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Resumen

Este artículo analiza aspectos de la recaudación, eficiencia y equidad de los impuestos más importantes en Chile, es decir, el impuesto a la renta, el IVA, y los impuestos a las ventas. La carga tributaria chilena en la actualidad representa aproximadamente un 20% del PIB, lo que se encuentra en línea con las cargas de los países vecinos. La conveniencia de un cambio en la carga tributaria dependerá de las necesidades de gasto publico del país que no pongan en riesgo la estabilidad macroeconómica. En comparaciones internacionales, Chile tiene una tasa máxima de impuesto a la renta personal (45%) que se encuentra entre las mas altas del mundo, y una tasa de impuesto a las utilidades (15%) que se encuentra muy por debajo de los estandares internacionales. La brecha entre ambas tasas (brecha de tasas al ingreso) es de 30 puntos porcentuales, y su reducción podría generar importantes mejoras en recaudación, eficiencia, y equidad que deben ser cuidadosamente comparadas con los beneficios del actual sistema. Puede valer la pena analizar los efectos sobre la recaudación, costos en eficiencia y beneficios esperados de algunos aspectos del sistema de impuestos a la renta. Concretamente, son elementos que merecen consideración, los incentivos al ahorro, la efectividad de costo del impuesto global complementario en lograr sus objetivos de equidad y recaudación, y la introducción de cobros por la explotación de recursos naturales. Existen, además, un conjunto de elementos que podrían ser usados para mejorar la recaudación y la eficiencia del IVA y de los impuestos a la renta. Ellas incluyen: (1) el crédito especial en el IVA a la construcción; (2) la exclusión de los retornos de impuestos a la venta de diversos productos --especialmente derivados del petróleo-- de la base del IVA; (3) el rol del impuesto de timbres y estampillas y el tratamiento del sector financiero frente al IVA; y (4) la carga tributaria apropiada para vehículos motorizados y del petróleo desde el punto de vista de la recaudación y el medio ambiente.

Abstract

This paper assesses selected revenue, efficiency, and equity aspects of Chile's major taxes, i.e., the income tax, the value-added tax (VAT), and excises. Chile's present overall tax burden, at about 20 percent of GDP, is in line with that in its neighboring countries. Whether any change from this level is desirable depends in a fundamental way on the public expenditure needs of the country without jeopardizing macroeconomic stability. Chile has a top personal income tax (PIT) rate (45 percent) that is at the high end of the international spectrum, and a corporate income tax (CIT) rate (15 percent) that is an outlier at the low end. The gap between these two rates (the income rate gap) of 30 percentage points could entail important revenue, efficiency, and equity costs that must be weighed carefully against any perceived or actual benefits. It may be worthwhile to undertake an assessment of the revenue and efficiency costs relative to the expected benefits of some aspects of the income tax system. Namely, saving incentives presently available, the cost effectiveness of the global complementary tax in achieving its revenue and equity objectives of taxing income on a global income basis, simpler ways of taxing capital and labor incomes, the introduction of royalties for the exploitation of natural resources. There are also a number of areas where existing policies could be reevaluated to enhance the efficiency and revenue potential of the VAT and excises. They include: (1) the special VAT credit to the construction sector; (2) the present exclusion of the excise revenue on many excisable goods--especially petroleum products--from the VAT base; (3) the role of the stamp duties and the VAT treatment of the financial sector; and (4) the appropriate excise burdens on motor vehicles and petroleum products for revenue and environmental reasons.

1. Introduction

This paper provides an assessment of the revenue, efficiency, and equity aspects of the present tax system in Chile from two perspectives: the macroeconomic perspective in terms of the overall level and composition of tax revenue in relation to GDP; and the microeconomic perspective in terms of the allocative and equity implications of certain structural features of the tax system. Throughout the report, an attempt has been made, whenever possible, to place the assessment in the context of both theoretical considerations and regional/international practices. The focus of the assessment is restricted to the three major taxes in Chile: the income taxes (comprising both the corporate income tax (CIT) and the personal income tax (PIT)), the value-added tax (VAT), and excises. Together, these taxes accounted for over 80 percent of the total tax revenue in Chile in recent years. A breakdown of the tax revenue is provided in Table 1.

There are two aspects of the assessment contained in this paper that are worth emphasizing at the outset. First, comparing a country's tax system and its revenue performance to those in other countries does not imply that international tax norms are necessarily appropriate benchmarks against which to undertake an evaluation, as different countries face different circumstances and have different national policy objectives. Instead, the value of such a comparison lies primarily in providing a basis, when the national practice deviates significantly from that abroad, for raising questions about whether the deviation is based on compelling and well thought-out reasons, as well as whether it can be sustained.

Second, on such fundamental issues as the efficiency and equity of tax policy, an assessment of the tax system alone is clearly incomplete, as it ignores the nature and composition of government expenditures that are financed by the tax revenue. Frequently, the efficiency and/or equity implications of a particular tax measure could be quite different once expenditures are taken into account. This limitation, which will become more apparent in some of the discussions below, should be borne in mind as an assessment of government expenditure policy is beyond the scope of this aide-mémoire.

2. Macroeconomic Perspective: Level and Composition of Tax Revenue

From a macroeconomic perspective, aspects on a tax system that interest policy makers most are whether the existing overall tax burden on the economy (usually expressed as a ratio to GDP) is appropriate, and, given a particular burden, whether the existing composition of tax revenue (usually in terms of income relative to consumption taxation) is desirable.[1] Much of this interest undoubtedly stems from the widely-held belief that the welfare costs of resource misallocation (both intra- and intertemporally) would increase with increased taxation, and that, between taxing income and taxing consumption, the latter is the lesser of the two evils in

[1]From time to time, policy makers may also be interested in tax revenue for addressing short-run budgetary imbalances. This has not been an immediate concern in Chile, however, as an overall budgetary surplus has been maintained in recent years.

affecting long-run growth.[2]

As it turns out, the vast literature on optimal tax theory provides little guidance on choosing the overall level of tax burden. The literature has a bit more to offer on the choice between income and consumption taxation, but even here the verdict is not clear cut. Following brief reviews of theoretical considerations about the tax burden and revenue composition, the Chilean situation is assessed against recent regional and international developments.

Level of the tax burden

Theoretical considerations

The primary reason why optimal tax theory has so little to say about choosing the overall tax burden for an economy is that much of this theory has been developed to solve for the optimal structure of taxes in a static, second-best context to raise a *given* amount of revenue, i.e., a *given* tax burden. To relax this assumption in a meaningful way for purposes of normative policy prescription would necessitate the explicit modeling of the benefits (through either consumption or production effects) of particular expenditures to be financed by the tax revenue. In other words, determining the optimal tax burden is conceptually equivalent to determining the optimal level of government expenditure. While many recent theoretical attempts have been made to address this issue in an integrated framework of expenditure and taxation,[3] the results so far have been rather abstract and highly model dependent; they cannot, therefore, provide much practical policy guidance.

International comparisons

Lacking a clear prescription from theory, an alternative approach to assessing the present tax burden in Chile might be to compare it to that in selected groups of countries to see whether the former is broadly in line with international developments. Table 2 provides some comparative information on the tax burden in Chile and that in a number of other Latin American countries, in OECD countries (for both the group as a whole and a few of its subgroups), and in Hong Kong and Singapore--the two countries most commonly cited for having good tax systems and achieving high growth.

Table 2 shows that, for the period 1993-95, Chile's total tax burden (inclusive of social security taxes and tax payments by CODELCO--the state-owned copper company) averaged about 20.6 percent of GDP, which was about the same as that in Mexico (19.3 percent of GDP) and the average of the four Mercosur countries (20.6 percent of GDP) on a comparable basis. In contrast, the average tax burden of OECD countries was almost twice as high, although the variance in the averages among the three OECD geographical subgroups was

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[2]Much of the theoretical and empirical literature in this area is surveyed recently in Tanzi and Zee (1997) (henceforth TZ), a copy of which is attached to this paper.

[3]Such attempts have become increasingly fashionable since the advent of the endogenous growth literature. A particularly well known example is Barro (1990) (cited in TZ).

large. The average tax burden in both Hong Kong and Singapore was notably lower than that in either the Latin American or OECD countries.

An important contributing factor to the high tax burden in the OECD countries (principally the Europe subgroup) is their high social security taxes, which averaged about 10 percent of GDP in the 1993-95 period. In non-European OECD countries, as well as in most developing countries, revenue from social security taxes as a percent of GDP is typically much lower. In Chile, such revenue, which amounted to about 1.4 percent of GDP in the same period, was comparatively low even by regional standards.[4] Hence, if social security taxes are excluded from tax burden comparisons, the total tax burden in Chile would be somewhat higher (by roughly 3.5 percentage points of GDP) than that in both Mexico and the Mercosur countries as a whole, although it would still be below the level of most OECD countries (albeit by a smaller margin).

