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Smuggling was allegedly rife in Indonesia in the late sixties. With its 30,000 miles of coastline, its proximity to the great entrepôt centers of Singapore and Hong Kong, and its extensive ties of family and finance between Indonesian-Chinese and Chinese elsewhere in Southeast Asia, smuggling would seem to be exceptionally easy there. But smuggling is an illegal activity, not lightly undertaken if it is not lucrative as well as easy. Smuggling was made attractive in Indonesia by the extraordinarily high tariffs (up to 300 percent) levied on many imports, combined with lax and corruptible enforcement. This combination, which can be found to a lesser degree in many developing countries, meant that an inspection of Indonesia's economic policies, and especially its tariff and tax policies, offered little guide to what was actually happening in Indonesia's economy. High statutory tariffs do affect economic behavior, but not necessarily in the intended direction. Indonesia's high tariffs neither protected Indonesia's industry nor produced tariff revenues commensurate with their height. Instead, they induced smuggling.

The notion of "smuggling" conjures up images of smugglers' lairs and small boats operating stealthily in the night. The dictionary defines smuggling as "clandestinely importing dutiable goods without paying the customs." Boats

*To appear in J. Bhagwati (ed.) Illegal Transactions in International Trade

landing quietly in the night constitute only one form of smuggling, however. For purposes of analyzing evasion of import duties in Indonesia, it is useful to distinguish four types of smuggling, or methods of evasion of import duties.

First, imports may not be recorded by customs officials. This can arise either because they are landed outside of the official ports of entry, or because they are moved covertly with or without the complicity of customs officials through the official ports of entry. The latter possibility is especially important for types of goods that are large and require the specialized equipment (e.g. cranes) that is available only in major ports. But surveillance may be sufficiently lax that facilities may be used without leading to a record of the imports, and without payment of duty.

Second, goods may come through the customs post, but be falsely declared as to value. When tariffs are high, there is an incentive to under-invoice imports so as to reduce their dutiable value. Extensive exchange controls on payments to foreigners, e.g. on remittances of profits or repatriation of capital by foreign-owned firms, creates an incentive in the opposite direction, to over-invoice imports in order to export funds illegally. But Indonesia, unusual among developing countries, has virtually no controls on the transfer of funds across the foreign exchanges, so this incentive was absent except for foreign investors who wanted to exaggerate their equity investment in the country. The tariff-induced incentives to under-invoice, on the other hand, were powerful.

Third, goods may come through the customs post but be falsely declared with regard to their nature (e.g. automobiles declared as tractors) or to their quality (e.g. silk goods declared as cotton goods -- and possibly wrapped in cotton goods), so as to lower the applicable duty. This type can be called "misclassification."

Fourth, goods may come through the customs post properly declared, but the duties actually assessed are below those that are legally applicable. We call this "under-assessment."

Needless to say, the probability of success in using these various forms of evasion depends on the degree of complicity or the gullibility of the customs service, with these attributes becoming more important as one moves through the list from the first to the fourth. But when duties are high, customs officials are badly paid, and traditions of honesty do not pervade government officialdom, this complicity may not be difficult to obtain.

In terms of their local market effects, there is perhaps not much difference among these different types of smuggling. But their welfare effects may be greatly different. In a recent essay on the welfare implications of smuggling, Bhagwati and Hansen have argued that smuggling in the presence of legal imports may reduce economic welfare and under conditions of increasing smuggling costs is bound to reduce economic welfare.[1] This result depends critically on the assumption that there are social costs associated with smuggling, as indeed might be generally expected to be the case when smuggling is of the "motorboat in the night" variety. (Even here, however, there may be

[1]Jagdish Bhagwati and Bent Hansen, "A Theoretical Analysis of Smuggling," Quarterly Journal of Economics, LXXXVII (May 1973) pp. 172-187, reprinted as Chapter 2 in this volume.

greater social cost in routing some goods through official ports of entry in a country like Indonesia than simply landing them near the point of local sale; so the assumption even that type I smuggling is socially more costly than legal trade may be questioned.) But it is clearly not true of the last three types of smuggling. There the additional social costs may be negligible or literally zero. Of course, where the complicity of customs officials is involved, importers may have to bribe them into non-enforcement. But these bribes are transfer payments, not social costs that absorb resources.[1]

Under these circumstances, smuggling of the last three types -- and possibly smuggling of the first type as well -- will lead neither to gain nor to loss of welfare in the Bhagwati-Hansen framework. And of course to the extent that smuggling of all types actually eliminates full duty-paid imports, there will be a welfare gain, for tariff-induced price distortions will have been reduced.

