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The International Links of Peruvian Illegal Timber: A Trade Discrepancy Analysis

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Key takeaways

» International trade and the infrastructure that supports it (regulations, institutions, practices) are important drivers and enablers of the illegal timber trade in Peru.

» This Trade Discrepancy Analysis (TDA) identifies significant and consistent discrepancies in the international trade of wood and wood products coming out of Peru.

» Data show consistently undervalued timber exports to Mexico and to the United States, which could be a sign of under-invoicing to avoid taxes or profit in informal currency exchange markets. In contrast, data show consistently overvalued timber exports to China and the Dominican Republic, which could be a means to transfer illicit funds into the country, or to abuse export incentives.

» TDA does not prove the existence of illegal activities, and discrepancies can be the result of simple reporting errors. But consistent value gaps represent red flags for potential illicit financial flows. This example demonstrates how practitioners and government officials can use TDA methodologies to identify and tackle illicit financial flows.

» The data show an impressive difference between the amounts of timber imported by the Dominican Republic compared to its potential for internal consumption. The role played by the country in the international trade in timber is yet to be determined.

» Ambiguity in the legal definition for each commodity category and the distinctive regulations that apply to each, act as incentives to mislabel certain products in order to avoid controls.

International Trade, Deforestation, and Illegal Timber in Peru

Peruvian forests play a primary role in global sustainability. They represent over 12 percent of the Amazon Basin, which holds the largest rainforest in the world, is the source of 20 percent of the global water supply, and houses at least 10 percent of the planet's known biodiversity. The Amazon is also one of the world's biggest carbon sinks; some 90-140 billion metric tons of carbon are stored in its rainforests (Abdenur et al. 2020).

In spite of its importance, effective forest governance in Peru has been historically elusive, as evidenced by persistent high rates of deforestation. On average, a total of 77,300 hectares per year were lost between 2001 and 2010, and this figure increased to 138,900 hectares between 2011 and 2018.

One key driver of this deforestation, among others,[1] is increasing global demand for timber products (Pacheco et al. 2021). Global production and trade of major wood products have surged to their highest levels since the Food and Agriculture Organization began recording forest statistics in 1947 (FAO 2018). It is expected that demand for timber products will quadruple by 2050 (World Bank 2016).

Currently, illegal logging satisfies much of this global demand. There is wide consensus that most of the timber produced and exported in Peru has an illegal origin (Urrunaga 2019), and the causes and participants of illegal logging have been widely studied. Internally, a lack of state capacity (Buendia and Dumet 2019), captured regulatory institutions (Crabtree and Durand 2017; Durand 2016), and criminal networks (Navarro 2019) all contribute to the phenomenon. Externally, insufficiently incentivized or informed sustainable consumption (Pokorny et al. 2016), willing pass-through markets (Kishor and Lescuyer 2012), and enabling financial and legal structures (TraCCC 2020; Zain 2020) factor in.

Key definitions

Trade Discrepancy: Trade discrepancy represents the difference between the trade value recorded by the importing country and that recorded by the exporting country. Trade discrepancies can be the result of simple reporting errors, or data aggregation methods. But they can also evince trade mis-invoicing, which is common practice in other illegal activities and closely linked to corruption (TraCCC 2020)

Trade Mis-invoicing: The illicit act through which any of the parties involved in an international transaction manipulate the value (or volume, or quantity, or quality) of a shipment in their customs declarations. Cases in which the value is fraudulently increased are referred to as over-invoicing, and artificially decreasing the value is known as under-invoicing.

Harmonized System (HS) Codes: The Harmonized System is a standardized numerical method of classifying traded products managed by the World Customs Organization (WCO). Customs authorities around the world use HS codes to identify products when assessing duties and taxes and for gathering and reporting statistics. The United Nations uses these data to publish the International Trade Statistics Database (UN COMTRADE).

Corruption enables and perpetuates all of these (Global Witness 2019; Environmental Investigative Agency 2018).

This topic brief adds to the analysis with a Trade Discrepancy Analysis (TDA). The paper examined commerce data between Peru and it's most important trading partners, and identified specific issues that could potentially be related to illegal acts such as tax evasion, fraud, or money laundering. The analysis suggests that the ease to perform all these acts though trade mis-invoicing, in a context of increasing global demand for timber products, are factors that drive and facilitate illicit timber in Peru.

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[1] Other causes of deforestation include clearing the land for illegal crops, illegal mining, and agro-industrial plantations.

What is a TDA and how is it done?

A trade discrepancy appears when an importing country records a different value for a trade than the exporting country. Trade discrepancies can evince trade mis-invoicing, used in subsidy abuse (Schuster, Carlotta, and Davis 2020), tax avoidance (Ferrantino, Liu, and Wang 2012), capital controls evasion, and money laundering (Cassara 2016). Given the illegal nature of these activities, they are often enabled by corruption. However, criminal acts do not always explain trade discrepancies. These differences can be the result of simple reporting errors or data aggregation methods. Regardless, upon identification of a discrepancy, governmental investigation and response is expected, either to prosecute the crimes that may be involved, ensure accountability for any corruption identified, or to perform the necessary adjustments to reporting or logistical processes.

TDA is a useful and accessible methodology to analyze discrepancies and identify potential illicit financial flows in the trade of any commodity. This analysis used data accessed through the United Nations International Trade Statistics Database (UN COMTRADE). This dataset consolidates the annual reports that over 170 countries provide on their yearly trade, and details the commodities by categories (HS Codes) and partner countries.

The study analyzed all HS codes for wood products (HS44 to HS442199) exported from Peru between the years of 2009 and 2018, identifying four timber products that represent more that 95 percent of all wood exports from Peru yearly:

» Sawn wood (HS4407)
» Boards and planks (HS4409)
» Laminated wood (HS4412)
» Carpentry articles (HS4418)

The data showed that in the particular case of the bilateral trade with the USA, two other products (densified wood [HS4413] and wood marquetry [HS4420]) have a particular participation and were therefore also included in that particular analysis.

The exercise also identified the main trading partners by value as Mexico, China, the Dominican Republic, and the United States, where over 80 percent of all yearly wood exports were destined. Results were later validated through the execution of semi-structured interviews with highly respected experts on the Peruvian Timber sector.

What are the main findings?