Numerous studies have attempted to identify the determinants of the level of taxation. One of the most commonly cited determinant has been per capita income, usually on grounds that economic development would bring about both an increased demand for public expenditure and a larger taxing capacity. Available international statistical evidence has tended to support the positive correlation between levels of income and levels of taxation . Indeed, compared to industrial countries, the tax burdens in developing countries are typically lower by 50 percent or more.[5] Asian developing countries generally have some of the lowest tax burdens, and it is certainly tempting to view this as a causal factor in their high growth rates. Unfortunately, the empirical evidence on this relationship is far from compelling.[6]

The implication for Chile of the above is twofold: (1) its present tax burden is in line with that in its neighboring countries; and (2) further economic development is likely to generate increasing needs for additional tax revenue. It is thus important to focus more on the ways the revenue is utilized, than on the level of taxation per se.

Composition of revenue

Theoretical considerations

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[4]This is largely explained by the fact that, since 1981, the social security system in Chile has been converted from a state-run pay-as-you-go system to a (mandatory) fully-funded system administered by private organizations (the so-called Pension Fund Administrators) under state regulations. Hence, budgetary revenue from social security taxes after the conversion corresponds only to that collected from workers who remain in the old system. Inevitably, such revenue has declined, and will continue to decline, over time.

[5]For a discussion of this literature as well as statistical evidence, see Zee (1996) (cited in TZ).

[6]Much of the available econometric evidence on the relationship between taxation and growth has not been very robust, due largely to the difficulties in disentangling the growth effects of other relevant variables from taxation. See, for example, Easterly and Rebelo (1993) and Levine and Renelt (1992) (both cited in TZ).

The most prominent issue in any discussion of revenue composition involves the taxation of income relative to that of consumption.[7] In evaluating the relative merits of these two tax bases, both efficiency and equity considerations are central to the analyses, although the theoretical literature has focused on the former.

The conventional belief that taxing income entails a higher welfare (efficiency) cost than taxing consumption is primarily based on the observation that the income tax consists of two broad components: a labor tax and a capital tax. Since the labor tax is equivalent to a tax on consumption in an intertemporal framework without labor-leisure choice and after adjusting for inheritances and bequests, the income tax gives rise to an additional distortion--on savings--that is absent from the consumption tax. This line of reasoning disregards, however, the fact that the labor tax--and thus the consumption tax--does distort the labor-leisure choice. In the presence of such a distortion, adding a second distortion is not necessarily welfare-reducing, a result that follows directly from the theory of the second best. It turns out that, in the traditional neoclassical growth model, the length of the consumer's planning horizon plays a crucial role in the theoretical ambiguity of the relative superiority of the consumption tax. If saving decisions are based on life-cycle considerations, the optimal mix of income and consumption taxes would depend entirely on the relevant elasticities, i.e, of labor supply and savings.[8] If, however, the planning horizon is infinite, then the optimal tax on capital would in fact be zero *in the long run*.[9]

The analytical picture would get even more complex and the results more ambiguous if human capital--the crucial ingredient in the new endogenous growth literature--is brought into the analysis. In general, the nature and process of human capital accumulation, i.e., whether its acquisition is thought to require time (foregone wages), physical capital, even human capital itself, or some combination of all three, will ultimately have a bearing on the relative welfare costs of income and consumption taxation.[10] The upshot of the above theoretical

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[7]Other issues that have also attracted attention include the revenue and protection implications of tariffs (still important for many developing countries) and the efficacy of environmental taxes (receiving increasing interest in developed countries).

[8]It is not uncommon to encounter arguments for relatively heavy consumption taxation on the basis that the elasticity of labor supply--at least for the group of prime male workers--is low. It must be noted, however, that the cited inelasticity usually refers to the uncompensated labor supply curve. The compensated elasticity--the concept relevant for measuring welfare costs--is typically much higher. Moreover, there is a great deal of uncertainty about the magnitude of the interest elasticity of savings.

[9]The life-cycle results are established in Atkinson and Sandmo (1980), and results from the infinite-horizon model are derived in Chamley (1986) (both cited in TZ). It could be optimal to tax capital in the life-cycle model because the intergenerational excess burden of a capital tax is not fully captured in such a framework.

[10]An important implication of the income tax in Chile for the acquisition of human capital is discussed in the Section 3.

considerations is that, while taxing (physical) capital may well depress (physical) capital accumulation, it, like taxing consumption, could have an impact on human capital accumulation and other variables through a web of complex interactions, rendering the relative welfare costs of the two taxes a priori uncertain.

With the rapid globalization of financial markets in recent years, there has been much rethinking about the appropriate tax treatment of capital income. In this regard, the concern is not so much about the traditional efficiency issues such as the tax-induced distortions on savings, as on the increasing ability of capital, especially financial capital for portfolio investment, to easily escape the domestic income tax net altogether. Such concerns have prompted a reexamination of the relevance of imposing an income tax based on the concept of global income.[11]

As regards (vertical) equity, it has long been thought that taxing consumption is inherently more regressive than taxing income, since it is administratively infeasible to effectively implement, on a broad scale, graduated tax rates on consumption.[12] Two recent lines of research have, however, cast doubt on this conclusion. First, the traditional form of the consumption tax, i.e., taxing consumption as it takes place (such as a VAT or sales tax), has been found to be far less regressive than commonly thought when viewed from a life-cycle rather than a static perspective.[13] Second, consumption can be taxed on the same graduated basis as the income tax, in theory, by allowing unlimited deductions from income of savings under the income tax itself.[14] But such a tax is likely to be administratively more costly than the traditional consumption tax, as net savings during a tax period eligible for deduction must be tracked and reported to the tax authorities.

International comparisons

Broadly speaking, income tax revenue (inclusive of taxes paid by CODELCO) and consumption tax revenue (the sum of the VAT, excises, and stamp duties) accounted for about 30 percent and 50 percent, respectively, of the total tax revenue in Chile in recent years, or an income/consumption revenue ratio of 0.6 (Table 1). How does such a ratio compare with that in other countries?

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[11]See Tanzi (1996) for an extended discussion on this issue.

[12]A limited application of differential consumption taxation is certainly feasible and in fact is widely practiced. There is, however, compelling evidence suggesting that such a practice is highly ineffective in achieving equity objectives, since both the rich and the poor consume (albeit in different proportions) the same goods that are being taxed differentially.

[13]See a series of studies by Metcalf, e.g., Metcalf (1994).

[14]This is the idea lying behind the so-called USA (unlimited savings allowance) tax that has been proposed in the United States recently (see Seidman (1997)). To a limited degree, Chile's income tax already contains some of the features of the USA tax, as discussed in Section 3 below.

As table 2 indicates, the comparable average ratio for the Mercosur countries over the 1993-95 period was about 0.3 and about 1.25 for Mexico. Hence, the mix of income and consumption tax revenues in Chile was certainly well within the regional boundaries. In the broader context, the OECD countries displayed an average ratio above unity, either for the group as a whole (about 1.3) or for any one of its three subgroups; and the same held true for Hong Kong and (marginally so) for Singapore. The study by Zee (1996) (cited in TZ) which looks at a much larger sample of non-OECD countries and over a longer horizon finds that their average ratio declined from about unity in the second half of the 1970s to about 0.75 in the second half of the 1980s, while over the same period the average ratio for the OECD countries remained stable at about 1.4. The developing countries as a whole experienced, therefore, a marked shift towards consumption taxation. It is noteworthy to point out, however, that this shift was much less pronounced for the group of Latin American countries (the average ratio declining from about 0.75 to 0.6--coincidentally the present ratio for Chile); and that for the small group of high growth Asian countries, the average ratio actually rose (from about 0.9 to unity) over the period.[15]

There are few clear-cut normative policy prescriptions that could be drawn from the above international comparisons; nor are there much compelling positive policy implications to be had from existing econometric evidence on the relationship between the income and consumption revenue mix on the one hand, and either the growth or savings rate on the other. While employing tax instruments to alter rates of return to savings may have an impact on the composition of savings, there has been little conclusive international evidence that such measures (unless of a drastic nature) could significantly affect either private or national savings in the long run.[16]

For Chile, the merits of any shift in the income-consumption taxation from its present mix in either direction would ultimately depend on spelling out clearly what objective(s) such a shift is supposed to achieve, how it would be achieved, and at what costs--in terms of both possible new distortions arising from the shift and its consequent equity impact.

3. Microeconomic Perspective: Selected Structural Aspects of Major Taxes

This section assesses the efficiency and equity of selected structural aspects of the income tax,

[15]As reported in Zee (1996), an interesting aspect of the comparison between OECD and developing countries with respect to the income tax is that the former tends to rely more on the PIT than the latter. The ratio of PIT/CIT revenue in OECD countries is about 3, while it is below unity for developing countries (ranging from about 0.25 in the Middle East to about 0.75 in Asia, based on broad samples of countries). Chile's ratio has averaged about 0.3 in recent years. Per capita income and sophistication of the tax administration are among the many possible factors in determining the relative importance of the PIT as a source of tax revenue.