However, the neo-classical framework they use for their analysis of the welfare effects of smuggling sorely neglects a key factor of tariff policy in most developing countries, viz. the need to rely on tariffs as a relatively low-cost source of government revenue. Indonesia in the late sixties drew one-third of its total (non-aid) revenues from import and export duties. To the

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[1]It should also be added that the Bhagwati-Hansen framework is one of full employment of local resources, a framework that is not fully relevant in many less developed countries. Even increasing-cost smuggling may yield a social benefit when it involves the employment of otherwise unemployed resources, provided the smugglers' spending generates secondary employment.

extent that governments need to raise revenues to finance public goods, a welfare loss is incurred by any development that either reduces those revenues or forces the government to increase its expenditures on collection. A welfare analysis of smuggling is surely incomplete without taking this important factor into account.

What can one say about the relative importance of the different types of smuggling noted above? Unfortunately, not much. It is in the nature of illegal transactions that they do not get accurately recorded, so any evidence on their magnitude is necessarily circumstantial and inferential, based on incomplete and indirect sources of information.

The first type of smuggling is not recorded at all, for instance. But the goods must be paid for. This means that they must appear somewhere in a complete set of the importing country's balance of payments accounts, if only in the errors and omissions. Thus the balance-of-payments accounts might seem to put at least circumstantial limits on the amount of smuggling. In the late sixties, however, Indonesia's balance of payments showed a positive balancing item, rather than a negative one which unrecorded payment for smuggled imports would require. Several explanations are possible, such as that the value of smuggled exports (to evade a modest tax on exported rubber) exceeded that of smuggled imports. The most probable explanation, however, is that Indonesian-owned assets, which had left the country during the political turmoil of the early and mid-sixties, were returning both in the form of unrecorded capital inflows and in the form of unrecorded imports. Inferences from balance-of-payments figures can be no better than those figures, and for many developing countries most of the accounts, especially for capital and service transactions, represent at best crude approximations of what is really happening.

An alternative approach to estimate the magnitude of smuggling is to rely on the trade figures of partner countries. This technique, while perhaps better than none, places great burdens on the accuracy of those figures, and is exceptionally difficult in the case of Indonesia because of the lack of uniform treatment in trade statistics of entrepôt centers such as Singapore, through which a substantial portion of Indonesia's trade flows.

The second type of smuggling, under-invoicing, can also be expected to be reflected in the errors and omissions of the balance-of-payments accounts. In addition, however, a more direct check can be made through comparison of unit values of imports (c.i.f. import value divided by some measure of quantity or even weight) with known foreign prices. Many imports are sufficiently idiosyncratic (e.g. a made-to-order piece of machinery) that foreign prices different from those shown on the invoice are difficult or impossible to obtain. But other prices are quite standard, and still others are subject to ranges of common-sense plausibility. Comparisons of this type suggest that under-invoicing into Indonesia was quite common in the late sixties, although it is impossible to say just how great was its magnitude. To give only a few examples, drawn from the imports recorded by customs: gold imports, dutiable at 8 percent, carried an import unit value of under $23 an ounce; motorcycles, dutiable at 50-100 percent, had a unit value of $129; motorcycle tires, a unit value of $2.27; table salt, dutiable at 140 percent, a unit value of 1.5¢ a kilogram; and so on. Some of these may be the result of careless recording of the quantity data. But there were enough examples to suggest under-invoicing was widespread. This practice lowers the effective rate of duty.

The third type of smuggling cannot be detected at all through indirect processes: the correct value is declared and the correct duty is paid for the merchandise declared. Direct inspection is required to see whether the goods have been misclassified.

