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The Revenue and Double Dividend Potential of Taxes on International Private Capital Flows and Securities Transactions

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Abstract

This paper explores two proposals to tax financial flows in developing economies—the package of policies implemented to various degrees by Chile and Colombia during the 1990s, widely referred to today as the Chilean model—and securities transactions taxes (STTs). I find that each provides a viable mechanism to raise revenue in some developing countries. Both can be introduced unilaterally (with the prospect of multilateral coordination in the future); both are progressive in their incidence, and in the case of the STT, represents an administratively manageable form of revenue collection. I also find that each entails double dividends that manifest in greater domestic and international macroeconomic stability.

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Keywords: securities transaction taxes, international private capital flows, financing for development, double dividends, taxation, financial flows

JEL classification: H2, H5, O23, E62

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I also find, however, that the revenue-creation potential of both of these policy tools is limited for most developing countries. Indeed, in the case of the STT, I find that ten developing countries account for 94 per cent of all securities transactions and STT revenues. In addition, I find that this revenue is unstable, owing to the dramatic fluctuations that occur in securities trading volume in developing countries.

These findings suggest the need to augment the national policy tools considered in this paper with other national and global strategies to raise revenues that can be used for the developmental purposes identified in the Millennium Development Goals.

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1 Introduction

In this paper I examine efforts by national governments in developing economies to tax international private capital flows and securities transactions. Two measures stand out in this context—the package of policies implemented to varying degrees by Chile and Columbia during the 1990s, widely referred to today as the Chilean model, and securities transactions taxes. The former was adopted in order to achieve objectives other than the raising of revenue, such as the promotion of macroeconomic stability. The latter have been in place in many developing (and, indeed industrialized) countries for quite some time, though many governments have begun to phase them out as part of the general trend toward fiscal liberalization that began in the 1990s.

I argue that policymakers in middle-income countries should give serious consideration to the two tax measures considered in this paper. To different degrees, they have the potential to raise modest pools of revenue in middle-income countries. These revenue pools can supplement the scant pool of development finance that is currently available to these countries. In addition, these measures offer the possibility of valuable national 'double dividends' (to use the phrase in Atkinson 2003), such as enhancing macroeconomic stability and lengthening the time-horizon of investors. The experiences with financial contagion over the last decade suggest that global financial stability can be enhanced via the promotion of domestic financial stability in developing countries (Eatwell and Taylor 2000; Grabel 2003).

The initiatives considered in this paper can be adopted unilaterally. They require no new multilateral agreement. This is a virtue of these initiatives, to be sure, since the immediate prospects for new conventions that introduce and harmonize these sorts of taxes are slim. But this is not to say that unilateral action in this domain is ideal—indeed, a country acting on its own to tax international private capital flows or securities transactions might face obstacles (such as international tax arbitrage) that interfere with policy success.

Fortunately, however, and as I argue below, this is an area of policy where nations have a strong incentive to coordinate eventually, since they stand to reap from such cooperation substantial global double dividends in the form of increased financial stability. Hence, this might be a case where Atkinson's 'flexible geometry' applies (2003)—where isolated national experiences with these initiatives might be expected to lead over time to regional or multilateral coordination as countries pursue the greater benefits that arise from such cooperation. We might hope, finally, that the success of coordinated initiatives to tax financial flows eases future agreement on more far-reaching multilateral tax initiatives, such as global currency transactions and environmental taxes (see the discussion of these initiatives in Sandmo 2003 and Nissanke 2003).

This paper proceeds in the following manner. Section two considers the Chilean model; section three, securities transactions taxes. Each section explores the revenue and double-dividend potential of the policy under review. Each also examines the potential costs and obstacles associated with these initiatives. The concluding section presents a summary of the analysis.

2 The taxation of international private capital flows by national governments: Lessons from Chile (1990-98) and Colombia (1993-99)

In the aftermath of the East Asian financial crisis of 1997-98, heterodox and prominent mainstream economists focused a great deal of attention on the 'Chilean model,' a term that has been used to refer to a financial policy regime that Chilean and Colombian authorities began to implement in mid-1990 and September 1993, respectively.[1] The apparent success of both countries (particularly Chile) in navigating the turbulent financial waters of the 1990s was the catalyst for intense study of the Chilean model. The discussion that follows primarily examines the question of whether the tax and 'tax-like' components of the Chilean model have potential as an innovative source of development finance in other developing countries. I also discuss briefly whether the national and global double dividends associated with this model provide an additional rationale for consideration of this approach.

Though there were national differences in policy design, financial policies in Chile and Colombia shared the same principal objectives. These were to balance the challenges and opportunities of global financial integration, to stabilize and lengthen the maturity structure of capital inflows, to mitigate the effect of large volumes of inflows on the currency and exports, to protect the economy from the instability associated with speculative excess and the sudden withdrawal of external finance, and to enhance the autonomy of monetary policy. Note that the harvesting of revenue was not among the stated objectives of the policy architects. We return to this matter below.

In mid-1990, the existing stamp tax on domestic loans in Chile was extended to foreign loans. This meant that foreign loans faced a stamp tax of 0.1 per cent per month with a ceiling of 1.2 per cent. Beginning on 15 June 1991, Chilean authorities began to impose a non-interest bearing reserve requirement of 20 per cent on new foreign borrowing (this is commonly referred to as the URR). Over time, the level of the URR was raised (to a high of 30 per cent) and its scope was eventually extended to all types of external credits and all foreign financial investments in the country. The URR functioned like a tax on international capital inflows insofar as the funds were held at the central bank for one year in a non-interest bearing account.[2] Beginning on 27 June 1991, Chilean authorities announced an alternative means of satisfying the URR. This alternative allowed borrowers and later investors to pay an up-front fee equal to what the central bank determined was an amount equal to the financial cost of the URR. The fee could be paid in the form of a promissory note with a repurchase obligation at a discounted rate priced at LIBOR plus 2.5 per cent in 1991 and LIBOR plus 4.0 per cent on 30 October 1992. Adjustments in the level, scope and method of payment of the URR during the lifespan of this policy regime were made in response to changes in the economic environment (particularly, changes in the volume and composition of inflows) and to identified channels of evasion.[3]

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1 The discussion in section 2 (aside from revenue considerations) draws heavily on Grabel (2003). See also Epstein *et al.* (2003).