[16]For a recent review of tax effects on household savings in OECD countries, see Normann and Owens (1997).

the VAT, and excises in Chile. Throughout the discussion below, it is taken as a given that, all other things equal, a simple tax system is better than a complex one. From this point of view, there seems to be much scope for simplifying Chile's tax system, especially regarding the income tax. From reading the income tax law, one gets a distinct impression that, to a large degree, the complexity in the present law is due to the accumulation of a great number of provisions enacted over many years designed for the fine tuning of different policy objectives. As time passes and economic circumstances change, tax provisions deserve to be reexamined from time to time for their intentions and effectiveness. Of course, tax simplification frequently involves accepting some degree of compromise over objectives of efficiency and equity, but this price must be weighed against the possibly unintentional distortions hidden in, and the enormous amount of rent-seeking activities generated by, a complex tax system.

Before launching into the assessment, however, it would be useful to take a brief look at some regional and international comparative information on both the nominal rates of broad-based income and consumption taxes and the tax treatments of major financial incomes (interest, dividends, and capital gains). While nominal rates alone seldom convey sufficient information about the structural content of a tax system, they are nevertheless convenient reference points with which to frame the discussion. As for financial incomes, the way they are treated in a tax system frequently have important implications for efficiency, equity, and tax competitiveness.

Comparative nominal tax rates

The nominal rates of the CIT, PIT, and VAT in the Mercosur countries, Mexico, Hong Kong, and Singapore are provided in Table 3, together with information on the rates of social security taxes and the corporate asset tax (if any) in these countries. The most striking feature about this table is that Chile has the lowest CIT rate (15 percent) and the highest top PIT rate (45 percent) among the sample countries . While the latter cannot be said to be the highest in the world,[17] the former is probably unparalleled (perhaps excluding one or two island tax havens) for its low level.[18] Another notable feature is that, in all of the sample countries except Chile, the CIT rate is closely aligned with the top PIT rate. The gap between the two rates in Chile (henceforth the income rate gap)--a full 30 percentage points--is also among the largest by international standards.[19] Unlike a number of other Latin American countries,

[17]A number of European countries, such as Belgium (60.6 percent), Denmark (61), Finland (57.5), France (60.2), Germany (57), Italy (51), Luxemburg (51.3), Netherlands (60), Spain (56), and Sweden (56), have a top marginal PIT rate in excess of 50 percent (indicated rates represent the sum of PITs at the central and subcentral levels of government in 1996).

[18]As of 1996, the bulk of the countries around the world have a CIT rate in the range of 30 percent to 40 percent. Countries with a CIT rate substantially above 40 percent are now few and far in between (e.g., Germany (56 percent) and Italy (53.2)). Most Nordic countries, which previously had CIT rates above 50 percent, have now moved to a dual-income tax system with an uniform tax rate (around 30 percent) on capital income (see below).

[19]A few countries with an income rate gap on the same order as Chile's are Finland (29.5 percentage points), Denmark (27), and Sweden (28). These gaps result not from an excessively low CIT rate, but from a high top PIT rate. All three countries have adopted the

including Mexico and Uruguay, Chile does not impose a tax on corporate assets.

As regards the VAT, the 18 percent rate in Chile is certainly comparable to that observed in other countries, either regionally or internationally.[20]

Comparative tax treatments of major financial incomes

Table 4 summarizes the tax treatments of major financial incomes in the same sample of countries as in Table 3. Generally, the tax treatment of *interest* income is based on the same principle across the countries: it is treated as ordinary income when paid to a resident legal or natural entity (although in Chile many specific types of interest income are tax exempt), and is subject to a final withholding tax when paid to nonresidents (Hong Kong is an exception, where interest is totally tax-exempt). Since interest expenditure is a deductible cost for companies, a withholding tax on interest remitted abroad is essential to prevent the stripping of profits by nonresidents.[21] While the withholding rate in Chile, at 35 percent, seems much higher than that in the other sample countries, almost all foreign investors in Chile take advantage of the special withholding rate of 4 percent that applies when the recipient is a foreign financial institution approved by the Central Bank of Chile. Given that the withholding tax on remitted dividends abroad is 35 percent (see below), the spread of 31 percentage points in the tax treatment of the two types of remittances could give rise to substantial incentives for back-to-back loan arrangements with an approved foreign financial institution.[22]

The tax treatment of *dividends* in Chile is substantially different from that in the other countries in the sample. These latter countries have generally opted for a simple exemption of dividend income, irrespective of the recipient's status of residence. This method is feasible because their CIT rates are at a reasonably high level (i.e., around 30 percent, except Hong Kong) and the CIT and the top PIT rates are closely aligned, as noted earlier. The exemption method is not feasible in Chile, given its large income rate gap, unless the authorities are

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dual-income tax system.

[20]As of 1996, the bulk of the OECD countries have a standard VAT rate ranging from 15 percent to 25 percent.

[21]Another common device to safeguard against profit stripping is to impose a thin capitalization rule. Chile's rule is set at 65:35 at present for foreign investments entering the country under Decree 600 (the foreign investment law). The rule can be bypassed, however, if foreign investors choose instead to enter through Chapter 14 of the Compendium of Foreign Exchange Regulations of the Central Bank of Chile (and in so doing they forego some of the benefits provided by Decree 600, including the exemption from reserve requirement on foreign loans (see below)). The international norm for the rule is in the range of 2:1 to 3:1.

[22]Foreign loans are, however, subject to a 30 percent reserve requirement with the Central Bank of Chile for one year without interest. This requirement lessens somewhat the benefits of the tax arbitrage.

willing to sacrifice a substantial portion of the tax base (especially with respect to Chile-sourced income remitted abroad). The full imputation method adopted by Chile with respect to dividend income circumvents the problems posed by the income rate gap, but at the cost of added opaqueness and complexity (relative to the exemption method).[23]

Among the different types of financial income, the tax treatment of *capital gains* is usually the most complex and diverse across countries--and the sample countries in Table 4 are no exception, as special provisions for capital gains on different assets abound in income tax laws. The broad tendency in most countries is to tax short-term capital gains (when not specifically exempted) as ordinary income and provide some relief for long-term gains; and to tax gains from financial assets at higher rates than those from real estate (if taxed at all). In a pervasively indexed tax system like Chile's, however, the distinction between short- and long-term gains is not relevant. Instead, the distinction is drawn on the basis of habituality of the activity from which the gains arise. Habitual gains are taxed as ordinary income, while the tax treatment of nonhabitual gains is varied. On the whole, however, capital gains taxation in Chile is not out of line with international practice, although there is certainly scope for streamlining special cases, especially those relating to the taxation of nonhabitual gains. The simplest approach is, of course, not to tax such gains at all, as in Hong Kong and Singapore, but this could raise serious issues of equity, and countries that exempt capital gains entirely from tax are still a minority.

Assessing the CIT and PIT

The income tax law in Chile first taxes capital income (referred to as first category income), which is the CIT component, separately from labor income (second category income), which is the PIT component. The two types of income are then combined and taxed under a global complementary tax (GCT), with *full imputation* against the CIT or PIT, or both, as the case may be. Capital income remitted abroad is assessed an additional tax (AT) through final withholding, again with *full imputation* against any CIT paid. Hence, in theory, Chile adheres to the global or comprehensive income tax concept. In practice, however, capital income receives a substantially more favorable tax treatment than labor income as a result of various provisions in the law. Several notable aspects of Chile's income tax system are assessed and discussed below, and are compared with recent international practices.

Income rate gap

The income rate gap of 30 percentage points in Chile raises several interrelated problems of efficiency and equity in the income tax system. For discussion purposes, it would be convenient to separate those that are related to the magnitude of the gap itself, from those that stem from the underlying cause(s) of the gap (i.e., the CIT rate being too low, or the top PIT

[23]It must be noted, however, that some form of imputation (partial or full) is in use in a number of OECD countries (e.g., Australia, Finland, France, Germany, Ireland, Italy, New Zealand, Turkey, and United Kingdom), as well as in Singapore, for dividends paid to domestic shareholders. Chile's system of imputation is, however, much wider in scope than that found in most other countries. See further discussions below.

rate being too high, or both).

Magnitude of the income rate gap. The primary objective of the income rate gap is, of course, to encourage corporate savings. Whether such a gap would, *in and of itself*, lead to higher private savings is debatable at best. Even if it did, its beneficial effects must be weighed against a number of revenue, efficiency, and equity problems the gap would entail.

