
THE EFFECTIVENESS OF FISCAL
INSTRUMENTS AGAINST THE POST-
PANDEMIC “SUPER CYCLE” OF METALS

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Peru

THE EFFECTIVENESS OF FISCAL INSTRUMENTS AGAINST THE POST-PANDEMIC “SUPER CYCLE” OF METALS

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Abstract

The paper has two main objectives. On the one hand, to assess whether the recent rise in the international price of metals is of similar importance to that registered during the “super cycle” of the decade 2003-2012. On the other, analyze the effectiveness of fiscal instruments in capturing the rent related to extraordinary profits from mining in Peru. Based on a statistical analysis it is found that the recent rise in the price of metals, being more intense and having started from a higher threshold compared to the past boom, translates into particularly high extraordinary revenues for mining companies. It is also concluded that the new mining tax regime, implemented since 2012, has not been showing the same dynamism as the old tax regime in order to ensure optimal appropriation of mining rent by the State.

Keywords: Mining taxation, Fiscal policy, Commodity market

Classification JEL: H22, H25, H32

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Introduction

The COVID-19 pandemic, which began in 2020, has brought terrible economic and social effects at the global level, which have been triggered or accentuated by various events: changes in the demand for financial instruments by international investors, inflation risks due to expansionary policies -in the monetary plane- and countercyclical policies -in the fiscal sphere- to face the ravages of the disease, renewed concern for less polluting energy products and sources (construction of electric cars, solar or wind plants, for example), recovery of the Chinese economy, among others.

The confluence of these factors helps to explain the rise in the price of minerals since the second quarter of 2020, which has raised the question of whether we are facing a new “super cycle” of metals, similar to the one that ended almost 10 years ago . Likewise, in the countries that export these raw materials, the debate is renewed on whether the fiscal instruments available to the State are sufficiently effective to capture the income generated by extraordinary profits from mining. This is so because you do not want to repeat mistakes or omissions from the past.

In the case of Peru, for example, the bonanza in the price of metals that began in 2003 and lasted until 2012, was a lost decade in terms of an optimal capture of mining rent by the State. The tax policy of that time had an exaggeratedly passive role. Until September 2011, no new fiscal instruments for the sector were explored, apart from the mining royalty that was established in 2004. This despite the variety of alternative and / or complementary instruments that were already applied in those years in other countries with extractive industries (Torres, 2018). Only in 2012, when the “super cycle” of metals was almost over, a new mining tax regime was incorporated, which coexisted with the old regime consisting of income tax and mining royalty.

This paper has two main objectives. On the one hand, assess whether the recent increase in the international price of metals is of similar importance to that registered during the “super cycle” of the decade 2003-2012. On the other, analyze for the case of Peru the effectiveness of fiscal instruments in capturing the rent generated by extraordinary revenues from mining.

Higher prices with greater intensity

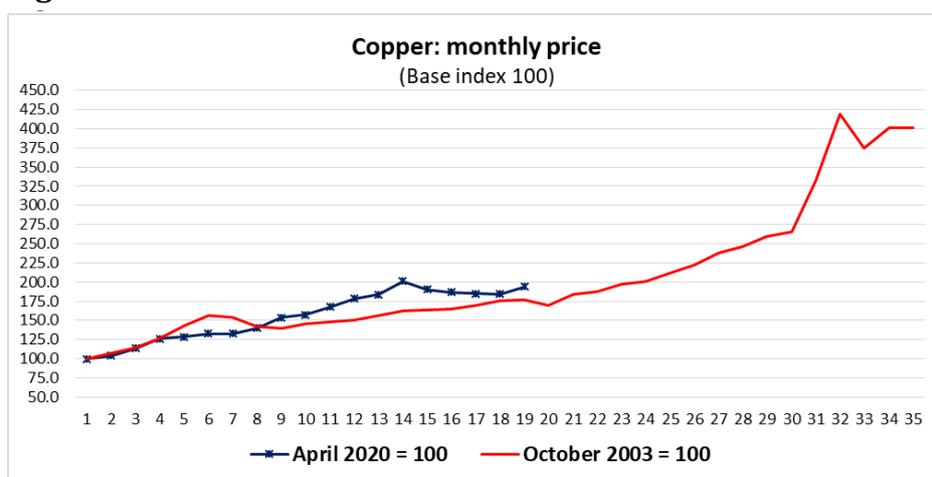
The recent increase in the price of metals has been showing greater dynamism compared to the mining bonanza of the decade 2003-2012. This is observed when analyzing the evolution of the price of some of the minerals that are most exported in the world: copper, gold, iron and zinc. These four metals represented 90,1% of Peru's mining exports during the January-September 2021 period.

