The Taxation of Spirits in Colombia: Problems with the Current Regime and the Impact of Tax Reform

Oxford Economic Forecasting, Fedesarollo and International Tax and Investment Centre

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The Taxation of Spirits in Colombia

Foreword

by

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In December 1998 the Andean Justice Tribunal ruled that Colombia must open its borders for alcoholic beverages to imports from the rest of the Andean Community. Colombians who consume the affected beverages would benefit from this action, since liberalization of the nation's markets for alcoholic beverages would place welcome pressure on prices. But groups that liberalization would affect negatively — employees in departmental liquor monopolies, departmental politicians, and those in the private sector who have "sweetheart" deals with the liquor monopolies — protest, citing the usual reasons for protectionism. This study, a joint effort by two well-respected foreign organizations (Oxford Economic Forecasting and the International Tax and Investment Center) and the leading Colombian think-tank on economic policy (Fedesarollo), is a valuable contribution to the on-going debate over public policy toward the liquor industry and its taxation in Colombia.

Colombia has created a system of local monopolies in the production and distribution of alcoholic beverages that is unusual by international standards. Departmental enterprises (*Licoreras*) produce liquor (or contract to have it produced for them in a few unimportant cases) and either sell it or contract with private enterprises for distribution. National law allows each to create a monopoly position for itself within its province by outlawing or restricting imports from other departments or from abroad. The result of this policy of artificially created departmental autarky is predictable: inefficiency, as manifested in greater employment, higher costs, and higher prices for alcoholic beverages.

This study is not only about the departmental liquor monopolies. Besides describing the national market for alcoholic beverages, the study describes and appraises national and departmental liquor taxes and their various effects — for example, on tax revenues, the distribution of tax burdens among income groups, and incentives for smuggling and adulteration of beverages. In appraisal national policy toward this industry it considers such questions as the choice between ad valorem and specific excise taxes, tax collection and compliance costs, and tax-induced distortion of consumer choices. The study concludes with analyses of taxation of alcoholic beverages in Argentina, Canada, and Hong Kong.

Anyone who cares about fiscal policies in Colombia will find this study must reading.

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The Taxation of Spirits in Colombia

The Key Contributors To This Paper

This paper is the result of collaboration between three eminent and respected international institutions: the International Tax and Investment Centre (ITIC), Oxford Economic Forecasting (OEF) and Fedesarrollo. A brief description of each institution is given below.

International Tax and Investment Centre

Established in 1993, at the request of the Ministries of Finance of Russia and Kazakstan, International Tax and Investment Centre (ITIC) is an independent non-profit research and education foundation with offices in Russia, Kazakhstan, Ukraine, the United Kingdom and the United States. ITIC is organised to serve as a clearinghouse for policy information, and as a training centre to transfer Western taxation and investment know-how to key policy makers in the former Soviet Union and other transition economies across the world with the aim of improving the investment climate of transition countries, thereby spurring business formation and economic prosperity.

Oxford Economic Forecasting

Oxford Economic Forecasting was founded in 1981 to provide independent forecasting and analysis tailored to the needs of business economists and planners. It combines a strong research agenda with a large commercial client list. It commands a high degree of professional experience and technical expertise both through its own staff and its links with Oxford University and the London Business School, as well as through partner firms and institutes in Europe and in the US. Its services cover both the international economy and the UK, and range from regular reports and business seminars to user-friendly PC-based econometric models. In addition, OEF is able to offer consultancy across a broad range of economic issues.

Fedesarrollo

For 30 years FEDESARROLLO has contributed to the decisions of policymakers in Colombia in the economic and social areas, and has provided constant support to the private sector. FEDESARROLLO's influence is based on rigorous and independent research, oriented towards the development of sound policies and the diffusion of knowledge in its areas of research. The Foundation for Higher Education and Development, FEDESARROLLO, is a private, non partisan, non-profit institution.

THE TAXATION OF SPIRITS IN COLOMBIA

CONTENTS

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Oxford Economic Forecasting, Fedesarollo and International Tax and Investment Centre, November 2000

Executive Summary

- **Colombia has an excessively complicated, cumbersome and distortionary system for the taxation of spirits.** For example, there are myriad tax regimes for legally-imported spirits, compounded with many different excise tax rates which vary widely across the departments. Moreover, taxes on spirits in Colombia are substantially higher than in neighbouring economies.

- The existing tax and legislative regime for spirits in Colombia creates a number of problems:
  - **It encourages smuggling and illegal production of spirits.** This in turn undermines government tax revenue, encourages corruption and crime, and poses risks to public health.
  - **It imposes high operating costs on firms operating legally in the spirits market and makes tax collection expensive for the authorities**.
  - **It penalises poorer sections of society**.
  - **It distorts consumer spending patterns, particularly by discriminating against internationally-traded spirits**.
  - **It means Colombia fails to meet international trade agreements**.

  These problems are exacerbated by the inefficiencies of the *Licoreras* (departmental monopolies).

- Urgent reform is needed in Colombia to prevent the revenues of the *Licoreras* and from the consumption tax on spirits continuing to fall dramatically over the next few years as contraband and duty-free imports increase. **Without action, we expect that revenues will drop by more than half in real (inflation-adjusted) terms in the next four years.**

- The changes to spirits taxation that the government is considering including in the forthcoming Tax Reform Bill are to be welcomed, especially since they substantially reduce discrimination against imported spirits. But these proposals do not go far enough. In particular, they fail to reduce tax rates sufficiently to discourage smuggling and other illegal trade in spirits.

- We propose four changes to the tax and regulatory structure of the Colombian spirits market:
  1. **A shift from the current *ad valorem* consumption tax regime to a specific tax regime**.
  2. **A reduction in the average tax rate**, involving a cut in the consumption tax rate from a specific tax equivalent of around 100 pesos per degree of alcohol in a typical 75 cl bottle of aguardiente, to around 75 pesos per degree for the same

bottle; and a cut in the VAT rate on spirits from 35% to 15% or, preferably, a specific tax of 25 pesos per degree of alcohol. These rates have been chosen to maximise tax revenues.

3. **A reduction in import duty to 5% for goods from outside the Andean Community**.
4. **The opening up of the market to full competition** – ie ending the monopoly rights of the *Licoreras* in both the supply and distribution of spirits.

- We calculate that **these proposals would substantially increase tax revenues** (compared to prospects without such reform) for all plausible assumptions about the behaviour of the spirits market in Colombia. The plausible ranges of elasticities are based on analysis of other spirits markets. There are two key mechanisms at work: first, lower taxes would encourage consumers to shift into the legal market, and second, the tax base would be increased by reducing the mark-up charged on domestic legally produced spirits.

- International experience clearly demonstrates the benefits for Colombia from adopting the reforms we are recommending.

The rest of this paper is organised as follows:

- Chapter 2 highlights the problems caused by the current excessively complicated and cumbersome system for the taxation of spirits in Colombia.

- Chapter 3 analyses the particular problems associated with the departmental spirits monopolies (the *Licoreras*).

- Chapter 4 sets out the principles that economic theory suggests should influence the determination of excise taxes in market economies, and which underpin our recommendations for reform to the taxation of spirits in Colombia.

- In Chapter 5 we make proposals for the complete overhaul of the tax and legislative treatment of the spirits market in Colombia. We show that by moving to a specific tax regime, cutting the consumption tax rate by 25% and opening the market fully to competition, the authorities would substantially increase their revenues from spirits compared to prospects without reform.

- Finally, in Chapter 6, we present international case study evidence that demonstrates the problems caused by poorly designed tax systems for spirits and the benefits derived by countries that have adopted reforms along the lines recommended here for Colombia.

Footnote:
The proposals related to tax rates included in this paper differ from those recommended by Fedesarrollo to DIAN earlier this year. This is due to a restriction defined by DIAN in the previous study consisting of avoiding income reduction in the short term. A more detailed analysis of the impact of changes in the tax regime on the size and composition of the spirits market, using data that were not available at the time of the previous study, leads to new conclusions.

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Introduction

The tax and legislative regime for spirits in Colombia is failing. Urgent reform is needed to prevent the revenues of the departmental monopolies (the *Licoreras*) and from the consumption tax continuing to fall dramatically over the next few years as contraband and duty-free imports increase.

In this paper:

- We begin by highlighting the problems caused by the current excessively complicated and cumbersome system for the taxation of spirits in Colombia.
- We then analyse the particular problems associated with the departmental spirits monopolies (the *Licoreras*).
- Next we make proposals for the complete overhaul of the tax and legislative treatment of the spirits market in Colombia. We show that by moving to a specific tax regime, cutting the consumption tax rate by 25% and opening the market fully to competition, the authorities would substantially increase their revenues from spirits compared to prospects without reform.
- Finally, we present international case study evidence that demonstrates the problems caused by poorly designed tax systems for spirits and the benefits derived by countries that have adopted reforms along the lines recommended here for Colombia.

I. What is Wrong with Current Tax Regime for Spirits in Colombia?

Colombia has an excessively complicated, cumbersome and distortionary system for the taxation of spirits. For example:

- There are myriad tax regimes for legally-imported spirits. Most spirits imported through normal channels are subject to a 20% import duty. But imports brought into Colombia via the 'special customs regime zones' are subject to much lower tax rates. For example, import duty in San Andres is 10%, while in La Guajira it is just 4% (set to increase to 10% from December 2002).
- Likewise, there are myriad of excise tax rates applied to spirits. While there is a national minimum ad valorem tax on consumption of 35% on the value of sales the rate actually applied varies by department, from 35.3% in Caqueta to 47.3% in Valle – although some imports from customs regime zones are exempt from consumption tax. And the definition of the taxable base discriminates both across products and between domestic and imported spirits.
- The VAT rate on most spirits is 35%, much higher than the 15% generally applied to other goods, including aperitifs.
- The rates of consumption tax and VAT on spirits in Colombia (other than the customs regime zones) are substantially higher than in neighbouring economies, as shown in Table 1. The cumulative tax burden as a proportion of the CIF price for a typical Scotch whisky is almost 200%.
- There are complicated and opaque bureaucratic procedures for determining the tax to be paid, ranging from application of the DIAN's 'reference list prices' for import duty and VAT on imported spirits, to DANE's reference price to determine the consumption tax liability on the most popular spirits, to the application of customs and departmental tax stamps (*estampillas*), to inefficient customs procedures.

Table 1: Consumption, VAT and import duty tax rates in select Latin American countries			
	VAT	Consumption tax	Import duty
Colombia	15%-35%	20%-40%	20% a/
Ecuador	10%	26,8%	19% -25%
Venezuela	15,5%	8.5%-10% b/	23% c/
Peru	18%	20%	12%-20% d/
Chile	18%	15%-30%-53% e/	9%
Mexico	15%	n/a	
Argentina	21%	0%	23.5%

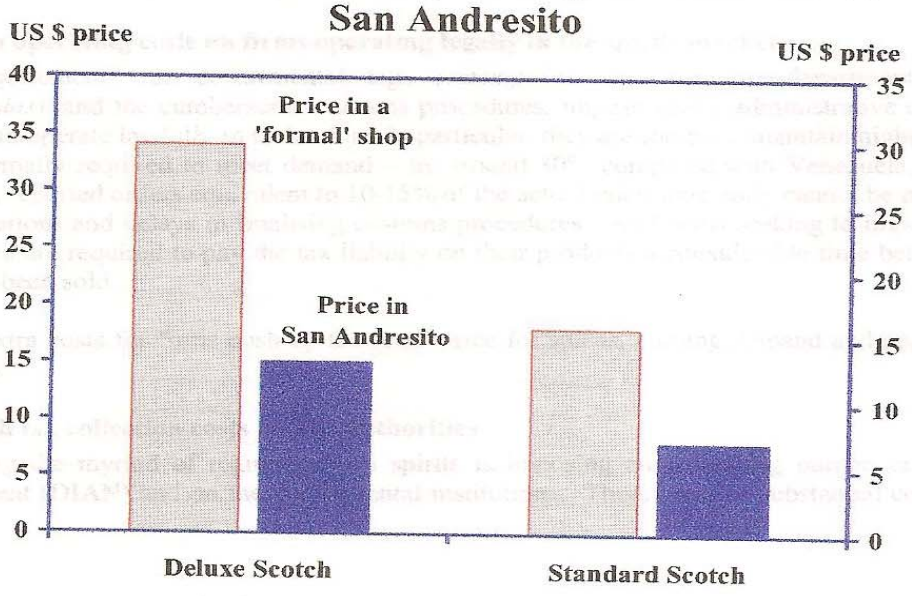
a/ 5% for tequilas; b/ Specific taxes also apply; c/ 13% for rum and vermouths; d/ 5% surcharge for wine and vermouths; e/ 15% for wine, 53% for whisky and 30% for all others. (Scheduled to change as of December 2000 to a 27%-47% range depending on abv.)

All of these factors combine to create a number of problems for the Colombian authorities and for spirits suppliers seeking to operate legitimately in Colombia:

(i) Contraband and counterfeit

The high tax rates on spirits in Colombia encourage smuggling. For example, it is estimated that contraband products accounted for about 80% of the market for premium whisky brands in 1999, and as much as 22% of the total value of spirits sold. The problem is exacerbated by the existence of the special customs zones, with 60-70% of all spirits contraband entering the country through La Guajira according to DIAN officials. As Chart 1 shows, Scotch whisky is available in a typical *San Andresito* at less than half the price available from a 'formal' retail outlet. But it is not just international spirits

Chart 1: Scotch whisky retail prices: Formal vs San Andresito



that are smuggled. The substantial tax differentials between different departments encourage inter-departmental smuggling within Colombia.

High taxes also encourage counterfeiting of spirits. An internal study conducted by UDV in 1993 found that 28% of analyzed Scotch whisky samples were counterfeit. Estimates based on actual apprehensions of forged spirit labels, caps etc reveal that this proportion has remained broadly stable ever since. There has been some progress. For example, a specialised anti-counterfeit unit has been created, thanks to a joint effort by police and industry officials, while Colombian legislation has recently been modified in order to make alcohol beverage adulteration a crime. But substantial progress in the fight against counterfeiting will not be achieved as long as economic incentives remain unchanged.

The existence of smuggling and counterfeiting in turn creates a number of difficulties:

(a) **It undermines government tax revenues.** Increased smuggling has contributed to the 25% fall in the real value of total tax revenues on spirits over the last five years. For example, it is estimated that departmental revenues over 1995-99 were typically reduced by 30% a year from inter-departmental smuggling alone. As a result, the funds available to departments to spend on health and education are being undermined.

(b) **It encourages corruption and other criminal activities.** Genuine customs stamps have been found, for example, in anti-counterfeit raids. And it is likely that an element in the contraband trade in spirits (as in other goods) is financed by the laundering of money originating from other illicit activities, such as drug dealing.

(c) **It poses risks to public health.** While health hazards resulting from the use of industrial alcohol in counterfeit products have largely disappeared in recent years, as ethylic alcohol has become more readily available, intoxication cases are still common at peak times in the demand for spirits.

(d) **It defrauds consumers and undermines the image and reputation of legitimate suppliers,** discouraging investment by international spirits producers in Colombia.

Moreover, as we demonstrate below, smuggling and counterfeiting of spirits are likely to increase substantially further if tax rates remain at current levels. It is striking that the much lower tax rates applied to beer and wine in Colombia mean that contraband is virtually non-existent, even though these products are internationally traded.

(ii) High operating costs on firms operating legally in the spirits market

The requirements for departmental tags *(estampillas)* and for inter-departmental shipments *(tornaguias),* and the cumbersome customs procedures, impose heavy administrative costs on firms seeking to operate lawfully in Colombia. In particular, they are forced to maintain higher stock levels than normally required to meet demand – by around 30% compared with Venezuela, for example. Even so, reported orders equivalent to 10-15% of the actual sales apparently cannot be met because of complications and delays in finalising customs procedures. And firms seeking to import spirits into Colombia are required to pay the tax liability on their products a considerable time before they have actually been sold.

These extra costs for firms push up the retail price for spirits, curbing demand and undermining tax revenues.

(iii) High tax collection costs for the authorities

Enforcing the myriad of regulations on spirits is imposing an increasing burden on the customs department (DIAN) and on the departmental institutions. There are also substantial costs for public

authorities associated with running the present tax collection system, and many opportunities for the corruption of officials.

Unfortunately, data in this regard are hard to obtain, due to the large number of separate institutional entities involved, whether national or departmental; this also masks the true total cost of public operations. For an institution like the customs department (DIAN), administrative costs are marginal, but enforcement costs are high – and increasing. For example, the share of employees exclusively dedicated to such enforcement activities has gradually increased in recent years to nearly a third of total employees. This is a deadweight cost to society, and a waste of scarce public resources.

(iv) Tax distortions create economic inefficiencies

High taxes on spirits distort consumer spending patterns. As a result, the consumption of alcohol beverages is relatively low in Colombia by international standards. According to estimates by Fedesarrollo, alcohol beverages (excluding beer) accounted for just 2% of total household consumption in 1999 in value terms. Industry estimates are broadly in line with these findings: in 1995, alcohol consumption per capita (including beer) was around 3 litres in Colombia, as compared to 12 litres in France, 18-20 litres in other European countries, and 8-10 litres for Latin American countries such as Mexico, Argentina, Brazil and Chile.

Moreover, the Colombian tax system discriminates heavily against internationally traded spirits. As a result, legal imports account for just 1.5% of the total spirits market.

(v) Alcohol taxes fall disproportionately on groups with relatively low incomes

Taxes on spirits generally penalise the poorer sections of society, which typically spend a greater proportion of their income on alcohol beverages than more affluent households. In the Colombian case, this problem is exacerbated by the high tax rates on spirits. Since aguardiente and rum account for over 80% of total spirits consumption, it is unlikely that the higher tax rates applied to premium brands will alleviate the regressivity of spirits taxation.

(vi) Colombia fails to meet international trade agreements

The justice department of the Andean community ruled in December 1998 that the departmental *convenios* (ie authorisations to sell spirits) created unfair barriers to trade and denied market access to spirit producers from the rest of the Andean Community. Colombia has yet to adapt its legislation to comply with its obligations. Moreover, the consumption tax contravenes Article III in GATT because it applies a lower tax rate to most domestic spirits than to imported products.

II. The Problems Associated with the Departmental Spirits Monopolies (the *Licoreras*)

The spirits market in Colombia is dominated by the departmental monopolies (*Licoreras*), which have a monopoly in the production and distribution of the most important domestic spirits (ie *aguardiente* and rum). Technically, there are currently 19 different departmental *Licoreras*. In practice, however, only nine are in operation, and four of those together account for over 85% of total *Licorera* production.

The *Licoreras* are grossly inefficient. Particular problems include:

(a) *Licoreras* tend to use an excess of labour compared with private companies. For example, in one case, production of *aguardiente* and rum was doubled and the number of employees fell to a fifth when the liquor company became a private concession. In another, for the same average production of *aguardiente*, a private firm employs 104 people while the public entity employs around 400. Moreover, there is no flexibility in selecting the most suitable people for each job. In some cases, employees are public officials fulfilling part of their administrative career.

(b) The *Licoreras* have a high rotation of managers and top level assessors. Typically, an administration lasts for a year at most, and 6 months on average. This makes any attempt at strategic planning impossible and results in a tremendous waste of resources.

(c) The *Licoreras* have not introduced any important innovation in products or packaging in the last few decades.

(d) The *Licoreras* have shown very little ability and efficiency with regard to marketing processes, losing opportunities to penetrate markets, especially international ones, and of segmenting the national market in order to take advantage of differences in tastes and income of the different strata.

(e) Pension obligations in the majority of *Licoreras* are a substantial cost burden - not only due to personnel excesses, but also because of the quantity of extra-legal corporate loans received by employees in these entities.

(f) Not all *Licorera* administrations have the freedom to take decisions on important commercial matters such as, for example, the price of products and discounts for volume. In some cases, departmental assemblies (*asambleas*) establish prices on a bi-annual basis.

These inefficiencies mean that the *Licoreras*' production costs for *aguardiente* are estimated to be over 50% higher than those in Ecuador. So, not only is the *Licoreras'* monopoly in contravention of the terms of the Andean Pact, it imposes substantial costs on consumers, who pay more for spirits than they should – reflecting not only production and distribution inefficiencies but also the lack of competitive price pressures. This in turn undermines sales and potential revenues for both departments and the government. Moreover, the *Licoreras* are rife with corruption and clientelism, and it is estimated that around a third of the departmental revenues they should provide is lost through smuggling, counterfeiting and under-reporting of production, which in turn is leading to under-funding of departmental health and education programs.

III. A New Regime for Spirits Taxation in Colombia

We propose three changes to the tax and regulatory structure of the Colombian spirits market:

- **A shift from the current *ad valorem* tax regime to a (mainly) specific duty regime** (except for import duty on alcohol imported from outside the Andean Community and Value Added Tax).

- **A reduction in the average tax rate,** involving a cut in the VAT rate on spirits from 35% to 15%, and a cut in the consumption tax rate from a specific duty equivalent of around 100 pesos per degree of alcohol in a typical 75 cl bottle of aguardiente, to around 75 pesos per degree for the same bottle. This rate has been chosen to maximise tax revenues. It is on 'the safe side' of the optimal rate – ie it is the lowest rate for which we can be reasonably confident that tax revenues are still increasing. Import duty should also be reduced to 5% for goods from outside the Andean Community.

- **The opening up of the market to full competition** – ie, ending the monopoly rights of the *Licoreras* in both the supply and distribution of spirits.

(a) The impact of high taxes on alcoholic drinks on the tax base

Canadian federal revenues from duty on alcoholic drinks fell by over 22% in real terms between 1985-86 and 1995-96. This in turn mainly reflected a 22½ % fall in the volume of sales of spirits in Canada over this period, with sales of beer and wine down only 2% and 6% respectively.

It is worth emphasising that the fall in spirits sales since the mid-1980s has not been caused by *rising* real duty rates on spirits or by higher retail prices; between 1985-86 and 1995-96, the federal excise duty on spirits rose 7.2%, a fall of 32.5% in real terms, while retail prices for spirits rose by just over 39%, in line with the general consumer price index. Similarly, retail prices for spirits have risen significantly less than for either beer (60% in nominal terms since 1985-86) or wine (55%), which have been subject to rather steeper increases in excise duty.

But that is not to say that taxes are not to blame for the sharp decline in sales of spirits in Canada. The problem, however, has not been rising real duties since 1985-86 but rather their very high absolute level - even allowing for the drop in real duty rates over the last decade, tax and other charges imposed by the federal and provincial authorities still account for 83% of the retail price of spirits in Canada, compared with only 44% in the US. This means that the retail price of spirits is around C$20 for a typical 750ml bottle in Canada, double that in the US. As consumers have become increasingly aware of this differential, and smuggling has developed to exploit the situation (for reasons discussed below), so the legitimate domestic market has been undermined.

The scale of smuggling of spirits suggests that tax rates on spirits in Canada are well above their revenue-maximising rate. OEF's econometric analysis suggests that the price elasticity of demand for spirits is around -1.25. On this basis, Canadian tax revenues would be maximised at a rate of about C$14 per 750 ml bottle, compared with an effective rate of C$16. This is a classic example of a country falling foul of the so-called 'Lafer curve'.

(b) The impact of cuts in tax on tobacco on smuggling of alcohol

Strikingly, despite the long-established differential between taxes in Canada and in the US, smuggling of spirits is a relatively recent phenomenon. Seizures of illegally-imported spirits were small prior to 1993. Rather, most smuggling in the early 1990s was of tobacco, again motivated by the much higher taxes imposed in Canada than in the US. (Illegal trade in tobacco is estimated to have been worth around C$6 billion in 1991 and close to C$10 billion by 1993.)

In 1994, the Canadian authorities responded to the problem of tobacco smuggling by cutting tobacco taxes by between 47% and 70% (depending on the province). And this policy was highly effective in its primary purpose: for example, the provincial police in Quebec have reported that trade in contraband tobacco has been cut by 80-90%.

The decision to reduce the tax differential on tobacco did not, however, eliminate smuggling altogether. Rather, many of the criminal gangs which had previously smuggled tobacco switched to illegally importing spirits, where the tax differential remained very large, offering the opportunity for continued substantial profits. Since these gangs already had well-established routes for bringing contraband into the country, and highly effective distribution networks within Canada, smuggling of spirits increased significantly.

This experience demonstrates the importance of considering the appropriate setting of duty rates on excisable goods in a coherent framework - allowing for the impact of changes in taxes on one product for revenues from other products - rather than on a piecemeal basis.

(iii) High tax rates promote smuggling, tax cuts deter it: the example of the Argentinian Scotch whisky market

Argentina has maintained an ad valorem tax system for spirits over the last decade. However, excise duty rates have been sharply reduced - for example, Scotch whisky was taxed at 50% at the start of

the 1990s but in 1998 and 1999 was taxed at only 12%, while the rate for brandy and gin has dropped from 30% to 8% over the same period.

Tax rates were cut to reduce the incentive for smuggling. For example, as Table 3 shows, illegal imports of Scotch whisky are estimated to have been equivalent to a third of legitimate sales in 1991 and this activity was expanding rapidly. But illegal imports have fallen 50% since 1992 and now represent only 7½ % of legitimate sales.

Lower tax rates have also boosted demand for spirits, which has risen 12% in volume terms since 1992, having fallen by 5% between 1988 and 1991. The tax cuts have also encouraged consumers to trade-up to more expensive brands, creating a more robust tax base.

With tax rates for spirits down by around 90% between 1992 and 1998, excise tax revenues have fallen substantially, although rather less than proportionately. The government judged it necessary to accept a fall in revenues in order to reverse the expansion of the black market in alcohol, which otherwise threatened a more fundamental weakening in the tax system. But with illegal imports now much reduced, a modest increase excise duty rates on spirits was announced from the start of the year.

Table 3: Illegal imports of Scotch Whisky in Argentina, 000s 9 litre cases

	1989	1991	1993	1995	1997	1998
Illegal imports	122	240	234.5	173	124	120
Legitimate sales	590	728	1274	1214	1466	1611
Illegal as % of legitimate	20.7	33.0	18.4	14.3	8.5	7.4

(iii) Ad valorem tax regimes yield lower tax revenues: the example of the Hong Kong spirits market

Excise taxes for spirits in Hong Kong became purely ad valorem in 1994. Previously, excise taxes were predominantly specific, although there was also an important ad valorem element.

The move to wholly ad valorem taxation substantially raised the prices of higher quality brands of spirits relative to those of lower quality products. As a result, it encouraged consumers to trade-down to these cheaper products in order to avoid tax. For example, low price Scotch whisky brands now account for over 23% of the market, having been less than 1% in the early 1990s.

By reducing the average price paid for spirits, the move to ad valorem taxation also encouraged higher alcohol consumption. For example, by reducing the price of Scotch whisky, the move to ad valorem taxes encouraged a 30% rise in sales between 1993 and 1996, reversing a sharp downward trend over the previous five years. However, whisky sales fell off sharply in 1997 and 1998 as a result of the Asian crisis.

But, as Table 4 shows, total government duty revenues from spirits fell 22% between 1993 and 1996 following the move to a wholly ad valorem regime, and then a further 47% over 1997 and 1998 as the demand for spirits was hit by the collapse in incomes associated with the Asian economic crisis.

In part, this loss of revenue reflects the trading down associated with ad valorem taxes. However, it also reflects the greater administrative problems associated with enforcing an ad valorem tax system compared with a specific duty regime (eg under-declaration of the value of excisable products).

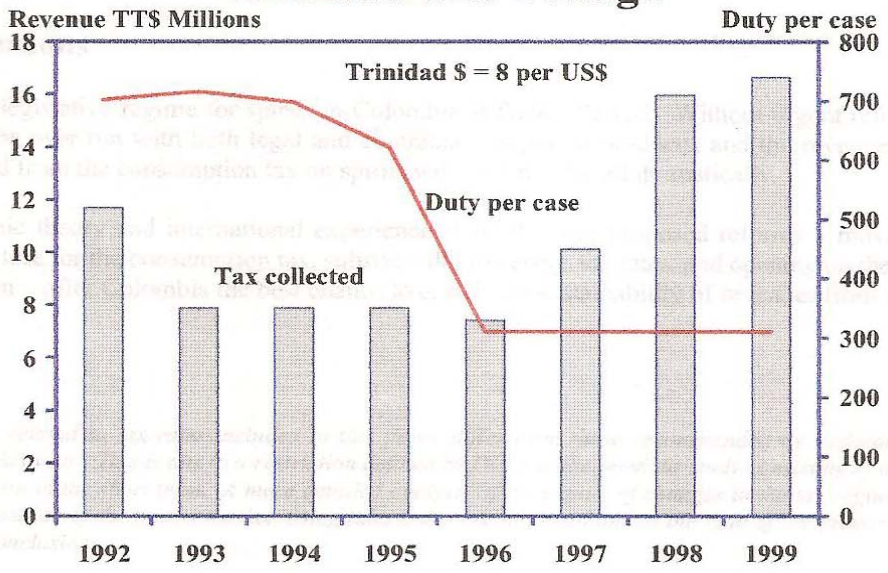
Table 4: Hong Kong excise duty revenues from spirits (HK$ millions)

	Brandy	Whisky	Gin	Vodka	Liqueur	Rum	Other	Total
1993	330.9	52.1	17.2	13.0	23.4	6.6	0.6	443.7
1994	328.8	39.9	8.5	5.0	12.3	3.2	1.6	399.2
1995	305.8	38.0	5.2	3.6	9.5	2.2	2.0	366.2
1996	282.4	39.8	4.8	4.0	9.9	2.2	3.4	346.6
1997	254.2	34.5	5.1	4.2	10.9	2.3	4.6	315.7
1998	135.3	26.5	4.3	3.5	6.8	4.6	4.5	182.7

(iv) Excise tax reductions can generate higher government revenues: the example of Trinidad and Tobago

Excise tax revenues on spirits fell sharply in Trinidad & Tobago through the 1980s and early 1990s, reflecting rapid growth in smuggling and counterfeiting in response to a sharp rise in tax rates. The government responded by halving excise tax rates in 1995, since when tax revenues have doubled, as illustrated in Chart 3.

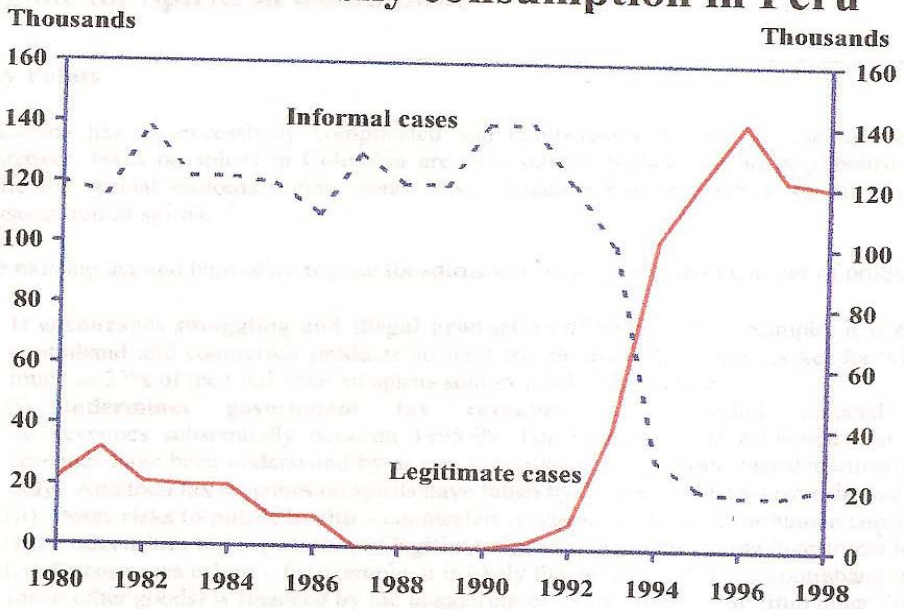
Chart 3: Spirits Tax rates and revenues: Trinidad and Tobago



(v) High taxes promote illegal trade in spirits, tax cuts can eliminate it: the example of Peru

Peru increased taxes on spirits substantially in the early 1980s, and between 1987 and 1990 imports were prohibited. As a result, contraband became rife - for example, accounting for the entire consumption of whisky at the end of the 1980s. But economic reform led to the re-opening of trade and lower taxes from 1992 onwards. As a result, contraband has been sharply curtailed and government revenues have risen to $20 million a year.

Chart 4: Whisky consumption in Peru



V. Conclusions

The tax and legislative regime for spirits in Colombia is fatally flawed. Without urgent reform, the market will be over-run with both legal and contraband imported products, and the revenues of the *Licoreras* and from the consumption tax on spirits will continue to fall dramatically.

Both economic theory and international experience show that our proposed reforms – moving to a specific structure for the consumption tax, substantially lowering tax rates, and opening up the market to competition – offer Colombia the best chance to ensure the sustainability of revenues from spirits.

Footnote:
The proposals related to tax rates included in this paper differ from those recommended by Fedesarrollo to DIAN earlier this year. This is due to a restriction defined by DIAN in the previous study consisting of avoiding income reduction in the short term. A more detailed analysis of the impact of changes in the tax regime on the size and composition of the spirits market, using data that were not available at the time of the previous study, leads to new conclusions.

Chapter 2: What's Wrong with the Current Tax and Legislative Regime for Spirits in Colombia?

Key Points

Colombia has an excessively complicated and cumbersome system for the taxation of spirits. Moreover, taxes on spirits in Colombia are substantially higher than in neighbouring economies, while the special customs regime zones have created a parallel market for the distribution and consumption of spirits.

The existing tax and legislative regime for spirits in Colombia creates a number of problems:

- **It encourages smuggling and illegal production of spirits.** For example, it is estimated that contraband and counterfeit products account for almost 90% of the market for whisky, and as much as 22% of the total value of spirits sold in 1999. This in turn:
  (i) **Undermines government tax revenues** – contraband reduced government tax revenues substantially between 1995-99. For example, it is estimated that departmental revenues have been understated by as much as 30% per year from inter-departmental smuggling only. And total tax revenues on spirits have fallen by 25% in real terms over the last five years.
  (ii) **Poses risks to public health** – counterfeit spirits are often unfit for human consumption.
  (iii) **Undermines the reputation of legitimate producers** – hampering investment in Colombia.
  (iv) **Encourages crime** – genuine customs stamps have been found, for example, in anti-counterfeit raids.

