ECO-ENA: Economics & ECO-Engineering Associate, Inc., Canada

The Annual Conference of Economic Forum of Entrepreneurship & International Business
ACEFEIB

The Second Annual Conference of Economic Forum of Entrepreneurship & International Business

Feb. 2nd – Feb. 4th, 2012

Venue: University of Ottawa, Ottawa, Ontario, Canada

2012

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Ottawa, Ontario, Canada

Conference Proceedings

Ottawa, Ontario, Canada

2012

The Second Annual Conference of Economic Forum of Entrepreneurship & International Business

February 2nd to February 4th, 2012

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The Annual Conference of Economic Forum of Entrepreneurship & International Business
(ACEFEIB)

The Second Annual Conference of Economic Forum of Entrepreneurship & International Business
2 – 4 February 2012

Venue: University of Ottawa
Ottawa, Ontario, Canada

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ECO-ENA: Economics & ECO-Engineering Associate, Inc.

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ECO-ENA: Economics & ECO-Engineering Associate, Inc., Canada provides also training for executives and training courses in Economics, Business, and related fields to individuals, companies, and government agencies. It also provides statistical analysis services to academics. It addition it provides Economic consultations and comprehensive feasibility studies to companies, government agencies, academic institutions, and international agencies.

ECO-ENA: Economics & ECO-Engineering Associate, Inc., Canada has two main e-research centers; the International Center of Economic Affairs (ICEA) and the Center of Economic Engineering (CEE). The team work of both centers is an international experienced team work from many countries around the world.

ECO-ENA: Economics & ECO-Engineering Associate, Inc., Canada sponsors the Annual Conference of Economic Affairs of Entrepreneurship & International Business: ISSN 1925-4601 (CD-ROM) and ISSN 1925-461X ((Online): Library & Archive Canada. The conference collects successful papers in Economics & Business from all around the world and discusses them in a big symposium. The conference proceedings enable new ideas of research to reach out via a recognized worldwide

outlook. The first annual conference of ECO-ENA, Inc. has been held in Cairo, Egypt under the organization of the Canadian Expertise House for Advanced Economic Studies, Cairo, Egypt. The second annual conference of Eco-ENA, Inc. has been planned to be held in Ottawa, Canada. ECO-ENA, Inc. is planning to hold the conference every year in a different country. ECO-ENA: Economics & ECO-Engineering Associate Inc., Canada also provides open seminars & lectures by international experts in the field.

ECO-ENA: Economics & ECO-Engineering Associate, Inc., Canada abides to all international ethical rules in business. It's approaching its second year after foundation and it has a promising future in Economics & International Business.

Dr. Ghada Gomaa A. Mohamed
President;
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The Second Annual Conference of Economic Forum of Entrepreneurship & International Business

SELECTED ACCEPTED PAPERS

Dear Reader,

We are very pleased to present the proceedings of ECO-ENA: Economic & ECO-Engineering Associate, Inc.'s Second Annual Conference of the Economic Forum of Entrepreneurship & International Business held in Ottawa, Canada, from February 2nd. to 4th., 2012.

The aims of the conference were to provide a forum open to academics, managers and professionals to discuss all areas of business, economics and the pursuit of equitable and sustainable economic development; to provide an audience for high quality research papers relating these areas; and to provide a forum for young researchers to present their own research and to learn from research presentations by researchers at a more advanced stage in their careers.

We are delighted to be able to provide a wide range of papers from around the world, covering issues in international economic relationships, financial markets and management practice from conference participants with a wide variety of backgrounds and experience.

The year 2011 was a period of substantial political and economic upheaval for many parts of the world, with rapid growth in some regions and stagnation in others. There were renewed concerns about sovereign, personal and corporate debt sustainability and about trade imbalances, with some countries exhibiting a persistent trade deficit for many years, raising questions about the long-term sustainability not only of their own economies but also of the economies which rely on exports to them. This is not to say that we should expect any country to import precisely as much as it exports or to attribute to the nation state the responsibility for private decisions by people and corporations to buy on credit with the expectation of future payment. However, there can be legitimate concerns about the possibility that a growing propensity to live off future earnings might be unsustainable in the long term, especially if economic growth does not keep pace with a growing deficit. Likewise, a reliance on sales to markets which offer money rather than goods and services in return might be viewed as a risky strategy in the long term, especially if funds are advanced for repayment in a currency of uncertain future value. We are delighted to be able to present a number of papers relating to the effects of international trade and development and sustainability of expenditure.

In a paper relating to international trade and development, Cenap Çakmak and Murat Ustaoğlu examine political factors affecting bilateral trade with specific reference to relations between Turkey and Israel. In a second paper examining the effects of politics on the economy and business, Adey Al Mohsen examines the activities and treatment of trade unions in Egypt in recent history.

In the field of international economic development, Ahmed Saddam Abdul Sahib and Fatimah Kari examine the relationship between trade, Foreign Direct Investment (FDI) and economic growth in GCC countries, with a mixed picture emerging, in which some FDI flows are shown to be more beneficial to the recipient country than others. On a similar theme, Souad Sherif and Kamel Fantazy specifically examine trade between Saudi Arabia, Bahrain and Qatar and conclude that economic

development and GDP growth are positively related to international commerce, with proximity being a further factor in bilateral trade. Jamel Boukhatem and Bochra Mokrani examine the role of financial development in the reduction of poverty.

Moving on from international trade and investment flows to the movement of people, Ali Muhammad, Saeed Akbar and Murray Dalziel provide a study of entrepreneurship among Afghan migrants, with conclusions about the effects of culture and personality on the propensity to develop new businesses as well as the impulse of necessity in settings where migrants started at an economic disadvantage.

Three papers examine the themes of financial information and its mediation through the financial markets. Suppanunta Romprasert provides insight into the role of commodity futures markets with a study on the efficiency of the rubber futures market in Thailand, with the conclusion that the futures market is efficient and makes good predictions of future prices, while Mamunur Rashid and Subhrendu Rath examine the relationship between liquidity, market valuation and the likelihood of listed firms being taken private, with the conclusion that managers are likely to take firms private, with a view to their own financial advantage, if they believe that they are undervalued by the market. On the other hand, Nkaprang Djossi Isabelle & F. Gaspart addressed entrepreneurship efficiency of banana and plantain producers in Cameroon by using a translog production function of a sample of 161 producers from three regions with different agro-ecological and demographic factors.

Moving into the field of business and business management, Ernesto Medina, Roberto Morales and Omar Salgado examine namely the problem of online music piracy and suggests ways in which new technologies may be used to combat it. In the field of more legitimate commerce, Leila Hamzaoui-Essoussi and Lucie Sirieix examine reasons for consumer preferences for organic products. Rai Imtiaz Hussain deals with employee relations, examining the factors influencing the desire to leave or change employment amongst university teachers in Pakistan. Frank Cotae examines the entrepreneurial element in new international ventures.

In addition to the papers contained in this volume, we are grateful to Wen-jhan Jane and Yi-hsuan Chiang for the presentation of a paper on network effects on internet usage, which is not included here because of the prospect of forthcoming publication elsewhere, and to Eduardo Roca and Abdulnasser Hatemi for their paper on the question of whether global real estate markets are integrated. Ghada Mohamed presents a paper exploring a cognitive game approach to consumer behavior and reactions to government policy and also presents a further paper, with Morrison Handley-Schachler and Nisreen Al-Banawi, on economic convergence in six GCC countries.

We are also privileged to welcome some distinguished key-note speakers from industry and commerce to the conference. Brian O'Higgins, Brian O'Higgins and Associates, Canada, discusses the commercialization of university research, a major theme for universities worldwide in the challenging new economic environment. Andrew Waitman, CEO, Pythian, Canada, speaks on the theme of developing global start-up businesses. Jamal Hejazi, Chief Economist at Gowlings, Canada, speaks on the subject of transfer pricing in the pharmaceutical industry.

Three further sessions are led by academics from around the world, with Morrison Handley-Schachler, Frank Cotae and Cenap Çakmak facilitating discussions on corporate governance, entrepreneurship and the effect of international relations on multinational corporations respectively. On the final day of the conference, Jamal Hejazi and Morrison Handley-Schachler return to lead discussions on transfer pricing and market prices in the financial markets.

We would like to express our deep gratitude to all who have contributed to this conference and to these proceedings. We also look forward to welcoming as many of you as possible to our third conference in the United Kingdom in 2012.

Yours Sincerely,

Dr. Morrison Handley-Schachler
The Chair of the Conference
ECO-ENA, Inc. Vice President of Research & Policy Analysis

The Second Annual Conference of Economic Forum of Entrepreneurship & International Business - (SACEFEIB)

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The Second Annual Conference of Economic Forum of Entrepreneurship & International Business (SACEFEIB)

Program

2 – 4 Feb. 2012
Unv. 90., University of Ottawa
Ottawa, Ontario, Canada

Thursday, Feb. 2nd, 2012

9:00 – 10:00 a.m.
Reception

10:00 – 10:30 (Presentation & Discussion) – Paper # (02-01)
10:35 – 11:05 (Presentation & Discussion) - Paper # (02-02)
11:10 – 11:40 (Presentation & Discussion) - Paper # (02-03)
11:45 – 12:15 (Presentation & Discussion) - Paper # (02-04)

12:20 – 13:00: Panel #(02 – 001)

13:00 – 14:00 (Luncheon Break)

14:10 – 15:10: Panel # (02-002)

15:15 – 16:15: Panel # (02 -003)

16:20 – 17:00: (Presentation & Discussion) - Paper # (02-05)

End of Sessions

Friday, February 3rd , 2012

9:00 – 10:00 a.m.
Reception

10:00 – 10:30 (Presentation & Discussion) – Paper # (03-01)
10:35 – 11:05 (Presentation & Discussion) - Paper # (03-02)
11:10 – 11:40 (Presentation & Discussion) - Paper # (03-03)
11:45 – 12:15 (Presentation & Discussion) - Paper # (03-04)

12:20 – 13:00: Panel #(03 – 001)

13:00 – 14:00 (Luncheon Break)

14:10 – 14:40 (Presentation & Discussion) - Paper # (03-05)
14:45 – 15:15 (Presentation & Discussion) - Paper # (03-06)
15:20 – 15:50 (Presentation & Discussion) - Paper # (03-06)

15:55 – 16:25 Panel #(03 – 002)

16:30 – 17:00: Panel #(03 – 003)

End of Sessions

Gala Dinner Gathering
Moroccan Folklore

Moroccan Restaurant, Hull
Friday, February 2nd, 2012
7:00 – 10:00 at night

Saturday, February 4th, 2012

CEHAES Financial Economics Meeting
9:00 – 10:00 a.m.
Reception

10:00 – 10:30 (Presentation & Discussion) – Paper # (04-01)
10:35 – 11:05 (Presentation & Discussion) - Paper # (04-02)
11:10 – 11:40 (Presentation & Discussion) - Paper # (04-03)
11:45 – 12:15 (Presentation & Discussion) - Paper # (04-04)

12:20 – 13:00: Panel Discussion #(04 – 001)

13:00 – 14:00 (Luncheon Break)

14:10 – 14:40 (Presentation & Discussion) - Paper # (04-05)
14:45 – 15:15 (Presentation & Discussion) - Paper # (04-06)
15:20 – 15:50 (Presentation & Discussion) - Paper # (04-07)

Round Table Discussion:

15: 55 – 16: 25

Topics:

Economic Growth Rates & World Business Cycles,

International Financial Markets Expectations after the Global Financial Crisis, and

Potential New Markets Openness in the Middle East & Different Views about the Arab Revolutions

16:30 – 17:00: Panel #(04 – 002)

End of Conference

Presentations

Feb. 2nd, 2012

Research Commercialization, Households Behaviour & Jobs Satisfaction, Piracy, Products, Marketing & Industry

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Paper # (02-01) – *Included in the conference proceedings*

Job Satisfaction and Intension to leave among University Teachers of Pakistan

Author: Rai Imtiaz Hussein

Abstract: This study aimed at exploring the relationship between employee's job satisfaction and turnover intensions. The study was conducted on sample of 100 respondents taken from the different campuses of University of Education, Lahore. Different measures of employee job satisfaction were studies for this purpose like satisfaction with supervisor, satisfaction with job variety, satisfaction with compensation, satisfaction with co-workers and satisfaction with HR management policies. For analyzing; the relationship descriptive statistics and correlation were used. Furthermore, regression analysis was conducted to determine that whether any relationship between satisfaction and intend to leave exists or not. Results of the study showed that most of the respondents were satisfied with their job and negative relationships exist between satisfactions and intend to leave.

Keywords: Job satisfaction, Intention to leave, Satisfaction with supervisor, satisfaction with job variety, satisfaction with closure, satisfaction with compensation, regression analysis, Correlation.

Paper # (02-02) – *Included in the conference proceedings*

Free Music (or Almost): A Profitable Business Model

Author: Ernesto Chacon Medina

Abstract: A business model about free legal distribution or at a very low price is economically profitable. To achieve this, the musical industry has to adopt itself to the new reality that the world, as well as the most recent information technologies is facing piracy is one of the resources collection methods that result more profitable for criminal groups and form its proliferation, as well as with the massive access to previously mentioned technologies, the legal recording sales fell at world-wide level. This work displays a sustainable model in behalf, mainly of musical creators.

Keywords: **Music, Free Business Model, Low Price, Legal Piracy**

Paper # (02-03) – *Not included in the conference proceedings*

Are You Browsing More when others are Browsing? An Exploration of the Network Effects on Internet Usage

Author: Wenjhan Jane & Yi-hsuan Chiang

Abstract: This article addresses the issues of network effects derived from network externalities for Chinese Internet usage. A sample of 65,441 individuals' browsing behavior on the ten largest websites in Taiwan were collected and examined by using Poisson models. Results show that total hourly page views of a website are positively related to an individual's hourly page views. An increase of 1,000 page views for a website will increase 2.2 individual's page views. The evidence shows that a positive network effect exists. Gender, age, education, and income are also significant factors in the regressions. The results of the gender (/age) effect suggest that males (/young people) use these websites less than females (/older people). There exists a network

externality on website usage that causes large websites to grow rapidly as smaller ones are driven out of the market. Therefore, regulation needs to focus on ensuring fair competition in the marketplace.

***Keywords*:** Network effect; Gender effect; Internet usage

Paper # (02-04) – *Included in the conference proceedings*

What Would Make Consumers Trust Organic Products? A Qualitative Study Based on the Distributors' Perspective

Authors: Leila Hamzaoui-Essoussi, Lucie Sirieix and Mehdi Zahaf

Abstract: Despite growing demand for organic food products, trust is missing at various levels of the marketing value delivery system. Hence, Canada, among other countries, needs to address important issues related to the level of trust/ mistrust in OF products. The purpose of this paper is to examine the dimensions and variations of trust among consumers as perceived by the distributors, and to determine the distribution channel strategies used to increase consumers' trust in OF products. The study is based on data collected through individual in depth interviews with a lot of 60 respondents that are managers from superstores, specialty stores, farmers' markets and producers. Based on the distributors' perspectives, findings show that levels and dimensions of trust differ significantly depending on the distribution channel as consumers rely on different factors for building their trust in OF. This clearly affects strategies and tools used by distributors to enhance trust in OF and in the distribution channels.

Keywords: Consumers' trust, Organic products, Distributors, perspective, qualitative Study

Paper # (02-05) – *Not included in the conference proceedings*

Decision Making & Consumers' Behaviour: A Cognitive Game Approach

Author: Ghada Gomaa A. Mohamed

Abstract: This paper utilizes a theoretical analysis of a cognitive game approach to address the relationship between decision makers in the government of USA & consumers' behaviour as an assessment of the payoff during the financial global crisis started in USA in the last quarter of 2007. The research starts with a strong assumption that the American consumer was the first node of a chain contains many other related economic variables and the reaction of consumers' behaviour toward a specific government policy can affect all other sectors in a spiral manner. A cognitive game is utilized in this paper to explain consumers' behaviours toward the expansionary government policies the government decided to adopt at times of the crisis. The paper also assumes a neural risk taker agent.

Keywords: Government decision making, Consumers' spending, Game theory analysis, the global financial crisis, USA

Panel # (02-001) – Commercialization of University Research

Speaker: Brian O'Higgins, *Brian O'Higgins and Associates, Canada*
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Who's He?

***Brian O'Higgins**, President, Brian O'Higgins and Associates*

"Brian O'Higgins is an executive with over 20 years as a leader in security technology development for enterprise and government customers—possibly known best for his role pioneering PKI (public key infrastructure)— and as the co-founder and Chief Technology Officer of Entrust, a leading Internet Security Company. He was also a co-founder and Chief Technology Officer of Third Brigade, a provider of security products for physical and virtualized servers that was acquired by Trend Micro in 2009. Brian's approach to security is both visionary and pragmatic. He is a frequent presenter at security and industry events around the globe. In 2008, he was appointed as a delegate to contribute to the Global Cyber security Agenda of the International Telecommunications Union. He is also a founding author and contributor to the Cloud Security Alliance.

Brian's current list of affiliations includes advisory board positions with Defence R&D Canada, the Ontario Centers of Excellence, the NSERC Internetworked Systems Security Project, the Global Institute for Cybersecurity Research Alliance, and a few startup companies in the IT security market. In addition, he serves on the boards of Recognia, Fischer International, AFORE, and Mobio Identity Systems.
Brian is an avid skier on both snow and water, and a competitive marathon runner."

Panel # (02-002) – Building Start-Up for Global Markets in Canada

Speaker: Andrew Waitman, *CEO, Pythian, Canada*
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Who's He?

"Prior to joining Pythian, for 12 years Andrew was the Managing Partner at Celtic House Venture Partners, a leading Canadian venture capital firm where he recruited the team, led the strategy, raised the funds and provided the most consistent investment track record: a Canadian best with more than a dozen successful M&A transactions, four IPOs and not one single bankruptcy in twenty five start-up investments during his Board of Directors oversight.

A sought-after thought leader and public speaker, Andrew has presented to such organizations as the Canadian Venture Capital Association and the Ottawa Centre for Research and Innovation. He has guest-lectured for MBA programs at Cornell University, Queen's University, the Richard Ivey School of Business at the University of Western Ontario, and the University of Ottawa. He has also taught entire courses on venture capital at the Queen's School of Business.

In addition to being a Professional Engineer and a Chartered Financial Analyst (CFA), Andrew's other passions include writing about business insights, reading non-fiction books on any topic, playing racquet sports (tennis, squash, ping pong) and drinking wine – preferably French… red… and from Bordeaux.

Recommended Reading by Waitman

The Greatest Minds of All Time by William Durrant
Fooled by Randomness by Nassim Taleb
Three Cups of Tea by Greg Morteson
Complications by Atul Gawande
Your Inner Fish by Neil Shubin
Why Most Things Fail by Paul Ormerod
Linked by Albert-Laszlo Barabasi
Reinventing The Sacred by Stuart Kauffman
Genome by Matt Ridley
The Ancestor's Tale by Richard Dawkins"

Panel # (02-003) – Has there been A Structural Break in the Pharmaceutical Industry from Transfer Pricing Perspective: A Look at North America

Speaker: Jamal Hejazi, *Gowlings, Canada*
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Who's He?

***Jamal Hejazi**, Chief Economist*

"Jamal Hejazi is a senior member of the Gowlings Transfer Pricing and Competent Authority team. Working in conjunction with the Firm's National Tax Practice Group, Jamal helps organizations optimize their global tax position and reduce exposure to unfavorable audit assessments through proper tax planning and implementation strategies. He has been involved in work for a number of industries including automotive, pharmaceutical, energy, computer software, gaming, manufacturing and services. He also specializes in intangible valuation and has done work for both the technology and biochemical sectors.
Prior to joining Gowlings, Jamal was a senior transfer pricing economist with the Canada Revenue Agency, where he participated in the resolution of a number of transfer pricing issues, including the relief of double taxation on Canadian corporations. He was instrumental in the negotiation of Advanced Pricing Agreements between Canada and foreign tax authorities.
Jamal has also held a faculty position at the University of Windsor, and was a lecturer at both Carleton University and the University of Phoenix. He has also served as an expert witness at the Tax Court of Canada.

Complementing his graduate degrees, Jamal has recently earned the Registered Professional Accountant (R.P.A.) designation. He is currently completing his CPA designation in the State of Illinois."

Feb. 3rd , 2012

Entrepreneurship, Private Business, Corporate Governance, Labour Conflicts, and International Investment

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Paper # (03-01) – *Included in the conference proceedings*

Applied Econometrics for Agricultural Futures: Case of Natural Rubber Smoked Sheets No. 3

Author: Suppanunta Romprasert

Abstract: This study investigates the efficiency of future pricing for ribbed smoked rubber sheet no. 3 (RSS3) during the period 2004 – 2009 and presents forecasting models along with results from the most efficient models that can help investors make more accurate buy and sell decisions. It addresses the question "Is price process in RSS3 futures market efficient?" Time series data from RSS3 futures was used as a leading indicator for the spot price of Thailand. The results indicate that the daily futures prices served as unbiased estimators of future spot prices and there was independence on daily price changes. The tests consistently supported the unbiased hypothesis which implies that Thailand's RSS3 future market is efficient and aids the process of price. This study would fill the information gap in the prediction of future spot prices with a guide to understanding how the futures market behaves. Part of forecasting, the study employs univariate, market timing and Diebold-Mariano as the criterions for the selection of the best prediction model. It includes an analysis of factors affecting the RSS3 futures prices in Thailand's futures market. The results show that the TOCOM, world synthetic rubber consumption, net imports natural (China) and crude oil price significantly affect the futures prices in the same direction. Particularly, the crude oil price is the leading indicator for the trend in rubber futures prices in Thailand. The analytical model is shown to be applicable and would facilitate related studies in forecasting the futures prices of other commodities. The time-series data is found to be suitable for the forecasting model.

Keywords: Futures pricing, Forecasting model, and Unbiased Estimators.

Paper # (03-02) – *Included in the conference proceedings*

How Does Undervaluation Affect Firms Going Private in Australia?

Authors: Mamunur Rashid & Subhrendu Rath

Abstract: This paper analyzes undervaluation as a determinant in going private transactions in Australia. We used a set of unique hand collected data within a period from 1990 to 2010 to develop and test a predictive choice model that distinguishes between firms went private from firms that did not go private. The analysis shows that firms taken over by PE firms suffer from market undervaluation, a possible effect due to information asymmetry existing between the market and managerial perception. This managerial perception is likely to act as an incentive for the managers to take their companies private. We also find liquidity as an important determinant in a going private decision. In addition, takeover speculation is found to be significant which means that market for corporate control plays its important role in Australia. The results are robust to the choice of alternative measures of undervaluation.

Keywords: Private equity, Going private, Takeovers, undervaluation, Australia

Paper # (03-03) – *Not included in the conference proceedings*

Are Real Estate Markets Globally Integrated? Evidence From Case-wise Bootstrap Analysis

Authors: Eduardo Roca & Abdulnasser Hatemi. J

Abstract: The paper investigates the extent by which real estate markets are integrated with the world market. The paper applies a case-wise bootstrap analysis – a method that is robust to non-normality and increased volatility that characterizes financial markets especially during periods of distress. It also takes into account the effect of the global financial crisis. The investigation is conducted in relation to the major real estate markets, namely, the US, UK, Japan and Australia. The paper found that all four markets are integrated with the world market. The US and the UK markets are the most internationally integrated while Australia is the least. The results also show that the US real estate market is more integrated internationally but resulted in the Japanese market becoming less globally integrated. In the cases of Australia and the UK, the crisis did not affect at all their level of integration with the world market.

Keywords: Beta, Casewise, Bootstrap, real Estate, World Stock Market

Paper # (03-04) – *Included in the conference proceedings*

A Conceptual Framework Linking Entrepreneurs to International New Venture Competitiveness

Author: Frank Florinel Cotae

Abstract: A long-standing view in the literature has been that international new ventures (INV) are affected by liabilities such as smallness, newness and foreignness. The need for born globals has been to identify a modality through which they can mitigate these costs. In focusing on finding a model that would define, identify and explain the factors affecting the link between entrepreneurs, networks, international new ventures and internationalization related liabilities we have decided that at the center of a dialogue we need to consider the individual as the cornerstone of such a

link. One model that stands out - advanced by Phelan, Dalgic and Sethi (2006) – allows for just such an origination point for a dialogue as it is based upon an entrepreneur's traits of social astuteness and competence that are expected to offer relief from the above referenced detriments. In this paper, we argue that Phelan et al model, while important as a contribution, is not sufficient in mitigating the globalization related liabilities. Through the medium of extant research and studies the model is analyzed as part of three fragments. First, the model is compared with findings from internationalization -reflecting economic condition as key-, embeddedness - the only one found to reflect some of the model's conceptual framework- and tacit theories - reflecting entrepreneurial uniqueness in recognizing and pursuing opportunities key as for securing INVs competitive advantage. Second, external factors such as behaviour, legal environment and goal commitment are applied to INV competitiveness. The third segment points out to geographic differences, as further considerations that refute some of model's claim, suggesting that INVs come to existence due to small domestic markets and strong immigrant communities, and place into the foreground the concepts of national attitudes and entrepreneurial maturity. The concluding fragment presents a modified theoretical framework for addressing the factors affecting INV success and competitiveness. The discussion part points out both the need to continuing the dialogue regarding INVs, networks and entrepreneurs in general and the lack of comprehensive nature of the concluding considerations. The article concludes that the implications for managers are two pronged: one related to increased awareness and understanding of the external factors affecting international market entry and second related to acquiring the ability to model INV according to general framework capable to mitigate cost related consideration. The recommendations for further research point to the need for both further identification of relevant external factors and statistical testing of the overall findings and propositions. The article's strength lies in its pursuit of a conceptual framework and dialogue and the limitation is in that it does not substantiate the findings with relevant measurements.

Keywords: Entrepreneur, International new venture, Entrepreneurial networks, Social compétence

Paper # (03-05) – *Not Included in the conference proceedings*

Culture's Consequences in Entrepreneurial Orientation: The Case of Afghan Migrants

Authors: Ali Muhammad, Saeed Akbar & Murray Dalziel

Abstract: This study presents a qualitative profile of migrant entrepreneurs of the world's highly orthodox and impoverished nations; the Afghans. It is well documented that in the developed world culture may persuade an entrepreneur to innovate new product, service or venture. However, the scenario is different in emerging economies where socio-cultural factors may facilitate people to pursue entrepreneurship as a mean to earn livelihood. This study therefore explores the effects of socio-historic cultural traits and customs upon the entrepreneurial orientations of the Afghan migrants in Pakistan. In order to support their family members, Afghan migrant entrepreneurs have invented peculiar ways of coping with

harsh economic realities. In an atmosphere of civil wars, chaos and disadvantages, unemployment and lack of money provides extrinsic motivations to the Afghans migrants. They are labeled mostly as necessity entrepreneurs being pushed into self-employment due to factors such as wars, economic downturn and strong adherence to cultural traits. Our findings are in consistence with the interactive model of cultural theory and migrants' disadvantage theory. Overall, this paper contributes to the literature by highlighting the role of interest socio-cultural traits in developing enduring entrepreneurial orientations.

Keywords: Entrepreneurship, Culture, Traits, Orientation, Afghan, Livelihood, Necessity, Self-employment, Afghan migrants, Entrepreneurial Characteristics.

Paper # (03-06) – *Not included in the conference proceedings*

Demobilization of labour unions in Egypt after the 2011 Uprising'

Author: Adey Al Mohsen

Abstract: The paper looks into the history of labor organization in Egypt, focusing on the late nineties and early two thousands wave of strikes and sit-ins by factory workers in al-Mansoura, al-Mahalla al-Kubra, and Suez. Workers protested privatization, neo-liberal reforms, and reduction of social benefits. The workers cause served as a launching pad for a number of social democratic and liberal parties ('harakit kifaya, 'harakit sitta abreil). These organizations accorded the socio-economic demands of the workers a political edge. This, among other things, resulted in a massive pro-democracy movement in the entire country, and which soon began to draw the support of many sectors of Egyptian society. Next, the paper examines how these organizations were engaged in events leading up to the 2011 Revolution and what role did workers and their unions play. With the rise of a new political bourgeoisie after Mubarak (composed mainly of the Muslim Brotherhood) and with the youth movements focus on liberal democratic reforms the workers movement was essentially demobilized. Strikes were officially banned by Sharaf's government and civil society organizations rejected the demands of the workers and labeled them to be denominational (fe'awiyya) claiming that workers' demands are subsidiary to the needs of the revolution - let alone the Islamists alliance with the SCAF. Why was this case and why did the worker's movement lose much of its momentum in 2011 are some of the questions that this presentation will investigate.

Keywords: Labour demobilization, Labour Strikes, the Egyptian Revolution.

Panel Discussion # (03-001): Corporate Governance - Who benefits?
Chair: Morrison Handley-Schachler, Teesside University, UK
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Panel Discussion # (03-002): Small Business & Entrepreneurial skills
Chair: Frank Florinel Cotae, Mount Royal University, Calgary, Alberta, Canada
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Panel Discussion # (03-003): International Political Relations & MNCs
Chair: Cenap Cakmak, *Eskisehir Osmangazi University, Turkey*
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Paper # (04-01) – *Included in the conference proceedings*

The Determinant of Entrepreneurship Efficiency: The Case Study of Banana and Plantain Farm Cameroon

Authors: Nkapnang Djossi Isabelle & F. Gaspart

Abstract: This article addresses entrepreneurship efficiency of banana and plantain producers in Cameroon using a translog production function of a sample of 161 producers from three regions with different agro-ecological and demographic factors (the South, the Southwest and Littoral) was estimated. The results show that the technical production factors such as the farm surface, the combined effect of the use of improved plants, and chemicals, all contribute positively to the production of plantain in Cameroon. However, investment factors such as transportation and watering of plants do not have a significant effect on production.

Furthermore, environmental characteristics of the farming area, such as high population density, have a negative effect on the technical efficiency of plantain production in Cameroon, a finding that may not be true in other plantain-growing areas. Socioeconomic characteristics of farmers, such as the ethnic group and the completion of primary and secondary education, improve the production of banana and plantain in Cameroon while the rising age of farmers has a negative effect on production.

Keywords: Efficiency, Plantain, Banana, Producer, Translog, Production Function

Paper # (04-02) – *Included in the conference proceedings*

Foreign Trade, FDI, and Their Impact on Growth in GCC Countries: Evidence from Qualitative and Quantitative Approaches.

Author: Ahmed Saddam Abdul Sahib

Abstract: This paper aims to measure the impact of foreign trade and FDI in GCC economies. We found that the role of FDI is positive in UAE and negative in Saudi Arabia, while it has no effect on the rest of the GCC countries. In addition, the study confirms the continued importance of oil exports, except for Bahrain. Furthermore, the non-oil coefficient did not affect economic growth, and the commodity imports have a positive impact except for the UAE.

Keywords: Economic growth, foreign trade, FDI, GCC countries.