Sometimes the several types of smuggling are used together. For example, automobiles were being imported into Indonesia at suspiciously low unit values. They were however declared as <u>used</u> automobiles at those values. Later a smuggling ring involving several customs officials was discovered to be engaged in this misdeclaration, and a number of persons were jailed for the offense.

The fourth type of smuggling, under-assessment of legal duty, can be discovered by comparing revenues collected, declared values, and statutory duties, commodity by commodity. This comparison requires that the import statistics be kept on the same basis as the tariff schedule; otherwise discrepancies in classification will mar the comparison. The data displayed in Chart I are not entirely free from this last difficulty, but they probably offer a reasonable approximation to the discrepancy between statutory duties and duties actually collected. Association of these discrepancies with illicit activity is further complicated by the fact that certain classes of importers (some government agencies, foreign or domestic investors in "pioneer" industries, etc.) are entitled to exemption from duties on imports essential for their activities. As a rule, however, imports of capital goods and raw and intermediate materials carry only low duties, so this complicating factor is not sufficient to explain the marked shortfall of collections in the range of commodities subject to high duties. It is noteworthy that the proportionate extent of shortfall tends to increase with the statutory duty, a point that will be discussed further below.[1]

While we cannot be sure of the total amount of smuggling or of the relative importance of the different types, except that in Indonesia all were present to some degree, we can measure more directly the effects of all types of smuggling on the marketplace. To this end, local wholesale prices for about 70 commodities were collected and compared with estimates of the c.i.f. prices augmented by the tariff and other taxes on imported goods. The results are shown in Chart II, which has a basic format similar to Chart I. Statutory duties are measured along the horizontal axis, while the vertical axis shows the local wholesale price as a percentage of the c.i.f. price. The 45-degree line indicates what the c.i.f. price inclusive of duty and tax would be, before allowance for importer and wholesale mark-ups. Thus if all imports were fully duty-paid, all the points (each of which represents a single, well-specified good, e.g. a room fan of a certain brand and model) would lie above, presumably well above, the 45-degree line. As can be seen, most of the points in fact lie below the line, and virtually all the points lie below the dashed line, which would be the price with a uniform 25 percent mark-up on tariff-inclusive prices. Moreover, the extent to which they lie below the 45-degree line seems to depend on the level of the tariff, i.e., the higher the tariff plus other applicable taxes, the greater the proportionate shortfall -- the same phenomenon that we observed in connection with under-assessment of duties. A linear regression of the observed wholesale price as a percentage of the hypothetical full duty-paid price on the level of the tariff plus taxes suggests that the shortfall increases by 22 percent of higher