- **It imposes high operating costs on firms operating legally in the spirits market.** The requirements for departmental tags *(estampilla)* and for inter-departmental shipments *(tornaguias)*, and the cumbersome customs procedures, impose heavy administrative costs on firms operating lawfully. They are forced to maintain higher stock levels than normally required to meet demand. And firms seeking to import spirits into Colombia are required to pay the tax liability on their products a considerable time before they have actually been sold. These extra costs for firms push up the retail price for spirits, curbing demand and undermining tax revenues.

- **It imposes high tax collection costs for the authorities**. Enforcing the myriad of regulations on spirits is imposing an increasing burden on the customs department (DIAN) and on departmental institutions. This is a deadweight cost to society, and a waste of scarce public resources.

- **Tax distortions and departmental monopolies create economic inefficiencies**. High taxes on spirits in Colombia distort consumer spending - particularly by discriminating heavily against internationally traded spirits - and keep consumption of alcohol relatively low by international standards. Furthermore, the departmental monopolies are grossly inefficient. Their production costs for *aguardiente*, for example, are estimated to be over 50% more than those in Ecuador, reflecting the absence of competitive pressure. Moreover, it is estimated that around a third of the revenues that the Licoreras should provide is lost through smuggling, counterfeiting and under-reporting of production, which in turn is leading to the under funding of departmental health and education programs.

- **It penalises poorer sections of society**. Preliminary evidence of alcohol consumption by socio-economic strata suggests that alcohol taxes are partially regressive in Colombia, falling disproportionately on groups with relatively low incomes.

- **Colombia fails to meet international trade agreements**. The justice department of the Andean community ruled in December 1998 that the departmental *convenios* created unfair barriers to trade and denied market-access to spirit producers from the rest of the Andean Community, and Colombia has yet to adapt its legislation to comply with its obligations. Moreover, the consumption tax contravenes Article III in GATT because it applies a lower tax rate to most domestic spirits than to imported products.

The structure of the Colombian spirits market is extremely complex, primarily due to an overzealous - and often ambiguous - regulatory and institutional framework. The purpose of this chapter is to set out the key features of the market, focusing on conditions *de facto* rather than *de juris*. The analysis is divided in four parts. Section I identifies the main agents in the market, both public and private. Section II analyses the composition of the market, discussing sales trends in recent years. Section III examines the prevailing tax regime for spirits in Colombia, paying particular attention to tax differences both within Colombia itself and with respect to neighbouring countries. Finally, Section IV discusses in greater detail some of the problems in the Colombian spirits market generated by, or associated with, the existing legal and institutional framework. In addition, it comments on the likely evolution of the spirits market in light of external developments – notably, the ruling against Colombia by the Justice Tribunal of the Andean Community (*Comunidad Andina*).

I. The Main Agents in the Colombian Spirits Market: the Departmental *Licoreras*

Colombia is divided into 32 administrative entities or 'departments' (known by its Spanish equivalent, *departamentos*). Each has an elected governor and a separate legislative assembly (*asamblea*). The fundamental difference with their North American counterparts lies, however, in the degree of fiscal self-sufficiency. Colombia is far from being a federal republic, and the fiscal autonomy of the departments is limited at best. This appreciation is critical to understand the analysis that follows. As Section III illustrates, revenues generated from the consumption of alcoholic beverages typically account for roughly half of current departmental revenues. These revenues, in turn, are supposed to fund health and education programs in each department. As a result, the question of spirits taxation in Colombia necessarily demands a political solution to an economic problem – one of incentives.

Each department has acquired, through a constitutional provision or otherwise, a monopoly in the production and distribution of (domestic) spirits. In practice, this monopolistic faculty is limited to the production (and distribution) of spirits within the 21-35% abv range, notably *aguardiente* ('firewater', an aniseed *eaux de vie*) and rum - though small quantities of other sugarcane-derived spirits within this alcoholic range are also produced. The *Licoreras* - public firms ultimately accountable to the governor of a given department - undertake the production and distribution of all these spirit types at the departmental level. These departmental entities also compete in the 'liberalized' spirits market – that of products of 20% abv or less – and have the exclusive right to import or produce, as the case may be, the generic alcohol type (ethylic) used in all domestic spirit varieties.

The situation of the majority of departmental *Licoreras* has sharply deteriorated in recent years - as will be shown in Section IV, and, in greater detail in Chapter 4. Many of them have become unviable due to a combination of economic inefficiency, high tax rates – coupled with other hurdles derived from operating under a highly complex and bureaucratic tax regime - and declining consumption of *aguardiente*. Technically, there are currently 19 different departmental *Licoreras*. In practice, however, only 9 are in operation, and 4 of those together account for over 85% of total *Licorera* production (see Table 2.1.1).

Table 2.1.1: Breakdown of total Licorera production		
	Licorera	**% of total production (1999)**
1	Antioquia	36.5
2	Caldas	23.2
3	Cundinamarca	16.4
4	Valle	9.4
	SUM OF ABOVE	85.5

In volume terms, the *Licoreras* account for around 80% of total spirits supply in Colombia. Other suppliers of spirits have a very small market share, as can be seen from the production figures provided in Table 2.1.2. For example, legal formal sales of imported spirits account for just 1.5% of total spirit sales, and around half of this share is taken by sales of Scotch Whisky alone. This market segment is clearly dominated by UDV, accounting for around 67% of all Scotch Whisky sales; other international distillers present are Seagrams, Grants, and Allied. Domestic private agents – accounting for almost 10% of spirits supply - concentrate in the production of brandies and 'aperitifs' of 20% abv or less.

Table 2.1.2: Total spirits supply in 1999 by market agent & product, 000 750ml bottles

Market agent	Aguardiente	Rum	Brandy	Whisky	Other	Total
Licorera Valle	11,268	220	-	-	381	11,868
Licorera Antioquia	39,112	6,933	-	-	183	46,227
Licorera Caldas	12,091	16,437	840	-	-	29,368
Licorera Cundinamarca	18,746	1,940	-	-	-	20,687
Subtotal main Licoreras	81,217	25,530	840	-	564	108,150
Other Licoreras	18,143	180	-	-	21	18,344
Total Licoreras	99,360	25,710	840	-	585	126,494
Private domestic producers	-	2,623	10,928	629	1,226	15,405
Total domestic supply	99,360	28,332	11,768	629	1,811	141,900
Formal Imports	-	606	110	1,124	576	2,416
Contraband	-	1,528	182	10,494	1,380	13,584
Total external supply	-	2,134	292	11,618	1,956	16,000
Total market supply	99,360	30,466	12,059	12,246	3,767	157,899

II. The Product Composition of the Colombian Spirits Market

The Colombian spirits market is dominated by sales of *aguardiente* and, to a lesser degree, rum. Together, these two spirit types account for around 80% of total spirit sales (including contraband estimates). The liberalized market for spirits of 20% abv or less – consisting mainly of aperitifs - is very small, accounting for just 1.2% of all sales; that said, its market share has been rising in recent years primarily due to the drop in the sales of *aguardiente*. Sales of imported spirits in formal markets account for only 1.5% of total sales, while estimates for informal imports (contraband or otherwise) place its share at around 8.5% of total spirit sales in volume terms - in other words, by the same measure, over 82% of all imported spirits are sourced through informal channels. These findings are summarized in Table 2.2.1.

Table 2.2.1: Market composition (9L cases)

TYPE OF SPIRIT	Formal imports		% Market Share	Informal imports		% Market Share
	1998	1999	1999	1998	1999	1999
Whisky	147,329	93,633	0.71	892,671	874,517	6.65
Vodka	42,611	17,108	0.13	48,517	62,171	0.47
Gin	3,489	2,630	0.02	9,511	7,870	0.06
Cognac	2,454	753	0.01	2,546	4,047	0.03
Brandy	8,545	8,415	0.06	13,955	11,085	0.08
Rum	45,598	50,510	0.38	100,902	127,327	0.97
Tequila	13,665	13,447	0.10	24,835	18,553	0.14
Aguardiente						
Other	35,721	14,813	0.11	1,029	26,437	0.20
Total spirits	299,412	201,309	1.53	1,093,966	1,132,007	8.60

Table 2.2.1 (cont'd): Market composition (9L cases)

TYPE OF SPIRIT	Domestic spirits		% Market Share	TOTAL		% Market Share
	1998	1999	1999	1998	1999	1999
Whisky	48,500	52,380	0.40	1,088,500	1,020,530	7.76
Vodka	25,949	25,534	0.19	117,077	104,813	0.80
Gin	5,469	5,382	0.04	18,469	15,882	0.12
Cognac				5,000	4,800	0.04
Brandy	996,575	980,630	7.45	1,019,075	1,000,130	7.60
Rum	2,408,461	2,361,028	17.94	2,554,961	2,538,865	19.29
Tequila				38,500	32,000	0.24
Aguardiente	8,424,878	8,280,013	62.93	8,424,878	8,280,013	62.93
Other	119,000	120,000	0.91	155,750	161,250	1.23
TOTAL SPIRITS	12,028,832	11,824,967	89.87	13,422,210	13,158,283	100.00

Table 2.2.2 provides an overview of the evolution of total spirits sales in the last 5 years. Total spirits sales have been progressively declining in recent years, at an average rate of around 3% per year. This has been largely due to the dramatic drop in the sales of aguardiente*, of around 22% from 1995 to 1999. As a result, the market share of* aguardiente *has been eroded to 64% from 68% over the same period. Other domestically produced spirits, however, have not shown a similar tendency. Indeed, sales of rum have remained broadly stable in recent years, whereas those of brandy/cognac and other spirits (mostly aperitifs) have increased substantially. As a result, rum, brandy/cognac and other spirits have increased their market shares by 20%, 32%, 48% respectively between 1995 and 1999. Sales of some imported spirits, such as whisky and gin, seem to have been particularly hit by the economic downturn during 1998/1999, though in the latter case it seems to have just accentuated an already declining trend. Despite this, the market share of whisky has remained largely unchanged in recent years, at around 7.7%.*

Table 2.2.2: Total spirit sales 1995-1999 (9L cases)

TYPE OF SPIRIT	1995	% Market share	1996	% Market share	1997	% Market share
Whisky	1,197,116	7.71	1,138,191	7.56	1,200,094	8.34
Vodka	147,871	0.95	100,310	0.67	106,940	0.74
Gin	33,188	0.21	26,005	0.17	25,904	0.18
Brandy/Cognac	899,366	5.79	963,999	6.40	1,124,910	7.82
Rum	2,501,266	16.10	2,737,277	18.17	2,535,501	17.62
Tequila	18,500	0.12	28,000	0.19	33,500	0.23
Aguardiente	10,608,295	68.29	9,924,073	65.89	9,205,923	63.98
Other	129,500	0.83	143,500	0.95	156,500	1.09
TOTAL	15,535,102	100.00	15,061,355	100.00	14,389,272	100.00

Table 2.2.2 (cont'd): Total spirit sales 1995-1999 (9L cases)

TYPE OF SPIRIT	1998	% Market share	1999	% Market share
Whisky	1,088,500	8.11	1,020,530	7.76
Vodka	117,077	0.87	104,813	0.80
Gin	18,469	0.14	15,882	0.12
Brandy/Cognac	1,024,075	7.63	1,004,930	7.64
Rum	2,554,961	19.04	2,538,865	19.29
Tequila	38,500	0.29	32,000	0.24
Aguardiente	8,424,878	62.77	8,280,013	62.93
Other	155,750	1.16	161,250	1.23
TOTAL	13,422,210	100.00	13,158,283	100.00

III. The Prevailing Tax Regime for Spirits in Colombia

Colombia has an ad valorem tax regime for spirits with myriad special regulations, exemptions, and national/departmental differences according to the type and/or alcohol content and/or origin of the spirit type in question. The taxable base to be taken into account in the application of certain taxes also varies according to these criteria. Broadly speaking, there are up to three different types of tax that can be applied to any given spirit: import tax, consumption tax, and value-added tax or VAT. But, in addition, the special customs regime zones are subject to separate regulations and provide an alternate mechanism for the legal import of spirits into the country.

(i) Import taxes

Import tax rates vary according to the type of spirit in question, with the tax applied to the CIF price of the product on entering the country. A summary of the applicable rates in recent years is given in Table 2.3.1. From this table, we see that all spirit types - except tequila - are currently subject to a 20% tax rate. The applicable rate for imported rum, *aguardiente*, cognac and brandy – ie those products that are in direct competition with departmental varieties – has remained unchanged over the years. However, the rate for other spirit types - such as whisky, gin and vodka - has increased from 5% to 20%, in order for Colombia to comply with Andean Community legislation in this regard. Customs procedures are supervised by the DIAN (customs dept). All import tax revenues go to the central government.

Table 2.3.1: Import tax rates					
Type of Spirit	**1995**	**1996**	**1997**	**1998**	**1999**
Aguardiente	20%	20%	20%	20%	20%
Rum	20%	20%	20%	20%	20%
Gin	5%	5%	20%	20%	20%
Brandy/Cognac	20%	20%	20%	20%	20%
Tequila	5%	5%	5%	5%	5%
Whisky	5%	5%	20%	20%	20%
Vodka	5%	5%	20%	20%	20%

The applicable rates for imported rum and *aguardiente* have had little practical significance so far: the (legal) sale of these products in Colombia has been effectively banned (in the case of imported *aguardiente*) or significantly halted (in the case of imported rum) under the protective umbrella of the departmental monopolistic faculties. Indeed, total sales (including contraband) of imported *aguardiente* are practically negligible, whereas that of imported rum amount to 7% of all rum sold, although legal sales barely account for 2%.

This situation derives from the fact that the sale of any spirit type in a given department must be 'approved' by its governor or legislative assembly, in what is known as a *convenio* – an agreement between two parties. These agreements are not a one-off, but must be renegotiated periodically – and office terms for governor last three years. Bureaucratic burdens aside, foreign producers are effectively subject to arbitrary criteria within a decision-making process lacking objective guarantees. This has particularly antagonized *aguardiente* and rum producers in Venezuela and Ecuador, fellow partners in the Andean Community. As a result, a legal procedure was initiated against Colombia by the justice tribunal of the Andean Community itself. The December 1998 ruling of the tribunal does not question the existence of the production and distribution monopolies *per se*. Rather, it takes issue with the unfair barrier to trade and lack of market-access derived from the existence of the *convenio*s. Colombia has not adapted its legislation to comply with this ruling as yet – though there are current proposals before Congress in this regard.

(ii) Value-added tax

Value-added tax (VAT) rates also vary depending on the type of spirit. A summary of applicable rates in recent years is given in Table 2.3.2. From this table we see that the aperitifs under 20% abv have been taxed at 16% since 1996; this rate dropped to 15% in 2000. All other spirits domestic and foreign, with the exception of whisky aged 12 years or more, have been subject to a 35% VAT tax rate since 1995. Domestic spirits bound for export are VAT-free.

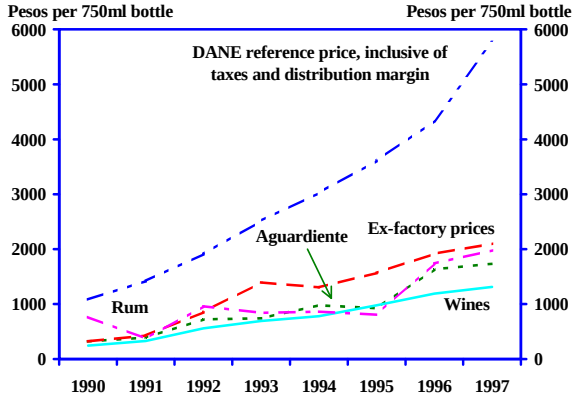
The application of VAT is ambiguous. For imported spirits the legal provisions are relatively straightforward: the relevant taxable base for the application of VAT is that of the CIF price of the product plus the import tax. Prior to 1996, the CIF price provided by the importer was sufficient for this purpose. Since 1996, however, the customs department (DIAN) periodically circulates a list detailing the 'reference price' of all spirit products at customs. Inspection agents must use this additional information to ensure that the stated CIF price for a given product corresponds to that appearing in the DIAN reference list for the same product.

Table 2.3.2: VAT rates

Type of Spirit	1995	1996	1997	1998	1999
Aperitifs	35%	16%	16%	16%	16%
Other spirits such as Aguardiente, Rum, Gin, Brandy/Cognac, Whisky <12 yrs old Tequila, Vodka,etc	35%	35%	35%	35%	35%
Whisky > 12 yrs old	20%	20%	20%	20%	20%

For domestic spirits, however, the legislation is less concise. In principle, the applicable taxable base for domestic spirits is that of the ex-factory price of the product. Nonetheless, the latter cannot be inferior to 40% of the average national retail price of a 750ml bottle of *aguardiente*, as calculated (and given) by the national statistics department (DANE) on a bi-annual basis. There is therefore effectively a 'range' of possible applicable taxable bases over-and-above this point – that is, as long as the declared ex-factory price is higher than the minimum taxable base derived from the DANE calculation. The above only applies to transactions where production and retail have taken place in the same department; if this is otherwise, the minimum applicable taxable base is reduced to 30% of the average national retail price as given by the DANE.

Chart 2.3.1 Current ex-factory prices of a 750ml bottle, 1990-1997



It remains a mystery how the DANE comes up with the average national retail price of a bottle of *aguardiente*; its calculations are not disclosed to the general public. In fact, this reference price has increased sharply in recent years, at a time when reported ex-factory prices have remained relatively stable and applicable tax rates have been unchanged; the price differential is not explained solely by the rate of inflation (see Chart 2.3.1). Nonetheless, the moral hazard risk is evident, since the tax base is influenced - in some measure - by those who are ultimately responsible for paying the tax itself.

Furthermore, the distribution of VAT receipts remains controversial. Under current legislation, VAT receipts from all imported spirits and domestic spirits under 20% abv

should go to the national government; everything else – the bulk of receipts, given the composition of the market – should go to the departments. Nonetheless, the departments have challenged these dispositions in a court of law, and a ruling is pending.

(iii) The tax on consumption

With regards to the tax on consumption, the applicable rates vary by department and alcohol content of the spirit in question; the taxable bases differ according to spirit origin and alcohol content. These varying provisions represent a significant bureaucratic burden – and an associated operating cost - for law-abiding public and private agents alike. A summary of the current dispositions is given in Table 2.3.3.

Chart 2.3.1 Current ex-factory prices of a 750ml bottle, 1990-1997

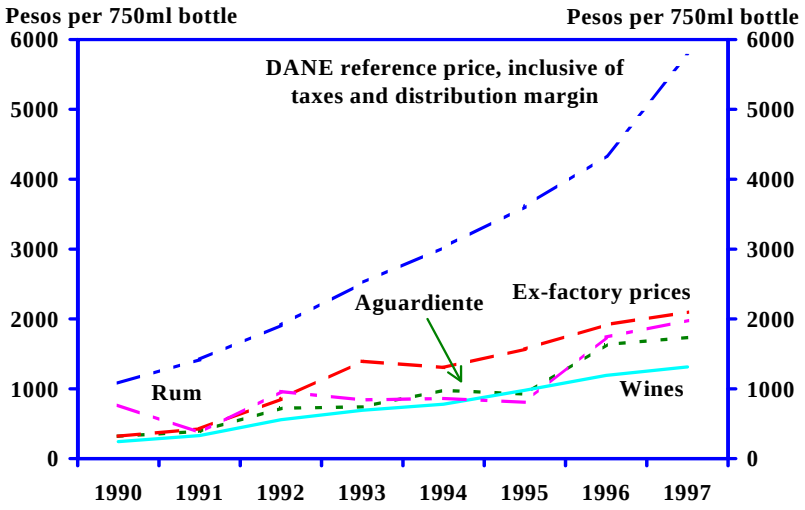


TABLE 2.3.3: CONSUMPTION TAX STRUCTURES ACCORDING TO ABV

abv %	IMPORTED PRODUCT		DOMESTIC PRODUCT	
	Rate	Taxable base	Rate	Taxable base
>35%	40%	[(CIF + Import Tax) x 1.3] x Rate	40%	Invoiced price to retailers within the capital city of the department where the producing facility is located, minus the applicable consumption tax and VAT (i.e. including distribution margins)
20%-35%	35%	As domestic product	35%	Retail price as determined every 6 months by the DANE (national statistics dept) inclusive of VAT, consumption tax itself, and 20% distribution margin
15%-20%	25%	As for >35% abv	25%	As for >35% abv
2.5%-15%	20%	As for >35% abv	20%	As for >35% abv

Applicable tax rates are set at 'minimum' levels by national legislation in this fashion. However, actual departmental rates may differ from these - and often do - such that there is an additional 'premium' imposed on a product upon entering a particular department. Table 2.3.4 offers a breakdown of existing consumption tax rates in selected departments for the 20%-35% abv alcohol segment, illustrating that the average departmental rate effectively applied is over 2% points above the national minimum – ie 37.3%. Weighted by the sales of each departmental *Licorera*, this figure rises to 38%.

While the actual (minimum) rates within a particular alcohol range are the same for both domestic and imported spirits, the treatment in the payment of the tax is not. The tax on consumption should be exercised – in theory – if and when a product is consumed, and this is largely the case for domestic spirits. Imported spirits, however, must in practice pay the full amount of the (national minimum) tax when entering the country, along with the applicable import tax and VAT. These revenues go to a common fund administered by the departments themselves (*Fondocuenta*), pending the final consumption of the product in a particular department. This represents a significant operational cost for importers, since they are effectively 'advancing' the full payment of all their merchandise months ahead.

Table 2.3.4 : Applicable minimum consumption tax rates in selected departments
FIRST SEMESTER 2000

DANE reference price: 8,395.30 pesos

Consumption tax minimum: (35%) 2,938.36 pesos

DEPARTMENT	**TAX AMOUNT DUE (PESOS)**	Applicable rate
Antioquia	2,989	35.6%
Atlantico	3,467	41.3%
Bolivar	3,853	45.9%
Caqueta	2,964	35.3%
Cordoba	3,467	41.3%
Cundinamarca	3,274	39.0%
Huila	3,022	36.0%
Sucre	3,467	41.3%
Tolima	3,358	40.0%
Valle	3,971	47.3%
National mean	3,131	37.3%

The applicable taxable bases also differ depending on the origin of the spirit in question. For imported spirits, the taxable base for most spirits is the CIF price of the product coupled with a 30% distribution margin. Domestic spirits should be taxed according to the ex-factory price of the product plus some distribution margin – though it is unclear what

this percentage is. In both cases, these operations are supervised by the DIAN (customs department). Under the current legislation, the tax paid on imported spirits must not be inferior to that paid (on average) on corresponding domestic products. The DAF (fiscal support directorate) has the duty to ensure that this is the case, and periodically circulates average reference prices for alcohol beverages within the 2.5%-20% range and over 35% abv respectively.

The exceptions to all of the above are spirits within the 20%-35% abv range, both domestic and foreign. These are subject to a different taxable base, and supervised by another institution. In this case, the average national retail price of a 750ml *aguardiente* bottle – as given by the DANE – is used, inclusive of a 20% distribution margin in the calculations.

Given the structure of the Colombian spirits market, this dual taxable base system effectively means that major domestic spirit types qualify for a lower tax rate than their foreign competitors. The bulk of imported spirits - such as whisky - are over 35% abv, but there is no corresponding domestic product in this range; locally produced *aguardiente* and rum do not exceed this mark. In practice, however, the *Licoreras* may actually be suffering from the system they pushed to implement in the first place. As was shown in Chart 2.3.1, the DANE reference price for a bottle of *aguardiente* – which determines the taxable base for the major domestic spirits - has increased dramatically in recent years.

This entangled institutional set-up has important flaws. For one thing, the sheer number of 'partial supervisory' agencies makes the effective and efficient monitoring of the evolution of the Colombian spirits market a cumbersome task. In addition, there is in fact no supervisory agency ensuring that a given department actually receives those receipts that it is entitled to – in other words, there is no external audit of the *Fondocuenta*. Furthermore, there is no agency ensuring that the funds received by the departments for health and education are ultimately used to this end. Given the importance of consumption tax revenues in total departmental revenues, these legal loopholes should not be ignored.

Allowing for import tax, VAT and consumption tax, Colombia taxes spirits much more heavily than most of its neighbours, as shown in Table 2.35. While its import tax rates are similar to those elsewhere in Latin America, Colombia has by far the highest VAT rates applicable to most spirits, and its consumption tax rates are only surpassed

by Chile – in the case of Whisky. This means that, in compound terms, Colombia has possibly the highest cumulative tax burden on spirits in the western hemisphere.

Table 2.3.5: Consumption, VAT and import tax tax rates in select Latin American countries			
COUNTRY	VAT	CONSUMPTION TAX	IMPORT TAX
Colombia	15%-35%	20%-40%	20% a/
Ecuador	10%	26,8%	19% -25%
Venezuela	15,5%	8.5%-10% b/	23% c/
Perú	18%	20%	12%-20% d/
Chile	18%	15%-30%-53% e/	9%
México	15%	n/a	
Argentina	21%	0%	23.5%

a/ 5% for tequilas
b/ Specific taxes also apply.
c/ 13% for rum and vermouths
d/ 5% surcharge for wine and vermouths
e/ 15% for wine, 53% for whisky and 30% for all others.
(Scheduled to change as of December 2000 to a 27%-47% range depending on abv.)

(iv) The special customs regime zones

The 'generic' standard national/departmental legislation that has been reviewed in this section is applicable to most of the Colombian territory - but not all. Indeed, there exist various 'special customs regime zones' under the present legislative framework, which have effectively created a parallel (yet legal) market for the distribution and consumption of (imported) spirits. The existence of such zones with exceptional tributary regimes – 17 ports in all – has accentuated the fragmentation of the Colombian spirits market, insofar as imported liquor is concerned.

One of such zones with specific legal dispositions is the island of San Andres - historically, a duty-free port. Under present regulations, a wide range of products (including all spirit types) can be imported into the island subject to a single import tax rate of only 10%, which is administered and collected by local departmental authorities. This in itself would not be a significant distortion to the Colombian spirits market as a whole, were it not for the fact that products coming into the mainland are subject to similar (exceptional) regulations.

Imported products from San Andres can find their way into mainland Colombia in one of two legal ways. First, distributors/wholesalers can deliver merchandise up to US$20,000 per shipment; products are subject to VAT and import tax premiums in order to comply with national dispositions in this regard, but there is no mechanism for collecting or controlling consumption tax from them, so it is not collected. Second, there is a separate scheme for travellers out of San Andres. In this case, a maximum of 10 articles per person/trip can be taken out of the island entirely tax-free; the value of such merchandise

must not exceed US$2,500. Products taken out of San Andres under this scheme are meant to be for personal use only, and cannot be (legally) re-sold for commercial purposes.

It is largely irrelevant whether this restriction is in fact commonly observed. Spirits can enter the mainland without honouring the tax on consumption; even assuming that the operation is licit, there is still a significant price differential with respect to the generic national standards. This price incentive, coupled with weak administrative controls – an imports registry is not required - mean that contraband products are distributed through the same channels. All of this has led to a sophisticated parallel system for the distribution and retail of imported spirits (amongst other things), whether contraband or otherwise. The most evident example of this – yet perhaps only the tip of the iceberg, in volume terms - is the direct retail outlets spread across the country, known appropriately as the *San Andresitos.*

Another special case - insofar as tax legislation is concerned - is that of the areas of Maicao, Uribia and Manaure within the department of La Guajira. In this case, imports are subject to a rate of only 4% - set to increase to 10% as from December 2002. Sales of these products within these special areas are subject to VAT, but exempt from consumption tax. All tax receipts ultimately go to the local departmental authorities. As before, market distortions are generated when imported products are introduced in the mainland, and the applicable schemes resemble those of San Andres. Wholesalers and distributors face the same US$20,000 shipment restriction in value terms. It is understood – though it is not explicitly stated in the applicable legislation – that tax premiums to match national standards should include those on the consumption tax, as well as VAT and import taxes. In practice, however, the potential for tax evasion is high, given that distributors/wholesalers are expected to liquidate the applicable taxes themselves and enforcement mechanisms are weak. This problem is compounded by the fact that, apart from the lack of import registries, imported spirits from La Guajira do not require the (otherwise mandatory) health certificate/approval issued by the Colombian authorities. As forgery of the latter is less common, this was typically a 'quality' check that could be easily performed by the Colombian consumer to ensure that the product was licit.

Travellers out of Maicao, Uribia and Manaure are similarly restricted to carrying goods with them up to US$2,500 in value. In this case, however, a surcharge of 12% is applied to the CIF value of the good in customs plus the initial tax levied upon entering the special customs regime zones. This additional surcharge is scheduled to edge down to 6% as from December 2002. There are no explicit legal dispositions forbidding the re-sale or distribution of products taken out of the relevant areas under this scheme.

The case of La Guajira is particularly critical, since it is only recently that the Colombian Congress has regulated its status. The oddity of having a special regime within the Colombian mainland – in light of its porous border and the lack of enforcement capabilities – is a serious cause for concern. This fact did not escape the Colombian customs authorities, which effectively moved to ban the entry of most merchandise (including spirits) coming through these special areas. Nonetheless, a popular backlash ultimately led to a dramatic u-turn in policy by Congress – ie the legalization of this alternate import channel.

All these factors – a complex legislative framework, the existence of parallel markets, and poor supervision and enforcement mechanisms, coupled with high price differentials encouraging contraband - work in combination to increase the fragmentation in the Colombian spirits market. This in turn undermines the tax base, reducing revenues for the different authorities - whether national or departmental – and creating deadweight/efficiency losses to both public and private agents. The following section examines these issues in greater depth.

IV. Problems in the Colombian Spirits Market Generated by, or Associated with, the Existing Legal and Institutional Framework.

The existing tax and legal regime for spirits in Colombia creates a number of problems:

- It encourages smuggling and illegal production of spirits
- It imposes high operating costs on firms operating legally in the spirits market
- It imposes high tax collection costs for the authorities
- It penalises poorer sections of society
- Tax distortions and departmental monopolies create economic inefficiencies
- Colombia fails to meet international trade agreements

We discuss each of these in turn.

(i) Contraband and counterfeit

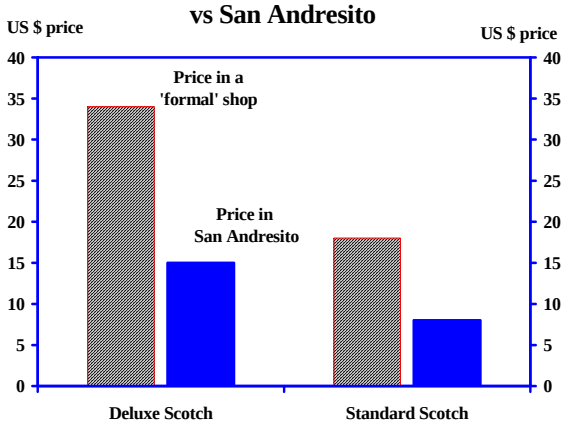
As explained in Section II, the vast majority of imported spirits consumed in Colombia are distributed and sold informally. In the case of whisky, formal sales accounted for just 11% of total sales in 1999. The existence of parallel markets in the country means that it is difficult to identify the exact proportion of contraband spirits in total informal sales; independent estimates from Fedesarrollo, place this share between 55%-60% from 1995-1999 – ie between 6.5% and 8% of total spirit sales in volume terms (see Table 2.4.1). This broad magnitude may vary depending on the type of spirit in question; industry officials claim that as much as 80% of all premium whisky brands enter the market as contraband, and Colombian customs officials (DIAN) privately concede this point. In value terms, Fedesarrollo estimates that contraband accounted for as much as 22% of total spirit sales in 1999, as the bulk of this illicit trade is with more expensive products.

Table 2.4.1: Consumption of Alcoholic Beverages, 1995-1999, (000 750 ml bottles)

(excludes beer)	1995	1996	1997	1998	1999	% Share 1999
Total consumption	218,797	212,725	203,013	192,990	190,530	100%
Domestic products	196,620	190,089	176,803	169,316	168,317	88%
Total imports	22,177	22,635	26,210	23,674	22,213	12%
Declared imports	8,564	9,475	10,895	9,533	9,486	5.0%
Non-declared imports	13,613	13,160	15,315	14,141	12,727	6.7%

The problem of contraband in Colombia has three separate dimensions. First, it is evident – as Section III has shown – that the existence of (poorly supervised) parallel mechanisms for the import of goods in Colombia essentially facilitates the illicit flow of spirits into the country; customs (DIAN) officials estimate that around 60%-70% of all spirits contraband comes into the country through La Guajira. In light of recent events – such as the legal regulation of these areas – one could expect such flows to increase in the near future. Second, it is likely that an element in the contraband trade for spirits occurs alongside other illicit activities. This partly explains why a typical bottle of imported Scotch whisky can be found for 32,000 Colombian pesos (US$ 15 approx) in a *San Andresito*, when it has a FOB price of 28,000 pesos (U$S 13 approx) coming out of Scotland – and has gone through at least three intermediaries plus the retailer. This is illustrated in chart 2.4.1.

Chart 2.4.1: Scotch whisky retail prices: Formal vs San Andresito



Third, there is the question of price differentials resulting from excessive taxation of imported spirits – and this is ultimately the root cause of the contraband problem in Colombia. As was shown in Section III, Colombia has one of the highest tax burdens on spirits in Latin America. Once again, the Scotch whisky market can serve as an example. The cumulative tax burden as a proportion of the CIF price for a typical premium Scotch

whisky bottle nears 200%. Once the relevant distribution/retail margins have been factored in, this means that a case priced at US$157 in the international market sells for US$412 in (formal) high street vendors.

