Preliminary insights from the Philippine Bureau of Customs imports database

Ronald U Mendoza and Aladdin Ko

Abstract

This paper provides an analysis of recently released importation data by the Philippine Bureau of Customs (BOC). The dataset has been released as part of the government's open data and transparency reforms aimed at boosting good governance and reducing corruption. The dataset includes information on over 88,000 imported items in December 2013, such as a description of the item imported, its HS code number and standard HS code description, what country the item came from, its value, and the amount of duties and taxes collected on that item. The BOC released the data along with a call for the public to assist by helping to analyse the dataset and (where necessary) report data discrepancies noted between the import valuation recorded in the dataset and those used in practice. The paper presents a preliminary analysis of the data released by the BOC and provides a platform to understand issues surrounding Philippine customs operations and reforms.

1. Introduction

The Philippine Bureau of Customs (BOC) launched an ambitious reform agenda in 2013, including the creation of offices to help spur analysis and research behind its modernisation (with the creation of the Customs Policy Research Office), the replacement of 48 customs collectors and officials as part of an agency-wide revamp,[1] and later, the abolition of the post audit function in Customs and its migration to the Fiscal Intelligence Unit in the Department of Finance.[2] However, what is perhaps the most novel reform so far introduced is the creation of the 'Customs ng Bayan' (Customs of the People) website[3] which now makes key information on customs operations open and accessible to the public.

In early January 2014, the BOC took an unprecedented step by releasing to the public extensive information on imported goods for the month of December 2013. Reform managers in BOC intended to publish this data on the web every month, as part of the agency's efforts to reduce smuggling, improve revenue collection and professionalise the agency – all underpinned by improving data collection and enhancing transparency in customs administration.[4]

The dataset for December 2013 includes information on over 88,000 imported items, such as a description of the item imported, its HS code[5] number and standard HS code description, what country the item came from, its value, and the amount of duties and taxes collected on that item. Since the January 2014 dataset, it has also included the type of customs entry, whether for consumption, transshipment or warehousing.[6]

The BOC invited the public to partner with it in analysing this dataset, for example by reporting discrepancies between the import valuation recorded in the dataset, and those actually used in practice, and so on.[7] This paper responds to that call by presenting preliminary analysis of the data released by the BOC.

2. Variation in valuation

We begin based on the understanding that what the authors refer to as 'technical' (as opposed to 'outright') smuggling skirts duties and taxes owed to the government in several ways, including:

- Under-valuation – Importer declares the value of the shipment at less than its actual value (that is, the purchase price)
- Under-declaration – Importer declares the imported good at less than its weight, or at less than its total quantity
- Misdeclaration – Importer reports the shipment as something else (that is, a product with lower value and/or lower tariff)
- Misclassification – Importer incorrectly classifies the HS code of the imported good to another category (such as one with a lower duty rate).

We interpret 'outright' smuggling as that which relates to, for example, non-declaration of goods. Put simply, this refers to smuggling into a country which does not involve reporting the goods to Customs.

The BOC dataset could be useful in revealing potential discrepancies that arise from these forms of 'technical' smuggling. For instance, one might expect that one product expressed in a standardised way should display very little variation in the reported valuation.[8] Hence, one initial hypothesis is that any discrepancy between importations of the same product can be monitored by looking at the mean and a measure of variance (for example, the coefficient of variation) of the valuation in each specific product category. Products with more variation in valuation could therefore be prioritised for follow-up analysis. In addition, by analysing patterns of dispersion in valuation, outliers can be identified and subsequently examined as well.

It should be noted that there are potential legitimate sources of variation in the value of certain products (even when standardised, such as by weight). For instance, the country of origin of the product, human error, and bulk purchasing are among some of the possible factors that could affect their price. For the purpose of our analysis, it is important to try to group more similar items that can be expected to have more similar valuations per unit of the product. Using this approach, we limit the other sources of variance in valuation, and by a process of deduction could potentially expose unexplained factors, including possible corruption or fraud.

Table 1 describes the specific product categories examined in this paper to illustrate this approach. Customs valuations are divided by the mass of the import and converted to a common currency (in this case, the US dollar). The use of the mean as a benchmark is indicated in Table 1.

While the mean valuation reported in Table 1 is likely to reflect a confluence of valuation estimates (that is, in the case of some products, possibly including values from both corrupt and correctly valued transactions), it can nevertheless serve as an initial and practical guide on valuation. Later in this paper, possible strategies for improving this basic approach will be discussed.