For each mineral, the month and year in which the sustained rise in its price begins is used as the base period for comparison. In the case of copper, which represents 51,4% of Peru's mining exports, the base period of the past bonanza is October 2003;

for the recent price increase, the base period is April 2020. When comparing the period April 2020-October 2021 (19 months) with the first 19 months of the “super cycle” (October 2003-April 2005), it is observed that the recent increase in the price of copper has been more pronounced than that observed in the past boom (see figure 1).

After 19 months of the recent rise in the price of copper it is 183.3 points higher than the price of its base period (April 2020). On the other hand, during the last boom, after the first 19 months, the price was 176.7 points above the price of its base period (October 2003).

Figure 1



Note: Data taken from Banco Central de Reserva del Perú (BCRP) – Nota semanal
 Author's own elaboration

Although with periods of comparison that differ in their beginning and length, the prices of gold, iron and zinc have also been registering more pronounced growth rates in relation to the past boom (see figure 2).

Figure 2



Note: Data taken from BCRP – Nota semanal
 Author's own elaboration

In the case of gold, which currently represents 25,9% of Peru's mining exports, as of October 2021 its price was 137,2 points above the price of the base period (May 2019). For the same number of months, during the past boom, the price was 134,1 points higher (September 2004) than in the base period (April 2002). Also, around month 16 of the recent increase (August 2020), the price of gold reached an index of 153,3, well above the 116,0 also registered in month 16 of the last boom (July 2003). In other words, the uncertainty generated by the COVID-19 pandemic

accentuated the demand for the yellow metal as a safe haven asset, pushing up its price.

The price of zinc, which represents 6,4% of Peru's mining exports, has risen to 177,4 points in the recent period (April 2020-October 2021) compared to 168,4 points in the past bonanza (September 2003 -March 2005). In the case of iron (6,4% of exports), the price rose to 255,2 points during March 2020-September 2021, compared to 234,8 points in January 2005-July 2006.

The recent increase in the international price of metals is not only more intense than that observed during the past boom, but has also started from a higher threshold. In the case of copper, 19 months after the recent increase, the average price (¢US\$/lb. 357,0) is 2,8 times higher than the average of the first 19 months of the “super cycle” (¢US\$/lb. 128,4) (see table 1).

In the case of gold, the average price (US\$/oz t. 1 691,1) in the last 30 months (May 2019-October 2021) was 5 times higher than the average price (US\$/oz t. 361,0) of the reference period (April 2002-September 2004). As for zinc, the average price is 2,5 times higher; and in iron, 3,4 times.

Table 1

International price of main metals

(Average prices in the first months of the "super cycle")

Metal	Period	Months	Average price	Var. %	Times
Copper	Oct.2003-Apr.2005	19	128.4 ¢US\$/lb.		
	Apr.2020-Oct.2021	19	357.0 ¢US\$/lb.	178.2	2.8
Gold	Apr.2002-Sep.2004	30	361.0 US\$/oz t.		
	May 2019-Oct.2021	30	1,691.1 US\$/oz t.	368.5	4.7
Zinc	Sep.2003-Mar.2005	19	48.1 ¢US\$/lb.		
	Apr.2020-Oct.2021	19	119.8 ¢US\$/lb.	149.2	2.5
Iron 1/	Jan. 2005-July 2006	19	34.3 US\$/mt		
	Mar.2020-Sep.2021	19	115.6 US\$/mt	236.8	3.4

1 / Price of iron ore in Peruvian exports.

Note: Data taken from Banco Central de Reserva del Perú (BCRP) – Nota semanal

Author's own elaboration

During the “super cycle”, the rise in the price of metals began in 2003 and lasted - in general terms - a whole decade. Copper reached its maximum price in February 2011 (447,59 ¢US\$/lb.); that is to say, about 90 months after having started its upward trend in October 2003. In the recent rise, the projections are more conservative, although they point to prices above pre-pandemic levels.