First and foremost, a large income rate gap provides strong incentives for taxpayers to choose the corporate form of doing business purely for tax reasons. This distortion exists even if the CIT and the PIT are fully integrated (as they are in Chile), because the taxpayers who are best situated to abuse the delay in the taxation of accrued income by incorporating themselves are precisely those whose sole purpose is to side-step the PIT in the first place. Professionals (e.g., lawyers and accountants) and small entrepreneurs, for example, can easily siphon off profits through dubious expense deductions over time and escape the higher PIT rate permanently. For them, taxes delayed are taxes evaded. With respect to these taxpayers, therefore, a large income rate gap creates a possibly severe revenue leakage but confers no investment benefits on the economy.[24]

For companies which are formed for legitimate reasons, a large income rate gap creates a different type of distortion: decisions about whether to retain or distribute profits would then be heavily influenced by tax considerations. One could, of course, argue that this is in fact a policy objective, i.e., to encourage reinvestment, but it must be noted that it is a distortion all the same. Whether such a distortion is desirable depends clearly on one's assessment of the relative benefits and costs of taxing distributed profits more heavily than retained earnings. Viewed in this light, the issue is basically the same as that involved in the well-known debate on the classical versus the integrated approach to dividend taxation.

On one side of the debate is the old view, which holds that, because a company's dividends have informational value for investors, discouraging dividend distribution through high taxes entails an efficiency loss. On the other side is the new view, which holds that, because retained earnings will eventually be distributed and subject to the higher PIT, the two approaches amount to a purely timing difference in tax payments, which, in present value terms, will be viewed by investors only as a lump-sum tax. Hence, the higher taxes on distributed profits entail no distortion (save for an income effect).[25] Naturally, it is an empirical matter as to which view is correct. It is important to note, however, that neither view provides any theoretical support for the differential taxation against distributed profits: it is either costly (the old view) or has little or no efficiency effects (the new view).

Even if retained earnings increase as a result of tax considerations, it still does not mean that this is brought about without a price. Excessive retainment of earnings by existing companies result in a economy-wide misallocation of capital, and new companies are penalized as they

[24]Forming companies to evade the PIT is seemingly a widespread phenomenon in Chile.

[25]For a recent review of this voluminous literature, see Sinn (1991).

typically require more equity capital than mature ones.[26] The trapping of earnings in companies to escape (or at least delay) the higher taxes on distributed profits is analogous to the lock-in effect of capital gains taxation, which is widely regarded as an impediment to the efficient functioning of capital markets.

The differential taxation of retained and distributed profits also gives rise to a horizonal equity problem, since the ease with which the high PIT can be evaded is not the same for all taxpayers. It could be vertically inequitable as well: with tax evasion, the progressive PIT rate structure, ostensibly designed to address vertical equity concerns, becomes binding mostly on wage earners. It has much less of an effective impact on those whose income is primarily derived from nonwage sources but who are, at least arguably, likely to be better off than those with only wage income.

Should the income rate gap be deemed excessive after conducting a careful analysis, the logical next question would be how to reduce it: should the CIT be raised or the top PIT be lowered, or that the burden of adjustment be shared by both?

Absolute level of the CIT rate. As noted earlier, by regional and international standards, the top PIT rate in Chile is relatively high and the CIT rate is exceedingly low. Amazingly, the marginal effective tax rate on capital at the company level is likely to be substantially below even that indicated by the low nominal CIT rate, largely due to the availability of a *general* investment allowance, in the form of a *tax credit*, of 4 percent of the value of new tangible fixed assets. At a CIT rate of 15 percent, this allowance is equivalent to an initial write-off against taxable income of about 27 percent of the value of the assets.[27] This is *in addition* to the applicable depreciation allowances, which separately provide favorable tax treatment to new fixed assets.[28] In OECD countries, the provision of general investment allowances or tax credits on fixed assets is very much a minority practice.[29]

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[26]This penalty on new companies is countered somewhat in Chile's income tax system because the purchase of new equity shares by individual taxpayers is partially deductible from income for tax purposes.

[27]There is a ceiling on the tax credit of 500 UTMs per year (the UTM is an accounting unit for tax purposes that is adjusted monthly according to the change in the CPI in the previous month). At present, 1 UTM is roughly equal to about US$57 (excess credits are not refundable). Hence, the equivalent maximum write-off against taxable income is about US$190,000 annually. To get a sense of the relative degree of generosity of this maximum write-off, note that in the tax year 1996, the average CIT taxpayer in Chile had about US$21,000 of taxable income.

[28]Chile employs the straight-line method of depreciation. The life of a depreciable asset, if new or imported, is reduced to one-third of its normal length.

[29]There is, of course, the well known externality argument in favor of providing tax incentives to equipment investment (see Delong and Summers (1991), cited in TZ). For this argument to be compelling, however, tax incentives should be given on a targeted, rather than general, basis--and only after a careful assessment of the costs and benefits of such incentives.

It is sometimes argued that generous tax incentives are necessary for competing with other countries in attracting foreign investment. Putting aside the fact that the empirical evidence on this argument is fairly inconclusive,[30] Table 3 shows that the CIT rate of 15 percent in Chile is lower than that in the other countries in the region by a *wide* margin, which raises questions about the necessity of maintaining it at its present level for this reason. Note also that, to a foreign investor, Chile's low CIT rate is attractive only to the extent that profits are not repatriated, since, as noted earlier, there is an AT that brings the total tax rate on profits remitted abroad to 35 percent--a rate that certainly cannot be regarded as particularly competitive. Hence, for foreign investment purposes, the offering of an initially low CIT rate is likely to be regarded as only a short-run benefit.

The above discussion suggests that, in narrowing the income rate gap, raising the CIT rate should not be excluded from serious consideration.

Absolute level of the top PIT rate. As regards the top PIT rate, lowering it is likely to improve both efficiency and equity, since, as discussed earlier, its burden falls disproportionately on labor income, notwithstanding the full integration of the CIT with the PIT. While in the longer term a lower top PIT rate may well raise revenue from efficiency gains and reduced incentives to evade taxes, such effects are difficult to quantify. In the short run, the rate reduction will necessarily have an adverse revenue impact, and this concern must be carefully addressed.

Table 5a provides the distribution profiles, by tax bracket, of both sole 2nd category taxpayers and taxpayers who filed for the GCT in 1996. As can be clearly seen, in both profiles taxpayers in the 45 percent bracket were small in number (which is typical in any tax with a steeply progressive rate structure) but contributed disproportionately to the revenue collected (which is somewhat surprising). Among the sole 2nd category taxpayers, about 28 percent of the revenue was collected from those located in the top bracket, which comprised only 0.1 percent of the entire taxpaying population of this tax. For the GCT, about 50 percent of the revenue was collected from the top bracket, which comprised about 1 percent of all GCT taxpayers.[31] These distribution profiles imply that the revenue impact of lowering the top PIT rate cannot be completely ignored.

Table 5b provides an illustrative new PIT rate structure that is broadly revenue neutral as compared to the existing rate structure *for sole 2nd category taxpayers*.[32] The block on the left

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[30]See OECD (1994) for an assessment of Asian country experiences, and Shah (1995) on developing countries (both cited in TZ).

[31]It must be noted that most GCT taxpayers also paid the 2nd category tax (and/or the 1st category tax), which can be claimed as a credit against the GCT. Such credits have been netted out from the GCT figures in Table 5a.

[32]The same exercise cannot be performed so easily for the GCT, because of the complex interactions among it and the 1st and 2nd categories of taxes. For the GCT, reliable simulation results must be based on detailed data from a reasonably large sample of actual tax returns.

side of Table 5b shows the tax revenue calculated under the existing structure based on the average actual taxable income in each bracket. The purpose of this calculation is to ascertain whether such an approach can broadly reproduce the actual tax revenue collected shown in Table 5a. It does, since the simulated revenue collection of 3.9 million UTMs is close to the actual figure of 4.1 million UTMs. The block on the right side of Table 5b illustrates the new rate structure, which is shown to be capable of raising about 4.1 million UTMs in revenue--about the same as the actual revenue figure, and marginally higher than the simulated figure under the existing rate structure.

The new rate structure differs from the existing one in two crucial respects: the former has a top rate of only 35 percent, but the rate of its fourth bracket is set at 25 percent, thus eliminating the 15 percent rate in the latter altogether. Obviously, this is not the only rate structure with a lowered top rate that could achieve revenue neutrality. But the illustrated rate structure has a number of desirable features: (1) the number of rates would be reduced from the present six to four, which is consistent with the direction of recent PIT reforms in both developed and developing countries around the world; (2) the top rate would be at a level that is compatible with the regional as well as international practices. This would contribute substantially to the narrowing of the income rate gap and facilitate further alignment with the CIT rate in the future; (3) taxpayers in the lowest three brackets, comprising about 99 percent of all sole 2nd category taxpayers, would be left unaffected, thus mitigating any adverse impact on the less well off; and (4) adverse vertical equity effects on taxpayers in the other brackets would be severely limited: taxpayers in the 4th-6th brackets would see their average tax burdens increase only marginally--in all cases by no more than 2.5 percentage points, while that on the taxpayers in the top bracket would be reduced by only 2 percentage points.

