



www.laceep.org

SUMMARY FOR DECISIÓN- MAKERS

Number 6

April, 2008

Estimating genuine investment for the Peruvian mining sector during 1992-2005)

Author: Carlos Enrique Orihuela R.

In recent years, some economies have had a significant economic growth. In some South American countries, this growth has relied on increasing mineral market prices. Peru had the highest rates of growth in the region: more than 6% during the last years, generating important contributions to national income. But, does this economic bonanza in the Peruvian mining sector (the most important economic sector in Peru) guarantees a sustainable development in such sector?

This question is particularly important for those countries exporting natural resources, whose unsustainable exploitation could endanger the needs of future generations. Peru is one of those countries; in the year 2005, 50% of its total exports were natural resources, and this percentage has now increased.

To answer this question, the objective of this research was to evaluate the sustainability of the Peruvian mining sector during the period 1992-2005. I used the Dasgupta-Mäler's wealth approach, called genuine investment. In simple terms this approach states that development is sustainable if the change in wealth

(measured as capital valued at its constant accounting prices) over a short period of time is non-decreasing.

According to my results, the Peruvian mining sector has not been sustainable during the mentioned period. Below are some of the reasons for this claim.



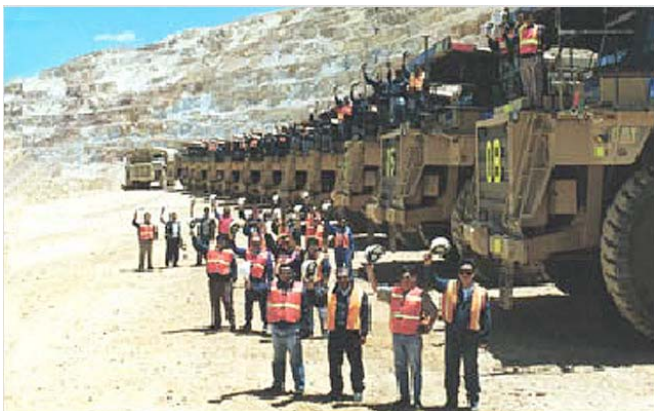
The most important type of capital in the Peruvian mining sector is natural capital. This type of capital has depended on new discoveries. During the time of greater discoveries, the genuine investment was positive. When proven reserves were smaller than depletion, the genuine investment was negative. These fluctuations made the genuine investment value to widely vary during the period of study. New discoveries

did not depend necessarily on market prices, at least for the Peruvian mining case.

What about the other types of capital? Investments in human capital (explorations investments) and man-made capital were not significant to affect the genuine investment value. Investments in human and man-made capital are too low. The human capital investment in Peru is one of the lowest in Latin America. For instance, in 2002, the national (public and private) investment in research and development (R&D) was only US\$ 58 million. It is obvious that investment of R&D in mining is much lower.

It is well known that only some of the biggest mining enterprises provide funds to support current expenses in education and structures. Yananocha, perhaps the highest revenue enterprise of Peru, gave US\$ 50 millions to communitarian investments during the period 2000-2004. This investment amounted to only 0.68% of sectorial revenues in 2004.

Moreover, the Peruvian mining sector does not generate human capital through “learning by doing” because it has not contributed in the development of new technologies. There is evidence that the Peruvian mining sector has not contributed significantly to the creation of other kinds of capital. This is extremely risky for a country as Peru, highly dependent on selling mineral resources. Why? Sooner or later, the mining production will cease due to low prices or exhaustion of reserves, which would bring the end to mining revenues as well.



The well-known recommendation is to reinvest properly part of the revenues perceived by the sells of minerals (rents) into other types of capital (human, man-made, even renewable natural capital). That is the case of rent reinvestment in sectors that attract positive externalities or technological transfers capacities. This would ensure the maintenance of total capital through time. In other words, maintain the total mining wealth.

However, Peru not is reinvesting properly mining rents into other forms of capital such as economic theory of natural resource suggests. Moreover, it is possible that current mining rent (royalty) is not optimal.

Currently Peru and especially, the Peruvian mining sector are facing good times, due to continuous increase in market prices. But how long will this apparent prosperity last? The exhaustion of proven reserves is offset continually when new rich mineral deposits (mainly of gold, copper and zinc) are found. Fortunately, Peru is still a very rich country in mineral resources. The clear truth is that if there is no adequate mineral revenue allocation into other types of capital within the sector, this activity will not be sustainable.

Carlos Enrique Orihuela is a Peruvian Economist currently working at the Economy and Planning Department - Universidad Nacional Agraria La Molina in Peru. He teaches mathematics for economists, microeconomics and natural resource economics. His research project was supervised by Dr. Karl-Göran Mäler, Beijer Institute, Sweden.

To get a full copy of this and other LACEEP funded, please access: <http://www.laceep.org>

“This work was carried out with the aid of a grant from the Latin American and Caribbean Environmental Economist Program (LACEEP)”