According to the World Bank (2021), the price of metals would fall by 5% in 2022, after an estimated increase of 48% in 2021. The global trend towards an energy transition that seeks to move away from fossil fuels is expected to increase the demand and the price of metals such as tin and -especially- copper. For the medium

and long term, it is estimated that the price of copper will remain approximately 25% above its 2020 price.

Extraordinary revenues: the case of Peru

To approximate a quantification of the extraordinary revenues that Peruvian mining has been registering due to the higher price of metals, we are going to freeze export prices to April 2020. This period is the one that we have identified as the beginning of the recent rise. The price of copper, therefore, is representative for Peru, since this metal represents more than half the value of its mineral exports. Furthermore, as seen in the preceding section, this period also incorporates the boom registered in the prices of gold, iron and zinc.

Of the total revenue from mining exports accumulated from April 2020 to September 2021 (18 months), 27,9% was due to the higher price of metals. That is, an additional US\$ 13 673 million just for a price effect (see table 2).

Table 2

Peru - Mining Exports: Extraordinary revenues, April 2020 - September 2021

(Millions of US\$)

	Current prices (A)	April 2020 prices (B)	Difference (C) = (A-B)	Var.% (A) / (B)	Part.% (C) / (A)
TOTAL	48,997	35,325	13,673	38.7	27.9
Copper	25,121	16,200	8,921	55.1	35.5
Tin	825	486	339	69.7	41.1
Iron	2,713	1,412	1,301	92.2	48.0
Gold	13,410	12,392	1,018	8.2	7.6
Refined silver	166	105	60	57.1	36.3
Lead	2,576	1,955	621	31.8	24.1
Zinc	3,065	2,043	1,022	50.0	33.3
Molybdenum	1,115	725	390	53.9	35.0
Rest	7	7	0	0.0	0.0

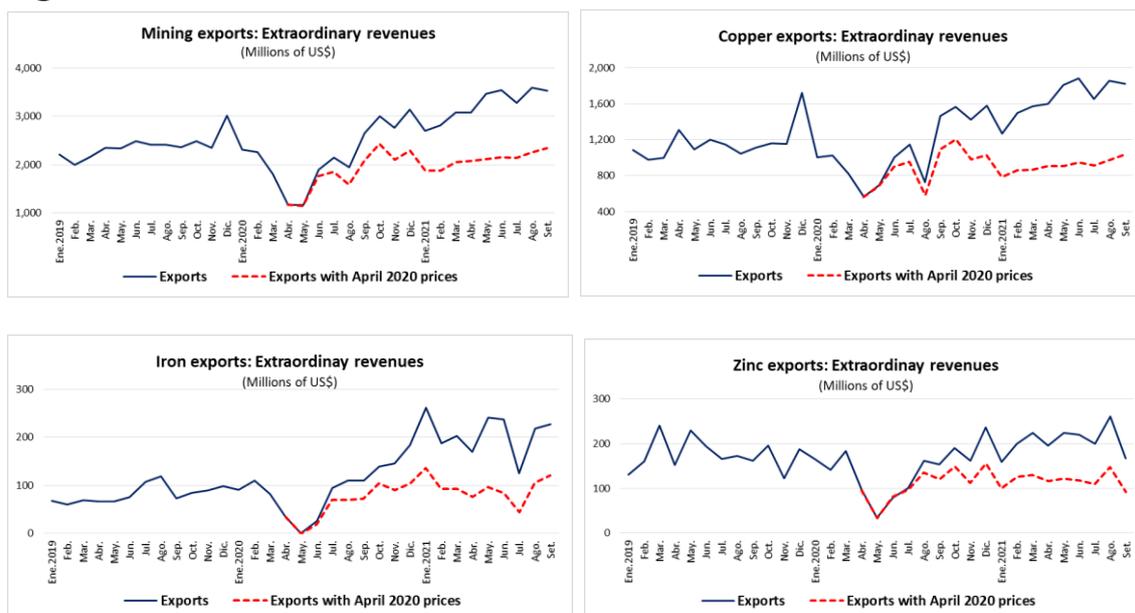
Note: Data taken from Banco Central de Reserva del Perú (BCRP) – Nota semanal

Author's own elaboration

Most of the extraordinary revenues (65,2%) was due to copper, whose exported value increased by 55,1% due to the rise in its international price. In the case of iron, 48,0% of what was exported was due to the price effect; as for zinc, 33,3% (see figure 3).