2 Zee (2000) presents in preliminary fashion an alternative to the Chilean URR that he terms a cross-border capital tax (CBCT). Zee's CBCT shares with the URR the objective of enhancing financial stability by lengthening investors' time-horizons.

3 See Gallego *et al.* (1999: Appendix 2) for a detailed description of the measures employed and a chronology of policy adjustments.

There is a large body of empirical work that estimates the implicit tax rate associated with the varying levels and coverage of the URR. The implicit cost increased over the lifetime of the Chilean model as a consequence of two factors: increases in the URR from 20 per cent to 30 per cent after May 1992; and a simultaneous rise in international interest rates (Ariyoshi *et al.* 2000: II: 4). The implicit cost of the URR for a three-month loan ranged from a low of 1.1 per cent from January-April 1992 to a high of 10.3 per cent in 1995 (with an average rate of 6.9 per cent from 1991-97), and the implicit cost of the URR for a six-month loan ranged from a low of 1.1 per cent from January-April 1992 to a high of 5.1 per cent in 1995 (with an average rate of 3.6 per cent from 1991-97) (Forbes 2002: Table 1).

The central bank eliminated the taxation of inflows (and other controls over international capital flows) in several steps beginning in the summer of 1998. This decision was taken because the country confronted a radical reduction in inflows in the post-Asian/Russian/Brazilian crisis environment (rendering flight risk irrelevant). Critics of the Chilean model heralded its demise as proof of its failure (e.g., Edwards 1999). But others viewed the dismantling of the model as evidence of its success insofar as the economy had outgrown the need for protection. For example, Eichengreen (1999: 53) notes that by the summer of 1998 it was no longer necessary to provide disincentives to foreign funding because the Chilean banking system was on such strong footing following a number of improvements in bank regulation.[4]

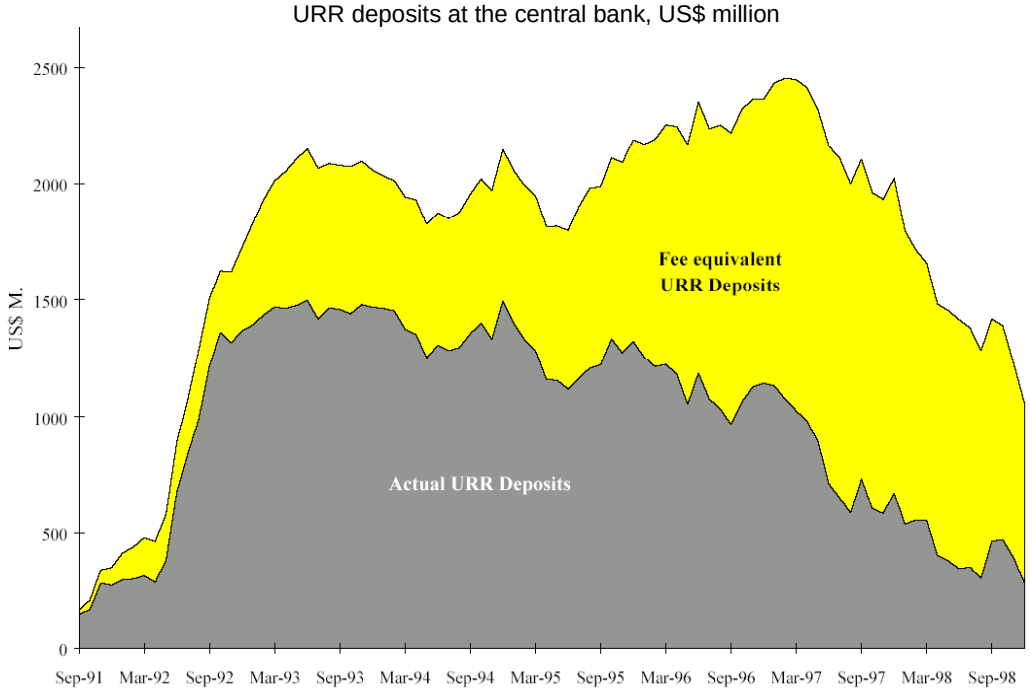
Colombia's inflows management policies relating to foreign borrowing were similar to (though more complex than) those in Chile. As in Chile, the level and scope of inflows management were adjusted numerous times during the lifetime of the policy regime (LeFort and Budenvich 1997). Beginning in September 1993, the Colombian central bank required that non-interest bearing reserves of 47 per cent be held (at the bank) for one year against foreign loans with maturities of eighteen months or less (this was extended to loans with a maturity of up to five years in August 1994). As in Chile, the option existed of paying the URR up-front through the repurchase (at a discount) of certificates issued by the central bank. Ocampo (2002: 5) reports that from 1994-98, the implicit cost of the URR was 6.4 per cent for three-year loans and 13.6 per cent for one-year loans. Consistent with the Chilean case, regulations on international capital flows were gradually eliminated following the reduction in flows after the Asian crisis.