Contraband is inevitable given the scale of the economic incentives created by the current legislative framework – the profit incentive for smugglers is very large. This realization is critical: while the homogenisation of the Colombian spirits market is certainly desirable, it will not *per se* solve the problem of contraband in Colombia. In other words, if the special tax regimes of San Andres and La Guajira were to be abolished, the flow of contraband will be perhaps temporarily hampered, not permanently eradicated. Eliminating contraband requires tax rates on spirits to be reduced substantially, close both to those prevalent in neighbouring countries and internationally.

Much of what has been said above applies to the issue of counterfeiting too. An internal study conducted by UDV in 1993 found that 28% of analysed Scotch whisky samples were counterfeit. Estimates based on actual apprehensions of forged spirit labels, caps etc reveal that this share has remained broadly stable ever since. There has, however, been progress of sorts on two different fronts. First, health hazards resulting from the use of industrial alcohol have largely disappeared in recent years, as ethylic alcohol has become more readily available; that said, a few intoxication cases are still common at peak times in the demand for spirits. Second, a specialized anti-counterfeit unit has been created, thanks to a joint effort by police and industry officials, while Colombian legislation has recently been modified in order to make alcohol beverage adulteration a crime. These policing/monitoring efforts are to be commended, but it remains true that substantial progress in the fight against counterfeiting will not be achieved as long as economic incentives remain unchanged.

The combination of contraband/counterfeit activities is once again most evident in, but not limited to, the *San Andresitos;* one can come across “8X4” cases carrying eight bottles of ‘pure’ contraband product and four bottles of counterfeit substance. Overall, these two illicit activities generate net losses for society as a whole: consumers may be defrauded (at best); the international spirits industry has no control over its own products and can suffer from image/reputation loss – not to mention the costs associated with designing bottles, etiquettes and caps with improved anti-counterfeit features, bottle buy-back programs, etc; increased policing efforts are a drain on public resources; and revenue losses are substantial – a fact often underestimated by governmental authorities. The potential contraband reduction associated with a modified tax structure will be dealt with in Chapter 5 of this study.

Incidently, contraband and counterfeit are not exclusively limited to imported spirits – domestic spirits are also subject to these practices. This will be discussed in point (v) of the present section, as the causes differ. It is also interesting to note, by way of contrast, that there is virtually no contraband in the markets for beer and wine – both with much lower applicable tax rates, and equally subject to domestic and foreign competition. A full discussion of the developments in these markets is provided in Appendix A.

(ii) High transaction costs for firms legally operating in the spirits market

Firms wishing to operate legally in the Colombian spirits market face myriad regulations and bureaucratic obstacles - in sharp contrast to agents in informal markets. Customs procedures are cumbersome: a typical shipment will take around a month to

clear customs fully, due to the number of separate administrative tasks involved and inefficiencies associated with the implementation of a new monitoring computer system. In theory, customs requirements should be uniform across entry ports; in practice this is not the case. As a result, certain firms have resorted to using a single entry port for all incoming products, regardless of their ultimate destination: the merchandise is directed to a unique centralized warehouse in order to complete customs procedures before being re-distributed across the country. This in turn is no simple task: each spirit bottle must carry the relevant departmental tag (*estampilla*) in order to be legally consumed; tags are only issued by departmental authorities once the merchandise has reached the department in question. To make matters worse, there are tight restrictions associated with the inter-departmental shipment of spirits, as the originating or 'exporting' department must authorize these as well. Such authorizations are known as *tornaguias*.

In practice, all this is not only cumbersome but also grossly inefficient - and thus costly. The dual systems of tags (*estampillas)* and inter-departmental shipments (*tornaguias*) do not fulfill their purpose of effectively controlling the distribution and consumption of spirits in each department. Obviously, spirits sold and distributed in informal markets do not comply with these regulations; tags in bottles are forged - and it is not uncommon to find the original types as well, pointing to the multiple potential corruption opportunities created by the present legislative framework. Administrative costs aside, the bulk of these costs for formal market firms take the form of excess inventories: firms are forced to maintain higher stock levels than normally required to meet demand – by around 30% compared with Venezuela, for example. In the case of imported spirits firms, this is particularly critical since the full amount of the consumption tax must be advanced in customs - as was discussed in Section III.

The irony of the situation is that often products fail to be delivered even if they are technically in stock, due to the complications and delays in finalizing customs procedures. Typically, reported orders that could not be met for this reason have accounted for 10%-15% of actual sales in any given month for a representative private firm. This in turn generates other problems, such as diminished customer loyalty.

(iii) High tax collection costs for public authorities

There are also substantial costs for public authorities associated with running the present tax collection system. Unfortunately, data in this regard are hard to obtain, due to the large number of separate institutional entities involved, whether national or departmental; this also masks the true total cost of public operations. For an institution like the customs department (DIAN), administrative costs are marginal, but enforcement costs are high – and increasing. For example, the share of employees exclusively dedicated to such enforcement activities has gradually increased in recent years to nearly a third of total employees.

The opposite is true for departmental institutions, where administrative costs account for the bulk of expenses due to the different bureaucratic stages involved: approval of inter-departmental shipments, concession/supervision of departmental tags, request of the funds owed to the department through the *Fondocuenta*, etc. In this regard, the deteriorating health of many departmental *Licoreras* in recent years has gradually changed the nature of fiscal departmental priorities, but not its spending patterns. Broadly speaking, the emphasis for most now is to ensure that the incoming *aguardiente* - from the remaining departmental producers - is appropriately taxed when consumed, rather than the

sustainability of the local *Licorera* as a source of revenue in itself. In other words, inter-departmental smuggling is a rising concern. In practice, however, little is being done to address this problem, as this is exclusively a departmental issue and most departments lack both the technical and financial means to efficiently supervise the system.

(iv) Alcohol taxes fall disproportionately on groups with relatively low incomes

The current tax regime for spirits in Colombia is penalising the poorer sections of society. Poorer households typically spend a greater proportion of their income on alcoholic beverages than more affluent households – as is also the case with food, clothing, and other items. While data on spirit consumption patterns by socio-economic strata are not available, this regressive element in the taxation of spirits is certain to be present as long as the income elasticity of demand is less than one – as is typically the case. This means that, for any given change in income, the percentage change in spirits consumption is less than the percentage change in income itself.

In the Colombian case, the regressive component of spirits taxation is exacerbated by the high applicable tax rates on spirits. Moreover, since *aguardiente* and rum account for over 80% of total spirits consumption, it is unlikely that the higher tax rates applied to premium brands will alleviate the regressivity of spirits taxation.

(v) Economic inefficiencies associated with tax distortions and the existence of departmental monopolies

High taxes on spirits distort consumer spending patterns. As a result, the consumption of alcohol beverages is relatively low in Colombia by international standards. According to estimates by Fedesarrollo, alcohol beverages (excluding beer) accounted for just 2% of total household consumption in 1999 in value terms. Industry estimates are broadly in line with these findings: in 1995, alcohol consumption per capita (including beer) was around 3 litres in Colombia, as compared to 12 litres in France, 18-20 litres in other European countries, and 8-10 litres for Latin American countries such as Mexico, Argentina, Brazil and Chile. Moreover, the Colombian tax system discriminates heavily against internationally traded spirits. As a result, imports sourced through traditionally established distributors account for just 1.5% of the total spirits market, as was shown in Section II.

In addition, the existence of departmental monopolies in production and distribution of the most popular spirit products entails considerable inefficiencies and deadweight losses for the economy as a whole. These inefficiencies are present at two different complementary levels: systemic and operational.

First, there are inefficiencies deriving from the way the system is set up – ie systemic inefficiencies. This has specifically to do with the implicit role assigned to the *Licoreras* – that of providing revenue streams for their respective departments. The spirits market has been artificially fragmented with the creation of 32 separate sub-markets, depending upon relatively narrow tax bases, albeit with very similar structures; product differentiation across *Licorera* spirit types is indeed very low. At the same time, the DANE reference price system for spirits within the 20%-35% abv range has in essence set common minimum prices across markets. The combination of these two factors means that strong collusion incentives exist as long as *Licoreras* cooperate and commit themselves not to penetrate each others' protected markets. But this initial *status quo* could only last for so

long: the narrow tax bases, the natural expansion of the market and the mutual exchange of political favours were forces pressing for licit inter-departmental trade – not least, with revenues from the consumption of spirits accounting for a substantial share of total departmental revenues.

Once this took place, however, the incentive structure was effectively reversed – ie there was (and still is) an incentive to cheat. And the DANE reference price system has had a 'boomerang' effect on the *Licoreras*, forcing some public firms increasingly to shift production towards 'watered down', flavour-added *aguardiente* in order to qualify for a lower tax rate – and make it appealing to the general public on the basis of price. It has also encouraged firms to under-report production in order to evade tax – a simple matter if production and distribution are ultimately controlled by the same entity. So, the departmental market structure has collapsed, triggering the rationalization/consolidation of spirits production and distribution already underway - as was illustrated in Section I. It is interesting to note that, out of the four major surviving *Licoreras* which currently dominate the market, three of them belong to those departments with the largest internal markets – and thus the widest tax bases - in the country.

With this in mind, it is easy to understand why inter-departmental smuggling and counterfeiting of *aguardiente* have become serious concerns for departments. Public industry *(Licorera*) officials estimate that inter-departmental contraband accounts for 11%-12% of all *aguardiente* sales, while counterfeit is estimated to have a 3%-4% share in this same total. The combination of inter-departmental smuggling, counterfeit and under-reported production is having a serious (negative) impact on total departmental revenues: with regards to sprits taxation, departmental officials estimate that the gap between actual and potential total cumulative revenues is approximately 33%. For example, in 1999 total departmental revenues from spirits taxation were around 600 billion pesos (around US$330 million), whereas the true figure ought to have been closer to 900 billion pesos (US$500 million approximately).

The evolution of revenues from spirits taxation in recent years is shown in Table 2.4.2.

Table 2.4.2: Total revenues from alcoholic beverages, 1995-1999, pesos million

	1995	1996	1997	1998	1999	% Share 1999
Consumption tax revenues						
Declared imports	7,361	8,660	10,188	11,930	15,697	2.3%
Domestic products	246,102	301,074	349,217	361,303	382,981	55.4%
Consumption tax total	253,463	309,734	359,405	373,233	398,678	57.7%
TOTAL - CONSTANT 1995 PRICES	253,463	257,596	251,455	216,996	208,394	
VAT revenues						
Domestic products	90,515	100,780	104,889	112,062	117,717	17.0%
Distribution of domestic products	105,538	116,732	122,661	127,703	133,757	19.4%
Declared imports	6,855	5,909	7,139	7,796	8,172	1.2%
Distribution of declared imports	24,027	20,711	25,020	27,323	28,641	4.1%
VAT total	226,936	244,133	259,709	274,884	288,287	41.7%
TOTAL - CONSTANT 1995 PRICES	226,936	203,038	181,704	159,817	150,691	
IMPORT TAX REVENUES						
Declared imports	1,051	973	2,880	3,640	3,943	0.6%
TOTAL - CONSTANT 1995 PRICES	1,051	809	2,015	2,116	2,061	
TOTAL TAX REVENUE	481,450	554,839	621,994	651,757	690,908	100.0%
Total - constant 1995 prices	481,450	461,443	435,174	378,928	361,146	

Over half of all spirit revenues derive from the consumption tax on domestic products; as consumption tax receipts go entirely to the departments, these typically account for two-thirds of all departmental spirits revenues. But revenues are falling in real terms (ie adjusted for inflation): consumption tax receipts have dropped by nearly 18% from 1995-1999, while VAT receipts slid over 33% during the same period. As a result, total revenues from spirits taxation have dropped by 25%, and this is having a critical impact on the (under) funding of departmental health and education programs. It is likely that the economic downturn in 1998/1999 has accentuated the drop in revenues, but the declining pattern of revenues is a longstanding problem.

Second, systemic inefficiencies give rise to, and are exacerbated by, inefficiencies arising from the operation of the departmental monopolies *per se* – ie operational inefficiencies. The initial market set-up encourages *Licoreras* to become complacent due to the lack of competition. In addition, the political nature of the *Licoreras* themselves potentially generates a string of other deadweight losses, such as clientelism and corruption opportunities associated with the distribution of spirits – not least, due to the arbitrary nature of the *convenios*. These issues are compounded by the fact that departmental governors are elected for one term in office only. One of the outcomes of this is that management changes in *Licoreras* within a single mandate are frequent. Another is that a typical (operating) *Licorera* employs around 400 people, while a similar sized (privately-owned) operation in Ecuador runs with a quarter of this labour force. A more detailed analysis of the state of departmental *Licoreras* is provided in Chapter 3.

As is often the case, the costs resulting from these inefficiencies are borne by the consumer – in the form of higher prices for spirits. First, the consumer is financing the

waste of public resources associated with for example, excess employment in firms, and there is a loss of consumer sovereignty associated with the monopolistic exploitation of the market. Second, the fragmentation of the market is such that there exist clear incentives for private firms – domestic and foreign – to pass on the highest distribution margin possible to departmental intermediaries, and so on. This is particularly true in the absence of inter-departmental wholesale and distribution networks owned by the producers themselves. Third, the fact that the *Licoreras* are the exclusive legal importers of ethyl alcohol means that, in practice, this is re-sold to private domestic producers at more than a 200% premium – from US$0.44 to US$1 per litre. Ultimately, these costs are passed on to the Colombian consumer as well.

With regards to the (in)efficiency question, *Licorera* officials largely prefer to concentrate on the systemic, rather than operational, component. The major problem facing the *Licoreras*, they argue, is one of tax (price) and not internal efficiency. With the appropriate tax structure, the argument goes, surviving *Licoreras* will be in a position to compete against foreign rum and a*guardiente* – notably from Ecuador and Venezuela. Furthermore, they argue that the rationalization of the market currently underway will ensure that any operational inefficiencies in production will be corrected (by compulsion) in the face of international competition. In order to substantiate the latter, *Licorera* officials point to a law proposal currently before Congress which will allow private firms in Colombia to convert industrial alcohol to ethyl alcohol; the *Licoreras* would remain, as now, the sole legal purchasers of the latter. This would ideally enable Colombia to take advantage of its vast stocks of residual sugar cane product - which are currently exported - while the cost of a litre of ethyl alcohol to the *Licoreras* would halve, thereby reversing the flow of imported ethyl alcohol from Ecuador.

All of the above, even if taken at face value, falls short on two important counts. First, ethyl alcohol only accounts for around 30% of the production cost of a typical bottle of *aguardiente*. Even if its cost were to be halved, it remains to be seen whether the *Licoreras* can produce very large quantities of *aguardiente* at around US$ 0.7 per bottle - as is the case in Ecuador. Second, no account is taken of any operational inefficiencies in distribution. These are likely to be harder to eradicate, as distribution is subcontracted out to private third parties, typically belonging to the regional political class. As a result, clientelistic mechanisms may exist.

In practice, the *Licorera* officials' apparent 'lack of preoccupation' with regards to their own international competitiveness is driven by the presumption that import penetration in *agaurdiente* will be low – and this is likely to be the case, at least in the short-run. There are, in fact, no perfect substitutes for the Colombian varieties: Venezuelan *aguardiente* is stronger in alcohol content, and is usually mixed with other beverages, while Ecuadorian *aguardiente* is not aniseed. In addition, newly set-up foreign competitors will find it hard to establish a niche in the market, due to the *Licorera's* brand recognition and customer loyalty. Thus, the resulting market structure for *aguardiente*, even if theoretically open to foreign competition, is still likely to have strong collusion incentives for the three or four major surviving domestic producers – and it is the duty of the Colombian competition authorities to ensure that this is not the case.

In the market for rum, however, competition is likely to be intense, as substitutes are readily available. In addition, the consumption of rum is likely to gain a greater share within the overall spirits market, given the progressive decline of *aguardiente* sales in recent years and the broad preference by younger Colombian generations for rum.

(vi) Failure to meet international trade agreements

In December 1998, the Justice tribunal of the Andean Community clearly ruled against Colombia due to the unfair barriers to trade and lack of market-access derived from the existence of the departmental *convenio*s. In practice, this means that the unhampered influx of Venezuelan and Ecuadorian spirits into Colombia – as well as those originating from other Andean Community members – is just a matter of time, such that these will be able to compete against Colombian varieties on an equal basis. While the tribunal's sentence is only concerned with spirits produced within the Andean community itself, the implication as to the discriminatory treatment of non-departmental spirits under the *convenios* is universal. The *convenios* offer a wide scope for arbitrary and fraudulent tactics, and it would be erroneous to assume that it is only foreign (non-Colombian) spirits that are harmed by such dispositions. Departmental spirit varieties are equally subject to this treatment. For example, around two years ago a major department refused to renew the license for the legal sale of a well-known rum brand from a different department, simply to protect the market while its own (new) rum variety was introduced.

As was discussed in Section III, Colombia has not adapted its legislation in order to comply with the sentence of the Andean tribunal, making the country legally liable to trade sanctions from other Andean Community member states. A current proposal before Congress in this regard only addresses part of the problem. On the one hand, it explicitly forbids departments from asking entry requirements for the sale of alcohol beverages other than the pertinent consumption tax, thus effectively limiting the scope for corruption/fraudulent behaviour. On the other hand, it still acknowledges the application of the *convenios* to regulate the spirits trade, simply forbidding departments from 'obstructing or delaying' the subscription of these. From a practical standpoint, therefore, the potential to limit/hamper the sale of spirits in the different departments remains – and that will not change until the *convenios* themselves are abolished.

In addition, Colombia has broader international obligations with regards to the tax treatment of spirits, as a member of the WTO and a GATT signatory. Article III (National Treatment) in GATT stipulates that identical taxation should be applied to 'like' domestic products and imported products, and that 'directly competitive or substitutable' products should be taxed similarly, with differentials not exceeding *de minimis* levels. The broad purpose of this article is to maximize competition and consumer choice, effectively preventing contracting parties from applying internal taxes in such a way as to provide protection for domestic products. This disposition has been applied by WTO/GATT arbitration panels in a variety of cases - for example, to rule against Japan's liquor tax regime in a complaint brought by the European Community in 1987. In this case, a GATT panel confirmed that 'like products' – such as brandies – should be taxed identically. In addition, it also ruled that 'directly competitive or substitutable products' – ie all distilled spirits beverages – should be taxed similarly, with differences not exceeding *de minimis* levels. Similar rulings have been made against Korea and Chile.

V. Conclusions

This Chapter has shown that the existing tax and legislative system for spirits in Colombia is deeply flawed, by virtue of being excessively complicated, cumbersome and distortionary. These characteristics work together to create a number of problems on

various fronts. First, high taxes encourage smuggling and illegal production of spirits, in turn undermining government tax revenues, posing risks to public health, encouraging crime, and damaging the reputation of legitimate producers. This problem is magnified by the existence of parallel markets for the legal import of spirits into the country, and the substantial differences with neighbouring countries insofar as the taxation of spirits is concerned. Second, high taxes also distort consumer spending patterns, within a system that discriminates heavily against internationally-traded spirits. As a result, alcohol taxes fall disproportionately on groups with relatively low incomes. Third, bureaucratic and customs requirements impose high operating costs on firms operating legally in the spirits market, making tax collection expensive for the authorities. Fourth, the system of departmental monopolies increases market segmentation and provides multiple potential opportunities for the corruption of officials, which could ultimately result in higher prices for the consumer. Moreover, the varying tax rates applied in different departments encourage inter-departmental smuggling and under-reporting of production, which in turn is leading to the under funding of health and education programs. And the departmental monopolies themselves – the *Licoreras* – are grossly inefficient, as will be shown in the next Chapter in greater detail, representing an added burden on public resources. Fifth, the existing tax and legislative regime for spirits violates Colombia's international trade obligations, both with the WTO and the Andean Community.

Chapter 3: Status, Costs and Competitiveness of the *Licoreras*

KEY POINTS

The situation of the majority of *Licoreras* is critical. A closer look at their operations and procedures reveals why:

- The *Licoreras* tend to use an excess of labour compared with private companies.
- The *Licoreras* have a high rotation of managers and top level assessors
- The Licoreras are obliged to carry out complex and costly internal procedures
- The *Licoreras* have not introduced any important innovation in products or packaging in the last few decades
- The *Licoreras* have shown very little ability and efficiency with regard to marketing processes
- Pension obligations in the majority of *Licoreras* are a substantial cost burden
- Not all *Licorera* administrations have the freedom to take decisions on important commercial matters

I. A closer look at the status of the departmental *Licoreras*

The situation in the departments with regard to the production of own brand spirits is shown in Table 3.1.1. From this table, we see that only nine departments produce spirits directly through their own operational *Licorera*s. Two departments have handed the production of spirits over to private firms, in the form of concessions. Four departmental *Licoreras* contract out the production of their spirits to other *Licoreras* elsewhere. The remaining departments do not promote their own production, either directly or through other firms.

As was pointed out in Chapter 2, three out of the four main *Licoreras* in operation produce in the mostly densely populated departments in Colombia. As a result, these departmental entities enjoy a great deal of leverage when facing both public producers from other departments and private producers or importers wishing to enter their markets. In this regard, it is perhaps unsurprising to find that the Caldas *Licorera* is one of the most aggressive when it comes to sales to other departments, given the relatively small size of its market. In addition, certain *Licoreras* benefit from particular idiosyncrasies specific to their markets. The greatest strength of the Antioquia *Licorera*, for example, is not only the fact that it has a relative large-sized market in absolute terms, but also that the consumption of *aguardiente* per capita in this department is three times the national average.

The remainder of the *Licoreras* together only accounted for 11.6% of total spirits supply in volume terms in 1999. This group consists of small departmental entities, typically with

major problems in production. As a result, the majority of departments within this group have opted for some form of subcontracting of production, either public or private. Moreover, industry officials estimate that two or three out of the five Licoreras which still produce directly will close in the next couple of years or so. Indeed, as the competitiveness analysis will show in Section II of this chapter, it is quite probable that all five of these public entities will cease to operate permanently as markets are opened up – unless they make substantial changes in the way they operate. Within the question of the medium-to long-term survival of the *Licoreras*, it is worth emphasizing that the bulk of private domestic producers are concentrated in the fast-growing market for brandy, accounting for 91% of total market supply of this spirit (see Table 2.1.2 in Chapter 2). This is a somewhat surprising finding, since the departments have the right to exercise a monopoly in the production of this spirit as well. Given that brandy is consumed by relatively more affluent households (in comparison to *aguardiente* or rum), it would seem that the *Licoreras* have effectively lost the opportunity to penetrate more profitable markets with higher margins.

Table 3.1.1: the status of the 19 departmental Licoreras

	Licorera	Direct production	Production under private concession	Production contracted out to other departmental Licoreras	Not operative
1.	Antioquia	X			
2.	Caldas	X			
3.	Cundinamarca	X			
4.	Valle	X			
5.	Tolima	X			
6.	Huila		X		
7.	Narino	X			
8.	Boyaca	X			
9.	Cauca	X			
10.	Caqueta	X			
11.	Bolivar		X		
12.	Magdalena			Bolivar	
13.	Norte de Santander			Caldas	
14.	Santander			Cundinamarca	
15.	Meta			Cundinamarca	
16.	Putumayo			Caldas	
17.	Choco			Caldas	
18.	Cordoba				X
19.	Atlantico				X

II. Operations and costs

As was shown in Chapter 2, *Licorera* production is concentrated on relatively low priced (and low value-added) spirits, predominantly *aguardiente*, rum and aperitifs. A heated debate is taking place as to whether, given the state of affairs, these departmental entities can survive in the medium-to long-term - particularly in light of the ruling by the Andean Justice Tribunal, and the opening up of the market (in distribution) to public and private agents, both foreign and domestic.

We present in turn some elements of this debate and evidence regarding comparative costs between public *(Licorera)* and domestic private producers, as well as between the former and foreign firms producing similar spirits types.

(i) Public versus private administration

The debate in Colombia focuses on forms of monopolistic markets and environments that are more open to competition. What is looked for with an environment of greater competition is a way to generate incentives in order to increase **assignative** efficiency (assigning resources with greater welfare for the consumer in terms of prices and production level) and **productive** efficiency (producing at minimum cost), once all the external elements and distribution have been covered.

In general, it is clear that as market structures move further away from competitive environments, whether dominated by public or private companies, any incentives to improving assignative efficiency diminish. Corporate losses are thus generated from poor distribution of resources between different uses and because the goods or services are not of the best quality. It is equally unclear that a monopoly of any nature (public or private) should have an incentive to produce at minimum cost. Rather, a situation arises in which the administrators define their own objectives, not directly related to the maximization of profits for the company.

The latter is most evident in public companies, although this ultimately depends on the mechanisms adopted for control and incentives. An important difference between the two types of monopoly, public and private, is the real possibility of bankruptcy in the latter case - which can induce the private monopolist to reduce costs, even if it does not achieve assignative efficiency.

For the purposes of the analysis presented here, the important thing is to show that any stimulus to competition brings positive effects for efficiency and welfare, as long as the problems in distribution are attended to appropriately through other means.

In this regard, a lot can be said about the departmental *Licoreras*. For one thing, these entities have the ability to produce under monopolistic conditions within their respective regions (for spirits of 20% abv or more). They can define the type of products that they wish to monopolise, as well those for which they give concessions to production or import from outside the country and other departments.

Inside the country, this possibility immediately generates an imbalance in the negotiating position of the *Licoreras*. As noted in Chapter 2, some *Licoreras* can take advantage of the size of their markets compared to the rest. The *Licoreras* with small markets cannot profit from the economies of scale that apparently exist in the production of spirits - and this is one of the reasons why they are on the brink of disappearing. In contrast, *Licoreras* producing in large population centres have been (and are) in a more favoured position because they are able to negotiate the entry of competitors into their attractive markets, and deny entry to those they consider able to compete successfully.

However, the large *Licoreras* also find it difficult in competing against foreign products, and private internal products, due to their inefficiency, both assignative and productive. In this regard, a series of factors contributing to inefficiency were identified in interviews with public companies and private producers of alcoholic beverages, carried out for this study. These factors will affect the competitive position of the *Licoreras* in a more open market.

Most of these inefficiencies were attributed as a direct result of the monopoly, although some arise from the fact that they are public companies. The principal factors were the following:

(a) *Licoreras* tend to use an excess of labour compared with private companies. For example, in one case, production of *aguardiente* and rum was doubled and the number of employees fell to a fifth when the liquor company became a private concession. In another case, for the same average production of *aguardiente*, a private firm employs 104 people while the public entity employs around 400. Finally, another manager of a *Licorera* explained that he could operate perfectly well with 30% of the people that he actually had in its payroll.

(b) The *Licoreras* have a high rotation of managers and top level assessors. Typically, an administration lasts for a year at most, and 6 months on average. This makes any attempt at strategic planning impossible and results in a tremendous waste of resources.

(c) Apart from the use excessive labour, there is no flexibility in selecting the most suitable people for each job. In some cases, employees are public officials fulfilling part of their administrative career.

(d) The *Licoreras* are obliged to carry out complex and costly internal procedures when entering into contracts, due to legal regulations. A contract for a more normal operation (purchasing raw materials, for example), can take up to 15 days to complete, whereas a private company undertakes the task in one or two days.

(e) In the last few decades, the *Licoreras* have not introduced any important innovations in products and packaging.

(f) The *Licoreras* have shown very little ability and efficiency with regard to marketing, losing opportunities both to penetrate markets, especially abroad, and to segment the national market in order to take advantage of differences in tastes and income of the different groups of consumers. Moreover, in some cases the companies delegate these aspects (marketing, advertising and promotion) to their distributors.

(g) Pension obligations in the majority of *Licoreras* are a substantial cost burden - not only due to personnel excesses, but also because of the quantity of extra-legal corporate loans received by employees in these entities.

(h) Not all *Licorera* administrations have the freedom to take decisions on important commercial matters such as, for example, the price of products and discounts for volume. In some cases, departmental assemblies (*asambleas*) establish prices on a bi-annual basis.

(ii) Vertical integration

It is unclear what effect different levels of vertical integration have on average costs and competitiveness in the production and sale of spirits. It is suggested that a number of other elements, like administrative capacity and flexibility, and the excess of labour, can have a more obvious influence on the competitiveness of *Licoreras*. Nevertheless, there are a number of elements to consider:

(a) In transport costs

The first clear element is that of transport costs in the distillation of alcohol. The cost of transporting molasses (a raw material extracted from sugar cane, used for distilling alcohol) is very high, representing an overhead for those firms that are not physically integrated (via pipeline) to a sugar mill. The cost of commercialising the sugar from the mill to main plant in the case of Valle del Cauca *Licorera* can amount to about 75% of its price ex-factory in the mill. This is an important advantage that Ecuadorean alcohol producers have over producers of alcohol in Colombia.

A similar argument – though not one that could be quantified - regards integration between the distillers and the sprits producers. In Ecuador, alcohol is also transported by pipeline between these two plants. The question here is this: what is more costly to transport, alcohol by pipeline or the end products (spirits) to the point of sale to the consumer? In the first instance it seems that transport of the final product is more costly, by weight and price, than that of the alcohol (a "commodity", which can be transported in tankers or large bulk container, as well as being a cheaper product). It may be inferred, therefore, that vertical integration between distillers and spirit producers is not important for reducing unit costs and may even increase them.

(b) To eliminate contaminants

In the area of alcohol distillation there is a problem with a by-product that is not always economical to dispose of, and is often discharged into the rivers as a contaminant. This is the "wine drawn off from the lees" or *vinaza,* a by-product of the molasses distillation process.

This by-product can be used without any major problem and cost when the production of alcohol is integrated with that of molasses. In this case, the *vinaza* is used directly as organic fertiliser. Where there is no such integration, however, there are three ways to dispose of the *vinaza*. One is to pour it into the rivers or drains at an enormous social cost in terms of pollution. A second option is to pay for it to be taken away to agricultural areas where it can be used as fertiliser, although with a commercial value that does not allow the transport costs to be recovered. A third alternative is to concentrate the *vinaza* and convert it into commercial fertiliser, which can be sold profitably in bags. This final option makes it necessary to build a processing plant, the cost of which is estimated to be around US$5 million.

(c) Economies of scale

Another aspect affecting decisions on vertical integration is that of economies of scale. It has been mentioned that these economies are important in the production of alcohol, which means that only major liquor companies can have their own distilleries. A small or medium- sized liquor company cannot profitably have its own distillery, much less when it is not an integral part of a sugar mill.

(d) Differences in costs of raw materials

Other matters of vertical integration have more to do with the efficiency of agricultural production than with problems of transport costs. This is the case with the production of brandy, which was done in some plants in Colombia until a few years ago using locally

grown grapes. Opening up the market meant that it was cheaper to import the grape must from Chile than to produce must domestically.

A similar thing has been happening with the production of alcohol, which is produced more cheaply in other countries, such as Ecuador. This matter will be analysed in more detail in the following sub-section.

(iii) Alcohol costs

In addition to the costs of transporting the molasses - which affects the final cost of the alcohol - there are also differences in the costs of production of the alcohol between, for example, Colombia and Ecuador. These arise due to inefficiencies assigning resources in the official distilleries (excess labour), possible overheads in the acquisition of raw materials and ingredients in these firms (due to their complex contracting systems), and because of the use of lower quality molasses than those used in Ecuador.

Another factor influencing the higher sales prices of alcohol produced in Colombia compared with that produced in Ecuador arises from an apparent paradox: the production costs of Ecuadorian alcohol are lower due to the lower productivity of Ecuadorian sugar mills.

Ecuadorian sugar mills are less productive due to the obsolete nature of the equipment used. This means that Ecuadorian alcohol producers cannot extract the same quantities of sugar per unit of raw material of sugar cane as their Colombian counterparts and, as a result, the by-product (ie the molasses) from Ecuador has a higher concentration of sugar than the one obtained in Colombia. When it comes to the production of alcohol, this inefficiency is effectively reversed, since a lower quantity of molasses is needed to produce a given amount of alcohol. Thus, in Ecuador 0.7 gallons of molasses are required to produce one litre of alcohol, as compared to 1 to 1.5 gallons of molasses in Colombia.

As a result of differences in transport and production costs of the molasses, as well as the overheads for control of contaminants, the *Licoreras* can acquire alcohol in Ecuador at prices CIF Colombia as low as US$0.46 a litre, compared with prices of US$1 a litre in Colombia. Indeed, in 1999 nearly 60% of ethyl alcohol imports (of more than 80º) came from Ecuador. Alcohol is also imported from Panama (23% of the total in 1999), Venezuela (14%) and Costa Rica (5%). Other countries, such as Bolivia and Brazil, are also in a position to produce alcohol at prices as low as, or lower than, Ecuador, but with higher costs of transport to Colombia. Alcohol production costs are higher in Venezuela than in Ecuador, and Venezuela maintains an overvalued local currency. Nevertheless, some *Licoreras* in the Atlantic Coast or the northeast of Colombia import alcohol from Venezuela.

Ecuadorian alcohol costs have been very low in recent years due to the many devaluations of the Sucre - which mean that labour costs, for example, average only US$40 a month. But the “dollarisation” of the economy is raising the cost of ingredients – as well as labour - so that by year-end some of Ecuador’s advantages in this regard are likely to have been eroded.

As was outlined in Chapter 2, there is currently a proposal before Congress in Colombia authorising sugar mills to produce alcohol for sale to the *Licoreras* or for automotive use (oxygenation of gasoline). The *Licoreras* would be the sole purchasers of

this alcohol for the purpose of spirit production. This project would, in the opinion of some, considerably reduce the price of ethyl alcohol, while simultaneously solving the dual problems of sugar concentration in molasses and associated transports costs in the shipment of the product to the distilleries. In this way, the argument goes, alcohol could be produced at a lower cost than that in Ecuador (US$0.25 or US$0.30).

Moreover, certain *Licorera* officials argue that Ecuadorian alcohol is of low quality. This would partially explain, in their view, the drop in the consumption of aniseed flavoured *aguardiente* in Colombia, as most *Licoreras* (such as Cundinamarca and Antioquia) are importing alcohol from that country.

(iv) Production costs of *Licoreras*

There exists a generalised view that the *Licoreras* in Colombia have higher production costs than their nearest or potential competitors, as is almost certainly the case with spirits from Ecuador (Trópico *aguardiente* and Bacardi rum) and probably, but not certainly, the case with Venezuelan brands (Cacique Rum, for example). In order to make more accurate comparisons, information was gathered on direct manufacturing costs and total costs for a series of Licoreras. This information was divided up by company and type of liquor, for products such as aniseed *aguardiente*, rum, vodka, brandy and aperitifs[1].