Naturally, in deciding on a new structure, the revenue impact on the GCT must also be taken into account. The approach adopted in the illustrative restructuring would, however, remain broadly valid, i.e., the adverse revenue impact of lowering the top rate by even a significant margin could be compensated by raising a middle rate, without producing serious negative effects on vertical equity.

Saving incentives

For taxpayers who have to file GCT returns, i.e., individuals with nonwage income, the PIT contains several notable incentives for savings that have important efficiency and equity implications. These incentives can be broadly grouped into four types: (1) income from any form of personal capital is tax-exempt if the total amount does not exceed 20 UTMs in a year; (2) 50 percent of the portion of the sum not exceeding 50 UTAs (1 UTA is equal to 12 UTMs) of dividend income and capital gains associated with shares of open corporation is deductible from taxable income; the deductible percentage is reduced to 20 percent on the portion of the said sum in excess of the stated amount; (3) 20 percent of the value of shares of open corporations is deductible (up to 50 UTAs) from taxable income if such shares are bought at initial public offerings and held for more than a year; and (4) *net* savings invested in instruments and securities issued by financial institutions and pension funds, up to 30 percent of taxable income or 65 UTAs, generate a tax credit against the GCT equal to the said applicable investment amount multiplied by the average tax rate prior to applying the credit (net dissavings give rise to a tax debit). Generally speaking, the first two types of incentives

relate to exempting *income from savings* from tax, while the last two relate to deducting *savings* from taxable income.

Efficiency implications. The above incentives raise two efficiency issues. First, all tax incentives entail, by definition, a revenue cost. For given levels of expenditure and budgetary balance, the revenue loss must be compensated by other (distortive) taxes. The crucial question is then whether this cost is justified by the benefits expected from the incentives. It should be noted that, in Chile, a significant portion of capital income is either not taxed or taxed only lightly: a large part of the interest income is out of the income tax net because of incentive (1) above and the income-exempt status of social security institutions;[33] and dividends from open corporations are taxed lightly due to incentive (2) above and the low PIT rate. As discussed earlier, removing capital income from the income tax base is already equivalent to converting, to a substantial degree, the income tax to a consumption-based tax in an intertemporal context. Hence, if the bias against savings under a traditional income tax is the chief concern, then the present tax treatment of capital income should already have largely mitigated it. If, *in addition*, a significant portion of savings is also allowed as a deduction against taxable income, then it is tantamount to allowing a part of income to permanently escape the income tax net. Whether such a double-barreled tax measure to stimulate savings is necessarily welfare-enhancing must, therefore, be carefully analyzed on a rigorous cost-benefit basis.[34]

The second efficiency issue is that the allowed savings deductions reward savings in physical assets but not investments in human capital by wage earners who incur expenses for either upgrading their existing skills or acquiring new ones through vocational training, since no deductions for such expenses are given.[35] This is not to imply, of course, that deductions for vocational training are necessarily desirable and should be given. The point is rather that the impact of the savings deductions currently available in the tax system is not neutral with respect to different forms of capital, even though they may all be important for future growth.

Equity implications. By definition, taxing different types of income differently violates horizontal equity. More importantly, the manner by which the incentives are given--through exemptions and deductions--also violates vertical equity. The reason is that, with a progressive PIT rate structure, a given amount of exemption or deduction always confers more benefit on the taxpayers in the higher rate brackets than those in the lower brackets, since the

[33]Although personal capital income (inclusive of interest income), if it exceeds 20 UTMs, is taxable under the GCT (unless specifically exempted), there is no withholding to ensure its effective taxation.

[34]As noted earlier, incentive (3) has the function of (partially) compensating for the penalty imposed on new companies as a result of the heavier tax burden on distributed profits. It is not clear, however, that this incentive is necessarily preferable to reducing the underlying distortion it is intended to compensate.

[35]At the company level, however, a tax credit against the CIT of up to 1 percent of payroll for contributions to approved training courses is available.

tax value of each unit of allowed deduction increases with the marginal tax rate. By contrast, tax incentives given in the form of tax credits benefit all taxpayers (who are in a position to exploit the incentives) equally, irrespective of the applicable marginal tax rate.

Table 6 provides a numerical illustration of this principle. It is assumed that, for the stated rate structure and average gross income in each bracket, a deduction of 5 UTMs is available to all taxpayers. With this deduction, the total tax collected is 100.5 UTMs. In an alternative scenario, instead of the deduction, a tax credit of 0.5 UTM is given to all taxpayers. The benefit of this credit is equivalent to that enjoyed by the taxpayers in the 10 percent bracket under the first scenario. It follows from this that taxpayers in the 10 percent bracket *or lower* under the credit method are no worse off (but could be better off) than those in the same brackets under the deduction method, as can be seen from comparing their average tax burdens under the two scenarios. For taxpayers in brackets above the 10 percent bracket, however, the average tax burdens rise, because, unlike the deduction, the benefit of the tax credit to taxpayers in the higher brackets is exactly the same as that to those in the lower ones. For this reason, not only does the credit method improve the vertical equity of the rate structure without any change to the nominal rates and brackets themselves, it also raises more revenue (by 3.8 UTMs in the numerical example).[36]

The implication of the above discussion is that, if tax incentives are to be given, for vertical equity reasons it is preferable for them to take the form of tax credits rather than exemptions or deductions.

Tax simplification

As noted earlier, Chile's income tax system is fairly complex, and it is worth examining whether some of its features that have led to this complexity are effective in achieving their intended objectives. This includes the treatment of capital gains and the system of depreciation (with more than 15 rates). One particularly notable aspect of the complexity that is discussed below is the pervasive use of imputation, ostensibly to define the tax base on the basis of the global income concept. In practice, however, the taxable income is far from global.

Although the literature on optimal tax theory has long established that it may be optimal on efficiency grounds to tax different types of income differently (schedular taxation), many tax specialists have championed, for reasons of horizontal equity, the concept of global income as a basis for taxation, i.e., a single tax rate (or tax schedule) is applied on the sum of all incomes as they *accrue*. It is, of course, seldom administratively feasible to implement a pure system of global income taxation, as some types of income, such as capital gains, are difficult if not impossible to tax on an accrual basis. In reality, most tax systems are neither purely schedular nor purely global, because for tax purposes it is often the case that only some types of income are aggregated.

[36]The revenue effect depends on the imputed equivalent tax credit of the amount of deduction. There would be a revenue *loss* if the credit is imputed at a sufficiently high rate bracket, e.g., at the top bracket.

In Chile, it seems that the compromise between schedular and global taxation has been brought to the extreme. On the one hand, different types of income (e.g., capital and labor incomes) are treated in a conspicuously different manner. On the other hand, all types of income (inclusive of exempt-income) must be combined under the GCT through a comprehensive imputation system, if only to capture the progressive effects of the rate structure. Since there are extensive exemptions under the GCT itself, as discussed earlier, it is unclear whether any significant effective enhancement in either horizontal or vertical equity is achieved by the GCT, and whether the administrative costs of the imputation system is fully justified by its relatively small net revenue yield (about 0.5 percent of GDP in recent years).

The advantage to be had from the GCT's imputation system would be even less clear should there be any reduction in the income rate gap through a combination of a higher CIT rate and a lower top PIT rate, in which case the progressivity impact (whatever degree remains after the exemptions) on nonwage income would be further diluted and the revenue yield of the GCT diminished. It would then be worthwhile to examine the possibility of foregoing the concept of global income taxation altogether, and instead tax financial incomes (when deemed taxable) separately from wage income explicitly. A version of this approach, known as the dual-income system, has in fact been recently adopted in a number of Nordic countries (Denmark, Finland, Norway, and Sweden) with minor variations.[37] Other versions of this approach are also possible, including a more widespread use of final withholding taxes on certain types of financial incomes, especially interest and dividends. Indeed, increased capital mobility across national boundaries has prompted a number of proposals just in this direction.[38]

Taxation of the mining sector

The mining sector, in which copper is the dominant output, contributed about 8 percent of the country's GDP in 1995. Copper production by the private sector now surpasses that of CODELCO, although income tax revenue collected from the former reportedly only amounted to about 10 percent of that from the latter. An unusual aspect of the tax treatment of the mining sector in Chile is that income from the exploitation of natural resources is only subject to the regular income tax, while in most countries such income is also subject to additional

[37]The impetus for the move away from the global income concept in these countries was the administrative difficulty in capturing financial incomes properly in the tax net when they have to be aggregated with labor income and subject to high PIT rates. The fundamental feature of the dual-income tax system is that all financial incomes are taxed once and at the uniform CIT rate. Thus, all capital income in the economy is taxed at this rate. In contrast, labor income continues to be taxed under a separate, progressive schedule. For a description and assessment, see Sorensen (1994).