2.1 Tax revenue and the Chilean model: Implications for developing countries

There is almost no attention paid to the revenue raised by the various taxes associated with the Chilean model (namely, the stamp tax on foreign loans, the central bank's earnings on the funds deposited to meet the URR; and the up-front payment of the URR). To the extent that there are any data available on this issue, it relates to Chile and not Colombia. Indeed, Agosin and Ffrench-Davis, leading analysts of the Chilean model, write that these policies should 'be judged by their prudential and regulatory value rather than by their revenue-earning value' (1996: 175). This is clearly the consensus view among analysts of the Chilean model, and may therefore explain the

4 Nevertheless Eichengreen (1999) makes clear that authorities erred in terminating inflows management.

Figure 1
URR deposits at the central bank, US$ million



Source: Gallego *et al.* (1999: Figure 3.2)

lack of attention to revenue concerns. In our view, this omission is regrettable insofar as the taxes associated with the Chilean model have the potential to raise modest amounts of revenue in *middle-income developing countries.*

Gallego *et al.* (1999) is the only study that deals extensively with the revenues that stemmed from financial controls in Chile. They report that between September 1992 and September 1996, the URR (including the up-front payment thereof) in Chile raised sums ranging from US$1,500 million to US$2,000 million annually (see Figure 1 for details). They report that the largest revenue harvest associated with these same policy instruments occurred in 1997 when these measures raised US$2,237 million,[5] an amount equal to 2.9 per cent of Chile's 1997 GDP and 30 per cent of that year's net capital inflow (Gallego *et al.* 1999: 5).

Other studies mention in passing the revenues associated with various parts of the Chilean model. Agosin and Ffrench-Davis (1996: 175) claim that from the time that they were imposed through the end of 1994, Chile's URR, the up-front payment of the URR, and the stamp tax raised revenues estimated at US$356 million or about 0.7 per cent of Chile's 1994 GDP. These instruments raised funds of US$6.9 million in 1991, US$64.8 million in 1992, US$111.6 million in 1993, and US$172.2 million in 1994. Forbes (2002: 6) reports that between June 1991 and September 1998, collection of the URR in Chile (including the money in reserves and payment of the up-front fee) increased central bank reserves by an average of 2.0 per cent of GDP or 40 per cent of the capital account surplus.

5 The data reported understate the amount of revenue harvested because they do not include the revenues associated with the stamp tax on foreign loans.

Revenues of this magnitude are not insignificant, to be sure. Taxes of the kind described here on international private capital flows should therefore be viewed as an innovative source of development finance for those countries that are successful in attracting private international capital flows. In practice, of course, this excludes most low-income countries, since international private capital flows to the developing world are highly concentrated in a small number of middle-income countries. Indeed, over the last 13 years, eight middle-income countries have accounted for 84 per cent of total net flows of portfolio investment to the developing world; and ten large, middle-income countries received 70 per cent of the FDI flows that went to the developing world in 2002 (World Bank 2003).

Even in the case of middle-income countries, the potential revenues from Chilean-style taxes on international private capital flows are clearly modest with respect to the development needs of these countries. Such taxes must therefore be complemented by other measures that stand to harvest far greater pools of revenue (see Atkinson 2003).

2.2 Double dividends and the Chilean model: implications for developing countries

The vast majority of analysts of the Chilean model find that it achieved many national double dividends.[6] I concur with these findings. Numerous empirical studies find that inflows management in Chile and Colombia played a constructive role in changing the composition and maturity structure (though not the volume) of net capital inflows, particularly after the controls were strengthened in 1994-95 (e.g., LeFort and Budenvich 1997; Gallego *et al.* 1999). With the exception of Gallego *et al.* (1999), these studies also find that leakages from these regulations had no macroeconomic significance. Following implementation of these policies in both countries, the maturity structure of foreign debt lengthened and external financing in general moved from debt to FDI.[7] The Chilean model afforded policymakers the ability to maintain relatively autonomous, somewhat restrictive monetary policies and some growth-oriented fiscal policies because of the protection from capital flight afforded by their financial controls (LeFort and Budenvich 1997). The insulation afforded to both countries by their financial controls also meant that monetary authorities were able to navigate the transition to a floating exchange rate rather smoothly.

Perhaps the most significant national double dividend of the Chilean model is the protection it affords developing countries from international financial crisis (see Grabel 2003). Both Chile and Columbia remained stable during the Mexican and East Asian financial crises of the 1990s, even while other developing countries in these regions suffered severe contagion. Were this model widely adopted, such as through policy coordination under the auspices of a new multilateral agreement, there is good reason to expect much greater international financial stability. Hence, the model entails a substantial incentive for policy coordination, as countries seek the global double dividend that this policy regime promises.

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6 Note that a minority of analysts challenge the consensus view on the double dividends achieved in Chile. Edwards (1999) is the best known such work. Forbes (2002) presents evidence on the microeconomic costs of the taxes in Chile, but the paper does not challenge the double dividend argument. See Grabel (2003) and Epstein *et al.* (2003) for a response to Edwards and to Forbes.

7 Though it is important to note that FDI is not without problems (Chang and Grabel 2004: ch. 9).

2.3 Other considerations vis-à-vis the Chilean model

I consider here the issues of tax incidence and possible constraints on the use of the Chilean model in middle-income developing countries. The taxes associated with the Chilean model are progressive, both internationally and domestically. On the national level, they are directly borne in the first instance by the firms that have access to international private capital flows. In developing countries, these are typically the largest firms, since smaller firms are largely excluded from foreign capital markets.

The precise final incidence of the tax is more difficult to predict, of course. But the incidence of the tax would be measurably more progressive today than several decades ago. This is because of the trade liberalization of the latter half of the twentieth century, which has substantially increased price competition for goods and services in developing country economies, and thereby reduced the ability of firms to pass taxes onto consumers. As trade liberalization deepens in the future, the incidence of the tax would continue to shift from consumers to firms' shareholders. Moreover, to the degree that large firms can and do raise prices to shift the tax burden onto consumers, small domestic firms (without access to foreign capital markets) benefit. On the international level, the burden of the tax falls on foreign investors—typically large, wealthy private investors and mutual fund shareholders.

In recent decades, the national and international political climate has certainly not been conducive to the widespread adoption of the Chilean model in developing countries. As we have seen above, recent research by Forbes (2002) suggests that the implicit costs of the URR are rather high. On this basis, we can expect that those sectors of the national business community most likely to be affected by the URR (namely, large firms with access to international markets) would oppose the imposition of such a tax. However, national policymakers would do well to weigh any concerns about the microeconomic costs of the URR to some firms against the macroeconomic (double dividend) benefits to the national economy as a whole. The URR performs quite well when assessed against this standard.