The coefficient of variation (CV) also provides a ready reference to compare variance in valuation across products – indicating the possible scope for more standardisation in the case of products with relatively higher CVs. From a practical customs administration viewpoint, a high measure of variation could indicate a need for more standardisation in the approach to valuation (or in minimising discretion which often leaves open the potential for corruption). For instance, from the products in Table 1, the product category 'sacks and bags' displays the most variance in valuation, across the sample of products selected, while 'ferrous waste' valuation displays the least variance.

Table 1: Descriptive statistics of the valuation (USD) per kilogram of certain products, December 2013–January 2014

Description: 4 digit	Description: 6 digit – Specific good	Category Size	Standard Deviation	Mean	Coefficient of Variation[9]	Normal Duty Rate[10]
Coffee; coffee husks and skins; coffee substitutes containing coffee	Coffee, not roasted or decaffeinated	66	0.578	1.92	0.30	30/40
	Decaffeinated coffee, not roasted	7	10.550	13.62	0.77	40
	Roasted coffee, not decaffeinated	35	8.554	6.53	1.31	40
Rice	Broken rice	42	0.136	0.33	0.41	40/50
	Rice in the husk (paddy or rough)[11]	10	1.554	2.46	0.63	0
	Semi-milled or wholly milled rice	41	0.305	0.45	0.68	40/50
Articles for use in goods made of plastics, etc.	Sacks and bags (including cones) of other plastics (excluding ethylene)	82	542.517	117.10	4.63	15
Springs and leaves for springs, of iron or steel	Leaf-springs and leaves therefor, of iron or steel – Used Leaf Spring[12]	46	0.249	0.48	0.52	20
Springs and leaves for springs, of iron or steel	Helical springs of iron or steel – Used Leaf Spring	10	0.478	0.53	0.90	15
Ferrous waste and scrap; re-melting scrap ingots of iron or steel	Ferrous waste and scrap, nes – Other	27	0.014	0.33	0.04	3

Source: AIM Policy Center analysis using Bureau of Customs data.

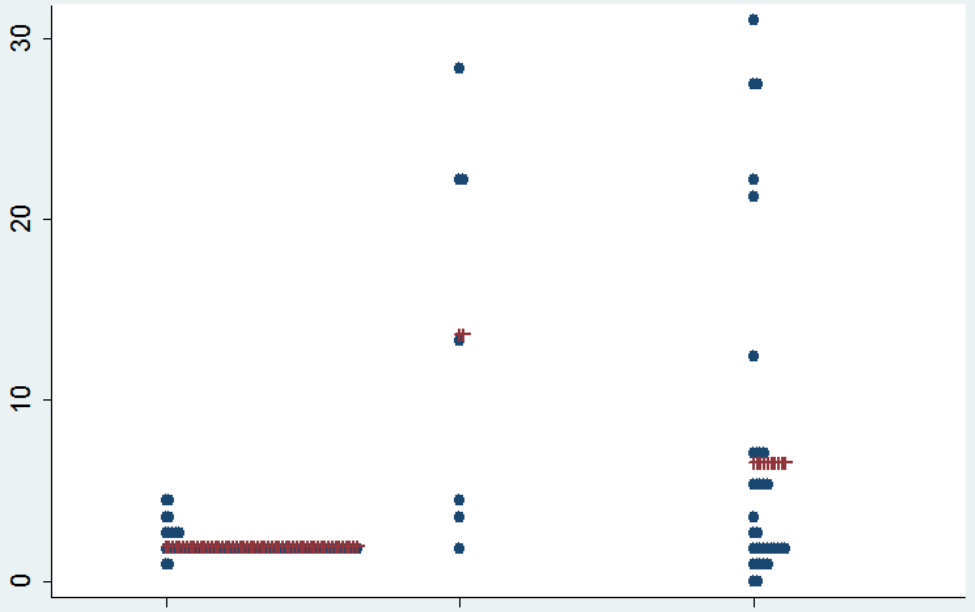
3. Dispersion and outliers in valuation

In addition, one could examine the degree of dispersion in the valuation for a certain product using dot plots. Outliers could then be examined for the veracity in their valuation (such as by comparing these with reported values by exporters to the Philippines). Just as an illustration, dot plots are presented in Figures 1 to 4, with each dot representing a specific importation. The lines marked by crosses in each figure refer to the mean valuation of the product.

