Policy Brief

ELLA Area: Economic Development

ELLA Theme: Extractive Industry Investment Policies

ELLA
Evidence and lessons from Latin America

In specific contexts of mineral booms and strong government capacity, shifting from production-based to profit-based tax regimes might be the best option. The cases of Peru and Chile demonstrate why.

PROFIT-BASED VERSUS PRODUCTION-BASED TAX REGIMES: LATIN AMERICA'S EXPERIENCE

SUMMARY

In the context of both increasing mineral prices and mining companies' profits, governments naturally seek to maximise their revenue in order to achieve maximum social welfare. By taking a panoramic look at the taxation regimes in place across Latin America, the authors compare two different regimes: profit-based vs. production-based fiscal regimes. This Brief uses the examples of Peru and Chile to highlight Latin American experiences when migrating from production-based to profit-based tax regimes, in particular arguing that profit-based regimes seem to be the best choice in the current Latin American context of a mining boom. It also addresses the institutional conditions needed to successfully move from one regime to another. Finally, it underlines enabling factors and policy lessons that may prove useful for other regions.

MAXIMISING RENT CAPTURE DURING MINING BOOMS: WHAT TAX REGIME IS BEST?

There is a worldwide trend to raise the mining tax burden, in particular in countries experiencing mining booms.[1] In the context of increasing mineral prices and the resulting growth in mining companies' profits, a number of countries have set out to increase their tax rates in mining.[2] In Latin America, Chile and Peru have increased their mining tax burden; countries in other regions are as well, such as the Democratic Republic of Congo, where a new tax code covering the mining industry is in the process of being written.[3] This trend follows a common theoretical assumption that governments will seek to maximise their revenue in order to achieve maximum social welfare, expanding or improving the provision of public goods.

However, more taxes do not necessarily lead to more rents, since higher taxes increase companies' perceived operating costs, which may then

KEY
LESSONS LEARNED

Tax regimes need to be developed taking into account both state capacities and socioeconomic contexts.

Profit-based regimes seem to be more suitable in the Latin American context in order to maximise countries' overall revenue collection,while continue to attract foreign investment.

Institutional capacity is a condition for successfully implementing profit-based regimes.

[1] PricewaterhouseCoopers LLP. 2012. *Corporate Income Taxes, Mining Royalties and Other Mining Taxes - 2012 Update*. PricewaterhouseCoopers LLP, London.
[2] Ibid.
[3] PricewaterhouseCoopers LLP. 2012. *Mining Tax Quarterly. Issue 2/2012*. PricewaterhouseCoopers LLP, Delaware.

reduce new mining investments. Changes in tax policies often trigger taxpayer responses, and countries do not want to chase away companies or fresh FDI as a result of tax increases.[4] As policymakers assess the different tax and royalties options, it is worth asking under which tax regimes and social conditions a government may raise the tax burden without discouraging future extractive development.[5]

TEXT BOX 1 - ROYALTIES VS. TAXES

There is often much confusion between royalties and taxes, especially coming from the fact that royalties can be considered a type of tax. There is even confusion in the literature, with authors occasionally saying taxes when they mean royalties.

The logic of royalties comes from states seeking a special compensation for the use of their natural resources. Unlike other private economic activities such as infrastructure development or IT services, extractive industries are built on the use of the state's nonrenewable natural resources. The idea of a royalty emerged so that states could be compensated by private companies who make financial gains via use of the state's resources. Taxes, on the other hand, have no justification coming from the use of resources, but rather from the general practice of taxing companies on their economic activities, regardless of what type of activity it is.

Previously, royalties were almost always calculated based on production, though this is now changing. This means that nowadays both taxes and royalties can be calculated on profits, blurring the line between them even further. Overall, royalties can be considered an extra and distinct type of tax, based solely on the logic of compensation for natural resource use.

HIGLIGHT ON THE LATIN AMERICAN EXPERIENCE: THE CASES OF CHILE AND PERU

Across Latin American, a number of countries are trying to maximise their mining revenues in the context of the current mining boom. In the region, the mining sector is typically dominated by large multi-national private corporations, with the one significant exception being the Chilean state-owned corporation CODELCO, the largest copper producer in the world. Since these corporations are enjoying unexpectedly high profits, states across the region have been seeking to increase their mining taxes in order to capture the massive mining rent.