Externally, the IMF, World Bank and most development economists have resisted national initiatives along these lines. But the success of Chile and Colombia in attracting foreign investment despite their controls, and in navigating the financial turbulence of the 1990s has won converts among many policymakers to the Chilean model. Empirical support for this model is also provided by recent economic research by both the IMF staff (e.g., Fischer 2002; Prasad *et al.* 2003) and a rather large body of independent academics (e.g., Eichengreen 1999; Kuczynski and Williamson 2003; see Grabel 2003 for additional references). In short, replication of the Chilean model across middle-income developing countries now seems much more achievable than just a few years ago.

It is clear that the success of the policies in Colombia and especially Chile was predicated on the ability of their central banks to close channels of evasion and respond to changes in the international economic environment. This level of institutional capacity is not without cost (as substantial staff attention must be devoted to monitoring) and, in any case, does not characterize the current capacities of central banks in all middle-income countries. However, central bank capacity can be enhanced through critical investments in education and training programmes for bank staff, an

investment that may offer valuable double dividends in regards to the performance of the domestic financial system.

2.4 Summary assessment

The Chilean model is a means for raising modest tax revenues in middle-income developing countries. The taxes associated with this model are progressive in their incidence, can be levied on a national level (absent any multilateral agreement), and stand to offer valuable national and global macroeconomic double dividends. The particular double dividends that derive from the Chilean model render the approach highly attractive in light of the serious national and global economic costs associated with recurrent financial instability in developing countries. The double dividends associated with this approach also distinguish it from the other measures considered in Atkinson (2003).

Of course, the double dividends of this model must be measured against its administrative costs and any potential sources of political opposition. But the costs of investing in enhanced administrative capacity might be offset by the substantial benefits that could be expected to derive from such investments. Finally, recent experience and academic and IMF research provide a basis to be cautiously optimistic about the political prospects of the Chilean model.

3 The taxation of securities transactions by national governments

A securities transaction tax (STT) is a levy typically imposed by national governments on the purchase and/or sale of securities. STTs can be assigned to the seller, to the buyer, or to both (a 'two-way' tax). Keynes (1936) was the first to advance a case for the STT. Recently, the case has been revived by a number of economists, particularly those focusing on the USA. Pollin *et al.* (2002) is by far the most comprehensive such study (but see also Baker 2001; Palley 2001; Stiglitz 1989, and Summers and Summers 1989). There has also been a good bit of scholarship on the experiences of Sweden (e.g., Umlauf 1993 and the UK (Campbell and Froot 1995) with STTs.

To date, there are no studies that make a specific case for STTs in developing countries. The following considers the possible revenue and double-dividend effects of STTs in this context.

3.1 The recent use of and proposals for STTs

STTs are now or have recently been in place in 38 countries (see Table 1). Most major financial markets in the world, most smaller OECD countries, and several developing countries have also used STTs (see Pollin *et al.* 2002; Campbell and Froot 1995). For example, as shown on Table 1, Argentina imposes a STT of 0.60 per cent on all transactions in stocks, corporate and government bonds, and futures; Korea imposes a STT of 0.30 per cent on stocks; and India imposes a STT of 0.50 per cent on stocks and government bonds.

Table 1
Security transaction taxes around the world (in per cent)

Country	Stocks	Bonds		Futures	Details
		Corporate	Government		
Argentina	0.6	0.6	0.6	0.6	Tax of 0.6% on all financial transactions approved by legislature March 2000
Australia	0.3	0.15	–	–	Reduced twice in the 1990s; currently 0.15% each on buyer and seller
Austria	0.15	0.15	–		Present
Belgium	0.17	0.07	0.07		Present
Brazil	0.3 (0.38)	0.3 (0.38)	0.3 (0.38)	–	Tax on foreign exchange transactions reduced from 2% to 0.5% in 1999. Tax on stocks increased and on bonds reduced June 1999
Chile	18% VAT on trade costs	18% VAT on trade costs	–	–	Present
China	0.5 or 0.8	(0.1)	0	–	Tax on bonds eliminated 2001. Higher rate on stock transactions applies to Shanghai exchange
Colombia	1.5	1.5	1.5	–	Introduced June 2000
Denmark	(0.5)	(0.5)	–	–	Reduced in 1995, 1998. Abolished October 1999
Ecuador	(0.1)	1.0	–	–	Tax on stocks introduced 1999; abolished 2001. Tax on bonds introduced 1999
Finland	1.6	–	–		Introduced January 1997; applies only to trade-offs HEX (main electronic exchange)
France	0.15	See note		–	Present
Germany	(0.5)	0.4	0.2	–	Removed 1991
Greece	0.6	0.6	–	–	Imposed 1998; doubled in 1999
Guatemala	3.0	3.0	See note	–	Present
Hong Kong	0.3 + $5 stamp fee	(0.1)	(0.1)	–	Tax on stock transactions reduced from 0.6% in 1993; tax on bonds eliminated February 1999
India	0.5	0.5	–	–	Present
Indonesia	0.14 + 10% VAT on commissions	0.03	0.03	–	Introduced 1995
Ireland	1.0	–	–	–	Present
Italy	(1.12)	–	–	–	Stamp duties eliminated 1998
Japan	(0.1), (0.3)	(0.16)	–	–	Removed April 1999
Korea	0.3	–	–	–	Present
Malaysia	0.5	0.5	0.015 (0.03)	0.0005	Present

Table 1 con't

Table 1 (con't)
Security transaction taxes around the world (in per cent)