The price effect is very significant in all the metals that Peru exports: tin (41,1%), refined silver (36,3%), molybdenum (35,0%). In gold, there is not a very high price effect (+ 7,6%), at least if we do the calculation for the last 18 months, because -as already mentioned- the price of gold began to rise in May 2019; that is, 30 months have passed since then.

Figure 3



*Note: Data taken from BCRP – Nota semanal
Author's own elaboration*

A higher export volume also helps to explain the high revenues of the mining sector. However, this is true mainly for copper, whose accumulated export volume increased by 2,5 times if we compare the period April 2020-September 2021 with the past boom (October 2003-March 2005) (see table 3).

Table 3

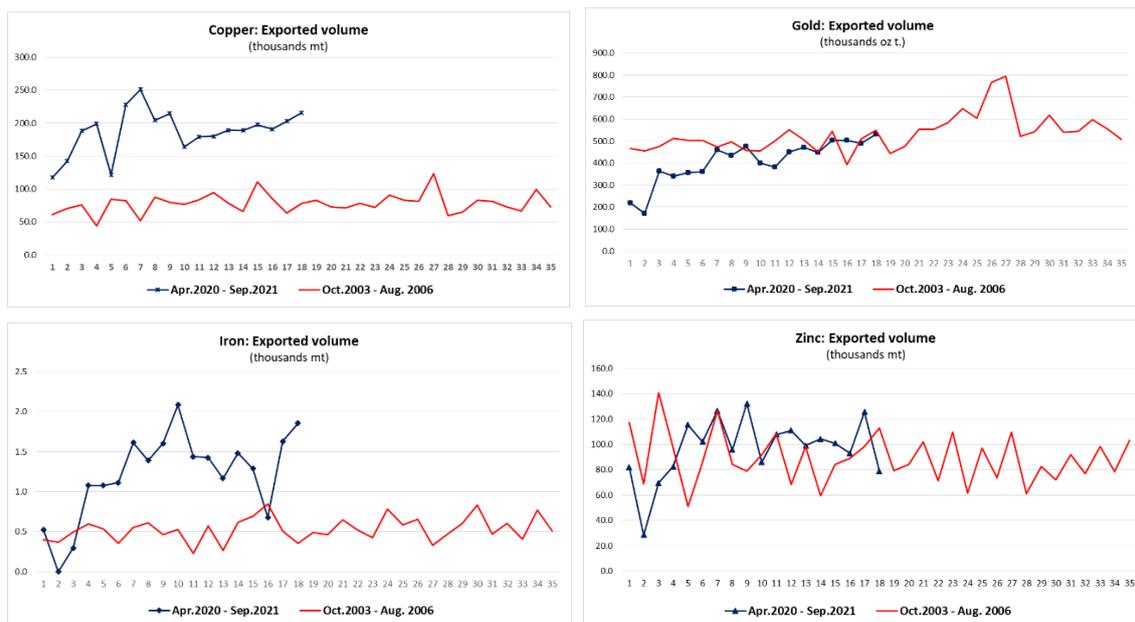
Peru: Export volumes according to main metals

Metal	Period	Months	Accumulated volume	Var.%	Times
Cooper	Oct.2003-March 2005	18	1,376.7 (thousands mt)		
	Apr.2020-Sep.2021	18	3,374.8 (thousands mt)	145.1	2.5
Gold	Oct.2003-March 2005	18	8,807.4 (thousands oz t.)		
	Abr.2020-Sep.2021	18	7,364.2 (thousands oz t.)	-16.4	0.8
Zinc	Oct.2003-March 2005	18	1,662.8 (thousands mt)		
	Apr.2020-Sep.2021	18	1,741.7 (thousands mt)	4.7	1.0
Iron	Oct.2003-March 2005	18	9.0 (thousands mt)		
	Apr.2020-Sep.2021	18	21.8 (thousands mt)	142.7	2.4

*Note: Data taken from BCRP – Nota semanal
Author's own elaboration*

Zinc export volumes have practically not varied between one period and another; in the case of gold, they have even decreased (see figure 4). Iron also increased its export volume (2,4 times), although its relative weight within mining exports is 6,4%.

