Hunt, Shane

**Working Paper**

# On the Accuracy of Peruvian Foreign Trade Statistics

Center Discussion Paper, No. 5

**Provided in Cooperation with:**
Yale University, Economic Growth Center (EGC)

*Suggested Citation:* Hunt, Shane (1966) : On the Accuracy of Peruvian Foreign Trade Statistics, Center Discussion Paper, No. 5, Yale University, Economic Growth Center, New Haven, CT

This Version is available at:
https://hdl.handle.net/10419/159937

ECONOMIC GROWTH CENTER

YALE UNIVERSITY

Box 1987, Yale Station
New Haven, Connecticut

CENTER DISCUSSION PAPER NO. 5

# ON THE ACCURACY OF PERUVIAN FOREIGN TRADE STATISTICS

Shane J. Hunt

April 5, 1966

# On the Accuracy of Peruvian Foreign Trade Statistics[1]

The economist often needs to know the total value of goods which enter and leave a country during a given period of time, and to find such information he turns to the official foreign trade statistics. The figures thus provided him may be other than what he wanted for any combination of three reasons. First, some types of goods may be deliberately excluded from official totals as a matter of policy. In the case of Peru, various types of imports are thus excluded. Military equipment is excluded from published totals for reasons of security, while imports of charitable organizations are also excluded as a matter of policy. The policy of exclusion is often on an ad hoc basis, and so there are other types of imports which for a variety of reasons are also not to be found in Peru's foreign trade yearbook, Estadistica del Comercio Exterior.[2]

Second, international transfer of goods may be omitted because the goods are smuggled rather than transferred by legal channels. Third, even those goods which duly pass through legal channels may be undervalued, to avoid full payment of export or import duties. There exists a widespread feeling, at least among the politically aware in Lima, that such total or partial evasions of customs duties are common. This feeling, however, may be attributed to an attitude of skeptism about one's fellow man, buttressed by anecdotal evidence, rather than more telling aggregative evidence. Even

---

[1]I wish to express my thanks to Richard Lawler for his assistance.

[2]For example, the imports of the government's Corporación Peruana del Santa have also been excluded in recent years through a quirk in customs procedures.

individuals whose work is closely connected with financial affairs or with foreign trade, and who should therefore be in a better position to know the reality of the situation, appear to have widely divergent ideas about the extent of such evasions. One specialist in maritime insurance with whom I spoke felt that evasion was practiced on only five or ten percent of total imports. On the other hand, others felt the practice substantially more frequent. Evasions through undervaluation were considered by many to be particularly associated with automobile imports, largely because graduated taxes make evasion so profitable. The rates of undervaluation which were suggested to me were in the order of 25 to 50 percent.

With regard to exports, an accountant conversant with business practices suggested undervaluations of 15 to 20 percent, not just on some exports, but on most exports. Others felt export valuations to be quite accurate.

Obviously, it is most difficult for the economist to persuade business firms to tell him about their evasion practices, even if he isn't connected with the tax collection authorities. As an alternative approach, I have attempted a comparison of Peruvian trade statistics with the statistics of some of her trading partners in the world economy. Evidently, if a given transaction evaded full valuation in both the exporting and the importing country, a comparison of statistics from these two countries would prove nothing at all. If, on the other hand, one of the trading partners was considered to have a closer control at the customs house, then discrepancies in the published statistics of the two countries could be a measure of evasion successfully accomplished.

Such is the case for the industrial countries of North America and Western Europe. Although they undoubtedly have their own problems of smuggling and undervaluations, their administrative controls are generally

tighter than in Latin America, and therefore the comparison I intend is between Peruvian trade statistics and the statistics of these industrial countries.

There is a variety of pitfalls in such comparisons. For example, a fluctuating exchange rate could reduce such comparisons to utter confusion, and for this reason the figures are restricted to the years 1961 and 1962, when the Peruvian sol maintained a fixed relation to the dollar. In addition, imports must be converted to an f.o.b. basis. This is easily done in the case of Peruvian imports. The valuations received by Peruvian customs authorities are on an f.o.b. basis; they are the valuations which are submitted to the Peruvian consuls in the countries of export. The published figures, however, are c.i.f., and the conversion is made by the customs statisticians merely by adding a flat 20 percent to f.o.b. value. F.o.b. value is recovered from published statistics, therefore, merely by taking the 20 percent away.