Country	Stocks	Bonds		Futures	Details
		Corporate	Government		
Morocco	0.14 + 7% VAT on trade costs	7% VAT on trade costs	7% VAT on trade costs		Present
Netherlands	(0.12)	(0.12)	0	–	1970-90
Pakistan	0.15	0.15	–	–	Present
Panama	–	–	–	–	Stamp duties eliminated January 2000
Peru	18% VAT on trade costs	18% VAT on trade costs	–	–	Present
Philippines	(0.5) + 10% VAT on trade costs	–	–	–	VAT present
Portugal	(0.08)	(0.04)	(0.008)		Removed 1996
Russia	0.8 on secondary offerings + 20% VAT on trade costs				Present
Singapore	0.05 + 3% VAT on trade costs	–	–	–	Reduced 1994; eliminated 1998: VAT present
South Korea	0.3 (0.45)	0.3 (0.45)	–	–	Reduced 1996
Sweden	(1.0)	–	–	–	Removed 1991
Switzerland	0.15	0.15	0.15	–	Present; 0.3% on foreign securities; 1% on new issues
Taiwan	0.3 (0.6)	0.1	–	0.05	Reduced 1993
United Kingdom	0.5	–	–	–	Present
Venezuela	0.5 (1.0)	–	–	–	Reduced May 2000
Zimbabwe	0.45% VAT on trade costs	–	–	–	Present

Notes: Brackets indicate former tax rate. Sources ambiguous as to whether tax applies to bonds in France and government bonds in Guatemala. Austria, Belgium, Finland, Germany, Italy, Japan, Mexico, Portugal and Spain also impose VAT-type taxes on commodity futures trade.

Source: Pollin *et al.* (2002: Table 1).

In the view of its proponents, the STT is a viable and efficient means to achieve two principal goals. First, it can be used to raise tax revenues at the national level. Second, and for many advocates even more importantly, the STT can enhance the stability of financial markets by penalizing disruptive, speculative short-term trading.

Crotty and Epstein (1996) have made a case for joint implementation of a currency transaction tax and STTs. They argue correctly that joint implementation of these taxes would enhance their effectiveness in curbing instability. Joint implementation would of course also introduce the possibility of raising more revenue than could either tax alone. Alternatively, joint implementation would allow governments to achieve desired levels

of revenue through lower STTs, which would correspondingly reduce any negative effects associated with the tax.

3.2 Tax revenue from STTs in developing countries

STTs are worthy of consideration as an innovative source of finance in middle-income developing countries (for arguments, see below). Unfortunately, no summary data are available regarding the total revenue raised by STTs in the developing countries that have them in place. I therefore present estimates of the revenue potential of STTs in all developing countries for which appropriate data exist (see Table 2).[8]

I provide revenue estimates for two possible STT rates—0.1 per cent and 0.5 per cent. The former represents the lower bound on securities taxes adopted in developing economies, while the latter has been frequently adopted by developing and developed economies. Many economists who have explored the rationale for a STT in the USA and beyond have most frequently identified 0.5 per cent as an appropriate level of taxation (see Pollin *et al.* 2002; Stiglitz 1989; Summers and Summers 1989).[9]

In establishing the revenue projections for the various STTs offered here, I presume that a 0.1 per cent tax will yield no reduction in transaction volume. In practice, the degree to which a transactions tax of this magnitude will actually diminish volume will vary from context to context, and over time.[10] To be prudent, I follow the lead of Pollin *et al.* (2002) in providing three revenue projections for the larger tax—one assuming no volume reduction, and two others that assume volume reductions of 25 per cent and 50 per cent, respectively.

Under these assumptions, the estimated aggregate revenues for all developing countries in 2001 range from about US$2.4 billion (under the 0.1 per cent tax) to US$12 billion (under the 0.5 per cent tax, no volume reduction). This is not an inconsiderable sum (especially at the upper end of the range), to be sure. But the estimated revenues fall far short of the needs for large pools of development finance, even in middle-income countries, when one considers these needs in light of the Millennium Development Goals.

The data in Table 2 demonstrate the dramatic differences in the level of transactions across developing countries. With the exception of India, low-income countries are characterized by very low levels of transactions. Sub-Saharan Africa stands out in this respect, as would be expected, but many Central, South American, and Caribbean

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8 The revenue estimates presented rely on Standard and Poor's (2003) data on the gross dollar value of the equities traded in individual markets. Data on bonds and other financial instruments traded in developing economies are not available.

9 Pollin *et al.* (2002: 22) notes that 0.5 per cent 'has been the benchmark figure for other studies as well (e.g., Hakkio 1994)'. But we note that the 0.5 per cent level is a conventional rather than an optimal target—indeed, the literature provides no compelling or generalizable case for this or any other particular level of the STT. We therefore provide a range of estimates for STTs from 0.1 per cent to 0.5 per cent.

10 Unfortunately, the literature on STTs yield no firm conclusions about the volume effects of STTs of various magnitudes.

countries likewise fare poorly. As a consequence, STTs of any magnitude will not raise significant amounts of revenue there. Indeed, for many countries, the revenues promised even by the higher tax rate can hardly be expected to offset the likely administrative and collection costs of the tax. For these countries, other new forms of revenue are necessary. For the middle-income countries, the prospects are far better. Based on 2001 transactions, Korea stands to raise between US$0.7 and US$3.5 billion; Taiwan, between US$0.5 and US$2.7 billion.

Even among middle-income countries, the disparity in transactions activity and STT revenue potential is dramatic. Indeed, the top five countries (Korea, Taiwan, China, India and Turkey) account for 84 per cent of total transactions, while the top ten countries (adding South Africa, Brazil, Mexico, Thailand and Israel) account for just over 94 per cent of the total.