Paper # (04-03) – *Not included in the conference proceedings*

The effect on Price, Liquidity, and Risk When Stocks are Added to and Deleted from a Sustainability Index: Evidence from Asia Pacific Context

Authors: Eduardo Roca & Adrian Cheung

Abstract: the paper examines the impact on returns, risk and liquidity of stocks in the Asia Pacific markets when included into and deleted from the Dow Jones Sustainability Worlds Index over the period 2002 – 2010. Using an event study methodology, we test five existing hypotheses and two new ones, called the "sustainability redundancy hypothesis." which we developed. Consistent with the "sustainability redundancy hypothesis", the paper found that both index addition and index deletion stocks experience a significant decline in returns, an increase in trading volume, no change in systematic risk and an increase in idiosyncratic risk. This indicates that sustainability matters to Asia Pacific investors, although in a somewhat negative manner.

Keywords: Corporate sustainability, Index additions and deletions, Asia pacific, Event study

Paper # (04-04) – *Included in the conference proceedings*

How Related are Politics and Trade? Impact of deterioration in Bilateral Political Ties upon Economic Relations between Turkey and Israel

Authors: Cenap Cakmak & Murat Ustaoglu

Abstract: This paper investigates the relationship between trade and politics, particularly the effect of improved or deteriorated political ties upon economic relations with particular reference to the bilateral trade and diplomatic relations between Turkey and Israel. The study finds that economic relations were bolstered at times of enhanced political relations whereas visible deterioration or decline was observed in the volume and state of trade relations when diplomatic relations worsened. The findings are consistent with the main arguments in the literature that politics determines trade. The paper concludes that at some critical points where the two countries have experienced difficulties and a state of crisis in their political relations, the volume of bilateral trade has also significantly declined.

Keywords: Political risk, Foreign trade volume, Israel, Turkey

Paper # (04-05) – *Included in the conference proceedings*

Intra-Regional Trade, Evidence from the Kingdom of Saudi Arabia (KSA): A Structural Equation Modeling (SEM) Approach

Authors: Souad Sherif & Kamel Fantazy

Abstract: The purpose of this paper is to examine the bilateral trade flows across three Gulf Cooperation Council countries—the Kingdom of Saudi Arabia (KSA), Bahrain (BAH), and Qatar (QAT)—over the last 30 years (1981-2010). The study focuses on the relationships between BAH and QAT, combined as one group, and KSA, which has a relatively larger economic mass and population. The empirical analysis consists of various economic factors, including gross domestic product (GDP), population growth (POP_GR), gross domestic product per capita (GDP/CA),

the distance between countries (DIST), and Kingdom of Saudi Arabia Export (KSA_EX). Data related to bilateral trade was collected from the International Monetary Fund (IMF). The proposed model was tested using the structural equation modeling technique. The results indicated that GDP, POP_GR, and GDP/CA have a positive relationship with the level of KSA_EX, while the DIST related negatively to the level of KSA_EX. This result showed an increase in trade cost as the distance between the two trading partners increased; countries that share a border have more trade with each other than countries that do not share a border.The study shows that all factors are crucial to the success of bilateral trade flow between both parties (BAH and QAT) and KSA because they provide the facts that decision makers need to make the appropriate decisions. Also discussed are the conclusions and the limitations of this study that could be addressed in future research.

Keywords: Bilateral trade; economic integration; structural equation modelling; GCC; regional integration

Paper # (04-06) – *Included in the conference proceedings*

Financial development and poverty: econometric assessment of the direct effect on a panel of lower and middle income countries

Authors: Jamel BOUKHATEM & Bochra MOKRANI

Abstract: This paper empirically examines the existence of a direct effect of financial development on poverty reduction in 67 low and middle income countries over the period 1986-2009. The results obtained suggest that the financial development contributes directly to the reduction of poverty, and this, independently of the econometric method used. On the other hand, instability related to the financial development would penalize the poor population and would annihilate the positive effects of financial development. Thus, is it necessary to find a trade-off between the financial development and its instability in order to ensure a pro-poor growth? Does Islamic finance constitute, in this direction, a panacea?

Keywords: Financial development, Poverty, Instrumental variables, Islamic finance

Paper # (04-07) – *Not included in the conference proceedings*

Economic Growth Rates of the GCC: Absolute or Relative Convergences? Panel Data Analysis

Authors: Ghada Gomaa A. Mohamed, Morrison Handley-Schachler, and Nisreen Al-Banawi

Abstract: This paper addresses both the absolute & the conditional convergence amongst the 6 GCC states; Saudi Arabia, UAE, Qatar, Bahrain, Kuwait, and Oman. The paper presents first a theoretical framework that illustrates the theoretical findings of the Solow-Swan growth model regarding both the absolute and the conditional convergences. Then the paper addresses intuitively all possibilities of convergence amongst the 6 GCC states and main economic differences amongst them. Then, the

paper utilizes various stochastic convergence techniques to test the convergence hypothesis after controlling for various variables and parameters.

Keywords: Economic Growth Rates, Beta Convergence, Stochastic convergence, Panel Data Analysis

Panel Discussion # (04-001): What is Transfer Pricing and why is it the most Important International Tax Issue of our Time?
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Panel Discussion # (04-002): Financial market - What is a market price?
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Before & after thank God for everything.

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Our regards;

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What would make consumers trust organic products? A qualitative study based on the distributors' perspective

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***Abstract*:** Despite growing demand for organic food products, trust is missing at various levels of the marketing value delivery system. Hence, Canada, among other countries, needs to address important issues related to the level of trust/mistrust in OF products. The purpose of this paper is to examine the dimensions and variations of trust among consumers as perceived by the distributors, and to determine the distribution channel strategies used to increase consumers' trust in OF products. The study is based on data collected through individual in depth interviews with a total of 60 respondents that are managers from superstores, specialty stores, farmers 'markets, and producers. Based on the distributors' perspectives, findings show that levels and dimensions of trust differ significantly depending on the distribution channel as consumers rely on different factors for building their trust in OF. This clearly affects strategies and tools used by distributors to enhance trust in OF and in the distribution channels.

***Key words*:** Organic food, consumer behavior, distribution, Organic food market.

1. INTRODUCTION

Nowadays, most environmental challenges that humanity is facing relate to unsustainable consumption patterns and lifestyles. Sustainability is seen in this context as a consumption pattern that meets the needs of present generations without compromising the needs of future generations (Bruntland, 1987). This is also related to basic needs such as food. The present food chain is mainly based on food scarcity, GMOs, use of pesticides and antibiotics, and industrialization of the agricultural system. Growing consumer demand for organic food (OF) is based on most of these facts (Davies et al., 1995; Chryssohoidis and Krystallis, 2005). Organic production combines best environmental practices, preservation of natural resources, animal welfare standards while ensuring no use of genetic engineering, pesticides, additives,

or fertilizers; each stage of the organic food production being controlled and certified. Although OF is generally considered to present less risk than conventional foods, consumers still look for risk reduction indicators in their food products. Extensive research has been conducted on the role of trust in consumers' perceived food risks. This debate has been re-launched as a direct consequence of rising concerns related to risks associated with intensive agricultural production, food industrialization, and the effects of food technologies and food scares (Davies et al., 1995; Chryssohoidis and Krystallis, 2005). However, the increasing number of organic brands, certification labels, and stores offering organic products, among other factors, does not seem to have increased consumers' trust in OF. Instead, consumer seems to have incurred an increasing level of mistrust in OF.

Several countries are addressing this issue from the demand side. Building trust in the OF supply requires more than just ensuring product quality and product knowledge, or labeling and setting proper pricing and communication strategies. Actually trust is missing at various levels of the marketing value delivery system and the food supply chain. The dimensions of trust necessary to achieve market growth have to be integrated to the OF product positioning and the distribution strategies. This will help to effectively build trust and avoid an increase of mistrust in organic food products. Hence, trust dimensions should also be examined from the supply side. For instance, trust orientations should be studied in the context of market actors such as distribution channels or certifying bodies. There are differences across markets in how the food system is organized, leading to differences in consumer choices and strategies for seeking information and in consumer trust in various sources of information when it comes to organic food (OF) products consumption. Distributors, among other market actors are contributing, at different levels and with different strategies to consumers' level of knowledge of, preferences for, as well as trust/mistrust in OF products. It is therefore important to understand their involvement and relative importance as well their strategies. This will help to understand how consumers perceive them when evaluating food quality, safety, and trustability.

Therefore, based on the distributors' perspective, this research aims to uncover trust variations among consumers with regards to the organic food supply chain and factors they rely on to build their trust in OF. A second objective is to identify the different

distribution strategies and arrangements to increase trust in OF products. Such information is important for all the market bodies that are involved in the supply food system in their effort to rebuild consumer confidence and satisfy consumer demand. The proposed study uses data from the Canadian OF industry as it is facing important decisions regarding product distribution, labelling and standardisation. These decisions can affect the future of the OF industry and long-term perceptions and behaviour of consumers.

The paper is organized as follows: first, a literature review on the organic market, OF channels of distribution and trust dimensions is presented. Second, the methodology is introduced, and finally, results, conclusions and managerial implications are discussed.

2. LITERATURE REVIEW

2.1. The Organic Market and the Organic Consumer

Agri-food markets have changed dramatically in recent decades. A number of food scares and crisis have stimulated changes in demand for higher levels of safety and quality in food. This led to an increasing organic agriculture that is now going mainstream. The organic market is the fastest growing sector in the food industry and double-digit market growth rates are leading to undersupply in various regions (Organic Monitor, 2007). The main problem for producers and growers is not with respect to demand for the product but being able to supply that demand. Most of the demand is coming from Europe and North America. Hence, large volumes of organic imports, coming in from other regions, are used to balance the undersupply, as these two regions are not self-sufficient. In Europe, sales of organic products approximated EU 18’400 million in 2009 (Willer and Kilcher, 2011). The largest market for organic products in 2009 was Germany (5.8 billion euros) followed by France (3 billion euros) and the UK (2 billion euros). US sales of organic products grew in 2009 by 5.3%, to reach 26.6 billion US dollars, representing 3.7% of the food market. On the Canadian front, the report of Agri-Food Canada in 2010 concludes that the total Canadian organic market approximates CA $2 billion annually (Willer and Kilcher, 2011). These figures are based on the 2008 sales of organic foods. Further to this, sales growth rates by Canadian provinces are distributed as follow: Alberta (44%),

British Columbia (34%), the Maritimes (34%), Ontario (24%), and Quebec (21%) (Macey, 2007).

This increase in sales volume is generated by organic consumers whose interest in OF is driven by different values. Some organic consumers are environmentally conscious, but most studies confirm the predominance of egocentric values like health, attitude towards taste, and freshness that influence OF choice more than the attitudes towards environment and animal welfare (Millock et al., 2002; Fotopoulos and Kryskallis, 2002a; Zanoli and Naspetti, 2002). In Canada, consumers identify health, the environment, and support of local farmers as principal values explaining their OF consumption (Hamzaoui and Zahaf, 2008). These motivations and values are leading OF consumers to accept a more or less large price difference between organic and conventional food products.

2.2. Channels of Distribution

The organic food industry has steadily moved from niche markets, e.g., small specialty stores, to mainstream markets, e.g., large supermarket chains (Jones et al., 2001; Tutunjian, 2008). Ten years ago the bulk of OF sales were made in specialty stores (95%) while the remaining 5% were realized in mainstream stores. Nowadays, the trend has been reversed (Organic Monitor, 2006). In some countries, distributors are promoting their own line of OF products under specific brand names (Rostoks, 2002; Tutunjian, 2004). Alternative distribution channels are being used and are characterized by a direct link between the producer and the consumer, eg. farmers'markets (Smithers et al., 2008). According to Macey (2008), in 2006 the total retail sales of Canadian OF products through all market channels was CA $1 billion. OF retails sales represent 1% of total retail food sales ($412 million) and expanded by 28% from 2005 to 2006. In 2009, the total annual retail sales of certified organic products were approximately $2 billion, with about 45% moving through mainstream supermarkets (AAFC, 2008). Fresh vegetables accounted for 25% of all supermarket organic food sales.

In Canada and according to Macey (2007), total mass market sales of certified OF products approximated CA $586 million allocated as follow: CA $175 million through small grocery stores, drug stores, and specialty stores, and CA $411 million

in large grocery chains. These figures do not account for the alternative distribution channels such as farmers' markets, natural food stores, box delivery, and other channels such as restaurants. These channels totalize CA $415 million (Macey, 2007). This distribution of sales volumes seems to be related to the structure of the distribution systems in place and to the following two main trends of consumption: (i) regular OF consumers using standard distribution channels (supermarkets) and (ii) hardcore consumers adopting alternative channels (box delivery, farmers' market, specialty stores, and small grocery stores). According to Smithers et al. (2008) direct channels such as the farmer's market is targeted toward consumers that look to interact – socially - with the producers, ask them question about their production methods, food origin and variety, and cooking tips. On the other hand, conventional distribution channels, characterized by a longer channel where consumers do not see and interact with the producer and where the information about food is limited, is targeted toward consumers that look for a one-stop grocery shopping experience (Hamzaoui and Zahaf, 2009). Distinct trends are thus observed in the organic food distribution. Each trend has its own development strategies but caters to consumers having different OF consumption motives. It is very likely that these consumers base their choices on different sources of information and have different trust dimensions.

2.3. Certification and Labeling

Certification standards for organic production are considered as an important source of information about organic food quality and safety from the consumer's perspective. Organic labels (product label and certification label) can thus play a very important role in mediating all communication from producers to consumers. Organic labels are perceived as symbols of regulation, and therefore an important source of trust (Torjusen et al., 2004). Public regulation and organic certification is traditionally a source of trust (Sassatelli and Scott, 2000), whereas a large number of private labels will not imply the same level of trust: labelling can be misleading. In Canada, the main organic labels available on the market vary by province. Consequently, consumers' awareness varies substantially, leading to scepticism about the authenticity of OF products. Switching to alternatives like adopting a single certification label at the national level (eg. in France) or regional level (e.g. in Europe) does not necessarily imply a better basis for certification label recognition and development of trust in these labels.

Many consumers are either unfamiliar with or confused by labeling due to lack of knowledge and low ability to perform simple inference making, leading to failure in decoding the information. Consumers also do not know to what degree they can trust certification labels. Moreover, there seems to be a need for consumers to be able to trust both the product and any organism certifying this product. With consumers wanting more in-depth information about the food and the food system than a label normally allows, trust/mistrust in organic labels emerges as an important issue (Torjusen et al., 2004).

2.4. Trust Dimensions

To facilitate decision making in complex food markets, trust is an essential element. In general terms, when related to food, trust is seen as "*an expression of the alternative to have to make an individual decision, and just assume that food is safe*" (Green *et al*., 2005; p.525). More specifically, there are particular information sources and organizations that are trusted to either provide safe food or to provide trustworthy information about food. Considering the risks associated with product consumption, consumers will search for and adopt several risk reduction strategies (Mitchell and McGolrick, 1996; Brunel, 2003) such as brand image (Gurviez, 1999; Gurviez and Korchia, 2002), store image, or label references. These are all means to built trust in the product. Studying OF consumption, Sirieix et al. (2004) highlight two sets of trust orientations defined as indicators consumers rely on in order to "trust": (i) trust oriented toward several quality indicators, and (ii) trust oriented toward individuals. Therefore, trust can be oriented toward the brand, the certification label, but also toward partners like producers. Studying trust orientations is hence important to clarify the market position of organic products, sales channels and certification authorities. In fact, increasing OF consumption seems to be directly linked to consumers' trust orientations and values. Hamzaoui and Zahaf (2008, 2009) highlighted in their study Canadian consumers' concern about quality indicators of OF such as trust in the certification label, trust in the product's country origin, but also trust in the type of channels of distribution used.

METHODOLOGY

2.5. Objectives

In order to target more efficiently consumers we need to investigate the role of the value delivery network in creating value added to the OF supply. This will lead to an in-depth understanding of the organic food industry, the major forces shaping it, and the current market structure, as well as an understanding of the challenges faced by the main players of the organic food industry. Moreover, it will provide a detailed assessment of the actual situation in the OF distribution system, i.e., superstores, specialty stores, and farmers' markets. Hence, our objectives are:

i. To assess the importance of the channels of distribution, labeling, and certification process in the organic food market.
ii. To determine OF consumers' purchasing behaviour in terms of how OF consumers buy, where they buy, their trust orientations, and the trusted channels of distribution.

2.6. Design

For the aim of this study, individual in-depth interviews were conducted with store managers of superstores, specialty stores, farmers' markets and producers in four Canadian cities: Thunder Bay, Toronto, Ottawa, and Montreal (thus including French and English speaking provinces). We also added in-depth interviews with certification organizations as they intervene in value creation process by providing the recognition of organic agriculture through organic labels. Interviews were based on an interview guide and lasted about 45 minutes to 1 hour, and were conducted during winter 2011. The guide probes various channels members, distributors, and producers of OF to discuss their perceptions of the current OF market, the actual structure of their distribution channel, consumers concerns and trust issues, and trust issues related to their distribution strategies.

The interview guide was designed to determine and understand current and new trends in the organic food industry, the distributors' perceptions of consumers' concerns and level trust in organic food, and finally, how consumers' concerns are addressed. It also helped to determine how distributors/suppliers manage similarities and differences between what consumers want and what they offer them. The interview guide is composed of three main sections. The first section deals with the structure of the channel of distribution while the second and third sections deal with how suppliers perceive consumers' demand and concerns.

Distributors were profiled as follow: (i) by channel size and type, (ii) by organic food products variety, and (iii) by channel position (retailer, wholesaler, etc.). A total of 60 interviews were conducted, of which 5 with certification organizations. The interviews were recorded (digital voice recorder), transcribed, coded, and analyzed by the researchers using content analysis (cf. Kassarjian, 1977). This technique allows the researcher to include large amounts of textual information, methodically identifies its properties by detecting the more important structures of its content, and determines the frequencies of most used keywords. Lastly, two separate judges coded the data.

3. RESULTS

Various players from the OF distribution channels have been interviewed in order to get a representative image of the organic food distribution system.

THEMES	SUB-THEMES
Current OF market	Unstable supply/availability Pricing Supply Driven by demand Consumer's education Better quality
Distributor's channels	Depends on the direct last channel members Differentiation Get most information about the market from the delivery companies Channel size differences
Consumers' trust dimensions	Trust labels/do not trust the labels Clear differences Brand name Store managers Certification labels
Increasing trust	Pricing accuracy Knowledge of clerks / advices Educating consumers Quality Communication Knowing the producer

Table 1: List of Generated Themes

This helps to uncover the major consumers' trust issues and how distributors develop marketing strategies to handle these issues. Results of the interviews analysis are based on the main themes that were generated from the data analysis: OF market and

distribution channels, organic consumers' trust dimensions, and strategies developed by channel of distribution (cf. Table 1).

Based on the supply side interviews, the findings show that growth perspectives are directly linked to the challenges expressed by the respondents: increasing consumers' trust in OF and in their distribution systems, and adapting their offer to new trends in OF demand.

3.1. OF Market and Distribution Channels

The distributors interviewed for this study generally agreed that the market for organic products is growing and shows substantial opportunities. More specifically they mentioned an increasing diversification of products and distribution channels. The increasing number of distribution channels seems to be mainly based on an increasing number of supermarkets and food store chains offering OF products and widening their offer of organic food at more competitive prices. Indeed, for supermarkets and retail chain managers, the diversification of the offer is the main driver of the market growth. Most conventional channels are increasing their organic sales using traditional marketing strategies for organic food, including some organic versions of conventional brands. This is done to satisfy the needs of a wider number of OF segments.

From the producers and farmers perspective, being able to expand supply is a big issue that translates into poor supply reliability and poor availability at the demand level. With the growth in popularity of organic food products, more wholesalers have entered the organic food supply chain. They have been encouraged by chain stores that want to work through them because demand is up and they need larger quantities at regular delivery times. Consequently, imports from regions (eg. California) with large organic farming activities still prevails.

From the organic food specialty stores' perspective (independent stores as well as small chain stores), the organic market shows differences with supermarkets in terms of variety, price and quality. In other words, supermarkets are able to provide consumers with a larger variety, lower prices and convenience whereas specialty stores differentiate themselves with the quality and the origin of their products. As for

producers, the main difference between suppliers is determined in terms of short direct / long channel of distribution, with producers offering traceability and quality. This is also related to the value offered in these channels: price versus quality. Moreover, the different distributors have consistent perceptions of the industry, the distribution system, and the distribution structure.

All channel members from various channels agree to say that consumers are becoming more educated and make smarter food choices. However, there are clear differences in their purchasing behavior. Shorter channels managers stated that consumers buying at their point of sale have specific needs and motivations to buy organic foods like health but also support of local farmers for example. Conversely consumers buying from longer channels are looking for a different shopping and consumption experiences. This is directly related to the OF adoption process. Consumers trusting the labels and certifications are either in the interest-evaluation-trial phase while consumers trusting stores are in the adoption phase. In fact, there are different orientations and levels of trust according to the channel members: trust related to the labeling and certification, trust related to the channel of distribution, and trust of the producer.

3.2. Trust dimensions by distribution channel

Based on the interviews, results are presented by type of distribution channel: superstores/retail chains, small grocery stores, specialty stores, and producers/farmers markets (Table 2). This table presents the trust dimensions consumers rely more or less on in building their trust in OF, from the point of view of the distributors.

Depending on the type of distribution channel considered, findings clearly highlight differences in factors/dimensions consumers rely on. Retailers and superstore managers mention that it is obvious and clear that – unanimously – the product label is important. Consumers feel very comfortable knowing what to buy and finding all information they look for. However, the brand name is not important. Managers also stated that there are different types of consumers based on their level of trust in the labels. Consumers are looking for a value based on certification and labeling.

According to	Trust more	Trust less
Superstores/Retail chains	Labels	Brands
Small Grocery Stores	Labels Stores and store manager	Brands
Specialty stores	Labels Certification labels	Brands
Organic producers	Certification labels Production methods	-
Certifiers	Certification labels	-

Table 2: Trust Levels by Distributors

For small grocery store managers, consumers seem to trust labels but not brands as well. This is probably more related to their loyalty to the store: they trust the store hence they trust the manager. Managers are more approachable as the clientele base is smaller than in bigger stores and hence, the trust relationship is very important to stay afloat and in business. Hence, this is a guarantee for quality and counterbalances the lack of brand effect. Here, the value is mainly based on the relationship with the manager and also on the label.

As for specialty stores, consumers trust labels (product label and certification label), and more importantly they trust the certification labels. Consumers are more knowledgeable and are able to recognize but also evaluate the different certification labels. Specialty store managers do not classify consumers with regards to their trust and hence do not see any difference in their market composition. It is important to note that even if brands are crucial to differentiate the store offering, brands are not used to increase trust in this market. The value offered in this channel is based on the width and depth of the product lines. Hence, labeling is important as a source of information.

When it comes to organic producers and farmers' markets, interestingly enough all of them acknowledged that consumer trust the labels relating to certification. This is important, especially knowing that not all producers are certified. They say that consumers ask to see a certification label but when they discuss the production methods with them, when they show them around, they kind of built a trust

relationship that acts as a certification seal. Hence, the value is based on the production methods.

As expected certification representatives see a clear difference in the OF market when it comes to trust. For them, there are different clusters of OF consumers based on their trust. This trust is mainly based on labeling (information, product description, and certification). The more detailed the information is, the more consumers will trust the certification/label.

To recapitulate, there is a clear distinction between the factors consumers rely on to build their trust in OF products offered in the different types of distribution channels. Brands definitely do not add to the level of trust in OF whatever the type of distribution channel whereas the product label as well as the certification label plays a significant role. Furthermore, the store manager as well as the production methods contributes in building trust with more or less impact for consumers from smaller size stores and direct channels (producers).

3.3. Distribution Strategies to Increase Trust

The third part of the interview guide aimed at uncovering the distributors' strategies considered in order to increase trust in organic products. Results are presented by type of distribution channel: superstores/retail chains, small grocery stores, specialty stores, and producers/farmers markets (Table 3).

It is clear from Table 3 that distributors use different strategies to increase consumers' trust in organic food. Retailers and superstore managers suggest that price plays a very important role in increasing consumers' trust. There is a lot of competition in the market and one way to differentiate a brand's offering is by giving the best price to the consumers, a price that reflects the true value of what organic is.

Small grocery stores managers believe that trust should be increased if competition is to increase. The main factor that will help achieve this objective is consumers' education. Some said that knowing the producer would help too as some consumers are concerned to a certain extent about the origin of the product. However, quality is not a key determinant in increasing trust as it is represented by the trust relationship

between the store manager and the consumers. Pricing accuracy has also been listed as potential factor affecting consumers' trust. It is interesting to notice that even if the knowledge of the clerks is not crucial in increasing consumers trust, knowing who the producer is or knowing where the food has been produced plays a key role in building consumers trust. This ties in well with the fact that consumers' education about organics and organic brands is a prerequisite for them to increase their trust. Lastly, as expected, quality is key here.

According to	**To Increase trust**
Superstores/Retail chains	Price Accuracy Knowing the producer Consumers' education Quality
Small Grocery Stores	Consumer education Knowing the producer Price accuracy
Specialty stores	Consumers' education Quality
Organic producers Farmers' markets	Consumers' education Knowing the producer
Certifiers	Information on the labels Consumers' education Knowing the producer Production methods Certification process

Table 3: Strategies to Increase Trust by Distributor

For specialty stores, education is considered as crucial to keep current consumers and attract new ones. Moreover, quality and knowing the product origin are not important. This is related – again – to the structure of the trust relationship. It is because of the store and more importantly the type of store (specialty store) that expectations are different. Consumers expect that the quality is there and that the products are certified. Knowledge of the clerk is not assumed to increase trust as it is based on a strong belief that the store is offering good quality products.

As for organic producers, education is the key factor to increase trust, and of course the most important factor is "knowing the producer". We have to keep in mind that most of these producers sell at farms gate and the farmers market, and are suppliers of some grocery store or specialty stores. As stated previously, they focus their activity on building long-term relationship with their clientele to increase their market base.

Also, it is important to note that there were two main types of producers, those who produce organic because of health and environmental reasons, and those who do it because of market reasons (profit driven). Hence, the perception of trust may differ depending the size of the farm operations.

Last, certification organizations clearly see consumers' education as the main component of future change in trust in OF products: information about the production methods, about the labels and about the certification process itself. They also do recognize that there is a need for more communication and cooperation with the other organic association in order to better promote the OF products.

4. DISCUSSION AND MANAGERIAL IMPLICATIONS

4.1. Organic Food Market and Distribution Channels

The market for organic products is generally seen as growing and having further growth opportunities. All players from the supply side mention an increasing product diversification and distribution channels. Whereas the types of distributors are mainly farmers, specialty stores, and superstores, the increasing number of distribution channels is essentially based on more supermarkets and food store chains. These channels are widening their offer and look for more competitive prices. The most significant growth seems to be occurring in pre-packaged organic products: 18% from 2007 to 2006 versus 12% for raw foods (Stiefelmeyer, Schmidt and Mussell, 2009). But unlike the US, Canada has not seen the development of large specialized organic food chains, which is in accordance with Hall and Mogyorody (2001).

Suppliers also provided their perception on several organic consumers' characteristic that is in direct relation with the type of distribution channel used. For most suppliers, consumers are in general knowledgeable and are looking for authentic and healthy products, quality, and taste. Their level of knowledge as well as their motivation to consume organic products seems to differ depending on the point of sale they mostly use. In other words, consumers buying from producers/farmers are clearly looking for proximity with the producer, fresh products and quality, and a better understanding of the organic farming process and show a clear interest for its impact on health and the environment. Conversely, consumers using standard channels of distribution are looking for convenience, healthy products and taste. These consumers do not have a

high knowledge of what organic is and seem to get confused between organic and natural products. Organic specialty stores describe their consumers as more knowledgeable and looking for health, quality and taste.

4.2. Trust Dimensions and Distributors' Strategies to Enhance Trust

Overall, distribution channels link consumers' trust in OF to different factors: organic labels, product labels, brands, traceability, advice, and/or store reputation. Because of the differences in these trust dimensions and based on consumers' specific interests and knowledge, providing standard information for all OF consumers may not be the best communication strategy. The following model is based on all the results of this study and summarizes the major findings.

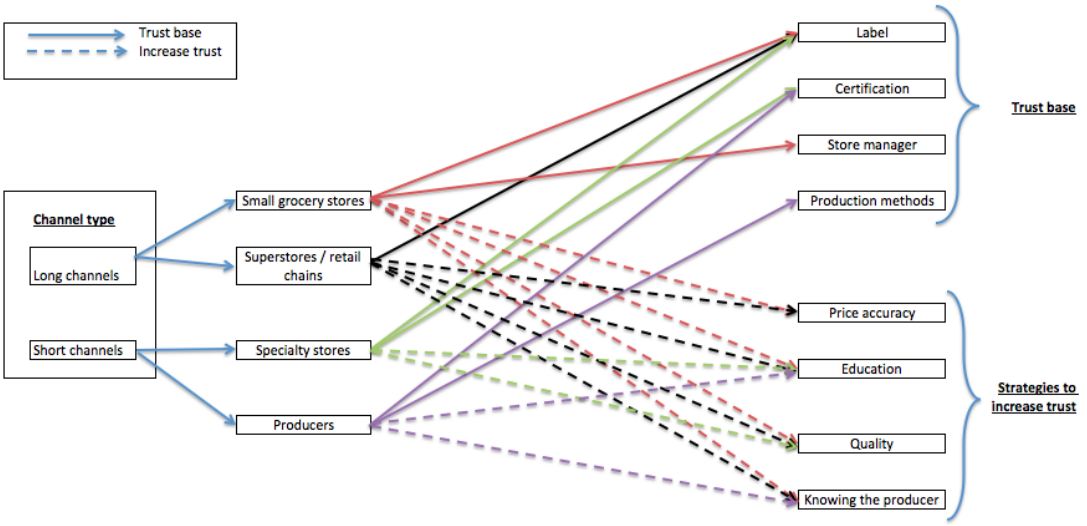

Figure 1: Summary Model

Trust is of extreme importance in the organic food networks as its added value is mainly based on the production methods. Certification and labeling systems serve as tools to enhance distribution and market development, create trust, and foster confidence. It is a commitment from producers/farmers to work with certain standards of production. According to Willer and Kilcher (2011), there are 80 countries using national standard of certification. In 2009, the Canadian government implemented the Organic Products Regulation to regulate organic certification. Therefore, organic labels can be seen as an important source of trust. Several organic labels are now present on the Canadian market. This somehow induces some confusion, as some consumers do not know which one(s) to trust. Therefore, the organic labels that

should play a central role do not seem to have achieved that position in the OF consumers' decision-making process yet.

For consumers' mainly purchasing their OF products in supermarkets, organic labels is mainly what they trust, not brands. This is clearly different from results presented by Sirieix et al. (2009) showing that French OF consumers buying in supermarkets mainly rely on organic labels as well as brands. Consumers purchasing in specialty store trust the store itself, the sales persons' advices, the products' traceability (transparency of the supply chain) and organic labels they know. Hence, communication on the products' quality and traceability, advices and information provided by store managers and sales persons (and store reputation) could increase consumers' trust in OF. For consumers purchasing from producers and farmers markets, traceability is the main element of trust, which is addressed through the trustful relationship established between the producer and the consumer. Last, brands do not appear as a major trust factor for Canadian consumers.