The problem is not so simple in the other direction. For those industrial countries which report their imports from Peru on a c.i.f. basis, it is a task beyond my resources or patience to convert these figures to an f.o.b. basis. Therefore, the comparison between Peruvian exports and imports of industrial countries can be made only for those countries which report their imports on an f.o.b. basis. These countries are the United States and Canada.

There remain other problems of comparison which cannot be adjusted for, and which mean that the figures resulting from this exercise will be indicative rather than definitive. First, there is the matter of timing. A shipment which leaves one country in December to arrive at its destination

in January will be entered in different years in the trade data of the two countries involved. The seriousness of this problem is diminished somewhat by looking at two consecutive years rather than just one, but it still remains. There are also severe problems introduced by the transshipment of goods through third countries. The destination reported in the statistics of the exporting country may well be the transshipping country rather than the country of final destination. Problems of this sort frustrated my attempts at comparing statistics for some of Peru's exports. Finally, there can exist a variety of discrepancies in definitions of products and in components of total trade statistics. Although countries attempt to classify products by a similar system, an infinite number of more or less arbitrary decisions must be made in each country to fit all the products in international trade into the system. Through chance or through error, different countries no doubt come up with slightly different classifying results.

With these various hedges in mind, we may look at the data, first comparing Peruvian import statistics to the export data of industrial countries. Table 1 presents this comparison for all goods exported by six industrial countries to Peru. What appears remarkable in this comparison is the similarities rather than the differences. The figures show that aggregate Peruvian import valuations for these two years were 3 percent lower than the valuations of the export countries, and this small a discrepancy can very easily be accounted for by problems of timing or inclusiveness of data. In fact, United States export statistics include military shipments and food shipments under P.L.480, and both these types of imports are excluded from the Peruvian data. We are therefore left with a choice of conclusions. Either the extent of customs evasions on imports is insigni-

Table 1

Peruvian Imports - Total Trade

| Exports to Peru from: | Source | Total Imports 1961 | Total Imports 1962 | Peru/Foreign Ratio 1961 | Peru/Foreign Ratio 1962 |
|---|---|---|---|---|---|
| Canada | U.N. | $ 8,181,000 | $ 7,745,000 | 1.05 | 1.25 |
| | Peru | 8,573,298 | 9,687,334 | | |
| France | U.N. | 10,670,000 | 15,197,000 | 0.79 | 1.10 |
| | Peru | 8,432,435 | 16,643,007 | | |
| Germany | U.N. | 49,245,000 | 59,453,000 | 0.93 | 0.93 |
| | Peru | 45,599,210 | 55,332,700 | | |
| Italy | U.N. | 11,057,000 | 12,493,000 | 0.91 | 0.91 |
| | Peru | 10,037,600 | 11,424,518 | | |
| U.S.A. | U.N. | 172,584,000 | 183,226,000 | 1.00 | 0.97 |
| | Peru | 172,526,600 | 176,994,400 | | |
| Netherlands | U.N. | 14,573,000 | 14,175,000 | 0.96 | 0.99 |
| | Peru | 13,975,316 | 14,066,708 | | |
| Total | U.N. | 266,310,000 | 292,289,000 | 0.97 | 0.97 |
| | Peru | 259,144,459 | 284,148,667 | | |

Sources: United Nations, Commodity Trade Statistics, Part II-Export Peru, Superintendencia General de Aduanas, Estadistica del Comercio Exterior.

ficant from an aggregative standpoint, or if it is significant, the resulting statistical inaccuracies are no worse in Peru than they are in the industrial nations.

Even though import statistics thus pass the test at the most aggregate level, the various subtotals may still be very inaccurate. To get some idea of the accuracy of groups within the import total, we may look at that group which would appear most vulnerable: motor vehicles. This comparison is made in Table 2, and once again it is seen that the Peruvian import statistics pass the test with flying colors. Indeed, they show a total valuation during the two years considered which is greater than the aggregate valuations shown by the exporting countries. Again, this is most probably attributable to differences in timing, and the fact remains that Peruvian import statistics show no evidence of systematic undervaluation.