Table 2 presents total transactions (and revenue predictions at the 0.1 per cent tax rate) for 1995, a time when foreign investors eagerly sought investment opportunities in the developing economies; 1998, which marked the height of the Asian financial crisis; and 2001, the most recent year for which data are available. These data demonstrate the significant variability in securities transactions over time within developing economies. This variability implies that though the STT might provide a valuable source of revenue in some middle-income countries, it is prone to substantial instability. Total transactions for all developing economies are much more stable, however, since national level fluctuations tend to cancel in the aggregate. Indeed, combined securities transactions for all developing countries fell in only two years from 1992 to 2001 (Standard & Poor's 2002: 23).[11]

The revenue estimates that appear in Table 2 are modest in comparison with total tax revenues (TTRs), even in the developing countries with the highest levels of securities transactions. Table 3 places these magnitudes in context for those countries with highest securities transactions for which TTR data are available. Here we find that at the 0.5 per cent STT level and assuming no volume reduction, STT revenue would be equal to just 0.37 per cent of TTR in Israel, and range up to 2.63 per cent of TTR in India. In contrast, at the 0.1 per cent level, India would manage to raise just 0.53 per cent of TTR through the STT, while the other four countries listed here would earn less than one-quarter of one per cent of TTR.

The STT is a progressive revenue source, since its incidence falls mainly on the relatively wealthy (both domestic and foreign investors).[12] Moreover, and like the currency transaction tax, the burden falls most heavily on speculators who churn their portfolios rather than on long-term investors.

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11 This implies the desirability of some sort of multilateral pooling arrangement, which collects the STT revenues and distributes them on the basis of negotiated development criteria (such as would be necessary under a currency transaction tax regime).

12 Kennedy (1955) argues that the tax should fall on the seller rather than on the buyer in order to penalize dissaving rather than saving.

Table 2
STT revenue projections for developing countries

	Gross value traded on equity markets			Tax revenues, US$ thousands					
				0.1% tax			0.5% tax		
	US$ millions			No volume reduction			No vol. red.	25% vol. red.	50% vol. red.
	1995	1998	2001	1995	1998	2001	2001	2001	2001
Argentina	4594	15811	4180	4594	15811	4180	20900	15675	10450
Bahrain		577	196		577	196	980	735	490
Bangladesh	158	789	741	158	789	741	3705	2778.75	1852.5
Barbados	3	34	10	3	34	10	50	37.5	25
Bolivia	1	6	1	1	6	1	5	3.75	2.5
Botswana	38	70	65	38	70	65	325	243.75	162.5
Brazil	**79186**	**146683**	**65090**	**79186**	**146683**	**65090**	**325450**	**244087.5**	**162725**
Bulgaria	4	12	70	4	12	70	350	262.5	175
Chile	11072	4417	4220	11072	4417	4220	21100	15825	10550
China	**49774**	**284769**	**448928**	**49774**	**284769**	**448928**	**2244640**	**1683480**	**1122320**
Colombia	1254	1525	355	1254	1525	355	1775	1331.25	887.5
Costa Rica	16			16			0	0	0
Côte d'Ivoire	14	39	8	14	39	8	40	30	20
Croatia	47	103	117	47	103	117	585	438.75	292.5
Czech Rep.	3630	4807	3349	3630	4807	3349	16745	12558.75	8372.5
Dominican Rep.							0	0	0
Ecuador	234	139	10	234	139	10	50	37.5	25
Egypt	677	5028	3897	677	5028	3897	19485	14613.75	9742.5
El Salvador		18	23		18	23	115	86.25	57.5
Estonia		922	220		922	220	1100	825	550
Fiji		4			4		0	0	0
Ghana	22	60	13	22	60	13	65	48.75	32.5
Guatemala	5	10	0	5	10	0	0	0	0
Honduras							0	0	0
Hungary	355	16042	4818	355	16042	4818	24090	18067.5	12045
India	**21962**	**148239**	**249298**	**21962**	**148239**	**249298**	**1246490**	**934867.5**	**623245**
Indonesia	14403	10610	9667	14403	10610	9667	48335	36251.25	24167.5
Iran	741	1389	4955	741	1389	4955	24775	18581.25	12387.5
Israel	**9155**	**11264**	**29791**	**9155**	**11264**	**29791**	**148955**	**111716.25**	**74477.5**
Jamaica	341	41	75	341	41	75	375	281.25	187.5
Jordan	517	653	933	517	653	933	4665	3498.75	2332.5
Kazakhstan		26	320		26	320	1600	1200	800
Kenya	65	79	40	65	79	40	200	150	100
Korea	**185197**	**145572**	**703960**	**185197**	**145572**	**703960**	**3519800**	**2639850**	**1759900**
Latvia		85	165		85	165	825	618.75	412.5
Lebanon		328	57		328	57	285	213.75	142.5
Lithuania	37	221	220	37	221	220	1100	825	550
Macedonia		87	2		87	2	10	7.5	5
Malawi		10			10		0	0	0
Malaysia	76822	29889	20772	76822	29889	20772	103860	77895	51930
Malta	16	56	47	16	56	47	235	176.25	117.5

