# André Canelas EVOLUTION OF OIL AND NATURAL GAS EXPLORATION & PRODUDCTION INVESTMENTS IN BRAZIL FOLLOWING THE MARKET REFORM

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# Overview

This paper analyzes the investments in the oil and gas (O&G) exploration and production (called E&P or upstream), which took place after the reform of the Brazilian O&G industry. The reason why such a period of time was chosen for analysis was the institutional change that took place in the Brazilian O&G industry after the Brazilian Parliament approved Law Bill n° 9.478 in 1997. The law represented the new regulation of the activities related to the O&G industry in Brazil. Since then, there has been a very large amount of capital spending in the O&G E&P, not only by Petrobras, the state-controlled oil company, but also by the oil companies which entered the Brazilian O&G industry after it was opened to foreign and private E&P investments. This paper analyses economically these E&P investments by Petrobras and by the new players in Brazil, addressing the growing share of E&P investments in the total investments in the Brazilian economy.

### Methods

The analysis of the 4 following time series has been carried on for this paper:

Evolution of O&G investments in Brazil (investments in both O&G upstream and other segments of the O&G sector, such as refining, natural gas processing and sales of oil by-products; investments by both Petrobras and other O&G companies in Brazil).

Evolution of world E&P investments

Evolution of Foreign Direct Investment (FDI) in Brazil (both the total amount of FDI in O&G upstream in Brazil and the total amount of FDI in the Brazilian economy) Evolution of the total amount of investments in the Brazilian economy.

#### Results

It is possible to observe a continuous increase in importance of the O&G upstream activities for the Brazilian economy. Throughout the most recent years, there has been a sharp increase of the share of O&G upstream into the total amount of Foreign Direct Investment (FDI) in the Brazilian Economy, as well as into the total amount of investment in Brazil (taking into account both national and foreign investments). All data concerning this analysis (tables and graphs related, and their sources) will be shown in this paper, in its full version.

# CONCLUSIONS:

Following the opening of Brazil's oil industry there has been an increase in investment flows to E&P activity in the country, as a result of the increase in investments by Petrobras and the new players entering the industry. This increase in investment is due to three factors: 1- the sharp increase in Petrobras's upstream investments, as the company pursues self-sufficiency in its O&G activities; 2- the introduction of other oil companies' upstream investments in Brazil, due to the above cited reform of the oil industry in the country, from 1997 on; 3- the high oil prices observed throughout the most recent years, which have resulted in increased amounts of O&G investments, mainly in the upstream segment of the O&G sector.

Given the fact that the Brazilian economy has been undergoing low economic growth in the most recent years (below the average economic growth of the developing economies), the growth of E&P investments is extremely positive, in that it guarantees progress towards the goal of self-sufficiency in oil supply, allowing the country to overcome a very relevant source of external restriction to the Brazilian economy.

### References

1- Statistical data from several sources, such as Petrobras (www.petrobras.com.br), IPEA (Brazil's Bureau of Applied Economic Research, at <u>www.ipeadata.gov.br</u>), and the Brazilian Oil & Gas Institute (www.ibp.org.br).

2- CANELAS, André (2004). Investimentos em Exploração e Produção Após a Abertura da Indústria Petrolífera no Brasil: Impactos Econômicos.(in English, "Economic Impacts of the O&G Upstream Investments after the Reform of the Petroleum Industry in Brazil"). B.Sc. thesis in Economics, presented at the Institute of Economics of the Federal University of Rio de Janeiro (<u>www.ufrj.br</u>), in Rio de Janeiro, Brazil, in 2004. Available for download at:

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(note: available in Portuguese language only).