If valuations were equal, or close to equal, then dots would be beside and close to each other, as in Figure 2 for broken rice or in Figure 4 for ferrous waste, indicating little dispersion in the figures. Reform managers could direct their attention towards products with higher variation in valuation, such as those for coffee in Figure 1 and rice in husk in Figure 2. Once again, the variation does not necessarily suggest corruption or fraud, however it can be used as a trigger for more focused and effective monitoring by reform managers with limited resources.

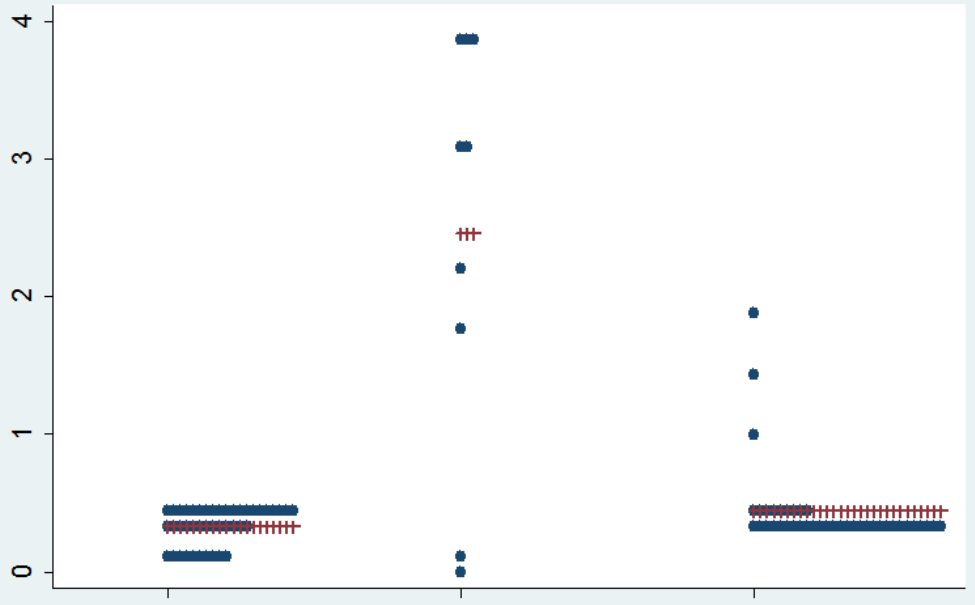
The dispersions reflect graphically the same information that can be gleaned from the CV. The CV, however, cannot identify the spread easily. For example, sacks and bags in Figure 4 had the highest variance as measured by CV, but based on its dot plot, this was not caused by dispersed figures throughout but rather due to several outliers. A majority of data points fall close to each other. However, there are extreme outliers above the mean which influence the mean upwards.

Figure 1: Dot Plot of valuations in USD per kilogram for Coffee 12/2013-01/2014



Source: AIM Policy Center anaylsis using Bureau of Customs data

Figure 2: Dot Plot of valuations in USD per kilogram for Rice 12/2013-01/2014



Source: AIM Policy Center anaylsis using Bureau of Customs data

Figure 3: Dot Plot of valuations in USD per kilogram for Used Leaf Springs 12/2013-01/2014