5. CONCLUSION

Consumers' interest in organic food has exhibited continued growth for the past two decades, which has attracted entrepreneurs and corporations seeing a big potential for this industry, and has also led to the creation of standards and regulations to guide the OF industry. Consumers are becoming more sophisticated in their purchasing decisions of OF, and companies are focusing on supply chain management in order to ensure high quality, traceability, and supply continuity. But the OF industry also faces some other challenges: (i) maintaining and increasing consumers' trust in the OF products and the OF industry in general, and (ii) facing new and fierce competition from market intermediaries and other types of "sustainable" products (e.g. fair trade products and local products). The OF industry and all its stakeholders will have to elaborate strategic responses to these opportunities and challenges.

The results also provide an insight into the structure of the organic food industry and the determinants of consumers' trust. In fact, there are different levels of trust according to the channel members: trust related to the labeling and certification, trust related to the channel of distribution, and trust of the producer.

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A Conceptual Framework Linking Entrepreneurs to International New Venture Competitiveness

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***Abstract*:** A long-standing view in the literature has been that international new ventures (INV) are affected by liabilities such as smallness, newness and foreignness. The need for born globals has been to identify a modality through which they can mitigate these costs. In focusing on finding a model that would define, identify and explain the factors affecting the link between entrepreneurs, networks, international new ventures and internationalization related liabilities we have decided that at the center of a dialogue we need to consider the individual as the cornerstone of such a link. One model that stands out - advanced by Phelan, Dalgic and Sethi (2006) – allows for just such an origination point for a dialogue as it is based upon an entrepreneur's traits of social astuteness and competence that are expected to offer relief from the above referenced detriments. In this paper, we argue that Phelan et al model, while important as a contribution, is not sufficient in mitigating the globalization related liabilities. Through the medium of extant research and studies the model is analyzed as part of three fragments. First, the model is compared with findings from internationalization -reflecting economic condition as key-, embeddedness - the only one found to reflect some of the model's conceptual framework- and tacit theories - reflecting entrepreneurial uniqueness in recognizing and pursuing opportunities key as for securing INVs competitive advantage. Second, external factors such as behavior, legal environment and goal commitment are applied to INV competitiveness. The third segment points out to geographic differences, as further considerations that refute some of model's claim, suggesting that INVs come to existence due to small domestic markets and strong immigrant communities, and place into the foreground the concepts of national attitudes and entrepreneurial maturity. The concluding fragment presents a modified theoretical framework for addressing the factors affecting INV success and competitiveness. The discussion part points out both the need to continuing the dialogue regarding INVs, networks and entrepreneurs in general and the lack of comprehensive nature of the concluding considerations. We conclude that the implications for managers are two pronged: one related to increased awareness and understanding of the external factors affecting international market entry and second related to acquiring the ability to model INV according to general framework capable to mitigate cost related consideration. The recommendations for further research point to the need for both further identification of relevant external factors and statistical testing of the overall findings and propositions. The article's strength lies in its pursuit of a conceptual framework and dialogue and the limitation is in that it does not substantiate the findings with relevant measurements.

***Key words*:** International New Ventures; Internationalization, Entrepreneurs

Introduction

The paper seeks to provide and create a theoretical framework for understanding entrepreneurs, entrepreneurial activities and international new ventures (INVs). Defining and designing a conceptual model that would be able to address the factors influencing a manager and entrepreneur entry into international market have not been studied and identified in a detailed matter. The extant research has largely focused on either measurements of the effect of internationalization related liabilities – smallness, foreignness and newness -, observations of particular industry related case studies and onto defining new theoretical frontiers for the field of internationalization as it relates to entrepreneurial activities in the pursuit of international new ventures creation. We argue here that these efforts, for the purposes of defining a conceptual model relating to INV creation, should to be subordinated to the human factor considerations – the entrepreneur as the origination point for the discussion. At the center of such a conceptual framework we searched for a model that had as a center point the entrepreneur in the context of international new venture creation. The closest match was provided by the conceptual model advanced by Phelan, Dalgic and Sethi (2006) as the authors enunciated just such related subject matter. The authors point to an entrepreneur's personal traits of astuteness and competence as the key variables for explaining INV and entrepreneurial networks.

The paper acknowledges the contribution made by the conceptual framework defined by Phelan et al (2006) and it focuses on substantiating, accepting, questioning or refuting - on the basis of field studies or of extant theoretical knowledge in the field of entrepreneurship- of the supported findings. The paper sustains that entrepreneurs, entrepreneurship, entrepreneurial activities, as they apply to the success of international new ventures are not necessarily a function of social competence and astuteness (Phelan et al, 2006) per se, but are rather affected by a multitude of factors, each possibly representing a different facet of the complex process of globalization.

The paper is organized into several subsections, each addressing a different facet of the argument directed at the Phelan's model. First, the social attributes supported by the model are placed in the context of internationalization, embeddedness and tacit theories. Second, external considerations/factors such as behavior, legal environment, subsidies and goal commitment are highlighted as contributing components to a INVs existence and competitive advantage vis-à-vis the

costs of internationalization. The third section looks at refuting the claim that INVs exist primarily due to small domestic markets or strong immigrant communities and points out certain geographical particularities with regards to undertaking entrepreneurial activities in China, USA and France.

The concluding segment presents the findings alongside a new schematic conceptual framework; framework considered better supported by extant research and section by section issued statements.

Phelan vs. "Embeddedness" (term defined by Granovetter, 1985; Frazier and Huddleston, 2009)**, Internationalization and Tacit Theories**

The fragment takes a look at the model advanced by Phelan et al (2006) in comparison to the social network paradigm proposed by Fraser and Huddleston (2009) , internationalization theory (Beamish, Morisson, Inkpen and Rosenzweig, 2003) and the role of tacit and codification opportunity elements supported by Matthews, Schenkel and Smith (2009). The rationale is to accept, enrich and/or question the model's point of view by applying the new findings and verifying or issuing a corresponding proposition.

Social competence and astuteness

Phelan et al (2006) supports the idea that the entrepreneur is the key for the success of international new ventures (INV). The entrepreneur is the driving force and by becoming "socially astute" and "social competent" will develop the necessary entrepreneurial networks capable of assuring success for new INVs. While the conclusions are presented in systematic and logical manner the fact that they are not supported by actual studies and given other contrarian points of view originating from the extant research allows for the findings to be subjected to review, discussion and argument.

First and to assure an appropriate background qualification, the terminologies of social astuteness and competence need to be presented and defined so as to allow for adequate comparison and analysis.

Social astuteness is defined as "the ability to influence the expectations of potential and existing stakeholders so they will commit resources to a business

network on favorable terms (Phelan et al, 2006).” A socially astute person is an “effective negotiator”, aware of other’s motives, and diplomatic in presenting issues to others (Phelan, 2006). The authors go further with their model and quote research by Phelan & Alder (2005) which has shown that socially astute people perform significantly better on resource picking tasks and social astuteness as a concept points to a high degree of correlation with other traditional entrepreneurial variables: risk taking, openness to experience, and propensity for innovation (Phelan et al, 2006; Phelan and Adler, 2005).

Phelan et al (2006) define *social competence* as an entrepreneur’s “ability to form and maintain relationships” by building a core of skills and capabilities that include “impression management, social perceptiveness, social adaptability, and persuasiveness (Fligstein, 1997; Baron and Markman, 2000; Baron and Markman, 2003; Phelan et al, 2006)”. While social astuteness can be considered an aspect of social competence, “not all socially competent people have developed the ability to manage expectations (Phelan et al, 2006).”

While Phelan et al (2006) findings point out that the area that would define the mechanism that underwrites the development of a network, as prescribed by the social competence ability, has been largely understudied, they nevertheless propose that a directly proportional relationship exists between the possession of social competence and the strength of social networks and social capital. The authors further their theoretical concepts and claims by further elongating them into defining *international social competence* as “the ability to form and maintain relationships across national borders (Phelan et al, 2006).” The success of INV is subordinated to an individual’s competence and skill vis-à-vis cross-cultural components such as language skill and cultural empathy (Karra and Phillips, 2004; Phelan et al, 2006).

Internationalization

Looking at internationalization as a process; process of intrinsic importance to INVs; the fragment will highlight the “born global” presentation of INVs’ success from a different angle- that of a three stage sigmoid- one well published and researched for several decades now. Sigmoid which seems to have limited, or no relation with the language skills and cultural empathy elements, supported by

Phelan's international competence definition, and a lot more to do with pure economic realities.

Internationalization is defined as the "process by which firms increase their awareness of the influence of international activities on their future, and establish and conduct transactions with other firms from other countries (Beamish et al, 2003)". Although, most related literature seems to either reconcile or promote internationalization as the appropriate direction for warranting a SME/MNE's superior performance attainment (Contractor, 2007; Riahi-Belkaoui, 1998; Sullivan, 1994; Tallman and Li, 1996), there are voices doubting the linear and equating relationship between a business entity's degree of globalization and its level of performance (Hennart, 1982, 2007; Johanson and Vahlne, 1990). Other voices are merely questioning the process (Glaum and Osterle, 2007; Lopez, Duarte and Garcia-Canal, 2007) as the absolute promise for increased performance levels; process which is generally seen as not existing devoid but rather as a result of interactions between entrepreneurial decisions, business environment, operational efficiencies and organizational learning/adaptability capabilities – a common trait for entrepreneurial companies.

A multi-stage and s-curve hypothesis is advanced as the model for the multinational degree of international expansion (DOI) and performance relationship (P) (Beamish and Lu, 2004). There are three distinct stages of internationalization in the life of a firm, best exemplified by the General Sigmoid (Johanson and Vahlne, 1977; Lu and Beamish 2004; Thomas and Eden, 2004) model -Figure 1-: stage I – early internationalization, stage II – later internationalization and stage III – excessive internationalization. At the first stage a global endeavor is expected to incur costs as it sets up "shop" in a foreign place (Thomas and Eden, 2004), yet these costs are expected to be recovered during the second stage as the firm's performance reaches superior or often forecasted results. The third stage has been the matter of debate as globals eventually reach a point where increasing the degree of internationalization becomes a counterproductive activity (Beamish et al, 2003) as the firm gradually reaches a level of operational resource saturation (Cotae, 2009), so to speak. The saturation point is where the core operational capabilities of a firm are no longer adequate for servicing the needs stemming from operating a large number of global vendors, subsidiaries, retail channels, customers and associates (Cotae, 2010).

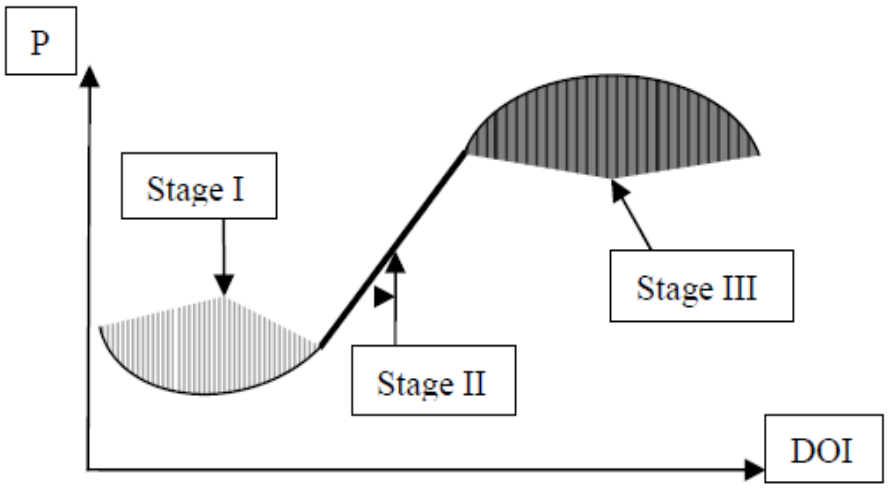

Figure 2 - Internationalization Sigmoid (Beamish et al, 2003)

Furthermore, during the third stage the cost or maintaining a global operation and/or growing internationally renders the internationalization strategy as inefficient and usually requires efforts outside a firm's realm of operational logistics/realities (Cotae, 2010). Results, productivity and profits are expected to decline. Simply put the firm finds itself overleveraged and overextended. Current research has not yet produced a model or factor by virtue which this stage on internationalization can be predicted or its effects ameliorated, postponed or diminished. It is therefore suggested as necessary for a SME to continuously attempt to assess and forecast its operational environment, degree of operational knowledge and core abilities before pursuing higher degree of globalization (Cotae, 2009).

The first argument is raised by internationalization as a process that cannot be exclusively mitigated by an entrepreneur or leader's social skills. No practical research has pointed out any ameliorating circumstances arisen from social astuteness or social competence as applied to the effect of excessive internationalization. No entrepreneur, regardless or social skills, is seen as having the competence or negotiating techniques to counter the negative predicaments described above. Therefore, it is primarily the *economic limitations* of INVs – i.e. limited resources, increased costs, operational saturation - that affect their performance and are influenced to a lesser degree by an individual's social skills. As such the following proposition is advanced:

> P1. The performance of an international new venture is affected by the stage of internationalization in which the endeavor operates as defined by economic limitations.

Embeddedness

Frazier and Huddleston (2009) study of 119 US retailers support the idea that for a SME to be successful an entrepreneur needs to be attentive to local networking and have market research skills. All other competences, such as market competence, the byproduct of networking, is seen as primordial only when related to performance but "not in creating and sustaining competitive advantage capabilities (Fraizier and Huddleston, 2009)" as it occupies a subordinate place to social capital accumulated through localized network relationships. Relationships seen as, if employed as part of a consistent operational strategy, to lead a high degree of "marketing scanning abilities (Frazier and Huddleston, 2009)."

Market scanning and market knowledge are estimated as critical in aligning a SME's strategy (Frazier and Huddleston, 2009) with its customers' needs and wants (Darroch and McNaughton, 2004). Tapping into local information networks may be one way that small firms can capitalize on their embeddedness in the market, giving them the ability to assess and respond to market demand more quickly and effectively than large-scale stores/companies (Clow and Cole, 2004).

Frazier and Huddleston's study draws on the *embeddedness* argument (Granovetter, 1985; Frazier and Huddleston, 2009), which maintains that market exchange are affected by the "values and norms of the social networks" in which it takes place. Embeddedness suggests that individuals are motivated beyond simple economic goals to pursue the improvement of business relationships and the concept of market embeddedness is advanced. *Market embeddedness* is seen to reflect the extent to which "individuals are socially connected to the marketing environment in which they operate (Cooke, Clifton and Oleaga, 2005)" business endeavors. Market embeddedness is therefore found useful in explaining: "differences in access to local market information (Frazier and Huddleston, 2009)" as managers of small firms "create and execute competitive strategies (Lee and Trim, 2006)", and as a perspective in examining the customer-retailer exchange process in smaller communities/markets (Miller and Kean, 1997; Subramanian, 1993).

Embedded relationships are therefore characterized by high levels of trust, amity and support, and are seen to produce benefits (Frazier and Huddleston, 2009) by "providing access to more valuable information than can be attained by arms length relationships (Burt, 2004)". Embedded relationships are seen to be created

through repeated social interactions and are generated anywhere there are "individuals interacting in dense, lateral networks involving voluntary engagement, trust, and mutual benefit (Frazier and Huddleston, 2009)"; Uzzi (1996) found that small firm embeddedness in social networks influenced information and resource exchange, which in turn "affected economies of time, integrative agreements, resource allocation efficiency, and adaptation (Frazier and Huddleston, 2009)".

To summarize the findings, a firm's ability to accumulate a certain degree of social capital through embeddedness is seen as instrumental in achieving not only a certain market presence, but also in reaching pertinent local market information and in establishing business networks; all significant in mitigating competitive advantage related challenges. Embeddedness is seen to mitigate some of the advantages that large firms have in favor of their smaller entrepreneurial counterparts by allowing the latter to capitalize and adapt based on unique local market information; information not readily available to large corporations.

Frazier and Huddleston (2009) seem to certainly give Phelan at all (2006) theoretical argument a certain degree of legitimacy as their social competence entrepreneur related label seems to fit, even though it is explained in a general form and does not take the detailed form advanced by the embeddedness argument. In keeping with this the following proposition is advance:

P2. Social capital accumulated through market and relationships embeddedness is seen to affect a firm's ability to achieve competitive advantage when compared to larger firms.

Tacitness and codification

An entrepreneur and INV's success have often been linked to the first's ability to recognize and capitalize upon new or available opportunities, be they in domestic or international markets. The segment looks at the process of recognizing opportunities and reconciles it with Phelan's argument. Smith, Mattheus and Schenkel (2009) have advanced that differences in how entrepreneurs identify and capitalize on present and future opportunities are explained by tacitness and codification.

The identification of opportunities is seen as significant as it is generally considered the "first step in the developing an entrepreneurial process and attitude (Baron and Shane, 2005)". Such identification was first advanced as based on an

individual's personal traits and lately was "enriched so as to include cognitive decision making" (Busenitz and Barney, 1997) and pattern matching (Baron and Ensley, 2006).

Therefore the two recognized roles for indentifying entrepreneurial opportunities are: tacitness and codification. *Tacitness* is seen as a form of knowledge that is unique to each entrepreneur as it is "personal, practical, context specific, acquired on the job and describes an individual's know-how about a process (Kogut and Zander, 1992; Smith, Mattheus and Schenkel, 2009)." Due to its uniqueness tacit knowledge is difficult to copy or imitate and as such is generally regarded as a positive influence in securing a certain level of competitive advantage for the entrepreneur and a particular business venture. From the concept of tacitness the study conducted by Smith, Mattheus and Schenkel (2009) moves towards defining tacit opportunities as a situation during which an entrepreneur seeks to realize profits by "exploiting market inefficiencies in a less-than-saturated market (Smith et al, 2009)," the overall process is individual-unique and as such it cannot be easily articulated, copied or communicated. The focus is placed on "significant innovations and improvements" of goods, products, services and organization models. The result is as identified through an entrepreneur securing a certain degree of market competitiveness that is mainly unique, at least in the short-run.

Codification is seen as an entrepreneurial skill of articulating information so as "specific knowledge is transmitted through formal language (Johnson, Lorentz and Lundvall, 2002)." A codified opportunity is defined, just as above, as a situation during which an entrepreneur -while seeking profits- is exploiting market inefficiencies through focusing on "imitation and moderate improvement of goods, products, services and organizational models (Smith e al, 2009)." The path is not unique or uniquely formulated and can be transmitted and copied by competitors or other industry players.

The difference between the two is the degree of tacitness that is to be employed by an entrepreneur as the more unique an individual is in the pursuit of an opportunity, the better the chances of achieving a degree of market competitiveness.

Phelan's model (2006) does not recognize the uniqueness or the opportunity recognition concepts, instead opting for an argument that pointed to general skills, skills that as all codified information can be easily matched and copied. Mitigating the costs of foreignness/newness/smallness, for example, for an INV will not be

sustainable against larger business endeavors unless the entrepreneur develops a unique approach to profit seeking, opportunity recognition and realization. Given these considerations the following proposition is stated:

P3: Entrepreneurial success in achieving profits and market competitiveness depends on the tacitness with which opportunities are recognized and pursued.

External Factors: Behavior, Legal and Goal Commitment

The fragment aims at supporting the argument that establishing entrepreneurial networks, while important, is not the absolute answer - as supported by Phelan et al (2006) -, that would assure entrepreneurial success and that other external factors such as: behavior, local legal conditions, differences in goal commitment need to receive equal consideration.

A point can be made that establishing networks for an international new venture is in itself a skill and an accomplishment particular to entrepreneurs and representative of the entrepreneurial activity. Establishing networks is in itself dependent on the above list of factors -list by no means exhaustive-, each with a different implication and possible repercussion upon the overall success of an INV.

Behavior

Brandl and Bullinger (2009) have exposed entrepreneurship as a reality of life in modern Western societies and the entrepreneurial behavior as a "legitimate concept" and activity (Zibler, 2006) that has become "economically institutionalized (Brandl and Bullinger, 2009)." The entrepreneurial behavior is seen as been supported and encouraged through positive valuation by Western societies, fact which is seen to give entrepreneurs/individuals from such societies a certain competitive advantage as they are given access to certain economic "mechanisms and educational experiences passed on over the years (Brandl and Bullinger, 2009; Munir and Phillips, 2005)."

Adopting an entrepreneurial behavior is cultivated in individuals through a certain degree or economic freedom granted by the Western educational, economic and legal systems. The societal wide merriment of individual entrepreneurial behavior is seen as characteristics of these societies as they "emphasize modern ideals of

cultural individualism, free market elements, change and economic wealth (Brandl and Bullinger, 2009)."

The above are supported by reality as societies that did not officially support in the past entrepreneurial behavior – Communist Eastern Block, China-, or present - North Korea -, realized modest economic results and grew economically only when they allowed and implemented free market policies in which entrepreneurship was encouraged, recognized and accepted.

International new ventures led by entrepreneurs from Western societies tend to have the benefit of the behavior and knowledge accumulated in such societies, both capable of delivering a certain measure of competitive advantage that mitigates the liabilities of going global detailed above. Is should be mentioned that this competitive advantage could be short-term, as members of other societies are expected to bridge the knowledge and behavioral differences. The above behavioral related considerations are not factored in Phelan's conceptual model as it supports an approach based on an individual's having had studied in an other than domestic market as a contributing factor in pursuing an INV, how this applies to national and cultural support/attitude of entrepreneurial activities is unclear. In keeping with these considerations another proposition is formulated:

P4: Entrepreneurial behavior, having institutional status in some societies, can assist an entrepreneur in securing a certain level of competitive advantage.

Legal Conditions

Entrepreneurial networks and entrepreneurs alike are subject to the legal conditions present in each international market they enter. These conditions can substantially affect the outcome of an entrepreneurial activity, the ability to realize profits and/or the overall attractiveness that would convince an entrepreneur to enter a particular market.

A federal survey published in the International Herald Tribune (2009/2010) revealed that three-quarters of the entrepreneur-participants – a 2002 sample- felt that their ability to expand operations internationally was seriously hindered by the US stricter business regulations, especially when applied to SMEs. The rationale why the US legal environment is utilized is because in itself the world's largest economy is an appropriate and relevant indicator of entrepreneurial feedback and general direction.

Restrictions, such as those levied on executive compensations and the Sarbanes-Oxley Act of 2002, have made entrepreneurs less likely to seek or invest in new international ventures and expansion (Miller, 2009) as the legal cost to mitigating these new legal requirements have increased. Therefore and individual did not pursue an INV not due to any cost associated with going international, but rather due to new cost generated by domestic legislation. An individual's social competence and astuteness cannot mitigate an ever-changing legal environment that in turn can reduce the resources available for pursuing an INV. To this point the following proposition is issued:

P5: New and changing legal domestic conditions affect an entrepreneur's propensity to seek growth and expansion through new international ventures.

Subsidies

The success of a new international venture is generally agreed upon as being the result of an entrepreneur's skills and opportunity recognition. The segment does not refute this but it diverges into also explaining entrepreneurial success and the establishment of networks for the purpose of international new ventures as being affected by the availability of subsidies (Clouser, Etzkowitz, Li and Papagiannidis, 2009) as a government form or support/intervention. Subsidies are direct assistance offered entrepreneurs in the form of tax advantages, access to incubators, business networks and information, direct payments from governments/private sponsors and access to synergies.

Clouser et al (2009) present the case of subsidies as a matter of economic development policy in the UK and several other European Union country-members. Subsidized assistance is directed at increasing the degree of international competitive advantage for new entrepreneurs pursuing new international ventures. The case of subsidies comes to further complicate the ability for an entrepreneur to compete in a foreign market as if such individual does not have access to subsidy form the home country it will have to find a response to subsidized competitors entering the same market at what appears a significant advantage. This further complicates and entrepreneur's newness, smallness and foreignness costs as they affect some more the SME owners sees as able to better mitigate them. In keeping with the subsidies availability the following propositions are advanced:

P6: The availability of subsidies could increase entrepreneurial INV competitive advantage, as they address better the global expansion costs.

P7: Entrepreneurs entering new markets might need to mitigate the competitive advantages of their subsidized counterparts.

Goal commitment

The segment points out to an often ignored phase in opting for pursuing a new venture: *goal commitment* gestation (De Clercq, Diochon, Gasee and Menzies, 2008). During this phase individual deciding to become entrepreneurs develop a series of attitudes with regards to starting up a new venture or expanding into new markets. Once a positive decision is made, the next step is to understand the commitment they will be willing to follow-up with so as to see the goal of developing an international new venture, for example, to fruition.

This goal commitment and the ensuing effort acceptance vary from individual to individual and are highly dependent of how entrepreneurs "perceive the success of desired outcomes (De Clercq et al, 2008)"; outcomes which need to be both "feasible and desirable (De Clercq et al, 2008; De Clercq and Arenius, 2006)." Feasibility refers to the probability that a goal will be attained and desirability points to the anticipated satisfaction with the expected results, consequence of goal attainment. In other words the effort to achieve a goal needs to be acceptable and it needs to provide enough benefits to make it valuable. These considerations have no commonalities with social competence and astuteness reflected in Phelan's model. Simply said an individual can be skilled but if is not committed or does not see as worthwhile the goal of pursuing an INV then the skill and social capital related concerns appear as mute and uneven considerations.

Pursuing an INV is therefore centered not on the ability to necessarily establish entrepreneurial networks, at least during this phase, but in its inception on the level of commitment the entrepreneur is ready to commit given the set goals and expected benefits. The corresponding proposition is submitted bellow:

P8: The goal commitment for establishing an INV is affected by feasibility and desirability of expected outcomes- taking place during goal commitment phase.

Geographic Considerations

Phelan et al (2006) theoretical argument points out a general framework in which entrepreneurial networks and INVs, especially, exist in "countries with small domestic market and strong immigrant communities (Knight et al, 2001, Phelan et al, 2006)." The segment attempts to focus on the claim and just as above seek to accept, enrich and/or reject the findings, while establishing the components for building of a new semantic and schematic argument.

The point for the fragment is to establish that INV exist/succeed differently from a geographic standpoint, as each country or area might present particularities that significantly affect the expected an INV's outcome. For an appropriate geographical valuation several continents -Asia, North America- are focused upon. The countries represented in the argument are: China, US and France.

China

As the world's most populous and faster growing economy is therefore without hesitation that it would be chosen as basis for a new theoretical framework. To begin with, China is neither a country with a small market -1.33 billion consumer base makes any further size related argument uneven-, nor does it have a strong immigrant community, therefore providing a basis for a contrarian argument to Phelan's et al (2006) model.

The study conducted by Naude and Rossow (2009) included data from 3,948 Chinese firms. The study found that 62% of these firms started exporting activities within 3 years of their inception. The pursuit of INVs was seen as a result of "challenging or adverse domestic conditions (Naude and Rossow, 2009)." To reality was that entrepreneurs were "encouraged", through government's related initiatives – i.e. lower taxation, exporting tariffs -, to pursue internationalization, be that through exporting or establishing of INVs. The lack of domestic infrastructure in comparison to the international one also made a difference in the entrepreneurial decision to pursue global expansion.

A significant percentage of the firms studied – 81% of ones that started exporting activities or INVs- pointed out that by pursuing INVs they mediated the lack of technological knowledge they faced by pursuing domestic ventures and economic opportunities. Entering into INVs alongside a foreign partner was seen to

give a local entrepreneur access to technological information too costly or otherwise unavailable.

The size and potential of domestic markets were not seen as important under the duress of an external forces present in their domestic environment: government economic policy, lack of domestic infrastructure and unavailable technological knowledge. All these factors were seen to be mediated through the pursuit of INVs (Naude and Rossow, 2009). A point can be made here that Chinese entrepreneurs found internationalization related costs/liabilities preferable when compared to the domestic ones. Given these reflections following proposition is advanced:

P9: Entrepreneurs pursue INVs under the pressure of domestically external factors such as: governmental economic policy, infrastructure and access to technological information.

United States

The world's largest economy points to pure business considerations for entrepreneurs in establishing networks so as to success in the pursuing internationalization through INVs.

Brown and Butler (1995) after conducting a field study of 30 SME wineries in Western and Northeastern US pointed out that in the industry entrepreneurs displayed a great degree of "maturity" in that they pursued joint INVs based on networks in collaboration with domestic competitors. This was seen as mediating the high costs of doing business in a foreign market- newness, smallness and foreignness. The competition in the domestic market was not affected by the partnership with competitors secured for entering the international arena. Each entrepreneur contributed, besides inventory, to the INVs directly proportional with the value of product to be retailed.

Building or capturing international market share was therefore pursued though "inter-organizational networks" with local competitors-where synergies, information, resources were equally accessed- as a modality to mediate the strategic advantages that large multinational wineries had internationally.

Given the above, entrepreneurial "maturity" - that is the ability to put aside domestic considerations and pursue competitors as partners for INV-, appears to generate the following proposition:

P10: Entrepreneurial maturity and competitors as partners could mediate the costs of pursuing internationalization.

France

Bossin, Branchet, Emin and Herbert (2008) conducted a study of 340 students from France, majority of which had had completed advance coursework in entrepreneurship studies. Their findings were than compared with the results from those of student counterparts from USA-270 students surveyed. In their opinion the probability for an individual to become an entrepreneur and pursue INVs depended largely on their opinion of the personal economic value/reward that such a choice was estimated to bring, their perception as to what acceptable risks were and their proximity to family members that were entrepreneurs themselves.

The findings elongate the sections related to goal commitment and behavior as it points out, in an advanced form, that the individual's perception of entrepreneurship and the required effort perception would be the foundation for INVs success an ability to reach/pursue a certain degree of competitiveness (Bossin et al, 2008). The difference is that individual's attitude vis-à-vis entrepreneurship is seen as the prerequisite for internationalization and entrepreneurial activity.

In the above mentioned study Bossin et al (2008) pointed out that French students, in absence of having examples of relatives as entrepreneurs -only 40.8% of them knew one- and inclined towards risk adversity, were less likely to consider becoming entrepreneurs as a career choice and perceived INVs as effort intensive and devoid of significant positive returns. By comparison US students, 83.8% of which had or knew relatives that were entrepreneurs, perceived self-employment as preferable to working for a corporation and considered risk as of medium importance when pursuing INVs. The size of domestic markets or strength of immigrant communities was again not the factor, but rather individual attitudes were the key; attitudes shared differently, even by individuals in two closely related Western economies.

The attitude that one has towards entrepreneurship as a process is geographically dispersed and affects differently individual behavior needed in pursuing INVs and building the networks necessary for its success. The proposition is therefore:

P11: Individual attitude towards entrepreneurship and the overall benefits versus efforts of pursuing INVs can vary from country to country.

Conclusions

The consideration presented above paint a complex environment that allows for a substantially changed model to emerge; a model that questions the social competence and astuteness as factors capable to mediate the risks associated with SMEs going global, and in doing so a new framework emerges.

Nevertheless, Phelan et al (2006) do the field of entrepreneurship a great favor as they initiate a continuous dialogue regarding the ability for SMEs to achieve competitiveness internationality as INVs and to modalities so as to mitigate the costs associated with such pursuits. Moreover, Phelan's model findings with regards to social capital as it applied to personal skill, market and relationship embeddedness were accepted as factors in explaining some aspects or achieving INV competitive advantage. The model is seen to apply to embeddedness considerations as a skilled individual would recognize and utilize market and local information for competitive advantage and successful market scanning.