[38]Two well known proposals (not yet adopted) in the European Union are: (1) the proposed EC directive in 1989 of a 15 percent *minimum* withholding tax on interest; and (2) the Ruding Committee's recommendation to the EC in 1992 of a *uniform* 30 percent withholding tax on dividends. Of course, many countries already have withholding taxes on interest income.

fiscal levies, such as royalties. Royalties are necessary because they represent payments to the government as the ultimate owner of the resources being exploited, which are conceptually distinct from the income tax that is imposed on all producers. They are also important for ensuring the tax treatments of private and state-owned companies are on an equitable basis, as the latter are subject to profit transfer requirements in addition to income tax payments.

While the design of an appropriate structure of royalties is beyond the scope of this aide-mémoire, its introduction should be given serious consideration, as it is likely to have a significant revenue potential.

Assessing the VAT and excises

Generally speaking, the VAT and excises in Chile have few major structural issues that would require special attention. The base of the VAT is extremely broad by international standards--excluded sectors comprise only education, health, public transportation, and the financial institutions, which is unexceptional in any VAT system. Save for one special case, discussed below, the VAT has a uniform rate of 18 percent, and yielded 7.9 percent of GDP in revenue (exclusive of special excises administered under the VAT law) in 1996 (Table 1). This implies a revenue productivity (defined as the average revenue yield for each percentage point of the standard VAT rate) of about 0.44 percent of GDP, which is notably higher than that in most other Latin American countries (typically in the 0.3-0.35 range) and is comparable to that found in Western European and high-growth Asian countries.[39] The same point about the VAT's relatively high revenue efficiency can be made from a different perspective: for a consumption-type VAT implemented on the destination principle (such as the VAT in Chile), its maximum theoretical base is simply the sum of private and government consumption. In Chile, this sum is about 70 percent of GDP. Hence, the VAT's actual revenue yield implies that the tax has captured, impressively, more than 60 percent of its maximum base.

As regards Chile's excise system, it includes all the goods that are traditionally considered to be excisable, such as motor vehicles, and alcoholic, tobacco, and petroleum products. While its total revenue yield, at about 3.1 percent of GDP in 1996, compared favorably with that in other countries in the region, a significant portion of it (about 22 percent) was derived from stamp duties on credit instruments. Excluding these duties, the excise revenue yield was much more modest. Discussed below are a number of issues related to the VAT and excises, primarily with a view to further enhancing their revenue potential.

Special VAT credits for the construction sector

The standard VAT rate of 18 percent is applied on all taxable goods, except residential housing, where the applicable rate is reduced to11.7 percent (65 percent of the standard rate). Officially, this reduced rate is administered as a special tax credit provided to construction companies of such housing, and the revenue foregone associated with this credit has averaged about 0.4 percent of GDP in recent years (Table 1). The credit has its origin many years ago as

[39]Brazil's VAT revenue productivity figure of about 0.47 percent of GDP is somewhat misleading, since its VAT system includes numerous exceptionally high rates.

a compensating measure for the cascading effects of the incomplete application of the credit mechanism in the construction sector. It has remained to this day, notwithstanding the fact that the original rationale for its existence no longer applies. Hence, the desirability of continuing with the credit should be examined in the context of both budgetary revenue needs and the distortion against other sectors taxed at the regular rate.

Interactions between the VAT and excises on excisable goods

The general principle observed in many countries around the world of imposing the VAT on excisable goods is to include the excise revenue in the VAT base. This is to ensure that the applicable VAT rate is applied on a basis that will in fact produce the same effective rate. As can be seen from Table 7, in Chile this principle is largely not observed, in part because some of the excises (e.g., on beverages and luxury goods) are administered under the VAT law itself, and are, therefore, officially classified as part of the VAT system (hence their exclusion from the base of the regular VAT). However, excises on petroleum products are imposed under a separate legislation, and there is no reason why they should not be treated on par with excises on tobacco products as part of the VAT base. Including petroleum excises in the VAT base would yield about 0.25 percent of GDP in revenue.

VAT treatment of the financial sector

As noted earlier, the VAT in Chile does not cover the financial sector. This is the standard international practice, primarily due to the conceptual difficulty in defining the appropriate basis for the financial sector on which to apply the VAT in a manner comparable to other goods and services. Credit instruments, however, are subject to stamp duties (0.1 percent per month up to a maximum of 1.2 percent on the amount of the credit) that are really in the nature of a financial transactions tax. As such, the tax cascades just like any other form of a turnover tax. While duties of this nature are not uncommon internationally,[40] their potential economic effects, in terms of both benefits and costs, on the efficient functioning of financial markets cannot be ignored.[41]

Since the revenue yield of the stamp duties (about 0.7 percent of GDP in 1996) is not trivial, any contemplated policy change regarding such duties must take into account its revenue consequences. If the duties were to be reduced, a possible compensating measure could be a limited extension of the VAT into the financial sector, such as imposing it on interest rate spreads (such as that recently implemented in Argentina). Note, however, that such an extension would introduce distortions of its own, because the tax is not comprehensively applied on the entire value-added of the financial sector, nor is it likely to be politically feasible to encompass all interest spreads under the VAT. Yet another alternative would be to apply the VAT on the financial institutions on the income side, where the tax base is formed by summing their wages and profits (the so-called addition method of a VAT). This approach

[40]For a survey of country practices, see Spahn (1995).

[41]Some have argued that a financial transactions tax is beneficial because it tends to reduce the volatility of financial markets. See, for example, Summers and Summers (1990).

has been adopted in Israel, and its scope would be more comprehensive than applying the VAT on interest rate spreads. The addition method has, however, the shortcoming that the resultant tax resembles an income tax, and, as a consequence, it may have effects that could be quite different from those of a conventional VAT.

Due to their potentially important efficiency implications for capital markets, the costs and benefits of tax policy changes as they relate to the financial sector must be carefully weighed.

Excises on motor vehicles and petroleum products

Motor vehicles and petroleum products are traditionally two important excisable goods, not only for their typically high revenue potential, but also for beneficial effects from excises on such goods in reducing pollution and urban congestion. It is not uncommon to find, for example, excise (or tariff, as the case may be) rates of 50 percent and up on motor vehicles in many countries. By international standards, the excise burden on motor vehicles in Chile seems excessively light (see Table 7).[42] The luxury tax, though imposed at a high rate, is ineffective, since it can be avoided by consumers in favor of small and/or used cars (the importation of used cars is allowed in Chile). Given the present low uniform tariff rate of 11 percent and its expected further decline in the near future, as well as the planned phasing-out of the cylinder tax by 1999, there seems to be an urgent need for a thorough evaluation of the adequacy of present and prospective excises on motor vehicles, for both revenue and environmental reasons.

For similar reasons, the present excise burden on petroleum products should also be examined. Table 8 provides comparative information on such burdens between Chile and OECD countries. Generally speaking, the excise rates on fuels in Chile, though higher than those in the United States and Canada, are far below the levels found in the European countries. In setting the appropriate excise rates, however, some care must be taken to ensure that rate discrepancies, if any, between Chile and its neighboring countries do not become excessive so as to generate incentives for smuggling activities.

[42]The revenue figure in Table 7 does not include the recurring (annual) registration tax imposed on a progressive scale (on the undepreciated value of the vehicle) and collected by municipal governments. No data on this tax are available.

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Note: references cited in the text that are also cited in Tanzi and Zee (1997) above are not separately listed.