Figure 4



Note: Data taken from BCRP – Nota semanal
 Author's own elaboration

Consequently, the extraordinary revenues of the sector is mainly explained by a price effect. On the one hand, the price of minerals has risen at a faster rate than that observed during the “super cycle”. On the other hand, the recent rise has started from a higher threshold, that is, the average price of metals is approximately three times higher compared to the past boom.

Collection and effectiveness of tax instruments

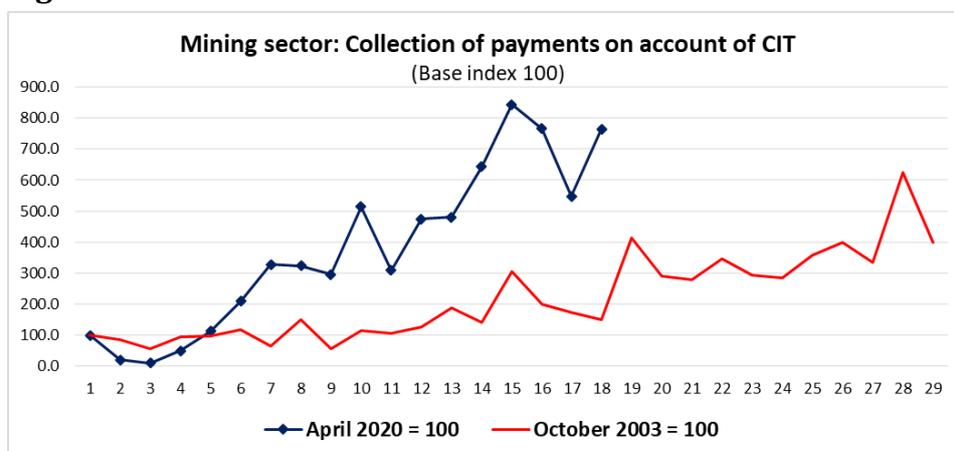
The rise in the international price of metals increases the revenues of mining companies, which has the positive effect of a higher payment of taxes by them. Thus, for example, if we compare the period January-September 2021 with its similar one in 2020, the increase in the collection of corporate income tax (CIT) is explained by 46,9% by the participation of mining.

Next, the intensity of this positive effect in the recent conjuncture (April 2020-September 2021) is compared with that observed in the past boom (October 2003-March 2005). The analysis is carried out only for the collection of CIT, since the new fiscal instruments -which currently also tax Peruvian mining- were only implemented in 2012, when the “super cycle” had almost ended: the special mining tax (IEM), the special mining assesment (GEM) and the new mining royalty (New RM) or profit-based royalty.

The collection of CIT in the mining sector has been increasing at a much more pronounced rate than that observed during the past bonanza. If we compare the payments on account of September 2021 with those of the base period April 2020, the collection for this concept increased by about 8 times (see figure 5). On the other hand, during the past bonanza, the payments on account of March 2005 compared with those of October 2003 increased by 1,5 times. For this measurement, based on the monthly indices, the collection for the annual CIT regularization is not taken into

account because it is concentrated in the months of February and March of each year and reflects the economic behavior of the previous year.

Figure 5



Note: Data taken from SUNAT – Nota tributaria
Author's own elaboration

In accumulated terms, the total collected from CIT (payments on account plus regularization) during April 2020-September 2021 is greater by about 5 times the amount collected in the first 18 months of the last boom (October 2003-March 2005) (see table 4).

Table 4

Peru: Collection of CIT in the mining sector
(Millions of US\$)

Concept	Period	Months	Accumulated	Var.%	Times
Payments on account	Oct.2003-Mar.2005	18	258		
	Apr.2020-Sep.2021	18	1,237	379.0	4.8
Regularization	Oct.2003-Mar.2005	18	173		
	Apr.2020-Sep.2021	18	741	327.7	4.3
TOTAL	Oct.2003-Mar.2005	18	431		
	Apr.2020-Sep.2021	18	1,978	358.4	4.6