A suspicion of undervaluation does arise, however, when we look at the most suspect component of motor vehicles: passenger motor cars. The figures in Table 3 suggest a systematic pattern of undervaluations of anywhere from 10 percent to 40 percent. Much of this apparent undervaluation may involve definitional or timing problems, since passenger motor cars are a component of road motor vehicles, for which Peruvian figures show a slightly higher total. Therefore, if the passenger motor cars component shows substantial undervaluation, then there must exist other components which show an even greater overvaluation. Such overvaluation would be hard to explain, unless the commonly used technique for evading duties on passenger motor cars is not undervaluation but the change of classification to some other type of motor vehicle. Obviously, this is pure conjecture, and incidental to the principal conclusion that, in general,

Table 2

Peruvian Imports - Road Motor Vehicles

(SITC 732 or equivalent)

| Exports to Peru from: | Source | Imports 1961 | Imports 1962 | Peru/Foreign Ratio 1961 | Peru/Foreign Ratio 1962 |
|---|---|---|---|---|---|
| U.S.A. | OECD | $24,666,000 | $29,302,000 | 1.11 | 0.98 |
| | Peru | 27,305,500 | 28,858,900 | | |
| Germany | OECD | 6,542,000 | 6,334,000 | 0.99 | 1.01 |
| | Peru | 6,506,100 | 6,400,700 | | |
| United Kingdom | OECD | 3,033,000 | 3,256,000 | 0.80 | 0.91 |
| | Peru | 2,431,600 | 2,961,900 | | |
| France | OECD | 1,556,000 | 1,268,000 | 0.78 | 0.96 |
| | Peru | 1,208,700 | 1,211,400 | | |
| Italy | OECD | 1,375,000 | 633,000 | 0.92 | 1.17 |
| | Peru | 1,258,600 | 740,600 | | |
| Sweden | OECD | 1,543,000 | 1,375,000 | 1.11 | 0.96 |
| | Peru | 1,705,400 | 1,316,700 | | |
| Belgium | OECD | 39,000 | 140,000 | 0.94 | 0.75 |
| | Peru | 36,600 | 104,400 | | |
| Austria | OECD | 132,000 | 78,000 | 0.89 | 1.12 |
| | Peru | 117,100 | 87,400 | | |
| Canada | OECD | 89,000 | 55,000 | 1.20 | 1.16 |
| | Peru | 106,900 | 63,900 | | |
| Total | OECD | 38,975,000 | 42,441,000 | 1.04 | 0.98 |
| | Peru | 40,676,500 | 41,745,900 | | |

Sources: OECD, Trade by Commodities, Statistical Bulletin Series C, Supplement. Peru, Superintendencia General de Aduanas, Estadistica del Comercio Exterior, Renglones 392-397, except partida 2976.

Table 3

Peruvian Imports - Passenger Motor Cars

(SITC 732.1 or equivalent)

| Exports to Peru from: | Source | Imports 1961 | Imports 1962 | Peru/Foreign Ratio 1961 | Peru/Foreign Ratio 1962 |
|---|---|---|---|---|---|
| France | OECD | $1,203,000 | $ 1,089,000 | 0.74 | 0.70 |
| | Peru | 896,200 | 766,200 | | |
| Germany | OECD | 4,404,000 | 4,550,000 | 0.80 | 0.78 |
| | Peru | 3,512,800 | 3,537,400 | | |
| Italy | OECD | 625,000 | 260,000 | 0.75 | 0.60 |
| | Peru | 465,700 | 155,400 | | |
| U.S.A. | OECD | | 9,784,000 | | 0.90 |
| | Peru | | 8,794,000 | | |
| United Kingdom | OECD | | 1,806,000 | | 0.74 |
| | Peru | | 1,344,100 | | |
| Total | OECD | | 17,489,000 | | 0.83 |
| | Peru | | 14,597,100 | | |

Source: OECD, Statistical Office of the European Communities, Foreign Trade Statistics - Analytical Tables, Exports
Peru, Superintendencia General de Aduanas, Estadistica del Comercio Exterior, Renglon 392.

Peruvian import statistics seem accurate.