General Trends in Peruvian Timber Exports, 2000-2018

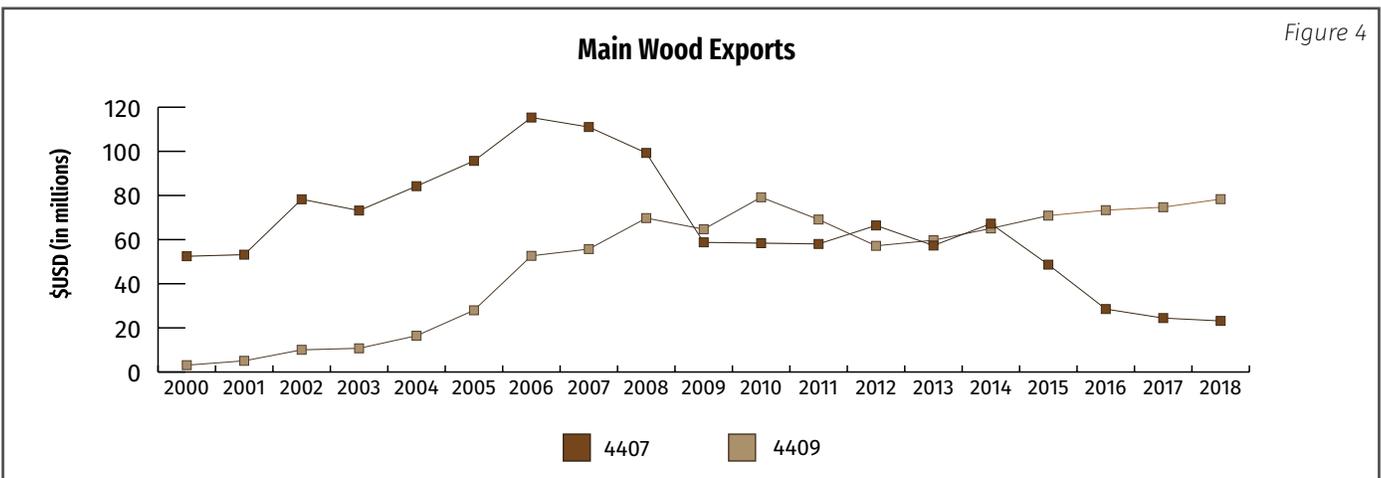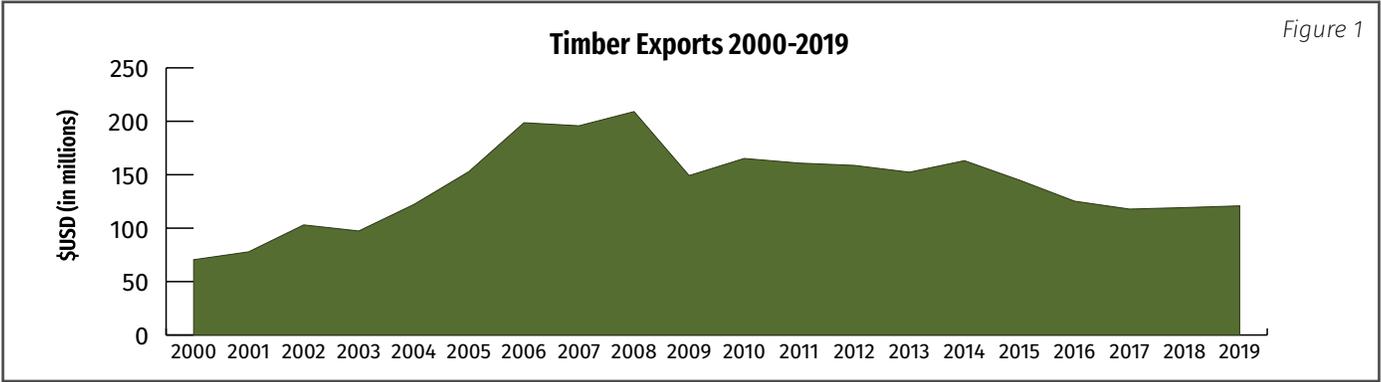The last two decades of Peruvian timber exports display three clear moments (Figure 1):

» a first booming era from 2000, when the country exported around USD 70 million, to 2008, when exports historically peaked at USD 210 million;

» a second moment of stable international production from 2009 to 2015, with mild trade fluctuations of between USD 150 million and USD 165 million; and

» a third period from 2016 to 2019, during which exports were lowest but stably averaged around USD 120 million.[2]

During this time, Peru's international timber trade was highly concentrated in destination. About 80 percent of all wood exports went to four countries (Figure 2): China, Mexico, the Dominican Republic, and the USA. The remaining 20 percent of exports were distributed among 70 other trading partners. This feature contrasts, for example, with Brazil, where 80 percent of timber exports was distributed among over 12 economies, and Guyana, which sent 80 percent of its timber exports to over 10 countries.

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[2] Although explaining these fluctuations in timber trade is beyond the scope and objectives of this paper, it is worth noting a couple of temporal coincidences. The first is that the end of the first period (2000-2008) concurs with the signing and entrance in effect of the Trade Promotion Agreement (TPA) and subsequent reforms. The end of the second period (2009-2015) coincides with the execution of Operación Amazonas, a joint law enforcement operation that included both Peruvian and American authorities and that resulted in the seizure of over 1,300 cubic meters of illegal timber in international ports, the largest confiscation recorded to date (OSINFOR 2016).

Timber Exports 2000-2019

Figure 1

$USD (in millions) — y-axis: 0, 50, 100, 150, 200, 250

x-axis: 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

Total Timber Exports vs. Main Partners

Figure 2

$USD (in millions) — y-axis: 0, 50, 100, 150, 200

x-axis: 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Legend: ■ Total Timber Exports ■ Sum of Main

Total Timber Exports vs. Sawn & Boards

Figure 3

$USD (in millions) — y-axis: 0, 50, 100, 150, 200

x-axis: 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Legend: ■ Total Timber Exports ■ 4407 & 4409

Main Wood Exports

Figure 4

$USD (in millions) — y-axis: 0, 20, 40, 60, 80, 100, 120

x-axis: 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Legend: ■ 4407 ■ 4409

As noted above, four categories of timber exports make up over 95 percent of the total timber that Peru exports each year. Within this group, two categories, sawn wood and boards, have historically concentrated close to 90 percent of all wood exports (Figure 3). The trends *between* those products, however, have drastically fluctuated over the last two decades. As shown in Figure 4, in 2000, the exports of sawn wood exceeded those of boards and planks by about 10 times, but almost 20 years later, the proportion switched. In 2019, exports of boards exceeded those of sawn wood almost fourfold.

This change in proportions should have corresponded to an important technological shift in the industry. Boards and planks have a slightly more complex transformation process than sawn wood and are, therefore, more valuable. However, none of the interviewees recognized a sufficient capital investment that could explain the increased production of boards and planks. On the contrary, interviewees pointed to the fact that existing regulations are more lenient for boards and planks than for sawn wood, and ambiguous in how the products are legally distinguished. This leniency and ambiguity in regulations creates the incentive and opportunity to fraudulently mark wood as boards and to pay or demand a bribe during inspection (Zain 2020), in order to avoid the stricter controls on the transportation of sawn wood.

Discrepancies between Peru and Mexico

There are consistent trade value discrepancies between these two countries (Figure 5) for sawn wood, boards and planks, and laminated wood (no consistent data was available for carpentry products). On average, during the 2009-2018 period, Peru reported exports to Mexico of on average USD 4.1 million less than what Mexico reported as imports from Peru. These differences ranged between USD 7.4 million in 2010 and USD 900 thousand in 2017. The largest discrepancies were in sawn or chipped wood (Figure 6) which averaged at 3.3 million per year, followed by laminated wood, with an average of USD 1.9 million a year.