As seen in the figure bellow - Figure 2- and by following the propositions stated above, an entrepreneur's tacit recognition of opportunities, degree of local embeddedness and pursuit of internationalization are all seen to positively affect an INVs competitive position with the caveat of excessive internationalization as an exception; exception occurring when internal capabilities would not match the required efforts/resources for undertaking of a successful INV.

The external factors pertaining to behavior, goal commitment and subsidies are all seen to positively affect a INVs ability to become or stay competitive as they could mitigate the costs/liabilities associated with global expansion. National attitudes towards entrepreneurial activities as well as availability of subsidies are considered to both be positives, as an individual having benefited from years of passed on knowledge or receiving government/private support would be better enabled to mitigate the costs of going global.

Difficult or restrictive legal environments, as well as a low level of commitment, are assessed as negatives in the life of an INV. Rightly so, as the costs associated with expanding into new markets are affected if domestic regulations

increase and/or if the entrepreneur lacks the necessary commitment, motivation or does not see a positive outcome when compared to the effort required to pursue an INV or an entrepreneurial activity in general.

Geographical considerations are in themselves complex as in each economy and country entrepreneurs pursue INVs from a variety of reasons, be they domestic influenced, due to having ascertained a certain entrepreneurial maturity or attitude. In the case of China individuals had to adapt their business endeavors so as to export their products due to domestic deficiencies represented by government regulations, inadequate local infrastructure and lack of access to technological advancements or technology in general. All geographic considerations are seen to provide a positive environment for establishing competitive INVs, yet one could assess that in China's case pursuing internationalization occurs at a cost as an entrepreneurs is unable to capitalize on local opportunities.

The attitude part paints an equally complex picture as pursuing entrepreneurship - as a precursor to INV and networks - is perceived as a choice that has a different degree of acceptance from one society/country to another. As such, attitude could have either a positive or negative connotation with regards to INVs. A case could be made that is should only be recognized as a positive as an individual that does not decide to become an entrepreneur will therefore not affect the competitiveness of a non-existent INV.

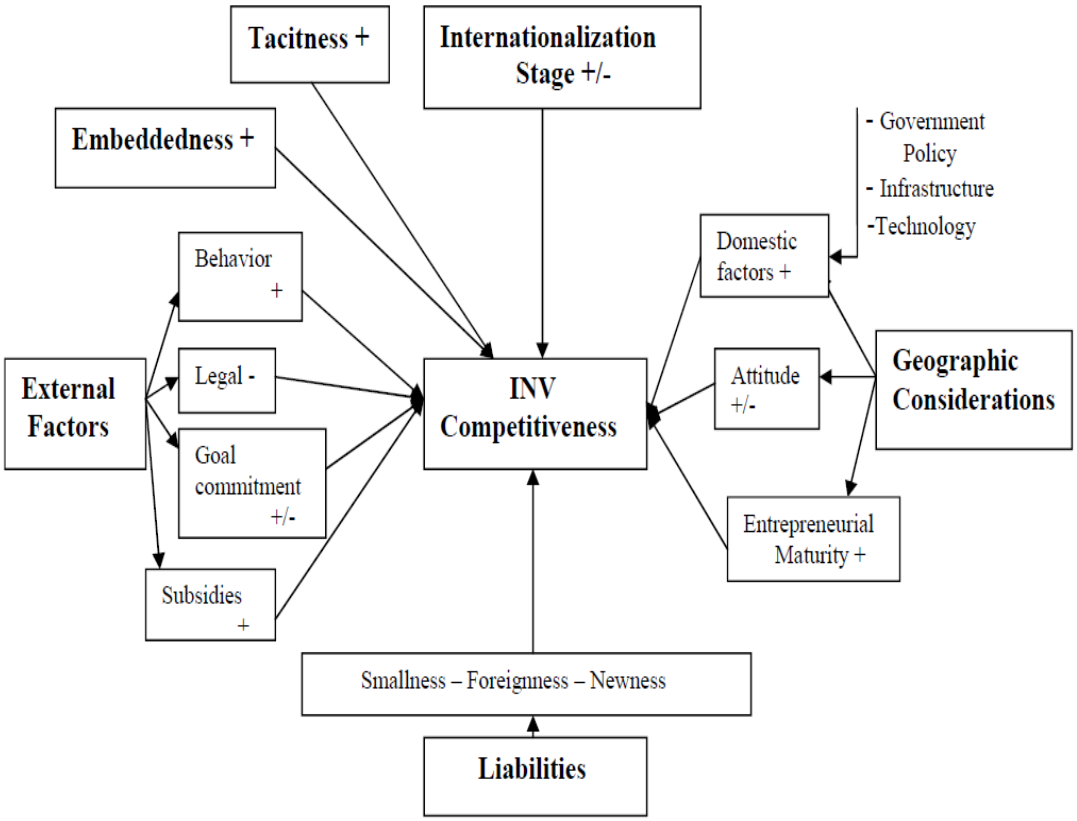

Figure 3 – Modified conceptual framework

Discussion

The field of entrepreneurship is ever-changing and as such any conceptual framework will be subject to continuous review. The framework presented here is not comprehensive by any means as each point made could be enlarged and further refined so as to better represent existing and upcoming realities. This article cannot neither underestimate, nor ignore the findings generated by extant research, yet it does attempt to address and start a dialogue regarding the void of research leading to a model capable of defining the factors affecting international new ventures (INVs), the corresponding entrepreneurial networks and the involved entrepreneurs in general.

This study does not provide an ample model capable of fully presenting the complexities associated with the traits defining of the entrepreneurial behavior or INV success, as it provides only a framework for an understudy for it. Further research is needed to mitigate the risks that SMEs encounter when pursuing globalization as the infrastructure, technology, opportunity costs/liabilities could be added to smallness, newness and foreignness. The study while attempting to present a variety of factors

related to the complex relationship between entrepreneurs has only pointed the need for dialog; dialog that will need to continue so as to result in the creation of a general model to ample applicability over industries and geographical areas.

Implications for Managers

Entrepreneurship, international ventures and business networks have been the subject of extensive research, yet most of it has been focused either on theoretical concepts or on the overall interpretation of results harvested through observations. This article cannot neither underestimate, nor ignore some of the findings generated by the extant research, yet it does attempt to address and start a dialogue regarding the void of research leading to a model capable of defining the factors affecting international new ventures (INVs), the corresponding entrepreneurial networks and the involved entrepreneurs and managers in general.

This paper and ensuing argumentation aims at issuing a commentary regarding some of the present findings as it builds the rationales for pursuing the foundation for a representative model. These rationales rely upon the perceived importance of enunciating a comprehensive conceptual framework linking the three related concepts – entrepreneurs, international ventures and the corresponding business networks - as being of significant importance to management professionals.

Managers would therefore be enabled to: first, define and identify the variety of external factors needed to be understood and taken under considerations for professionals considering international markets entry and second, acquire the ability to model their mode and modality of entry according to a framework (or its role and components) that if implemented and understood would render the entrepreneur an outcome capable of assisting with a successful INV pursuit and realization.

Direction of further research

It will be recommended that the direction of further research would focus upon statistical testing of the propositions and factors presented and identified in this paper as by doing so a higher degree of legitimacy would be applied to the conceptual framework. Organizing such measurements should not be inclusive of results of new

research that would target results and measurement from a wide range of industries and economies.

The expected research should continue on the path of further identifying external factors able to mediate the costs and liabilities of entering international markets as well as estimating the implications of such factors upon entrepreneurs, INVs creation/pursuit and entrepreneurial networks functionality in this context.

Strengths and Limitations

The article's main strength is that it provides, just as mentioned above, the backdrop for a discussion and dialogue related to defining a model that identifies the factors affecting entrepreneurs entering international markets through international new ventures and assisted by business networks.

The limitation for the paper's findings is that it provides only a background for an understudy studying born globals, SMEs and INVs in general. It does not provide measurements to substantiate the actual effect of each factor upon mitigating the liabilities of foreignness, newness and smallness.

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Free music (or almost): a profitable business model

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***Abstract*:** A business model about free legal distribution or at a very low price is economically profitable. To achieve this, the musical industry has to adapt itself to the new reality that the world, as well as the most recent information technologies is facing. Piracy is one of the resource collection methods that result more profitable for criminal groups and from its proliferation, as well as with the massive access to previously mentioned technologies, the legal recording sales fell at world-wide level. This work displays a sustainable model in behalf, mainly of musical creators.

***Key words*:** Music, free business model, low price, legal, piracy

Introduction

Music´s market has seen diminished its profits in a world-wide scale, mainly due to the combined phenomena of piracy and massive access to the Internet. On the other hand, legal digital channels represent 29% of the global musical industry profits (IFPI, 2011). The present paper discusses the viability of an unpublished and web-based business model, for free/low-priced, all-genre-inclusive music distribution, whose account generation is gratuitous for creators and customers, targeted to the consuming segment of this material that simultaneously, Information Technologies-oriented (IT).

We will analyze what IT and piracy stand for, as well as the history of the later, along with the technological developments it has made use of and we will provide examples of its variants like homemade compact disc (CDs) duplication,

purchasing of pirate recordings in the informal economy and illegal music obtaining via Internet by diverse means available nowadays. We will deepen in the model´s explanation, developed to offer three adaptable and configurable modalities depending on each artist/customer/regions' conditions and preferences, being able to choose the desired mix among: (1) Free download/distribution, (2) Low-priced musical content sale and (3) Rent (at the cloud) (Zalud, 2011) on a streaming-based service without recording option. This, with an "online push browser", a "pull" one for e-mail alert sending and an intelligent browser for an experience enhancement, according to the previous usage, whose administration and knowledge management, accumulated in different countries (Escorsa, 2001) will be shared by an international organism (sum of musicians' unions, governments and technological experts in charge of each region), because no company/signature has, as an individual, the necessary knowledge, abilities and resources to co-create innovation and value with the consumer (Prahalad C. and., 2008). It will also an Intranet/Extranet for information exchange among creators, IT managers, press and stakeholders, altogether with an automatized Marketing system intended to improve the presentation of differentiated offerings to similar groups and to measure their answer´s difference (Kotler, 2006). Such central organism will also control the collection of artists´ premium services and will supervise payments for sales and royalties to its corresponding owners (e.g.: PayPal). The purpose is to deliver the best not of two, but of three worlds with successful and already proven models: Apple´s iPod/iTunes (Prahalad C. and., 2008), recent "on air/on sale" (Williams, 2011) and rent. To achieve this, there must be coordinated efforts among creators, producers, copyright protecting institutions and governments.

The data that supports our research was gathered along the literature´s history with cases of key countries (iPod/iTunes in the United States, Baidu and its Ting! platform in China, "on air/on sale" in the United Kingdom, Corona Music and Barcel Play model in Mexico and Spotify in Sweden, Norway, Finland, United Kingdom, France, Spain, Holland and the United States), bands/artists favored or harmed with Internet (Metallica, Radiohead, Pearl Jam, Paul McCartney, Caifanes, Víctimas del Dr. Cerebro, La Lupita, Resorte, La Gusana Ciega, Caos, Olivia y Julio Revueltas, Justin Beiber, as well as OCESA´s participation to let this happen in Mexico) and another useful information for our analysis from official organisms (like IFPI, WIPO, RIAA, Music United), regulators (Indautor), media (like Billboard and Music Week),

reports, news, experts ‘opinions (Zalud, 2011; Cardew, 2010) and other authors´ researches.

The real application of this paper is possible from 2011, taking advantage for Digital Era´s goddesses (Zalud, 2011; Einhorn, 2011; Gibbs, 2010) and its scope is at world-wide level, with special emphasis in key regions such as the United Kingdom, China, United States and Mexico, where piracy activities are stronger.

Finally, we will focus on the model´s implied advantages for creators while adapting themselves to the new reality of the world, as well as for the consumer with the access to virus-and-other-threats-free material, exclusive content, promotional methods and other added-value advantages linked to the intellectual work in contrast to potential dangers that the piracy productions imply.

Method

We will analyze historical and nowadays musical industry data at global and by key country levels, generated by official organisms (IFPI, WIPO, RIAA, Music United) and regulators (Indautor) like numbers of sales, production and the impact that piracy and legal or illegal digital transactions have in the business (Envisional reports).

In addition, piracy´s history and technologies involved in the process, with case examples of benefitted and/or harmed artists, information from other authors (academic researches, books, magazines), reports and specialized media news (Billboard, Music Week), as well as experts´ opinions. We will also compare with already-operating models (iTunes, Spotify, Barcel Play, Corona Music, Pirate Bay).

With this information, we will raise our business model ´s benefits, its application advantages and disadvantages, as well as the benefitted and harmed actors of the industry.

With respect to data selection, the advantages are the information sources´ trustworthiness, the direct relation among themselves and the extensive variety of their origin, not only in theory, but supported, whenever possible with researches and other authors´ papers that have translated its verification into the real life, besides from the multidisciplinary support explaining factors like motivations and habits that lead people to get involved or not in musical piracy related activities. It is also needed to emphasize that we struggled to include news on diverse efforts that are being

carried out at a world-wide level in the piracy combat from the government, actors directly related to the recording industry and those involved in the IT area.

Among the disadvantages we need to emphasize the merely theoretical nature of this paper, not counting on the necessary resources to being able to verify it empirically in an immediate way, mainly due to time, scope and legal limitations implied on a global business model involving so many actors. In addition, many of the empirical consulted researches have too small samples that are not statistically significant at world-wide level. Finally, we found that several news display intentions or proposals, at government level, without settling on anything definitely.

Analysis

Our analysis begins with the copyright (authors´ and related rights) history according to WIPO information, which indicates that we must overcome to the XVI century to find the first regulations in the matter of authors´ rights, related to books. The first real legislation arrived until 1710 in England, but it was not until the mid-XIX century in France, where the law was modernized and begun to take shape (Stopps, 2008). The history of music has been accompanied for a long time by piracy that largely, comes by the hand of technological advances, because through history, musicians and composers have battled against rampant piracy, recording companies with no scruples and suspicious practices. Nowadays recording industry troubles are pale, in comparison. A crisis is being lived on the modern musical industry including the dispute of royalties, in their historical context. During the last century, a series of technological changes made music more accessible and ubiquitous than ever before. Cinemas, gramophone, radio, jukebox, television, electrical guitar, transistors, LP discs, stereo, Walkman, discotheques, compact discs, Internet, DVDs, Mp3, iPod and other advances have soaked the modern world of music, besides the eruption of the youthful culture after 1945 (Blanning, 2008). It´s clear the intervention in this matter of Information Technologies (IT), understood as those tools and methods used to gather, retain, manipulate or distribute information. IT is generally associated with computers and compatible technologies applied to decision making (Bologna, 1997), as is Internet, that according to many label managers, is responsible for destroying the standard business model that has been in operation for decades, where music purchasing happened directly at the favorite disc store. Steve Jobs already stated that

the world and art are at a historical and decisive moment, since the way art is produced and distributed is changing. It is necessary to be attentive and expectant to these changes, as important as it was in its time the invention of the phonograph (De la Cueva, 2005). Analyzing its impact, it is worthwhile to notice that the format in which we listened to music nowadays has evolved enough in last the four decades, starting from the vinyl in the 60s, cassette in the 70s, followed by the CD in the 80s and nowadays the Mp3 in late 90s/2000. Napster created the pandemonium where users began to upload and download musical archives freely at colossal speed rates. Inversely, digital sales are increasing and Apple´s iTunes store is the sample of how money is still able to be made, it only requires more significant efforts than before (Bonner, 2010). We will continue with the definition of the term "piracy", that nowadays appears, at least, in four different types of behavior: (1) duplication/unauthorized song downloading, (2) pirate musical product purchasing (Chiou, 2005), (3) its distribution (Woolley D., 2010) and (4) sharing it by other means, like mobile phones, data storage devices, portable players, etc. The big difference of the latest is that users do not do it for business, but it´s still money lose for the musical industry anyway (Stopps, 2008). Previous to the Digital Era, music piracy was typically characterized by the sale of low-quality recordings at flea markets or another kind of the unconventional stores. Profits were limited because high sale volumes could attract law´s attention, resulting in substantial criminal penalties. Nowadays, duplication is almost perfect. Second and subsequent generation copies only lower sound quality at a minimum portion, depending on the compression level. On the other hand, buying pirate CDs replaces the purchase of the original one and promotes criminal activities from forgery (Chiou, 2005).

Table 1: 10 key moments of music history and the great factors in its relation with piracy

10 key moments of music history and the great factors in its relation with piracy

Time	Factors
(1) 16th century	First attempts in Copyright regulation
(2) 1710	First actual regulation at England
(3) 19th century	Modernization of the law at France
(4) 1945	Youth culture
(5) 60´s	Vinyl records / Jukebox
(6) 70´s	Cassette / Discoteque
(7) 80´s	Compact Disc
(8) 90´s / 2000´s	Internet popularization / MP3 / Mass access to IT / P2P / DVD / Home CD burners
(9) First decade of the 21st century	International Copyright Treaties / Virtual stores / Portable players and memories / Smartphones / Virtual lockers / Video and audio sites / Web penetration and promotional strategies / Streaming radio stations
(10) 2011	Joint ventures among labels, ISPs and mobile telephone operators / Subscription, On air / On sale and Free sponsored download models / File tracking technology, anti-copy protecting and anti-piracy playback systems

With respect to the social and moral aspects, we must remember that online music piracy is a relatively new phenomenon and is a form of criminal behavior (D´Astous A., 2005), but many users feel that simply, it is nowadays reality and download material illegally, in spite of seeing such act as immoral or the potential minimization of the feeling of guilt for damaging the artist for being interested in one or two songs per disc that are frequently broadcasted on the radio (Bonner, 2010) and knowing the anti-piracy arguments, like the personal negative consequences, for artists and the opposite to ethics nature of this behavior (D´Astous A., 2005), even denying they are making something wrong and blaming the musical industry for charging too high prices (Kwong, 2003). Although the intention to gain access to pirate material could be seen affected when experimenting feelings of proximity with

the idolized artist or band (Bonner, 2010) and the factors motivating legal material purchases, as the access to full songs, quality of sound and price (Chiou, 2005). The effects of technology in the recording industry at a global level initially may be thought as negative, as the big detriment on recorded music industry, lowering their incomes, profits and the potential to change the whole industry structure, for example, for artists that are both creators and performers, the majority of their revenue comes from advertising and live concerts, instead of their recording exploitation (Stopps, 2008), because artists earn a commission typically not surpassing 10% of the CD´s sale price (Vives, 2004). Recorded music sales fell 7% in value and 8% in units in 2002, that the International Federation of the Phonographic Industry (IFPI) blames on the massive downloading unauthorized file sharing methods over the Internet, that is becoming one of the most fast growing activities on the web (Graziano, 2001), phenomenon that is becoming at a world-wide level (IFPI, 2011) and the proliferation of CD burners. (Chiou, 2005). The total cost of music piracy is esteemed in $12.5 trillion yearly, from which, $5 trillion are directly related to the recording industry (Woolley, 2010), affecting the four "big" dominating labels of the recorded music industry - Universal Music Group, Sony Music Entertainment, Warner Music Group and EMI, that serve a multitude of different markets and geographic regions (Carroll, 2009; The Irish Times, 2009). In 2008, 40 billion files were illegally transferred and its esteemed that 95% of the online musical archives are pirate (Forde, 2009; IFPI), almost 40% of all world sold CDs and cassettes in 2011 were pirate copies (Chiou, 2005). Nevertheless, there are also good news, because income for legal digital music commerce raised 6%, ascending to $4,6 trillion, representing 29% of 2010´s total accumulated money (IFPI, 2011). There are efforts that could seem ambivalent, not only by intermediary industry´s actors, but also by artists themselves. For example, while many organizations mobilize in order to stop musical piracy, others like Internet Service Providers (ISP), MP3 manufacturers and CD burners try convincing consumers of the benefits of online music. Although these organizations promote legal downloading, the message could seem ambivalent, particularly among young people (D´Astous A., 2005). In addition, we must take into account some Marketing managers´ strategies that use free music files to introduce potential demand to the consumers (over the Internet). As done with software trial versions, consumers only download files to have a test of music. If they like it, then they will buy the legal CD in the future (Chiou, 2005), same trial version strategy that some artists frequently

release their music freely to promote their album, just as a sample, to take advantage of the Internet as information media (Bonner, 2010). According to estimations, approximately 23.8% of Internet´s global traffic correspond to illegal "bittorrents", as the most popular method for archive transferring, where 99.24% of the material is copyrighted (Envisional, 2011).

About some of the key countries, Mexico is the second piracy port in Latin America, only after Brazil and on world-wide scale, it´s in third place, behind Russia and China (Indautor, 2005). Nevertheless, there are initiatives like websites such as Corona Music and Barcel Play, which give away music to Mexican customers through a sponsorship business model, being in charge of royalties' payment to the rights owners. We find for example that in Germany, it was discovered that changes favored by Internet in the music purchasing process has modified the underlying consumers´ motivations, now looking for music variety and time convenience (Walsh, 2003). In the United Kingdom there has been recently trying a model known as "on air/on sale" where labels put in sale digital formatted songs the same day of the radio release. Thus, consumers are incentivized not to resort to piracy to find their favorite music quickly, due to supplies shortages that disc stores suffer sometimes (Ashton, 2011).

According to recent U.S. surveys, 27% of American Internet users admit they regularly download music and videos, increasing 18% from the previous year (PEW / Internet, 2005), where, between 2003 and 2006, 800 record stores went bankrupt (Keen, 2007) and where also have achieved some victories, such as the ones from the Recording Industry Association of America (RIAA), which has taken a number of strategies to combat unauthorized music copies downloading, successfully suing and forcing the closure to a variety of Internet sites and systems used for electronic music distribution, like Napster (Green, 2008). Their efforts have also closed other sharing networks like Limewire, Mininova and partially blocked Pirate Bay (IFPI, 2011). It is important to emphasize that is in this country where the global musical industry got transformed with the iPod portable players and the multimedia content store iTunes, both owned by Apple. On the other hand, Asia is one of the most serious markets for piracy in the world. Despite its high economic performance, other Asian societies such as Hong Kong, Singapore and Taiwan have serious music piracy trouble with an

estimated 50%. Based on 2011´s estimates, the biggest problem is China, with a piracy rate of over 90% (IFPI, 2011), a country with nearly 300 million Internet users, more than any country in the world, much of them are young people considered Internet-addicted (Ward, 2009), where authorities are struggling with agreements such as the one signed on the past July among One-Stop China, Universal Music Group, Sony Music Entertainment, Warner Music Group and Baidu, whose search engine is leader in China, along with its social music platform "Ting!" - "listen" in Mandarin-, controling over 75% of the country's Internet market (Einhorn, 2011) being a supplier of links for illegal music. The intention is to provide their registered users up to 100 free songs and once reached this limit they can get subscribed to the musical service that Baidu plans to launch later this year, charging a monthly fee to access unlimited downloads and other exclusive services, including a virtual locker in the cloud. Baidu has other partnerships with EMI. Since 2008, Google ran a music service in China with the local partner Top100.cn, planning to extend their model to a subscription downloading service for mobile users (Hau, 2011).

Table 2: Piracy, its causes and effects in the music industry

Piracy, its causes and effects in the music industry

Time	Data
(1) 16th century	Some publishers sold sheet music supposedly signed by famous composers / There was no payment for royalties concept
(2) 70s	Music duplication in cassettes / Low quality / Clandestine sale with limited revenues
(3) 90s / 2000s	High-quality modern piracy / IT, CD/DVD home burners / Low-cost blank CD/DVD / Almost perfect duplication / MP3 y other audio compressors / Pirate substantial revenues / Most of the artistis´ income comes now only from advertising and live performing, not from the explotation of their recorded music, that rarely exceeds 10% of the selling price of the CD, affecting the four major labels (Universal Music Group, Sony Music Entertainment, Warner Music Group and EMI)
(4) 2005	27% of U.S. Internet users regularly download music and videos (18% more than the last year) / México is the second pirate port in Latin America after Brazil and worldwide is in third place, behind Rusia and China
(5) 2006	800 record stores in the United States went bankrupt in the last three years
(6) 2008	40 billon files illegally transferred
(7) 2009	95% of the online musical files are pirated
(8) 2010	Total cost of music piracy: $12.5 billion anually Direct cost to the recording industry: $ 5 billon annually
(9) 2011	40% of the CDs and cassettes sold in the planet were pirate 50% of the market in Hong Kong, Singapore and Taiwan is pirated 90% of the musical market in China is pirate, stimulated by its 300 million Internet users, many of whom are young people addicted to its use

Among some examples of artists and groups that have been benefited or harmed by piracy and label´s common practices, we find in the U.S. that Metallica sued Napster in 1999 for "criminal association against copyrights," a process that paradoxically , was won by the musical group, but promoted the use of the P2P platform (De la Cueva, 2005). Another one was the band Radiohead, that decided to innovate with a business model by digitally publishing their seventh studio album “In Rainbows" on October 2007 across their own website, letting users to decide the right

amount to pay for it and according to initial estimates it was downloaded 1.2 million times in the first two days, with earnings for the band from $1 to $5 million, despite a digital survey reported that over 60% of the visitors paid nothing for the download. The physical CD was planned to arrive to the stores on January 1st, 2008 (Ferguson, 2007). The also American band Pearl Jam made a deal with Corona Music in Mexico, so that users could download from the platform the album "Twenty Original Motion Picture Soundtrack" in exchange for codes printed on the beers´ bottle tops and also achieving access to the chance to win a trip to attend a band´s concert in Santiago, Chile (Corona Music, 2011).

The visit of the former Beatle, Paul McCartney to Mexico in May 2010 led to a demand impossible to satisfy. Coca Cola decided to make an agreement with the musician, buying the rights to webcast live the full concert via Coca Cola TV, a website owned by the company (Coca Cola TV, 2010) as well as the installation of a giant video screen at the "Niños Héroes" monument in Chapultepec, in partnership with the Mexico City´s Ministry of Culture (Caballero, 2010).

Extending the case of Mexico, we find a full variety of examples, starting in the rock genre, where the band Víctimas del Dr. Cerebro was invited to receive a gold record from a Mexico City´s clandestine pirate association (Vinueza, 2009) for high-volume sales of the "Víctimas del Dr. Cerebro" record, led by the popular song "El esqueleto" (Dueñas, 2009). Another affected was La Lupita, who had differences with its record label, BMG, not getting the corresponding sales commission of the "Pa´servir a ud" and "Que bonito es casi todo" materials in the Latin American market editions, therefore, the band continually encouraged their friends and fans to attend their concerts instead of buying the recordings, which did not benefit them so much. A similar case was experienced by the band Resorte, with their debut album "República de ciegos" already released in 1997, the lesson came from their label, Manicomio (which went bankrupt years later), because the band was not getting the promotion initially agreed. In 1996, La Gusana Ciega decided to give away their first album "Merlina" to those who bought a ticket for the presentation concert, in view or the inability of Intolerancia, their label at that time, to execute the appropriate promotion. Closely related to this group is Caos, authors of the song "La planta" which was popularized via Napster by using a wrong named file that attributed the authorship to La Gusana Ciega. Finally, but considered to be the most important case is that of Caifanes, that after 15 years of absence and with only 4 studio albums in its

history, has won many new fans among young people who had not heard live, due to an integral strategy that, among other actions, included free music publishing via Corona Music, where the band almost daily appears on the first place of downloads popularity and the band's written permission to live-broadcast via Internet, for free, of their first five songs during their comeback concert as the closing band at the Vive Latino 2011 festival, although it is one of the nationally most pirated bands and on sites as YouTube there are hundreds of videos of their current and initial phase. In another genre, the Mexicans Julio and Olivia Revueltas, guitarist and pianist respectively, have used Facebook and YouTube, among others, to offer, for free, video recordings in live versions of their songs, covers and improvisations executed in their own houses, with a clear sacrifice of sound quality in exchange for a "rapprochement" with their audience, intended to demonstrate the talent that mother and son have in mastering their respective instruments. Notice that the strategy is free for both parties.

It is important to emphasize, the role of OCESA, the company responsible for organizing many mass concerts and the management of entertainment venues in Mexico who also regulates the sale of merchandise at the beginning / ending of each event, where in the 100% of the cases it is possible to find on sale the complete discography of the artist / group in MP3 format and in cases for tours with two or more presentation days at the same site, it is possible to find on sale high definition recordings of the previous day´s performance, highlighting the inability of the company to punish and eradicate the practice.

Finally, in the international pop arena, it is well known the youth star Justin Beiber case, who began his career promoting himself on the web and now is the most searched word on Google, but his music is also the most pirated (Zalud, 2011).

Table 3: Examples of benefits / harms of piracy and the music industry practices

Examples of benefits / harms of piracy and the music industry practices

Artista/grupo	Descripción	Resultado
(1) Metallica	a) Sues Napster in 1999 "for criminal association against Copyrights" b) They won, but paradoxically, promoted the P2P software	a) Positive b) Negative
(2) Radiohead	2007: Offered on sale on its website the album "In Rainbows", allowing each user to decide how much to pay or even if they wanted it for free	Positive
(3) Pearl Jam	Convenio con Corona Music (México) para que los usuarios que descargue el disco "Twenty original motion picture soundtrack" accedan además al derecho de concursar para ver a la banda en concierto en Chile	Positive
(4) Paul McCartney	2010: Full transmission of his live performance via Internet at the Foro Sol (México), sponsored by Coca Cola and directly to a giant screen at Chapultepec in partnership with the Ministry of Culture of Mexico City	Positive
(5) Víctimas del Dr. Cerebro	Receive a gold record for pirate sales of the record "Víctimas del Dr. Cerebro"	Negative
(6) La Lupita	Their label BMG failed to pay the band´s comission for the sales of the records "Pa´ servir a Ud." and "Que bonito es casi todo" in the Latinamerican editions	Negative
(7) Resorte	1997: Did not receive the promotion agreed with its label Manicomio for their debut record "República de ciegos"	Negative
(8) La Gusana Ciega	They gave away their debut record "Merlna" in the purchase of a ticket for its presentation concert at the failure of Manicomio, their label to execute the correct promotion	Negative
(9) Caos	Their song "La planta" became popular thanks to Napster, but the file was wrongly named the authorship was asigned to La Gusana Ciega	Negative
(10) Caifanes	a) Free music through Corona Music b) Authorization for the free Internet broadcast of the first five songs of their back-to-the-stages concert at Vive Latino 2011 c) One of the most pirated mexican rock bands d) Hundreds of videos of their concerts in YouTube, most of them recorded with cell phones	a) Positive b) Positive c) Negative d) Negative
(11) Olivia and Julio Revueltas	Free distribution of their performances through Facebook and YouTube	Positive
(12) Justin Beiber	a) He began his career with a web-promotion strategy b) His name is the search number one at Google c) His music is the world´s most pirated	a) Positive b) Positive c) Negative
OCESA	Responsible for regulating the sale of merchandising before, during and after concerts at the venues controlled by them. In 100% of the events there is piracy available, ranging from the complete discography to the day before´s concert recorded in high definition	Negative

Regarding the benefits of IT, the World Intellectual Property Organization (WIPO), a United Nations agency with 183 countries as members, states that previously it was advisable for an author or performer to move to one of the largest global centers of musical activity such like Los Angeles, Paris, Hamburg, London, New York or Nashville. With the advent of Internet now it is less important, being able to access the web, building a nice website and having presence on social networks like MySpace and YouTube, where all the world markets are within the

reach of the fingertips no matter where they live (Stopps, 2008). Technology opens the door to new business models such as subscription easy to use, such as Spotify (currently used in Sweden, Norway, Finland, United Kingdom, France, Spain, Holland and USA), Deezer and Vodafone, which are expanded and complemented by hundreds of download services already available to consumers. Also labels, ISPs and mobile operators have teamed up to offer musical services in Ireland, Taiwan, Italy, South Korea, Denmark and Sweden (IFPI, 2011). Of course, not forgetting about the sponsorship model of the trademarks that reward customers with free music as done in Mexico by Corona Music and Barcel Play, which include codes on their products so that the consumer might log in to their respective websites and then would be able to redeem them from the available catalog, Corona featuring Sony Music´s and in turn, Barcel working along with Universal Music´s (Corona Music, 2011; Barcel Play, 2011).