When we turn to an examination of Peruvian export statistics, many of our comparisons must be confined to trade from Peru to the United States and Canada, since these are the only two countries in the O.E.C.D. which report their imports f.o.b. In contrast to imports, Peruvian exports seem to show some evidence of undervaluation. This is shown at the most aggregative level possible in the data of Table 4, where the average experience of the three years 1960-1962 suggests a valuation 5 percent below that reported in the U. S. and Canadian import statistics. The table also shows, however, that there is very little year-to-year consistency, and that discrepancies between Peruvian valuations on one hand and U. S. and Canadian valuations on the other can by no means be exclusively attributed to deliberate undervaluation in Peru. Other factors are probably timing discrepancies, transshipments to Europe, and deliberate undervaluation of imports into the United States, especially when the United States importer and the Peruvian exporter are both branches of the same parent company.

In order to better establish the sources of valuation discrepancies, a separate look at some of the principal Peruvian exports is necessary. Table 5 presents data for three such exports, and in each case the three-year average shows the Peruvian source to come up with a lower total. Indeed, the Peruvian figure is higher only in the cases of sugar and fishmeal for 1960, and in both cases this higher figure can be explained quite simply in terms of timing. The value of shipments to the United States expanded quite rapidly in both these industries between 1960 and 1961, and as a result a disporportionate amount of 1960 exports may have been expected to leave Peru at the end of 1960, arriving in the United States in early 1961. This is particularly evident in the case of fishmeal, where the fishing catch has great seasonal variation and hits a peak in the months of November,

Table 4

Peruvian Exports - Total Trade ($000)

| Year | Source | Exports from Peru to: U.S.A. | Canada | U.S.A.+ Canada | Peru/foreign Ratio U.S.A.+Canada |
|---|---|---|---|---|---|
| 1960 | OECD | $168,872 | $ 3,128 | $172,000 | 0.91 |
| | Peru | 154,913 | 1,815 | 156,728 | |
| 1961 | OECD | 191,053 | 4,179 | 195,232 | 0.92 |
| | Peru | 176,192 | 3,271 | 179,463 | |
| 1962 | OECD | 178,169 | 3,016 | 181,185 | 1.03 |
| | Peru | 184,319 | 2,232 | 186,551 | |
| Total | OECD | 538,094 | 10,323 | 548,417 | 0.95 |
| | Peru | 515,424 | 7,318 | 522,742 | |

Sources: OECD Trade by Commodities, Statistical Bulletins Series C, Supplement

Peru Superintendencia General de Aduanas, Estadistica del Comercio Exterior. 1960 figures converted by average exchange rate of S/.27.30 per dollar.

Table 5

Peruvian Exports to U. S. - Sugar, Coffee and Fishmeal ($000)

| | Year | Source | Exports to U.S. | Peru/U.S. Ratio |
|---|---|---|---|---|
| Sugar | | | | |
| | 1960 | OECD | $ 27,327 | 1.09 |
| | | Peru | 29,781.1 | |
| | 1961 | OECD | 65,010 | 0.97 |
| | | Peru | 63,166.1 | |
| | 1962 | OECD | 57,810 | 0.94 |
| | | Peru | 54,317.8 | |
| | Total | OECD | 150,147 | 0.98 |
| | | Peru | 147,265 | |
| Coffee | | | | |
| | 1960 | OECD | $15,446 | 0.92 |
| | | Peru | 14,148.0 | |
| | 1961 | OECD | 15,867 | 0.99 |
| | | Peru | 15,730.9 | |
| | 1962 | OECD | 18,681 | 0.97 |
| | | Peru | 18,029.8 | |
| | Total | OECD | 49,994 | 0.96 |
| | | Peru | 47,908.7 | |
| Fishmeal | | | | |
| | 1960 | OECD | $ 3,923 | 1.14 |
| | | Peru | 4,469.4 | |
| | 1961 | OECD | 10,190 | 0.85 |
| | | Peru | 8,642.9 | |
| | 1962 | OECD | 16,847 | 0.95 |
| | | Peru | 16,066.7 | |
| | Total | OECD | 30,960 | 0.94 |
| | | Peru | 29,179.0 | |

Sources: See Table 4. Sugar is SITC 061 in OECD source, sum of sugar and molasses in Peruvian source. Coffee is SITC 071. Fishmeal is SITC 081, and in Peruvian source is the sum of fishmeal and whalemeal.

December, and January. We may conclude that the pattern of undervaluation is quite consistent in all three exports, but that the discrepancies shown, of 2, 4, and 6 percent, are not as great as some people have suggested. Of course, the true extent of undervaluation may be greater if the values declared to United States Customs officials are also biased low, but in a lesser degree.