Possible Red Flags

The consistent export of wood products at undervalued prices could indicate export under-invoicing. This practice is usually executed with the aim to conceal profits abroad (World Trade Organization 2018), in order to artificially lower profits and avoid taxes (Ferrantino, Liu, and Wang 2012), or to launder the proceeds of crime or corruption (Financial Action Task Force 2006; TraCCC 2020). This consistent underreporting can also be incentivized and explained by fluctuations in foreign exchange rates. An exporter can report a lower value for the wood than the price at which they sell it, and later sell the currency corresponding to the under-invoiced amount

Figure 5

Value Gap
Peru - Mexico

Legend: MEX Imp. — PER Exp.

Figure 6

Sawn Wood
Peru - Mexico
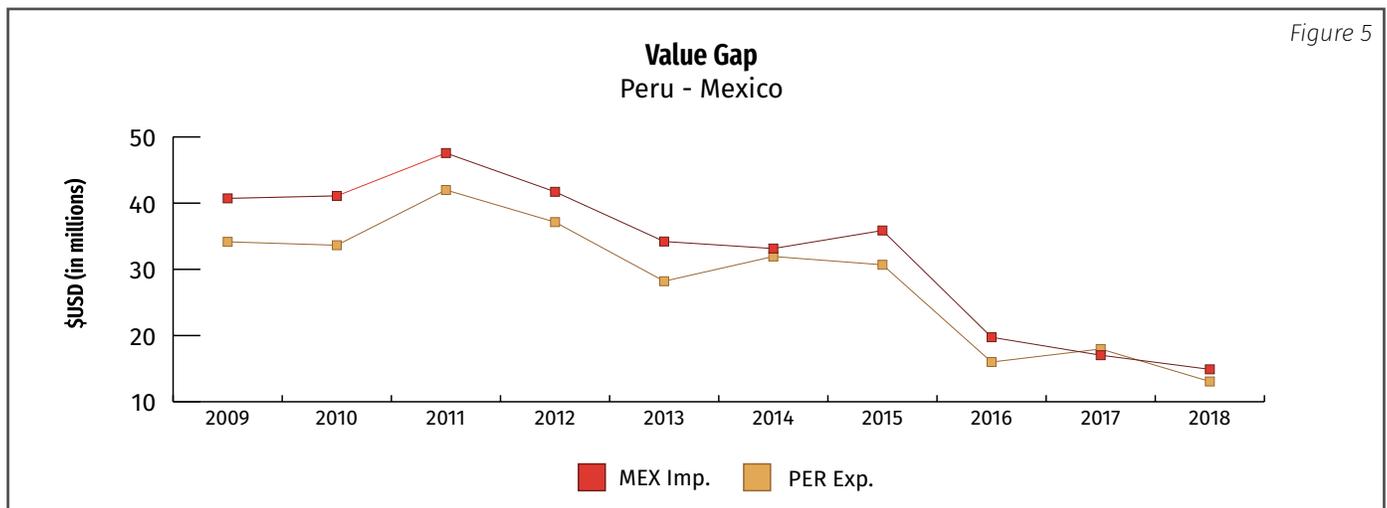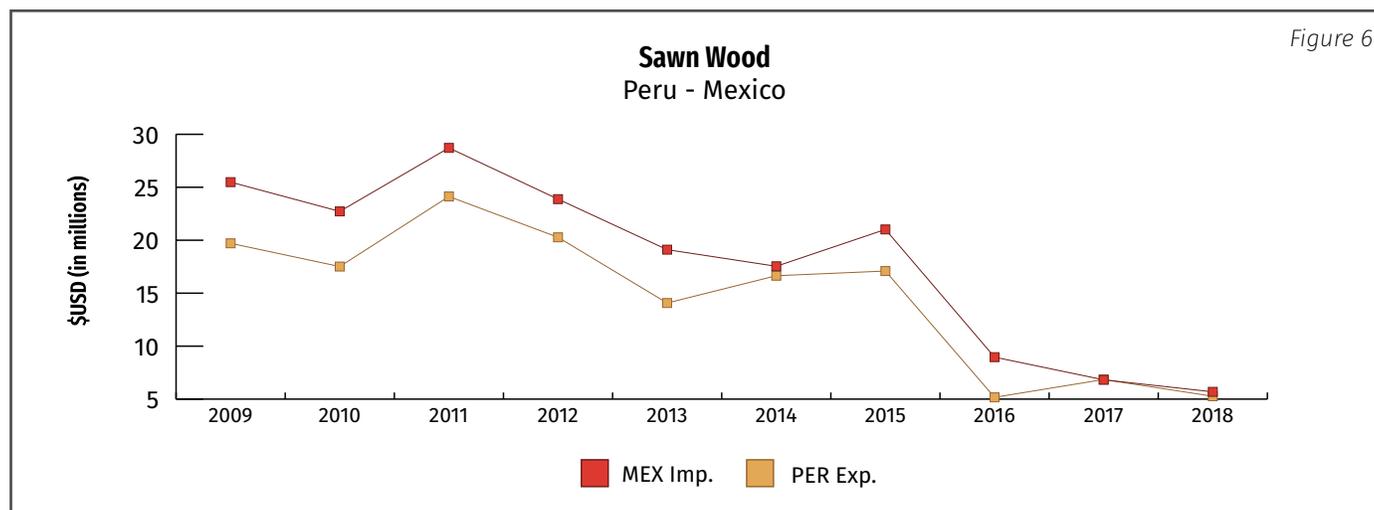
in informal markets (de Holanda Barbosa, Cysne, and Holanda 1992).

At the other side of the transaction, the consistent import of wood products at higher values is import over-invoicing. This practice can be used to shift money out of the purchasing country, to evade capital controls (Liu, Sheng, and Wang 2020), to reduce import duties or taxes, or to shift wealth into hard currency (Global Financial Integrity 2020). Like the exporters above, importers can also profit from foreign exchange rates by over-invoicing and selling the difference in informal markets. At the close of the operation, they will have managed to spend less local currency for the same import.

Discrepancies between Peru and the Dominican Republic

The analysis identified a stable trend of marginally higher reported export values from Peru that reported import values in the Dominican Republic (Figure 7). This is especially the case for sawn wood exports (which comprise most of the trade in wood between the two countries), where discrepancies reach the highest values and range from US$ 58 thousand in 2010 to US$2.6 million in 2015 (Figure 8). There is also a steady higher value of exports of boards and planks (Figure 9), although the range of values overall is much smaller. In this case, discrepancies range from US$37 thousand in 2014 to US$620 thousand in 2016.

Possible Red Flags

As mentioned, transactions that artificially show a higher value than what importers actually pay can be used to bring illicit funds into the country, or to illegitimately access export subsidies (Nitsch 2011; Cassara 2016). The values in this specific case are not considerably high, but given the stark differences, especially in particular years, this issue is a clear red flag.