(a) Aniseed *aguardiente*

This product had an average direct cost of production, taking a sample of 2 large and 3 small *Licoreras*, of US$0.33 and US$0.54 per 750ml bottle for major and minor *Licoreras* respectively. In addition, the total costs amount to US$1.12 and US$1.99 a bottle for major and minor *Licoreras* respectively, resulting in rather more than 70% of the total costs being represented in general costs, as costs of administration and sales (Table 3.2.1).

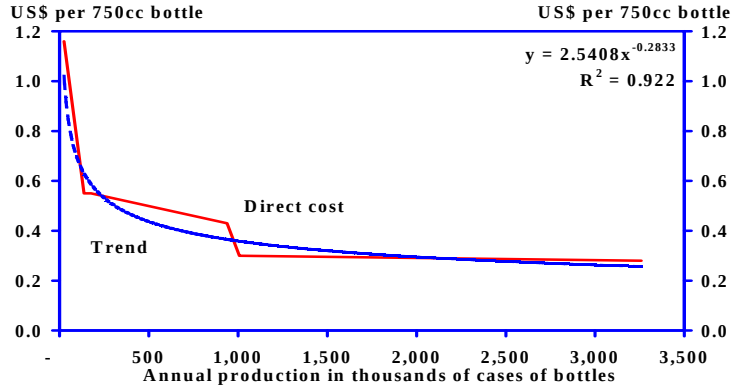
[1]/ It should be noted that this information has not been collected in uniform manner or format. It is information that the liquor companies have provided to the authorities, at different times, with no homogeneous format.

Table 3.2.1: Costs structures for Aguardiente in Licoreras, 1998-1999, percentages and US$

Items	Direct Average Costs		Total Costs	
	Major Licoreras	Minor Licoreras	Major Licoreras	Minor Licoreras
Basic ingredients (alcohol)	34%	36%	10%	10%
Other raw materials (1)	3%	2%	1%	1%
Bottle, label and cap (2)	50%	47%	15%	13%
Packaging etc (3)	8%	3%	2%	1%
Subtotal (1)+(2)+(3)	95%	88%	28%	24%
Direct labour	5%	12%	2%	3%
Total direct costs	100%	100%	29%	27%
Other indirect costs			0%	2%
Admin.& sales costs			71%	71%
Total			100%	100%
Dir. cost of manuf., US$/750ml bottle	0.33	0.54		
Total costs, US$ x bottle			**1.12**	**1.99**
'Ratio Admin. and Sales Costs / Total cost			71%	73%

Direct costs of manufacturing decrease according to company size. So, while large companies show costs of between US$0.28 and US$0.30 a bottle, medium and small companies produce at costs of between US$0.55 and US$1.16 a bottle. The figures for average cost reveal that there are economies of scale, although these do not appear to be present above a certain level of production (more than 12 or 15 million bottles) (Chart 3.2.1).

Chart 3.2.1: Direct unit cost of production of Aguardiente according to Licorera size, 1999



The difficulty facing *Licoreras* in tackling economies of scale is one of the reasons why most departmental entities have closed or are near to doing so. There could be a case for arguing that these Licoreras are adequately sized but that, because of the departmental monopoly, they cannot reach appropriate levels of production since their own market is small. However, there is no evidence for this. The *Licoreras* that distil all the alcohol they require, but are not integrated with the production of molasses, are expected to have

higher production costs than *Licoreras* importing ethyl alcohol, and the figures confirm this: US$0.43 per bottle for those Licoreras that distil their own alcohol, compared to US$0.28-US$0.30 for those that import it.

Another point to make is the importance of general costs (operating and non-operating) to the *Licoreras*' costs structure - that is to say, total unit costs – accounting for 70% of the total costs or, on average, US$0.79 and US$1.45 a bottle for major and minor *Licoreras* respectively. This situation can safely be attributed to the excess costs caused by the inefficiency that is a result of the monopolistic situation.

(b) Rum

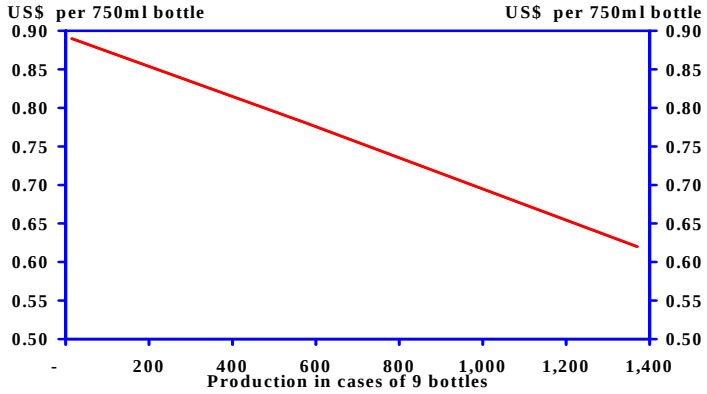
The average direct cost of the manufacturing of rum is, of course, higher than that of aniseed *aguardiente*. For the typical *Licorera*, it averages US$0.67 and US$0.89 a bottle for major and minor Licoreras respectively. The general costs per bottle are on average around 50% of the total costs for major *Licoreras*, and 64% for minor *Licoreras*. (Table 3.2.2).

Table 3.2.2: Costs Structures for rum in Licoreras, 1998-1999, percentages and US$

Item	Licoreras				
	Private Concession	Direct Average Costs		Total Costs	
		Major	Minor	Major	Minor
Basic ingredients (alcohol)	31%	64%	40%	32%	14%
Other raw materials (1)	1%	1%	1%	1%	0%
Bottle, label and cap (2)	49%	25%	39%	12%	14%
Packaging and others (3)	12%	8%	6%	4%	2%
Subtotal (1)+(2)+(3)	93%	98%	85%	49%	30%
Direct labour	7%	2%	15%	1%	5%
Total direct costs	100%	100%	100%	50%	35%
Other indirect costs				0%	1%
Admin. & sales costs				50%	64%
Total direct costs				100%	100%
Dir. cost of manuf., US$/750ml bottle	0.50	0.67	0.89		
Total costs US$ x bottle	**1.00**			**1.34**	**2.53**
Ratio admin.& sales costs / total cost	44%			50%	65%

In this case there is also a reduction in the direct costs of manufacturing as production increases, from levels of nearly US$0.90 a bottle for the *Licorera* with a lower level of production, to levels of US$0.62 a bottle for *Licoreras* with a larger market share (Chart 3.2.2). In general, the unit costs of manufacturing for private firms in Colombia are between 15% and 25% (on average) lower than those of the better performing *Licoreras*. Similarly, while general expenses in a typical major *Licorera* represent, on average, 50% of the total unit costs, in the private firms these expenses account for just 36%.

Chart: 3.2.2: Direct unit cost of manufacturing of Rum per 750ml bottle for Licoreras, 1999



(c) Brandy and vodka

There is very little data available for these spirit types, since they are not a substantial part of the *Licoreras'* production. In addition, no data in this regard could be obtained from private producers. For brandy, for example, the figures available from two *Licoreras* show an average unit direct cost of manufacture of US$1.04 a bottle, with total unit costs of US$3.04 - in other words, general costs of US$2.0 a bottle (66% of the total costs). As far as vodka is concerned, information from two of the *Licoreras* shows very different direct unit costs of manufacture per bottle, namely, US$0.60 and US$1.5. In the first case, total costs were of US$2.3 a bottle – ie general expenses of US$1.70, or 74% of the total unit costs.

(v) Domestic and international competitiveness of the Licoreras

The data available clearly shows that total costs of private firms are lower than those of departmental *Licoreras*. This is predominantly due to the excessive general expenses in public entities, though there are also differences in direct costs. General expenses can be in between 30% and 40% of the total costs in the private firms, whereas they reach between 50% and 70% in the major *Licoreras*, depending on the spirit type in question.

With respect to production costs in Ecuador, ex-factory prices of *aguardiente* can amount to US$0.82[2] per 750ml bottle. Assuming a margin of distribution of 25% of the ex factory price (US$0.21 per bottle), and an average transport cost of US$0.10 per bottle, the product could be placed in Colombia at a retail price of US$1.13 per 750ml bottle, excluding taxes (Table 3.2.3).

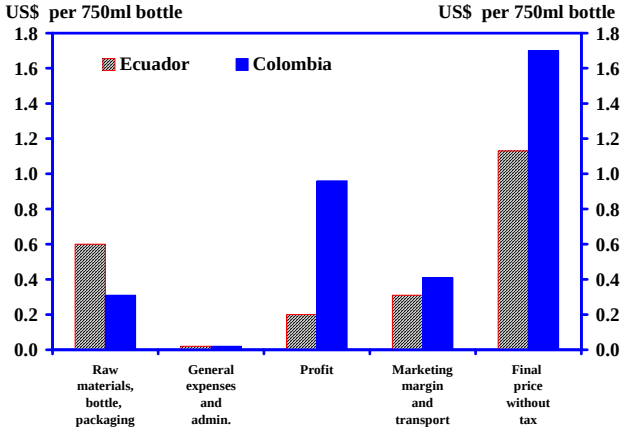
[2] With direct costs of US$0.62 and general costs of US$0.08, for a total of US$0.70 a bottle, according to information from a company that makes *aguardiente* in Ecuador. Assuming a profit of US$0.12 a bottle (15% of sales), the sales price ex factory would amount to US$0.82 a bottle.

Table 3.2.3: Production costs for aguardiente and rum in Ecuador, 2000 (US$ per 750ml bottle)

Item	Aguardiente (750ml bottle)	Rum (750ml bottle)
Raw materials, bottle and packaging	0.60	n.d
Direct labour	0.02	n.d.
General & administrative expenses	0.20	n.d.
Price ex factory	0.82	1.00
Distribution margin	0.21	0.25
Transport costs	0.10	0.13
RETAIL PRICE EXCLUDING TAX IN COLOMBIA	1.13	1.38

In Colombia, the large *Licoreras* sell a bottle of *aguardiente* at around US$1.70 excluding tax. This price consists of an average manufacturing cost of US$1.12, a manufacturer's utility margin of 15% (US$0.17) and a distribution margin of around 25% (US$ 0.41). According to these calculations, the price of Colombian *aguardiente* is 50% higher than the comparable Ecuadorian variety. The major differences in price between the two countries are in the general expense cathegory (administration, sales and profits) and, secondly, in the costs of raw materials, packaging and bottling (Chart 3.2.3)

Chart 3.2.3: Costs of production of Aguardiente in Colombia and Ecuador 1999-2000



As for the smaller *Licoreras*, given direct and indirect costs totalling US$2.00 a bottle, they would be suffering a loss of US$0.70 a bottle if they wanted to compete with the major *Licoreras* – and sell their products at the same price. In order not to lose money,

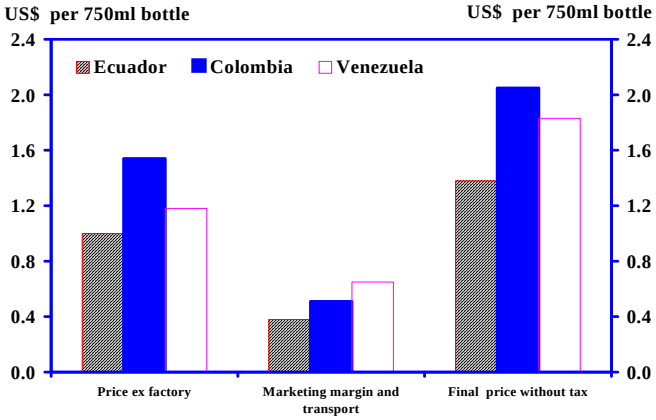
they would need to sell a bottle of *aguardiente* at US$2.40, which puts them competitively in a very difficult position [3].

With regard to rum, from Table 3.2.3 we learn that a 750ml Ecuadorian bottle could be placed in the Colombian market at about US$1.38 excluding taxes. This comprises of a US$1.00 ex-factory price, US$0.13 for transport costs and US$0.25 for margins of distribution for the retailer and wholesaler. In Colombia, the retail price of rum (excluding taxes) produced by major *Licoreras* is estimated to be of US$2.05 per 750ml bottle. This price is made up as follows: US$0.67 of direct manufacturing costs, a similar amount due to general expenses, US$0.51 of distribution margin and profits of US$0.20 a bottle. According to these calculations, this price would be around 48% higher than the Ecuadorian variety.

As in the case of *aguardiente*, small *Licoreras* would not be able to compete with either major departmental *Licoreras* or foreign varieties. With direct total costs of US$0.90 a bottle and general expenses of US$1.67 a bottle, they would once again have to sell their product at a loss (-US$0.52 a bottle), after paying US$0.51 on marketing, if they wanted to sell at the same price as the major *Licoreras.* To avoid losses, they would have to sell a bottle of rum at US$3.08.

Venezuelan rum imported into Colombia came in at a CIF price of US$1.18 for a 750ml bottle in 1999. If a mark-up of 25% and transport costs of 15% are added to this price, it would imply a price of US$1.65 excluding taxes. The retail price of Colombian rum from the large *Licoreras* would thus exceed the Venezuelan variety by 24% (Chart 3.2.4).

Chart 3.2.4: Ex-factory and retail prices for Rum in Colombia, Ecuador and Venezuela, 1999 - 2000



III. Conclusions

In conclusion, this section has shown that *Licorera* production of *aguardiente* and rum from cannot compete on price with comparable products from Ecuador and Venezuela, let alone on aspects of quality and marketing. The *Licoreras'* inefficiencies mean that the their production costs for *aguardiente* are estimated to be over 50% higher than those in Ecuador. However, as was pointed out in Chapter 2, public and private producers point

[3] In fact, if the figures for 1999 of net profits after tax are analysed for 12 *Licoreras*, 4 large and 8 small, we find that only 3 large and 1 small *Licorera* show a profit.

out that, for example, Ecuadorian *aguardiente* is not a perfect substitute to Colombian varieties, as it is not aniseed-flavoured. Moreover, they claim that, partly because of this difference in taste, and partly because of the alleged low quality alcohol used in Ecuadorian *aguardiente,* this would only be appealing to low income socio-economic strata on the basis of price. This latter part of the argument, however, does not seem very convincing since most of the alcohol used at present in Colombia for major spirit types comes from Ecuador. At the same time, it has also been mentioned that Colombian rum (*Ron Viejo* from Caldas, for example) has different technical specifications from Venezuelan rum (Cacique), and that the latter has trouble competing in Colombia because of the deficient marketing strategies of producers or importers[4]/.

In any case, not only is the *Licoreras'* monopoly in contravention of the terms of the Andean Pact, it imposes substantial costs on consumers, who pay more for spirits than they should – reflecting not only production and distribution inefficiencies but also the lack of competitive price pressures. As was noted in Chapter 2, this in turn undermines sales and potential revenues for both departments and the government. Moreover, it is estimated that around a third of the revenues that the Licoreras should provide is lost through smuggling, counterfeiting and under-reporting of production, which in turn is leading to under-funding of departmental health and education programs.

[4]/ According to market sources, Old Rum from Caldas is not allowed into Venezuela as rum but as a different type of spirit, since it does not apperently meet the technical specifications of that neighbouring country.

Chapter 4: The Principles of Excise Tax Determination

In this Chapter, we consider the principles that economic theory suggests should influence the determination of excise taxes in market economies, and which underpin our recommendations for reform to the taxation of spirits in Colombia. This has two aspects:

- First, *in what form should indirect taxes be set?* - the standard choice being either *ad valorem* (ie a proportion of the price of the good being taxed) or *specific* (ie a fixed charge, either per unit of the good or based on some quantitative characteristic such as alcohol content).

- Second, *at what rate should indirect taxes be set?* - taking into account their impact on economic efficiency, equity and the problems of tax evasion.

Key Points

Specific taxes are to be preferred to ad valorem taxes except in circumstances of rampant inflation:

- **Specific taxes encourage consumers to trade up to higher quality products** than they would purchase under an ad valorem regime. This means that specific taxes encourage a market structure that can better support rates of excise taxation more consistent with international norms.
- **Specific taxes are easier to administer** than ad valorem taxes and therefore improve tax collection. This is because they only require tax administrators to know the physical quantity of the excised good and not the value of its sales, which is often under-declared in the face of ad valorem taxation.
- **Tax revenues are more predictable under a specific tax regime**. In particular, ad valorem taxes encourage price wars between companies, which can undermine government revenues.
- **Specific taxes encourage producers to improve the quality of their products**. As a result, they are better placed to compete with imported products and to export to other markets.

All major OECD economies have a specific tax regime for the taxation of alcoholic beverages.

The level of excise taxation on alcoholic beverages needs to be set with regard to:

- **The impact on economic efficiency**. In general, this suggests that the tax base should be as broad as possible, with tax rates kept low to avoid distorting consumer choice. Economic theory also suggests that price-inelastic goods should be taxed more heavily than those for which demand is very sensitive to changes in price.
- **The impact on equity**. This suggests that tax rates should be kept low on products that account for a relatively high proportion of spending by the poorest groups in society.
- **The impact on tax evasion and illegal activity**. High tax rates encourage smuggling and counterfeiting of products, which undermine the operation of the legitimate market and may ultimately lead to lower tax revenues for the authorities. Tax rates should therefore be set at rates consistent with those in neighbouring countries to remove any incentive for smuggling.
- **Any social problems (ie 'externalities') associated with alcohol misuse.** Frequently, however, these may be better tackled through, for example, drink-driving legislation, than through the tax system.

I. The Choice Between Ad Valorem and Specific Excise Taxes

We begin by considering the advantages and disadvantages of ad valorem excise taxes as compared with those of specific taxes. Strikingly, economic theory suggests that a shift from one form of indirect taxation to the other can have a substantial impact on a society's welfare, depending on the nature of the product being taxed and the market in which it is sold. In addition, there are a number of practical issues that need to be borne in mind in choosing between ad valorem and specific taxation.

(i) The Impact on Market Structure

A specific tax regime encourages producers and consumers to trade up to higher quality products than they would choose under an ad valorem system. Among other things, this means that specific taxes encourage a market structure that can support higher rates of excise taxation than can be sustained under ad valorem taxes.

Under a specific tax regime, the tax paid per unit of the good is the same regardless of the suppliers' price, and hence is the same regardless of quality. This means that the tax payment as a proportion of the final retail price will be lower, the higher the quality of the good under a specific tax system. In contrast, under an ad valorem system, the tax payment as a proportion of the final retail price is, by definition, the same whatever the quality of the good. So, the amount of tax paid per unit will be an increasing function of the supplier's price, and hence will be higher the better the quality of the good. This is the so-called 'multiplier' effect of ad valorem taxes, which means that a rise in the supplier's price leads to a more than one-for-one rise in final retail prices.

Since both consumers and producers are likely to seek to minimise their tax payments, they will tend to prefer lower quality goods under an ad valorem system than under a specific tax system: indeed, the multiplier effect means that the government effectively subsidises shifts to lower quality under an ad valorem system. Moreover, an increase in an existing specific tax is likely to encourage upgrading (or trading-up) to products of even higher quality (since the incidence of the tax is then proportionately smaller); while an increase in an existing ad valorem tax is likely to encourage further trading down to lower quality products to avoid the tax charge.

(ii) The Predictability and Stability of Tax Revenues

With excise taxes representing an important source of revenues, especially in many developing economies, government's are understandably concerned to ensure that their tax structure ensures that those revenues are as predictable and stable as possible. There are two particular sources of risk to excise revenues:

(a) Price uncertainty

Variations in the price of the good subject to excise taxation can clearly have important implications for revenues, depending on the price elasticity of demand. If the price elasticity of demand is zero, so that demand is constant in the face of price changes, then a specific tax system will mean that revenues are also invariant to price changes. On the other hand, if the price elasticity of demand is one, it is overall spending on the good that is constant in the face of price changes, and an ad valorem system will give stable revenues.

More generally, as noted by Keen(1997), revenues can be stabilised in the face of small price variations if the share of ad valorem taxation in total taxation is set equal to the price elasticity of demand[5]. So, if the price elasticity of demand is below 0.5, excise taxes such be predominantly specific; if the price elasticity is above 0.5, excise taxes should be predominantly ad valorem.

But there is a complication with ad valorem taxes here. As we have seen earlier, a switch from a specific to an ad valorem tax will tend to reduce consumer prices. Indeed, since ad valorem taxes effectively discriminate against quality, such a move is likely to lead firms to compete more intensely on price than on other characteristics of their products, potentially generating periodic price wars as firms seek to oust competitors from the market. (Given that the final retail price will fall more than one-for-one in response to a reduction in the suppliers' price, an ad valorem tax system effectively subsidises such price cutting.) If the price elasticity of demand is less than one, which is typical for most excisable products, such price wars will undermine government revenues under an ad valorem system. In contrast, under a specific tax system, revenues would be expected to increase in the face of price wars, as the reduction in the final retail price boosted consumer purchases of the excisable good.

(b) The impact of the economic cycle

It is not only variations in price that can affect government excise revenues. They are also likely to be affected by variations in demand across the economic cycle. In particular, as well as cutting back on their overall spending, consumers are likely to trade down towards lower quality, cheaper goods when their income falls, as in a recession. For goods which are price inelastic, such behaviour will imply that revenues are more volatile across the cycle under an ad valorem tax system than under specific taxes.

(iii) Administrative Simplicity

Specific taxes are generally considered to be easier to administer than ad valorem taxes (eg Sunley, 1998). This is because they require tax administrators only to know the physical quantity of the excised good and not the value of its sales. Specific taxes do, however, require a clear definition of the 'quantity' to be taxed (eg alcoholic content by volume, number of cigarettes, litres of petrol etc).

Determining the value of sales can be particularly difficult if an ad valorem tax is levied on the manufacturer's price for the good, since companies then have an incentive to sell to a related distribution company at artificially low prices in order to avoid tax. (This occurred in the Philippines, for example, and prompted the government to switch from ad valorem to specific taxes in 1996.) This could be avoided if the tax were based on retail prices, but this creates further complications because there are usually far more retailers than manufacturers/importers for the tax administration to monitor.

(iv) Externalities

Excise taxes are frequently justified not only in terms of their contribution to government revenues but because they discourage consumption of goods which have adverse externalities (side-effects on people other than the consumer himself). Since this objective is most effectively achieved by taxing the characteristic that gives rise to the externality, specific taxes are preferable to ad valorem taxes on these grounds. So, for

[5] *This rule, however, ignores cross-price effects on revenues from other goods subject to tax.*

example, it is better to tax cigarettes according to the number smoked than according to their value, since the latter would discriminate against more costly filter cigarettes, which are less damaging to health. Similarly, externalities resulting from excessive alcohol consumption are better countered by taxing the alcohol content of beverages than by their value (which will also reflect, for example, the costs of service in bars). And taxes should be higher on leaded than unleaded petrol.[6]

(v) Impacts on Competitiveness

As noted earlier, ad valorem taxes encourage producers to concentrate on lower quality brands. They are therefore likely to have an adverse effect on exports of those products, which are typically of higher quality brands. Moreover, with production then constrained by the size of the local market, firms may be less able to exploit economies of scale (Walter, 1996).

(vi) Equity Considerations

Ad valorem taxes may well be less regressive than specific taxes. For example, if poorer families tend to buy lower quality, cheaper goods they will pay less tax per unit consumed than richer households under an ad valorem system, whereas they would pay the same tax per unit under a specific tax system. But the practical significance of these effects should not be exaggerated. If necessary, undesirable distributional consequences of specific taxes could be corrected through increased progressivity in the income tax or social security systems.

(vii) The Influence of Inflation

Similarly, ad valorem taxes are often advocated because they tend to keep pace with inflation automatically. In contrast, while specific taxes can be uprated with inflation, this generally occurs with a delay and the decision often becomes a political issue, subject to intense lobbying. In order to overcome this, some countries have legislated to make tax uprating automatic (eg Sweden), while others (eg Russia) have set their tax rates in terms of overseas currencies (eg the ECU) on the assumption that exchange rates will move in line with relative inflation in the long run.

(viii) Conclusion: Ad valorem or specific taxes?

There are clearly a number of factors that tax authorities need to consider when choosing between ad valorem and specific excise tax systems. Best international practice suggests, however, that specific taxes are generally to be preferred to ad valorem taxes except in circumstances of rampant inflation. The primary advantages of specific taxes are:

- Consumers and producers are encouraged to prefer higher quality products, which are likely to be preferable both on grounds of health/externalities and for export competitiveness. Moreover, since high quality products can support relatively high tax rates, specific taxes can generate greater revenues for the government than ad valorem taxes.

[6] *We return to the issue of using excise taxes to counter externalities in the context of the discussion of the determination of the appropriate level of taxes.*

- Tax revenues are more predictable and stable in the face of potential price wars and the economic cycle.

- Administration and enforcement is simpler than under an ad valorem system.

- Adverse externalities arising from particular characteristics of the excisable goods can be discouraged directly by appropriate definition of the 'quantity' to be taxed.

Table 4.1.1 shows for OECD countries whether their excise tax regime for tobacco, alcohol and petrol is ad valorem, specific or mixed. The clear message is that specific taxes are overwhelmingly preferred in practice for alcoholic beverages and petroleum products. The tax system for tobacco is more mixed, primarily reflecting the EU requirement that the share of specific tax in total tax for the most popular price class (MPPC) of cigarettes should be between 5% and 55%.

Table 4.1.1: Ad valorem or specific taxes: current practice in OECD countries

AV = ad valorem; S = specific tax; M = mixed system

Country	Tobacco	Alcoholic beverages	Petrol/Diesel
Australia	S	S	S
Austria	M	S	S
Belgium	M	S	S
Canada	S	S	S
Denmark	M	S	S
Finland	M	S	S
France	M	S	S
Germany	M	S	S
Greece	M	S	S
Iceland	M	S	S
Ireland	M	S	S
Italy	M	S	S
Japan	S	S	S
Luxembourg	M	S	S
Mexico	AV	AV	AV
Netherlands	M	S	S
New Zealand	S	S	S
Norway	S	S	S
Portugal	M	S	S
Spain	M	S	S
Sweden	M	S	S
Switzerland	S	S	S
Turkey	M	AV	AV
United Kingdom	M	S	S
United States	S	S	S

II. Principles for Determining Excise Tax Rates

We now move on to consider the principles that economic theory suggests should determine the setting of excise tax rates (ie the appropriate *level* of taxes). Appendix B sets out the issues in detail. The key points to stress are:

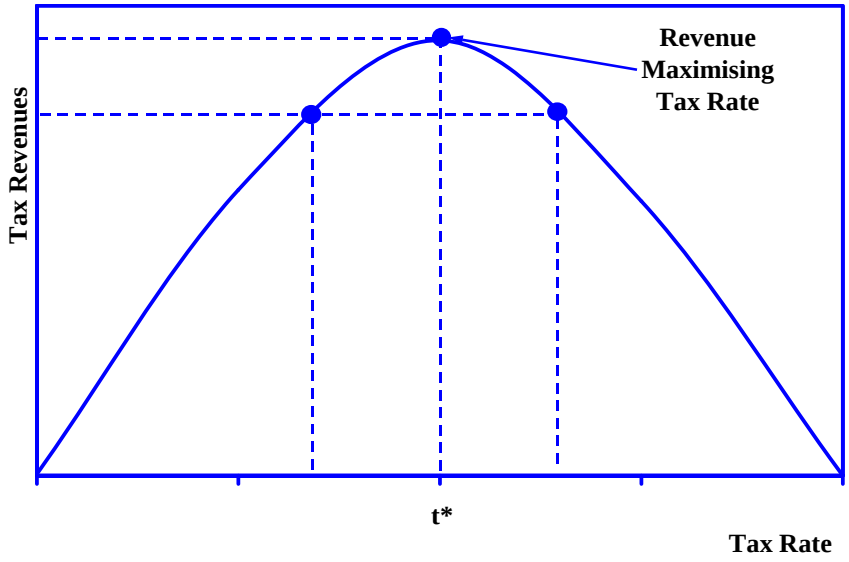
(i) Tax rates should be set to minimise distortions and maximize tax revenue

Governments raise taxes in order to fund their spending on public services, such as health, education, defence, social security etc. But by their very nature, excise taxes are distortionary, driving a wedge between production costs and retail prices for products, and leading consumers and producers to make decisions that they otherwise would not have made. Taxes should be set so as to minimise these distortions. In general, this suggests that the tax base should be as broad as possible, with tax rates kept low to avoid distorting consumer choice. Economic theory also suggests that price-inelastic goods should be taxed more heavily than those for which demand is very sensitive to changes in price.

(ii) Tax rates should be set in a way that does not penalise poorer sections of society

It is generally accepted that tax systems should be progressive – ie the tax paid by richer sections of society should be higher as a proportion of their income than for poorer sections. This suggests, among other things, that tax rates should be kept low on products that account for a relatively high proportion of spending by the poorest groups in society. In most countries, this includes alcohol, as well as food and clothing.

Chart 4.2.1: Tax rates and revenues - the Laffer Curve



(iii) Tax rates should be set at levels which do not encourage smuggling, corruption and counterfeiting

High tax rates encourage smuggling and counterfeiting, and corruption generally. Indeed, it is possible that, by encouraging these activities, an increase in tax rates may lead to a fall,

rather than a rise, in tax revenues, as illustrated by the so-called 'Laffer curve', presented in Chart 4.2.1.

The Laffer curve maps the relationship between tax revenues and the tax rate. At a zero tax rate, revenues are obviously zero. Similarly, at very high tax rates, revenues fall to zero too because people stop purchasing the product being taxed. Between these two extremes, revenues initially increase as tax rates rise. But beyond a certain limit - shown as t* in the chart - increases in the tax rate lead to lower revenues because people either start to cut back their consumption significantly or purchase from suppliers that charge a lower tax (eg smugglers). In Chart 4.2.1, t* is therefore the revenue-maximising tax rate. The level of this tax rate will depend on the elasticity of demand for the particular product, according to the formula:

$$t^* = \pi / (1- e)$$

where e is its price elasticity of demand and π is the pre-tax price. The higher is the price elasticity of demand, the lower is the optimal tax rate – ie, the further to the left is the peak in the chart above. Only where the price elasticity of demand is very low, will the optimal tax rate be very high. In particular, demand for a certain product in any given country is likely to be sensitive to the price of the same product in neighbouring countries: this cross-price elasticity of demand is likely to be large. So the optimal tax rate on a given product in any country is unlikely to be substantially higher than the actual tax rates in neighbouring countries. Taxes should therefore be set at rates consistent with those in neighbouring countries, to remove any incentive for smuggling.

(iv) Tax rates should reflect any social problems (ie 'externalities') associated with alcohol misuse

While medical research suggests that moderate levels of alcohol consumption may be beneficial to health, it is well known that one risk of excessive consumption of alcohol is that it can result in alcoholism or alcohol-dependence for some individuals. It is often argued that such problems justify relatively high taxes on alcohol. Frequently, however, these may be better tackled through, for example, drink-driving legislation or education programmes, than through the tax system.

III: CONCLUSIONS

This chapter has addressed the question of what type of taxes should be levied on alcohol, and at what level it should be levied. Both theory and best international practice suggest that specific taxes are generally to be preferred to ad valorem taxes except in circumstances of rampant inflation. And, if the price elasticity of demand for alcohol is anything other than very low, the optimal tax rate in any country will probably not be substantially higher than the rates levied in neighbouring countries.

Chapter 5: The Impact of Proposed Changes to the Colombian Alcohol Market

Key Points

- The changes to spirits taxation that the government is considering including in the forthcoming Tax Reform Bill are to be welcomed, especially since they substantially reduce discrimination against imported spirits. But these proposals do not go far enough. In particular, they fail to reduce tax rates sufficiently to discourage smuggling and other illegal trade in spirits.

- **We propose four changes** to the tax and regulatory structure of the Colombian spirits market:

  - **A shift from the current *ad valorem* consumption tax regime to a specific tax regime**.
  - **A reduction in the average tax rate**, involving a cut in the consumption tax rate from a specific tax equivalent of around 100 pesos per degree of alcohol in a typical 75 cl bottle of aguardiente, to around 75 pesos per degree for the same bottle; and a cut in the VAT rate on spirits from 35% to 15% or, preferably, a specific tax of 25 pesos per degree of alcohol. These rates have been chosen to maximise tax revenues.
  - **A reduction in import duty to 5% for goods from outside the Andean Community**.
  - **The opening up of the Colombian market for aguardiente and rum to foreign and domestic competition**, both in supply and distribution.

- **Without these changes, our base forecast shows state monopolies' revenues and total tax revenues falling dramatically,** dropping by 58% in real terms between 1999 and 2004, as legal and contraband imports increase. That is because compliance with the terms of the Andean Pact means opening the door to cheaper legal and illegal foreign imports of aguardiente and rum – the main sources of state monopolies' revenues and the biggest component of the current tax base.

- **Our proposal would substantially increase tax revenues relative to our base forecast.** By reducing the retail price of domestic legally produced aguardiente and rum, the reduction in the consumption and value added tax rate and the opening up of the market to competition would encourage consumers to shift from the illegal market to the legal (tax-paid) market, increasing the tax base. That result is robust to all but the most extreme assumptions about the impact of changes in taxes on demand for alcohol in Colombia.

- **A simpler tax structure would also reduce tax evasion and cut tax collection costs**. The shift to a simpler specific tax regime would make taxes easier and cheaper to administer, and should make it more difficult to evade tax. These benefits would probably be large enough to ensure that our proposal would yield higher tax revenues net of collection costs than base in all cases.

I. Introduction

Chapters 2 and 3 outlined the key economic problems associated with the Colombian spirits market. Chapter 4 described what a hypothetical ideal tax system would look like. In this chapter, we put forward a concrete proposal designed to alleviate some of the problems specific to Colombia. Our approach is to use tax and regulatory policy to change the economic incentives that have created the current, undesirable situation. By changing these incentives, the tax base can be made more robust, tax revenues can be stabilised, and some of the undesirable side effects of potentially high levels of contraband and corruption can be avoided.