We turn next to exports of iron ore, and, as Table 6 shows, the trade pattern is very confusing indeed. In every export there is some confusion as to the identity of the purchasing country, since the Estadistica del Comercio Exterior instead lists the country which is the destination of the ocean shipment. Thus, many exports destined for Germany are listed as going to Belgium or the Netherlands. Such confusion is minor compared to this special case of iron ore, where practically all exports are listed as destined for Panama or the Canal Zone. The only other destinations listed are Japan and, occasionally, Argentina. Although we may assume with something close to certainly that all shipments to Panama and the Canal Zone are ultimately destined for O.E.C.D. countries, it is impossible to estimate from the Peruvian statistics what portion of these shipments actually went to the United States and Canada. Furthermore, a few published sources show that freight costs as a percent of value of iron ore shipments are both very high and very variable.[1] Consequently, it is impossible to estimate these freight costs with any accuracy so that c.i.f. imports in O.E.C.D. countries

---

[1]Herman F. Karreman, Methods for Improving World Transportation Accounts, Applied to 1950-1953, National Bureau of Economic Research, Technical Paper 15, 1961, Table 5, p. 14.

Charles P. Kindleberger, Foreign Trade and the National Economy, New Haven: Yale University Press, 1962, Table 2-2, p. 13.

Table 6

Peruvian Exports - Iron Ore

| Exports from Peru to: | Source | Values ($000) 1960 | 1961 | 1962 |
|---|---|---|---|---|
| U.S.A. | OECD | $26,866 | $11,752 | $ 6,182 |
| | Peru | 105 | 171 | 0 |
| Canada | OECD | 0 | 0 | 0 |
| | Peru | 0 | 191 | 0 |
| Panama | OECD | 0 | 0 | 0 |
| | Peru | 4,783 | 4,500 | 1,348 |
| Canal Zone | OECD | 0 | 0 | 0 |
| | Peru | 22,271 | 19,391 | 13,584 |
| Germany | OECD | 20,392 | 21,913 | 11,465 |
| | Peru | 0 | 0 | 0 |
| France | OECD | 139 | 134 | 2,238 |
| | Peru | 0 | 0 | 0 |
| Italy | OECD | 484 | 1,288 | 3,093 |
| | Peru | 0 | 0 | 0 |
| U.K. | OECD | 760 | 1,854 | 4,528 |
| | Peru | 0 | 0 | 0 |

Sources: See Table 4. Iron ore is SITC 281 in OECD source, partida 2332 in Peruvian source.

could serve as a guide to the reasonableness of Peruvian f.o.b. export figures. Consequently, no checks are possible on iron ore exports. One can only conclude that the pattern of destinations used in Estadistica del Comercio Exterior is regrettable, not only because checks of the kind desired here are impossible, but also because the official Peruvian statistics are less useful in any study of the geographical distribution of Peruvian exports.

When we turn to the case of cotton, we are beset with similar problems, but in this case freight costs are small relative to value of shipment, and therefore some estimate of this cost can be made with the confidence that great error is not thereby introduced into the analysis. The irrelevance of a bilateral comparison between Peru and the United States is shown at the top of Table 7, where the value of cotton exports to the U. S. as reported by Peru is substantially greater than the value of imports from Peru as reported by the U. S. Undervaluation of U. S. imports seems an unlikely prospect, particularly in the case of a product which is under such tight control in the domestic U. S. farm program. The only other explanation which seems feasible is that a large portion of Peruvian cotton shipments to the United States do not enter the U. S. but are instead transshipped to Europe.[1]

It therefore becomes necessary to compare Peruvian cotton exports to the total cotton imports from Peru of all O.E.C.D. countries. This must be a comparison between f.o.b. exports and c.i.f. imports, however, and therefore United States and Canadian imports must be written up to a c.i.f. level. We may estimate freight costs for raw cotton to be as little as 4 percent of

---

[1] A representative of the New York Cotton Exchange confirmed that this practice was followed.