Although the *value* discrepancies identified were not consistently large, the analysis identified a large discrepancy between the *quantity* of timber that the Dominican Republic imports and how much was exported or could feasibly be used to satisfy internal demand. Data analyzed showed no values recorded as re-exports, so, at least according to customs documents, the timber stayed in the Dominican Republic. This raises questions about the role the Dominican Republic plays in the global timber trade. The answers to those questions go beyond the scope and objectives of this document, but investigations have shown the Dominican Republic playing a role in important international timber laundering operations parting from the Amazon region (EIA 2018).

Discrepancies Between Peru and China

Similar inconsistencies were identified in reporting on timber trade between Peru and China. As seen in Figure 11, China reported more than double the
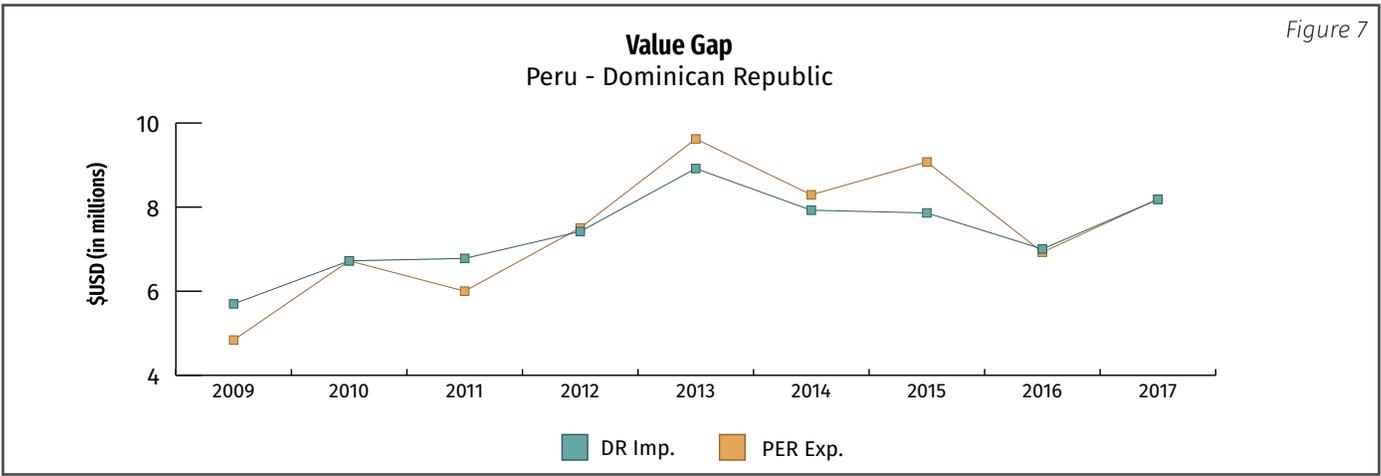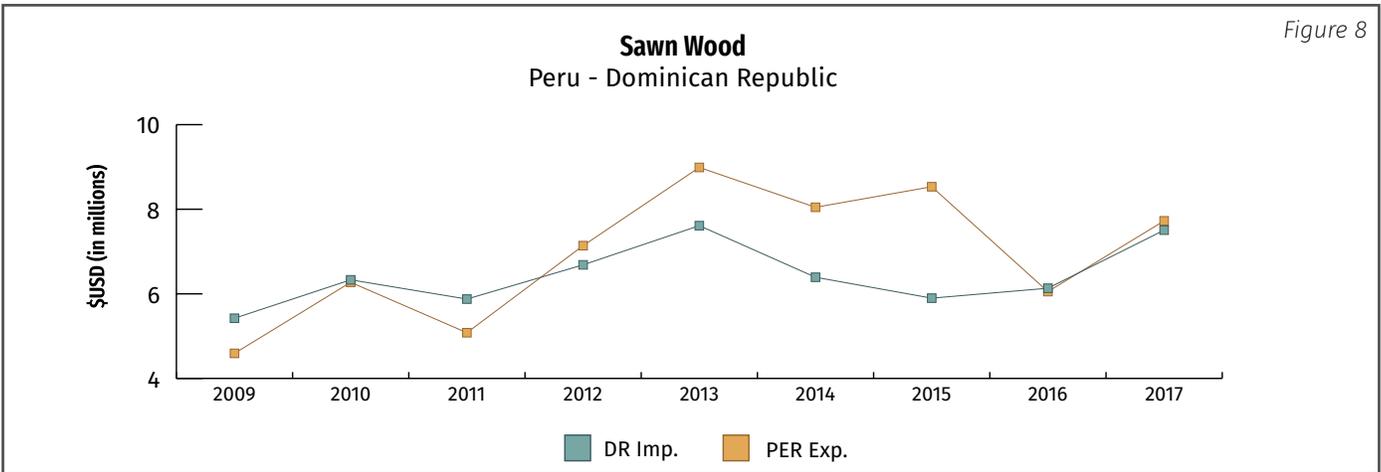
Value Gap
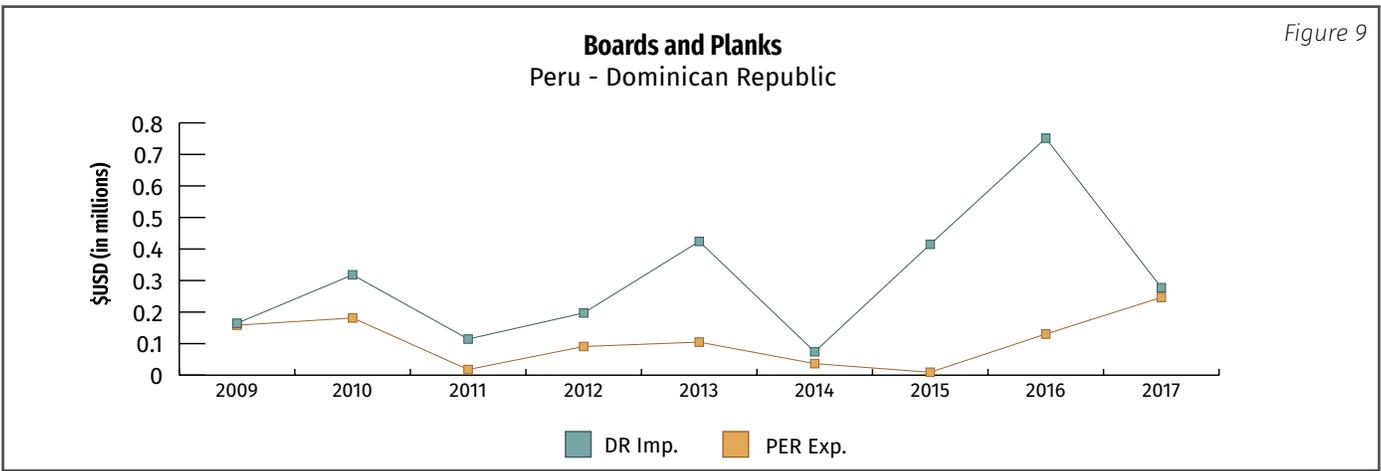### Peru - Dominican Republic