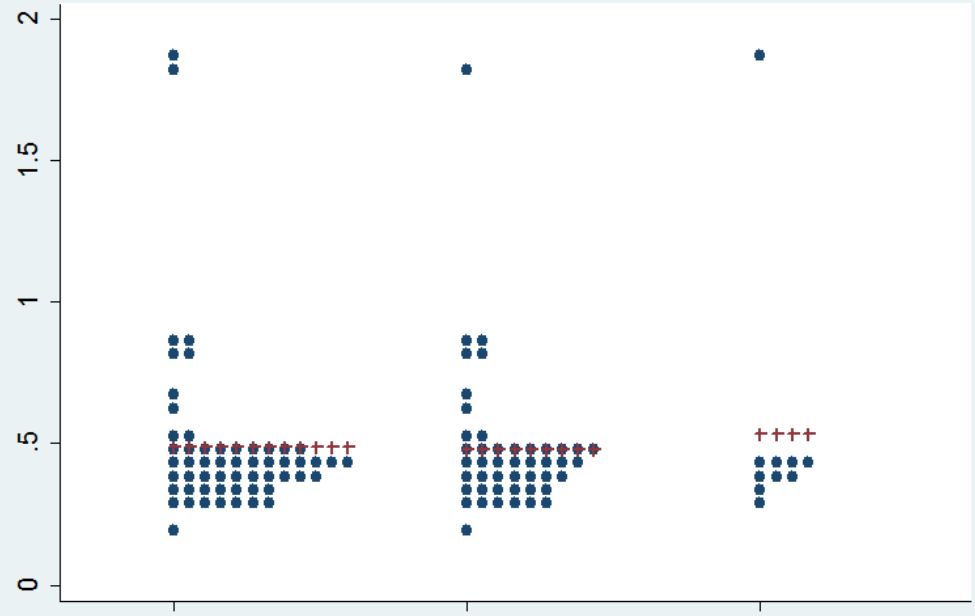
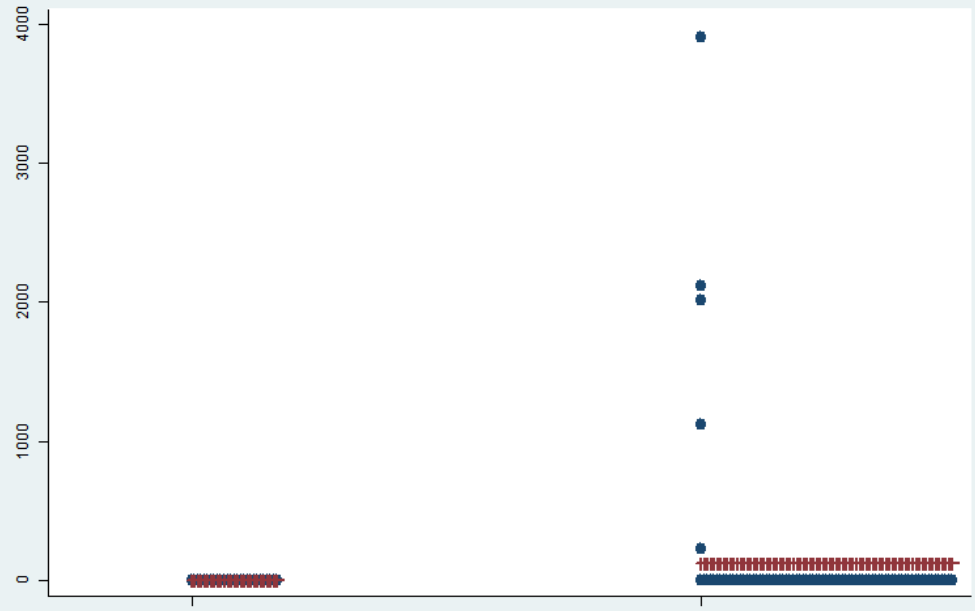


Figure 4: Dot Plot of valuations in USD per kilogram for Steel waste and Sack bags 12/2013-01/2014



Due to the non-uniformity of products made from plastic and steel, only a subset was chosen based on which categories contained similar products. For example, the category of 'Household and toilet articles of plastics, nes' included plastic toys, kitchenware, and toilet seats – products whose prices cannot be compared directly to measure variance in pricing. Issues with the categorisation of imports by their proper HS codes and a lack of standards in the phrasing of the declared good's description increased the difficulty of grouping products easily into product categories. Below are some specific observations from the dataset that reflect such issues:

- Aggregation of different goods in one shipment (for example, a particular shipment included items as diverse as '105 pkgs. Car accessories, mannequin, hanger' and was categorised with other articles of plastic instead of those of motor vehicles)
- Use of vague product descriptions (for example, an import from the United States was described as 'Others' under the categorisations of 'Other articles of plastics, nes', '---Other')
- Using the 'Others' category despite a fitting category being present (for example, describing a shipment as 'Screw' under the 11 digit description of '---Other' and 6 digit description of 'Screws and bolts of iron or steel, nes', instead of mentioning the exact type of screw, like metal screw or wood screw)
- Possibly incorrect figures (for example, Shipment 000107392 of Polybags from Hong Kong only weighed 1 kg but was worth USD1,133.83. From the same month, a shipment of polybags from Thailand weighing 3,615.13 kg was valued at USD37, 472.21).

While such issues with the data may not necessarily affect collected revenue negatively (if duty rates for the mislabelled category are the same, or even higher than that of the correct one), it creates further opportunities for non-conspicuous 'technical' smuggling if recorded data cannot be deciphered easily.

This issue is most clearly reflected in Figure 3, where 'Used Leaf Springs' are presented in the two separate categories from which they can belong, the main difference being a 5% duty rate difference applied (see Table 1). When the mean of all used leaf springs is compared with the data points from those that were categorised as Helical, all data points fall below the mean. Not only are these paying 5% less in taxes, their average figures do not match those that identify their imported leaf springs as leaf springs.