In addition, it is worth noting that tax reforms in the extractive sector are politically sensitive and technically complex. Tax reforms are often an important yet controversial part of the political agenda in economies heavily dependent on extractive revenues. Thus, new governments try to gain legitimacy or popularity by driving a change in the tax regime.[6] In addition, the extractive sector has several financial and business structural specificities, such as a lengthy initial period of exploration during which there is no revenue, large up-front investment and sophisticated equipment needs, and the fact that once the mine is built, the capital is captive and not transportable; these industry-specific characteristics make any tax reform proposal technically complex.[7] Countries then need to find out the best possible combination of taxes or royalties in a given system or tax regime, taking into account both economic and technical concerns, as well as institutional and political conditions.

To highlight the social, economic and political context of Latin America, as well as some countries' shift from production-based to profit-based regimes, this Brief will focus primarily on the cases of Peru and Chile. These countries are particularly illustrative, being two of the main mining producers in the region, and both having carried out progressive reforms of their mining taxes regimes over the last decade. The Brief begins by briefly outlining some of the key tax regime options, before presenting the argument that profit-based tax regimes seem best suited to the particular Latin American context, though important institutional capacities are needed.

Tax and Royalty Alternatives

A tax reform implies the design of tax base and rates. Following Calder's typology,[8] the list below briefly highlights the most common types of resource taxes, in order from

[4] Land, B.C. 2010. Resource Rent Taxes: A Re-appraisal. In: Daniel, P., Keen, M., McPherson, C. (eds). *The Taxation of Petroleum and Minerals: Principles, Problems and Practice*. Routledge, London.
[5] Gaudet, G., Lasserre, P., Van Long, N. 2005. Optimal Resource Royalties with Unknown and Temporally Independent Extraction Cost Structures. *International Economic Review* 36(3) 715-749.
[6] Von Haldenwang, C. 2011 *Taxation of Non-Renewable Natural Resources – What are the Key Issues?* Briefing Paper 5/2011. German Development Institute, Bonn.
[7] Otto, J. *et al.* 2006. *Mining Royalties: A Global Study of Their Impact on Investors, Government and Civil Society.* World Bank, Washington, DC.

less to more administrative complexity, mentioning also the main administrative challenges they entail.

1. **Bonuses** are taxes that require only a single payment in relation to some specific event, such as the signature of exploration and production licence agreements. They do not require on-going administration.

2. **Specific (volume-based) taxes**, such as US dollar per barrel, are established over the volume of production. Although considered to be the simplest on-going tax, calculating volume-based taxes does still bring difficulties. The measuring process requires a physical audit able to measure production quantities and monitor production flows to ensure there is no illegal extraction. It becomes particularly difficult to measure mining production, where mineral content has to be deduced form large piles of rocks that are exported for processing.

3. **Ad valorem (value-based) taxes** are set upon the value of the extracted commodities. The value is volume multiplied by price, so the difficulty of establishing price is added to the difficulty of establishing volume. This difficulty is exacerbated by the huge volatility in natural resource prices and in particular in connected party transactions, where transactions can hide a mispricing of transfer profits. Though royalties in Peru were calculated ad-valorem until 2011, they are now calculated based on profits.

4. **Profit-based taxes** are set upon the company's profits and are the most difficult to carry out. The state needs strong financial, technical and administrative capacities to regulate such taxes. The corporate income tax is the most common profit-based tax, and is present in all Latin American countries.

The literature shows that there is no right combination of taxes and royalties for maximising state revenues that works in all cases; instead, some financial instruments perform better in some geographic contexts, but underperform in comparison to other instruments in other areas.[9] Therefore, instead of looking at the characteristics of each instrument in isolation, it is necessary to assess how different taxes and royalties combinations perform in particular socio-political conditions. In other words, we need to assess which tax regime or system has been more efficient in capturing extractive rent under specific regional conditions.