Our proposal relates to the market for spirits in Colombia. We examine the economic impact of adopting our proposal by using our model of the Colombian alcohol market to forecast alcohol sales and tax revenues under different scenarios. The base forecast provides our estimate of what will happen to alcohol sales and tax revenues if the current tax regime and market structure are maintained. The scenarios are designed to explore the impact of imposing a set of changes on the market: changes in the tax regime, the level of taxes, and the monopoly structure of the market. Since data on the Colombian alcohol market are sparse and unreliable, our approach is to explore the impact of the proposed changes under a range of different assumptions about the key economic relationships at work in the market.

(i) A New Regime for Spirits Taxation in Colombia

The Colombian government is currently considering including a number of proposed changes to the tax regime for spirits as part of the forthcoming Tax Reform Bill. These include making both the consumption tax and VAT specific taxes rather than ad valorem, and substantially reducing discrimination against imported spirits. Such changes are to be welcomed. But they do not go far enough. In particular, they would leave tax rates on spirits too high to prevent the continued growth of smuggling and illegal production, which threatens to undermine the legitimate spirits market and the revenues both of the Licoreras and from the consumption tax.

Our proposals go much further. We propose four changes to the tax and regulatory structure of the Colombian spirits market:

- A shift from the current *ad valorem* consumption tax regime to a specific tax regime.
- A reduction in the average tax rate, involving a cut in the consumption tax rate from a specific tax equivalent of around 100 pesos per degree of alcohol in a typical 75 cl bottle of aguardiente, to around 75 pesos per degree for the same bottle; and a cut in the VAT rate on spirits from 35% to 15% or, preferably, a specific tax of 25 pesos per degree of alcohol. These rates have been chosen to maximise tax revenues.
- A reduction in import duty to 5% for goods from outside the Andean Community.
- The opening up of the Colombian market for aguardiente and rum to foreign and domestic competition, both in supply and distribution.

According to our analysis, adoption of this proposal would increase tax revenues relative to base (though not necessarily relative to current revenues), would create a more robust tax base (one less sensitive to potential future increases in tax rates), would reduce the potential for contraband and corruption and their associated undesirable side-effects, would reduce tax collection costs, and would make Colombia more attractive to domestic and foreign investors.

The OEF Model of the Colombian Spirits Market

Modelling a market involves making simplifying assumptions about the way that market works. In the case of the Colombian spirits market, we assume that we can capture all of the key relationships we need for this research by splitting the market into three segments: aguardiente, rum, and other spirits. So we do not examine the relationships between different brands of aguardiente, for example, nor those between different strengths of spirits. Without doubt these simplifications gloss over some issues that are interesting in their own right. But the model is designed to address a particular set of questions related to the tax structure, not all possible questions related to the Colombian alcohol market. This limitation is also a strength: it means the model is tractable, flexible and reliant on (relatively) few key parameters about which we have (relatively) good information.

The model is an interrelated set of equations determining the sales and the prices of each of the five 'types' of Colombian alcohol, each broken down into four categories: domestic legal production; legal imports; illegal imports and domestic counterfeit production. So, for example, sales of domestic, legally produced aguardiente depend on income, wealth, the real (deflated by the CPI) price of domestic, legally produced aguardiente, and a set of relative prices of each of the other types of alcohol for which aguardiente is a good substitute. Algebraically, that equation is as follows:

$$q_i = a_i + b_i y + c_i w + d_i p_i + \text{sum}_j e_{ij} p^r_{ij}$$

where all variables are in logs, and q_i is the volume sales of alcohol type i (in this case domestic legally produced aguardiente), a_i is a constant, $b_i y$ captures the effect of income, $c_i w$ captures the effect of wealth, $d_i p_i$ captures the effect of the real price of alcohol type i, and $\text{sum}_j e_{ij} p^r_{ij}$ captures the effects of the set of relative prices p^r .

As well as a set of equations determining volumes, there is a set of equations determining prices, broken down into the same categories. In the case of domestic, legally produced aguardiente, for example, its retail price equals its price net of tax, scaled up according to the rate of VAT and of consumption tax. For imported liquor, import tax is also included. The model therefore allows us to explore what would happen to prices and sales if one or more of the tax rates were changed. It also allows us to explore what would happen if a specific tax rather than an ad valorem tax were imposed.

A shortage of data means that it is not sensible to attempt a formal estimation of the key relationships at work in this model. It is most unlikely that we could identify these relationships with any degree of confidence. That implies something about the structure of this research: instead of basing all our conclusions on a unique set of estimated parameter values in which we have a high degree of confidence, we present conclusions that are robust to a wide range of different parameter values. Consequently, our conclusions are less precise, but more robust.

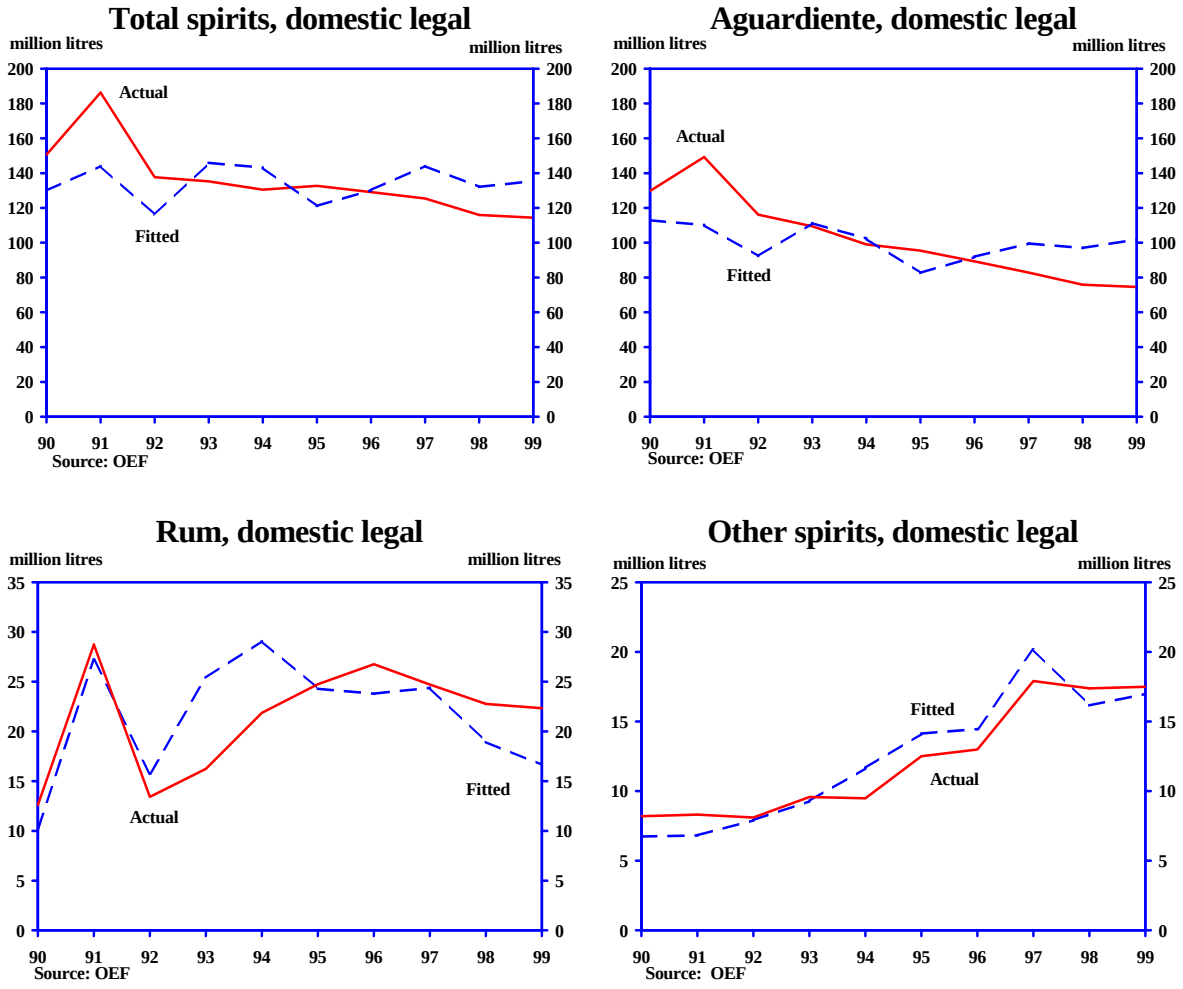
To generate our baseline forecast, the model is calibrated rather than estimated. That means that 'plausible' parameter values are imposed – values drawn from other research into similar markets – and then adjusted until the model tracks the actual data reasonably well and has sensible simulation properties. Typically there is a trade-off between these two objectives, a trade-off that is overlooked in standard econometric estimation techniques: it is a virtue of calibration as opposed to estimation that it allows the modeller to monitor the performance of the model against both of these objectives simultaneously. The strength of estimation is that it allows for statistical tests for significance, confidence intervals, model mis-specification etc, none of which is available to us in this case due to a lack of data.

Income and wealth data for Colombia are readily available: for income we have used real GDP, and for wealth, a weighted sum of real M3 and real bonds. However, data on the Colombian alcohol market are patchy at best, and non-existent at worst. Typically, we

have between five and ten years of annual data for sales and prices of legally produced or imported alcohol, and less reliable data for contraband and counterfeit alcohol. Any econometric estimate is only as reliable as the data, and the data in this case are extremely unreliable. That strengthens the case for calibration: a calibrated model without any relationship to the data for a particular market can still be used to draw helpful conclusions, due to the economic theory embedded in the model. A calibrated model which tracks the data for the Colombian alcohol market closely is even more useful.

In outline, the model is as follows. In each equation, the elasticity of sales with respect to real income is 0.5, as is the elasticity of sales with respect to real wealth. The own price elasticity (by what proportion sales will fall if the real own price rises without changing relative prices) is generally small compared to the relative price elasticities. The relative price elasticities increase with the degree of substitutability between the different alcohol types: eg, the elasticity of demand for domestic legally produced aguardiente with respect to the relative price of imported legally produced aguardiente is high, while that with respect to the relative price of counterfeit rum is low.

CHARTS 5.1.1: SALES OF SPIRITS IN COLOMBIA, ACTUAL AND FITTED



II. The Base Forecast

Key Points

- Our base forecast provides our estimate of what would happen to sales of spirits, and associated tax revenues, if the current tax regime and market structure were maintained.
- It shows Licoreras' revenues and total tax revenues will fall dramatically – by 58% in real terms between 1999 and 2004 - as legal and contraband imports increase.

Our base forecast provides our estimate of what would happen to sales of spirits, and associated tax revenues, if the current tax regime and market structure were maintained. To generate the base forecast, we assume that all real net prices of Colombian alcohol remain unchanged, that (therefore) all relative prices remain unchanged, that all tax rates remain unchanged, and that real income and wealth grow in line with the forecast for the Colombian economy derived from OEF's model.

If that were all that were required, it would be easy to produce the base forecast. However, that overlooks a major structural change to the Colombian spirits market that is currently underway. In the past, production and distribution of aguardiente in Colombia has been restricted to the departmental monopolies. Aguardiente from any other source has been illegal. That in effect means that demand for aguardiente from other sources has been suppressed. However, to comply with the terms of the Andean Pact, Colombia is now required to open its doors to imports of foreign-produced aguardiente, which will probably also open the way for contraband imports as well.

If the market has changed, the model has to change too. The relative price elasticities between domestic legally produced aguardiente and aguardiente from other sources, which have been suppressed until now, will now come into play. That has already shown up in falling sales of domestic legally produced aguardiente (and associated tax revenues), both in absolute terms and relative to what the model would predict, even though the official figures show sales of other aguardiente still close to zero. That process will go further, eventually reducing sales of domestic legally produced aguardiente dramatically if prices remain unchanged, as in our base forecast.

Table 5.2.1 below shows our base forecast for volume sales of alcohol in Colombia broken down by type, and Chart 5.2.1 shows our base forecast for total real tax revenues. Tax revenues collapse, dropping by 11% a year in nominal terms over the next few years (17% a year in real terms) – ie effectively halving over the next four years - mainly because sales of domestic legally produced aguardiente fall as contraband imports take off.

TABLE 5.2.1: LEGAL SALES OF SPIRITS BY TYPE

'000 litres	Aguardiente	Rum	Other
1998	75827	23898	19158
1999	74525	23028	18997
2000	71571	14283	18865
2001	60655	11412	18865
2002	37116	9021	18865
2003	27308	8200	18865
2004	21423	7750	18865

Chart 5.2.1: Colombian tax revenue all spirits

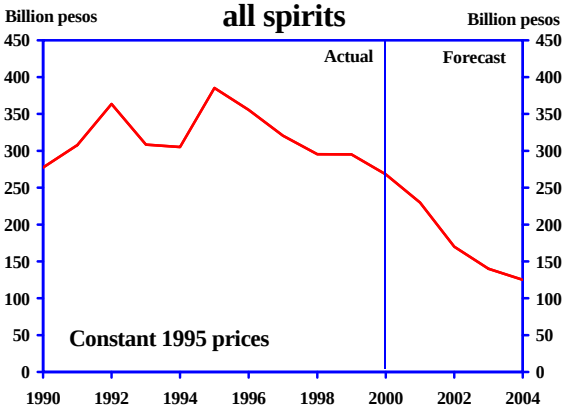


Table 5.2.2 shows the base forecast for volume sales of spirits in Colombia broken down by type. Legal domestic sales of both aguardiente and rum fall substantially as imports (both legal and contraband) increase.

Table 5.2.2: Sales of spirits, baseline forecast

	Aguardiente			Rum			Other Spirits		
000 Litres	Domestic Legal	Imports Legal	Imports contraband	Domestic Legal	Imports Legal	Imports contraband	Domestic Legal	Imports Legal	Imports contraband
1997	82856	2	1	24715	1814	533	17903	2154	10954
1998	75826	2	1	22770	1129	908	17379	1779	9698
1999	74523	2	1	22343	686	818	17498	1499	8728
2000	69796	1775	22511	12978	1305	4567	17330	1536	8881
2001	55584	5071	50651	10107	1305	5864	17330	1536	8881
2002	29002	8114	81041	7716	1305	7682	17330	1536	8881
2003	17926	9382	93704	6895	1305	8597	17330	1536	8881
2004	11280	10143	101301	6445	1305	9197	17330	1536	8881

Table 5.2.3 below shows our estimates of the key relative retail prices of spirit types in Colombia. They are expressed as ratios, with the common denominator being the retail price of domestic, legally produced aguardiente. Legally sold rum and legally imported other spirits are generally more expensive than domestic, legally produced aguardiente. But illegal imports are always cheaper. In particular, contraband imports of aguardiente are – on our estimates – substantially cheaper than domestic legally-produced aguardiente. But these imports have, until now, been largely suppressed.

Table 5.2.3: Relative retail prices								
	Aguardiente			Rum			Other Spirits	
	Legal Imports	Illegal Imports	Legal Domestic	Legal Imports	Illegal Imports	Legal Domestic	Legal Imports	Illegal Imports
1995	0.91	0.29	0.63	0.69	0.36	1.01	2.14	1.17
1996	1.31	0.28	0.78	0.86	0.44	1.20	2.34	1.29
1997	1.88	0.28	0.90	0.99	0.51	1.07	2.50	1.34
1998	1.30	0.28	0.98	1.07	0.55	1.05	2.22	1.19
1999	1.18	0.28	1.06	1.13	0.58	1.09	2.73	1.46

III. Scenario Analysis

In this section we use the model to assess the impact of our proposal on sales and tax revenues. We explore three scenarios around the base forecast, under a range of different assumptions about the key economic relationships. The scenarios are as follows: first, a shift to a lower average tax rate; second, a shift to a specific tax regime; and third, the abolition of the state monopolies.

(i) Shift to a lower average tax rate

Key Points

- A cut in Colombian spirits taxes such as we propose would bring the average tax rate into line with its close international trading partners.
- Lower taxes on spirits would increase tax revenues relative to base by encouraging consumers to shift out of the illegal and into the legal (tax-paid) market.

In this scenario we reduce the average tax rate. The current *ad valorem* consumption tax settings equate to a specific tax equivalent of around 100 pesos per degree of alcohol in a typical 750 ml bottle of aguardiente – or about 3000 pesos in total per bottle. That is on top of Value Added Tax, which adds a further 35% to the retail price of aguardiente, and import tax (though legal imports of aguardiente are not large at present). In this scenario, we reduce the consumption tax rate to around 75 pesos per degree. We also reduce VAT from 35% for aguardiente to 15% for all spirits – in line with the VAT rate applicable to other non-luxury goods in Colombia. That sort of reduction in average tax rates would normally be associated with a reduction in tax revenues, given a generic price elasticity of less than 1 as in the base case, all else the same. However, all else is not the same. In particular, the lower average tax rate also means changes in relative prices, and especially in the price of legal (taxed) alcohol relative to that of illegal (untaxed) alcohol. The narrowing of the price differential between legal and illegal alcohol will encourage substitution into the legal (taxed) market, so that even if total expenditure on alcohol (legal and illegal) falls as a result of this change, tax revenues may actually rise.

That is particularly relevant in the case of aguardiente. Recall that in the base forecast, sales of domestic legally produced aguardiente collapse as imports, and particularly contraband imports, increase. The reduction in the average tax rate reduces the retail price of legal aguardiente, and thus reduces the incentive to import contraband. That means the fall in sales of domestic legally produced aguardiente could be slowed

down or arrested as a consequence of this tax change. In fact, in this scenario, sales of domestic legal aguardiente still fall, but stabilise at a new, lower level. That is still a marked improvement relative to the base forecast, though.

Our approach is not to base all our conclusions on a unique, unreliable set of estimated parameter values, but to explore the impact of tax changes across a range of different 'plausible' parameter values. With that in mind, we have examined the effect of this tax change under various different parameter settings for the generic price elasticity of demand. In the base forecast, this is 0.75. We vary this elasticity between 0.1 and 1, scaling up the own price elasticities accordingly. The own price elasticities, as in the base case, decrease as the net price of the alcohol type increases, reflecting the assumption that higher priced goods have a higher brand value and hence enjoy a lower price elasticity of demand.

But the generic (own-price) elasticities are only half the story. The other half is the relative price elasticities. In the base case, relative price elasticities are relatively high between close substitutes – between domestic legally produced aguardiente and imported legal aguardiente the relative price elasticity is 1 – it would be higher, except that imported aguardiente is not the same product (having a different flavour) to domestically produced aguardiente. And the average relative price elasticity is 1. We vary the average relative price elasticity between 0.3 and 1.5, scaling up the individual relative price elasticities accordingly.

Table 5.3.1 below shows a matrix of outcomes for total tax revenues relative to the base forecast, across a range of different (generic and relative) price elasticities. Reading from left to right, the generic price elasticity increases from 0.1 to 1. Reading from top to bottom, the average relative price elasticity increases from 0.3 to 1.5. In all but seven cases, located in the top left hand corner, tax revenues increase as a result of a shift to a lower average tax rate.

Table 5.3.1: Change in total tax revenues for a cut in the average tax rate (billion pesos)

Relative Price Elasticities	GENERIC PRICE ELASTICITIES				
	0.1	**0.25**	**0.5**	**0.75**	**1**
0.3	-20	-17	-14	-4	6
0.5	-13	-6	0	8	14
0.75	-2	3	11	15	19
1	7	12	16	24	28
1.25	9	15	21	31	36
1.5	10	16	22	33	39

What can we conclude from this table? That for nearly all 'plausible' parameter values a shift to the lower rate proposed would increase tax revenues from alcohol. That is because of substitution into the legal market, relative to a base case in which sales of domestic legally produced aguardiente collapse close to zero. Tax revenues will still fall compared to their current levels – but this change would ensure that they do not fall as far as they otherwise might. Only where the elasticities are very low does this result change.

We have chosen the lower rate in order to maximise tax revenues in this scenario. It would of course be possible to reduce the consumption tax rate much further, in principle to zero. But tax revenues only increase up to a certain point – the 'optimal' tax rate – and

then they start to decrease again. The current tax rate is probably substantially higher than this 'optimal' rate. In fact, our model suggests that, on the baseline parameter settings, the optimal consumption tax rate may be even lower than the 75 pesos per degree of alcohol that we propose. However, given the uncertainty surrounding the key elasticities in this model, our proposal is 'on the safe side'. That means that the tax cut we propose will tend to increase tax revenues for most plausible parameter settings, and we are can be reasonably confident in that result, since our model suggests that an even bigger tax cut would do the same.

(ii) Shift to a specific tax regime

Key Points

- The shift to a specific tax regime from an ad valorem tax structure will tend to increase tax revenues for the same average tax rate, as it would encourage consumers to trade up to more expensive brands.
- A specific tax regime would also be cheaper to administer, and should reduce tax evasion.

In this scenario we explore the implications of shifting from the current complex *ad valorem* tax structure to a simple, non-discriminatory specific tax regime, where the consumption tax and the value-added tax are levied per unit of alcohol. The specific tax equivalent to the current consumption tax and value-added tax taken together- that is the tax that would raise the same revenue given the same net prices and the same volume sales of each alcohol type - would be around 156 pesos per degree of alcohol, for a typical bottle of aguardiente. Since the generic price elasticity of demand for all alcohol is around 0.75 in the baseline case, the total volume of alcohol sold will fall by 7.5% for an increase in average price of 10%. That implies that a shift to an equivalent specific tax will tend to increase tax revenues, as consumers are encouraged (by this shift) to trade up to more expensive brands, raising the average price and increasing total expenditure (though not total volume sales), and therefore, for the same average tax rate, increasing total tax revenues.

As above, we explore the impact of this change under a range of assumptions about the generic and relative price elasticities. The results are shown in Table 5.3.2 below.

Table 5.3.2: Change in total tax revenues for a shift to a specific tax regime (billion pesos)					
Relative Price Elasticities	Generic Price Elasticities				
	0.1	**0.25**	**0.5**	**0.75**	**1**
0.3	-2	-3	-6	-9	-11
0.5	3	2	0	-2	-4
0.75	9	9	8	6	5
1	15	14	14	13	12
1.25	18	17	17	17	16
1.5	9	10	12	15	18

Total tax revenues increase in all but seven of the thirty cases above. The shift to specific taxes tends to reduce the relative price of the more expensive (legal) brands and increase that of the cheaper (legal) brands. So consumers are encouraged to trade up, and spend more on alcohol overall as long as the generic elasticity is less than 1. When the relative price elasticities are small, consumers do not trade up significantly; so total expenditure does not change substantially. As the generic price elasticity increases, for small relative price elasticities, the increase in average prices due to the trading up that does occur, has a bigger negative effect on total expenditure.

The outcomes of this scenario are complex. But, to simplify, the impact of a shift to a specific tax regime varies between a minimum of -11 billion to a maximum of +18 billion pesos, depending on the price elasticities. And 23 of the 30 cases examined result in increased revenue.

Furthermore, the analysis above does not include the cost savings or other benefits to be gained by the shift to a specific tax regime. As explained above, in Chapter 4, specific taxes are easier, and therefore cheaper to administer, so tax collection costs should fall. Specific taxes encourage consumers to trade up to better quality goods, creating a market structure better able to support rates of excise taxation consistent with international norms. Tax revenues are more predictable under specific tax regimes, being less vulnerable to price changes. And specific taxes encourage local producers to improve the quality of their products, making them better placed to compete internationally.

The reduction in tax collection costs in particular is likely to represent a substantial saving in Colombia. It is difficult, without precise information, to estimate how large this saving could be – but it only needs to be of the order of 10 billion pesos, compared to total spirits tax revenues of around 520 billion pesos in 1999 (ie less than 2% of total spirits tax revenues), to ensure that the shift to a specific tax regime would increase tax revenues net of tax collection costs in *all* the cases above. The experience of many countries in moving between ad valorem and specific tax regimes suggests that the impact is likely to be much larger than this (see case study on Hong Kong in Chapter 5).

(iii) Opening the market to competition

Key Points

- If the Licoreras continue to try to exploit their market position by charging a large mark-up, in the long run they will go out of business, undercut by foreign competitors.
- Opening up the spirits market to competition would force the Licoreras to reduce their prices to competitive levels now, and would therefore increase sales of spirits. For an unchanged specific tax, that would unambiguously increase tax revenues.

Monopolies charge a mark-up over average cost. If any competition is introduced, this mark up is reduced – in the limit to zero. The higher the mark-up, the higher the price, and the lower the volume sales – though total sales revenue may increase or decrease as the price increases, depending on the price elasticity of demand. In the case of the Colombian alcohol market, a lower price of legally produced or imported alcohol narrows the price differential between the legal and the illegal markets, causing substitution into the legal market and increasing tax revenues, over-and-above the effect of higher volume sales of all alcohol as a result of a lower average price.

In order to explore the impact of a change in the market structure of the Colombian alcohol market in which competition (foreign and domestic) is introduced into the market for aguardiente, we assume that the Licoreras cut their net prices to the same level as the foreign producers of legal imports. That assumption is like saying the Licoreras are forced to compete fairly with foreign competitors, while remaining silent on whether those net prices still involve a mark-up or not.

The consequence of this change, on the baseline parameter settings, is to increase tax revenues relative to base. Once again, we vary the price elasticities (generic and relative) and produce a matrix of outcomes for tax revenues relative to base as a consequence of this change. Table 5.3.3 below shows this matrix. In all thirty cases (assuming an unchanged specific tax regime) the outcome is higher tax revenues relative to base. That is because lower net prices mean higher volume sales, and an unchanged specific tax must therefore mean higher tax revenues.

Table 5.3.3: Change in total tax revenues after the abolition of the state monopolies (billion pesos)

Relative Price Elasticities	GENERIC PRICE ELASTICITIES				
	0.1	**0.25**	**0.5**	**0.75**	**1**
0.3	23	31	45	62	81
0.5	37	44	58	74	92
0.75	54	62	76	92	111
1	71	79	94	111	131
1.25	86	95	111	129	150
1.5	101	110	127	146	168

The big losers in this scenario are the Licoreras, whose profits are squeezed relative to current levels. But it is worth emphasising again that the current situation is not sustainable. In fact, if the terms of the Andean Pact are observed, allowing unrestricted imports of aguardiente and rum from the rest of the Andean community, this scenario is likely to come about in the long run anyway: without price cuts by the Licoreras, their

revenues and profits will fall close to zero, as foreign producers undercut domestic producers. Only by cutting prices can domestic producers stay in business in the long run.

Forcing the Licoreras to cut prices would yield higher tax revenues. Abolishing them altogether would do the same, and would have the additional benefit that tax collection would be easier and more transparent. Since distribution of domestic legally produced aguardiente is controlled by the Licoreras, it is difficult to be sure that declared sales of aguardiente are the same as actual sales. Under-reporting of actual sales would reduce the monopolies' declared tax receipts for any given revenues, and the current set-up ensures that there is no real way to check whether such under-reporting is occurring. In other words, though the consumer pays the taxes, they may not ever translate completely into health and education expenditure, as they are supposed to. Opening up the distribution market to competition would also open it to proper scrutiny, and ensure that more of the tax revenue got through to final public expenditure. It is difficult to be sure about how significant the illegal expropriation of tax revenues is, but given the incentives in place and the current lack of proper scrutiny, it is likely to be substantial.

(iv) Conclusions from scenario analysis

In each of the three scenarios above, tax revenues nearly always increase relative to base. That means that we would recommend each of the three elements of our proposal in isolation. But the potential increase in tax revenues relative to base from adopting all three elements simultaneously are clearly much more substantial. Table 5.3.4 below shows the impact on total spirits tax revenues of adopting all three elements of our proposal simultaneously.

Table 5.3.4: Change in total tax revenues for all three scenarios together (billion pesos)

Relative Price Elasticities	GENERIC PRICE ELASTICITIES				
	0.1	**0.25**	**0.5**	**0.75**	**1**
0.3	1	10	25	49	76
0.5	27	40	58	80	106
0.75	62	74	95	114	135
1	92	105	123	148	171
1.25	113	127	149	177	202
1.5	119	136	161	194	225

The impact of adopting our proposal is increased tax revenues for all plausible assumptions about the effect of prices on demand for alcohol in Colombia. There are two key mechanisms at work: first, lower taxes encouraging consumers to shift into the legal market, and second, increasing the tax base by reducing the mark-up charged on domestic legally produced spirits.

IV. Indirect benefits

First, a simpler, more transparent tax structure is more easily administered, so – as above - tax collection costs should fall. Another consequence is that tax evasion should become more difficult. In principle, a single tax authority could be responsible for collecting all alcohol taxes.

Second, the reduction in the potential for contraband, counterfeiting and corruption associated with the policy proposal above would have spin-off benefits in terms of making Colombia more attractive to investors (foreign and domestic), and to potential donators of foreign aid. The best way for countries like Colombia to improve their long-run growth prospects is for them to try to control illegal activities, and the best way to do that is to change the economic incentives so that those activities are no longer so rewarding. The policy proposal above would have exactly that effect, albeit in only one sector. Ideally, it would be one plank of a coordinated campaign to reduce the incentives to undertake illegal economic activity, which in the long run would make Colombia much more attractive to investors, and consequently much more prosperous.

Third, a specific tax regime would encourage consumers to trade up to more expensive, higher quality types of alcohol. And lower average legal prices would discourage counterfeiting. Both of these effects should generate benefits in terms of public health: if consumers drink less, but more expensive alcohol in general, and drink absolutely less counterfeit alcohol, their health should improve. That should reduce expenditure on health, and free up those resources to be more productively employed. And it should improve average labour productivity, as fewer working days are lost due to ill health.

V. Conclusions

Our proposal involves substantial change to the current tax and regulatory structure of the Colombian spirits market. But the market is already changing: compliance with the terms of the Andean Pact will involve opening the market for aguardiente and rum to foreign competitors. The inflow of legal imports will also open the door to contraband imports. Even if there are no foreign competitors at present that could pose a real threat to domestic producers, the incentive of an open market with high prices and profits is bound to produce them eventually. And when the new suppliers arrive, flows of both legal and contraband imports of aguardiente and rum into Colombia will take off, with disastrous implications for tax revenues and for Licoreras' profits. That is, unless further changes occur.

Our proposal: lower taxes; a shift to specific taxation; and opening the market to competition, would bring about the changes necessary to stabilise tax revenues (albeit at a lower base compared to today) in the long term, and to transform domestic producers from inefficient monopolists into efficient, profitable enterprises engaged in fair competition in the global market. It would also reduce the flows of contraband, the evasion of tax, the corrupt expropriation of tax revenues and the associated criminality that make Colombia so unattractive to potential investors and donators of foreign aid at present. The tax base would be larger; tax revenues would be more predictable (less dependent on prices), and more robust (less sensitive to possible future increases in tax rates).

The biggest cost of this proposal is a loss in profits in the short run for the Licoreras. But their profits will decline to almost zero in the long run without changes of this sort – as in the base forecast. The benefits of this proposal far outweigh the costs. That conclusion is robust to a wide range of different assumptions about how the Colombian spirits market operates.

Chapter 6: International Experience in the Taxation of Alcoholic Beverages

In this Chapter, we look at five international case studies illustrating from a practical perspective the issues fiscal authorities should consider in setting excise tax rates on alcoholic drinks. The countries we consider here are:

- Canada - where high taxes on spirits have also generated a sharp rise in smuggling and illicit production in recent years, aggravated by a decision to cut tobacco taxes sharply without reviewing alcohol taxes.

- Argentina – where the government responded to a growing problem of smuggled alcohol by sharply cutting excise tax rates and, as a result, has reduced smuggling substantially.

- Hong Kong – which moved from a largely specific tax regime for spirits to a wholly ad valorem system and saw tax revenues fall sharply as a result.

- Trinidad and Tobago – which has cut excise taxes on alcohol and seen a sharp rise in tax revenues.

- Peru – where economic reform, including the re-opening of trade and lower taxes, has led to a substantial reduction in contraband and increased tax revenues.

While there are clearly significant differences between the economies of these countries and that of Colombia, there are a number of important lessons that can be drawn from their experience that translate to considerations of the appropriate setting of excise taxes by the Colombian authorities.

I. Case Study: Canada

Key Points

- Although tax rates have fallen in Canada in real terms since the mid-1980s, they are still very high both in absolute terms and relative to tax rates in the US, and this has undermined the tax base, particularly for spirits.
- By failing to reduce the tax differential on alcoholic drinks vis-à-vis the US at the time they cut tobacco tax, the Canadian authorities have simply encouraged a switch in contraband goods, rather than eliminating smuggling altogether.
- Smuggled and illicitly produced alcoholic drinks are frequently subject to tampering, which potentially makes them a health risk.
- The large ad valorem element in the Canadian alcohol tax system increases incentives to smuggle since it implies that the price differential vis-à-vis the US tends to rise over time, even if inflation rates are similar. Ad valorem taxes also encourage consumers to 'trade down' - ie to avoid tax by buying cheaper products of poorer quality.
- The much higher tax imposed on spirits than on beer and wine in Canada distorts consumer choices.
- The system of restrictions on trade in spirits prior to 1995 limited the scope for alcoholic drinks producers to exploit economies of scale. This meant that production costs, and therefore retail prices, were higher than necessary, which in turn curtailed demand and hence restricted the tax base.

(I) The tax regime for alcoholic drinks in Canada

The alcoholic drinks market in Canada is primarily controlled by provincial liquor monopolies, which determine what products may be sold, regulate distribution, licence outlets, and may be involved in pricing decisions.

Alcoholic drinks are subject to tax at both the federal and provincial levels in Canada.

(a) Federal

Alcoholic drinks are subject to 7% federal *value added General Sales Tax*, which replaced a 19% manufacturers' sales tax in 1991.

Excise tax is levied at the federal level as follows:

Beer: tax is charged on production, in bands according to alcohol by volume, measured at the end of the production line, with payment due at the end of the following month. Control is based mainly on the submission of reports and records, buttressed by surveillance programmes.

Spirits: excise is levied on the volume of absolute alcohol when the spirits are taken out of bond, with the provincial liquor board monopolies liable for tax, with is paid by the last business day of the month of release. Again, control is through submissions of records coupled with surveillance.