Furthermore, in Sweden the Pirate Bay site has new owners who try to get it away from the pirate market to make it legal, but taking advantage of the benefits of the P2P technology, rewarding those who share legal files and forging alliances with ISPs to retain the large portion of market share that the site already has, with its 20 million users, using a tracking system for downloadable “torrents” as well as creating new methods for cash flow generation, like turning super-users into sub-distributors in a pyramid model, where, the more music they promote, the more new material they would access, known as PAP4 "pass-along-paid-for" (Forde, 2009).

Now we will enumerate the treaties and agreements concerning copyrights aimed to protect the industry internationally, as well as electronic copies, regulated by a variety of laws too. Among them, there are included the Digital Performance Right in Sound Recordings Act of 1995, the No Electronic Theft Act of 1997, the Digital Millennium Copyright Act of 1998 (Imfeld, 2005), the Berne Convention for the Protection of Literary and Artistic Works of 1886 (updated seven times, most recently in 1971), the World Trade Organization’s Agreement on Trade-Related Aspects of Intellectual Property Rights 1995, the Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations of 1961 and the member countries adopted the WIPO Performances and Phonograms Treaty of 1996, as well as the WIPO Copyright Treaty, that extends the rights of authors, particularly in the context of the Internet, forcing its members to incorporate into their national laws. All share two factors: (1) the copyright of the work (music composition

and / or lyrics) and (2) the recording related rights (Stopps, 2008), but they are not enough and developed countries are still putting copyright protection pressure in hope to force local governments to legislate with greater rigidity in the area (Gillespie, 2002), in addition to adopt ethics awareness programs in the formal education system and public campaigns, very important to gradually build social consensus that opposes the promotion of the musical piracy behavior and to persuade marketers to always try to sell music products at reasonable prices and with continued quality improvement. It should allow the consumers to perceive that they are really getting value for their money (Chiou, 2005). It should be noted that the protection of treaties and agreements mentioned above are not universal, as some are honestly nulled and opposed by local laws, as well as offering protection only under the cover of the member countries but outside them, nothing can be done.

Technological efforts are also present in the combat against piracy, such as content blocking at certain regions by Vevo with some of their artists / regions on YouTube, file tracking technologies like "watermarked" legally downloaded songs from sites like Corona Music in Mexico (Corona Music, 2011), Digital Rights Management (DRM) protection system to prevent copies from Apple devices / pirate file playback (Penalva, 2007) or only "streaming" services, similar to traditional radio stations, with no saving-document option to hard disk or memory sticks. Also through partnerships among record companies, governments and ISPs, which have started the first actions (warnings and sanctions) to stop the massive and illegal traffic in France, Ireland and South Korea in 2010, that other governments, including the UK, New Zealand and Malaysia, are beginning to implement during 2011, along with the copyright legislation review by the European Union (IFPI, 2011).

Table 4: The IT and its good news

The IT and its good news

Time	Data
(1) 2007	DRM technology to prevent copying among devices and unauthorized file playback
(2) 2008	40 billion files illegally transferred / RIAA sued and successfully closed sites and electronic music distribution systems like Napster / Sites such as MySpace and YouTube allow creators to have worldwide presence on social networks / Streaming technology allows to enjoy the music content without memory storage option
(3) 2010	6% increase on legal digital music sales, earning $ 4.6 billon = 29% of the total industry´s revenues
(4) 2011	It is achieved Limewire and Mininova´s closure and Pirate Bay´s partial blockage / There are novel subscription models easy to use such as Spotify, Deezer and Vodafone, as well as the option of outright purchase of streaming music with the On air/On sale model / Technology allows ISPs and mobile operators to monitor (warn and punish, if necessary) when their subscribers are involved in piracy / Content blocking at certain regions in sites like YouTube / Tracking technology for downloaded files (”watermark”) / Apple announces partial blocking technology of some iPhones functions in unauthorized places (example: the user does not have access to audio or video recording, nor to photos inside entertainment venues that have the service available)

Expected results

The presented model herein is intended to demonstrate the potential benefits to be gained by artists, users, governments, sponsors and other stakeholders, with its implementation. Therefore, to show why piracy, in comparison, is more expensive and adds no value to the consumer. Our model is conceptualized in a simple musical staff, using the natural scale with the "American notation" to take the letter of each note as the beginning of the seven sentences that summarize the actions and consequences of its implementation.

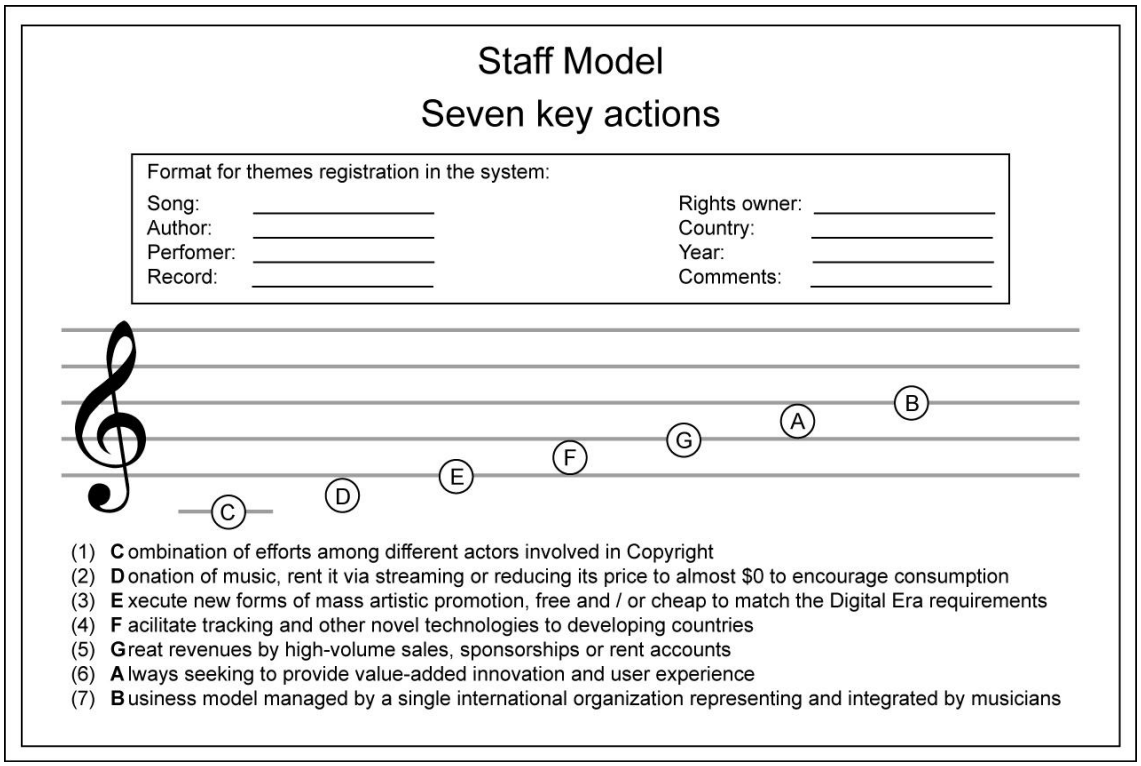

Figure 1: Staff Model: Seven key actions

As noted in previous sections, it is a web based system where artists can create free accounts to upload their material and receive payment for any mixture of the three concepts: (1) music sale through digital downloads (2) sponsorship of a brand in order to allow the artists to give away their music and (3) royalties for themes used in the "streaming" service. If decided, users can pay for premium services, such as preferential positions layout, special promotional methods and others available on the site, paying for each one of them directly to the international organism responsible for the system management. Regarding to users, they will equally be able to access the free account creation to download sponsored music and may also be free to choose at any time to buy music and / or pay for the monthly “streaming” service, which will operate as an Internet “On Demand” service, this latter, without the option of saving files (except for using the always available option to purchase the current playing song, similar to the “on air / on sale” system), but they are allowed to hear the music of their choice at any time through the cloud.

Regarding to the collection of services, it is designed to be done through e-commerce, where possible or through partnerships between users and their ISPs, which are also strongly recommended to be directly involved in supporting the

international organism representing musicians and have the necessary government facilities, as well as regulatory and official institutions (WIPO, RIAA, Indautor, collective societies, unions, etc.). It also planned to have an IT expert group to support the system´s creation, maintenance and improvement, and to evaluate different options to ensure that files uploaded by the creators are viruses-spyware-and-others-free, always hoping to improve the customer experience, offering them artists suggestions, events, exclusive promotions, configurable at all times according to their previous behavior and preferences, thanks to intelligent search engines.

With all of this we seek to encourage consumers to access our platform, giving an added value to the free and / or low-cost music, as opposed to piracy, that results in potential threats to their various technological devices and even for themselves, making counterfeit products bad, harmful and expensive compared to our proposal.

Discussion

The model represents a potential tool to mitigate music piracy. We are not referring to its total eradication, as there are many influencing factors, as Internet and IT availability for all citizens and regions of the world, personal and cultural motivations to purchase or not illegal material, the willingness of all the parties to achieve this, including all governments, enough promotion to spread the site globally, its acceptance among musicians, sponsors and users, and other aspects that will only come into light with the actual system implementation.

With the appropriate adjustments, service can be extend to authors of content in video, audio and other formats different from music (audio books, courses), texts (books, magazines, manuals, documents), software and multimedia in general.

In the future we need standardization and continuous improvement of the model, according to the emergence of new technologies that can assist in the benefit of the industry, keep the site as a state-of-the-art one and above all, provide customers with a value added user experience, rent and purchase. Furthermore, we must also take into account the market dynamism and adopt / forget the necessary business practices to maintain the site at the top of the public, companies and creators´ preferences.

Notice the crucial importance that have for its operation, the corresponding changes to the current global and local legislation, needed to be able to ensure adequate copyright protection.

The economic significance of our model is that the authors are receiving profits from their work directly from consumers and / or companies. This is a downside against all intermediaries in the traditional industry of recorded music, that are now out of the equation, unless suiting to the model by adding value to their work, for example, by designing creative and free or low-cost promotional campaigns for artists. Obviously, not every job has a place in this model where, for example, people doing for a living the transfer of physical CDs from one place to another, will not be employed.

Piracy is one of the income sources for criminal groups engaged in other kind of equally illegal activities, some even very harmful to society as drug trafficking. By reducing their profits, we are also reducing its scope, partially freeing society from their practices. At the macro level, this may potentially mean an increase in life quality, initially for those directly related and progressively, to a lesser degree, for the rest of the society. This includes the participant business sector, because through its music sponsorship it facilitates the culture transmission between creators and consumers, and it also improves its image towards society, increasing their brand´s values by being an example of applied Social Responsibility and depending on each region´s laws, the possibility to access tax incentives such as exemptions.

The political class will also get benefits from this model by properly legislating in favor of international cooperation and carrying out an unresolved worldwide duty since many years ago, increasing their preference and sympathy among the population, improving its image and the possibility of establishing international agreements and treaties, beyond the topic referred in this document, combined, of course with its member´s political skills.

Conclusions

On the positive side, through the proposed model it has been presented the possibility for artists to obtain various benefits such as free / cheap promotion having literally the

world just a couple of "clicks" away. The benefits are for creators and performers of all genres, at any fame level achieved, accessible from anywhere in the world. For novice musicians at the industry it makes things much easier, by having access to a business model that allow them to earn income from the very beginning of their careers by uploading their creations to the platform immediately after the recording phase, besides of being part of a single worldwide organism body that will protect their copyrights. For those more experienced, is the possibility of immediate internationalization in support for the consolidation of their music, the access to existing promotional methods only possible through the use of IT, such as offering web concerts with signals generated from potentially anywhere in the world, even with other bands and artists, the choice of executing very inexpensive promotional campaigns regarding the cost per mille (CPM) of users reached, highly segmented email lists according to the preferences chosen by consumers, fair and transparent payment from sale and / or appearance on the "streaming" service. Finally, for acclaimed artists / groups, undoubtedly the most attractive option is to get free at a very high degree from the piracy problem, in addition to all intermediaries that make music more expensive and also, to generate sales directly with users, putting their material available worldwide on the very day of its release. Indeed, for all artists / groups it opens a wide door that let their music to be heard anywhere, which represents the possibility of signing performing contracts on a myriad of places and do other business in an unimaginable scope.

As mentioned earlier, the argument against our model is in the ield of application, because much of what we have discussed cannot be proved until the actual launching of the project, highlighting also the fact that it requires the total collaboration of a large number of actors who must work together and toward the same goal, a topic that very often comes face to face with corruption, which for many means a big-profit business and is very hard to skip or disappear. However, this is where you, reader of this text, can help to an unimaginable extent, not being part of the vicious circle and of course, your contributions will be taken into account in the system, which is continuously created in conjunction with industry, because without you, the consumer, it wouldn´t simply exist.

It is anticipated that through the correct application, adaptation to novel

technologies and further improvements needed, piracy will be less consumed by the public, when they realize that its use damages their favorite artist / group, it also means technological hazards, the quality of their products is not always optimal and most importantly, encourages other criminal activities and is the beginning of a long chain of social damage tolerated by authorities in many parts of the world.

Finally, regarding to the elimination of intermediaries between artists and users, it will promote a healthier relationship where both parties benefit and those actors from previous business models that have no place in our proposal must be renewed and find a niche within which their knowledge may be exploited, such as promoters and managers, performing very concrete and innovative proposals to harness the global, immediate and very direct reach which will provide the system presented in our work. As it becomes reality, they may engage in activities on behalf of copyright in their respective country to pressure the authorities to achieve a bigger and better music industry, so loved by many around the world, where any effort, even if it could seem too small, might mean the survival of music, one of the Fine Arts.

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Determinants of entrepreneurship efficiency
The case of banana and plantains farm in Cameroon

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***Abstract*:** This article analyzes the entrepreneurship efficiency of banana and plantain producers in Cameroon using a translog production function of a sample of 161 producers from three regions with different agro-ecological and demographic factors (the South, the Southwest, and the Littoral). The results show that technical production factors such as farm surface, combined effect of the use of improved plant material, and chemicals, all contribute positively to the production of plantains in Cameroon. However, logistical and maintenance factors such as transportation and watering of plants do not have a significant effect on production. Furthermore, environmental characteristics of the farming area, such as high population density, have a negative effect on the technical efficiency of plantain production in Cameroon, a finding that may not be true in other plantain-growing areas of Cameroon and Africa. The socioeconomic characteristics of farmers, such as the ethnic group and the completion of primary and secondary education, improve the production of plantains in Cameroon; while the rising age of farmers has a negative effect on production.

***Key words*:** efficiency, plantain, banana, producer, translog, production function

1. Introduction

1.1 Problem

Plantains play a strategic role in the food security of the people of Central and West Africa. This fact makes this research critical from the scientist, socio-economist, and political perspectives. Several international meetings confirm the increasing importance of this product (Picq, et *al*., 1999, Craenen, et *al.*, 2000; Dubois et *al.*, 2010). However, yields per hectare and total production remain stagnant, which leads to a shortage of the product on the market. Consequently, consumption is falling because of supply shortages. This is the case of countries like Cameroon (5.4t/ha), the Republic of Congo (7.6 t/ha), Equatorial Guinea (5.1t/ha), the Central Republic of

Africa (2.9 t/ha), the Democratic Republic of Congo (4.4 t/ha), Ghana (11 t/ha), and Nigeria (6 t/ha). Yields on the farms are lower than those in the research station (30 t/ha) or industrial firms producing dessert bananas (40t/ha) (FAOSAT, 2010, Kwa, et *al*., 2005, ASSOBACAM/MINEPAT, 2010).

In Cameroon, despite changes in agricultural policies aiming at the improvement of the plantain supply chain, taking into account the growth rate of the population and the relative stagnation of the production, the availability this food stuff went from 53,89 to 45kg/habt/an between 1998 and 2008 (FAOSTAT, 2010) (Bikoï, 1999; Temple, 2001). Many empirical studies were able to determine constraints that limit farm yields and production. The most important constraints were modernization/mechanization of the production system, farm institutions and management, and finance. However, few studies have been done on the efficiency of farmers. Furthermore, the yield per hectare as an indication of efficiency remains the most critical criterion for the evaluation of agro ecological performance of farms (FAOSTAT, 2010). Efficiency is a significant factor in the improvement of farm productivity in an economy such as Cameroon where farmers find it difficult to acquire natural production resources (land, labor) and innovations (improved plant material, modern agricultural equipment and fertilizers, certified plant materials).

Earlier studies on efficiency sought to solve the problems of production growth with important debates on the assumptions of technical efficiency (perfect and imperfect). The "perfect" assumption holds that it is enough to increase inputs or to change technology in order to increase the production. The second assumption (imperfect efficiency) suggests that it is necessary to take into account a third factor, which is the improvement of production efficiency or entrepreneurship. The proponents of this last school of thought support their ideas by arguing that the success of the first assumption (increase in inputs and change of technology) depends on: perfect knowledge of technology, producer's motivation, and suitable institutional and social environment (Nkendah and Temple, 2003; Bifarin et *al.*, 2010; Nkunzimana, 2005).

Therefore, it is important to understand why plantain producers in Cameroon are not able to meet up with the demand in spite of the various innovations developed and propagated in partnership with CARBAP's researchers. This research explores the

following questions. What is the production function of plantain farmers? What are the factors that influence their production efficiency? The study seeks to show that it is possible to increase productivity by improving entrepreneurship efficiency without developing a new technology or increasing the use of the basic resources. The improvement of entrepreneurship efficiency makes it possible to increase farm income, reduce food insecurity in the area, the massive importation of substitute food products, and improve the balance of trade of the country.

1.2 Objectives

The objective of this article is to identify the parameters that make it possible to increase the production of plantains by improving efficiency without generating additional costs.

More specifically, the paper evaluates the effect of technical, environmental and sociocultural factors on the production performance of plantain farmers in Cameroon in order to identify the sources of inefficiency and to propose strategies for technical and managerial improvement of production.

The study comprises three sections: 1) presentation of important concepts such as production possibility frontier and technical efficiency, 2) the analytical model and data-gathering and 3) the results of the research.

2. Context

2.1 Concept of efficiency

The concept of efficiency refers to the difference between the possible maximum production and the level of production observed, while holding technological innovation constant. Several categories of efficiency are identified, such as, technical, allocative and economic efficiency. Technical efficiency evaluates the characteristics of a maximum production using the same input but while holding technological innovation constant. If all farmers have access to the same technology, only that farmer producing at the maximum level is technically efficient. In other words, only the producer who, while using less input, with a given technology, produces the

maximum output is efficient. Allocative efficiency evaluates the manner in which the producer combines the various factors of production for maximum profit. This type of analysis depends on the price of production factors that are available on the market. Economic efficiency derives from the combination of technical and allocative efficiency (Bifarin, 2010; Battese and Coelli, 1995). This study examines only technical efficiency and its effect on overall entrepreneurship efficiency.

2.2.1 Estimates of efficiency and its determinants

Several measurements of efficiency are used, the most significant being the Farrell index and production frontier (Farrell, 1957; Aigner et *al.*, 1977; Meeusen and Van Den Broek (1977; Coelli, 1995). Several methods have been used by researchers to identify the determinants of production efficiency. Those which are frequently met in the literature are correlation, analysis of variance, comparison of averages, tests of restrictions in production functions, and finally econometric regression analysis. This study uses the production frontier to analyze entrepreneur efficiency in plantain production.

The production frontier is an approach suggested by Aigner et *al.*, (1977), Meeusen, and Van Den Broek (1977). It has several alternatives according to the type of representation (parametric and nonparametric) and according to the measurement methods (nonparametric convex, nonparametric nonconvex, parametric, differential methods, and descriptive) (Nkunsinmana, 2005, Nkendah and Temple, 2003). A production frontier function is known as nonparametric if the analysis of the process cannot be apprehended by a functional form. Therefore, the border is obtained either by connecting segments or right angles of the most efficient observation of the sample, or by tracing the convex envelope of the sample. In this case, the border can be convex or not convex. Several criticisms were raised on this approach in particular as it does not take into account the different environments in which producers operate their farms. One of the weak points of non-parametric methods is that the sample size has more influence on the accuracy of the results compared to parametric methods. Moreover, the estimators are very sensitive to extreme values (Roudaut and Vanhems, 2009). These weaknesses led to the development of the parametric approach (Coelli, 1995; Aigner et *al*., 1977 and Meeusen and Van den Broeck, 1977).

A production border is known as parametric if it can be represented by a function that includes clearly identified parameters. Several alternatives are distinguished based on the estimation method. There are inferential and descriptive methods. In these two methods, the assumptions about the nature of the observed variation between the production border and observed production determine the type production border. Therefore, if the variation is only due to technical inefficiency, the production frontier function is said to be deterministic. On the other hand, if technical inefficiency is not the unique cause of the observed variation, then the production function is stochastic. Consequently, a deterministic function is characterized by only one error term that is positive while the stochastic function depends on the breakdown of the error term into two components (see equation). The introduction of a random error term which can be positive or negative allowed researchers to take into consideration the error term that may be due to measurement, specification, omission of explanatory variables, and any other factors that could influence the production process.

$Y_i = f(x_i, \beta)\exp(v_i - u_i)$ Where

Y_i = the farm production i,

x_i = the input and

β = the vector of the parameters to be estimated.

Generally $f(x_i, \beta)$ is a Cobb-Douglas type of function, v_i is the residue due to factors that are not under the producer control, u_i is the residue which represents the technical inefficiency of producer i

The stochastic approach is not without problems. The major limitation is the imposition of an arbitrary assumption about the form of the production frontier function and the distribution of the error term. Given that the production frontier function is estimated using least squares, the solution is certainly not optimal because the function is not completely concave, thus allowing several local maxima (Mddala, 1971).

Technical efficiency can be evaluated by using one or two step approaches. In the procedure with two stages, the production frontier function is first estimated and the technical efficiency of each firm is derived in the first step. In the second step,

producer technical inefficiencies derived in the first step are regressed with explanatory variables (Kalirajan and Obwona, 1994; Pitt and Lee, 1981 and Obwona, 2006). However, the approach with two stages is not consistent with the assumption about the distribution of the inefficiency. In fact, it is assumed that the inefficiencies are independently and identically distributed before they are even estimated. In addition, in stage two, inefficiencies are assumed to be related to a certain number of specific factors, thus violating some assumptions that were imposed stated in the first stage (Coelli, Rao, and Battese, 1998). To overcome this inconsistency, Kumbhakar et *al*. (1991) suggest evaluating all parameters using the one step approach. This study will use the one step approach.

Nkendah and Temple (2003) and Nkunsimana (2005) after comparing the parametric and nonparametric approaches, report that the latter does not make any assumption, a priori, on technologies of production. It is an advantage in sectors where very little is known about the subjacent technology like the post offices, banking institutions, and hospital complexes.

The non-parametric methods are intuitive. A manufacturing unit is inefficient when another well specified unit performs better than it does. It is understandable by a large audience and consequently, the managers of the relevant units will incorporate these methods into their decision functions. Moreover, the non-parametric methods are didactic since, in order to perform better, it is enough for the managers of the inefficient companies to imitate those managers whose production processes are more efficient.

The use of the non-parametric methods requires a restricted number of comparison criteria. It is also necessary that units that are part of the sample be of comparable size. These two conditions constitute true limits for the use of non-parametric methods.

The parametric methods are comparatively advantageous owing to the fact that the shape of the border is elaborated using all information that is available in the sample. The border takes account of all information available in the sample. These methods

are also less sensitive to the inclusion of new variables in the analysis. The parameters that determine the borders make it possible to obtain indications on several characteristics of the production function such as elasticity of scale and substitution. Lastly, they make it possible to include technical progress by the introduction of a trend analysis of the explanatory variables in the model.

The stochastic approach was used in this study, since it is a particular specification of the inferential parametric approach (equation).

2.2.2 Production function

Several forms are used in the empirical estimate of the production frontier model, which includes specifically the Cobb-Douglas function and the translog form (Nkunsinmana, 2005; Nkendah and Temple, 2003). The most evoked criticisms of the Cobb-Douglas function are its restriction on elasticities of production and the constant output in response to scale. It is recognized for its simple transformation logarithmic curve of the data and it is easy use. The translog is more flexible and does not have a restriction on output as it scales. Furthermore, the impact of the functional form on the efficiency estimate is reported as being often unimportant (Kopp and Smith, 1991). However, it suffers from the econometric problems of multicolliniearity and degree of freedom. Battese and Broca (1997) recommend approaches in which general assumptions and specifications are stated and whose formulation is simple to test. The translog form was used in this study.

2.2.3 Determinants of efficiency

The determination of the level of productive efficiency is important but not sufficient. It is equally meaningful to find factors that can be used to improve the productive performance of farmers. Many studies have been carried out in different fields and in almost all continents to quantify the efficiency of farmers. A significant number of publications exist on this subject. The most recent and relevant of these studies show that the most determinant factors that influence technical efficiency are the size of the exploitation (Helfand and Levine, 2004; Ekou, 2006); the farming system (Nyemeck et *al*., 2004; Coelli and Fleming, 2004; Thiam et *al*., 2001; Bagamba, 2007); the kind of education and/or the experiment (Bifarin, 2010; Battess and Coelli, 1995;

Coelli and Fleming, 2004) and the access to the credit (Battese and Coelli, 1995; Bagamba, 2007). However, the majority of empirical works are limited to the individual characteristics of the household. To mitigate these shortcomings, Nkunsinmana (2005) distinguishes two types of factors that influence the technico-economic efficiency of farm production. They are particularly the factors related to individual decision-making and to the decision-making process itself (entrepreneurship). However, production takes place and evolves in a changing environment that gives rise to another type of factor related to the external environment (institutional, social, physical, economic and political) together with the manufacturing unit.

3. Experimental design and data

3.1 Area of study

The study is interested in the plantain food system, which is the second food crop in Cameroon with more than 1.4 million tons produced in 2008. It is related to the fact that food safety depends mainly on banana and plantain, manioc (cassava) and macabo (cocoyam) in nearly the entire "Great South area of Cameroon" (Temple, 2003; REPARAC, 2008). Cameroon has three significant plantain production areas, ((1) Southwest and the Littoral, (2) the Center, East and the South, and (3) the West and the North-West (Fadani, 1998), which supply the domestic and the sub region markets (Gabon, Guinea etc.).

In order to determine more variability among producers, their performance within three areas (Southwest, Littoral, and South) was analyzed while taking into account different demographic characteristic within production areas and the areas identified by CARBAP during previous research. This analysis represents various possible combinations of socio-economic, agro-ecological and demographic variables that are likely to influence the technical efficiency of the producers. This study also included demographic density as a variable in the analysis.

The Littoral and Southwest areas contribute more than 70% of the plantain supply of the city of Douala (Bikoï, 1999). The survey done in Littoral was in the Administrative Departments of Moungo (Penja, Njombé, Loum, Matouké, Mbango,

Bomono, Penda Mboko) while that of Southwest area include the Districts of Ekona, Mautu, Muéa, and Buéa.

The sites of Mvomeka and Ambam, belong to the largest plantain production area in the South region and consequently, supply plantain to the secondary cities of the area of the South and the frontier cities of Cameroon (Libreville in Gabon and Bata, Ebenbeyin in Guinea equatorial) (Efanden et *al*., 2006; Efanden et *al.,* 2003, and REPARAC, 2008). The research in this study took place in the localities of Ambam and Ebolowa.

3.2 Sampling, collection and data analysis

3.2.1 Sampling

The population of this study is banana and plantain farmers of the localities targeted by the CARBAP and its partners (MINADER and IRAD) through various Projects such as TARGET, DURAS – INNOBAP, REPARAC and PRFP, which operate in plantain producing areas. The second category was selected for two principal reasons. The first category was already composed of CARBAP's partners. Therefore, it was easier to collaborate with the them than to choose new areas. The second category was chosen from the production markets and also based on information given by other farmers as well as information from extension agents and other local development organization, for their role in plantain production deserves special attention in a study like this one, given their importance to the evolution of production technologies in these areas.

3.2.2 Collect and analyzes data

The method of a quota per production area was used to choose farmers. This approach was used for farmers who took part in one of the above-mentioned projects. The sampling rate varied from 5 to 10%. All the participants in the project DURAS-INNOBAP were interviewed. A total of 221 producers were interviewed; however, only 166 observations were analyzed using the software, STATA, due to a problem of collinearity in the data.

In order to collect information from the sample, criteria for selection were developed in line with the general and specific objectives (appendix 3) of the study. The technical production function was estimated using a production frontier translog stochastic model, defined as follows:

$$\ln Y_i = \alpha + \beta_1 \ln X_{1i} + \beta_2 \ln X_{2i} + \beta_3 \ln X_{3i} + \beta_4 \ln X_{4i} + \beta_5 \ln X_{5i}$$
$$+ \delta_1 \ln Z_{1i} + \delta_2 \ln Z_{2i} + \delta_3 \ln Z_{3i}$$
$$+ \gamma_1 \ln S_{1i} + \gamma_2 \ln S_{2i} + \gamma_3 \ln S_{3i} + \gamma_4 \ln S_{4i} + \gamma_5 \ln S_{5i} + \gamma_6 \ln S_{6i} + \gamma_7 \ln S_{7i} + (e_i - \mu_i)$$

Where :

$$\beta_1 = \theta_{10} + \theta_{11} \ln X_{1i} + \theta_{12} \ln X_{2i} + \theta_{13} \ln X_{3i}$$

$$\beta_2 = \theta_{20} + \theta_{21} \ln X_{1i} + \theta_{22} \ln X_{2i} + \theta_{23} \ln X_{3i}$$

$$\beta_3 = \theta_{30} + \theta_{31} \ln X_{1i} + \theta_{32} \ln X_{2i} + \theta_{33} \ln X_{3i}$$

i=1, 2, 3,……N

where:

Y_i = the yield of the farmer i,

X_i = inputs used by farmer i,

Z_i = demographic factors,

S_i = socio-cultural factors;

$\alpha, \beta, \delta, \gamma, \theta$ = vectors of parameter to be estimated;

e_i = the error term representing factors that are under the control of famer i,

μ_i = the residue representing the technical inefficiency of the farmer i

The structure of these inefficiencies is as follows:

$$e_i \approx N(0, \sigma)$$

$$\mu_i \approx \frac{1}{2} N(0, \sigma_i \ln(surf))$$

However, a test of robustness using a simple linear equation was also reported as means of comparison.