Figure 7

DR Imp. ■   PER Exp. ■

Sawn Wood
Peru - Dominican Republic

Figure 8

DR Imp. ■   PER Exp. ■

Boards and Planks
Peru - Dominican Republic

Figure 9

DR Imp. ■   PER Exp. ■

Dominican Republic Timber Trade 2001-2017

Figure 10

Imports ■   Exports ■

Sawn Wood
Peru - China

Figure 11

China Imports HS44 vs. HS4407
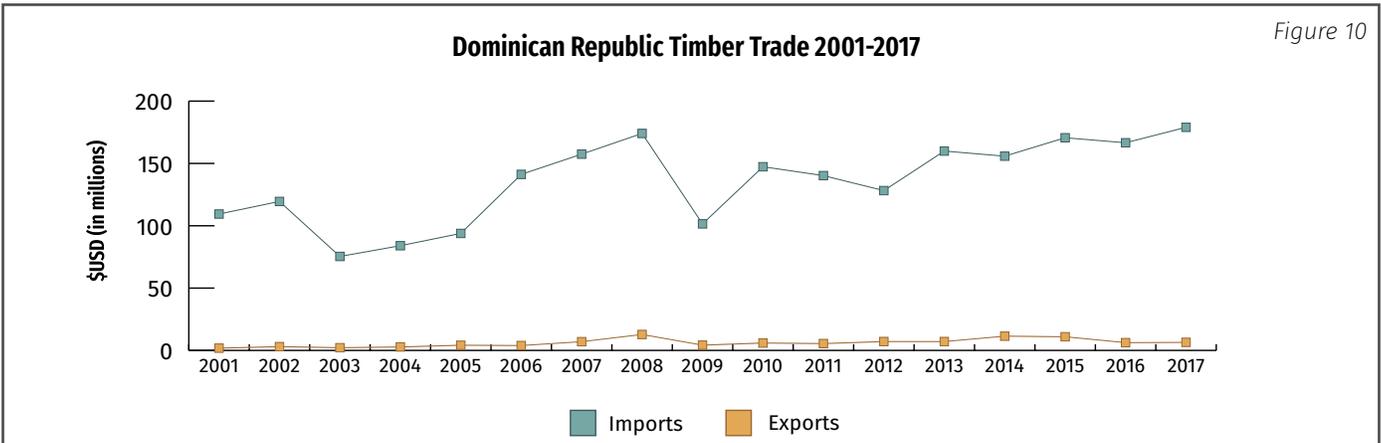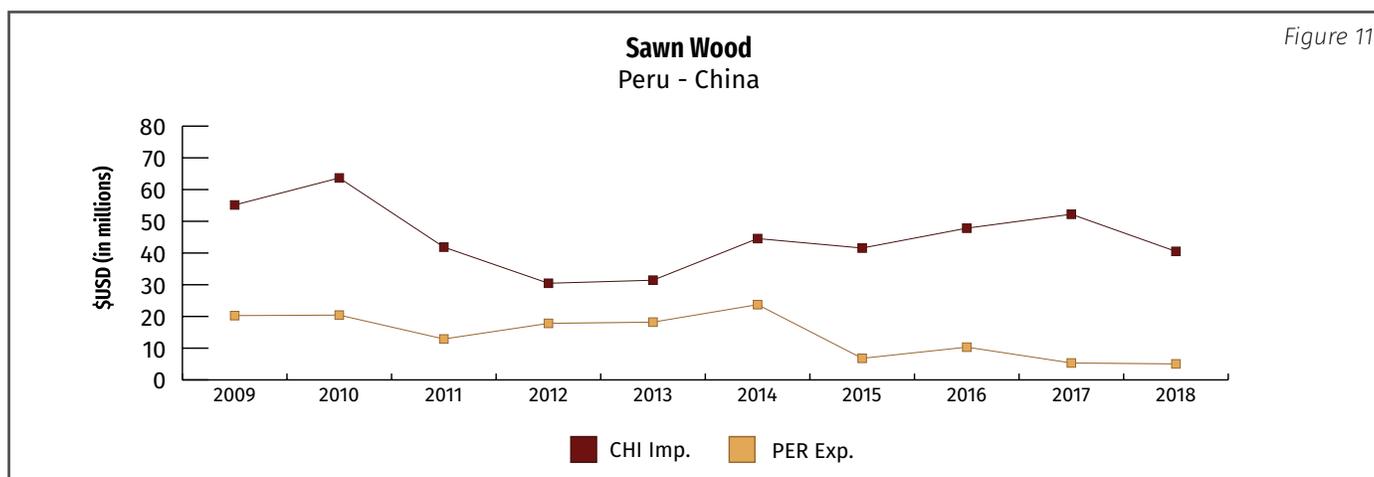
Figure 12
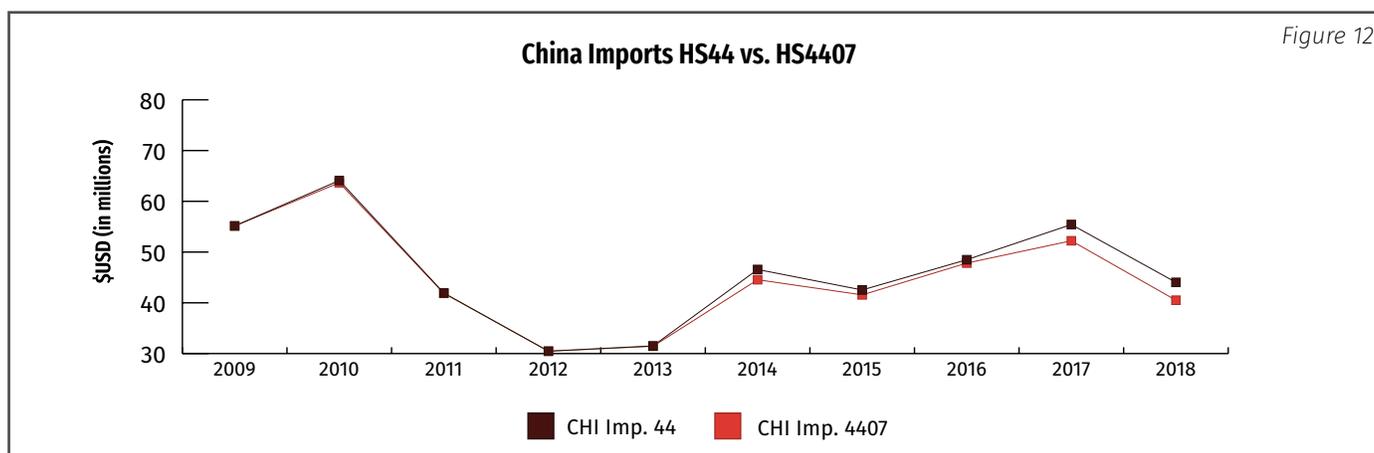
import values of sawn or chipped wood (HS4407) than Peru reported as exports. The aggregate of trade in the other timber categories did not explain this wide difference, but the values reported by China for its chipped wood imports are the same as the values reported for all wood product imports (Figure 12). Put simply, Chinese authorities reported all timber imports as sawn wood or chipped (HS4407), regardless of how they were categorized at the Peruvian ports of shipments.