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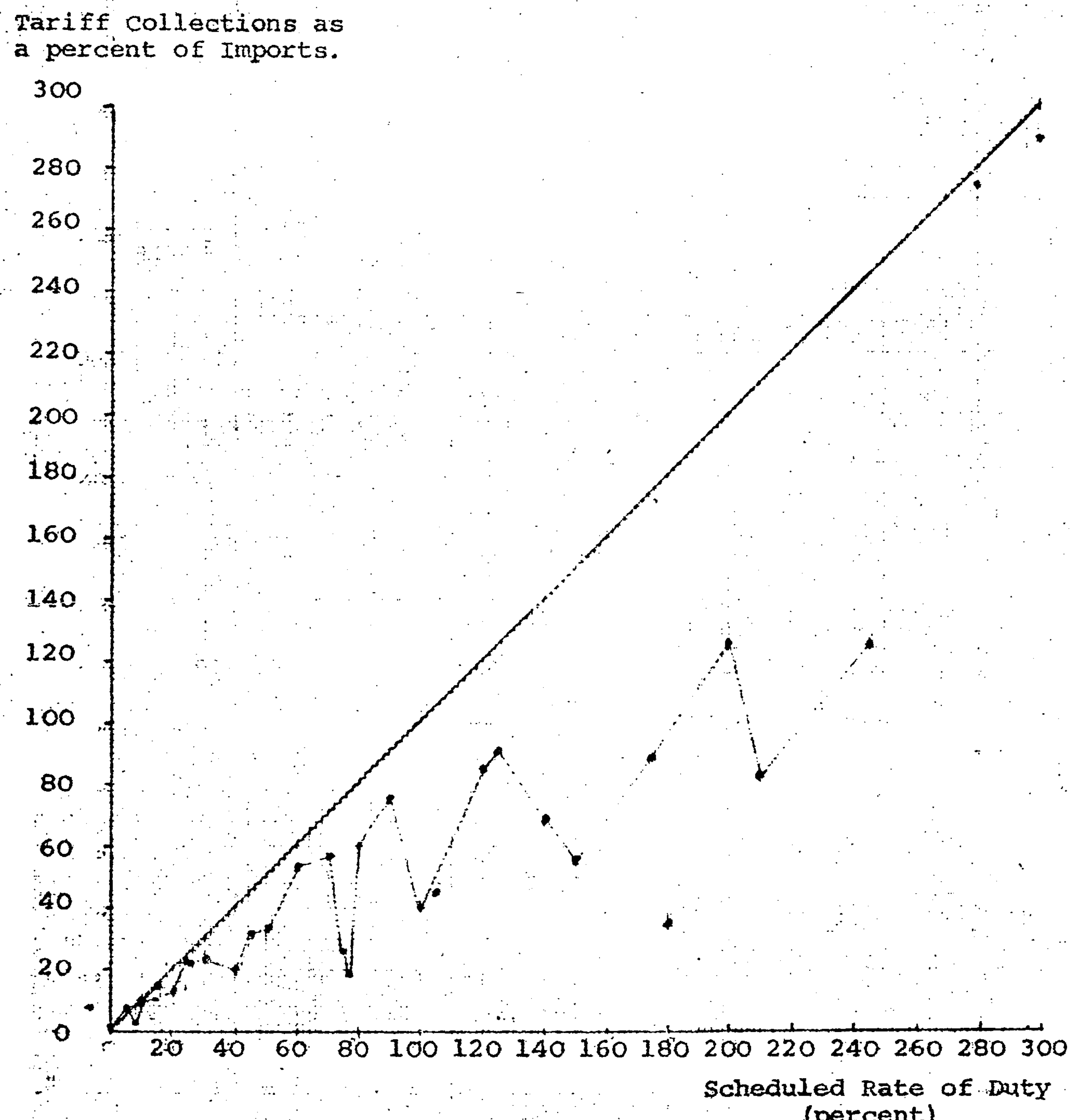
[1] The points that have not been connected to the rest are de minimus (under $500,000) in recorded import value; the two goods carrying duties of 280 and 300 percent--drinking glasses and matches--were believed to have been subject to extensive under-invoicing.