Table 2 con't

Table 2 (con't)
STT revenue projections for developing countries

	Gross value traded on equity markets			Tax revenues US$ thousands					
				0.10% tax			0.50% tax		
	US$ millions			No volume reduction			No vol. red.	25% vol. red.	50% vol. red.
	1995	1998	2001	1995	1998	2001	2001	2001	2001
Mauritius	70	101	112	70	101	112	560	420	280
Mexico	**34377**	**34164**	**40043**	**34377**	**34164**	**40043**	**200215**	**150161.25**	**100107.5**
Mongolia	2	13		2	13		0	0	0
Moldova		81	22		81	22	110	82.5	55
Morocco	2426	1390	974	2426	1390	974	4870	3652.5	2435
Namibia	3	13	8	3	13	8	40	30	20
Nepal	18	4		18	4		0	0	0
Nigeria	14	160	496	14	160	496	2480	1860	1240
Oman	211	1943	442	211	1943	442	2210	1657.5	1105
Pakistan	3210	9038	12455	3210	9038	12455	62275	46706.25	31137.5
Panama	9	118	45	9	118	45	225	168.75	112.5
Paraguay	22	15		22	15		0	0	0
Peru	3935	2832	849	3935	2832	849	4245	3183.75	2122.5
Philippines	14727	10120	3148	14727	10120	3148	15740	11805	7870
Poland	2770	8918	7432	2770	8918	7432	37160	27870	18580
Romania	1	596	256	1	596	256	1280	960	640
Russia	465	10495	22908	465	10495	22908	114540	85905	57270
Saudi Arabia	6194	13713	22224	6194	13713	22224	111120	83340	55560
Slovakia	832	1032	966	832	1032	966	4830	3622.5	2415
Slovenia	345	702	794	345	702	794	3970	2977.5	1985
South Africa	**17048**	**58347**	**69676**	**17048**	**58347**	**69676**	**348380**	**261285**	**174190**
Sri Lanka	221	281	153	221	281	153	765	573.75	382.5
Swaziland		0	10		0	10	50	37.5	25
Taiwan	**383099**	**1291524**	**544808**	**383099**	**1291524**	**544808**	**2724040**	**2043030**	**1362020**
Tanzania		0	8		0	8	40	30	20
Thailand	**57000**	**21618**	**35705**	**57000**	**21618**	**35705**	**178525**	**133893.75**	**89262.5**
Trinidad & Tobago	137	177	174	137	177	174	870	652.5	435
Tunisia	663	188	316	663	188	316	1580	1185	790
Turkey	**51392**	**68459**	**77937**	**51392**	**68459**	**77937**	**389685**	**292263.75**	**194842.5**
Ukraine		93	226		93	226	1130	847.5	565
Uruguay	5	4	1	5	4	1	5	3.75	2.5
Uzbekistan							0	0	0
Venezuela	510	1532	394	510	1532	394	1970	1477.5	985
West Bank & Gaza		69	75		69	75	375	281.25	187.5
Yugoslavia		13	1		13	1	5	3.75	2.5
Zambia		3	53		3	53	265	198.75	132.5
Zimbabwe	150	186	1530	150	186	1530	7650	5737.5	3825
Developing market total	1040196	2368356	2400844	1040196	2368356	2400844	12004220	9003165	6002110

Note: Author's calculations; data taken from Standard and Poor's (2002). Top ten countries by trading volume in bold.

Table 3
STT revenue projections as a percentage of total tax revenue (TTR)
selected developing countries,
current US$, 2001 data

Country	At 0.1% STT, no volume reduction, STT/TTR (%)	At 0.5% STT, no volume reduction, STT/TTR (%)	At 0.5% STT, 25% volume reduction, STT/TTR (%)	At 0.5% STT, 50% volume reduction, STT/TTR (%)
India	0.53	2.63	1.97	1.32
Israel	0.07	0.37	0.27	0.18
South Africa	0.23	1.16	0.87	0.58
Thailand	0.22	1.08	0.81	0.54
Turkey	0.22	1.11	0.83	0.56

Note: Countries listed are the five of the top ten developing countries for value traded on equity markets, for which TTR data are available.

Source: World Bank (2002); author's calculations.

3.3 The debate over STTs

In our view the STT has much to recommend it, at least for those developing countries where the level of transactions is sufficient to justify it. First, evasion is more difficult with this tax than with many alternatives, such as income taxes, since the STT is collected at the point of sale.[13] This implies reduced collection costs. Moreover, unlike the Chilean model, the introduction of a STT does not require a new (or enhanced) administrative apparatus since it works through the existing mechanisms by which securities transfers already take place.

Second, like the Chilean model, the STT can be implemented unilaterally, without multilateral agreement. This implies that the policy tool can be implemented quickly in any country with the desire to do so. While the ideal arrangement would entail a regional or broader agreement through which countries coordinate STT levels, unilateral country initiatives in this area might be all that is politically feasible in the very short run. It might be hoped that success at the national level might serve as an impetus toward eventual multilateralism in this area.

Third, and also like the Chilean model, the STT entails a powerful double dividend in the form of national financial stability, as the penalty that this tax places on speculation reduces churning of equities while lengthening investors' time-horizons. Since financial instability in the developing world is internationally contagious, the reduction in instability in any one country might yield a valuable global double dividend of greater global financial stability as well. As with the Chilean model, the particular national and global double dividend associated with STTs distinguishes it from other measures considered in Atkinson (2003). This global double dividend implies a powerful incentive for countries to seek multilateral agreement on STTs, in order to improve the economic environment that they collectively inhabit. Once installed, the tax could be easily adjusted upward or downward as the priority placed on the goals of revenue generation and financial stability (or other circumstances) changes over time. Finally, as noted above, the tax is broadly progressive.

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[13] See below for a related discussion as to how problems of market migration and asset substitution can be addressed through the design of STTs.

As Palley notes in his treatment of currency transaction taxes, a tax of this sort is justifiable despite its impact on speculation and in light of the theory of optimal public finance. The same can be said of STTs. As Palley (2001: 8) argues:

> If the impact [of a STT] is small, it implies that the demand for currency [securities] transactions is relatively inelastic, and the theory of optimal public finance tells us that governments should tax exactly this type of activity. Conversely, if the impact is large, then speculation will have been reduced, thereby reducing the negative externality imposed by speculators on other investors in accordance with Pigouvian tax theory.

One obstacle facing those advocating the STT is the fact that in recent years developed and developing countries have been reducing and/or eliminating the tax. In keeping with the neoliberal tenor of the times and the growing political influence of the global financial community vis-à-vis national governments, governments have been urged to dismantle restrictions on and taxes of private economic flows. Achieving widespread adoption of the STT, then, would require reversing this trend toward neoliberalism and challenging the political power of the financial community. Recent challenges to the Washington Consensus (by new social movements and in academic and popular literature) suggest that in fact neoliberalism might finally be challenged by alternative policy regimes that entail a good bit greater government control over economic flows, including STTs (see Chang and Grabel 2004; Stiglitz 2002). More specifically, recent research suggests that there is far more support today for market-based measures that promote financial stability in developing countries than could be found as recently as a few years ago (e.g., Eichengreen 1999; Fischer 2002; Kuczynski and Williamson 2003; Prasad *et al.* 2003).

