

**ESAN UNIVERSITY**



**Analysis of the reaction of mining stocks to the development of copper prices**

**Thesis submitted in partial satisfaction of the requirements to obtain the degree of Master in Business Administration by:**

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## EXECUTIVE SUMMARY

The mining sector is still one of the most fundamental ones in today's economy, providing raw material to probably every industry. Accordingly, mining has a great influence on stock markets and investors worldwide. Following this importance of the mining industry, some research has been conducted, analyzing the development of mining stocks and its influencing factors. This research has so far neglected copper, as probably the second most important mineral after gold, and the influence of copper future prices on copper mining companies' stock returns. Furthermore, it missed consideration of an international perspective, as most research focused on single stock markets, majorly in the United States of America. A last detected research gap, is the influence of the global financial crisis of 2008 on stock returns in the mining industry. This has partly been considered for individual stock exchanges (Lima), but not on an international scale.

This paper aims at closing these research gaps and analyze the influence of copper prices on mining company's stock returns. To reach this target the following objectives are defined:

- Analyze the significance of different copper prices, as copper is traded on a spot or future (90-day and 180-day) base
- Investigate on the influence of the 2008 global financial crisis on copper producing companies' stock returns
- Test for market integration or segmentation among the leading international mining stock exchanges.

Based on the studies of previous research, these objectives are transformed into the following four hypotheses:

1. Changes in copper future prices influence the stock returns of mining firms, that have copper as their main product
2. The global financial crisis decreases the reaction of mining stock returns to changes in copper prices
3. Capital markets (with respect to mining companies) of developed countries are more integrated than the ones of less developed countries

4. The impacts of the global financial crisis and market segmentation/integration are observable simultaneously

In order to test these hypotheses, data of 23 copper focused mining companies, listed on the stock exchanges of New York, London, Toronto and Lima, has been collected for the period 2005-2015. Minimum squared regression models have then been used to verify the hypotheses, with the following results:

Hypothesis one: Spot and 180-day copper prices are relevant to explain copper mining companies' stock returns and prove a positive influence. 90-day future prices are found to be not significant. The  $\beta$  for copper prices is in both cases, spot prices and 180-day future prices, around 0.5, which indicates that for a 1% rise in copper prices, stock returns will rise by 0.5%. Hypothesis one is confirmed.

Hypothesis two: The global financial crisis of 2008 does have a negative impact on copper mining companies' stock returns in less developed capital markets, but no significant impact on returns in developed markets. Hypothesis is confirmed for less developed markets, but rejected for developed ones.

Hypothesis three: The trade venue does prove a significant impact on copper mining companies' stock returns, which indicates that markets are segmented. Furthermore, stock returns are found to be higher on developed then on less developed markets. Hypothesis three is rejected.

Hypothesis four: The impacts of the global financial crisis as well as the trade venue are observable simultaneously. The effects are consistent with the previous hypotheses' findings. Hypothesis fours is confirmed.

In conclusion, copper spot and future (180-day) prices are found to have a positive impact on copper mining companies' stock returns. The global financial crisis of 2008 just proves significance in less developed capital markets and is insignificant for developed ones. The significant impact of the trade venue on the stock returns indicates segmented markets.