Table 1: Tax Revenue, 1993-96

	1993	1994	1995	1996
	(In percent of GDP)			
Taxes on income	**4,1**	**4,0**	**3,7**	**4,1**
First category tax 1/	2,1	2,1	2,0	2,3
Second category tax 2/	1,0	1,0	0,9	1,0
Global complementary tax 3/	0,5	0,6	0,5	0,5
Additional tax 4/	0,6	0,7	0,6	0,7
40% tax -- Decree 2398 (1978) 5/	0,1	0,1	0,1	0,2
Other taxes and adjustments	-0,2	-0,5	-0,4	-0,4
Tax payments by CODELCO 6/	**1,3**	**2,2**	**2,8**	**2,4**
Social security taxes	**1,5**	**1,4**	**1,3**	**1,4**
VAT	**8,4**	**8,4**	**8,0**	**8,4**
Of which: imports	4,5	4,3	4,3	4,4
special credit 7/ (-)	-0,4	-0,4	-0,3	-0,4
special excises 8/	0,5	0,4	0,5	0,5
Excises	**1,9**	**1,8**	**1,8**	**1,9**
Tobacco products	0,6	0,6	0,6	0,6
Petroleum products	1,3	1,2	1,2	1,4
Civil registration tax 9/	**0,6**	**0,6**	**0,6**	**0,7**
Taxes on international trade	**2,2**	**2,0**	**2,0**	**2,1**
Other	**0,4**	**0,3**	**0,4**	**0,3**
TOTAL	**20,4**	**20,7**	**20,6**	**21,3**
	(In percent of total)			
Taxes on income	**20,1**	**19,4**	**18,1**	**19,4**
First category tax1/	10,2	10,0	9,9	10,7
Second category tax 2/	5,0	5,0	4,4	4,6
Global complementary tax 3/	2,6	2,7	2,3	2,1
Additional tax 4/	3,2	3,3	3,0	3,1
40% tax -- Decredd 2398 (1978) 5/	0,3	0,7	0,6	0,7
Other taxes and adjustments	-1,1	-2,2	-2,0	-1,9
Tax payments by CODELCO 6/	**6,5**	**10,6**	**13,6**	**11,3**
Social security taxes	**7,3**	**6,9**	**6,3**	**6,4**
VAT	**41,3**	**40,4**	**38,7**	**39,4**
Of which: imports	22,0	20,8	21,0	20,5
special credit 7/ (-)	-1,8	-1,7	-1,6	-1,7
special excises 8/	2,4	2,2	2,3	2,4
Excises	**9,1**	**8,7**	**8,7**	**9,1**
Tobacco products	2,9	2,8	2,7	2,7
Petorleum products	6,2	5,9	6,0	6,4
Civil registration tax 9/	**2,9**	**3,0**	**2,8**	**3,1**
Taxes on international trade	**11,0**	**9,5**	**9,7**	**9,8**
Other	**1,7**	**1,6**	**1,9**	**1,5**
TOTAL	**100,0**	**100,0**	**100,0**	**100,0**

Source: Data provided by the authorities.

1/ On retained corporate profits.

2/ On wages, salaries, and pensions when these are the only sources of income.

3/ On global personal income: tax credits given for first and second category taxes.

4/ On distributed and remitted profits to nonresidents: tax credits given for the first category tax.

5/ Additional tax on state - owned enterprises (SOEs).

6/ Income tax inclusive of the 40% SOE tax but exclusive of transfers to armed forces under Law 13196.

7/ Provided to construction companies for residential housing.

8/ Excises administered under the VAT law on alcoholic and nonalcoholic beverages, cars, and luxury goods

9/ Inclusive of stamp duties.

Table 2: Comparative Levels and Structures of Tax Revenues, 1993-95 Average

(In percent of GDP)

	Total taxes		of which:				
	Including social security	Excluding social security	Income taxes	General consumption taxes	Specific domestic taxes	Social security taxes	Import duties
Chile	**20,6**	**19,2**	**6,0**	**7,8**	**2,9**	**1,4**	**2,1**
Mercosur countries							
Argentina	19,1	14,6	2,2	5,9	1,9	4,5	0,9
Brazil	26,1	20,9	4,0	9,8	--	5,2	0,5
Paraguay	12,5	10,8	1,9	3,9	1,7	1,7	2,1
Uruguay	24,5	16,9	2,4	8,1	3,5	7,6	1,2
Average 1/	**20,6**	**15,8**	**2,6**	**6,9**	**2,4**	**4,8**	**1,2**
Mexico	**19,3**	**15,9**	**6,0**	**3,0**	**1,8**	**3,4**	**1,1**
OECD 1/2/3/	**38,0**	**28,0**	**13,5**	**6,6**	**4,0**	**10,0**	**0,7**
America 1/2/3/	27,5	22,1	11,4	3,5	3,3	5,4	0,6
Pacific 1/2/	31,4	28,2	16,2	4,1	2,7	3,2	0,6
Europe 1/2/	40,4	28,8	13,4	7,4	4,3	11,6	0,7
Hong Kong 2/	**12,4**	**12,4**	**7,3**	**--**	**4,9**	**--**	**--**
Singapore 2/	**17,5**	**17,5**	**7,6**	**1,4**	**6,1**	**--4/**	**0,9**

Sources: Revenue Statistics, 1965-1995 (OECD); and national authorities.

1/ Unweighted average.
2/ Data refer to 1992-94 period average.
3/ Includes Mexico.
4/ Contributions to the Central Provident Fund apply.

Table 3: Comparative Nominal Rates of Selected Taxes, 1996

(In percent of GDP)

	Value-added tax 1/	Corporate Income tax 2/	Corporate asset tax	Personal income tax	Social security taxes	
					Employer	Employee
Chile	18	15 3/	--	5,10,15,25,35,45	0.9 - 3.4 4/	20,3
Mercosur countries						
Argentina	21	33	--	6,10,15,20,25,33	33	17
Brazil	20.48/21.95 5/	15 6/	--	15,25	27,8	8,9,11
Paraguay	10	30	--	--	16,5	9,5
Uruguay	23	30	1.5 7/	--	18,55	19.05,21.05,24.05
Mexico	15	34	1.8 8/	3,10,17,25,32,33,34,35	22.7 4/	5,25
Hong Kong	--	16,5	--	2,9,17,20 9/	--	--
Singapore	3	26	--	2,5,8,12,16,20,22,23,26,28	--10/	--10/

Source: Staff compilation

1/ Standard tax - exclusive rate.
2/ General rate
3/ 35 percent applies on profits remitted abroad or distributed to nonresident shareholders.
4/ A required profit - sharing arrangment with employees generally applies: 30 percent of profits (less 10 percent of net equity) or 25 percent of annual wages in Chile, and 10 percent of profits in Mexico.
5/ State tax (ICMS); there is also a Federal tax (IPI) with varied rates up to over 300 percent.
6/ Surcharge of 10 percent applies to income above a certain threshold; corporate income is also subject to a 8 percent social contribution tax.
7/ Applies on net assets; creditable against corporate income tax with ceiling.
8/ Applies on gross assets (net of intercompany liabilities subject to this tax) as a minimum tax on corporate income.
9/ Applies only on salaries, on which the maximum rate is 15 percent before personal allowances.
10/ A 20 percent contribution (for both the employer and employee) to the Central Provident Fund on wages generally applies.

Table 4: Comparative Nominal Rates of Selected Taxes, 1996

(In percent of GDP)

	Interest	Dividends	Capital gains 2/
Chile	Res.: ordinary income. Nonres: 35% (final withholding) 3/	Res.: legal entities -- exempt ; individuals -- ordinary income (full imputation) 4/ Nonres: 35% (final withholding and full imputation)	Ordinary income.
Mercosur countries			
Argentina	Res.: ordinary income. Nonres.: 13.2% (final witholding).	Exempt.	Res.: legal entities -- ordinary income; individuals -- exempt. Nonres.: exempt.
Brazil	Res.: ordinary income. Nonres.: 15% (final witholding).	Exempt.	Res.: legal entities -- ordinary income; individuals -- 15 percent. Nonres.: 15% (final withholding).
Paraguay	Res.: ordinary income. Nonres.: 17.5% (final withholding). 5/	Res.: exempt. Nonres.: 5% (final withholding)	Same as interest.
Uruguay	Res.: ordinary income. Nonres.: exempt.	Exempt. 6/	Same as interest.
Mexico	Res.: legal entities -- ordinary income. individuals -- 2% (final withholding). Nonres.: 4.9%-35% (final withholding).	Exempt.	Res.: ordinary income. Nonres.: 20% (final withholding on gorss proceeds) or 35% (final wittholding on net gains).
Hong Kong	Exempt.	Exempt.	Exempt.
Singapore	Res.: ordinary income. Nonres.: 15% (final withholding).	Res.: ordinary income (full imputation) Nonres: exempt.	Exempt. 7/

Source: Staff compilation.

1/ Unless otherwise indicated, stated treatments apply to both legal entities and individuals.
2/ The provisions for taxing capital gains usually entail numerous and complicated exceptions.
3/ The rate is 4% if paid to "approved" financial institutions.
4/ Dividends from foreign sources are always subject to the corporate income tax (with imputation for foreign taxes paid but no refunding of excess credits).
5/ The rate doubles if remitted to the head office.
6/ A 30% final withholding tax applies on dividends paid to nonresidents only if the recipients can claim a foreign tax credit in full in their home countries.
7/ Gains from real properties disposed within three years are taxable as ordinary income.