In the interest of a balanced assessment it must be acknowledged that critics are unpersuaded by the arguments advanced in favour of STTs. Critics claim that any potential benefits (if any) are overwhelmed by the explicit and implicit costs associated with these measures. First, STTs reduce trading and thereby reduce the potential revenues of the tax (Hubbard 1995). Second, STTs increase the cost of capital and thereby decrease investment and growth (Hubbard 1995). In our view, this argument bears on the magnitude of the tax rate, and suggests moderation rather than abstinence. Third, a country that pursues STTs unilaterally will find it more difficult to attract and retain private capital, as investors engage in international tax arbitrage (Campbell and Froot 1995). Sweden is often cited as evidence of this danger. In 1984 Sweden adopted a STT of 1.0 per cent; in July 1986 the tax was raised to 2.0 per cent. Umlauf (1993: 229) finds that following the increase, 60 per cent of the trading volume of the eleven most actively traded Swedish share classes moved to London. This reduction was so severe that the loss of capital-gains tax revenues fully offsets the increase in STT revenues.[14]

The Swedish case suggests, however, that the risk of market migration arises only at relatively high levels of STTs. Indeed, as this case indicates, a country that acts

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14 For a negative assessment of the Swedish STT, see Umlauf (1993). For a negative assessment of the British and other STTs, see Campbell and Froot (1995). The criticisms of STTs presented in the text above also appear in Hakkio (1994) and Habermeier and Kirilenko (2001). For detailed rejoinders to these critiques that complement the arguments presented here, see Baker (2001); Palley (2001); Stiglitz (1989) and Summers and Summers (1993).

unilaterally might therefore face substantial penalties only when it raises STTs beyond a level that investors find tolerable. This rate would vary (perhaps dramatically) across countries, depending on the attractiveness of the broader investment climate. Moreover, market migration in response to STT implementation could be minimized through the adoption of various other policy tools, such as the non-tax components of the Chilean model (for details, see Grabel 2003). Indeed, Britain did not face market migration during its tenure of STT because it took the form of a stamp tax that was required upon registration of all trades, including those that took place offshore.[15]

Fourth, critics allege that STTs induce asset substitution, as investors shift funds from securities to bonds and other financial instruments to avoid the tax. This danger increases with the magnitude of the tax, of course. Critics cite the experience of the UK with a STT as evidence of this problem. The UK tax did not apply across all financial asset markets. It did not apply, for instance, to futures markets, and applied only to options when they were exercised. As a consequence, investors shifted funds from the spot to the derivatives market. The obvious solution is to implement the STT alongside other transactions taxes, covering other financial instruments.[16] For example, Pollin *et al.* (2002) propose a STT for the USA of 0.5 per cent, combined with transactions taxes on bonds equal to 0.01 per cent of bond value multiplied times the number of years until the bond's maturity; on futures at 0.02 per cent of the notional value of the underlying asset; on options at 0.5 per cent of the premium paid for the option; on interest rate swaps at 0.02 per cent of value times the number of years until maturity.[17]

This is not to say that all these measures must be introduced in all contexts, and all at once. Obviously, the need for these complimentary measures depends on the depth and extent of a nation's financial markets, the range of the instruments traded, and on the magnitude of the intended STT. A small STT might induce very few problems of market migration or asset substitution, and so require few to no supplementary tax measures. A country might therefore be well advised to begin with a relatively modest STT that does not cause these disturbances, raising the STT level only gradually as the institutional capacity to manage and tax the full range of financial flows emerges.

3.4 Summary assessment

STTs represent a means for raising modest revenues in those developing countries with the highest levels of securities transactions. STTs are progressive in their incidence, have low collection and administrative costs, can be imposed unilaterally and at relatively low rates, and stand to offer valuable national double dividends. Countries also have a powerful incentive to coordinate policy in this area, in pursuit of the global

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15 In this spirit, Pollin *et al.* (2002) propose reducing the problem of market migration by imposing the STT on foreign as well as domestic trading of a country's shares. Had it been in place, this measure would have staunched the shift in trading of Swedish shares to the London market.

16 The absence of comprehensive data on these other financial assets in developing countries precludes estimates of the revenue potential of other forms of transactions taxes.

17 Furthermore, in a departure from the British model, Pollin *et al.* (2002) propose that the STT apply to all traders in US financial markets of both domestic and foreign residents; to foreign transactions of US nationals and corporations; and to trades of US securities by foreigners in non-US markets. These modifications to the British model are aimed at addressing the problems of evasion, market migration, and other distortions that might attend the implementation of a narrowly focused STT.

double dividend of greater financial stability. Moreover, careful policy design can address problems of market migration and asset substitution. Finally, as with the Chilean model, political opposition to STTs might well be less of a factor at the present juncture insofar as the consensus around neoliberal economic policy has begun to unravel.

4 Conclusion: prospects for taxing financial flows by national governments in developing economies

This paper has explored two proposals to tax financial flows in developing economies, the Chilean model and the STT. We have found that each provides a viable mechanism to raise revenue in some developing countries. Both can be introduced unilaterally (with the prospect of multilateral coordination in the future); both are progressive in their incidence, and in the case of the STT, represents an administratively manageable form of revenue collection. We have also found that each entails double dividends that manifest in greater domestic and international macroeconomic stability.

We have also found, however, that the revenue-creation potential of both of these policy tools is limited for most developing countries. Indeed, in the case of the STT we found that ten developing countries account for 94 per cent of all securities transactions and STT revenues. We also found that this revenue is unstable, owing to the dramatic fluctuations that occur in securities trading volume in developing countries.

These findings suggest the need to augment the national policy tools considered in this paper with other national and global strategies to raise revenues that can be used for the developmental purposes identified in the Millennium Development Goals. The UNU-WIDER and UN-DESA project on Innovative Sources for Development Finance directed by Atkinson presents numerous promising avenues for raising substantial revenues, some of which (such as global environment taxes) are also associated with important double dividends.

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