4. Results

In this section, we present the parameters of the production function of plantain farmers in Cameroon. The results are shown in *table* 1. The signs of the coefficients associated with the factors of production, demographic, and socio-cultural parameters indicate the impact of those factors on the productive performance. Thus, a significantly positive value suggests a positive influence and vice versa. From the statistics of Chi (X^2 and R^2) it is possible to deduce the stochastic nature of the production function using the test of probability. The estimated model is satisfactory because it shows that at least one production factor explains the dependent variable.

Because of the translog functional form of the production function, the estimated parameters are also elasticities of the production frontier function in relation to other factors.

Table 1: Estimate of the production frontier function of plantain

Explanatory variable		**Regression**		**Robustness Test 161**	
		Number of obs. 161		**R-squared= 0.4288**	
		Wald chi2 (21)= 178.40		**F(21.139) = 4.97**	
				Adj R-squared= 0.3425	
		Prob>chi2=0.00		**Prob > F= .000**	
		Coef.	P>|t|	Coef.	P>|t|
Improved plant material (X_1 in kg)		-.0084	0.574	-.0167	0.345
Chemical (fertilizer, pesticide, etc…) (X_2 in FCFA)		.0250	0.518	.0176	0.717
Farm area (X_3 in ha)		.8135	0.000	.7459	0.001
Farm area^2 (X_3X_3)		-.0764	0.089	-.1168	0.008
Improved (X_1X_2)		.00001	0.030	.00001	0.073
Improved plantlets and Farm area (X_1X_3)		-.00004	0.891	. 00003	0.916
Chemical and Farm area (X_2X_3)		.0035	0.840	.0078	0.692
Portetout (X_4 : 1= yes ; 0= no)		.1481	0.323	.1825	0.291
Irrigation system (X_5 : 1= yes ; 0= no)		.101	0.481	.1234	0.440
Poor demographic density (Z_1 : yes ; 0= no)		-.0179	0.926	.0515	0.795
Average demographic density (Z_2 : yes ; 0= no)		.2644	0.263	.0515	0.795
High demographic density (Z_2 : 1= yes ; 0= no)		-1.778	0.000	-1.720	0.000
Age (S_1)		-.1076	0.057	-.0795	0.153
Age^2 (S_1S_1)		.0009	0.121	.0006	0.243
Ethnic (S_2) 1=West region and North west et 0=other)		.4340	0.062	.5577	0.070
Primary instruction level (S_3 : 1 yes ; 0= no)		.4501	0.038	.4725	0.092
Secondary instruction level (S_4 : 1 yes ; 0= no)		.6515	0.006	.721	0.017
Tertiary instruction level (S_5 : 1= yes ; 0= no)		.3704	0.273	.4238	0.330
Belonging to and association t (S_6 : 1= yes ; 0= no)		.2083	0.237	.255	0.249
Support and counselling (S_7 : 1= yes ; 0= no)		.0206	0.916	-.0751	0.751
Experience time (S_8 in year)		.0968	0.314	.1687	0.166
Cons.		7.839	0.000	6.584	0.000
lnsig2v	**Cons.**	1.139	0.000		
lnsig2u	**Farm area (X_3 en hectare)**	.7640	0.019		
	Cons.	- 2.182	0.078		
Sigma v		.56592			

Source: survey: 2007–2008.

4.1 The effect of the technical factors on production

According to table 1, the use of improved plants material does not affect the production of the plantain in this sample. This result could be explained by the fact that the extension of the new varieties is recent relative to the time of the interview (3 years for the first projects dealing with dissemination of new varieties) in the majority of the areas of Cameroon. Consequently, a three-year period is insufficient for the evaluation of the adoption of new plant materials and its impact on the production of a crop whose production cycle varies from eight to 18 months.

On the other hand, the dissemination of innovation such as plantlets obtained through bud fragmentation (PIF) or the technical methods of PIF started long ago. However, the adoption of this technical route or the purchases of plantlets is relatively too expensive for small farmers. In fact, according to documents produced by CARBAP (2002), one needs an average 100,000 to 200,000 FCFA for the construction of the nursery and the shade structures. It is, therefore, not an easy amount for the above mentioned category of farmers. The purchase of a plantlet costs an average of 125 to 145 FCFA compared to 200 and 250 FCFA for suckers. It is important to note that suckers are easier to handle than the plantlets in addition to being cheaper.

Moreover, the use of improved plantlets does not affect efficiency in our sample because it goes along with mastering technical production techniques in order to achieve suitable production levels; and this implies a minimum of rigor and knowledge. However, in this study, more than 70% of farmers have only primary level education, a knowledge level that is sometimes not sufficient for the assimilation of new production technologies. Using improved plantlets also requires access to large farms, but more than 60% of the sample of farmers in this study own less than 6 hectares as a total area of their farms.

The results also show that the use of chemicals does not affect the production of plantain in this sample. In fact, chemicals are still too expensive for the small plantain producer. Consequently chemicals are used for commercial purpose only. Commercial plantain production is rare as the household production model in Cameroon is centered on subsistence farming and only the surplus is sold. Fertilizer is used in extremely poor soil areas like the outlying suburban areas of Douala. The Area of Southwest has a very rich soil (volcanic), therefore farmer are not used to the artificial fertilizer. However, telluric diseases (cause by weevils and nematodes) which are very frequent in that area are fought using farm management system for the price of the medical plant health products is above the purse of the average farmer.

Results show that, the farm surface area positively affects (C=0.813 P=0.00) the production efficiency of plantain farmers. The square of the surface whose coefficient is negative and significant (C=-0.00001; P=0.03) makes it possible to confirm the nonlinear relationship between surface and production and consequently the result

expressed by the surface. In fact, surface presents a correlation positive with the production up to a certain level of surface beyond which it become negative.

Indeed, each farmer when increasing the surface creates an economy of scale which can only have of positive influence on the general production up to a level where it begin to decreasing.

The result shows that the combined effect of the use of improved plantlets and chemicals positively and significantly affects the production efficiency (C=0.00001; P=0.03) in our sample. This result coincides with the observations defended by the green revolution where the combination of the new varieties and the chemicals increased the production significantly.

4.2 The effect of investment factors in Capital on the production

All factors of investment in particular: irrigation system, "portetout", and sprayer, do not affect production efficiency to a significant degree in the sample. This result could be explained by the fact that farmers do not invest only for one crop, such as plantain production, because the majority of the farmers draw their returns from several crops. In fact, 100% of the farmers practice mixed-farming together with plantain. Although 10% of the sample practices plantain monoculture, all farmers produce their foodstuff in a mixed-farming environment. Therefore, it is possible that farm investments factors have objectives other than plantain production.

4.3 The effect of the demographic factors on the production

The result shows that strong population density negatively and significantly (C=-1.77; P=0.000) affects plantain production. However, low and average population densities do not have any effect on plantain production. This result contradicts the Boserup's (1965) assumption that demographic pressure constitutes a driving force for intensification by pushing the agrarian communities to increase their production, using technical improvements, in response to the increasing food needs of people. This result coincides with the neo-Malthusians theories which assert that demographic pressure generates a degradation of the natural resources and creates a food security

problem. These problems are manifested, in the long term, either as a massive decrease in the population due to famine, by an escape of the population towards cities, or by wars. This idea has an alarmist and pessimistic attitude the capacity of agriculture to fulfill the food needs that accompany demographic growth, especially in Africa. However, it is true in the case of our sample and in Cameroon, where the riots of hungry people occurred in February 2008 due to the food insecurity and led to the death of many Cameroonians citizens, in particular in the in Douala.

This result is contrary to Nkendah (1999), which shows that in the Western region of Cameroon and more particularly in Foumbot and Galim, technical inefficiency in farm production decreases as population density increases. In other words, the demographic pressure would push plantain farmers to use better their technical potential.

4.4 The effect of the socio-economic factors on the production

The results show that plantain production efficiency in our sample is affected by some socio-economic factors.

Age negatively affects (C=-0.1076; P=0.057) plantain production. Indeed, a review of empirical studies from 37 countries of all continents shows that four years of primary education could increase the production by 8.7% (Tilak, 1993). This result could be explained by the rural environment of Cameroonians, which suffers from the ageing of farmers, rural-to-urban migration (the rural migration having deprived rural areas of young farmers) and an absence of subsidies from the Government. Consequently, as age increases, the farmer invests less physical or financial resources in the farm business. On the other hand the square of the age is not significant. It shows that the relation between age and production is linear and consequently impossible in the real economic world.

According to results, ethnicity positively and significantly influences (C=0.4501; P=0.2323) production efficiency. In this study, the ethnic groups of Bamiléké, together with the English-speaking peoples of the North-West region, were compared with all other ethnic groups. The results show that the idea that the members of the

Bamiléké ethnic group are more entrepreneurial is once more proven in the case of this study (Dongmo, 1981). This dynamism could be explained by conditions that prevail in the Bamiléké areas of the country (very high population density, hard topography, high social organization). This is not the case of other ethnics groups which have an abundance of natural resource (surface area, river, natural forest) that the people can easily access.

The results show that primary (C=0.4501; P=0.2168) and secondary (C=0.6515; P=0.2373) education levels positively affect production efficiency, while tertiary education levels (C=0.3704; P=0.3378) have no significant impact on farm efficiency. Indeed, Rogers (1983), Tchoumboué et *al*. (2001) showed that as farmers become more educated, they are more inclined to adopt farming innovations. On the other hand, the fact that the tertiary level of education is no significant effect on the technical efficiency of producers can be explained only by their small numbers in plantain production in Cameroon.

Technical support and extension service factors (C=0.2055; P=0.1945) just as the membership to an association (C=0.2083; P=0.1761) do not have a significant effect on plantain production. Indeed, specific technical support and extension service activities for plantain in Cameroon still very weak and recent. By the time of this study, only 0.1 % of farmers and nursery farmers (5 out of 600) approximately had benefited from either a training, common reference or individual evaluation plots, workshops evaluation (culinary and agronomic), subsidiaries (technical route document, plantlet, fertilizer or plant health products) within the framework of different projects and other activities organized by the CARBAP. Furthermore, the dissemination of plantain innovations is extremely limited probably because of poor Intellectual Propriety Right and plant certification on plantain. Similarly, farmers do not receive the elements that complement and make these new technologies effective. For example, some will receive fertilizers without plantlets or vis versa because of delays in production or supply. This breakdown in the supply chain is automatically affects the results.

The link between the various actors of the plantain sector in Cameroon is still a conventional type which was proven not to be very effective in sub-Saharan Africa. In

fact, the great demarcation between the creation of the innovations (research), the extension agents, and the farmers prevents any collaborative development of innovation. Consequently, projects have low impact on farmers and farm production or productivity; and even the minute impact that they may have is not sustainable.

The fact that membership in an association does not affect production efficiency could be explained by several factors such as the role those associations (which is generally confined to the contribution of members towards daily labor without clear initiative or personal remuneration), the lack of economic dynamism that could help farmers to both maximize their profits and purchase input for a scale economy.

Furthermore, the recent agricultural policy of Cameroon has set up a number of programs with the aim of developing plantain production. The majority of these programs require the potential beneficiaries to belong to an association, which leads logically to the creation of fake associations. For these reasons, most of these associations cannot be strong or sustainable. This result is in line with the observations of Lecomte (2010) on the three stages for the construction of a country-wide movement in West Africa. He calls into question the idea that says 'unity is strength' as well as the policies of farmer organizations.

5. Conclusion and recommendations

5.1 Conclusion

This study estimated the determinants of the farming technologies and entrepreneurship efficiency of plantain farmers in Cameroon using the analysis of technical efficiency of the production frontier function. The data used in this study were obtained from a sample of 221 plantain farmers living in three areas with different demographic density. However, only 161 farmers were included during the construction of the production function and in the efficiency analysis. The statistical summary shows that technical factors such as the farm surface and the combined effect of the improved plantlets and the use of chemicals influence positively and significantly the production of plantains in Cameroon. On the other hand, investment factors do not have influence. The average demographic density influences

negatively and significantly the plantain production. Socio-economic factors in particular ethnic and primary/secondary education levels positively influence plantain production in Cameroon. The technical support and extension services as well as membership in a farmer association do not significantly affect technical efficiency.

These variables are important factors to be considered when developing government policies and actions that aim to improve the current level of technical farm efficiency and consequently the economic efficiency of plantain farmers.

However, other factors such as the technical support and extension services, membership in an association as well as the time spent as a plantain farmer does not affect technical efficiency in our sample.

5.2 Recommendations

Considering the results, the following recommendations are made for farmers, policy makers, researchers, and extension agents.

Given that several technical variables do not affect production, it is necessary for the farmers to develop capacities that will make it possible for them to maximize the use of these factors in production. Indeed, to have technical resources without the capacity to use them can be a disincentive for farmers to even attempt to adopt new technologies in the future especially in areas where adoption of such innovations requires significant capital outlays and farmers simply do not have the financial capital to invest in innovation.

Political decision makers must organize the plantain sector in the study area instead of focusing on producers. Also there is a need to intensify the extension services or to develop the existing endogenous potential for a better dissemination and adoption of innovation.

Researchers should continue to study the determinants of entrepreneurship efficiency in all plantain producing areas of Cameroon. The results of these studies will inform

and possibly improve policies that aim at increasing farm efficiency and productivity at the national level.

Studies on the household model of plantain farmers would help in decision making so to avoid competition among this sector for factors and other industries. In the same way, gender studies could provide significant insight into the sector.

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Applied Econometrics for Agricultural Futures: Case of Natural Rubber Ribbed Smoked Sheets No.3

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***Abstract*:** The study investigates the efficiency of futures pricing for ribbed smoked rubber sheet no.3 (RSS3) during the period 2004-2009 and presents forecasting models along with results from the most efficient models that can help investors make more accurate buy and sell decisions. Time series data from RSS3 futures was used as a leading indicator for the spot price of Thailand. The results indicate that the daily futures prices served as unbiased estimators of future spot prices and there was independence on daily price changes. This study would fill the information gap in the prediction of future spot prices with a guide to understanding how the futures market behaves. Part of forecasting, the study employs univariate, market timing and Diebold-Mariano as the criterions for the selection of the best prediction model. It includes an analysis of factors affecting the RSS3 futures prices in Thailand's futures market. The results show that the TOCOM, world synthetic rubber consumption, net imports natural rubber (China) and crude oil price significantly affect the futures prices in the same direction. Particularly, the crude oil price is the leading indicator for the trend in rubber futures prices in Thailand. The analytical model is shown to be applicable and would facilitate related studies in forecasting the futures prices of other commodities. The time-series data is found to be suitable for the forecasting model.

***Key words*:** Forecasting, Futures Prices, Estimators

Introduction

Thailand had bought and sold rubber in future contracts with traders from China, Japan and the United States of America, but had to do so through brokers in these countries. Thailand had been less competitive than these other countries but the establishment of the futures market in Thailand provided an opportunity for Thai traders to reduce brokers' fees, plan their buying and selling and plan on stocking rubber in the country. The development of futures market in Thailand and the unique institutional characteristics, prompted researchers to study the basic properties of how price behaves, at the moment, there are few published literatures on futures market in Thailand and fewer yet that are based on statistical characteristics of prices. The study would provide better information and fill some gap in the literature by making a

detailed examination of futures price especially rubber product in Thailand. So, the paper seeks to answer the questions on efficiency and forecasting in price of RSS3 in Thailand.

The comprehensive test on efficiency of rubber futures was conducted by examining a period of time over which rubber futures had existed. It examined the random walk and unbiased hypotheses for RSS3. Based on the empirical evidence, the paper argues that Thailand's RSS3 futures market is efficient and aids the process of price because futures price could be unbiased predictor of future spot price.

The forecasting logic of rubber prices in futures market is to a certain extent similar to the price movement in stock market. It can also provide an estimate, taking into consideration the effects of external factors. This is because adjustment of rubber price in the long term may be affected by the law of supply and demand. However, the purpose of the futures market is to serve as an instrument for agricultural rubber groups, producers, agricultural suppliers, and investors to manage risks associated with fluctuations in commodity prices. This involves the buffering of risks related to efficiency, transparency and fairness. Hence, the study will focus on the methods of forecasting by using two cases. The first case uses the technical analysis in which it focuses only on the duration of rubber prices without considering exogenous variables. The second, the fundamental analysis, accounts for the effects of exogenous variables.

Each analysis has its strong and weak points. The paper integrates the technical and fundamental analyses in investigating the probability of the fundamental analysis results to see the extent to which the fundamental analysis can be trusted. The fundamental analysis in the current year has many forecasting methods, but the most well-known and frequently used analytical programs include the Naïve or Random Walk (RW), Random Walk with Drift (RWD), Vector Auto Regressive (VAR), Autoregressive (AR), Simple Moving Average (MA), Simple Exponential Smoothing (SES), Trend (T), Random Walk with Drift and Trend (RWDT) and Box-Jenkins (ARIMA). In addition, the study highlights proper method in determining the movement of rubber price data in futures market and finds proper period of time and appropriate number of data used in forecasting. The line graph is used in considering trend of rubber prices that occurs in subsequent periods. Generally, the fundamental analysis is used to examine the factors that influence rubber prices and determine the

rubber price when the factors that influence rubber price are dynamic. However, the paper focuses on the market price mechanism.

The paper's objectives include the following: 1) to answer the question on efficiency price; 2) to discover the proper forecasting model and 3) to identify the appropriate fundamental factors affecting the change in daily and monthly time period applicable in estimating rubber prices, particularly on demand-supply factors. To achieve these objectives, the paper focuses on a number of key considerations.

First, the Agricultural Futures Exchange market in Thailand (AFET). Second, rubber prices, which refer to the natural rubber ribbed smoked sheets no. 3. The reason is because it makes up a major share of exports, taking into account the observation on the level of exports FOB that is applied as the selling price in the futures market. Third, the forecasting model used in the study. They are classified into two cases: (a) short time prediction, targeted at finding a forecasting model which is most suitable for daily rubber prices, and (b) long time prediction through the use of monthly forecasting. Before making the final decision, the paper considers and examines external factors that may affect the rubber futures prices. The graph-leading indicators are built to determine the period that rubber prices move up or down. Fourth, the time period used in short time prediction. The 310-day period of gathering data starts from 1st August 2007 to 31st October 2008. Fifth, the monthly time period, comprises of 61 months during May 2004 to May 2009. Both daily and monthly periods use 2/3 of the period as the estimator and 1/3 as the forecasting.

Sixth, for both short and long time prediction, the paper observes the variables that affect rubber prices by using multiple regressions. The daily data used are taken during 1st August 2007 to 31st October 2008 while the monthly data is taken during May 2004 through May 2009. The variables used include the exchange rates between the Thai baht and U.S. dollar, the exchange rate between the Japanese yen and U.S. dollar, the price of crude oil, TOCOM, net imports of natural and synthetic rubber in Japan, net imports of natural and synthetic rubber in China, and the world consumption of natural and synthetic rubber. Lastly, periods when rubber prices expand or shrink via indicated factors are examined by graphical analysis between monthly rubber prices. The construction of the monthly rubber price model is derived from indicated variables, with the monthly natural rubber ribbed smoked sheets no. 3 price as the reference line.

Literature Review

Given the importance and the interest in the pricing efficiency of the futures markets, numerous studies have examined the efficiency of the agricultural futures markets. Nearly every agricultural futures contract listed by an exchange today has been examined in some context (Garcia, Hudson, and Waller, 1988). In examining the necessary conditions for futures market efficiency, three sets of forecasts are used in predicting the USDA's announced Class III price: futures forecasts, forecasts generated from simple time series models, and expert opinion forecasts. These forecasts are first evaluated using the traditional forecast accuracy measure of the root mean squared error. In addition to casual comparisons of mean squared error, the Multiple Data Model (MDM) procedure tests for statistical differences in forecast accuracy (Harvey, Leybourne, and Newbold, 1998) are used. The more stringent test of pricing efficiency, the forecast encompassing, is then tested in a multiple encompassing framework using the MS test statistic put forth by Hervey and Newbold, in which they suggest as a test statistic MS based on Hotelling's generalized T2-statistic. Intuitively, the futures market efficiency should be intimately linked to the ability of the market to be forecasted. Nevertheless, Working (1985) was reluctant to call futures prices forecasts.

Tomek and Gray (1970) suggested that cash prices of non-storable commodities may be able to forecast deferred prices better than futures prices. The futures market will not forecast if doing so elicits behavior that will prove the forecast wrong (Koontz et al., 1992). Yet, poor forecasting does not necessarily make a market inefficient. The futures market may still be the best forecast available. Fama (1970) suggested that a futures market is efficient if the prices contain all relevant information. He also describes efficiency in terms of whether abnormal trading profits can be earned conditional upon three possible sets of information, namely, weak form, semi-strong form, and strong form. Grossman and Stiglitz (1980) extended Fama's definition by noting that where information has a cost, informational efficient markets will be impossible. Essentially, their work added that for perceived inefficiencies to be real inefficiencies, they must be large enough to merit the cost of trading them out. Fama (1970) acknowledged this as well. In addition, profit comparisons for efficiency testing should account for risk. Besides these, Makridakis, Wheelwright and McGee (1983) studied the accuracy of the combination method by emphasizing on the

method of averaging from 14 forecasting methods such as naïve, simple moving average, exponential, ratio, Brown, Holt's, regression, Holt's and Winter, Automaic AEP, Lewandowski's FORSYS, Parzen'ARIMA' methodology, Bayesian forecasting, and BOX by MAPE. They found that accuracy depends on the number of methods that are used to combine because the more we join each method; the higher is the accuracy of forecasting. It is found that the prediction is stable if more than four methods are combined.

There are three forecast selection/combination techniques used to enhance the plausibility of dynamic forecast selection over a long period. When evaluating the ex-post effectiveness of forecasts, standard statistical measures are commonly used. The mean pricing error, mean absolute pricing error, mean absolute relative pricing error (MARPE), median absolute relative pricing error and root mean squared error (RMSE) are typically calculated. The results are used to generate conclusions about the accuracy of forecasts, for example, Just and Rausser (1981: 197-208); Leitch and Tanner (1991: 580-590); Bessler and Brandt (1992:249-263) including Gerlow, Irwin and Liu (1993:387-397). This research will focus primarily on RMSE, which gives a measure of the magnitude of the average forecast error, as an effective measure. It may be noted, however, that the RMSE is a measure that is commodity specific and cannot be readily used for comparing across commodities. Mean squared error (MSE) is used extensively to evaluate the forecasting performance of the futures markets. Early studies relied on casual comparisons of MSE (Leuthod, 1974: 271-279) while more recent studies have examined the statistical difference in forecast error (Irwin, Gerlow and Liu, 1994: 861-875). As previously stated, the necessary standard condition for the futures market efficiency is that no competing forecast such as a time series, econometric, or expert opinion forecast can provide a smaller MSE than the futures market forecast. However, differences in MSE among competing forecasts are often subtle, thus leading the researcher to wonder if differences in MSE are due only to chance. Although significant advances have been made in evaluating the statistical difference in prediction errors (Diebold and Mariano, 1995: 253-263; Harvey, Leybourne and Newbold, 1998:281-291), stating the necessary condition for the futures market inefficiency strictly in a comparative MSE framework is potentially misleading. The Root Mean Square Error (RMSE) is one of the most widely used measures of forecast accuracy. While simple and intuitive, MSE is not without potential drawbacks. First, MSE may be inconsistent with profit measures, as

was pointed out in Leitch and Tanner (1991: 580-590); Stekler (1991: 375-384) and Swanson and White (1995: 265-257). Furthermore, MSE is not invariant to non-singular, scale preserving linear transformations. This problem is discussed in Clements and Hendry (1995:127-146).

As the magnitude of the RMSE is specific to each price series, it can be difficult to quickly assess the performance of a model from this statistic. Hence in this application, the RMSE result is displayed relative to the RMSE of either the random walk model or the others, to facilitate comparison between models. The base model will have a value of unity. If a comparison model has a relative RMSE value greater than unity, it may be considered to underperform the base model in terms of statistical accuracy. On the other hand, a relative RMSE value less than unity would indicate superior RMSE performance in relation to the base model.

Another test of the directional performance of forecast models is the Cumby and Modest (1987: 169-189) test for market timing ability, which is an extension of the Merton (1981: 363-406) market timing test. It was designed to use information about the magnitude of change, as well as the direction of change, to generate a performance statistic. The estimates are applied with the White (1980: 817-835) adjustment for heteroskedasticity. In essence, this differs from the Harding-Pagan statistic in that the dependent variable incorporates both the magnitude as well as the direction of the change. Hence, the Cumby-Modest statistic gives extra weight to situations under which the forecast would have correctly predicted the direction of large actual changes in spot prices. When a forecast misses a directional change in prices that is small in magnitude, it is not penalized as heavily by the Cumby-Modest statistic as it is by the Harding-Pagan statistic. This alternative model selection criterion is suggested by Henriksson and Merton (1981: 513-533); Schnader and Stekler (1990: 99-107); Pesaran and Timmermann (1994: 1-7); and Stekler (1994: 495-505), which can be used to forecast economic turning point. The confusion rate calculated in the paper is retrieved from a 2*2 contingency table, called Confusion Matrix (CM). The best model according to Confusing Rate (CR) is the least confusing one (the one with the smallest value of CR). Pesaran and Timmermann (1994: 1-7) showed that the test of market timing in the context of forecasting the direction of assert price movements proposed by Henriksson and Merton is asymptotically equivalent to the standard chi-squared test of independence in a confusion matrix, when the column and row sums are not a priori fixed, which is the case in this

analysis. One examines the standard chi-squared test of independence. The null hypothesis is the independence between the actual and the predicted directions. Thus, rejecting the null hypothesis provides direct evidence that the model is useful as a predictor of the sign of change in the prices. The chi-squared is therefore used to test statistics.

The Diebold-Mariano Predictive Accuracy Test (DM Test): Harvey, Leybourne and Newbold (1998: 281-291) originally proposed a modification of the Diebold-Mariano test for the differences in MSE to account for non-normal distributions of the forecast error series. The paper also constructs the asymptotic loss differential test proposed in Diebold and Mariano (1995: 253-263). Using only the loss differential series and the assumption that the loss differential series is covariant stationary and has short memory, the DM test has a null hypothesis that both forecasting models are equally accurate. Following the suggestion of Diebold and Mariano (1995: 253-263), the paper uses the rectangular lag window defined by $L(\tau / S(T) = 1$ for $|\tau / S(T)| < 1, = 0$ otherwise. Note that assuming (h-1)-dependence of loss differentials for h-step ahead forecasts implies only (h-1) sample autocovariances needed in the estimation of f(0), so that S(T)=h-1.

Methodology

The methods can be classified into Quantitative forecasting and Qualitative forecasting. The quantitative forecasting is divided into two main groups: 1) Time Series Model, which views that the past behavior of an object that we want to predict should be enough to forecast behavior in the future, and includes the naïve method, RWD method, VAR method, AR method, moving average method, simple exponential smoothing method, trend method, RW with drift and trend method and ARIMA; 2) the Casual Model, which views that the behavior of an object can be predicted from others that have suitable aspects to relate to each other, such as the regression method and econometrics method. The forecasting methods have different characteristics, strong points and weak points. None can provide a perfect forecast, therefore the most proper and reliable forecasting method should be selected. Selection criteria include the factors used in the method; for example, time period, data, number, validity, reliability and cost of applying the method (Makridakis, Wheelwright and Hyndman, 1998).

There are 10 statistical methods used in this paper: 1) the regression analysis was used to examine the relationship of a dependent variable or response variable to specified independent variables or explanatory variables. It can be used as a descriptive method of data analysis, such as curve fitting, without relying on any assumptions about the underlying processes in generating the data (Richard, 2004); 2) Random walk method, to model the diffusion of vorticity was first proposed by Chorin (1973). To simulate the diffusion of vorticity in vortex methods, the positions of the vortices are given random displacements (a random walk) (Chorin and Marsden, 1990). The basic idea of the random walk method is that the random displacements spread out the vortices like the diffusion process spreads out the vorticity; 3) Random walk with drift method, the best forecast of tomorrow's price is today's price plus a drift term. One could think of the drift as measuring a trend in the price (perhaps reflecting long-term inflation). Given the drift is usually assumed to be constant. Related: Mean reversion; 4) Vector auto regression; an economic model used to capture the evolution and the interdependencies between multiple time series, generalizing the univariate AR models. All the variables in a VAR are treated symmetrically by including for each variable an equation explaining its evolution based on its own lags and the lags of all the other variables in the model. Based on this feature, Christopher Sims advocates the use of VAR models as a theory-free method to estimate economic relationships, thus being an alternative to the "incredible identification restrictions" in structural models (Sim, 1980) Auto regression; a type of random process which is often used to model and predict various types of natural and social phenomena; 6) Moving average, commonly used with time series data to smooth out short-term fluctuations and highlight longer-term trends or cycles. Mathematically, a moving average is a type of convolution and so it is also similar to the low-pass filter used in signal processing. When used with non-time series data, a moving average simply acts as a generic smoothing operation without any specific connection to time, although typically some kind of ordering is implied; 7) Exponential smoothing method, in statistics, exponential smoothing refers to a particular type of moving average technique applied to the time series data, either to produce smoothed data for presentation or to make forecasts. Exponential smoothing is commonly applied to financial markets and economic data, but it can be used with any discrete set of repeated measurements. One disadvantage of this technique is that it cannot be used on the first k-1 term of the time series. A slightly more intricate

method for smoothing a raw time series X_t is to calculate a weighted moving average by first choosing a set of weighting factors and then using these weights to calculate the smoothed statistics; 8) Trend, the relatively constant movement of a variable throughout a period of time. The period may be short-term or long-term, depending on the trend itself; 9) Random walk with drift, and 10) Box-Jenkins approach to modeling ARIMA processes was described in a highly influential book by statisticians George Box and Gwilym Jenkins in 1970. The original Box-Jenkins modeling procedure involves an iterative three-stage process of model selection, parameter estimation and model checking. Recent explanations of the process (Makridakis, Wheelwright and Hyndman, 1998) often add a preliminary stage of data preparation and a final stage of model application or forecasting. One of the attractive features of the Box-Jenkins approach to forecast is that ARIMA processes are a very rich class of possible models and it is usually possible to find a process that provides an adequate description to the data. The original Box-Jenkins modeling procedure involved an iterative three-stage process of model selection, parameter estimation and model checking. This is a complicated method and needs specialized expertise in data analysis. However it gives a higher accuracy than others in short-term prediction (Newbold and Granger, 1974).

All time series data of RSS3 in the futures market, particularly the daily and monthly data, were collected. The reason for considering both daily and monthly prices is the benefit from studying the change in rubber price for both short and long periods. The rubber prices in time series were used for plotting graph checks for moving characteristic.