As a more significant issue, the analysis identified a general export over-invoicing pattern in the values of exports reported by Peru, significantly higher than the import values reported by China (Figure 13). On average, these discrepancies amounted to US$15.3 million per year and reached a total of almost US$153 million during the period under study. Most of these value gaps (74 percent) came from the trade in board and planks (HS4409). In this specific good, discrepancies ranged from USD 3.3 million in 2017, to USD 15.9 million in 2013.

Possible Red Flags

In intentional over-invoicing, exports are artificially increased to show higher values than what importers at the other side of the deal actually pay. This practice has been linked to fraud, as by artificially increasing their numbers, exporters can access export subsidies and other incentives that they would otherwise not be entitled to (Schuster, Carlotta, and Davis 2020). Peruvian legislation provides such economic incentives. The Special Tariff Regime (Drawback), which was approved in 1995, allows companies to access a refund of the taxes paid during the export process that are related to production, shipment, and loading costs, among others. Currently, Peruvian authorities do not audit to guarantee that companies are fulfilling the requirements for benefitting from this Drawback Regime (Navarro and Blue Sky 2017).

On the other side of the transaction, the consistent import of products at undervalued prices is a means of illicit financial inflow into the importing country. In such a case, more value is imported than what is

Figure 13

Value Gap
Peru - China
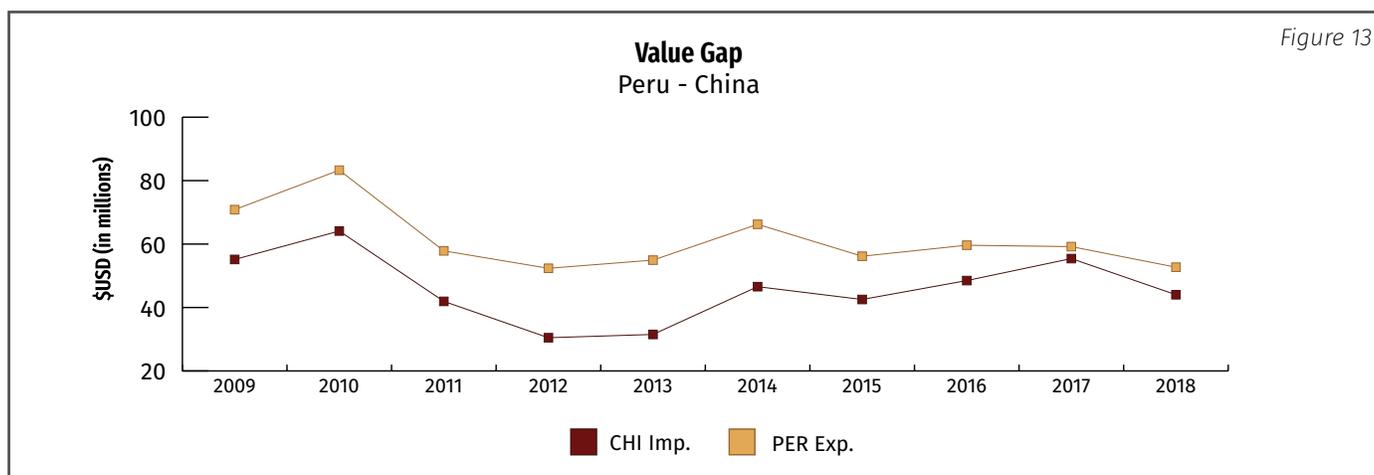
reported to the authorities. This type of transaction is used to evade custom duties or import taxes, and it has also been identified in natural resource money laundering cases (TraCCC 2020).

Discrepancies between Peru and the USA

Similar to the case of the Dominican Republic, there are no major discrepancies in the trade in wood products between Peru and the USA, at least at the aggregate level. However, there is a small but consistent value gap that implies that Peru's exports were constantly undervalued with respect to import values reported by the USA (Figure 14). This gap averages at US$1.5 million per year and peaked in 2013, when the reported difference reached US$3.6 million.

A closer analysis at the trade in each category under study shows that Peru consistently undervalues certain timber exports to the United States. This is the case of sawn wood (Figure 15), where export records show that the average difference is roughly US$5 million per year, peaking at US$9.4 million in 2013. There are similar trends in laminated wood (Figure 16), and boards and planks (Figure 17).

Given the significant participation of wood marquetry and densified wood specific to this bi-national trade, these two items were also included in the analysis. For wood marquetry (HS4420), a highly sophisticated woodcraft, exports from Peru showed two opposite patterns during the period under study (Figure 18). First, they appeared undervalued with respect to US import data from 2009 to 2013, and then highly

overvalued from 2014 to 2018. The 2013 to 2014 change is an amazing increase of over 1000 percent, when values leaped from USD 56,000 to USD 686,000. This turning point in the exports of HS4420 coincided temporally with, and could therefore be explained by, a decrease in exports of laminated wood (Figure 16) and boards and planks (Figure 17), both of which showed a clear decrease starting in 2013.

Possible Red Flags

As mentioned, export under-invoicing can be used to conceal profits abroad (World Trade Organization 2018), to artificially lower profits, avoid taxes, or to launder the proceeds of crime (Financial Action Task Force 2006). Exporters can also report a lower value of the wood that they send, and later sell the extra currency corresponding in informal currency markets (de Holanda Barbosa, Cysne, and Holanda 1992).

In the Peru-USA case, a larger red flag appears in the acute fluctuation in the exports of wood marquetry. If no major capital investment took place in the Peruvian timber sector, as interviewees agreed, the fluctuation could be explained by two other problematic factors. First, the arbitrary labeling of wood, which would allow traders to avoid specific regulations that only apply to certain types of wood products. Second, reporting products as a higher value type could be another way to access export subsidies offered by the Special Tariff Regime (Drawback).

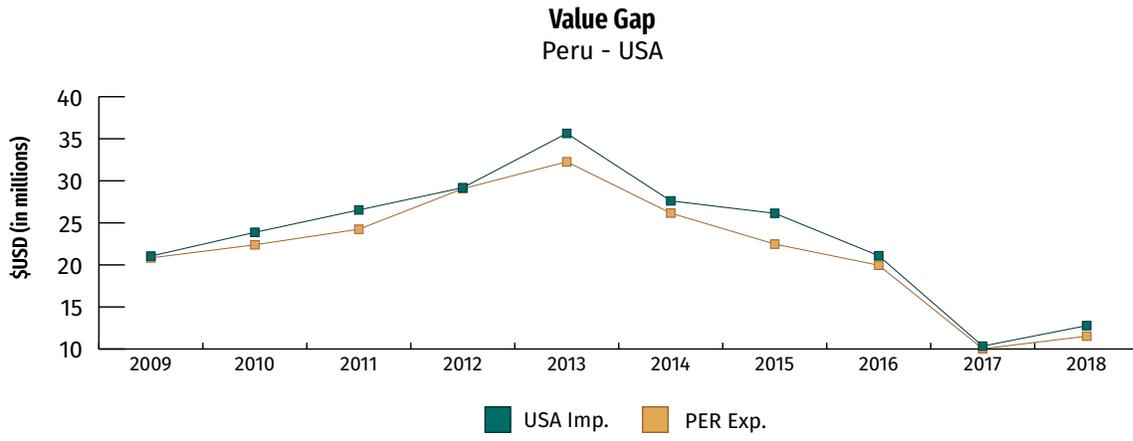One final red flag emerged for densified wood (HS4413), which we therefore added to this analysis

