, products, and countries to control for nonrandom sources of variation in inspection activity and for other factors that might have affected Albanian imports during the reform episode.
4. It does not appear that the reduction in inspection probabilities or the amount of time spent in customs was larger for imports from the EU than imports from other high-income countries. Rather, it seems that

imports from the EU responded more to a given reduction in clearance times than imports from other high-income countries (that is, they had a higher elasticity to changes in inspection time).

5. For example, the adoption of just-in-time (JIT) inventory methods would likely make imports more sensitive to time delays. It is likely that such methods are not feasible when inspection levels are high, but firms may have introduced them as inspection levels fell. Adoption of JIT would be consistent with the estimates in the Bank Group study, but the study did not develop any direct evidence on the adoption of particular methods of supply chain management.

References

For a full list of references and further reading, see Fernandes, Hillberry, and Alcántara 2015.

- Fernandes, Ana, Russell Hillberry, and Alejandra Mendoza Alcántara. 2015. "Trade Effects of Customs Reform: Evidence from Albania." Policy Research Working Paper 7210, World Bank, Washington, DC.
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To order additional copies contact Jenny Datoo, managing editor, Room F 5P-504, The World Bank, 1818 H Street, NW, Washington, DC 20433.

Telephone:

001 202 473 6649

Email:

jdatoo@worldbank.org

Produced by Carol Siegel

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