CHART I

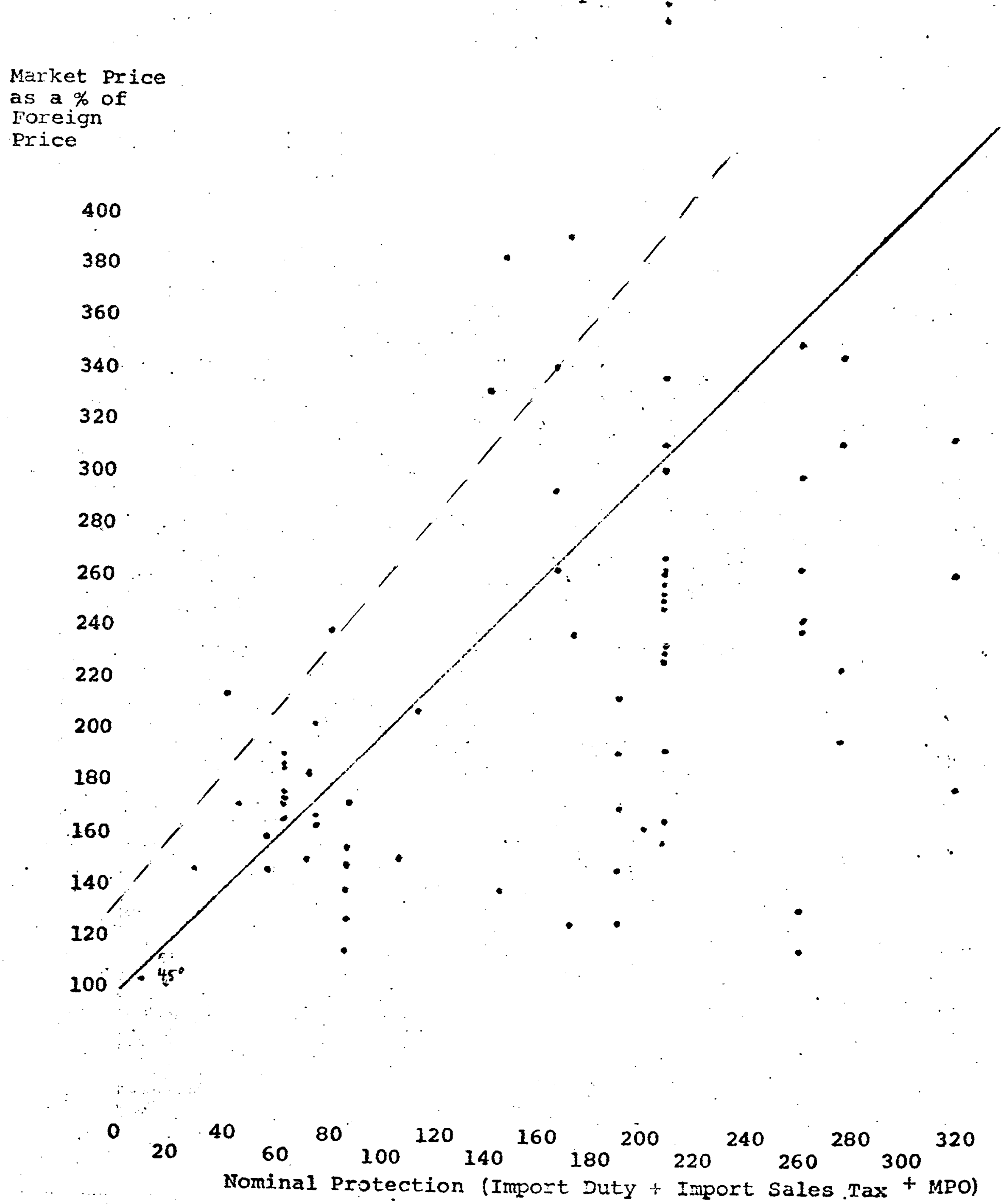
Relationship between Scheduled Duties
and Actual Tariff Collections.



Note : In these calculations imports were below $500,000 at each of the rates : 15, 105, 180, 280, and 300 percent, so these points should receive less weight than the others.

CHART II

Ratio of Domestic to Foreign Price of Imports
in relation to Duties plus Taxes.



statutory duties plus taxes. At taxes plus duty of 100 percent, the market price is just equal (on average) to the full duty-paid price (implying a domestic mark-up on average of 22 percent); at taxes plus duty of 200 percent, the market price falls to only 78 percent of the full duty-paid price. To put the point another way, as the tariff plus taxes are raised from zero to 100 percent, only 78 percent (on average) are actually reflected in the market price; and as the tariff plus taxes are raised further to 200 percent, only 34 percent of this increment is actually reflected in the market price. Increases in tariffs above 230 percent will result (on average) in an actual reduction of market price.[1] Revenue collections will of course fare even worse, for the market price reflects not only tax collections but also other costs (including bribes) that may be associated with importing the goods in question. Variation around these averages is of course wide, as the scatter in Chart II indicates. But the underlying tendency of market prices to rise with duties, but less than proportionately, is unmistakable.

What explains this pattern of behavior? One plausible model involves a threshold of illegality which importers are reluctant to cross, but once it is crossed illicit activity dominates the market. Thus if the costs of smuggling were the same (per unit value) for all goods, all imports dutiable below a threshold tariff would enter the country legally, with full duty being paid, while all goods dutiable above that threshold would pay no duties. In terms

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[1]The linear regression result was $p/f = 1.22 - .22t$, where p is the observed market price, $f = c(1 + t)$ is the hypothetical full duty-paid price, t is the rate of duty plus indirect taxes, and c is the c.i.f. price. Multiplying through by f and substituting yields a market price quadratic in the tariff rate: $p = [1.22 + t - .22t^2]c$. p/c reaches a maximum at t = 229 percent.