Note: Data taken from SUNAT - Nota tributaria
Author's own elaboration

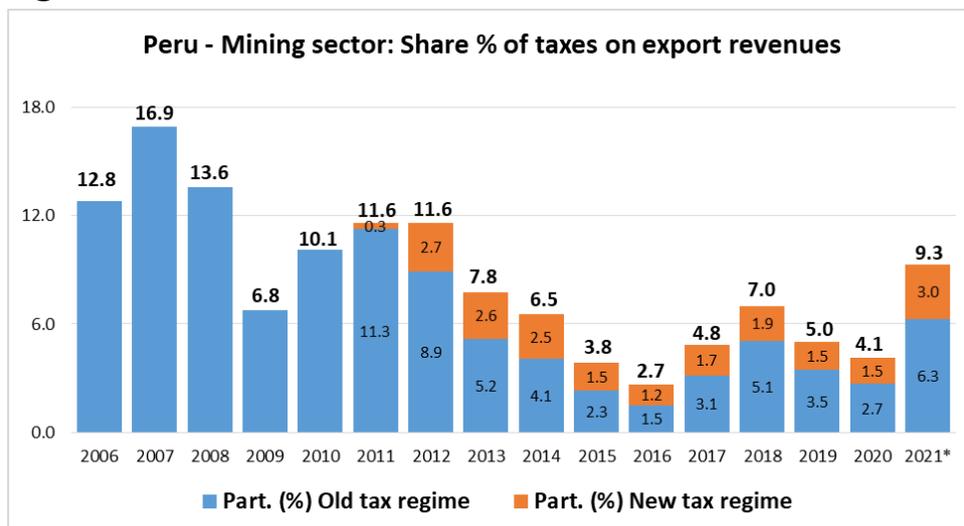
Whether higher prices translate into higher tax revenues will also depend on the effectiveness of the tax instruments with which they are collected¹. We will approach this issue from the percentage of export revenues that mining companies allocate to pay taxes.

In the best years of the past bonanza (2006-2011), what was collected under the old mining tax regime, made up of CIT and the ad valorem royalty - still in force - that is

¹ In this paper we do not deal with the fundamental role that the Tax Administration must also fulfill for an efficient collection of tax revenues, mainly by facing evasion and avoidance.

applied on mineral sales (Old RM), represented -on average- 12,0% of the exports revenues (see figure 6). Since then, this participation has fallen steadily, reaching the floor of 2,7% in 2016. This was the case despite the fact that, since 2012, the old tax regime was “reinforced” with the new mining tax regime, made up of the IEM, the GEM and the New RM, instruments whose common denominator is that their tax base is the operating profit determined according to accounting standards.

Figure 6



* January-September

Note: Data taken from BCRP, SUNAT

Author's own elaboration

The recent rise in the price of metals has been favoring a recovery in the share of export revenues that mining companies allocate to paying taxes: from 4,1% in 2020 to 9,3% in 2021 (January-September). However, this result is still below the 16,9% registered in 2007, when only the old mining tax regime existed, which proved ineffective to optimally capture the extraordinary profits of the sector during the 2003-2012 “super cycle”.

Indeed, during the past bonanza it was not possible to increase tax revenues to the same extent that extraordinary profits increased. The net profit after tax of the mining companies increased at an average annual rate of 41,0% in the period 2005-2011, but the collection of CIT plus the Old RM did so at a rate of 27,0%. It was a regressive tax regime, since it did not favor a comparatively growing participation of the State in mining profits.

The new mining tax regime, inaugurated in 2012, was designed to correct this scenario and capture extraordinary profits in periods of price bonanza. However, this would not be fulfilling that function with the same intensity that is observed in the old tax regime. In statistical terms, the latter correlates better with exports revenues, compared to the new tax regime.

In other words, mining companies have been obtaining higher extraordinary income compared to the past boom, but the percentage of their total revenues that they use to pay taxes does not yet show a similar dynamism.

This should lead us to reflect on whether the fiscal instruments implemented since 2012 are being sufficiently effective in capturing the extraordinary profits of the sector.

Conclusion

The extraordinary revenues that the mining sector has been obtaining is not due to innovations in extraction technologies, cost reductions, or an improvement in the grade of the exported mineral. It is simply the result of the different socioeconomic factors that have been occurring in the world economy, one of whose manifestations is the rise in the price of metals. In this context, the State must collect the corresponding tax and non-tax revenues.

On more than one occasion we have opined that the growth and development of a country should not be subject to tax revenues that originate mainly from the export of raw materials, as this makes it very vulnerable to the ups and downs of the international market. However, this perspective does not contradict the right that every State has to optimally capture the rent generated by the exploitation of its natural resources. Even more so in a situation such as the current one, with rising prices and the need for additional resources to face the ravages caused by the pandemic. In achieving this objective, the effectiveness of fiscal instruments is a *sine qua non* condition.

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