In Latin America we can broadly identify two tax regimes: profit-based and production-based fiscal regimes. Different tax regimes may include both production-based royalties and income taxes, but they differ in the way the royalties are calculated and in the importance or weight that each of these fiscal instruments has in the overall rent captured. In the production-based regimes, royalties based on production value are the more important source of revenue, while in the profit-based regime income taxes are the main fiscal

Figure 1: Elements of Profit-based Versus Production-based Fiscal Regimes

Profit-based taxes and royalties	Production-based taxes and royalties
Corporate income tax: fee paid by every company according to its profits. In 2012, the rate was 18.5% in Chile and 30% in Peru.	*Royalty*, which can be both unit based and value based
Profit tax on dividends: a share of dividends from non-resident investors is withheld and paid to the government by the company	*Withholding tax on loan interests and services*: a share of interests generated by the investment which have to be paid to a non-resident investor is withheld and paid to the government by the company
Royalty: based on profit/income measure	*VAT* (Value Added Tax), a percentage tax paid on every purchase)
Withholding tax: on remitted dividends. In 2012, this was 35% in Chile but only 4.1% in Peru	*Export duty*: fee paid for selling goods abroad
Resource rent tax: tax on profits generated from exploiting non-renewable resources	*Payroll tax*: deductions from an employee's wages and taxes paid by the employer based on the employee's wages
	Sales and excise tax: specific amount charged on each production-for-sale unit within a country

Own elaboration.
Adapted from: Dietsche, E. 2009. *The Challenge of Mineral Wealth: Using Resource Endowments to Foster Sustainable Development*. ICMM and Commonwealth Secretariat, London.; PricewaterhouseCoopers LLP. 2012. *Corporate Income Taxes, Mining Royalties and Other Mining Taxes - 2012 Update*. PricewaterhouseCoopers LLP, London.

[8] Calder, J. 2010. Resource Tax Administration: Implications of Alternative Policy Choices. In: Daniel, P., Keen, M., McPherson, C. (eds). *The Taxation of Petroleum and Minerals: Principles, Problems and Practice*. Routledge, London.
[9] Rating system based on: Garnaut, R., Clunies Ross, A. 1975. Uncertainty, Risk Aversion and the Taxing of Natural Resources Projects. *Economic Journal* 85(6) 272-87.; Baunsgaard, T. 2001. *A Primer on Mineral Taxation*. IMF Working Paper No. 01/139. IMF, Washington, DC.; Elaboration: Daniel, P., Keen, M., McPherson, C. (eds). 2010. *The Taxation of Petroleum and Minerals: Principles, Problems and Practice*. Routledge, London.

tax instruments. In Figure 1, we offer some examples of the different types of instruments used in both profit-based and production-based tax regimes.

Both regimes have advantages and disadvantages. In the production-based regimes, the state can ensure a more stable source of revenue from the beginning of the project´s production, but it is less adequate to maximise rent capture when companies' profits soar due to mineral price increases. In the profit-based regime, states can maximise state rent capture in boom times, but governments need to wait until companies make profits to start receiving significant revenues.

Profit-Based Regime: The Best Choice for the Latin American Boom Context

Traditionally, Latin American countries have implemented higher royalties based on production than income taxes. However in the last decade, some countries have started to increase income taxes and calculate royalties based on profits rather than on production. Focusing on our two case study countries, Chile has increased both its corporate income tax from 17% to 20% as well as its profit-based royalties. Peru has followed this trend by increasing its profit-based royalties. Investors have accepted the overall increase in tax burden in exchange for a fiscal stability agreement offered by the two governments (see Text Box 2). But why does this seem to be the best choice in the Latin American context?

Smith considers that the performance of any system of resource taxation depends on three key factors: its ability to raise revenue; potential distortions of private investment that might reduce the final value of taxes collected; and the resulting allocation of risk between government and investors.[10] Following this assessment, we assert that profit-based regimes are more suitable for Latin American countries in the current socio-economic context, for the following key reasons.

First, the main studies agree that profit-based tax regimens are more technically efficient in maximising rent capture in times of increasing profits.[11] In particular, profit-based taxes can capture revenue from windfall profits that are lost to the companies in production-based tax regimes. Accordingly, fiscal revenue from mining in Chile has risen as copper prices soared, beginning with the 2005 fiscal reform through to 2011.[12] Of course, the risk is that in downturns, revenues fall, since lower prices generate lower profits and in turn lower tax revenue. In 2012, mineral prices were affected by the global crisis, with the average price of cooper decreasing from US$ 3.99 per pound in 2011 to US$ 3.60 in 2012; in this time frame, mining revenue subsequently decreased 14%[13] in Chile and 18.7%[14] in Peru. However, minerals prices started to rise again at the beginning of 2013, continuing the previous decades' trend of constant price growth, meaning that tax revenues under the profits-based regimes in both Chile and Peru are expected to increase again.