The equation of each method for daily and monthly rubber price are constructed from the methods previously mentioned. The value of regression on the prediction method is compared to the true monthly value. The model of rubber price for the monthly time series is constructed by studying the variables that affect the rubber price through the regression from May 2004 through May 2009. The paper also constructs the model and looks for the variables affecting rubber prices. It considers the period when the trend in rubber price is influenced by expansion or recession, as well as the business cycle index. This is done by graph analysis showing the relations between monthly rubber price and quantity of variables.

Empirical Results and Discussion

The discussion focuses on analyzing efficiency in price and on determining, the suitable forecasting model on the movement of rubber prices in the futures market. The variables are examined with the view of determining the rubber futures price that can help guide, plan, and control rubber price thereby making it less volatile. The last part analyzes the trends of rubber prices using the relationship between rubber prices and the leading indicator variables. The results are classified into four parts, as follows:

Studying efficient market on RSS3 futures to explain the form of price's movement and the return on investment of RSS3 futures, we provide into two parts. First part, we test the independent with futures itself by using tools, i.e, autocorrelation function test, run test and autoregressive model to show the return on RSS3 futures price whether independent. Also, using the variance ratio tests and unit root tests to show the return on RSS3 futures price whether follows by the random walk theory as in Table 1 and the second part; we test the independent between futures and spot as in Table 2.

Table 1 Results Expressed Tools Analyzing Efficiency in Price

Tools for analyzing	Results
Autocorrelation Function (ACF)	Not Weak Form Efficient
Unit Root Tests:	
*Augmented Dickey-Fuller (ADF) Test	Weak Form Efficient
*The KPSS Test	Weak Form Efficient
Run Test	Weak Form Efficient
First-Order Autoregressive Scheme or AR(1)	Not Weak Form Efficient
Variance Ratio Tests	Weak Form Efficient

The results from Table 1 concluded that there were two methods that showed the RSS3 futures market was not weak form efficient, namely the Autocorrelation Function (ACF) and the First-Order Autoregressive Scheme or AR (1). The other three methods, namely the Unit Root Tests, Run Test, and Variance Ratio Tests, summarized that the RSS3 futures market was weak form efficient. The two methods that showed "not weak form efficient market" were parametric tests, which use only the normal distribution data. The parametric tests are less favorable when compared to the non parametric tests. The non parametric tests are now more accepted for research in Thailand and foreign countries. Moreover, the Run Test and Variance

Ratio tests are considered more reliable than the Autocorrelation Function (ACF) and First-Order Autoregressive Scheme or AR(1), in which the two latter tests concluded that the RSS3 futures market was weak form efficient. Furthermore, the Unit Root Tests by Augmented Dickey-Fuller (ADF) test and The KPSS test of stationary showed “non-stationary”, following the random walk theory, also supported the weak form efficient market of the RSS3 futures.

When we get daily ECM, we need to check the serial correlation problem by using Breusch-Godfrey Serial Correlation LM test (B-G Test). The results show that all leading indicators cannot reject the null hypothesis of “no serial correlation”. It means there is no autocorrelation problem. After that continuing to test ARCH effect or autoregressive conditional heteroskedasticity by using ARCH LM Test, all reject the null hypothesis autoregressive conditional heteroskedasticity. This provides evident of volatility clustering that forms in high frequently time-series, but the generalized autoregressive conditional heteroskedasticity or GARCH models are useful to obtain data with this. However, the GARCH is not target on this paper working. Note that the ECM coefficient is significantly for oil and TOCOM variables. That is consistent to result from cointegration that we found long run relationship in oil and TOCOM only showing in Table 2.

Table 2 Results Expressed on Stationary, Cointegration and Volatility of Efficiency in Price

Tests	Results
Without Leading Indicators:	
Stationary of residual without trend and constant (Mackinnon t-statistic)	Reject null hypothesis: futures price and future spot price have long range equilibrium relationship.
Wald Test	Cannot Reject the null hypothesis for both contracts 1 and 2-month: futures price can be the representative for future spot price.
ECM:	
Breusch-Godfrey Serial Correlation LM	Reject null hypothesis on no serial correlation: there is the autocorrelation problem excepting contract 1-month.
ARCH LM	Cannot Reject null hypothesis: the models are following the theory; also, the volatility of future spot price has the stationary of characteristic on "Homoscedasticity".
With Leading Indicators:	
Stationary of residual without trend and constant (Mackinnon t-statistic)	Reject null hypothesis: leading indicators and futures price have long range equilibrium relationship only crude oil price, TOCOM for daily and only TOCOM and net imports synthetic rubber China for monthly.
ECM: with leading indicators:	
Breusch-Godfrey Serial Correlation LM	Cannot Reject hypothesis on no serial correlation: there is autocorrelation problem.
ARCH LM	Cannot Reject hypothesis for monthly: the model was following the theory; also, the volatility of the leading indicators has stationary of characteristic on "homoscedasticity".

By adopting the model selection approach to RSS3 price in a real time forecasting scenario, the paper attempts to shed light on the usefulness of econometric forecasting, and the empirical relevance of modeling theoretical relationships between the futures and spot prices when constructing forecasting models providing in Table 3.

Table 3 Model Ranking by Univariate Criteria (1-step-ahead forecasts) in Pure Time Series on First Top Three

Criteria	Ranking 1	Ranking 2	Ranking 3
RMSE	VAR	ARIMA(1,1,1)	AR(1)
MAE	ARIMA(1,1,1)	VAR	SES
MAPE	ARIMA(1,1,1)	VAR	SES
THIL'S	VAR	ARIMA(1,1,1)	AR(1)

The univariate criteria in pure time series: VAR and ARIMA (1,1,1) is the best accurate model regarding to RMSE and MAE; ARIMA (1,1,1) is the best perfect fit model relying on MAPE; VAR is the best predictive performance model according to Thiel's U-statistic.

Table 4 Daily Leading Indicators Express by Lag Term on First Top Three

Criteria	Ranking 1	Ranking 2	Ranking 3
RMSE	VAR	AR(1)	SES
MAE	VAR	SES	RW
MAPE	VAR	SES	AR(1)
THIL'S	VAR	AR(1)	SES

The univariate criteria in daily leading indicators expressed by lag term: VAR is the best accurate model regarding to both RMSE and MAE; VAR is the best perfect fit model relying on MAPE; VAR is the best predictive performance model according to Thiel's U-statistic.

Table 5 Monthly Leading Indicators Expressed by Lag Term First Top Three

Criteria	Ranking 1	Ranking 2	Ranking 3
RMSE	RWDT	ARIMA(1,1,1)	IMSRJ
MAE	MA(1)	AR(1)	TOCOM
MAPE	IMSRJ	WCNR	EXR(฿/$)
THIL'S	ARIMA(1,1,1)	RWDT	IMSRJ

The univariate criteria in monthly leading indicators expressed by lag term: RWDT and MA(1) is the best accurate model regarding to RMSE and MAE; MA(1) is the best perfect fit model relying on MAPE; ARIMA(1,1,1) is the best predictive performance model according to Thiel's U-statistic.

Table 6 Daily Leading Indicators Expressed by ECM First Top Five

Criteria	Ranking 1	Ranking 2	Ranking 3	Ranking 4	Ranking 5
RMSE	TOCOM	Crude Oil Price	VAR	EXR(Yen/$)	EXR(฿/$)
MAE	TOCOM	VAR	Crude Oil Price	EXR(Yen/$)	SES
MAPE	TOCOM	VAR	Crude Oil Price	EXR(Yen/$)	EXR(฿/$)
THIL'S	TOCOM	VAR	Crude Oil Price	EXR(Yen/$)	EXR(฿/$)

The univariate criteria in daily leading indicators expressed by ECM: TOCOM is the best accurate model regarding to RMSE and MAE; TOCOM is the best perfect fit model relying on MAPE; TOCOM is the best predictive performance model according to Thiel's U-statistic.

Table 7 Monthly Leading Indicators Expressed by ECM First Top Five

Criteria	Ranking 1	Ranking 2	Ranking 3	Ranking 4	Ranking 5
RMSE	IMSRJ	IMNRC	RWDT	WCNR	ARIMA(1,1,1)
MAE	MA(1)	VAR	TOCOM	WCNR	RWDT
MAPE	VAR	MA(1)	TOCOM	WCNR	IMNRC
THIL'S	IMSRJ	IMNRC	ARIMA(1,1,1)	RWDT	WCNR

Univariate criteria in monthly leading indicators expressing by ECM: Net imports synthetic rubber Japan and MA(1) is the best accurate model regarding to RMSE and MAE; AR(1) is the best perfect fit model relying on MAPE; Net imports synthetic rubber Japan is the best predictive performance model according to Thiel's U-statistic.

Table 8 Diebold-Mariano Statistics of Predictive Accuracy

UNIVARIATE	RMSE	MAE	MAPE	5% level $\|S\| > 1.96$	Reject or Unable to reject Null hypothesis
RW – RWD	0.195	0.190	0.001793	-0.1675	Unable to reject null hypothesis
RW – VAR	0.169	0.131	0.001222	3.1532	Reject null hypothesis
RW – AR(1)	0.179	0.155	0.001448	2.1902	Reject null hypothesis
RW – MA(1)	0.180	0.157	0.001471	1.7352	Unable to reject null hypothesis
RW – SES	0.099	0.064	0.000617	1.8874	Unable to reject null hypothesis
RW – T	6.029	5.209	0.050018	-2,714.61	Reject null hypothesis
RW – RWDT	0.210	0.180	0.001680	0.9952	Unable to reject null hypothesis
RW – ARIMA (1,1,1)	0.196	0.170	0.001613	3.0268	Reject null hypothesis

Table 8 showed the results that RW - SES; RW - MA(1); RW - RWD and RW - RWDT are unable to reject the null hypothesis of equal predictive accuracy according with RMSE, MAE and MAPE. Moreover, statistically, the Diebold-Mariano test also shows that the pairs of model that do not able to reject the null hypothesis mean that those pairs do not differ in terms of their squared forecast errors. However, for the VAR, AR(1), RWDT and ARIMA(1,1,1) we can find better forecast performance as we can reject the null hypothesis at 5% level.

The last criterion is attempting to predict future market directions, usually by examining recent price and volume data or economic data, and investing based on those predictions; also, called timing the market showing in Table 9:

Table 9 Model Ranking by Market Timing Criterion

Market Timing	Confusion Matrix	Confusion Rate	Ranking	Chi-Square
RW	-597	0.596154	4	2.918402
RWD	-510	0.567308	1	0.838801
VAR	-834	0.644231	5	0.723896
AR(1)	-1,096	0.692308	7	0.621158
MA(1)	-1,192	0.711538	9	0.733287
SES	-1,103	0.692308	8	0.680194
T	-393	0.586538	2	0.135285
RWDT	-569	0.586538	3	0.865951
ARIMA(1,1,1)	-979	0.673077	6	0.556971

Table 9 reports the values of market timing criterion, for RSS3 commodity and forecast horizons. Judging by the confusion rate values, it is interesting to note that most of the models are quite accurate and correctly predict the direction of price changes in time. All of the chi-square values suggest rejecting the null hypothesis of statistical independence. In other words, most of models are useful for predicting the direction of futures price changes.

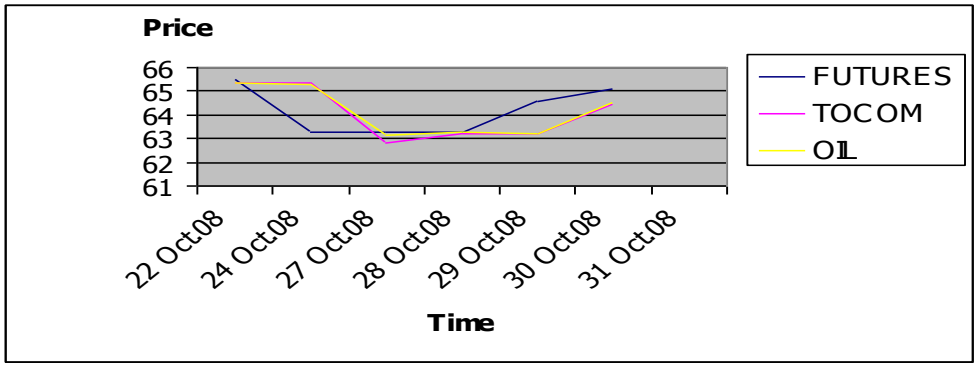
Analyses on the 310-day time-series multiple regression used the daily exchange rates between the Thai baht and U.S. dollar, the exchange rate between the Japanese yen and the U.S. dollar, the crude oil price and TOCOM that affect the monthly RSS3 futures price. The comparison between time-series and leading indicators models found that the first rank of univariate selection criteria for checking on the most accurate model according to the lowest values in both RMSE and MAE for time-series model was VAR. Furthermore, the outstanding rank in both RMSE and MAE for leading indicator was the exchange rate between the yen and the U.S. dollar. It is noticeable that there is not much difference between the numbers. Therefore, the multiple regression model enables for all the variables to be used as an option for forecasting with leading indicators. Multiple regression can create forecasting model as follows:

$$dlog(futures) = -0.003366 + 0.022657\ dlog(oil) + 0.230491\ dlog(TOCOM)$$
$$(1.237687)^{*} \qquad (6.504277)^{****}$$

The model shows that RSS3 futures price in AFET at time t has positively relationship with both crude oil price and TOCOM at the time when others are "ceteris paribus". If the crude oil price increases by 1 percent, it will affect the RSS3 futures price in AFET at time t which will increase by 0.022657 percent. If the TOCOM price increases by 1 percent, it will affect the RSS3 futures price in AFET at time t and will increase by 0.230491 percent.

In Figure 1, we select the line graph by visually comparing with "FUTURES" as the reference line. One of the reasons is because the particular line graph should be the leading character for reference graph. Another reason is that change for both leading and reference graph should not be much different from each other.

Figure 1 Seven Days Movement on Graph of Rubber Futures Price and Leading Indicators



The study on selecting variables appropriate to be leading indicators for analyzing the RSS3 futures prices trend by using the graph found that the crude oil price can be the proper leading indicator for the futures price.

Analyses on the time-series multiple regression of 61 months used the effect of monthly exchange rate between Thai baht and U.S. dollar, crude oil price, exchange rate between yen and U.S. dollar, TOCOM, net imports of natural and synthetic rubber in Japan, net imports of natural and synthetic rubber in China, and the world natural and synthetic rubber consumption on the monthly RSS3 futures price. According to a comparison made between the time-series and leading indicators models, it was found that the top two ranks of univariate selection criteria for the most accurate model according to the lowest values in RMSE for time-series model was the RWDT and ARIMA (1,1,1). In MAE for time-series model was MA (1) and AR (1). Furthermore, the outstanding rank in RMSE and MAE for leading indicator was net imports synthetic rubber Japan and TOCOM, respectively. The forecasting model can be created as follows:

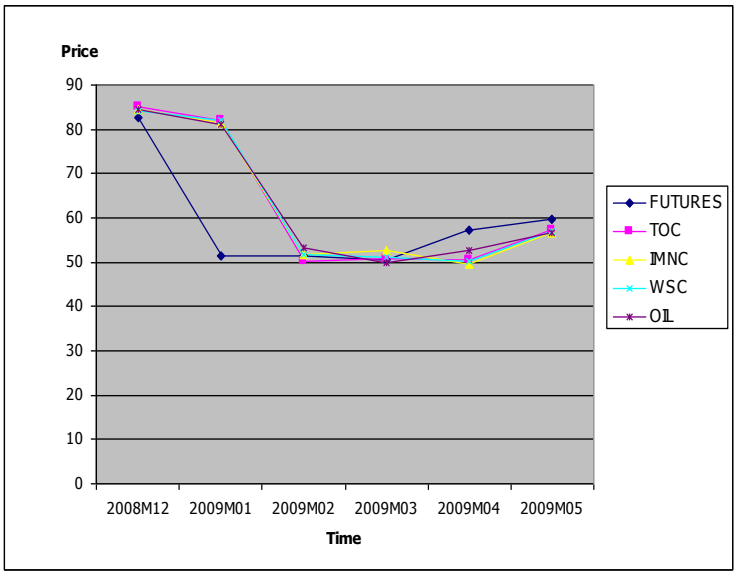
$$dlog(futures) = -0.000305 - 0.072949\ dlog(IMNC) + 0.232344\ dlog(WSC) + 0.031489\ dlog(oil) + 0.992509\ dlog(TOC)$$

$$(-4.481363)^{****} \qquad (3.507576)^{****} \qquad (2.225023)^{***} \qquad (48.43469)^{****}$$

The model shows that RSS3 futures price in AFET at time t has the positively relationship with world synthetic rubber consumption, crude oil price and TOCOM, but has the negatively relationship with net imports natural rubber China at a time

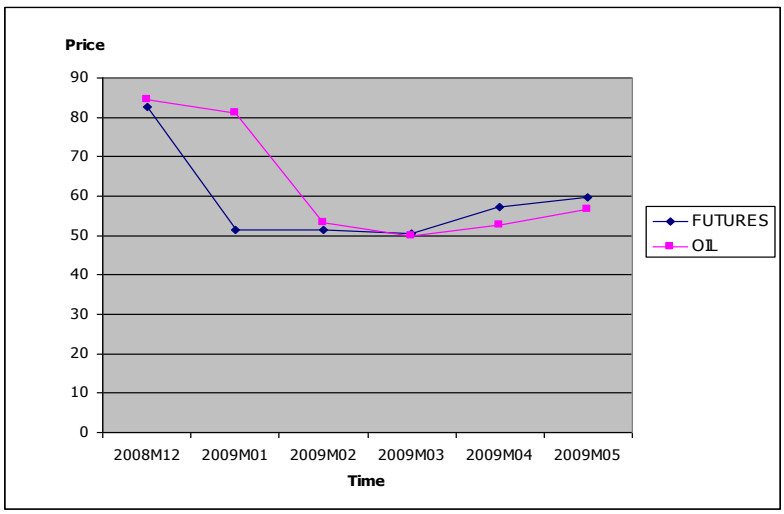
when others are “ceteris paribus”. If the world synthetic rubber consumption increases by 1 percent, it will affect on RSS3 futures price in AFET at time t increased by 0.232344 percent. If the crude oil price increases by 1 percent, it will affect the RSS3 futures price in AFET at time t a by 0.031489 percent increase. If the TOCOM price increases by 1 percent, it will affect the RSS3 futures price in AFET at time t by a 0.992509 percent increase. However, if the net imports of natural rubber in China increase by 1 percent, it will decrease the RSS3 futures price in AFET at time t by 0.0575 percent.

Figure 2 Six Months Movements on Graph of Rubber Futures Price and Leading Indicators



In Figure 2, we select the line graph again by visual comparing with the reference graph, FUTURES regarding on these characteristics. The graph shows that the trend of one-month decrease then two- month increase affects crude oil price, and will also affect the RSS3 futures price in the same direction.

Figure 3 Six Months Movements on Graph of Rubber Futures Price and Crude Oil Price Leading Indicator



In Figure 3, considering the rubber futures price trend that is going to be happen in January 2009, the crude oil price is continuously decreasing to the mid of March 2009. The period with high supply of crude oil is estimated to be around two and a half months which it can expect that the rubber futures price will also drop for two and a half months period. It is expected that in March 2009 the price will be the lowest and then will increase again afterwards. So, the rubber futures price also has an increasing trend in the same period.

Table 10 Compare True Value with Expected Trend

Month Level	Month/Year	True Value
59	March/2009	50.65
60	April/2009	57.20
61	May/2009	59.56
62	June/2009	57.75
63	July/2009	59.11
64	August/2009	68.68

The results shown in the graph and the true value are corresponding to each other which it depicts that the there will be one month decrease and two months increase. The price dropped in March 2009 and after that during April and May 2009 increased to 59.56. In June 2009, the price decreased to 57.75 and increased back for two months until August 2009. However, if this pattern is correct, we expect to see a dropping price trend again in September 2009 and an increasing price trend in October and November 2009, respectively.

Conclusion

The rapid growth of Thailand's agriculture output has been driven by large increases in the export of basic commodities such as natural rubber and rice. The demand for these commodities had resulted in a dramatic increase in spot prices as well as price volatility in recent years. Thus the development of futures market was seen as a vital step in reducing uncertainty on price. The result indicated that daily and monthly futures prices served as unbiased estimators of future spot prices. Therefore, Thailand's RSS3 futures market was weak form efficient market. Moreover, RSS3 futures price can be predicted by net imports natural rubber China, world synthetic rubber consumption, crude oil price and futures price TOCOM; investors can use this information with futures price prediction. Because futures price lead spot price and both futures and spot price will converse lastly.

In this regard, the people who involve with the market are speculators, so the government should motivate and inform the hedgers who the direct agricultural group is using the futures market as the optional choice on reducing or protecting the risk in the future when the RSS3 price drops. When the volume of RSS3 futures contract is widely accepted, it should reconsider on the other commodities to be the instruments on reducing the fluctuation of agricultural prices. Furthermore, if the futures market has the professional investors using the sophisticated trade to set up the funds for trading, this might be the case that futures price can be the representative of future spot price followed by the theory on the ratio of expected representative equal to one. This will make more knowledgeable in futures market expansion. Therefore, the government should support on setting up the funds to make the futures market efficiency and to develop the potential of agents in the futures market.

And finally, it is interesting to academic researchers and explorers for future research. In future period, the data should collect in addition when the time goes by to make the suitable equation. The study does not include other commodities such as rice (BHMR and BWR5) and potato (TC); if there is available data and more volumes, it interest to test on. In addition, the test of GARCH may be a suggesting for future research on price volatile.

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Job Satisfaction and Intention to Leave among University Teachers in Pakistan

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***Abstract*:** This study aimed at exploring the relationship between employees Job Satisfaction and turnover intentions. The Study was conducted on sample of 100 respondents taken from the different campuses of University of Education, Lahore. Different measures of employee Job Satisfaction were studied for this purpose like Satisfaction with Supervisor, Satisfaction with Job Variety, Satisfaction with Closure, Satisfaction with Compensation, Satisfaction with Co-Workers and Satisfaction with HR/Management Policies. For analyzing the relationship descriptive statistics and Correlation were used. Furthermore, regression analysis was conducted to determine that whether any relationship between Satisfaction and intent to leave exists or not. Results of the study showed that most of the respondents were satisfied with their Job and negative relationships exist between satisfaction and intent to leave. Regression Analysis shows that effect the employees' intentions to quit from their jobs.

***Key words*:** Job satisfaction, intention to leave, satisfaction with supervisor, satisfaction with job variety, satisfaction with closure, satisfaction with compensation, regression analysis, correlation

Introduction

For any organization whether it is a university, bank or any other organization turnovers of the employees is an imperative issue to be considered. According to equity theory (Adams, 1963), if employees found equity between input and outcome at their jobs they will be intended to plan for long term job commitment with their existing employers and their level of job satisfaction will be higher and they will have lower intentions to quite from their existing jobs. Employees of an organization are the main strength of an organization. A skilled workforce contributes towards the larger future benefits of any organization. A significant turnover of employees in any organization makes it difficult to smoothly perform its operations. In many previous

studies like (Wagner, 1994) and (Fitz-enz, 1997) it was found that many of the organizations are found with shortage of skilled workers to compete in the present world of competition. These studies reported that more skilled worker contribute towards the higher benefits of the employees.

It is always considered better to retain the current employees instead of taking the new employees and giving them training and assigning the tasks which they are performing first time and will need a lot of time to get expertise in their jobs. Keeping the experienced employees save a lot of training costs and brings expert decisions in many of the important situations which new and fresh employees are not expected to do like a university teacher which is teaching a course from last many years will definite have more skills and knowledge than a new teacher starting his career. So, it could be appropriate to say that losing an employee have more costs than searching and hiring a new employee for any job.

This study aimed at exploring the factors which contribute towards the employees' satisfaction with their job and the relationship between the satisfaction of any employee towards his job and intention to leave the job.

Literature Review

Satisfaction with Supervisor

Supervisors are interacting with the employees most of the times and therefore, there behavior is important measure for satisfaction of the employees. Many of the studies found that behavior of the supervisor with the subordinate staff affects the satisfaction level of the employees. Kuzmits and Elbert (1992), Seta *etal*. (2000), Syptak *et al.* (1999), Studies have found the employees commitment as a result of supervisors' behavior and support. (Bycio, Hackett, & Allen, 1995).

Satisfaction with Variety

Satisfaction with variety is defined as employees are given different types of tasks in their job and they are not only assigned routine tasks but they are rotated on different positions which increases their skills and they get information and skills about different positions. According to this particular study it could be studied in the context that teachers are assigned different courses and they also got exposure in different non-teaching activities.

Satisfaction with variety in previous literature could be found as when employee got different opportunities regarding work experience they got more chances to grow and that these growth opportunities ultimately leads towards the satisfaction of an employee towards his job. Allen and Katz (1995) found that employees prefer challenging tasks in their job because they consider that their personal development will enhance their knowledge and they will get opportunities to grow in their professional careers.

Satisfaction with Management and HR Policies

Human Resource Policies of the organizations affects the level of the satisfaction of its employees. *Schermerhorn, J.R., Jr. Hunt, J.G and Osborn, R.N. (2000)* If management of the Organization has policies which facilitates the employees it will direct their satisfaction level towards positive direction and if the management of the organization has policies which are considered unnecessary by the employees of the organization and they treat these policies a burden for them it will create frustration among the employees and finally that will leads towards dissatisfaction of the employees. Syptak, Marsland & Ulmer (1999).

Satisfaction with Closure

Satisfaction with closure means that employees are satisfied with the opportunity his job is providing him to complete his tasks.

Satisfaction with Compensation

Compensation has been discussed as a measure for the satisfaction of employees in numerous studies. These studies focused on compensation as an important measure for the satisfaction of the employees. If the organizations will pay their employees who suffice their requirements then employees will consider them more satisfied. Seta *et al*. (2000)

Satisfaction with Co-workers

An important aspect of the employee's job satisfaction is the employees' satisfaction towards the environment of the organization and cooperation of the co-workers. Many of the previous studies focused on this aspect of the job satisfaction and found that satisfaction of the employee towards his co-workers contribute significantly towards his overall job satisfaction. Kuzmits and Elbert (1992), Seta *etal*. (2000)

Job Satisfaction

If an employee is satisfied with all aspects or some aspects of his job it will leads towards overall job satisfaction of the employee. Job satisfaction can be defined as satisfaction of an employee towards different aspects of his job. Job satisfaction is the result of an employee satisfaction towards different factors of his job. (Falkenburg & Schyns, 2007). Overall job satisfaction now can be defined as the satisfaction of the employees with some or many of the aspect of the job discussed in literature like Satisfaction with Supervisor, Satisfaction with Variety, Satisfaction with Management and HR Policies, Satisfaction with Closure, Satisfaction with Compensation and satisfaction with co-workers. If an employee is not intended to quite from his existing job because of his satisfaction with some or all of these measure then an assumption might be made that employee is satisfied because he is not switching from his existing job due to satisfaction with some measure of satisfaction.

Intention to Leave

Intention to leave can be defined as behavior of any employee to quit from his existing job Rumery (1997). Intention of an employee determines his behavior about his job retention that whether he will keep his current job or he will try to quit from

his job in the future. Igbaria and Greenhaus (1992) an employees future behavior can be predicted from his intentions to quit or to stay in his current job. Literature supports the assumption that future behavior of an employee can be better judged by his intentions Firth, Mellor, Moore & Loquet, (2004) Actual turnover of an employee is the outcome of his intentions to quit the job. Johnsrud and Rosser (1999)

Satisfaction and intentions to quit

Malkovich &Boudreau, 1997) found that teacher which were satisfied from their jobs were not intended to move for the new job and reported that more satisfied teacher were found having more stay in the jobs. Moynihan *et. al.* (1998) found a negative relationship between job satisfaction and intentions to leave the job. Many other studies found a negative relationship among the satisfaction and intention to quit like Lee and Mowday (1987), Moynihan *et. al.* (1998), Harrel and Stahl (1984)

Hypothesis

From the literature given we can draw these hypotheses about the relationship among satisfaction and intention to leave.

H1 = Satisfaction with Supervisor has negative relationship with turnover intentions.

H2 = Satisfaction with Job Variety has negative relationship with turnover intentions.

H3 = Satisfaction with Closure has negative relationship with turnover intentions.

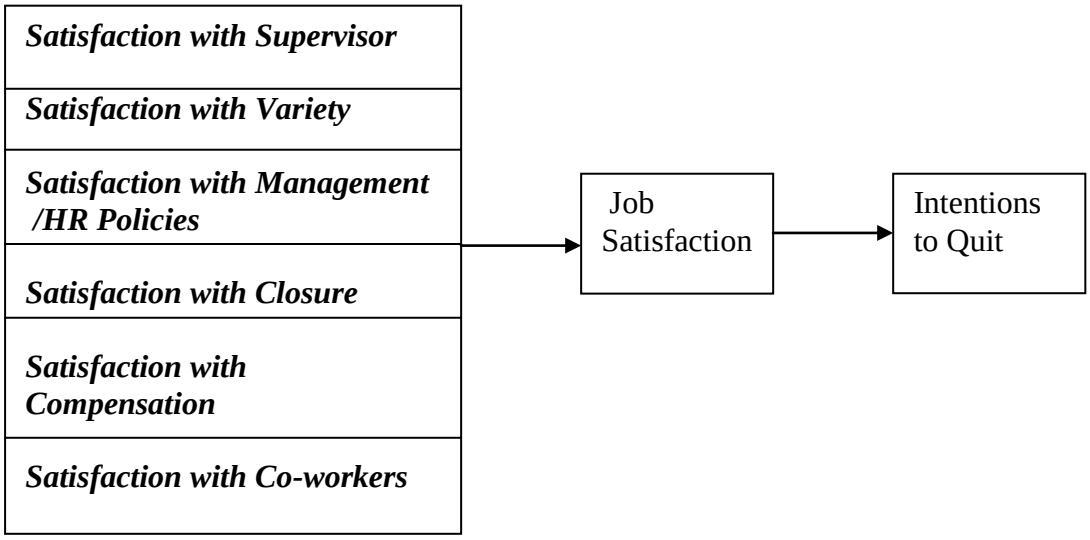
H4 = Satisfaction with Compensation has negative relationship with turnover intentions.

H5 = Satisfaction with Co-workers has negative relationship with turnover intentions.

H6 = Satisfaction with HR/Management Policies has negative relationship with turnover intentions.

Data and Methodology

Model



Sample of the study was the teaching staff of University of Education, Lahore. University of Education has 11 campuses across the province of Punjab. For the sample selection, 100 employees of the University from the teaching staff were selected randomly from different campuses. Questionnaires completely filled and returned were 97 so; actual response rate was 97 percent. The instrument for the data collection and to measure this relationship is adopted from previous studies of Wood et al. (1986), adopted by Purani and Sahadev (2007) and Alam et al. (2009)

Findings

Reliability Statistics

Table 1

Factor	Cronbach's Alpha
Satisfaction with Supervisor	.931
Satisfaction with job variety	.891
Satisfaction with closure	.874
Satisfaction with compensation	.836
Satisfaction with co-workers	.921
Satisfaction with management policies	.888
Intent to leave	.937

Cronbach's Alpha was used for the reliability of the instrument. Alpha value for all the factors was satisfactory for the reliability of the instrument as shown in the table.