Table 7

Peruvian Exports - Cotton

| Exports from Peru to: | Source | Values ($000) 1960 | 1961 | 1962 |
|---|---|---|---|---|
| U.S.A. | OECD | $ 3,389 | $ 5,040 | $ 5,402 |
| | Peru | 7,421 | 5,713 | 7,506 |
| Canada | OECD | 48 | 67 | 28 |
| | Peru | 28 | 54 | 25 |
| Germany | OECD | 17,465 | 16,792 | 21,972 |
| | Peru | 8,493 | 9,590 | 13,021 |
| Austria | OECD | 1,904 | 1,348 | 1,399 |
| | Peru | 376 | 535 | 562 |
| Belgium | OECD | 2,699 | 3,835 | 3,381 |
| | Peru | 12,698 | 11,834 | 13,401 |
| Denmark | OECD | 1,685 | 1,886 | 2,130 |
| | Peru | 1,301 | 1,790 | 1,789 |
| France | OECD | 6,217 | 7,305 | 7,582 |
| | Peru | 4,741 | 5,291 | 5,859 |
| U.K. | OECD | 11,353 | 8,828 | 12,000 |
| | Peru | 10,800 | 7,660 | 11,135 |
| Holland | OECD | 3,012 | 4,990 | 3,169 |
| | Peru | 4,038 | 6,330 | 4,850 |
| Ireland | OECD | 912 | 1,000 | 939 |
| | Peru | 624 | 569 | 589 |
| Italy | OECD | 3,643 | 3,575 | 3,357 |
| | Peru | 3,544 | 3,456 | 2,836 |
| Portugal | OECD | 31 | 195 | 140 |
| | Peru | 18 | 1 | 124 |
| Sweden | OECD | 513 | 628 | 261 |
| | Peru | 438 | 573 | 172 |
| Switzerland | OECD | 8,286 | 7,752 | 6,784 |
| | Peru | 2,162 | 2,227 | 2,453 |
| Total Europe | OECD (cif) | 57,725 | 58,134 | 63,114 |
| | Peru (fob) | 49,233 | 49,854 | 56,791 |
| Total OECD | OECD (cif) | 61,299 | 63,445 | 68,761 |
| (adjusted) | Peru (fob) | 56,682 | 55,621 | 64,322 |
| Ratio OECD/Peru | | 108.1 | 114.1 | 106.9 |

Sources: See Table 4. Cotton is SITC 263 in OECD source, partidas 1471-1473 in Peruvian source. Adjustment applied to totals in bottom two rows is that OECD figures for U.S. and Canada have been inflated by 4 per cent so that all OECD are on at least an approximate c.i.f. basis.

the value of shipments, and so the adjustment is quite small.[1] We would then expect total O.E.C.D. imports on a c.i.f. basis to be 4 percent greater than Peruvian exports f.o.b. As the bottom of Table 7 shows, the actual ratios are somewhat larger, and an average ratio for the three years is 109.6, i.e., O.E.C.D. imports are 9.6 percent higher. Again, if we may consider the O.E.C.D. figures to be correct, and if we consider the freight estimate also to be correct, this would suggest an undervaluation of Peruvian cotton exports of about 5 1/2 percent.[2]

Nonferrous metals, principally copper, is the principal Peruvian export not yet considered in this statistical review. Table 8 presents comparisons for refined copper, and once again it is seen that Peru seems to export more to the United States than the United States actually receives. Unlike the case of cotton, this discrepancy cannot be completely explained by transshipments from the United States to Western Europe. In both 1960 and 1961, shipments to Europe as reported by the Peruvian authorities just about equals imports reported by the European O.E.C.D. members. Therefore the transshipments from the United States must have gone someplace else, if this is to explain the statistical discrepancy.

At first sight, this explanation seemed rather implausible, since to ship copper to the United States and then ship it elsewhere but not to Europe seemed highly uneconomic. An inquiry to the Cerro de Pasco Corporation showed that this was indeed the case, however. Substantial amounts of copper are shipped to the United States, where they go through further stages of fabrication while kept in bond, to be re-exported as wire, bars, or other

---

[1] This was the figure estimated for raw cotton shipped from Egypt to the United States in Kindleberger, op. cit. Bela Balassa, in Trade Prospects for Developing Countries (Irwin, 1964, p. 369), used a figure of 5 percent.

[2] This apparent undervaluation is overstated if freight costs are understated. If freight costs were instead as high as 7 percent of f.o.b. value, the apparent undervaluation would be reduced to 2.9 percent.