Table 6.1.1: History of Federal Excise Levies on Alcoholic Beverages

	Beer per Hectolitre		Spirits per litre alcohol		Wine per litre		
	1.2-2.5%	**Over 2.5%**	**Brandy**	**Other**	**Under 7%**	**Over 7%**	**Sparkling**
1972	9.24	9.24	4.72	5.49	0.06	0.12	0.56
1974 Nov	9.24	9.24	5.49	6.26	0.10	0.21	0.65
1975 June	9.24	9.24	5.49	6.26	0.06	0.12	0.56
					Under 7%	**7-14%**	**Over 14%**
1980 Apr	5.94	11.88	6.60	6.60	0.13	0.28	0.66
1980 Oct	5.94	11.88	6.60	6.60	0.13	0.66	0.66
1981 Apr	6.12	12.25	6.81	6.81	0.14	0.28	0.28
1981 Sept	6.65	13.31	7.39	7.39	0.15	0.31	0.31
1982 Sept	7.66	15.33	8.51	8.51	0.17	0.35	0.35
1983 Sept	8.68	17.37	9.65	9.65	0.19	0.40	0.40
1984 Sept	9.11	18.21	10.12	10.12	0.20	0.42	0.42
1985 May	9.29	18.58	10.32	10.32	0.21	0.43	0.43
1986 Feb	9.66	19.32	10.73	10.73	0.21	0.45	0.45
1991 Jan	13.99	27.99	11.07	11.07	0.25	0.51	0.51

Table 6.1.2: National average provincial mark-ups

Beverage	**$ Canadian per litre**
Spirits	11.75
Beer	0.83
Wine	1.83

Wine: an excise tax rather than tax is levied on wine, based on the volume sold by the manufacturer, with different rates applying according to content of alcohol by volume. Firms with an average monthly tax liability of over $1 million are required to remit twice monthly, while smaller firms must pay by the 21st of the month following sale. Control procedures are based on the submission of records together with regular auditing.

(b) Provincial

Provinces apply a *sales tax* on alcoholic drinks, typically as a mark-up at the same rate as applied to most commodities. In addition, their are provisional level licence fees (for outlets not operating as monopolies) and, in some cases, surcharges levied at a rate based on package size or volume.

Excise tax is levied at the provincial level as follows:

Beer: generally, an ad valorem tax applies, set by the liquor monopolies. In Quebec, brewers pay a litre tax on sales. In Ontario brewers pay an ad valorem licence fee on all beer sold in the province. In Newfoundland and British Colombia, brewers are required to pay the equivalent of the monopoly mark-up on beer sold through outlets other than the liquor monopoly.

Spirits: an ad valorem tax applies.

Table 6.1.3: Customs Duties on Alcholic Beverages Effective January 1,1997(a)

Beverage	Most favoured nation	USA	Mexico
Beer (per litre)	$0.021	$0.003	Free
Made from malt			
Spirits (per litre alcohol)			
Whiskey	0.0384	Free	Free
Rum	0.3147	Free	Free
Gin and geneva	0.063	Free	$0.007
Vodka	0.1574	Free	0.019
Liqueurs	0.1574	Free	Free
Spirits made from grape wine or prape mar	0.0959	Free	Free
Tequila	Free	Free	Free
Wines (per litre)			
Sparkling	0.407	0.044	0.044
Other			
Not exceesing 13.7% alcohol by volume	0.0407	0.004	0.004
From 13.7 to 14.9%	0.1018	0.011	0.011
From 14.9 to 15.9%	0.1124	0.012	0.012
From 15.9 to 16.9%	0.1231	0.013	0.013
From 16.9 to 17.9%	0.1338	0.014	0.014
From 17.9 to 18.9%	0.1445	0.015	0.015
From 18.9 to 19.9%	0.1551	0.016	0.016
From 19.9 to 20.9%	0.1659	0.017	0.017
From 20.9 to 21.9%	0.1765	0.019	0.019
Over 21.9%	0.1872	0.02	0.02
Vermouth			
To 18.3% alcohol by volume	0.0271	0.003	0.003
Exceeding 18.3%	20.5%	2.5%	2.5%

(a) Different rates may apply on imports from General Preferential rated countries and from Australia and New Zealand.

Wine: an ad valorem tax applies, except for Ontario wine sold through wine stores, where the wineries pay an ad valorem fee based on the gross selling price of all wine sold through producer stores.

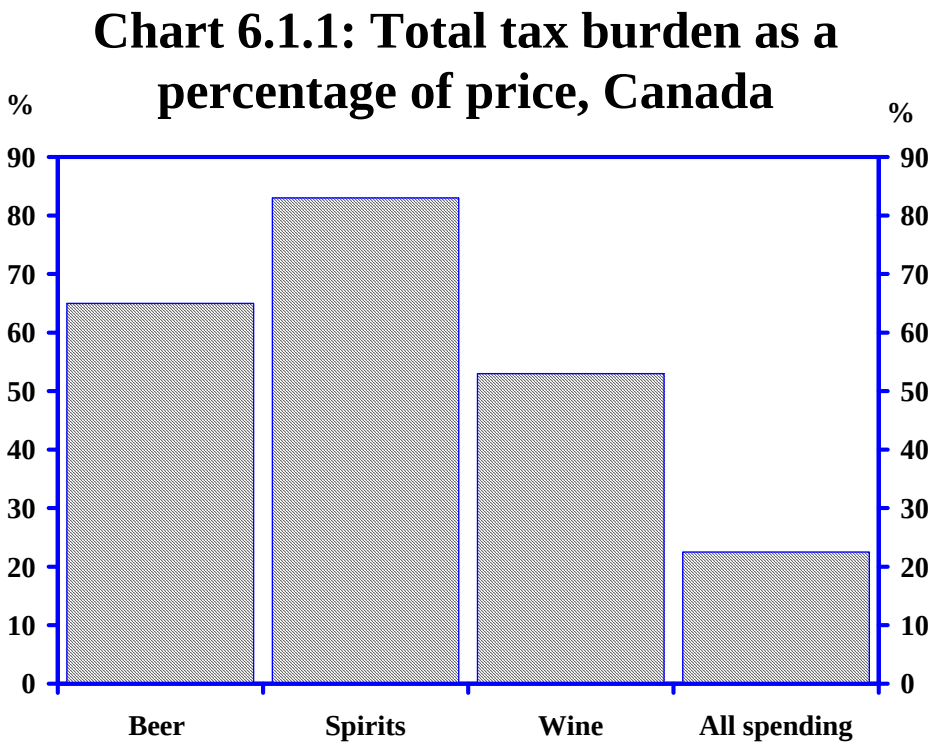
Customs Taxes

Canada also charges customs taxes on imports of alcoholic drinks, with different rate schedules for imports from the British Commonwealth, countries with Most Favoured Nation status, the US and Mexico, and other countries.

Table 6.1.1-6.1.3 show how taxes on alcoholic drinks in Canada have varied since the early 1970s. The key points to highlight are:

- Between October 1980 and May 1985 federal excise taxes were automatically indexed each September. This was abandoned in 1985, and in the following two years levies were raised by 6%. Levies then remained unchanged until 1991, when the

manufacturers sales tax on alcoholic drinks was replaced by GST at a much lower rate,



with excise taxes raised in a tax switch designed to be revenue-neutral.

- There are significant differences in provincial sales tax rates and in the provincial mark-ups set by the liquor monopolies. These were supported by inter-provincial trade barriers prior to July 1995.

Chart 6.1.1 shows the share of tax in the final retail price for beer, spirits and wine. Tax accounts for 83% of the retail price of spirits, 65% of that of beer and 53% of that of wine. In contrast, indirect taxes represent only 22½% of spending on all goods and services purchased by consumers.

Cross-border shopping and smuggling represent a serious problem in Canada, where taxes are much higher than those in the US, as shown in Chart 6.1.2. Smuggling and diversionary fraud are estimated to account for around a quarter of the Canadian spirits market, and the Auditor General of Canada has suggested that evasion of excise tax on spirits is reducing federal government revenues by around C$200 million a year. In addition, it is estimated that over C$600 million in provincial government revenues is being lost in this way.

As well as cross-border shopping and smuggling, illegal alcohol production is a serious problem in Canada. For example, non-regulated wine production is estimated to be around 45 million litres a year, while home-brewing (both using home kits and at U-brews) accounts for over 15% of the beer market in some provinces.

Chart 6.1.2: Canadian and US taxes on spirits

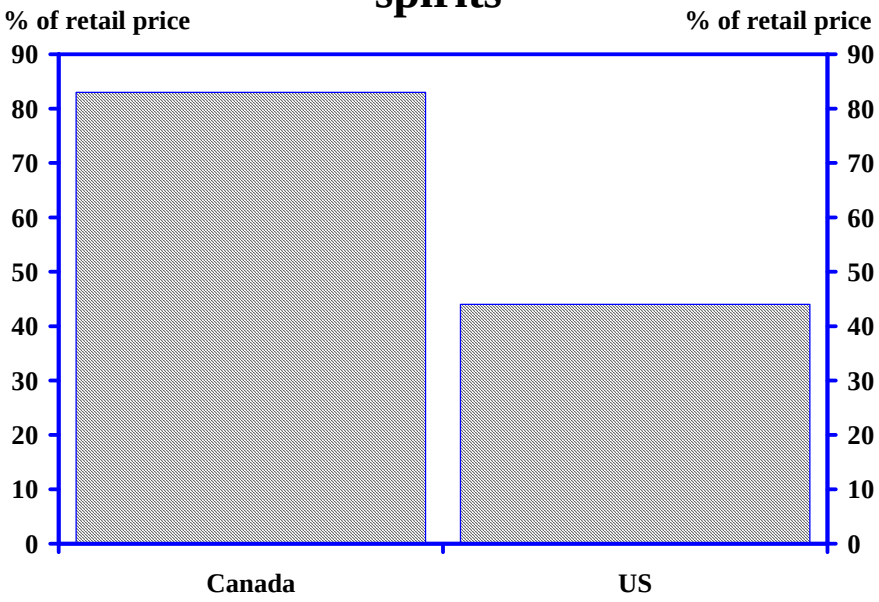
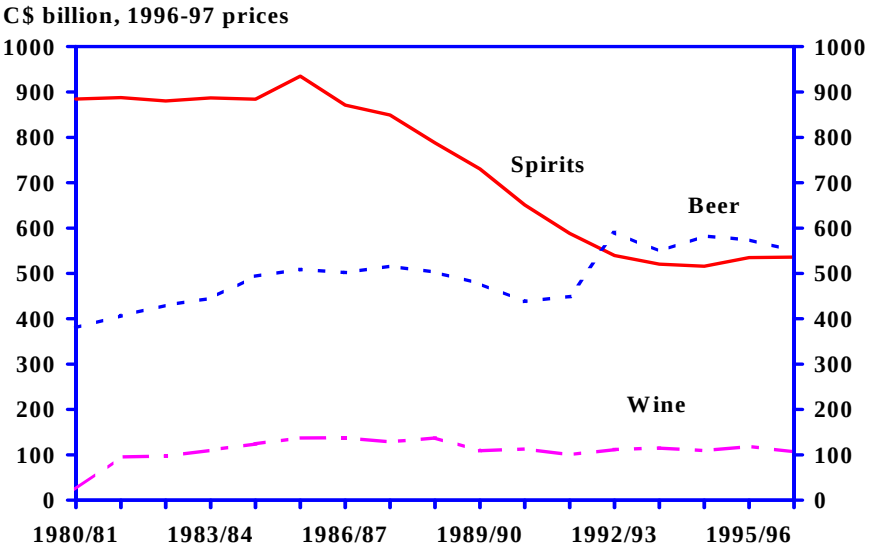


Chart 6.1.3 shows how federal government revenues from excise taxes on alcohol have developed since 1986. Overall revenues rose by only 7% between 1985-86 and 1995-96, implying a fall in real terms of over 22%.

Chart 6.1.3: Federal excise taxes



(ii) Problems with the Canadian excise tax regime for alcoholic drinks

There have been six key problems with the Canadian tax regime for alcoholic drinks:

- Although tax rates have fallen in real terms since the mid-1980s, they are still very high both in absolute terms and relative to tax rates in the US, and this has undermined the tax base, particularly for spirits.

- By failing to reduce the tax differential on alcoholic drinks vis-à-vis the US at the time they cut tobacco tax, the Canadian authorities have simply encouraged a switch in contraband goods, rather than eliminating smuggling altogether.

- Smuggled and illicitly produced alcoholic drinks are frequently subject to tampering, which potentially makes them a health risk.

- The large ad valorem element in the Canadian alcohol tax system increases incentives to smuggle since it implies that the price differential vis-à-vis the US tends to rise over time, even if inflation rates are similar. Ad valorem taxes also encourage consumers to 'trade down' - ie to avoid tax by buying cheaper products of poorer quality.

- The much higher tax imposed on spirits than on beer and wine distorts consumer choices.

- The system of restrictions on trade in spirits prior to 1995 limited the scope for alcoholic drinks producers to exploit economies of scale. This meant that production costs, and therefore retail prices, were higher than necessary, which in turn curtailed demand and hence restricted the tax base.

We consider these in turn.

(a) *The impact of high taxes on alcoholic drinks on the tax base*

The sharp fall in Canadian federal revenues from tax on alcoholic drinks since the mid-1980s shown in Chart 6.1.3 was almost entirely accounted for by lower receipts of tax on spirits, which dropped by over 20% in nominal terms and over 40% in real terms between 1985-86 and 1995-96. This in turn reflected a 22½% fall in the volume of sales of spirits in Canada over this period, with sales of beer and wine were down only 2% and 6% respectively.

It is worth emphasising that the fall in spirits sales since the mid-1980s has not been caused by *rising* real tax rates on spirits or by higher retail prices; between 1985-86 and 1995-96, the federal excise tax on spirits rose 7.2%, a fall of 32.5% in real terms, while retail prices for spirits have risen by just over 39%, in line with the general consumer price index. Similarly, retail prices for spirits have risen significantly less than for either beer (60% in nominal terms since 1985-86) or wine (55%), which have been subject to rather steeper increases in excise tax.

But that is not to say that taxes are not to blame for the sharp decline in sales of spirits in Canada. The problem, however, has not been rising real taxes since 1985-86 but rather their very high absolute level - even allowing for the drop in real tax rates over the last decade, tax and other charges imposed by the federal and provincial authorities still

accounts for 83% of the retail price of spirits in Canada, compared with only 44% in the US. This means that the retail price of spirits is around C$20 for a typical 750ml bottle in Canada, double that in the US. As consumers have become increasingly aware of this differential, and smuggling has developed to exploit the situation (for reasons discussed below), so the legitimate domestic market has been undermined.

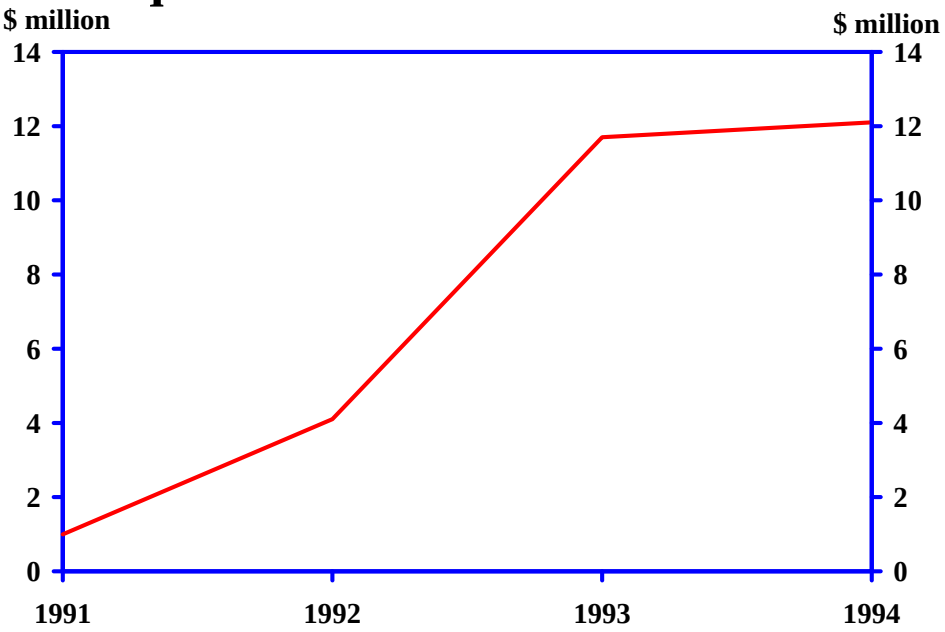
The scale of smuggling of spirits suggests that tax rates on spirits in Canada are well above their revenue-maximising rate. OEF's econometric analysis suggests that the price elasticity of demand for spirits is around -1.25. On this basis, Canadian tax revenues would be maximised at a rate of about C$14 per 750 ml bottle, compared with a current effective rate of C$16.

It is important to acknowledge, however, that some uncertainty always surrounds estimates of price elasticity. If it were -1.4, the revenue-maximising tax rate would be C$8.75 a bottle. But if the price elasticity were -1.1, revenues would be maximised at around C$35 a bottle, well above current tax levels. Moreover, the revenue-maximising tax rate would be lower than suggested by these figures if we allowed for the impact of changes in demand for spirits on employment, profitability in the Canadian alcoholic drinks industry, and hence on income and corporation tax receipts etc. For example, assuming that the price elasticity of demand is -1.25 and that non-excise tax revenues are equivalent to a quarter of the pre-tax price of spirits implies an optimal tax rate of around C$13 a bottle.

(b) The impact of cuts in tax on tobacco on smuggling of alcohol

Strikingly, despite the long-established differential between taxes in Canada and in the US, smuggling of spirits is a relatively recent phenomenon. Chart 6.4 shows that seizures of illegally-imported spirits were small prior to 1993. Rather, most smuggling in the early 1990s was of tobacco, again motivated by the much higher taxes imposed in Canada than in the US. (Illegal trade in tobacco is estimated to have been worth around C$6 billion in 1991 and close to C$10 billion by 1993.)

Chart 6.1.4: Value for duty of Canadian liquor seizures from 1991 to 1994



In 1994, the Canadian authorities responded to the problem of tobacco smuggling by cutting tobacco taxes by between 47% and 70% (depending on the province). And this policy was highly effective in its primary purpose: for example, the provincial police in Quebec have reported that trade in contraband tobacco has been cut by 80-90%.

The decision to reduce the tax differential on tobacco did not, however, eliminate smuggling altogether. Rather, many of the criminal gangs which had previously smuggled tobacco switched to illegally importing spirits, where the tax differential remained very large, offering the opportunity for continued substantial profits. Since these gangs already had well-established routes for bringing contraband into the country, and highly effective distribution networks within Canada, smuggling of spirits increased significantly.

This experience demonstrates the importance of considering the appropriate setting of tax rates on excisable goods in a coherent framework - allowing for the impact of changes in taxes on one product for revenues from other products - rather than on a piecemeal basis.

(c) The health dangers associated with illegal production and sales of spirits

It is not only the revenue implications of illegal trade in spirits which should be of concern to policy-makers. There is also clear evidence from Canada that both smuggled and illicitly-produced spirits are of much poorer quality than their legitimate counterparts. In general, this simply involves diluting the product with water. But more serious cases have also been reported. For example, police have seized spirits bottled in containers used previously for windscreen-cleaning fluid, and found traces of rat poison, cyanide and

sulphur dioxide in smuggled spirits. Similarly, there are suggestions that illicitly-produced spirits are being based on industrial rather than grain alcohol.

In addition, smuggling of spirits is associated with - and, indeed, helps to fund - other forms of crime, such a protection rackets. And guns, jewellery and other goods are often illegally imported along with spirits.

(d) The problems of ad valorem taxes on alcoholic drinks

Taxes on alcoholic drinks in Canada include a substantial ad valorem element - for example, provincial sales tax, averaging 12%; provincial mark-ups (over the suppliers' selling price and federal excise tax) of over 130%; and federal GST, applied after the mark-up, of 7%.

This tax structure has two major disadvantages:

- With Canadian taxes much higher than those in the US, and effectively automatically uprated in line with inflation each year thanks to their substantial ad valorem element, the absolute price differential between spirits purchased legitimately in the two countries tends to rise in nominal terms over time even if inflation rates are similar. So, for example, if the initial tax differential is C$10 per bottle and inflation in both countries is 3%, the differential will rise to C$10.30 after one year, C$10.61 after two years and so on. If real household incomes are falling, as in Canada over the last couple of years, such a system will then imply that the burden of spirits taxation increases, encouraging greater smuggling etc.

- Ad valorem taxes encourage consumers to switch from high quality/high price products to poorer quality/cheaper goods in order to reduce their tax payments. For example, consider two brands of spirits, one of high quality with a suppliers' selling price of C$5 a bottle, and one of low quality supplied at C$3 a bottle, implying an initial price differential of C$2 a bottle. A specific tax charge would have no effect on this absolute differential. But an ad valorem tax would make it even larger - for example, at a rate of 50%, it would raise it to C$3 a bottle, which is likely to lead more consumers to choose the cheaper brand. This 'trading down' means that an ad valorem system is likely to raise less revenue for the authorities than an apparently equivalent specific tax system.

Also in Canada, differential ad valorem charges are made via the provincial mark-up on Canadian whisky (131%) compared with Scotch whisky (138%). This distorts consumer decisions and, since the products are both close substitutes and their overall demand is price elastic, is likely to lead to lower overall revenues for the authorities than a system which taxed both products at the same (intermediate) rate.

(e) The impact of differential excise tax rates on the Canadian alcoholic drinks market

As shown in Chart 6.1, taxes on spirits represent 83% of the retail price of spirits in Canada, compared with 65% for beer and 53% for wine. These differential tax rates distort consumer choices for no particularly good reasons. Moreover, imports account for three-quarters of wine sales compared with half that of spirits. So, by encouraging consumption of wine at the expense of spirits, high taxes on spirits stimulate increased import penetration in the alcoholic drinks market.

(f) Limits on inter-provincial trade in alcoholic drinks

Prior to 1995, provincial authorities required brewers to operate largely within their province if they wanted competitive access to their market, and enforced this with inter-provincial trade barriers. But by restricting the market to which firms could sell, this system limited the scope for alcoholic drinks producers to exploit economies of scale. That meant that production costs, and therefore retail prices, were higher than necessary, which in turn curtailed demand and hence restricted the tax base.

The Agreement on Internal Trade, which came into effect in July 1995, was introduced to remove inter-provincial trade barriers on the basis of the following four principles:

- Parties will not establish new barriers to internal trade and will facilitate the cross-boundary movement of persons, goods, services and investments within Canada.

- Parties treat persons, goods, services and investments equally, irrespective of where they originate within Canada.

- Parties reconcile relevant standards and regulations to provide for the free movement of persons, goods, services and investments within Canada.

- Parties ensure that their administration polices operate to provide for the free movement of people, goods, services and investments within Canada.

(iii) Conclusions

This case study highlights six lessons for policy-makers deciding on excise tax rates for alcohol:

- Very high tax rates will undermine domestic demand for alcohol, even if those tax rates are actually falling in real terms. This risk is particularly serious if consumers have access to cheaper sources for these products, through smugglers or home production.

- The increase in smuggling of spirits following the 1994 cuts in tobacco taxes demonstrates that tax rates on excisable goods should be set in a coherent framework - allowing for the impact of changes in taxes on one product for revenues from other products - rather than on a piecemeal basis.

- Smuggled and illicitly-produced alcohol tends to be of poorer quality than legitimately supplied drinks, and may well represent a serious risk to health.

- Ad valorem taxes can encourage increased smuggling and also encourage consumers to ‘trade down’ to poorer quality products in order to evade tax.

- Differential excise taxes on different alcoholic drinks will distort consumer choices, leading to economic inefficiencies.

- Restrictions on internal trade in alcoholic drinks limits the scope for producers to exploit economies of scale etc, leading to higher unit costs and hence higher retail prices. This in turn reduces demand and leads to lower government revenues.

II. Case Study: Argentina

Key Points

- Argentina has maintained an ad valorem tax system for spirits over the last decade. However, excise tax rates have been sharply reduced - for example, Scotch whisky was taxed at 50% at the start of the 1990s but in 1998 and 1999 was taxed at only 12%, while the rate for brandy and gin has dropped from 30% to 8% over the same period.

- Tax rates were cut to reduce the incentive for smuggling and counterfeit production. For example, illegal imports of Scotch whisky are estimated to have been equivalent to a third of legitimate sales in 1991 and this activity was expanding rapidly. But illegal imports have fallen 50% since 1992 and now represent only 7½% of legitimate sales.

- Lower tax rates have also boosted demand for spirits, which has risen 12% in volume terms since 1992, having fallen by 5% between 1988 and 1991. The tax cuts have also encouraged consumers to trade-up to more expensive brands, creating a more robust tax base.

- With tax rates for spirits reduced sharply between 1992 and 1998, excise tax revenues have fallen substantially, although rather less than proportionately. The government judged it necessary to accept a fall in revenues in order to reverse the expansion of the black market in alcohol, which otherwise threatened a more fundamental weakening in the tax system. But with illegal imports now much reduced, a modest increase excise tax rates on spirits was announced from the start of 2000.

(I) The tax regime for spirits in Argentina

Table 6.2.1 shows how the excise and VAT tax regime for spirits has changed in Argentina in recent years. The key points to note are:

- Argentina has had an ad valorem tax regime throughout the 1990s. However, the composition of the tax burden has changed over time: VAT is much higher today than in 1990, while the excise tax component has declined substantially since 1992.

- The overall impact of these changes has been to reduce substantially the overall tax burden, as the rise in the VAT rate has been more than offset by the decline in excise rates.

- Excise tax rates over the last decade have varied according to the type of spirit and alcoholic strength. The tax regime in 1998 and 1999 taxed whisky at 12%; spirits of all types above 30% abv at 8%; and other spirits below 30% but above 10% abv at 6%. But a uniform tax of 20% on all spirits was introduced at the start of 2000.

- The VAT rate applicable to spirits has risen through the decade, from 13% in early 1990 and to 21% since 1995.

Table 6.2.1: The tax regime for spirits in Argentina

Date/Category of spirit	Excise Tax	VAT[1]
1990		
Whisky	50%	13%
High-strength bulk whisky	50%	13%
Cognac, brandy, gin, tequila, rum, vodka	30%	13%
Other spirits above 30% abv	20%	13%
Other spirits between 10% - 29% abv	14%	13%
[1] From February 1990; raised to 15.6% in November 1990		
1993		
Whisky	30%	18%
High-strength bulk whisky	30%	18%
Cognac, brandy, gin, tequila, rum, vodka	18%	18%
Other spirits above 30% abv	12%	18%
Other spirits between 10% - 29% abv	8%	18%
1998		
Whisky	12%	21%
High-strength bulk whisky	12%	21%
Cognac, brandy, gin, tequila, rum, vodka	8%	21%
Other spirits above 30% abv	8%	21%
Other spirits between 10% - 29% abv	6%	21%
2000		
All spirits	20%	21%

(II) The impact of tax tax changes on the structure of the Argentine spirits market

Economic theory suggests that the changes in the tax regime for spirits described above would have substantial impacts on the Argentine spirits market:

- First, they should have substantially reduced the tax burden on spirits, leading to lower retail prices to consumers and higher demand – in particular, leading to a switch from illegal imported spirits to legitimate tax-paid sources.

- Second, they should have reduced the tax burden on premium spirits relative to that of cheaper brands, reducing price differentials.

- Third, the impact of the tax changes on relative prices should have encouraged consumers to shift up-market, buying more of expensive brands of spirits and less of the cheaper brands.

- Finally, given the relatively high price elasticity of demand for spirits, these tax changes should have helped to maintain government tax revenues by boosting demand, encouraging trading up to higher quality brands, and reducing tax evasion through smuggling.

We look at the evidence on each of these effects, concentrating particularly on the market for Scotch whisky.

(a) The impact on retail prices for spirits, consumer demand and illegal imports

Table 6.2.2 shows how the pre-tax price of Scotch whisky, the tax element (excise tax and VAT) and the overall retail price have changed since 1992. Here we take the price of Chivas Regal as indicative of movements in the price of premium whisky brands and J&B as indicative of movements in the price of standard brands. It shows that premium brand whisky prices have fallen by over 40% in nominal terms since 1993, while standard brand whisky prices have fallen by over 60%. Measured in real terms (ie allowing for the effects of general inflation), premium brand prices have fallen by over 50% since the start of 1993, while standard brand whisky prices have fallen by over 70%. The reduction in tax rates has also led to falls in prices for other spirits - for example, prices of genever have dropped by almost 50% in nominal terms since early 1993.

The falls in spirits prices have helped to boost demand for spirits. Table 6.2.3 shows that

Table 6.2.2: The impact of duty changes on whisky prices (Pesos/litre)

	Premium / Malt			Standard		
	Retail price	Tax	Pre-tax price	Retail price	Tax	Pre-tax price
1992	73.01	42.1	30.9	46.53	26.8	19.7
1993	79.33	32.3	47.1	47.87	19.5	28.4
1994	46.53	18.9	27.6	34.00	13.8	20.2
1995	42.14	17.8	24.4	23.33	9.8	13.5
1996	34.52	9.4	25.1	21.07	5.7	15.3
1997	32.92	9.0	23.9	18.87	5.1	13.7
1998	45.20	12.3	32.9	18.65	5.1	13.6

overall spirits consumption has risen by 12% in volume terms since 1992, having fallen by 5% between 1988-1991.

The main reason for the reduction in excise tax rates in Argentina through the 1990s was to reduce the incentive for smuggling - for example, illegal imports of Scotch whisky are estimated to have been equivalent to a third of legitimate sales in 1991, and this illegal activity was expanding rapidly, threatening to undermine the tax base. However, as Table 6.2.4 shows, illegal imports of whisky have fallen by 50% since 1992, and now represent only 7½% of legitimate sales.

Table 6.2.3: Market Breakdown for Spirits

	Scotch Whisky		Other Whisky		All Whisky	
	Total Sales (000 9L. Cases)	% of Total Spirits	Total Sales (000 9L. Cases)	% of Total Spirits	Total Sales (000 9L. Cases)	% of Total Spirits
1992	271,00	6,50	647,50	15,54	918,50	22,04
1993	357,00	7,20	917,00	18,50	1274,00	25,70
1994	384,00	7,95	955,00	19,78	1339,00	27,74
1995	348,00	8,41	865,50	20,91	1213,50	29,32
1996	357,00	8,12	1013,75	23,07	1370,75	31,19
1997	384,00	8,41	1081,75	23,69	1465,75	32,10
1998	405,00	8,67	1206,00	25,82	1611,00	34,49

	White Spirits		Rum/Cane		Other Spirits	
	Total Sales (000 9L. Cases)	% of Total Spirits	Total Sales (000 9L. Cases)	% of Total Spirits	Total Sales (000 9L. Cases)	% of Total Spirits
1992	735,5	17,65	139	3,34		
1993	910,50	18,37	160,50	3,24	2612,00	52,69
1994	767,50	15,90	146,00	3,02	2575,00	53,34
1995	570,00	13,77	123,00	2,97	2233,00	53,94
1996	569,50	12,96	110,50	2,51	2343,50	53,33
1997	592,50	12,97	114,00	2,50	2394,50	52,43
1998	557,00	11,92	129,00	2,76	2374,50	50,83

Table 6.2.4: Illegal imports of Scotch Whisky, 000s 9 litre cases

	1989	1991	1993	1995	1997	1998
Illegal imports	122	240	234.5	173	124	120
Legitimate sales	590	728	1274	1214	1466	1611
Illegal as % of legitimate	20.7	33.0	18.4	14.3	8.5	7.4

(b) The impact on relative prices for spirits

Table 6.2.2 shows how prices for premium and standard brands of whisky have moved relative to one another since 1992. The key points to note are:

- The reduction in excise tax rates in 1993 cut the tax paid on a litre of premium whisky from 46 pesos to only 19 pesos (ie by almost 60%), while the tax paid on standard brand whisky fell from 28 pesos to 14 pesos (ie 50%).

- As a result, the price differential between premium and standard brands fell from 66% in 1993 to 37% in 1994. And in absolute terms, the price differential between premium and standard was still only 14 pesos a litre in 1997, having been 31.5 pesos in 1993.

- This price differential would have been even narrower in recent years but for falls in the pre-tax price of standard brand whisky, which in turn reflected the introduction of new, low-price whisky brands.

The excise tax reductions since 1993 have also reduced the price differential between whisky and other spirits, which are typically cheaper to produce. For example, the price differential between standard brand whisky and genever has fallen from over 300% in 1993 to 200% in 1998 (Table 6.2.5).

Table 6.2.5: Retail prices for selected spirit types (Pesos/litre)

	Standard Scotch Whisky	Genever	Vodka	Local Whisky	Rum	Liqueur
1993	47.87	11.87	n/a	13.99	19.87	5.03
1994	34.00	6.09	n/a	10.15	20.13	5.19
1995	23.33	4.91	19.33	9.88	17.20	4.73
1996	21.07	5.99	5.27	9.32	19.33	4.22
1997	18.87	4.93	5.05	7.81	14.21	4.57
1998	18.65	6.12	6.12	6.65	14.53	5.32

(c) The impact on the composition of the spirits market

Table 6.2.3 shows the market share of each of the major types of spirits. It shows that the sharper reduction in prices for Scotch whisky than for other spirits caused by the reduction in excise tax rates has helped to boost their share of the overall spirits market, from 6.5% in 1992 to 8.7% by 1998.