Table 5a. Distribution Profiles of Sole 2nd. Category and Global Complementary Taxpayers, 1996

Taxable income bracket	Marginal tax rate	Sole 2nd. category taxpayers							Global complementary taxpayers						
		Taxpayers		Taxable income		Net tax		Average tax rate	Taxpayers		Taxable income		Net tax		Average tax rate
		Number	Percent	Total	Percent	Total	Percent		Number	Percent	Total	Percent	Total	Percent	
(UTM)	(Percent)			(UTM mil.)		(UTM mil.)		(Percent)			(UTM mil.)		(UTM mil.)		(Percent)
0-10	0	1270168	78,5	48,2	34,9	0,0	1,1	0,1	668956	63,2	22,0	11,6	0,0	0,1	0,0
10-30	5	295328	18,3	56,1	40,7	0,8	19,6	1,4	248083	22,7	51,3	27,0	0,3	5,7	0,6
30-50	10	32474	2,0	14,7	10,7	0,7	16,3	4,5	74179	7,0	34,2	18,0	0,5	9,1	1,4
50-70	15	10640	0,7	7,5	5,4	0,5	13,2	7,2	34418	3,3	24,3	12,8	0,5	9,5	2,1
70-90	25	4327	0,3	4,1	3,0	0,4	10,4	10,4	17877	1,7	17,0	8,9	0,6	10,5	3,4
90-120	35	2459	0,2	3,0	2,2	0,5	11,1	15,1	12415	1,2	15,3	8,0	0,8	15,0	5,4
>120	45	2044	0,1	4,3	3,1	1,2	28,3	26,8	10276	1,0	26,2	13,7	2,7	50,3	10,5
Total		1617440	100,0	137,9	100,0	4,1			1059004		190,3	100,0	5,4	100,0	

Source: Data Provided by the authorities.

Table 5b. Illustrative Revenue - Neutral Change in Rate Structure for Sole 2nd. Category Taxpayers, 1996

Existing structure							Illustrative revenue - neutral new structure						
Taxable income bracket	Marginal tax rate	Taxable income		Net tax		Average tax rate	Taxable income bracket	Marginal tax rate	Taxable income		Net tax		Average tax rate
		Average	Total	Average	Total				Average	Total	Average	Total	
(UTM)	(Percent)	(UTM)	(UTM mil.)	(UTM)	(UTM mil.)	(Percent)	(UTM)	(Percent)	(UTM)	(UTM mil.)	(UTM)	(UTM mil.)	(Percent)
0-10	0	3,2	48,2	0,0	0,0	0,0	0-10	0	3,2	48,2	0,0	0,0	0,0
10-30	5	15,8	56,1	0,2	0,7	1,2	10-30	5	15,8	56,1	0,2	0,7	1,2
30-50	10	37,8	14,7	1,7	0,7	4,4	30-50	10	37,8	14,7	1,7	0,7	4,4
50-70	15	58,5	7,5	4,2	0,5	7,1	50-70	15	58,5	7,5	5,0	0,6	8,6
70-90	25	78,7	4,1	8,1	0,4	10,3	70-90	15	78,7	4,1	10,1	0,5	12,8
90-120	35	102,3	3,0	15,2	0,4	10,3	90-120	35	102,3	3,0	17,2	0,5	16,8
>120	45	176,3	4,3	46,7	1,1	26,5	>120	35	176,3	4,3	43,1	1,1	24,5
Total			137,9		3,9					137,9		4,1	

Source: Data provided by the authorities; and staff calculations.

Table 6. Illustrative Tax Calculations under Deduction and Tax Credit Methods

			Deduction method 2/				Tax credit method 3/				
Taxable Income bracket	Marginal tax rate	Avg. gross income 1/	Deduction	Avg. taxable income	Net tax	Avg. tax rate	Avg. taxable income	Gross tax	Tax credit	Net tax	Avg. tax rate
(UTM)	(Percent)	(UTM)	(UTM)	(UTM)	(UTM)	(Percent)	(UTM)	(UTM)	(UTM)	(UTM)	(Percent)
0-10	0	5	5,0	0,0	0,0	0,0	5	0,0	0,5	0,0	0,0
10-30	5	20	5,0	15,0	0,3	1,3	20	0,5	0,5	0,0	0,0
30-50	10	40	5,0	35,0	1,5	3,8	40	2,0	0,5	1,5	3,8
50-70	15	60	5,0	55,0	3,8	6,3	60	4,5	0,5	4,0	6,7
70-90	25	80	5,0	75,0	7,3	9,1	80	8,5	0,5	8,0	10,0
90-120	35	105	5,0	100,0	14,5	13,8	105	16,3	0,5	15,8	15,0
>120	45	240	5,0	235,0	73,3	30,5	240	75,5	0,5	75,0	31,3
Total					100,5					104,3	

Source: Staff calculations

1/ Assumption: average gross income in each bracket is at the mid-point of the bracket; that in the highest bracket is twice the minimum of the bracket.
2/ By assumption, 5 UTMs of income can be deducted from income before tax computation.
3/ By assumption, tax credit is imputed from the tax deduction at the 10 percent bracket.

Table 7.Structure and Revenue of Excises, 1996

	Basis of tax	Rate1/	Revenue Percent of GDP	Percent of total	Credit for earlier excise?	VAT imposed?	Excise in VAT base?
Motor vehicles			**0,09**	**2,9**			
Luxury tax 2/	CIF less US$ 10.118	85,0	0,08	2,6	No	Yes	Yes
Cylinder tax 2/	CIF	Formula 3/	...	0,0	No	Yes	Yes
Used vehicle tax	market price	0,5	0,01	0,3	Yes	No	No
Luxury goods			**0,01**	**0,2**			
Precious stones, jewerly, ivory, fur	CIF + tariff or sale price	50,0	0,01	0,2	Yes 4/	Yes	No
Tapestry, caviar, fireworks, airguns, trailers	CIF + tariff or 1st sale	50,0	0,00	0,0	Yes 4/	Yes	No
Yachts	"	30,0	0,00	0,0	Yes 4/	Yes	No
Beverages			**0,29**	**9,2**			
Soft drinks	CIF + tariff or nonretail sale price	13,0	0,13	4,2	Yes 4/	Yes	No
Wine	"	15,0	0,04	1,4	Yes 4/	Yes	No
Beer	"	15,0	0,05	1,7	Yes 4/	Yes	No
Piscos	"	25,0	0,04	1,2	Yes 4/	Yes	No
Liquors	"	30,0	0,01	0,4	Yes 4/	Yes	No
Whiskey	"	70,0	0,01	0,2	Yes 4/	Yes	No
Tobacco products	**Retail price**	**124,2**	**0,57**	**18,3**	**No**	**Yes**	**Yes**
Petroleum products			**1,36**	**43,7**			
Gasoline	Importation or 1st. sale	4.4084 UTM/cu.m.	0,96	31,0	No	Yes	No
Diesel	"	1.5 UTM/cu. m.	0,39	12,5	No	Yes	No
Others	...	...	0,01	0,2	No	Yes	No
Stamp Duties			**0,67**	**21,5**			
Checks	Per check	C$ 103/check	0,11	3,5	No	No	No
Unpaid checks or drafts	Amount	1,0	0,01	0,4	No	No	No
Credit instruments	Amount	0.1 5/	0,54	17,5	No	No	No
Others 6/		...	**0,13**	**4,2**			
Total			**3,11**	**100,0**			

Source: Data provided by the authorities.

1/ In percent of tax -- exclusive price or value, unless otherwise specified.
2/ Vehicles weighing more than 2 tons or with more than 15 passenger seats are exempt.
3/ Formula based on cc; tax will be phased out by 1999.
4/ Credit given only if the seller is excisable and excise was paid on his purchases.
5/ Per month, maximum 1.2 percent
6/ Includes excises on imported luxury goods; beverages; and motor vehicle based on cylinders.

Table 8. Comparative Excise Burdens on Fuels, 1996

	Leaded petrol	Unleaded petrol	Diesel
	(Multiples of U.S. burden)		
Chile	**4,6**	**4,6**	**1,2**
OECD countries			
Australia	5,7	5,4	4,0
Austria	12,2	10,4	5,4
Belgium	12,2	10,5	5,7
Canada	1,6	1,5	0,4
Denmark	13,6	11,4	8,9
Finland	13,8	11,9	5,8
France	14,8	13,7	6,2
Germany	14,3	13,0	6,2
Greece	10,9	10,4	5,4
Iceland	12,0	11,2	0,0
Ireland	9,5	8,7	5,6
Italy	14,8	13,6	7,5
Japan	11,5	11,5	5,3
Luxembourg	7,7	6,4	5,8
Mexico 1/	...	...	...
Netherlands	15,2	13,5	5,9
New Zealand 2/	...	4,3	0,0
Norway	15,7	13,7	7,8
Portugal	12,1	11,2	6,0
Spain	10,1	9,3	5,1
Sweden	13,1	11,6	6,2
Switzerland	12,6	11,3	9,0
Turkey 3/	...	...	...
United Kingdom	11,6	10,1	7,6
Average	**11,7**	**10,2**	**5,5**
Memorandum item:			
U.S. excise rate (US$/1000 litres)	48,61	48,61	64,61

Sources: *Consumption Tax Trends, Second Edition (EOCD, 1997); and staff calculations.*

1/ In Mexico, the excise is ad valorem: 60.2% (leaded), 46.4% (unleaded), 29.5% (diesel).
2/ New Zealand does not use leaded petrol.
3/ In Turkey, the excise is ad valorem: 233.5% (leaded), 222% (unleaded), 164.5% (diesel).

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