Second, in a profit-based tax regime, the state and the extractive corporation share the risk more evenly than in a production-based one. In times of financial crisis, both

TEXT BOX 2 - CHANGES IN THE PERUVIAN MINING TAX REGIME *GRAVAMEN MINERO*

In 2012, Peru's central government changed the mining tax regime in an effort to maximise their revenue by making taxes and royalties specifically linked to profits. Three main changes were carried out:

1. The country's royalty scheme is now calculated on the basis of operating profits instead of the on value of the mineral produced. The rates were also raised.

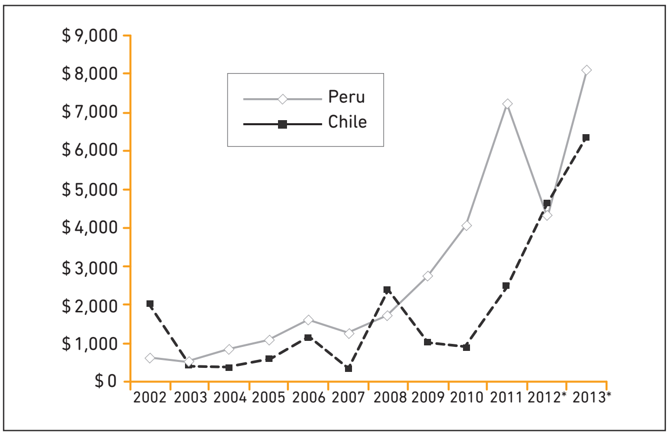
2. Two new taxes controlled by the central government were created: the Special Mining Tax and the Special Mining Contribution. Both are calculated on the basis of operating profits.

3. Each of these taxes can now be deductible in the Corporate Income Tax calculation.

Source: Macroconsult. 2011. *Gobierno Promulga los Impuestos a las Ganancias Extraordinarias en la Minería (Government Promulgates the Windfall Tax on Mining)*. Editor's Comment. Online publication, Macroconsult website.

[10] Smith, J. 2012. *Issues in Extractive Resource Taxation: A Review of Research Methods and Models*. IMF Working Paper No. 12/287. IMF, Washington, DC.
[11] For a few key examples, see: Otto 2006, above n 7.; Land 2010, above n 4; Calder 2010, above n 8; Von Haldenwang 2011, above n 6; International Institute for Environment and Development. 2002 *Breaking New Ground: Mining, Minerals and Sustainable Development*. IIED, London.
[12] Diaz Herrera, P.P. 2011. *Chile's Mining Industry on a Global Scale*. Government of Chile, Santiago.
[13] Emol. 13 February 2013. *Aporte de Sector Minero a Ingresos del Estado Disminuye al 14% en 2012 (Mining Sector's Contributions to State Revenue Decreases 14% in 2012)*. Emol Economía, online publication.
[14] La República. 11 January 2013. *Perú: Recaudación Minera 2012 (Peru: Fiscal Revenues in Mining 2012)*. Online publication.

Figure 2: Private Mining Investment in Chile and Peru ($US million)



Own elaboration.
Sources: National Society of Mining, Oil and Energy (Peru); Scotiabank Peru; National Mining Society (Chile).
* Estimated and expected investments. In the Peruvian case, the estimated value for 2012 only includes the period January-September.

companies and governments see their profits and revenues proportionally reduced.

Third, profit-based tax regimes do not appear to discourage, but rather encourage, mining investment. There is evidence, such as empirical evidence from the World Bank,[15] that shows investors prefer profit-based tax regimes because they allow them better financial planning in the long-term. Another clear indicator comes from the performance of Chile and Peru: increases in profit-based taxes and the shift from production-based to profit-based royalties through legislation introduced in Chile in 2005 and Peru in 2010 has had no impact yet on private investment flows in these countries (see Figure 2).