Table 8

Peruvian Exports - Refined Copper

| Exports from Peru to: | Source | Values ($000) 1960 | 1961 | 1962 |
|---|---|---|---|---|
| U. S. A. | OECD | 9,149 | 23,635 | 28,989 |
| | Peru | 47,960 | 39,646 | 35,613 |
| Germany | OECD | 21,303 | 21,625 | 20,698 |
| | Peru | 14,663 | 13,727 | 12,405 |
| Austria | OECD | 0 | 74 | 0 |
| | Peru | 0 | 0 | 0 |
| Belgium | OECD | 14,452 | 16,946 | 14,091 |
| | Peru | 14,481 | 16,526 | 11,084 |
| U. K. | OECD | 1,956 | 12,264 | 16,700 |
| | Peru | 1,936 | 11,118 | 16,851 |
| Holland | OECD | 0 | 0 | 0 |
| | Peru | 7,094 | 10,683 | 4,693 |
| Italy | OECD | 535 | 82 | 117 |
| | Peru | 653 | 27 | 0 |
| Sweden | OECD | 112 | 2,040 | 0 |
| | Peru | 0 | 2,314 | 0 |
| Switzerland | OECD | 671 | 570 | 16 |
| | Peru | 0 | 0 | 0 |
| Total | OECD | 48,178 | 77,236 | 80,611 |
| | Peru | 86,787 | 94,041 | 80,646 |
| Europe only | OECD | 39,029 | 53,601 | 51,622 |
| | Peru | 38,827 | 54,395 | 45,033 |

Source: See Table 4. Refined copper is SITC 682 in OECD source, all of partida 2388 except 2388-18 in Peruvian source.

copper shapes. The re-exports go all over the world, even back to Peru. As a result, it becomes impossible to use these comparisons as a means of checking the accuracy of valuations of Peruvian copper exports.[1]

Therefore, in the cases of iron ore and copper we have struck out. In the cases of coffee, sugar, fishmeal, and cotton, the figures do seem to suggest an undervaluation which averages something like 5 percent. The aggregate comparisons reach this same conclusion. These conclusions are deliberately couched in qualifying phrases, since the method which has been used can deliver only suggested conclusions, not proven conclusions. Even if the conclusions are correct, this suggests a problem for tax administrators, but a 5 percent discrepancy is no problem for an economist in Peru.[2] It means that, the pessimism of some individuals notwithstanding, Peruvian foreign trade statistics are not only among the most accurate statistics available in the country, but they are sufficiently accurate for almost any purpose

---

[1] Another possible source of difficulty in making comparisons for mineral products is that there is no completely clear distinction between different stages of processing and between different mineral exports. For example, in the case of copper, it is a somewhat arbitrary decision to say which types of export are refined and which are not (e.g., precipitates, cements, matte, etc.). Also, refined copper is often exported in bars which contain small amounts of gold and silver which add substantially to the value of the export. To make sure that these difficulties were not the reason for the pattern shown in the statistics of Table 8, a similar comparison was made for all nonferrous metals (SITC 283 and 681-689). The results were virtually the same. For 1961 Peru registered a total export of $157,791,000 to O.E.C.D. countries; but the O.E.C.D. countries reported a total import of only $153,308,000, even though all but the United States and Canada were reporting c.i.f. The comparable figures for 1962 were $141,587,000 and $134,664,000.

[2] Part of this apparent discrepancy may be no problem for tax administrators, either. A curiosity of customs procedure is that mineral exporters tend to declare a low value, and pay taxes accordingly, when export takes place. Then when the assay is completed by the government's agent, the value is revised and additional tax payments are made, but the revised value does not find its way into customs statistics. Exporters make slight undervaluations because they have difficulty in obtaining refunds. I am indebted to Daniel Schydlowsky for this information.

to which the economist wishes to put them.

Although Peruvian foreign trade statistics have therefore passed the rough tests given them in this paper, it should not be inferred that there are no statistical problems within any subgroups which may be considered. The economist who wishes to study the importation of passenger motor cars will have his problems. From recent evidence uncovered by economists in the Banco Central de Reserva del Peru, the economist interested in studying the importation of capital equipment for the Corporacion Peruana del Santa will also have his problems, since it seems that these imports have been omitted from the official statistics. It should therefore be remembered that problems can arise through the use of particular components of the aggregate, but it should also be remembered that large components of the aggregate are accurate, and that the aggregate itself is also accurate.