All the empirical work reported here was done with the collaboration of Lawrence White of Princeton University, to whom I am grateful for assistance.

of Chart II, all the points below the threshold tariff would lie on the 45-degree line (before allowance for domestic mark-ups), while all the points beyond the threshold tariff would lie along a horizontal line somewhat below the market price ratio of the goods dutiable just at the threshold (reflecting the conjecture that importers are willing to incur some cost to remain law-abiding).

Reality is not so clear cut. Undoubtedly there is a threshold of law-abidingness below which smuggling will be negligible. Penalties for breaking the law are not proportional to the benefits; indeed they arise even if benefits are nil. Breaking the law also exposes one to blackmail, damages reputation and hence business good-will, and so on. So importers are likely to be willing to pay a full duty so long as it is "small", even when it exceeds the direct costs of smuggling. How small is "small" will vary from culture to culture, for the traditions of law-abidingness, and the social penalties associated with being caught breaking the law, vary substantially from country to country.

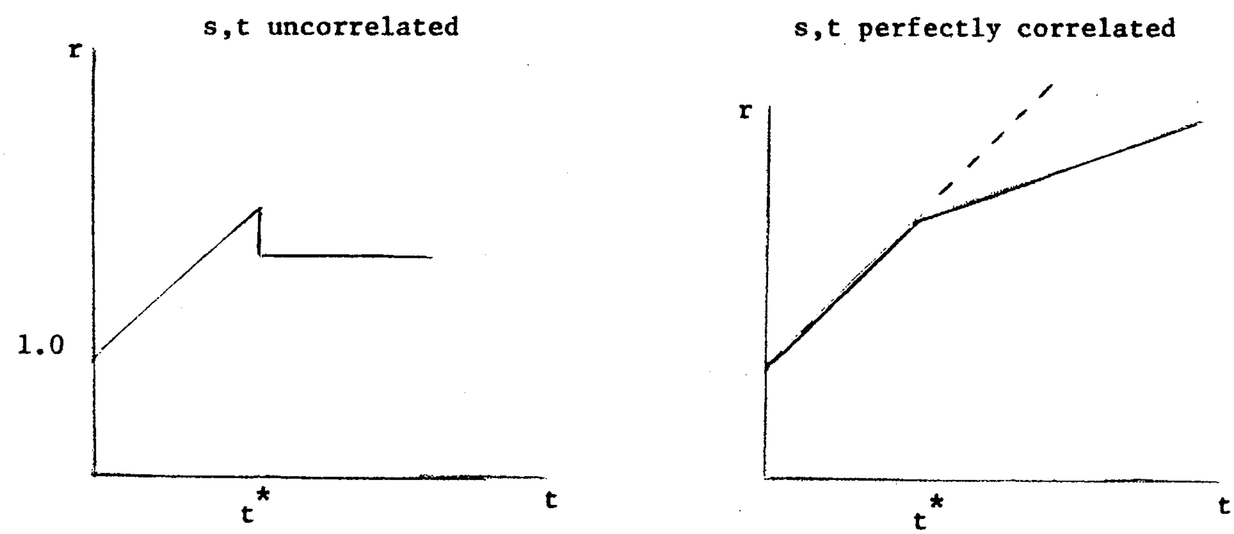
Once tariffs and taxes rise above this threshold level, smuggling is not in fact likely to replace legal trade altogether. This is in part because the costs of smuggling will vary from commodity to commodity (whereas the threshold tariff is not likely to vary so much, if at all), so the gains from smuggling at the threshold will vary substantially from commodity to commodity. Furthermore, some importers are likely to want to remain as close to the law as possible and still remain in business, whereas others will leave it more quickly. Risk aversion will differ from businessman to businessman, and there is no insurance market to hedge against getting caught in violation of the law. Thus some importers, instead of abandoning legal entry altogether, will begin to "trim" through modest under-invoicing or through small bribes to achieve under-assessment or misclassification to qualify for a lower duty. But they continue to import through a customs post and they continue to pay some duty. As the tariffs rise relative to the cost of the first type of smuggling, the amount of "trimming" will also increase, and probably more than proportionately, for two reasons. First, the incentives to trim rise with the duty. Second, it becomes increasingly difficult for any one importer to stay in business as the extent of tariff evasion grows. With competition from smuggling of any type, what appears to be an indirect tax, the tariff, becomes a direct tax on the income of he who pays it, for he cannot pass it on to his customers. As the pervasiveness of evasion increases, this fact becomes increasingly apparent, even to the customs officials, and their willingness to provide some relief to the relatively law-abiding importer, enough at least to keep him in business, will result in systematic under-assessment or other forms of permitted evasion. The result of this process is something like the observed pattern: import costs that rise with the statutory tariff, but less than proportionately.