Value Gap
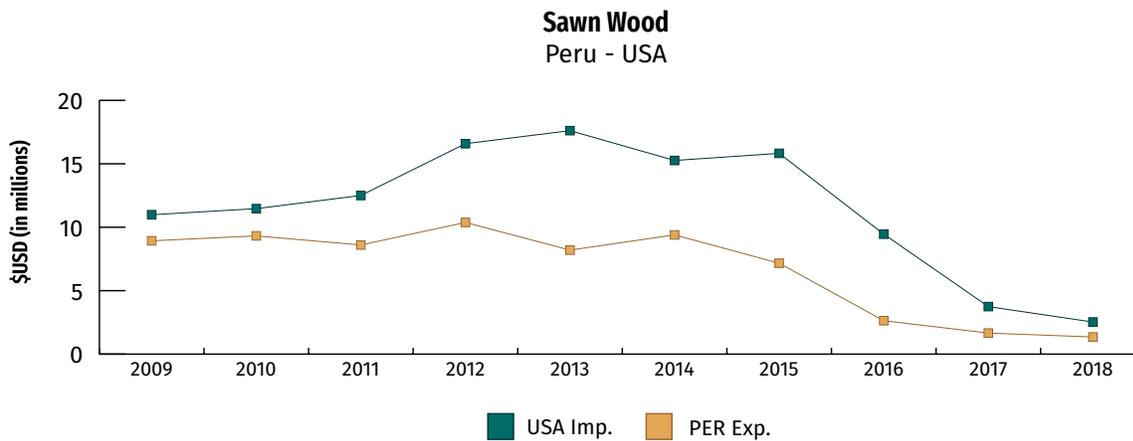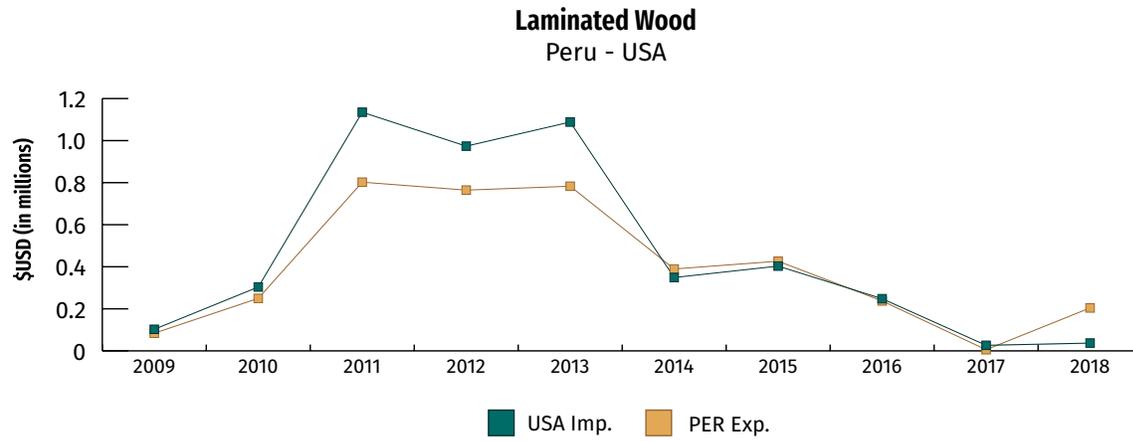Peru - USA