Table 6.2.6: Market Breakdown for Scotch Whisky

	Super Premium		Premium/Malt		Standard		Low Price		Total
	Sales (000 9L. cases)	% of Total Sales	Sales (000 9L. cases)	% of Total Sales	Sales (000 9L. cases)	% of Total Sales	Sales (000 9L. cases)	% of Total Sales	Sales (000 9L. cases)
1986	0.50	0.59	20.00	23.53	64.50	75.88	0.00	0.00	85.00
1987	0.75	0.82	23.25	25.27	68.00	73.91	0.00	0.00	92.00
1988	1.00	0.88	27.00	23.89	85.00	75.22	0.00	0.00	113.00
1989	1.00	0.80	47.00	37.60	77.00	61.60	0.00	0.00	125.00
1990	1.75	1.29	54.75	40.26	79.50	58.46	0.00	0.00	136.00
1991	4.25	1.69	76.75	30.46	171.00	67.86	0.00	0.00	252.00
1992	3.75	1.38	78.75	29.06	188.50	69.56	0.00	0.00	271.00
1993	2.25	0.63	74.25	20.80	280.50	78.57	0.00	0.00	357.00
1994	1.75	0.46	99.75	25.98	282.50	73.57	0.00	0.00	384.00
1995	1.25	0.36	90.25	25.93	253.50	72.84	3.00	0.86	348.00
1996	1.00	0.28	74.00	20.73	271.00	75.91	11.00	3.08	357.00
1997	1.00	0.26	77.00	20.05	293.50	76.43	12.50	3.26	384.00
1998	1.00	0.25	76.00	18.77	320.00	79.01	8.00	1.98	405.00

Table 6.2.6 shows the breakdown of the market for Scotch whisky. It shows that, following the tax cuts of 1993, there was a switch in demand from standard brands to the more expensive premium brands (ie up-trading), reflecting the greater reduction in premium whisky prices. As a result, the share of premium brands in the overall Scotch market rose to 26% in 1994 and 1995 from under 21% in 1993 - reversing a sharp downward trend evident since 1991.

However, this recovery in the market share of premium brands proved short-lived - it had fallen to under 19% by 1998 as cuts in the pre-tax price of standard brands revived their fortunes. Standard prices were cut in response to the emergence of low-price whisky brands, which had won over 3% of the overall market by 1996.

It is worth highlighting that the excise tax cuts of 1998 will have cut the prices of standard brands of Scotch whisky relative to those of low-price brands. This helps to explain why the market share of low price brands dropped from 3.3% in 1997 to 2% in 1998 at the expense of standard brands.

(d) The impact on government excise revenues

The changes to the tax regime for spirits in Argentina have helped to maintain government tax revenues through several mechanisms:

- By reducing prices, the tax cuts have helped to boost demand for spirits, increasing the tax base.

- By discouraging smuggling, the tax cuts have helped to switch demand from illegal imports to the legitimate (ie tax-paid) market.

- By encouraging consumers to trade-up to more expensive brands, the tax cuts have created a more robust tax base. This also helps to generate higher VAT revenues.

- By encouraging domestic spirits production, it has supported output and employment not only in that sector but also throughout its supply-chain (bottlers, packagers, distributors, equipment suppliers etc). This in turn will have generated higher general tax receipts (eg on employment incomes and company profits).

Table 6.2.7 shows how excise tax revenues for alcoholic and non-alcoholic drinks have developed in recent years. It shows that excise tax revenues for spirits dropped by 73% from 1992 to 1998. Over this period, excise tax rates (measured as pesos per litre) fell by around 90%. That revenues fell by rather less than tax rates reflects the boost to legitimate (ie taxed) purchases of spirits resulting from lower prices and a reduction in the incentives for smuggling. Unfortunately, data for the (positive) impact on other revenues (eg VAT, company taxes etc) are not available.

Table 6.2.7: Excise duty revenues for selected beverage types (Millions of Pesos)

	Spirits	Beer	Wine	Non-alcoholic beverages
1990	13.30	n/a	4.38	24.86
1991	46.05	9.47	14.15	125.38
1992	48.83	n/a	11.24	152.83
1993	44.91	19.37	19.23	224.04
1994	29.42	24.96	17.97	259.70
1995	24.45	22.53	14.30	222.86
1996	16.80	24.28	6.53	104.18
1997	14.61	24.69	0.00	38.53
1998	13.15	25.95	0.00	39.36

(iii) Conclusions

This case study has illustrated that the best way in which to combat smuggling of beverage alcohol is to reduce the excise taxes which create the incentive for illegal activity. By sharply reducing tax rates, the Argentine authorities have virtually eliminated black market trade in spirits, which was otherwise threatening to undermine the legitimate industry.

III. Case Study: Hong Kong

Key Points

- Excise taxes for spirits in Hong Kong became purely ad valorem in 1994. Previously, excise taxes were predominantly specific, although there was also an important ad valorem element.
- The move to wholly ad valorem taxation substantially raised the prices of higher quality brands of spirits relative to those of lower quality products. As a result, it encouraged consumers to trade-down to these cheaper products in order to avoid tax. For example, low price Scotch whisky brands now account for over 23% of the market, having been less than 1% in the early 1990s.
- By reducing the average price paid for spirits, the move to ad valorem taxation also encouraged higher alcohol consumption.
- But total government tax revenues from spirits fell 22% between 1993 and 1996 following the move to a wholly ad valorem regime, and then a further 47% over 1997 and 1998 as the demand for spirits was hit by the collapse in incomes associated with the Asian economic crisis.
- In part, this loss of revenue reflects the trading down associated with ad valorem taxes. However, it also reflects the greater administrative problems associated with enforcing an ad valorem tax system compared with a specific tax regime.

(i) The tax regime for spirits in Hong Kong

Table 6.3.1 shows how the tax regime for spirits has changed in Hong Kong in recent years. The key points to note are:

- Hong Kong had a predominantly specific tax regime in the early 1990s. By 1993, the specific element for European-type spirits was taxed at HK$ 80 per litre. But there was also a significant ad valorem element charged at 35% cif.
- The tax regime became purely ad valorem in 1994, at a rate of 100% for all spirits over 30% abv, and 90% for grape spirits up to 30% abv.
- In 1997 the tax rate for grape spirits up to 30% abv was reduced to 60%.
- No VAT or sales tax is applied in Hong Kong.

Table 6.3.1: The tax regime for spirits in Hong Kong

Date/Category of spirit	Excise tax	VAT/sales tax
Pre-1994		
European-type spirits over 30% abv	HK$ 80/litre + 35% on cif	n/a
European-type grape spirits up to 30% abv	HK$ 80/litre + 35% on cif	n/a
Other European-type spirits up to 30% abv	HK$ 80/litre + 35% on cif	n/a
Chinese-type spirits	HK$490/hectolitre	n/a
1994		
European-type spirits over 30% abv	100% fob	n/a
European-type grape spirits up to 30% abv	90% fob	n/a
Other European-type spirits up to 30% abv	30% fob	n/a
Chinese-type spirits	HK$490/hectolitre	n/a
1998		
European-type spirits over 30% abv	100% fob	n/a
European-type grape spirits up to 30% abv	60% fob	n/a
Other European-type spirits up to 30% abv	30% fob	n/a
Chinese-type spirits	HK$840/hectolitre	n/a

(ii) The impact of tax tax changes on the structure of the Hong Kong spirits market

Economic theory would suggest that the changes in the tax regime for spirits described above would have substantial impacts on the Hong Kong spirits market:

- First, they should have reduced the retail price of low cost spirits relative to that of more expensive brands.
- As a result, they should have encouraged consumers to shift down-market, buying more low cost spirits and fewer expensive brands.
- Linked to this, they potentially may have encouraged higher overall spirits consumption since the average price of spirits consumed should have been lower than previously.
- Finally, they should have reduced government tax revenues if the elasticity of demand for spirits is less than one and/or if the switch to the ad valorem regime made tax evasion easier.

We look at the evidence on each of these effects, concentrating particularly on the market for Scotch whisky.

Table 6.3.2: The impact of duty changes on whisky prices (HK$/litre)

	Premium/malt			Standard			Low price		
	Retail price	Tax	Pre-tax price	Retail price	Tax	Pre-tax price	Retail price	Tax	Pre-tax price
1993	261.4	112.2	149.2	155.3	84.7	70.6	85.4	66.6	18.8
1994	270.0	135.0	135.0	139.0	69.5	69.5	88.0	44.0	44.0
1995	270.0	135.0	135.0	150.0	75.0	75.0	57.5	28.8	28.8
1996	297.0	148.5	148.5	162.0	81.0	81.0	49.5	24.8	24.8
1997	297.0	148.5	148.5	152.0	76.0	76.0	59.0	29.5	29.5
1998	288.0	144.0	144.0	152.0	76.0	76.0	57.5	28.8	28.8

(a) The impact on relative prices for spirits

Table 6.3.2 shows how the pre-tax price of Scotch whisky, the tax element and the overall retail price have changed since 1993. Here we take the price of Johnnie Walker Black Label as indicative of movements in the price of premium whisky brands; Johnnie Walker Red Label as indicative of movements in the price of standard brands; and Own Label as indicative of movements in low price brands.

The key points to note are:

- Pre-tax prices for both the typical premium and standard brands has changed little in recent years. The pre-tax price for the low-price brand is estimated to have risen by around 50% since 1993.

- The move to a wholly ad valorem tax system substantially raised the tax payable on premium brands of whisky and reduced that payable on low-price brands. However, the tax payable on standard brands was little affected.

- As a result, the retail price for the typical premium brand rose by over 13% between 1993 and 1996, while that for low-price brands fell 42%. Over the same period, the price of the typical standard brand was broadly unchanged.

The overall impact of these changes has been to increase the differential between the retail price of premium and low-price brands from around 200% in 1993 to 400% now, while the differential between standard and low price brands has risen from around 80% in 1993 to 160% now. Similar changes are also evident in the other spirits markets in Hong Kong.

(b) The impact on the composition of the spirits market

Table 6.3.3 shows the market share of each of the major types of spirits. Since 1993 there has been a small increase in the share of white spirits, offset by a fall in the share of Chinese-type spirits.

Table 6.3.3: Market Breakdown for Spirits

	Scotch Whisky		Other Whisky		All Whisky	
	Total Sales (000 9L. Cases)	% of Total Spirits	Total Sales (000 9L. Cases)	% of Total Spirits	Total Sales (000 9L. Cases)	% of Total Spirits
1993	53.00	2.69	5.50	0.28	58.50	2.97
1994	60.80	3.12	6.10	0.31	66.90	3.44
1995	66.70	3.48	6.80	0.35	73.50	3.83
1996	69.00	3.76	8.50	0.46	77.50	4.22
1997	64.00	3.69	9.00	0.52	73.00	4.20
1998	54.50	3.51	7.50	0.48	62.00	3.99

	White Spirits		Rum/Cane		Other Spirits	
	Total Sales (000 9L. Cases)	% of Total Spirits	Total Sales (000 9L. Cases)	% of Total Spirits	Total Sales (000 9L. Cases)	% of Total Spirits
1993	42.00	2.14	8.30	0.42	1858.40	94.47
1994	51.30	2.63	9.30	0.48	1820.00	93.45
1995	52.80	2.75	11.10	0.58	1781.50	92.84
1996	59.40	3.23	10.50	0.57	1689.35	91.97
1997	59.55	3.43	10.80	0.62	1593.15	91.74
1998	47.75	3.07	9.60	0.62	1434.00	92.32

Table 6.3.4 shows the break-down of the market for Scotch whisky. It shows that while the overall consumption of whisky has been broadly constant since 1993:

- The share of super premium and premium brands in the overall Scotch whisky market has fallen from 45% to just over 37% in 1998.
- The share of standard brands has fallen from almost 54% to only 39% in 1998.
- The share of low price brands has increased from only 1.4% to over 23% in 1998.

It should be noted that most of this period saw rapid economic growth in Hong Kong (averaging 5% a year from 1993 to 1997, although the Asian crisis caused GDP to fall 5% in 1998). There is therefore little reason to suggest that the increase in the market share of low-price brands has reflected efforts by consumers to economise because their incomes have been depressed - household income growth has actually been strong for most of the 1990s.

Rather, the increase in the market share of low-price Scotch whisky can primarily be explained as the result of the sharp fall in the price of low-price brands relative to the more expensive alternatives. In this case, a 37% fall in the relative price of low-price brands compared to other brands since 1993 has generated a 22% point increase in the market

Table 6.3.4: Market Breakdown for Scotch Whisky

	Super Premium		Premium/Malt		Standard		Low Price		Total
	Sales (000 9L. cases)	% of Total Sales	Sales (000 9L. cases)	% of Total Sales	Sales (000 9L. cases)	% of Total Sales	Sales (000 9L. cases)	% of Total Sales	**Sales** (000 9L. cases)
1986	0.60	0.95	23.00	36.51	39.40	62.54	0.00	0.00	63.00
1987	0.80	1.15	23.00	32.95	46.00	65.90	0.00	0.00	69.80
1988	1.10	1.56	24.50	34.85	44.20	62.87	0.50	0.71	70.30
1989	1.40	2.08	27.00	40.18	38.30	56.99	0.50	0.74	67.20
1990	1.60	2.48	28.00	43.34	34.50	53.41	0.50	0.77	64.60
1991	1.90	3.34	22.00	38.66	32.50	57.12	0.50	0.88	56.90
1992	2.20	4.14	21.50	40.41	29.00	54.51	0.50	0.94	53.20
1993	2.40	4.53	21.40	40.38	28.45	53.68	0.75	1.42	53.00
1994	2.50	4.11	21.90	36.02	31.90	52.47	4.50	7.40	60.80
1995	2.50	3.75	20.90	31.33	31.10	46.63	12.20	18.29	66.70
1996	2.50	3.62	20.80	30.14	31.00	44.93	14.70	21.30	69.00
1997	2.05	3.20	20.05	31.33	26.90	42.03	15.00	23.44	64.00
1998	1.60	2.94	18.75	34.40	21.40	39.27	12.75	23.39	54.50

share of low price brands. Such powerful 'cross-price elasticities' are not unusual in price-sensitive markets offering a range of close substitutes.

(c) The impact on the overall demand for spirits

Changes to the tax system for spirits have impacts not only on the relative prices and market shares of the various brands, but also on the average overall price for spirits and therefore on the total demand for spirits. As we have seen, by moving from a largely specific regime to a wholly ad valorem regime, the Hong Kong authorities generated substantial falls in the retail price of low-price brands and increases in prices for premium brands, and encouraged consumers to switch to low-price brands from more expensive alternatives. As a result, the average price of spirits consumed fell significantly, and this has gave a substantial boost to the volume of spirits consumed.

In the case of Scotch whisky, the average price per bottle consumed fell from around HK$200 a litre in 1993 to around HK$180 a litre in 1998 (weighting the individual brand prices by their respective market shares in the two years). This represents a fall of 10% in nominal terms and over 30% in real terms (ie relative to movements in the consumer price index).

Such large drops in average prices obviously have substantial impacts on overall demand for spirits, depending on the price elasticity of demand for the product. Our statistical work suggests that the price elasticity of demand for Scotch whisky may be around 0.75-1 in Hong Kong. The 30% fall in its real price since 1993 has therefore boosted the overall volume of Scotch whisky consumed by around 20-30%. As Table 6.3.4 shows, this has been sufficient to stop the downward trend in Scotch whisky sales, which had fallen by 25% between 1988 and 1993. Indeed, whisky sales rose 30% between 1993 and 1996 (back to 1988 levels), but fell off sharply in 1997 and 1998 as a result of the Asian crisis.

(d) The impact on government excise revenues

The changes in market structure generated by moves from a specific tax to an ad valorem regime can have substantial impacts on government excise revenues, even when the tax rates under the two regimes are intended to be equivalent. In the case of Hong Kong, the move to a wholly ad valorem regime encouraged consumers to switch to low-price brands to a large extent in order to avoid paying the higher tax that was now due on premium brands. The impact on overall government revenues depends on both the overall price elasticity of demand for spirits and on the so-called cross-price elasticities between the different brands (ie the extent to which consumers switch brands because of movements in their relative prices).

Table 6.3.5 shows how overall excise tax revenues for spirits have evolved in recent years. For example, it shows that total tax revenues fell by 22% between 1993 and 1996, following the move to a wholly ad valorem tax regime, and then fell a further 47% over 1997 and 1998 as demand for spirits was hit by the collapse in incomes associated with the Asian economic crisis.

Table 6.3.5: Hong Kong excise tax revenues from spirits (HK$ millions)

	Brandy	Whisky	Gin	Vodka	Liqueur	Rum	Other	Total
1993	330.9	52.1	17.2	13.0	23.4	6.6	0.6	443.7
1994	328.8	39.9	8.5	5.0	12.3	3.2	1.6	399.2
1995	305.8	38.0	5.2	3.6	9.5	2.2	2.0	366.2
1996	282.4	39.8	4.8	4.0	9.9	2.2	3.4	346.6
1997	254.2	34.5	5.1	4.2	10.9	2.3	4.6	315.7
1998	135.3	26.5	4.3	3.5	6.8	4.6	4.5	182.7

In order to illustrate the impact of the change in the tax regime on excise revenues, we have undertaken a number of counter-factual simulations looking at how excise revenues from whisky sales might have developed if the tax regime had retained its pre-1994 largely specific structure. The results are presented in Table 6.3.6, which shows:

- The price of premium whisky brands in 1998 would have been around 5% cheaper under the pre-1994 largely specific tax regime than they were under the actual wholly ad valorem regime. In contrast, prices for standard brands would have been around 20% higher and prices for low-price brands would have been around 110% higher than actually recorded. (Note: in these calculations we have assumed that the specific tax element on whisky would have been uprated in line with the CPI.)

- Under the new relative prices, demand for low-price brands would be much lower, while that for premium brands would be expected to rise. Moreover, given that the price differential for standard brands over low price brands is substantially reduced, the market share of standard brands might also be expected to rise even though its price is higher in absolute terms than under a wholly ad valorem structure. In the simulation presented, we assume that around two-thirds of the growth in the demand for low-price whisky brands would not have occurred if the tax regime had remained largely specific,

Table 6.3.6: Whisky prices, market shares and revenues if pre-1993 tax regime maintained

	Premium/malt			Standard			Low price		
	Retail price (HK$/l)	Tax (HK$/l)	Pre-tax price (HK$/l)	Retail price (HK$/l)	Tax (HK$/l)	Pre-tax price (HK$/l)	Retail price (HK$/l)	Tax (HK$/l)	Pre-tax price (HK$/l)
1993	261,4	112,2	149,2	155,3	84,7	70,6	85,4	66,6	18,8
1994	247,1	112,1	135,0	158,7	89,2	69,5	124,3	80,3	44,0
1995	252,8	117,8	135,0	171,8	96,8	75,0	109,3	80,6	28,8
1996	275,2	126,7	148,5	184,1	103,1	81,0	108,1	83,4	24,8
1997	279,5	131,0	148,5	181,6	105,6	76,0	118,8	89,3	29,5
1998	275,4	131,4	144,0	183,6	107,6	76,0	119,9	91,1	28,8

	Premium/malt			Standard			Low price		
	% diff in price rel. to actual price	Implied market share (%)	Change in share rel to actual (% pts)	% diff in price rel. to actual price	Implied market share (%)	Change in share rel to actual (% pts)	% diff in price rel. to actual price	Implied market share (%)	Change in share rel to actual (% pts)
1993	0,0	44,9	0,0	0,0	53,7	0,0	0,0	1,4	0,0
1994	-8,5	46,0	5,9	14,2	51,5	-1,0	41,2	2,5	-4,9
1995	-6,4	47,0	11,9	14,5	48,0	1,4	90,1	5,0	-13,3
1996	-7,3	48,0	14,2	13,6	44,5	-0,4	118,5	7,5	-13,8
1997	-5,9	49,0	14,5	19,5	42,0	0,0	101,4	9,0	-14,4
1998	-4,4	50,0	12,7	20,8	41,0	1,7	108,5	9,0	-14,4

with market shares for premium and standard brands higher as a result. (Plausible variations in this assumption do not significantly alter our findings.)

- The overall average price of whisky in 1998 (weighting together the new retail prices for the different brands by their new market shares) is estimated would have been around 24% higher under the pre-1994 largely specific structure than under the wholly ad valorem system actually in place. This is because the fall in the retail price of the premium brands is offset by higher prices for standard and low-price brands, and because consumers react to the relative price movements by buying relatively more of the expensive brands.

- Given the higher overall price, total whisky demand is lower by an amount that depends on its price elasticity of demand - by around 18% by 1998 if the elasticity of demand is 0.75, around 25% if the elasticity is 1.

- The impact of maintaining the pre-1994 largely specific tax regime for government revenues also depends on the price elasticity of demand. If the elasticity is 0.75 then we estimate that revenues by 1998 would have been around 8% higher than actually recorded. But with an elasticity of 1 revenues would have been little different from that

than actually recorded. In general, the lower the overall price elasticity of demand then the more likely it is that a specific tax regime will generate higher tax revenues than an equivalent ad valorem regime.

- Similar results would be expected to hold for other spirits, most notably brandy, the tax revenues from which fell 15% between 1993 and 1996, and a further 50% over 1997 and 1998.

- Overall, most of the loss of excise tax revenue associated with the move to a wholly ad valorem tax system appears to reflect the resulting increases in tax collection costs because of the greater difficulty of administering an ad valorem system than a specific tax regime. In particular, it would appear that the ad valorem system has made tax evasion much easier, for example because it is simpler for firms to conceal the true sale value of their products (which determines the tax liability under the ad valorem system) than it is to conceal the volume of product sold (which determines the tax under a specific tax regime).

It should be highlighted, however, that it is not just the direct impact on revenues that should be of concern to the authorities in designing their tax regime. In addition, because the market share of low price brands tends to increase under an ad valorem regime, the government's scope to increase revenues by raising tax rates is reduced. This is because ad valorem taxes encourage firms and consumers to make choices predominantly on the basis of price than on issues of quality, branding etc. In addition, the tax base under ad valorem taxes is more vulnerable to price wars and to the economic cycle.

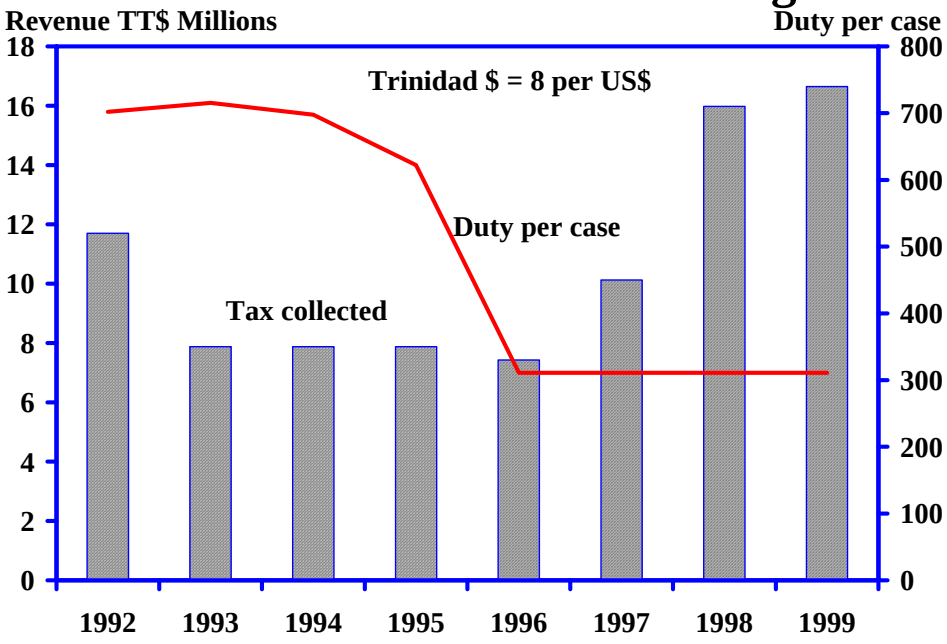
(iii) Conclusions

This case study has shown that the move from a largely specific tax regime to a wholly ad valorem structure has had a substantial impact on the spirits market in Hong Kong. In particular, it has biased the market in favour of low-price brands to the detriment of more expensive products. As a result, it has created a less secure tax base. Moreover, we have shown that there are good reasons to believe that excise tax revenues in Hong Kong are actually lower under the current ad valorem system than they would be if the pre-1994 largely specific tax regime had been maintained.

IV. Case Study: Trinidad and Tobago

Excise tax revenues on spirits fell sharply in Trinidad & Tobago through the 1980s and early 1990s, reflecting rapid growth in smuggling and counterfeiting in response to a sharp rise in tax rates. The government responded by halving excise tax rates in 1995, since when tax revenues have doubled, as illustrated in Chart 6.4.1.

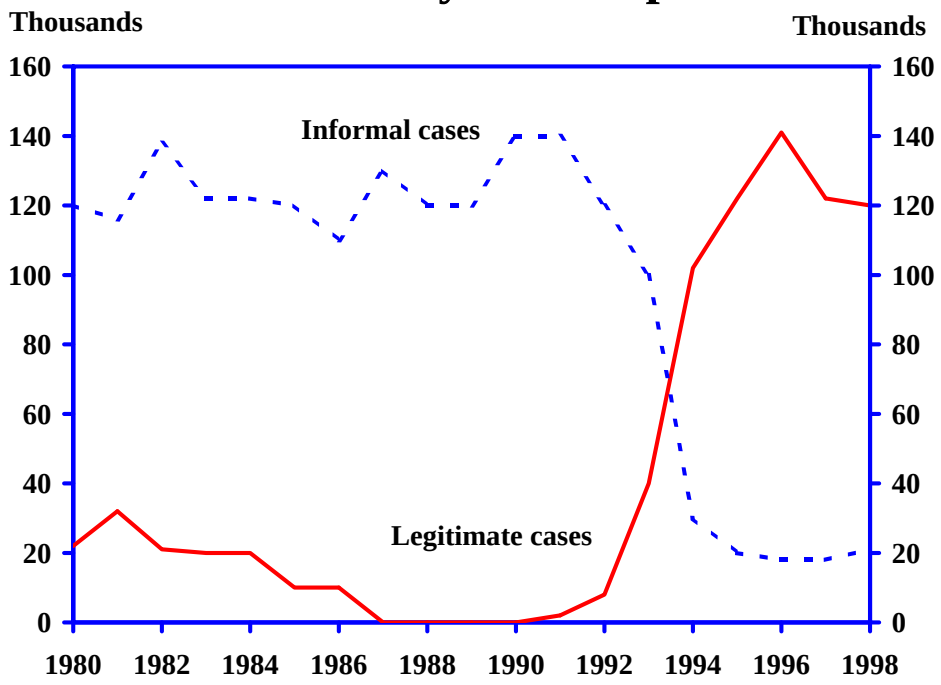
Chart 6.4.1: Spirits Tax rates and revenues: Trinidad and Tobago



V. Case Study: Peru

Peru increased taxes on spirits substantially in the early 1980s, and between 1987 and 1990 imports were prohibited. As a result, contraband became rife - for example, accounting for the entire consumption of whisky at the end of the 1980s. But economic reform led to the re-opening of trade and lower taxes from 1992 onwards. As a result, contraband has been sharply curtailed and government revenues have risen to $20 million a year.

Chart 6.5.1: Whisky consumption in Peru



Appendix A : Tax on Beer, Wines and Aperitifs

This appendix presents the legal norms regarding taxation on beer, wine and aperitifs that serve as a reference point for designing a structure for taxation on spirits.

I Beer

(i) Tax on consumption

The tax on beer consumption is ad valorem. It also involves tax on sales. In other words, the tax rate is divided into two: one part represents the tax on consumption itself, while the other represents a tax on sales.

- Raising the tax

The tax is paid when the merchandise is imported, together with the payment of any customs tax. In other words, collection is done as one and is done at source (Article 429 of the Tax Statutes (TS)).

In the case of nationally produced beer, the tax is due at the time that the goods are delivered at the factory or plant by the producer, for distribution or sale in the country, including products delivered for advertising and promotion (Article 430 TS and article 188 of Law 223 de 1999).

- Tariffs

The tax on beer consumption is 48%, distributed as follows: 40 percent as tax on consumption and 8 percent as sales tax. There is no discrimination in tariffs between nationally produced beers and imported beers (Article 475 TS and article 190 of Law 223 of 1995) (Table No. 1.1).

In the case of beer, there is no other kind of tax on consumption other than those established by Law 223 of 1995, unlike in the case of spirits of more than 20º of alcoholic content, which are taxed on their percentage of alcohol rather than on consumption. It is possible for this tax on percentage to be higher than any tax on consumption, as, in addition, this tax is fixed at different rates from one department to another.

There is no tax on consumption for exported beer.

An important difference between the tax on consumption/sales in the case of beer, and value added tax (VAT) for other alcoholic beverages is that in the first case there are no reimbursements on payments made in the chain of adding value, so that the nominal tariff corresponds to the effective tariff.

Value added tax is technically higher, since each economic agent pays his contribution according to the value that he adds to the product. It is also clear that the administration of a tax like VAT represents greater administrative and control difficulties, being especially critical on products with very high tariffs, with more than two or three links for adding value and a very high index for the ratio of retailers/producers. From there, in order to reduce tax

evasion and smuggling, there is a tendency to apply value added tax only at source (producers or importers) with an arbitrary constant percentage assigned as added value by the intermediaries and final sellers.

Because of this, on some occasions it may be preferable to apply a less technical sales tax which is easier to control than VAT. In any case, excessively high tariffs will encourage evasion.

- Tax liability

For national products, tax liability for the consumption of beer depends on the manufacturer's sale price to the retailer.

For imported beer, the sales price to the retailer is determined as the value of the merchandise in customs, including import tax and a mark-up of 30% (Article 189 of Law 223 of 1995).

The tax liability will not include the cost of the packaging or containers, whether these are returnable or non-returnable [7]. In no case will the tax paid by foreign producers be less than the average tax payable for the consumption of beers produced in the country [8] (Paragraphs 1 and 2 of article 189 of Law 223 of 1995).

- Destination of the moneys collected

Production and distribution companies collect the tax on consumption directly and are responsible for assigning it and paying it monthly to each of the secretaries of the Ministry of Finance in the departments (tax on consumption: 40%; sales tax: 8%).

In the case of imported beers, importers will pay tax on consumption at the time of import, in favour of the Fund/Account for Taxes on Consumption of Foreign Products. This Fund will pay the money collected to the secretaries of Finance in the different departments.

The tax will be distributed on the basis of the consumption of beer in each department, in accordance with reports that producers and importers must make to the secretaries of Finance in the different departments at the time of the sale or import.

- Information

Producers and importers must maintain a system for reporting on volumes of production, importation, inventory, sales, and returns by department [9].

(ii) Import tax

Beer is taxed at 20%. This level is applied to the CIF import price.

[7] This is different from VAT on liquors.
[8] This is a way of establishing a minimum price for the import of beer.
[9] The information and control system can be simpler in the case of beers, than in the case of liquors, due to the fact that there are only two beer producers in the country, although with a much greater number of production plants.

II Wines and Aperitifs

For legal purposes, alcoholic beverages in Colombia are roughly divided into a number of groups: beers, liquors and other alcoholic beverages. The definition of liquor is reserved for those beverages with an alcoholic content in excess of 20º. Wines and aperitifs are not considered liquors but are grouped as other beverages.

Aperitifs in turn are defined in Colombia as alcoholic beverages with a maximum 20º of alcohol, obtained by mixing ethyl alcohol or vinic alcohol, water, wine, "mistelas", infusions of vegetable substances and their extracts or natural essence. Aperitifs can be vinic (more than 75% wine), non vinic (less than 75% wine), special (punches, zabaglione, etc.), aromatic bitters, cocktails and wine coolers (Article 6. of Decree 365 of 1994).

The importance of this distinction between spirits and other alcoholic beverages is based on the fact that the departmental production monopoly is reserved solely for drinks grouped as spirits and does not refer to wines and aperitifs.

The rest of this section describes the rates of tax on sales (VAT), consumption and any tax payable in Colombia on wines and aperitifs, taken altogether, due to the fact that they are dealt with in practically the same way, the only difference being the rates of tax on consumption.

(i) Tax on sales (VAT)

The general rate for VAT (15%) applies to goods in sections 22.04, 22.05 and 22.06 of the tariff guide regardless of their origin (Article 25 of Decree 380 of 1996). Wine corresponds to sections 22.04 and 22.05 of the tariff guide (Table No. 1.1).

Punches, zabagliones, creams and aperitifs with an alcohol content of less than 20º will be taxed at the general rate for VAT (15%) (Article 25 of Decree 380 of 1996). Aperitifs are classed under section 22.08.70.90.00 of the tariff guide.

The basis for determining the tax on the sale of wines and other spirits (including aperitifs) is the total value of the operation. In other words, the general rule is applied (Article 447 of the Tax Statute)

VAT on imported merchandise is calculated on the CIF price plus the tax (Article 459 of the Tax Statute).

Tax on consumption is calculated as follows:- (i) For national producers, at the moment of delivery of the product at the factory; (ii) For foreign products, at the moment they are brought into the country. For the purpose of tax on consumption, wines, aperitifs and the like, imported in bulk for bottling in the country, will be dealt with as national products, paying only national taxes or duties as applicable (Article 204, Law 223 of 1995).

(ii) Consumption tax

Tax on consumption for alcoholic beverages, unlike beer, is applied in accordance with the degree of alcoholic content, so that the higher the content, the higher the tariff.

Beverages with an alcoholic content of between 2.5º and 15º pay a level of tax on consumption of 20%, while those with more than 15º of alcohol up to 20º, pay a tax on

consumption of 25%. The first group includes wines while the second includes the majority of aperitifs.

The tariff on wines, aperitifs and the like, produced nationally, with less than 20º alcohol, is decided by the sales price to the retailer, in other words, the price that, not including the value of the tax on consumption, the producer fixes for the seller or retailer, in the capital of the department where the factory is located. This price must reflect the following factors, valued in agreement with current market conditions: the factory price or the price at producer level, and the sales margin at the factory gate for delivery to the retailer (Article 1 of Decree 2141 of 1996).

The tax to be paid on foreign wines and aperitifs cannot be less than the average of the tax paid on the consumption of wines, aperitifs and the like, produced in Colombia (Paragraph of Article 205, Law 223 of 1995).

The General Directorate of Fiscal Support (DAF) of the Ministry of Finance will establish every six months the averages mentioned for the degree of alcoholic content of 2.5º up to 15º and from 15º up to 20º.

(iii) Import tax

Import tax on wines and aperitifs is applied by article (position in the tariff guide) and by origin.