Various possible cases can be expressed in algebraic terms. Let s_i be the constant cost of smuggling commodity i, as a proportion of its c.i.f. price, c_i. Let $r_i = p_i/c_i$ be the ratio of the local market price to the c.i.f. price. Then if we make no allowance for local mark-ups or for law-abidingness, $r_i = 1 + t$ if $s_i > t_i$ and $r_i = 1 + s_i$ if $s_i < t_i$, where t_i is the ad valorem tariff and other applicable taxes on commodity i.

A general schedule relating r to t then depends on the relationship between s and t. If s and t are uncorrelated over all commodities, then the general relationship between r and t will be $r = 1 + t$ up to some threshold of law-abidingness, t^* (where t^* may exceed the median value of s), and $r = 1 + \bar{s}$ for still higher values of t, where $\bar{s}$ is the median value of s.

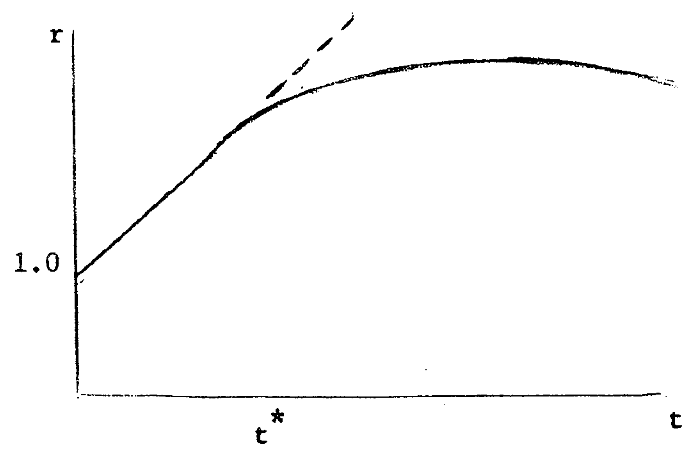
If, to take another extreme case, s and t are perfectly correlated, as might be the case if the tariff was aimed at protection rather than revenue and took "smugglability" into account, then $r = 1 + t$ up to the threshold of law-abidingness, and $r = 1 + kt$ for still higher values of t, where $k < 1$ is the constant of proportionality between s_i and t_i.

These alternative formulations would show the following general patterns, where t^* indicates the threshold of law-abidingness:



A combination of the two patterns would hold if importers drew a sharp distinction, say, between type I smuggling and under-invoicing (as they might do, for instance, if the penalties for the former were much stiffer than for the latter).

Then importers would continue to pay a fraction of the legal tariff, a fraction that might be expected to decline with higher and higher tariffs because of the alternative possibility of Type I smuggling.



Thus we have a mixed system, in which smuggling of several types takes place simultaneously, in which many importers pay some but less than full duty, and in which the government collects as revenue not only less than regulations call for but also less than importers pay. Moreover, the protection provided by tariffs to local industries is less, sometimes substantially less, than the nominal tariff schedule would suggest. The welfare consequences of such a mixed system cannot be determined a priori. The efficiency gains from lower protection must be set against the real resource costs (if any) of smuggling plus the incremental cost of raising government revenue elsewhere or foregoing government expenditure.

It would in these cases improve national welfare if tariffs could be lowered to levels at which they seem "reasonable" to the law-abiding business community and are not too costly to enforce against remaining smugglers. If this is done, government revenues will rise by inducing a higher proportion of imports through legal channels. The protective effect of duties may also rise, to the extent that a threshold of law-abidingness exists and exceeds the cost of smuggling. Thus it may not serve the interests even of protectionist policy-makers to set tariffs as high as possible.