Improving Administrative and Institutional Capacities: A Key Condition

Though profit-based regimes seem to have many advantages, successfully implementing them brings about significant administrative and institutional challenges.[16] Typically, resource-rich developing countries tend to suffer from weak administrative capacity and overall governance, and become exposed to huge additional pressures by the scale and complexity of resource taxation. This is the main reason why a number of developing countries prefer to maintain their production-based tax regimes which assure more stable - if not optimised - revenue flows and require less administrative and institutional capacities.[17]

In profit-based regimes, state agencies need to closely supervise companies´ financial performance in order to avoid underreporting profits and thus tax evasion. This is not an easy task, since many extractive corporations are global market players are thus not completely regulated by any single government. To implement profit-based regimes well, countries need to improve their administrative and institutional regulatory capacities in at least three areas: information access, financial market knowledge and transparency.

Text Box 3 summarises some suggestions for coping with the administrative challenges posed by adopting profit-based regimes in developing countries.

However, the main challenge to successfully adopting a profit-

TEXT BOX 3: HOW TO MAKE PROFITS-BASED TAX REGIMES ADMINISTRATIVELY POSSIBLE

Profit-based tax regimes allow the government to share a larger amount of the wealth generated by an extractive project the higher its length of operation, prices and profits are. To capitalise on the advantages offered by this regime, developing countries must develop the capacity to administer such regimes. One key issue for improving capacity is the state's simplification of its administration system, which can be achieved through:

A. *Consolidating tax sub-regimes*, bringing the different co-existing tax regimes more closely into line

B. *Using standardised contracts* with a limited number of variable parameters

C. *Using familiar and internationally established industry and accounting concepts*

D. *Reducing the number of resource taxes and coordinating the rules for different taxes*, which may not include, for example, charging royalty fees

E. *Simplifying particular provisions of the resource tax legislation*

Source: Calder, J. 2010. Resource Tax Administration: Implications of Alternative Policy Choices. In: Daniel, P., Keen, M., McPherson, C. (eds). *The Taxation of Petroleum and Minerals: Principles, Problems and Practice*. Routledge, London.

[15] Otto 2006, above n 7, 11.
[16] See, for example: Dietsche, E. 2008. *Institutional Change and Developmental State Capacity in Mineral-rich Countries*. Mimeo: Paper prepared for the UNRISD project on *Social Policy in Mineral-Rich Countries*. UNRISD, Geneva.; Hinojosa, L. *et al.* 2010. Social Policy and State Revenues in Mineral-Rich Countries. Programme Paper Number 44. UNRISD, Geneva.; Otto 2006, above n 7, 11, 15; Land 2010, above n 4, 11; Lund, D. 2009. *Rent Taxation for Nonrenewable Resources*. Annual Review of Resource Economics 1 287-308.; International Institute for Environment and Development (IIED). 2002 *Breaking New Ground: Mining, Minerals and Sustainable Development*. IIED, London.
[17] Von Haldenwang 2011, above n 6, 11.

based regime is not administrative but institutional: good administration needs to be based on a strong institutional setting. Defining an optimal tax system for the mining sector requires institutional settings that assure public accountability as well as governance strategies that integrate social actors' perspectives and responsibilities.[18] In particular, the literature identifies the following key areas for institutional improvements.

On the one hand, it is necessary to improve the state extractive sector´s governance capacities in order to facilitate the design and implementation of fiscal regimes, which redirects the accountability of the state toward its citizens and produces a social contract.[19] For this, the state needs to improve its professional capacities and legitimate its political authority.[20] In this regard, a centralised administration rather than dispersed administration is preferred, anchored on clarity of roles and responsibilities, as well as on principles of transparency and integrity.[21]

On the other hand, rules and procedures need to be clearly set and followed. First, an effective resource tax administration should be clearly set out in legislation (describing the rights and the obligations of both tax payers and tax authorities) and with clear dispute resolution mechanisms – and executed by good and specialised tax officers, supported by IT capacities. In addition, transparency appears as an especially sensitive issue for profit-based tax regimes because of the complexity of administrative work and the need for building trust among taxpayers, tax authorities and civil society.[22]

Institutional improvements in Peru and Chile

So how have Chile and Peru fared in implementing the kinds of institutional improvements necessary to successfully adopt profit-based tax regimes? Both countries have had to strengthen their regulatory capacities and extractive policies in a number of ways while migrating from production-based to profit-based regimes.

For example, the Peruvian government has made efforts to improve the performance of its state agency for tax collection and tax law enforcement (SUNAT). In Chile, the government has made efforts to be more transparent, in particular with regard to the financial accounts of its state-owned mining company, CODELCO. This is especially important for the Chilean extractive sector since CODELCO is the main copper producer in the world.