Current tariff levels are as follows:

- 15%, grape must.
- 20%, wines and aperitifs.

Imports from countries of the Andean Group (Bolivia, Ecuador, Venezuela and Peru), have a tariff of 0% [10].

Reduced tariff levels, compared with general nominal tariffs, are also presented for imports from Chile (wines), Mexico (tequila), Argentina (wines), Brazil, Paraguay and Uruguay, countries belonging to the ALADI, and countries that make up CARICOM, that is to say, countries of Central America and the Caribbean (rums).

Customs tax is applied to the CIF import value, although reference prices have been used since 1996 in order to control under-invoicing.

III Levels of Collection

No information was available on the collection of any taxes for wines and aperitifs, with the exception of customs tax. In the previous study carried out by Fedesarrollo for the DIAN, an estimation was done of VAT and tax on consumption for this type of beverage, although without separation by type of beverage, nor by economic agent [11].

[10] Important level spirit liquor (Ecuador) and rums (Venezuela).
[11] See L.A. Zuleta J. and L. Jaramillo: "Tax on Liquors in Colombia". Fedesarrollo (May 2000).

For spirits estimates were also made in the same study, which are included here. With regard to beer, annual information has been available for a number of years, and it is unnecessary to make estimates.

The amount of taxes collected, on consumption, sales and customs tax, in the case of the different alcoholic beverages, is estimated at $1.205 thousand million in 1999, distributed as follows: 53% for liquors, 43% for beer and 4% for wine, creams, aperitifs and the like.

These figures allow several observations to be made:

- The amounts collected for alcoholic beverages are an important source of income for the different departments, amounting to some US$685 million in 1999.
- Wines, creams, aperitifs and the like represent a very low share of the amount collected (4.4% in 1999), with their share in the value of sales of alcoholic beverages, including beer, amounting to 8% or 9%. This situation is due to the lower tax applied to this type of beverage.
- Liquors' share of the total tax collected on alcoholic beverages has decreased over the last few years, dropping from 59% in 1995 to 53% in 1999.

IV The Tax Structure Compared

A number of conclusions can be drawn from this tax structure, when comparing the levels of tax for wines and aperitifs, with those for liquors of more than 20º of alcoholic content:

(a) In order to calculate the tax payable on imported alcoholic beverages, a fixed sales margin, established arbitrarily at 30%, should be added to the CIF price, in addition to customs tax. Without additional information for comparison, it is not possible to know if this margin is on average greater or less than, or the same as, the existing margin for calculating the tax payable on nationally produced alcoholic beverages. In the latter case, the margin is established by the market. This fixed margin rewards inefficiency and punishes the more efficient marketers.

(b) Wines are an alcoholic beverage with a very low level of contraband, according to available figures on this respect. One explanation for this is, very possibly, the low levels of tax: 15% VAT and 20% tax on consumption, compared with levels of 35% VAT and 35%-40% tax on consumption for liquors (of more than 20º alcoholic content).

(c) Aperitifs are a substitute, although not a very good one, for spirits such as *aguardiente*. If they can be offered on the market at comparatively much lower prices than *aguardiente* [12] (and in physical presentation and appearance there is not much difference), the consumer may be persuaded to partially substitute the consumption of *aguardiente* for that of aperitifs. This lower quality liquor has its own market sector: people on low income, for whom price is more important than the beverage's other characteristics.

This situation is exactly what favours the existing tax structure, since an *aguardiente* of 29º can be watered down (and essences added), to bring it to 19.5º, for example, so

[12] A bottle of aperitif currently has a final price to the consumer of between 2000 and 3000 pesos, compared with 9500 for a bottle of *aguardiente*.

that the VAT can be reduced and, above all, the tax on consumption (from 35% on the artificially high reference price of the DANE for *aguardiente* to 15% of the price to the retailer for aperitifs).

(d) In the case of beer, the market is clearly structured very differently from that of spirits: There is a quasi-monopoly of production throughout the country and there are relatively high natural transport barriers for the access to the internal market of products with a low price-volume ratio. This situation has allowed a greater capacity of negotiation between the producer and the economic authorities, leading to the establishment of a relatively simple tax structure.

(e) A different situation exists in the case of spirits, which are traded in an oligopolistic and geographically segmented market, with regional barriers to entry which have more to do with political decisions than with natural factors, since in this case the price/volume ratio is more favourable for spirits in general, especially for high priced ones.

Appendix B: The economics of excise tax determination

I Background

The general principles that should govern taxation in developing and developed countries alike are that taxes should be raised subject to three considerations: allocative efficiency, equity, and any practical considerations. Regarding allocative efficiency, in the case of tobacco and alcohol, there are at least two special issues. Firstly, there are negative health and social externalities associated with the consumption of these products. This tends to suggest higher taxes than would otherwise be appropriate. Secondly, there is a risk that some individuals may become dependent on tobacco and alcohol. This may make them demerit goods and candidates for high taxation. But from the perspective of the standard efficiency arguments, dependency suggests taxation should be *lower* than is suggested by the short-run elasticity of demand. Regarding practical considerations, tobacco and alcohol are normally seen as goods where the costs of tax collection are low. But in many cases smuggling has to be taken into account. The causes of this are partly geographical and partly a consequence of high taxation itself. These special problems mean that, while the standard arguments regarding taxation apply, we also need to take account of unwanted and perhaps unexpected side-effects of taxation. This may lead to a lower optimal tax.

II Allocative Efficiency

(i) Ramsey Taxes

The basic theory of indirect taxation was set out by Ramsey in the *Economic Journal* in 1927, and the principles remain the same to this day. Ramsey considered a situation where a government is to raise revenue by taxing commodities. He asked what the optimal structure should be in a competitive economy. The ideal tax is a lump-sum quantity, which (assuming taxpayers have the resources to pay) is non-distorting. The 'second fundamental theorem of welfare economics' states that any desired distribution of resources can be supported by lump sum taxes without distorting choices. The practical problem in any real world economy is that leisure cannot be directly taxed and so taxes on other goods are distorting. They create an 'excess burden'. In fact, one way of interpreting the Ramsey solution is that the optimal taxes are second-best, taking into account the goods' complementarity with (untaxed) leisure. This is taxing leisure by the back door, as it were. This may help to explain why tobacco and alcohol are usually considered to be excellent candidates for high taxation if, indeed, they are complementary with leisure (which is not entirely clear).

As what matters for distortion are relative prices, we can formally treat one good as untaxed, which (in our context) is most obviously labour. The idea is that a tax on labour income is like a uniform tax on all other goods.

The Ramsey model is one of general equilibrium. What this means is simply that it takes account of the fact that tax-induced changes in the price of goods affect the demands for other goods. The government's problem is to maximise the utility of the representative

household[13] by setting indirect taxes, subject to a tax revenue constraint and the optimal decisions of households (that is, their labour supply and goods demand functions).[14] The basic problem for the government is to:

$$\text{maximise } V = V(q,w)$$

$$\text{subject to } R(t) = \Sigma t_k x_k \geq R$$

where q is a vector of consumer prices, t_k is the tax on the kth good, x is a vector of quantities of goods (element x_k) and w is the wage. The function $V(q,w)$ is the indirect utility function.[15] If λ is the Lagrange multiplier associated with the constraint, the first order conditions are:

$$\frac{\delta V}{\delta t_i} + \lambda \frac{\delta R}{\delta t_i} = 0$$

λ is the shadow price of an extra dollar of tax revenue, or the extra value of one extra dollar of tax revenue. This leads to the Ramsey rule; namely, to set taxes such that:

$$\frac{\sum_k t_k s_{ik}}{x_i} = -\theta$$

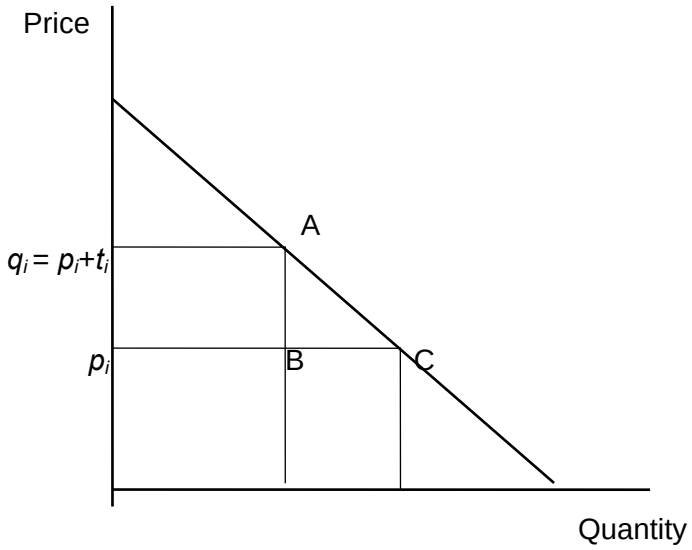
where s_{ik} is the utility-compensated change in demand for the ith good when the kth price changes. θ is a positive number independent of whichever good we are considering, which can be interpreted as the gains from a shift to lump-sum taxation.[16] What the rule does is to minimise the distortion (excess burden) flowing from taxation. The proportional reduction in compensated demand should be the same for all goods.

[13] *From a formal point of view, there is a problem defining social welfare, which is side-stepped by assuming a single or representative consumer.*

[14] *Ramsey works in a static model, but this is a very general framework which can be generalised to cover time.*

[15] *Utility is a function of quantities of x and leisure. The indirect utility function is derived by choosing optimal x and leisure to give demand functions in terms of q and w, which are then substituted back into the function to give V(q,w).*

[16] *More precisely,* $\theta = -\alpha/\lambda + (1 - \sum_k t_k \partial x_k / \partial M)$ *where* α *is the marginal utility of income, M.*



If the cross-substitution terms are all zero we have a simpler rule, which is that:

$t_i/q_i = \mu/\varepsilon_i$

for all goods, where t_i is the tax on the ith good, q_i is its price, ε_i is the own elasticity and μ is a constant, corresponding to $-\theta$ in the previous expression.[17] This gives us the familiar diagram above. The triangle ABC is the deadweight loss; it is the sum of this across goods which needs to be minimised. While the cross-substitution effects ought ideally be taken account of, the main result is that (all things being equal) it is best to tax goods in inelastic demand. Tobacco and alcohol typically fall into this category, along with fuel. The welfare intuition is that taxing goods in inelastic demand is the closest we can get to a lump sum tax; it changes (distorts) demand by a small amount. Introducing the possibility of income tax does not change this analysis, for (as observed above) a proportional income tax is like a tax on all goods. However, there will be distributional implications for income, briefly discussed in Section C below. The pattern of indirect taxes can be used to tackle this directly. It may or may not be more efficient to deal with this with income tax.

Thus tobacco and alcohol taxes are probably good candidates for efficient revenue sources. If we are prepared to guess or otherwise estimate the own and (possibly) cross-price elasticities, the optimal tax rates are straightforward to estimate.[18]

(ii) Externalities

A further aspect of efficiency is to do with externalities and social costs. The external effects of tobacco and alcohol consumption are social and health costs not borne by the consumer.[19] For simplicity, social cost may be expressed as $V = V(q,w) - Kx(q,w)$ where

[17] *That is*, $\mu = \alpha / \lambda - (1 - t \partial x / \partial M)$.

[18] *Note that as λ is constant over all goods, the relative pattern of taxation does not depend upon it.*

[19] *We have to be careful what we include here. Presumably, rational consumers will take into account their beliefs about the adverse effects of tobacco and alcohol on their health, as they*

K is a vector of external costs associated with the vector of consumption demand, *x*. This means that the Ramsey rule is now modified to:

$$\frac{\sum_k t_k s_{ik}}{x_i} = -\theta + \frac{K}{\lambda x_i}\frac{\partial x_k}{\partial q_i}$$

where $\partial x_k/\partial q_i$ is the uncompensated demand effect. Using the simple version of the Ramsey rule, the optimal tax is given by:

$$t_i = q_i \mu/\varepsilon_i + K_i/\lambda[1-\partial x/\partial M.q_i/\varepsilon_i]$$

where K_i is the external cost per unit of consumption.

(iii) Tobacco and alcohol dependence

While medical research suggests that moderate levels of alcohol consumption may be beneficial to health, it is well known that one risk of excessive consumption of alcohol is that it can result in alcoholism or alcohol-dependence for some individuals, and similar risks apply to tobacco. The commonsense approach suggests that this is a bad aspect of the product – making alcohol and tobacco 'demerit' goods. However, economics suggests that the commonsense view is mistaken here. Arguably, many goods have addictive properties; the more we use them, the more we want to use them. At one level, this is simply learning by doing. Connoisseurs learn to appreciate (for example) rare books more the more they study them, and we do not normally consider this a problem. Where we do see a problem is when consumption brings attendant costs, as with drug addiction. But, as argued above, the adverse effect of tobacco and alcohol consumption on individuals (separate from the external costs to society) should be taken into account by consumers in their rational calculation. We are prepared to accept this with, for example, the risks associated with dangerous sports. Whether the good is addictive or not has nothing to do with this argument. This means that we should ignore these private costs, unless somehow we believe society knows better than individuals themselves what is good for them. This may be the case, of course. People may not be informed about health and social costs of tobacco and alcohol. But in this case the appropriate policy is education, not deterrence.

So what are the special implications of tobacco and alcohol dependence? Conventional wisdom is that consumers who are alcohol-dependent will not respond to price signals. But the conventional view may be wrong. In fact, the opposite is likely to be true. Models of 'rational addiction' look at addictive substances in an economic framework.[20] The idea is that tastes are constant, but consumption of addictive goods introduces a kind of investment element to the utility function. Take a utility function, $U(t) = u[c(t), S(t), y(t)]$ where $U(t)$ is utility at time t, $c(t)$ is consumption of the addictive good, $S(t)$ is the cumulated stock of 'addictive capital' and $y(t)$ is another non-addictive good. There are two factors at work, which to some extent offset each other. The first is 'addiction'. This is where cumulated past use raises the marginal utility of current consumption; $u_{cS} > 0$. Football fans grow to follow their team more faithfully; drinkers learn to appreciate the

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would with any other activity. So the external costs here are those not borne by the individual – for example, hospital costs.

[20] The key reference is Becker and Murphy (1988). See also Averett and Hochman (1994), Barthold and Hochman (1988), Becker (1992) and Phlips and Pieraerts (1979).

effects of alcohol more. The second is 'tolerance'. Here, cumulated consumption lowers utility; $u_S < 0$. Habitual drinkers need a bigger shot to get the same effect as in the past. The first factor raises consumption. But, rational, well-informed and forward-looking consumers will take account of the second, future effect. If the first factor dominates, behaviour is 'reinforcing'. This approach can explain cycles[21] – binges and cold turkey abstinence – and can also explain why there are 'addictive personalities' (for instance, people with high rates of time preference). There is a reasonable amount of evidence for the rational addiction model, mainly from the USA.[22] The main testable prediction is that, contrary to the conventional wisdom, consumption may be quite responsive to price changes; but only in the long run. So, we expect elasticities to be much larger in the long run than in the short.

The implications for excise taxation are that, while the Ramsey rule still applies, we should be careful not to use short-run elasticities in our calculations.[23] Any elasticities used must be based on models which allow the short and long-run to differ (both for tobacco and alcohol but also for other goods). Thus, we have another reason for avoiding high taxes on efficiency grounds. High taxes on tobacco and alcohol may raise high revenues in the short-run, but will eventually lead to sub-optimal consumption and low taxation revenue. There may be a taxation J-curve.

III EQUITY

The Ramsey rule tends towards inegalitarianism. As we have seen, goods in inelastic demand will tend to be more heavily taxed. These will include many necessities, consumed disproportionately by the poor. It is an empirical question whether tobacco and alcohol have a high or low income elasticity, but in general it is likely to be low. In principle, the rule can be modified by including two extra elements:

$$\frac{\sum_h \sum_k t_k s_{ik}^h}{x_i} = -(1 - br_i)$$

where the Slutsky term s is now indexed by household h. The new elements are, firstly, the average net social marginal utility of household income, b; and, secondly, the covariance between consumption of the ith good and the net social marginal valuation of income, r_i. 'Net' means the value of an extra dollar to a household as seen by the government, plus any extra indirect taxation revenue arising from that extra dollar. The existence of income taxes makes equity considerations less critical, but the optimal combination of taxes will include progressive elements in both income and indirect taxes.

Calibrating these effects for the Colombian case involves making heroic assumptions about empirical relationships and the government's preferences for social welfare. Probably, it is unlikely we can, or want to try to, put a precise figure down. In any case, to do the job properly we need a detailed micro-simulation tax and expenditure general equilibrium model.

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[21] *Dockner and Feichtinger (1993).*

[22] *See the evidence referred to in Becker, Grossman and Murphy (1991), Becker, Grossman and Murphy (1994) and Waters and Sloan (1995).*

[23] *McKenzie (1991) makes this point.*

IV Practical Issues

The main practical issues to consider in the case of Colombia are the potential for corruption, smuggling and counterfeiting. Consideration of these features suggests that raising taxation may be counter-productive after some point. There may be a kind of criminal 'Laffer curve' at work. Higher taxes raise the incentives to avoid tax or produce socially-costly illegal alcohol. After some critical point, higher taxes simply lead to lower net revenue (especially after taking into account social costs). The solution may be to lower taxes but raise expenditure on enforcement.

(i) Crime and tax evasion

There are two aspects here. These are illegal production and tax evasion.[24] The two are closely related, and we do not distinguish them. The modern economic analysis of crime and punishment began with Gary Becker (1968). In essence, crime is a career for people with a low degree of risk aversion.[25] In an expected utility framework, the expected payoff W from crime is given by:

$$W = \pi U(y - x) + (1 - \pi)U(y)$$

where π is the probability of being detected, x is the punishment if detected and y is the payoff if undetected. Pretty obviously, the expected utility from crime is lower with a lower payoff, a higher probability of detection or a higher punishment. The 'supply' of crime is increasing in W. In our context, the payoff is increasing with alcohol taxes. So, we have additional costs to taxation. The first of these is the lost revenue from substitution from legal to illegal (smuggled, tax-evading and illegally produced) alcohol and tobacco. This may or may not be incorporated in the estimated elasticity of demand, depending on the data being modelled. In most data sets, it will be incorporated. The second cost is the social cost of crime. This can include enforcement costs, but also encompasses wider social costs, less easy to quantify.

So the social loss function needs widening. The problem now is to:

$$\text{maximise } V = V(q,w) - Kx(q) - S(z(t,e))$$

$$\text{subject to } R(t) = \Sigma\, t_k(x_k - z_k(t,e)) - e \geq R$$

The maximand now includes the social costs of crime, $S(z)$, where $S_z > 0$ and z_k is the level of illegal or tax-evading output of tobacco/alcohol. Revenue depends on demand x less illegal output. There is a cost to revenue in terms of enforcement expenditure, e.

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[24] The study of tax evasion is a subset of the crime literature. The context is therefore one of risky behaviour where the incentive is a high payoff (no tax paid) and the downside is that there is a risk of being punished. The risk depends on the extent to which the authorities put resources in to deterrence and the level of the punishment. Most work has been on income tax evasion. An early paper is Allingham and Sandmo (1972). The literature is comprehensively surveyed in Cowell (1985). A simple model of excise tax evasion is put forward by Panagariya and Narayana (1988); see the comment by Tower (1989).

[25] *The seminal article is Becker (1968). Surveys include Bergstrom (1990), Cameron (1988) and Dilulio (1996). It seems clear that the economic model has something to offer, but other factors are important too. Evidence in favour of the model is presented in (eg) Ehrlich and Brower (1987), Skogh and Stuart (1982), Witte (1980) and Witte (1983), but generally with some reservations.*

Illegal output $z_k = z(t, e)$ is affected by taxation ($z_t > 0$) and enforcement expenditure ($z_e < 0$). That is, high taxes encourage crime; expenditure on enforcement raises the probability of detection and discourages it. At the margin, taxes raise revenue directly but reduce it indirectly through illegal activity. The social costs include any factors apart from the revenue loss and the direct costs of combating crime, which is treated as a negative revenue. These factors include justice (punishing the guilty) and equity (not allowing favourable treatment to evaders). While these arguments are logically separate from the economic case for increased detection, they are nevertheless strong arguments in themselves, although they may be hard to quantify.

This modifies the Ramsey Rule in two ways. Firstly, there is an extra term in the first order condition, namely $-\lambda(z+t\partial z/\partial t)$. This reflects the loss in revenue due to the expansion of illegal activity. However, in practice this will be captured in the estimated elasticities, on the assumption that they only refer to legal output. Secondly, the effect of social costs ($S(z(t,e))$) is to modify the (simplified) Ramsey rule to:

$$t_i = q_i \mu / \varepsilon_i + K_i/\lambda[1-(\delta x/\delta M)q/\varepsilon_i] + (\partial S/\partial q)/\varepsilon_i \lambda x$$

This requires estimates of the impact of higher taxes on illegal activity, and also of the social costs of crime: $\partial S/\partial q = \partial S/\partial z . \partial z/\partial t$. The term $[(\partial S/\partial q)/x]$ is the marginal impact on social costs of a rise in taxes (via increased crime) per unit of output. In addition, there is now an extra first order condition.[26] We now have enforcement costs, e. The new condition is that:

$$-\partial S/\partial e + \lambda(1- t \partial z/\partial e) = 0$$

That is, enforcement expenditure should be set to equate the marginal social gain from an extra dollar of expenditure with the lost dollar less the gain to revenue from the reduction in illegal activity, times the marginal value of tax revenue. This is not an issue that bears directly on tax setting, of course. It does not enter the modified Ramsey rule, which treats the level of enforcement expenditure as given.

There is one other possible issue, which is the optimal mix of income and excise taxation when tax evasion is prevalent in both cases. This has been explored by a few authors, most recently Gordon and Nielsen (1997). The argument put forward there is simply that the authorities should use both taxes, equating the efficiency loss from evasion at the margin. This may justify relatively high excise tax rates if evasion rates are lower (even allowing for smuggling) than for other taxes, such as VAT or income and payroll taxes. On the other hand, it is worth noting that the sort of differential taxation typically implied by optimal tax theory can create an environment more prone to lobbying efforts than would result from applying uniform taxes (as companies vie to reduce taxes on their goods). It may therefore divert resources from more useful activities, with resulting welfare costs.

[26] *We could have expanded the framework to explicitly include deterrent effects, following the expected utility approach. An increase in the severity of punishments also reduces crime.*

V Applying the Theory

(i) Calculating Ramsey Taxes

We now take the giant step of trying to set out an explicit rule. Deciding on the precise level of taxation is fraught with difficulty. However, we can perform some rule-of-thumb calculations. If we assume any estimated price elasticities of demand for tobacco/alcoholic drinks incorporate the impact of diversion into illegal production and that we can ignore cross-substitution effects, then the theory set out above implies that the optimal rule for indirect taxes is given by:

$$t = q\,\mu/\varepsilon + K/\lambda[1-(\partial x/\partial M)q/\varepsilon] + (\partial S/\partial q)/\varepsilon\,\lambda x$$

where t is the tax, μ a constant term equal to $\alpha/\lambda - (1 - t\partial x/\partial M)$, q the consumer price, λ is the marginal value of extra tax revenue, K is the external cost per unit of tobacco/alcohol output, S is the social cost associated with illegal activity in tobacco/alcohol and ε is the own price elasticity of demand. Calibrating this clearly requires making a number of explicit assumptions on matters about which we may have little evidence. The sensible way to proceed is to calculate a range of values. For some elements – for example, ε_i - we have a good idea of the approximate range. For others – for example, K – we may be able to make a reasonable stab at the number. For the remainder – notably λ and $\partial S/\partial q$ – we will probably just be able to take a selection of rough 'ball park' figures.

Here we illustrate the application of this theory in the context of the UK, focussing primarily on excise tax rates for alcoholic drinks. Our approach is to take price elasticities from the tax model used by HM Customs and Excise (see Table C1). We then calculate a figure for the marginal value of an extra tax pound by assuming that 'other goods' have an effective tax rate of 14.9%[27] (the UK VAT rate) and calibrating the formula to deliver this. External costs tend to raise the tax: social costs (following from tax-induced crime) tend to reduce it. The more price-inelastic the good, the higher the tax. We have ignored distributional issues and cross-elasticities.

[27] *ie VAT as a share of final consumers' expenditure (=17/117.5)*

TABLE B.5.1: SIMPLIFIED RAMSEY RULE TAXES

	Beer	Wine	Spirits	Other goods
SPIT elasticities	0.985	1.124	0.917	0.851
Actual % tax rate	32.2	35.3	43.0	14.9
Zero external costs	12.9	11.3	13.8	14.9
Low external costs	19.8	18.5	20.6	N/A
Medium external costs	30.3	29.2	30.9	N/A
High external costs	43.4	42.3	44.0	N/A

Notes: i Low costs is 10% of price social costs offset by 2% social costs of associated crime.

ii Medium costs is 25% of price social costs offset by 5% social costs of associated crime.

iii High costs is 40% of price social costs offset by 5% social costs of associated crime.

iv Effective tax based on January 1997 figures.

The first thing to note is that, contrary to conventional wisdom, alcohol demand in the UK is not especially inelastic. In fact, all categories ought to have relatively low effective rates. It is clear that we need hefty external costs to justify the kind of tax rates reported in the second row of Table C1. We have calculated three variants for spirits and two for wine and beer. These are *low costs*, where external costs amount to 10% of the consumer price; *medium* with 25%; and *high* with 40%. Associated with these external costs are even less certain figures recognising that tax-induced crime itself carries a social cost. These social costs are due to the *tax*, and therefore point to lower taxes. For the low case we assume it can be calibrated at 2% and for the medium and high cases at 5%. All of these are just rough-and-ready estimates but serve for illustrative purposes.

Table B.5.2: Implied annual total external costs

	Beer	Wine	Spirits	Total
Expenditure in 1996, £million	15 048	6 089	5 638	26 775
Low	1 505	609	564	2 678
Medium	3 762	1 522	1 410	6 694
High	6 019	2 436	2 255	10 710

It is important to see quite how large actual UK taxes are. Recall that from the point of view of efficiency, any private costs need to be excluded. So, lost wages from sickness or absenteeism which is alcohol-related should not be included. The appropriate costs are those borne by society, not the individual. These include medical costs borne by the National Health Service; the loss of profits from sickness and absenteeism; and the costs in terms of injury, loss of life and damage to property (all affecting only third parties) caused by drunk-driving.

These are serious costs. But given how widespread the habit of drinking is, it is important to get this into perspective. Around 40 million people drink in the UK. Alcohol is associated with between 500-600 deaths in road accidents per year. Taking the higher figure and assuming a life can be valued at £200,000, higher than the standard assumptions, we get a cost of £120 million. This is an over-estimate, not least because it includes the lives of the drunk-drivers themselves. Cirrhosis kills about 2,500 a year, but not all of those cases are caused by alcohol, and in any event this is largely a private cost. Alcohol is implicated in other accidental deaths, but these will typically have smaller external effects. Put simplistically, only the drinker dies. The evidence on the effect of alcohol consumption on other forms of morbidity is ambiguous and does not point strongly to alcohol causing death – which in any case is a private cost. There are undoubtedly some external costs arising from expenditure on policing alcohol- related crime and disturbances. Offsetting these costs, however, premature deaths may have a net external benefit to society as there are savings on pension payments and medical costs associated with illness in old age. We do not attempt to quantify the detail of each of these costs[28]. But Table C2 shows the size of the external costs implied by the assumptions at 1996 levels.

What costs would, for example, justify a beer tax at the current level? To get the 1997 effective rate, we could assume that beer has external costs of 24.2%. Every time a drinker downs a pint costing £2, he or she is imposing an external cost of 48p on society. This adds up to £3,640 million at 1996 expenditure levels. To make the case most favourable to the tax setter, in making these calculations we assumed the offsetting social costs of smuggling-related crime were just 2%.

(ii) Ahmad and Stern calculations of the social cost of particular taxes

Arguably, we are so far from the optimum that calculating Ramsey taxes is somewhat academic. However, there is a way forward. Ahmad and Stern[29] have set out and applied some simple practical ways to approach tax reform. In this section, we extend their analysis to include social costs and benefits. It turns out to be very easy to answer the following questions: 'How far are we from the optimum? And in which direction should taxes change?'

Recall that the basic Ramsey problem for the government is to:

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[28] *Moreover, we have not attempted to quantify the benefits to health derived from moderate consumption of alcohol. Evidence from researchers in the USA, UK and New Zealand suggests that the number of deaths caused by excessive alcohol consumption and alcohol-related accidents is effectively balanced by the number of 'lives 'saved' due to moderate consumption of alcohol and its protective effect against heart disease. Some researchers believe moderate alcohol consumption reduces the risk of heart disease by as much as 40%, with equal benefits conferred by beer, wine and spirits.*

[29] *For instance in Ahmad and Stern (1984); also Ahmad and Stern (1986) and the chapter on tax reform in Newberry and Stern (1987).*

$$\max\ V = V(q, w)$$

$$subject\ to\ \ R(t) = \sum t_k x_k \geq R$$

If λ_i is the Lagrange multiplier associated with the *i*th tax, then:

$$\lambda_i = -(\partial V/\partial t_i)/(\partial R/\partial t_i)$$

is the marginal cost in terms of social welfare of an extra tax pound.

Optimality requires that all the λ_i are the same. It is easy to show that:

$$\lambda_i = \frac{\sum_h \beta^h x_i^h}{X_i + \sum_k t_k \left(\frac{\partial X_k}{\partial t_i} \right)}$$

where *X* is aggregate consumption, *x* is household consumption indexed by *h* and β is the marginal social utility from a household's consumption. Making the simplifying assumption that β is one and there are no cross-substitution effects, as we have been assuming in our simple Ramsey Rule, we get that:

$$\lambda_i = \frac{1}{1 - \varepsilon_i (t_i/q_i)}$$

What about external costs? As in the earlier discussion, we change the problem to the following:

$$\max\ V = V(q, w) - Kx(q, w)$$

$$\lambda_i = \frac{1 - K\frac{\varepsilon_i}{q_i}}{1 - \varepsilon_i \frac{t_i}{q_i}}$$

Making our simplifying assumptions, we get:

$$\lambda_i = \frac{1 - K\frac{\varepsilon_i}{q_i}}{1 - \varepsilon_i \frac{t_i}{q_i}}$$

TABLE B.5.3: AHMAD AND STERN CALCULATIONS; NO CROSS EFFECTS

	Tax	λ_1 (zero costs)	Low Costs	λ_2 (low costs)	Medium Costs	λ_3 (medium costs)
Beer	0.322	1.46	0.1	1.42	0.25	1.35
Wine	0.353	1.66	0.1	1.59	0.25	1.49
Spirits	0.43	1.65	0.1	1.59	0.25	1.49
Food	0.05	1.04		1.04		1.04
Fuel	0.074	1.04	0.1	1.03	0.25	1.03
Clothing	0.12	1.13		1.13		1.13
Transport	0.149	1.17		1.17		1.17
Services	0.149	1.13		1.13		1.13
Petrol	0.756	1.26	0.1	1.23	0.25	1.19
Tobacco	0.831	1.34	0.1	1.30	0.25	1.25
Other	0.149	1.15		1.15		1.15

For the time being, we ignore the offsetting social costs of high tax-related crime. In order to operationalise this, we need to make additional assumptions about externalities affecting other goods as well. To do this, we make the assumption that external costs associated with fuel, petrol and tobacco are the same as for alcohol and look at the low- and medium-cost cases. It is clear these assumptions weight the argument against alcohol (overstating the optimal tax), as external costs are likely to be much higher for petrol than alcohol. But the estimates could obviously be refined. Again, the possible health benefits resulting from alcohol's protective effect against heart disease should not be ignored.

Table C3 gives the results without taking account of cross effects. The estimates are striking. Recall that λ measures the social costs of taxation on a product. High values of λ indicate the tax should be lowered. The column headed λ_1 gives the base line results. λ is highest for the three alcohol groups (highlighted). Petrol and tobacco have high tax rates, but these can be justified by the low elasticities, even without external costs. Introducing external costs does not really change the picture, even at the higher level. On the basis of these figures, alcohol seems to be overtaxed in the UK. Economic welfare would probably be increased by a reduction in alcohol taxes, with any adverse revenue implications offset by higher taxes on other goods (eg VAT).

VI Conclusions

The analysis presented in this section highlights a number of factors which tax authorities should consider in determining excise taxes, principally:

- *The impact on allocative efficiency*

  The simple rule suggested by economic theory is to 'tax price-inelastic goods most'. This needs to be modified to take account of externalities (mainly health and social costs). The relative size of both demand elasticities and externalities typically points to higher taxes on tobacco and alcohol compared to most other products. Countervailing this, while medical research suggests that moderate levels of alcohol consumption may

be beneficial to health, it is well known that one risk of excessive consumption of alcohol is that it can result in alcoholism or alcohol-dependence for some individuals. If so, the main implication for efficient taxation is that we should distinguish short- and long-run elasticities. It is possible that the long-run elasticity (relevant for taxation) is higher than the short-run elasticity. This implies lower taxation than might be thought at first sight.

- *Equity*

  Even in the presence of a well-established income tax system, equity considerations tend to suggest lower taxes on tobacco and alcohol because its demand is generally income-inelastic.

- *Special practical circumstances*

  High levels of taxes can encourage evasion and illegal activity - most notably, smuggling and corruption - and the optimal tax should reflect this cost. Tax revenue may actually be higher with lower tax rates (reducing the benefits of evasion) and higher expenditure on enforcement (increasing the risk of detection) – using both carrot and stick.

This short discussion is sufficient to demonstrate that determining appropriate excise tax rates on alcoholic drinks (and other excisable products) is far from straightforward since it involves trading-off a number of frequently-conflicting objectives. It would be wrong to suggest that the Colombian authorities should design their tax structure simply by plugging in appropriate parameters into the equations set out in this paper. But the theoretical framework for identifying 'optimal' indirect tax rates described and illustrated here offers a useful tool that enables policy-makers at least to be explicit about their various objectives and the implications of the constraints under which they operate for the appropriate setting of tax rates.

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