4. Supporting customs reform with open data

Open data and greater transparency in public sector operations and transactions can serve as powerful levers for supporting and sustaining reform. The BOC has taken an important step in this direction by publishing extensive import data on its website, with a specific call for the public to help it review the veracity of this data. This paper demonstrates the potential for a 'public-private partnership' in customs reform by analysing the dataset in order to expose possible patterns that could serve as 'triggers' for identifying possibly anomalous valuations.

Yet, questions remain. To what extent will improved access to information curb smuggling? Is it enough? What are the advantages of increased transparency? Are there any costs? How does increased transparency figure into the future role of Customs in border control and trade facilitation? It remains to be seen whether 'Customs ng Bayan' will be a force for good governance and reduced smuggling that most hope it will be.

References

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Federation of Philippine Industries 2014, 'Briefing paper on smuggling in the Philippines', Mimeo.

Sevilla, JP 2014, 'Statement of BOC Commissioner John P Sevilla on the publication of import data for December 2013', 6 January, www.dof.gov.ph/?p=8842.

Notes

1 See http://newsinfo.inquirer.net/496719/27-customs-collectors-moved-to-ghost-office; http://newsinfo.inquirer.net/531279/10-more-customs-execs-placed-in-think-tank-unit-in-revamp and http://www.philstar.com/headlines/2013/12/01/1262949/more-boc-officials-reassigned.

2 See http://business.inquirer.net/163656/customs-postaudit-team-abolished and http://newsinfo.inquirer.net/528447/more-customs-execs-transferred-new-collectors-to-take-office-monday.

3 Found at www.dof.gov.ph/customsngbayan/.

4 At the time of writing, the December 2013 and January 2014 datasets had been released to the public.

5 Harmonized System Code or HS Code refers to the numbers assigned to specific categories of traded products now followed by customs agencies worldwide.

6 The data can be downloaded from the following links: customs.gov.ph/import-reports/; dof.gov.ph/?page_id=3762; dof.gov.ph/customsngbayan.

7 In a press statement, BOC Commissioner Sevilla noted that: 'If members of the public have specific information about actual values of specific imports which are very different from what we are using, we hope that they will share that information with us in writing, by e-mail to import.valuation@customs.gov.ph. We would particularly appreciate it if you could cite a specific HS code and country of origin or control number as shown in the list in your correspondence'.

8 This could be the case if markets are competitive (so that even techniques such as bulk purchasing are routinely used by almost all importers) and if the good itself is homogenous (so that there are no major differences in quality and characteristics of the goods under that category).

9 The coefficient of variation describes the dispersion of the variable by calculating the ratio of the standard deviation to the mean. A unitless measure, coefficients of variation can be compared to each other – smaller coefficients indicate less dispersion than those with larger coefficients.

10 Certain products have different duty rates for products in quota and for products out of quota (indicated with a forward slash, '/'). The first figure indicates the 'in quota' rate, the second, the 'out of quota' rate.

11 In January 2014, importation with Control Number 00007205 was categorised under 'Rice in the husk' instead of 'Broken Rice' despite being described as 'Long grain white rice 25% broken rice – In Quota'. The 40% duty for 'Broken Rice – In Quota' was correctly applied, however.

12 Used leaf springs are found in two separate categories with different duty rates.

Ronald U Mendoza

Dr Ronald U Mendoza is an Associate Professor of Economics at the Asian Institute of Management (AIM), and the Executive Director of the AIM Policy Center. Prior to his appointment at AIM, he was a senior economist with the United Nations in New York. He has published extensively in various peer-reviewed economics and policy journals as well as several books on international development, public finance and international cooperation. Ronald obtained his Masters in Public Administration and International Development (MPA-ID) from the John F Kennedy School of Government, Harvard University, and his M.A. and PhD in Economics from Fordham University. He is also a recipient of various awards, including the 2012 National Academy of Science and Technology's Ten Outstanding Young Scientist (OYS) in the Philippines (in Economics), the World Economic Forum's Young Global Leaders in 2013, and Devex 40 Under 40 Development Leader in 2013.

Aladdin Roxas A Ko

Aladdin Roxas A Ko is a Research Associate at the AIM Policy Center. He is presently engaged in research on anti-corruption and customs reforms, as well as studies on the Philippine business landscape, examining firm growth and competitiveness, the link between politics and firms, and the background of board members of large firms. He graduated *cum laude* from the Ateneo de Manila University with a Bachelor of Arts degree in Economics (Honours Program), with a minor in Development Management. He was awarded the Program Award for Economics that same year.