Considering the openness of the Chilean economy and its dependence on copper exports, a key objective of Chilean fiscal law has been to provide a shield against external shocks, protecting the economy from swings in commodity prices. So far this goal has been attained quite successfully. Chile has established a fiscal policy that allows for revenues from mining taxes, among others activities, to be used to build up the country's international reserves. Managing options between CODELCO earnings and burdening private incomes, Chile uses its liquidity to shape counter-cyclical policies like fiscal expenditure and social programmes during financial difficulties, such as in the 2008 financial crisis.[23]

Interestingly, the Extractive Industries Transparency Initiative (EITI) has played a key role in creating incentives for state and private sector actors involved in mining to strive for high accountability and transparency standards. In Peru, the mining, energy and treasury ministries, as well as mining companies and NGOs, have sponsored a set of research efforts about tax payment practices and methods, aiming industry actors to improve and simplify fiscal language and procedures. Peru is the first country to receive EITI compliant status in Latin America.

[18] Hinojosa 2010, above n 16.
[19] Dietsche, E. 2008 *Institutional Change and Developmental State Capacity in Mineral-rich Countries*. Mimeo: Paper prepared for the UNRISD project on Social Policy in Mineral-Rich Countries. UNRISD, Geneva.
[20] Von Haldenwang 2011, above n 6, 11, 17.
[21] Calder 2010, above n 8, 11.
[22] Daniel 2010, above n 9.
[23] OECD. 2010. *OECD Economic Surveys: Chile*. OECD, Paris.

CONTEXTUAL FACTORS

ENABLING THE LATIN AMERICAN RESPONSE

There are two main enabling factors that created the adequate conditions for successful tax reforms in the extractive sector in Latin America, particularly in Chile and Peru: political stability with democratisation; and tax policies that were coherent over time.

First, the Latin American political situation has steadily improved since 2000. Most countries in the region have reinforced their democratic institutions while enjoying political stability. State policies and procedures are in general more predictable and transparent than ever before. Moreover, there is more civil society participation in debating public policies. In the case of Chile and Peru, their last tax reform to shift to more profit-based regimes was subjected to much public debate and scrutiny thanks to political openness.

Second, Latin American countries have followed coherent tax policies over time. In the 1980s and 1990s, when no investor wanted to engage in Latin America because of the region's troubled past, governments designed fiscal instruments to attract foreign investment, with governments reducing their mining tax and royalties rates and offering tax stability and contract security. In countries with especially hard conditions to overcome, such as Peru, which was recently recovering from an internal violent conflict, the government included tax holidays in their offer to potential mining investors, in which an investor would not be subject to any tax until it recovered all of its investment. This strategy sought to establish a constant flow of rents over the years and was successful in attracting foreign mining investment to the region.

However, since 2000, most Latin American economies have performed well, showing impressive steady growth even in the context of global crises; the cases of Peru and Chile are emblematic in this regard. In this context, mining companies' profits multiplied in the years when mineral prices soared, while states' share decreased in terms of profits percentages due to schemes with low tax rates. Thus, countries like Chile and Peru decided to increase their mining taxes and royalties through negotiations with extractive corporations. Current evidence shows that this negotiated change has not significantly affected the flow of mining FDI in the region.

[24] Otto 2006, above n 7, 11, 15, 16.

LESSONS LEARNED

1. Different tax regimes need to be developed taking into account both state capacities and the socioeconomic contexts. Some tax regimes may provide more stable revenue flows, while others would better capture windfall profits, and others are more suitable to attract foreign investments. The Latin American experience shows how tax regimes need certain social, political and economic conditions to be successful in optimising revenue capture.

2. Latin America is now migrating from production-based tax regimes to profit-based ones, which seem to be more adequate to the current socioeconomic conditions of the region, namely the boom in mining and increasing state capacity. Thanks to this move, countries such as Chile and Peru have been able to increase their overall tax burden while continuing to attract foreign investment.

3. Improving institutional and administrative state capacities is a constraint to successfully implementing profit-based regimes since in these regimes state agencies need to closely supervise companies' financial performance in order to avoid underreporting profits and thus tax evasion. The literature tells us that countries need to improve their institutional regulatory capacities in at least three areas: information access, financial market knowledge and transparency. The Chilean and Peruvian experience show how this may be possible.

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