Figure 14

Sawn Wood
Peru - USA

Figure 15

Laminated Wood
Peru - USA

Figure 16

Boards and Planks
Peru - USA

Figure 17

Figure 18

Wood Marquetry
Peru - USA

■ USA Imp.   ■ PER Exp.
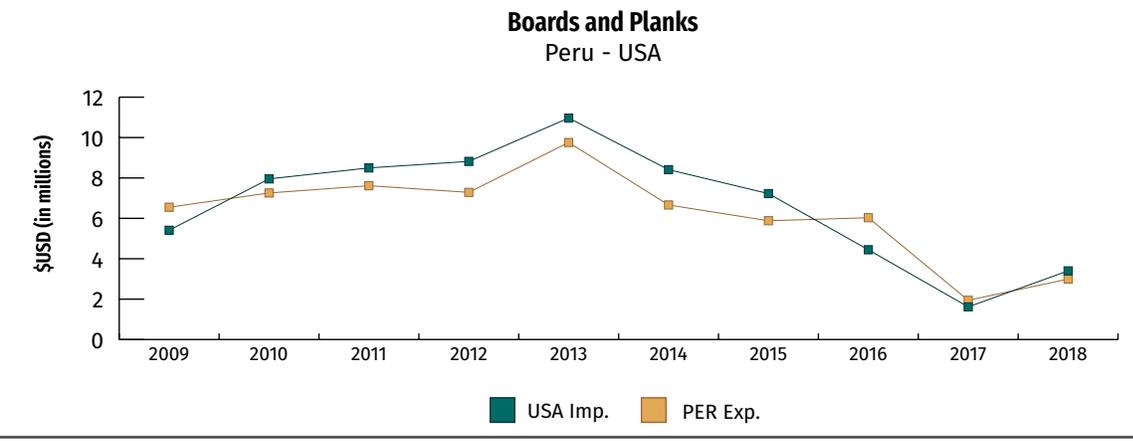
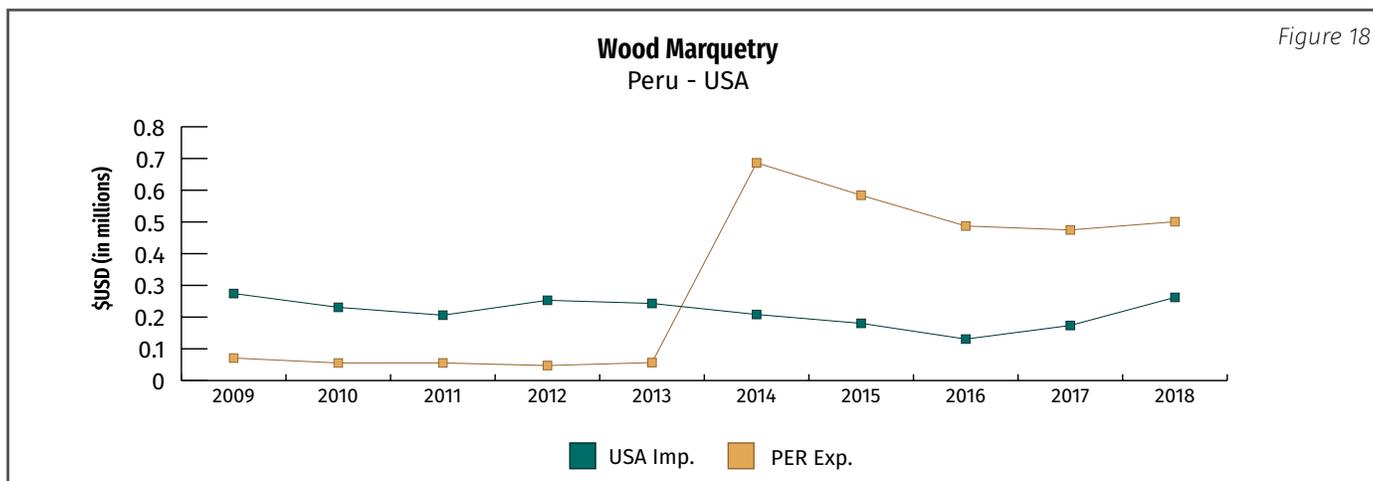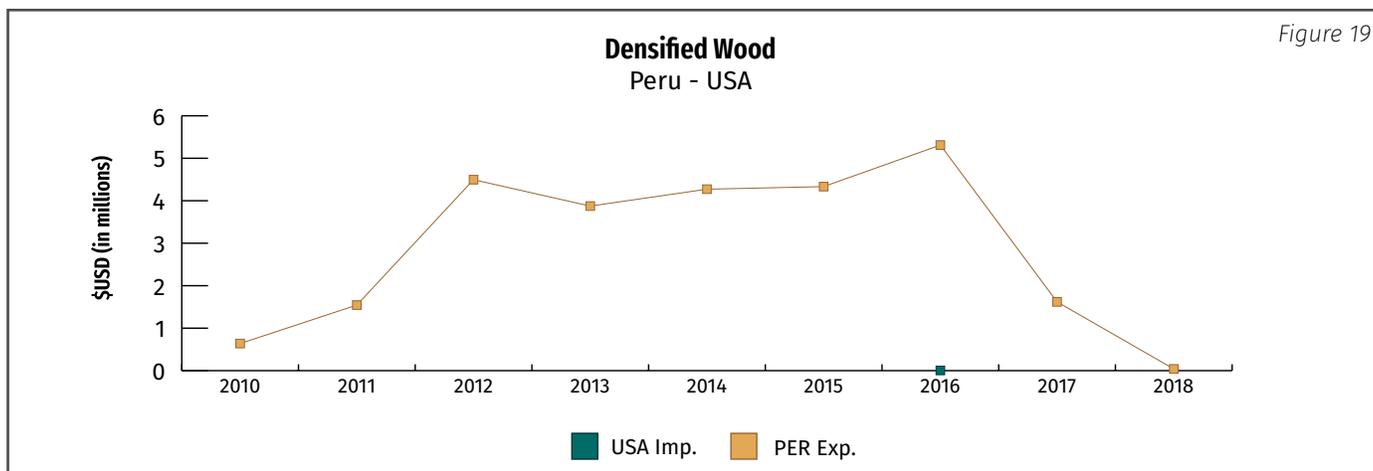*Figure 19*

Densified Wood
Peru - USA

■ USA Imp.   ■ PER Exp.

(Figure 19). These exports reached a total of over USD 26.2 million during the period under study, representing a little over 12 percent of the total timber exports from Peru into the US. However, USA import records showed almost nothing for this category; only USD 5 thousand was reported in 2016. Such a discrepancy in otherwise very consistent trade data is a major red flag.

Lessons and Recommendations

Whether or not any of the identified discrepancies derive from corruption and illicit financial flows, the ease with which trade misinvoicing can be executed can act as an incentive for exporters to continue using illegal timber for their international transactions.

In addition, the loss of assets through illicit financial flows aggravates the already reduced tax earnings of Peru, and similar countries, severely hindering public investment and state capacity.

Below, we offer some lessons and recommendations from our analysis.

TDA is a useful methodology to identify possible illegality in the trade of any commodity.

Differences between the value, quantity, or quality of commodities recorded by the importing country and those recorded by the exporting country, can be signs of a variety of illegal activity, or the related corrupt activity that enables it. The ease with which the UN COMTRADE database can be accessed allows any practitioner or government officials to investigate discrepancies in product and financial flows using TDA.

The value gaps presented in this analysis identified points for further investigation.

Although this TDA does not provide conclusive evidence of illegal activities, the consistent and significant discrepancies identified do represent clear red flags. The results therefore provide authorities

with points of entry to scale up investigations on the ground, or to perform in-depth document reviews (e.g., customs, tax, financial, and/or ownership records). Tax and customs authorities will ideally flag any commodities, trade partners, and/or firms they find to be high risk for trade mis-invoicing, and investigate and prosecute potential illicit financial flows.

Inter-institutional coordination and cooperation should be enhanced.

According to most of the interviewees, there are no permanent fora for different Peruvian authorities to collaborate in investigations. Often, tax agencies, the financial intelligence unit, custom officials, and the forest inspection agency gather different information and manage it in silos. Peru and other governments should promote inter-institutional cooperative schemes, through which they would enhance their potential to identify illicit acts and bring responsible agents to justice. A collaborative approach led by the National Statistics Office in each country to gather and analyze banking, tax, customs, and law enforcement records, would be beneficial for the identification of illicit financial flows (UNCTAD and UNODC 2020).

Improved auditing is necessary to assure compliance with the requirements of the Drawback Regime.

As shown, consistently overvalued timber exports could correspond to an equally consistent abuse of the financial incentives provided by the Peruvian Government to the sector. According to data gathered during this research, the auditing activities performed by Peruvian authorities are insufficient. Enhance their auditing capacity would result not only in a more efficient use of the Drawback Regime resources, but it would also eliminate one of the incentives for illegal timber.

Ambiguous definitions of commodities allow exporters to mislabel for beneficial regulatory treatment.

For example, boards and sawn wood are physically similar but go through different transformation processes that make them different export categories. As a consequence, they are subject to different regulations. While sawn wood is the result of a primary transformation process of the raw material, boards and planks go through an additional process that makes them more valuable. Although these definitions come from the Harmonized System, knowing that this is an issue, governments can improve their capacity to identify these differences and apply the corresponding regulations through improved and continuous training of their customs staff.

Exchange of country-by-country reporting of tax information is key.

Peru implemented country-by-country reporting in 2018. Through this exchange, tax authorities have access to information from other jurisdictions on income, revenue, taxes paid and accrued, employment, capital, and tangible assets of multinational companies. Currently, Peru shares its information with 59 other jurisdictions and receives information from 72 exchange partners. Mexico is one of those exchange partnerships, but Peru currently does not have an exchange relationship with China or the United States. (For its part, the Dominican Republic has no exchange relationship with any country.) Peru should pursue wider bilateral relationships for information exchange with its most important timber trade partners and, at the same time, encourage them to engage in this practice.

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