Table 2 represents the demographics of the respondents. Most of the respondents were between the age group of 20 to 35 years and with works experience of up to 5 years. It was found that most of the respondents were young with work experience of less than 5 years. Education level of the most of the teachers was master's degree. It might be the result of university policy to allow study leave after confirmation of the services which takes 5 years after the joining period. Demographic factors shows that respondents were equally divided in males and females and approximately fifty percent of the respondents were married.

Demographics

Table 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Age	20-25 years	5	5.2	5.2	5.2
	26-30	48	49.5	49.5	54.6
	31-35	26	26.8	26.8	81.4
	36-40	14	14.4	14.4	95.9
	above 40 years	4	4.1	4.1	100.0
	Total	97	100.0	100.0	
Education	Masters	76	78.4	78.4	78.4
	M Phil	16	16.5	16.5	94.8
	PhD	5	5.2	5.2	100.0
	Total	97	100.0	100.0	
Gender	Male	49	50.5	50.5	50.5
	Female	48	49.5	49.5	100.0
	Total	97	100.0	100.0	
Marital Status	Single	47	48.5	48.5	48.5
	Married	50	51.5	51.5	100.0
	Total	97	100.0	100.0	
Experience	up to 2 years	22	22.7	22.7	22.7
	2-5 years	58	59.8	59.8	82.5
	6-10 years	12	12.4	12.4	94.8
	11-20 years	3	3.1	3.1	97.9
	above 20 years	2	2.1	2.1	100.0
	Total	97	100.0	100.0	

Table 3

Descriptive Statistics

	N	Mean	Standard Deviation
Satisfaction with Supervisor			
I am satisfied with the information I receive from my superior about my job performance	97	3.494	.8180
There is enough opportunity in my job to find out how I am doing.	97	3.422	.7883
I receive enough feedback from my supervisor on how well I am doing.	97	3.463	.8172
I receive enough information from my supervisor about my job performance.	97	3.360	.7930
Satisfaction with Job Variety			
My job has enough opportunity for independent thought and action	97	3.237	.8136
There is enough variety in my job	97	3.361	.7798
I have enough freedom to what I want in my job	97	3.320	.7712
I am satisfied with the variety of activities my job offers.	97	3.381	.6838
I am satisfied with the opportunity my job provides me to interact with others	97	3.309	.6976
I am satisfied with the freedom I have to do what I want on my job.	97	3.361	.7526
Satisfaction with Closure			
My job has enough opportunity to complete the work I starting to end	97	3.330	.7461
I am satisfied with the opportunity my job gives me to complete tasks from beginning.	97	3.278	.7738
Satisfaction with Compensation			
Overall I am satisfied with the company's compensation package	97	3.392	.7979
I am satisfied with the medical benefits	97	2.526	.9777
I am satisfied with the holiday (vacation) eligibilities	97	3.000	.9134
I received with the security my job provides me.	97	2.959	.9781
I am satisfied with the retirement benefits	97	2.546	.9654
Satisfaction with Co-Workers			
My fellow workers are pleasant.	97	3.866	.7587
My fellow workers are not selfish	97	3.763	.8871
The people I work with help each other out when someone falls behind or gets in a tight spot	97	3.742	.8200
The people I work with are very friendly	97	3.763	.8633
Satisfaction with HR/Management Policies			
University management has a clear path for teacher's advancement	97	3.021	.6288
Physical working conditions are supportive in attaining quality	97	2.969	.6685
Management is extremely fair in personal policies.	97	3.021	.7068
Decisions are made keeping in mind the good of the teachers	97	2.990	.7288

Table 3.1 Intent to Leave

	N	Mean	Standard Deviation
Presently, I am actively searching for other job.	97	2.619	.8949
In the last few months, I have seriously thought about looking for a new job.	97	2.619	.9292
I intend to leave the organization in the near future	97	2.619	.9403
Valid N (list wise)	97		

Descriptive Statistics shows that mean value for the satisfaction of the respondents with the co-workers is found high in all other factors of the satisfaction. Descriptive Statistics reported that respondents were satisfied with the factors of satisfaction. Respondents were found less satisfied with only one factor of Satisfaction which is satisfaction with Management/HR Policies.

Mean Value for the teacher in University of Education shows that respondents were less intended to leave their jobs. Results of the descriptive study revealed that teachers were satisfied with their compensation, Job variety, Co-workers and with closure and were less intended to quite from their job. However respondents have given either a neutral response or dissatisfied response towards the management policies.

Table 4

Correlation

	Satisfaction with Supervisor	Satisfaction with Variety	Satisfaction with Closure	Satisfaction with Compensation	Satisfaction with Co Workers	Satisfaction with HR/ Management Policies	Intent to Leave
Intent to Leave	-.285	-.317	-.225	-.147	-.155	-.225	1
	.005	.002	.027	.150	.130	.027	

Results of the correlation matrix revealed that satisfaction has negative correlation with intent to leave. It was found that all the factors of satisfaction have negative relationship with the intention to leave. Correlation tells about the direction and strength of the relationship. Satisfaction with Supervisor has negative correlation of -.285 with the intent of leave. Satisfaction with Variety has -.317 correlation with intent to leave, Satisfaction with closure has correlation of -.225 with intent to leave,

Satisfaction with co-worker has correlation of -.147 with intent to leave -.155 and satisfaction with HR /Management Policies has value of -.225 with intent to leave. Correlation results are evident that all the factors of satisfaction have negative correlation with intent to leave. It could be deduced that Job Satisfaction has negative relationship with intent to leave. However, this relationship is not very strong but has negative direction. So, it is appropriate to say that satisfaction and intent to leave are negatively correlated.

Correlation reports the strength and direction of the different variables but it do not explain the impact of one variable on other variable. To analyze the impact of Job Satisfaction on Intent to leave regression analysis was used.

Table 5

Regression

Variable	R Square	Beta	t	Sig.
Supervisor	**.081**	**-.285**	**-2.896**	**.005**
Variety	**.100**	**-.317**	**-3.255**	**.002**
Closure	**.050**	**-.225**	**-2.246**	**.027**
Compensation	**.022**	**-.147**	**-1.452**	**.150**
Co Worker	**.024**	**-.155**	**-1.527**	**.130**
HR Policies	**.050**	**-.225**	**-2.246**	**.027**

Table 5 represents the regression results. Regression is run separately on different factors of satisfaction on the teachers' intention to leave their jobs. R Square presents that all these factors do have impact on the employees' intention to quit from their jobs. R square is not found very strong. R Square value given in the table are considered low to consider them have any strong significant impact on employees intention to leave their jobs. The reason for low R Square might be that all the factors of satisfaction are used separately in the regression equation. If we single regression equation it might depict more significant results but separate correlation and regression equations are run to test the effect of all factors of satisfaction separately.

Conclusion

This study was aimed at exploring the relationship between the employees Job Satisfaction and their intentions to quit from their jobs. Important factors taken in the previous researches to measure the satisfaction of employees towards their jobs were

taken to analyze this relationship. Descriptive Statistics, Correlation and regression Analysis were used on a sample of 100 respondents from the teaching staff of University of Education. Sample was selected from various campuses of the university.

Most of the respondents were found satisfied with their supervisors behavior and support, respondents were also found satisfied with Job Variety, Closure, Compensation and Co-Workers. The only factor which was showing low level of satisfaction was the HR/Management policies. Results are consistent with many of the previous research studies conducted on this relationship. Seta *et al*. (2000) found that satisfaction with co-workers contribute towards employees overall job satisfaction and reduces the intention to quit from the job. Seta et al (2000) also reported that if employees consider their compensation plan sufficient they will have low intentions to leave the job (Bycio, Hackett, & Allen, 1995). Reported in their study that supervisory support increases the employee commitment and ultimately increases employees' satisfaction, so results of this study are consistent with the study of (Bycio, Hackett, & Allen, 1995) many of the other studies reported the similar results like Syptak, Marsland & Ulmer (1999) and Masroor Alam et al. (2009).
However, result might differ depending on the nature of employment and other factors which might have not been taken in this study, like Jackofsky and Peter (1983) found that it is not only the employees satisfaction which is related to his turnover intentions but Other Opportunities available in the market also contribute to the decision of whether to keep the current job or to move for any better opportunity. So, many other aspects could be addressed to further elaborate this topic.

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How does undervaluation affect firms going private in Australia?

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***Abstract*:** This paper analyzes undervaluation as a determinant in going private transactions in Australia. We used a set of unique hand collected data within a period from 1990 to 2010 to develop and test a predictive choice model that distinguishes firms went private from firms that did not. The analysis shows that firms taken over by PE firms suffer from market undervaluation, a possible effect due to information asymmetry existing between the market and managerial perception. This managerial perception is likely to act as an incentive for the managers to take their companies private. We also find liquidity as an important determinant in a going private decision. In addition, takeover speculation is found to be significant which means that market for corporate control plays its important role in Australia. Our results are robust to the choice of alternative measures of valuation.

***Key words*:** Private Equity, Going Private, Undervaluation, Australia

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1. Introduction

In February 2007, a consortium of private equity investors known as Airline Partners Australia (APA) launched a bid for a private takeover of Qantas, one of the largest and best known public corporations in Australia. Although the bid collapsed due to mounting pressure of political concerns and rival bidding, it brought to the fore the most often cited reason for a public corporation going private: undervaluation. Private equity investment activities in Australia have grown to record levels in recent years. According to the 2010 yearbook of the Australian Private Equity and Venture Capital Association Limited (AVCAL), private equity funds raised in Australia has increased

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from $585 million in 2001 to $1,456 million in 2010 with commensurate levels of growth over the same years in going-private transactions. The growth and effect of these transactions in capital markets has attracted regulatory concerns with the Australian Senate holding a parliamentary inquiry into the private equity investment in Australia[3]. Despite the development and ensuing interest in capital markets regarding going private activities in Australia, there has not been any proper analysis of what motivates going private transactions in Australia. Given the size and growth of this market in Australia, it is important to understand such motivations.

Private equity (PE) takeovers, in its most common form, involves a public to private (PTP) transaction which takes place when a publicly quoted company is taken over by a PE firm and the target company goes private through a delisting from the stock market (Frankfurter & Gunay 1992). Mehran and Peristiani (2010) argued that publicly listed firms, failing to sustain sufficient financial interest and visibility, are also more likely to undertake PTP transactions. Lowenstein (1985) concluded that since PTPs eliminate asymmetric information between managers and shareholders and thus remove undervaluation, the presence of information asymmetries may provide incentives for the managers to manipulate information before they take their firm private. Jensen (1989) argues that PE firms apply financial, governance and operational engineering to their portfolio companies and, in the process, improve firm operations and create economic value. PE firms also require management to make a meaningful investment in the company, so that management has a considerable stake in the company's equity capital which reduces management's incentive to manipulate company's performance (Kaplan 1989).

In this paper, we investigate a fundamental and often cited reason for going private transaction: undervaluation of the firm. The true value of a corporation is plagued with the problem of information asymmetry between management and outsiders about the maximum value that can be realized with the assets in place and available investment opportunities. Managers, who are likely to have superior private information, may perceive that the share price is undervalued. The undervaluation problem is exacerbated as it is difficult to use the equity market to finance available

[3]Commonwealth of Australia, Senate Standing Committee on Economics, Private Equity investment in Australia, August, 2007.

investments, as low share price is a deterrent in attracting the interest of institutional shareholders and fund managers. The lack of institutional interest in itself creates illiquidity which provides further incentive to go private through managerial support in order to 'capture the full value' of an ongoing public corporation. The case of PE takeover attempt of Qantas in 2007 typifies the managerial support in the face of market undervaluation. Facing the takeover bid from the takeover offer, the Qantas board recommended acceptance of the bid citing the low market valuation as the primary reason[4]. In addition to undervaluation, we also examine if endogenous issues such as corporate governance characteristics determine the going private decision. Prior research on private equity in general has been exclusively limited to US and UK samples. There has been no systematic research on the rationale for Australian firms opting for private equity takeover while a vigorous private equity market has been developed in Australia since the 1990s[5]. It is also questionable whether the evidences applicable to US and UK private equity transaction studies can be generalized in the Australian context. Australian studies on going private transactions exhibit one empirical study (see Chapple, Clarkson & King 2010) on PE deals thus far, exploring the financial and governance characteristics of Australian PE deals. As a result, private equity is the one dimension of going private deals that has received little attention in the academic literature. Considering the recent surge and significance of PE investments worldwide, formal studies into the nature and interplay of these investments are warranted. With the existence of a number of studies on the financial and governance characteristics of target firms in PE transactions, we are not aware of any research linking the relationship between undervaluation and the likelihood of firms to be involved in going private transactions through PE takeovers in Australia. It is estimated that approximately 12% of all takeover announcements in the Australian Securities Exchange (ASX) involves PTPs[6]. We use Enterprise Value and MTB ratio (see, e.g., Weir, Laing & Wright 2005a; Weir, Laing & Wright 2005b; Evans, Poa & Rath 2005) to determine the market valuation of each of the firms involved in PEs and

[4]In a letter to shareholders, Qantas chairman Margaret Jackson indicated that the private equity led bid offer was a substantial premium on the then share price range. The letter went on to say, "Qantas has delivered year-on-year profits, growth and diversification. But while the business had prospered, the Qantas share price has not. The offer is the best available option to enable Qantas shareholders to realize significant value for their investment." (Letter to Shareholders, Qantas Corporation, 10 February 2007.)

[5]Chapple, Clarkson & King 2010 did a review study….

[6] Data from Securities Data Corporation (SDC) Platinum ANZ M&A Database

compare them with a set of firms that did not go private. This comparison allows us to create a predictive model which distinguishes between firms going private from firms that did not. The analysis reveals that with market undervaluation, there is possibility that firms will be involved in PE transactions in Australia. This result is also consistent with the previous empirical literature (see, e.g., Weir, Laing & Wright 2005a; Weir, Laing & Wright 2005b). The remainder of this paper is structured as follows: section 2 provides the theory and hypothesis development. Section 3 describes the data, sample selection process and methodological issues. The empirical results are reported in section 4. Section 5 presents the conclusions.

2. Empirical Propositions

Firms involved in PTP transactions traditionally been argued to have higher level of agency costs in terms of incentive misalignment and poor monitoring (Jensen 1986). Firms going private are expected to have high free cash flows where PTPs would allow them to return the free cash flow to shareholders with improved level of governance and incentive realignment (Weir & Wright 2006). The review of recent empirical evidence indicates that buyouts and PE transactions appear to be associated with incentive and governance mechanisms that enhance performance. However, the question remains unanswered as to whether the gains resulting from implementation of new governance mechanisms after buyouts can actually be achieved without taking the firm private (Jensen et al. 2006). Critics often claim that PE investors make proper use of superior information where incumbent management is a source of this private information. With better incentives and closer monitoring, managers are expected to use their knowledge to deliver better results (Kaplan &Stromberg 2009). Thus, managers may have incentive to take their firm private in order to eliminate asymmetric information when information about managerial performance and investment opportunities is not correctly transmitted (DeAngelo, DeAngelo & Rice 1984). With discretionary power, managers would try to use such discretion to enhance their income by investing in projects with high information asymmetry and thus make it difficult for the rival managers to manage such projects (Edlin & Stiglitz 1995). Because of the asymmetric information between management and outside shareholders about the true and intrinsic value of the firm, management can actually send a signal to the market by attempting a going private transaction (Evans, poa & Rath 2005). With the existence of this information asymmetry, incumbent

management may also see listing costs as an unnecessary burden (Weir & Wright 2006). DeAngelo, DeAngelo & Rice (1984) noted that the costs of maintaining a stock exchange listing are very high. Depending on the size of the company, for UK quoted firms, the listing costs in terms of fees paid to stockbrokers, registrars, lawyers, merchant bankers and financial companies, as well as the exchange fee and the auditing, printing and distribution of accounts, can be very high which might even effect the profitability of the firms. Benoit (1999) reported that for UK quoted firms, the listing fees can even amount to GBP 250,000. Some UK CEOs estimate that these costs may even be higher and can be up to GBP 1 million. Renneboog, Simons & Wright (2007) suggest that wealth gains from going private are largely the result of the elimination of direct and indirect costs associated with maintaining a stock exchange listing. A delisting would therefore be an appropriate action by the management (Weir & Wright 2006). Cumming, Siegel & Wright (2007) reported that PTPs had lower valuations than traditional acquisition and this indicates that managers had private information before they were involved in PTPs. The undervaluation hypothesis thus suggests that the management of firms going private possess private information that leads them to believe that the market undervalues their companies. Anecdotal evidence also confirms that market undervaluation is an important reason for going private decisions. With lower valuation, there will be a lack of buyers of shares of such companies and this makes it harder for these companies to use the equity market for fund expansion. This raises questions about the actual benefits of being publicly quoted. Given the significant costs associated with being quoted, remaining public creates restrictions on a company's ability to compete (Weir, Laing & Wright 2005b). It is, thus, hypothesized that presence of information asymmetry between managers and outside shareholders is likely to motivate managers to take their firm private through PE backed deals. The presence of information asymmetry can be explained as having lower valuations and therefore the following hypothesis is developed:

Hypothesis 01: Firms with lower market valuation are more likely to be subject to PE transactions compared to the firms that did not attempt to go private.

Free cash flow theory tells us that the likely LBO candidates tend to underutilize their debt capacity (Myer & Majluf 1984). Reduction in leverage brings more cash flows under the control of managers and thus increases the agency cost of free cash flows

(Jensen 1986). It is argued that managers usually have incentives to keep borrowing at lower levels because this reduces the probability of bankruptcy and provides managers with a greater discretion over the use of excess cash (Florackis & Ozkan 2009). With low levels of debt and an increased level of free cash flow, managerial discretion is increased which may lead managers to the route of opportunity to obtain 'rents' and this follows the managerial entrenchment theory as suggested by Shleifer and Vishny (1989). Jensen (1986) argued that going private transactions create a new organizational form where there are advantages of controlling the agency costs associated with the excess free cash flow. Jensen (1986) believed that managers often have the incentives to grow firms beyond their optimal size and thus would increase the resources under their control. Jensen (1986) also stated that firms having high free cash flow may spend this cash flow by undergoing corporate restructuring events such as going private transactions. Although empirical evidence on the role of high free cash flow in the decision to go private is mixed (Lehn & Poulsen 1989; Opler & Titman 1993; Weir, Laing & Wright 2005a, 2005b; Weir and Wright 2006), stable cash flows are found to be a common feature of the firms going private (Chapple, Clarkson & King 2010). Therefore, such firms are expected to have high free cash flow. It is, thus, hypothesized that target firms in going private deals would have high free cash flow to attract PE-led bids:

Hypothesis 02: Target Firms in a PE led bid are more likely to have high free cash flows compared to the firms that did not attempt to go private.

To add to the free cash flow theory, another explanation offered for companies to go private is that the buyout group attempts to realize the true value of the assets of the firm through restructuring. After the new investors take control of the firm, they can restructure the firm's existing assets by disposing of unprofitable assets. As a result, high liquidity can be a feature that is more likely to be found in going private firms (Evans, Poa & Rath 2005). Carroll, Zumpano & Elder (1988) also showed that LBO targets have greater liquidity compared to non-LBOs. It is, thus, hypothesized that the higher the liquidity of the assets of the firm, the higher the probability of going private:

Hypothesis 03: Target Firms in a PE led bid are more likely to have high liquidity compared to the firms that did not attempt to go private.

ASX Corporate Governance Council suggested a significant representation of non-executive independent directors and the separation of the role of chief executive officer (CEO) and board chair (Henry 2010). An independent board usually pursues shareholders' interests and maximizes the wealth of the outside shareholders. Hence, boards with a greater proportion of independent non-executive directors are expected to ensure better monitoring (Weir, Laing & Wright 2005a). Jensen and Meckling (1976) claimed that non-executive directors represent an effective means of monitoring through a reduction of managerial discretion and thereby reduce agency costs. In addition, non-executive directors may bring other advantages, such as expert knowledge, to the company (Fama & Jensen 1983). Similarly, separation of the role of CEO and chairman will ensure better decision making by the board (Weir, Laing & Wright 2005a). The basic problem with duality is that it makes one person more powerful and offers a more centralized control (Morck, Shleifer & Vishny 1988). This, in turn, reduces board's ability to monitor actions of the CEO. Duality should therefore be linked to poor and in-effective governance structure (Weir, Laing & Wright 2005b). Therefore, independent board and non-duality is less likely to be present in firms going private. It is, thus, hypothesized that firms going private through PE led bids are more likely to have ineffective internal corporate governance structure. In relation to this, following two hypotheses have been developed:

Hypothesis 04: Target Firms in a PE led bid are more likely to have fewer independent non-executive directors compared to the firms that did not attempt to go private.

Hypothesis 05: Target Firms in a PE led bid are more likely to have the existence of Duality in their board compared to the firms that did not attempt to go private.

Takeover bids prior to going private may reflect a response to the existence of information asymmetries between management and outside shareholders. As a result managers may undertake going private transactions to protect from an actual or perceived threat of competing bids (Eddy, Lee & Taylor 1996). Lehn and Poulsen (1989) also noted that a reason for going private activity may be the threat of hostile takeovers. They (Lehn & Poulsen) suggested that management might team up with some outside financier to take it private to ensure that their company is not taken over by hostile corporate raiders. US going private firms in the 1980s and 1990s were more likely to experience hostile takeover interest than firms that did not go private (Lehn

& Poulsen 1989; Halpern, Kieschnick & Rotenberg 1999). This suggests that the market for corporate control appeared to act as an effective realignment mechanism (Weir, Laing & Wright 2005b). It is, thus, considered that the existence of takeover threats might provide an impetuous for the going private deal. Going private through PE takeovers, henceforth, might be used as a form of takeover defense. The following hypothesis, therefore, is developed:

Hypothesis 06: Target Firms in a PE led bid are more likely to experience takeover pressures from the market compared to the firms that did not attempt to go private.

3. Data and Research Design

The study covers a period between 1990 and 2010. The sample consists of all successful going private bids involving companies listed on the ASX and made between the sample period of 1 January 1990 and 31 December 2010. A matched sample of firms that involved public-to-public transactions was constructed using the same accounting date as the PTPs. The sample was matched by size, time period and industry as classified by the ASX industry classification code. Matching samples have been used in numerous studies, for example, Lehn and Poulsen (1989), Weir, Laing & Wright (2005a, 2005b) Weir and Laing (2003). The matched sample also had the same number of companies within the same industry and time period. The natural logarithm of total assets (Weir, Laing & Wright 2005a) of each of the companies was used to match the size of the companies included in both the samples.

The sample was formed by utilizing a variety of databases and resources. Specifically the initial sample of all takeovers was collected from the Securities Data Corporation (SDC) Platinum ANZ M&A Database. Initially a total of 517 successful going private bids were identified. A screening process was then employed to finalize the observations. All going private successful bids involving an acquirer with a status of 'Joint Venture' or 'Subsidiaries' have been screened out of the sample to ensure that no 'publicly' listed companies are a part of acquiring companies. The going private transactions were then re-confirmed via the list of ASX delisted firms from Aspect Huntley Morning Star DatAnalysis Database. The list of PE takeovers, out of the going private bids, was then confirmed through Bureau Van-Dijk ORBIS Global Database. The going private bids were considered as PE led bid only when it was financed wholly or partly by a PE firm. After finalizing the observations in both the

samples, the financial data were then collected from Aspect Huntley Morning Star FinAnalysis Database for all PE and Non-PE target firms. Based on the availability of at least 3 years of financial data, 129 companies were finally selected as PE takeovers during the specified period. All financial variables are measured as of the balance sheet date prior to the year of the announcement of the takeover activity. Thus the 129 observations included in the PE sample meet the following criteria:

- All transactions are to take place between 1 January 1990 and 31 December 2010
- All transactions are to be successful going private bids
- All acquirer firms should be private companies and should not have a status of 'Joint Venture' or 'Subsidiaries'
- To be considered as PE led bid, all transactions are to be financed, either wholly or partly, by PE firms and
- All the target firms must have complete information for at least the last 3 years prior to takeover activity

Following variables have been used for testing the hypotheses of the study:

Enterprise Value (EV1) is used as a measure of valuation. It is measured as enterprise value (equal to market capitalization plus debt minus cash) at time 't' divided by the enterprise value at time 't-1'. If PTPs are truly undervalued, it is expected that EV1 ratio would be lower than the companies from matched sample that did not go private (to exhibit a negative relationship) (Weir, Laing & Wright 2005b). To see the longer term perspective of valuation, EV2 (calculated as the enterprise value at time t divided by the enterprise value at time t-2) is also included in the model. If PTPs are truly undervalued, it is expected that EV2 ratio would be lower for going private companies than the companies from matched sample that did not go private (to exhibit a negative relationship) (Weir, Laing & Wright 2005b).

Market-to-Book (MTB) ratio is also used as a measure of valuation. Firms with low MTB ratio are considered as being undervalued by the market. MTB ratio is measured, from a valuation perspective, by the stock market value of the company's assets divided by the company's book value of the assets. If PTPs are truly undervalued, it is expected that the MTB ratio will be lower for going private companies than the companies from matched sample that did not go private (to exhibit a negative relationship) (Evans, Poa & Rath 2005).

LNTA is the natural logarithm of total assets. This variable (in log form) is included to control for the size of the firms (Weir and Wright, 2006). No hypothesize direction of relationship is expected for this variable.

Leverage (LVG) ratio is a measure of the debt condition of the firm. It is calculated as total liabilities divided by total assets. This variable is included to control for the effect of high financial slack on the going private decision (Evans, Poa & Rath 2005). It is expected that LVG ratio will be lower for going private companies than the companies from matched sample that did not go private (to exhibit a negative relationship).

Current (CURR) ratio is a measure of the liquidity condition of the firm. It is calculated as current assets divided by current liabilities. It is expected that CURR ratio will be higher for going private companies than the companies from matched sample that did not go private (to exhibit a negative relationship) (Evans Poa & Rath 2005).

FCF measures a company's relative free cash flow. FCF is defined as free cash flow divided by total assets. This approach is used by previous Australian going private studies (Evans, Poa & Rath 2005; Chapple, Clarkson & King 2010). Free cash is defined as operating cash flow minus interest, taxes and dividends. This definition of free cash is consistent with a number of US and UK studies (Kieschnick 1998; Halpern, Kieschnick & Rotenberg 1999; Weir, Laing & Wright 2005a, 2005b). A positive relationship is expected between free cash flow and the decision to go private (Weir, Laing & Wright 2005b).

CAPEX measures a company's net capital expenditure. It is defined as spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets expressed as a percentage (Weir & Wright, 2006). No hypothesize direction of relationship is expected for this variable. This variable is included to control for the effect of any new capital expenditures on going private decisions.

Board share ownership (BSO) measures the percentage of ordinary shares held directly and indirectly by the members of the company board. This is a control variable and is included to control for the effect of internal governance mechanism in going private decision. A positive relationship is expected between BSO and the decision to go private (Weir, Laing & Wright 2005a).

The ASX Corporate Governance Council recommends majority of the board members are to be independent non-executive directors to ensure the board to be independent

(Henry 2010). Hence, board independence (BIND) is a dummy variable that takes the value '1' if the number of independent non-executive directors is equal to or less than 50% on the board and '0' otherwise. It is expected that firms going private to have fewer independent non-executive directors.

Duality (DUAL) is a dummy variable that takes the value '1' if the posts of CEO and Chairman are combined and '0' if they are separated. It is expected that firms going private to be more likely to combine the posts (Weir, Laing & Wright 2005b).

Takeover threat (THREAT) is a dummy variable that takes the value '1' if there is a takeover bid in the last 24 months prior to going private and, '0' otherwise. The information on takeover threat was collected through the ASX Announcement Section from the Aspect Huntley Morning Star DatAnalysis database by a company-by-company basis. This variable is included to see if going private decision is used as a takeover defence mechanism (see, e.g., Evans, Poa & Rath 2005).

PRIVEQ is the dependent variable used in this study. This variable takes the value '1' if the company went private through PE takeovers and '0' otherwise. The binary nature of the dependent variable means that using OLS might produce residuals that are non-normally distributed and heteroscedastic (Weir, Laing & Wright 2005b). Therefore logistic regression is an appropriate technique to use. The following model is used to test the hypotheses of the study:

$$PRIVEQ_i = \beta_0 + \beta_1 EV1/EV2\ RATIO_1 + \beta_2 MTB_2 + \beta_i LNTA_i + \beta_i LVG_i + \beta_i CURR_i + \beta_i RFCF_i + \beta_i CAPEX_i + \beta_i BSO_i + \beta_i BIND_i + \beta_i DUAL_i + \beta_i THREAT_i + \varepsilon_i$$

4. Empirical Results

4.1 Sample Characteristics

Table 1 provides frequency distribution of PTP deals in Australia in terms of number of deals and percentage as compared to the Non-PTP deals. During the period between 1 January 1990 and 31 December 2010, 4546 completed deals took place in ASX out of which only 517 were going private transactions, constituting 11.37% of all completed deals. Evans, Poa & Rath (2005) found approximately 10% of all deals in Australia were going private. With steady increase, the going private deals become around 12% in recent times. Stromberg (2007) mentioned that going private deals were increased considerably after 2000s. Table 1 suggests the same story for Australia also where most number of PTP deals took place between 2001 and 2007.

Table 1: Frequency of Going Private Deals in Australia[7]

	PTP Deals		Non-PTP Deals		
Year	Number	Percentage	Number	Percentage	Total
1990 - 1992	11	6.07	171	93.95	182
1993 - 1995	34	9.09	340	90.91	374
1996 - 1998	40	7.97	462	92.03	502
1999 - 2001	51	13.01	341	86.99	392
2002 - 2004	93	10.69	777	89.31	870
2005 - 2007	133	14.27	799	85.73	932
2008 - 2010	155	11.98	1139	88.02	1294
Total	517	11.37	4029	88.63	4546

Table 2 classifies the PE takeover firms into various industry groupings showing the number of firms in each industry group. ASX divides its listed companies into 25 different industry groups, including sub-groups (Evans, Poa & Rath 2005). Prior Australian studies (Evans, Poa & Rath 2005; Eddey, Lee & Taylor 1996) suggested that the financial sectors had the greatest number of going private deals in Australia. Chapple, Clarkson & King (2010) found a very low concentration of Australian PE firms in financial and mining sectors. The statistics in Table 2 does not agree with Chapple, Clarkson & King (2010) in terms of mining sector, but shows a similar story in terms of financial sector. A possible reason for these differences might be the differences in the time period covered by these studies. It is apparent, however, that during the last two decades, the PE firms in Australia didn't concentrate in any particular industry sector. This is evident from table 2 which shows that out of 25 industry groupings available in ASX, PE transactions took place in 16 industry sectors. This is consistent with Chapple, Clarkson & King (2010) idea that PE firms in Australia are 'opportunistic' and do not seem to concentrate on any particular industry sector for their target firms.

[7] Data from Securities Data Corporation (SDC) Platinum ANZ M&A Database

Table 2: Industry Concentration of PE Deals in Australia

Industry Concentration	PE Deals	Industry Concentration	PE Deals
Mining	22	Transportation Services	4
Oil and Gas exploration	4	Communication Supplies/Services	12
Equipment Production/Supplies	7	Media, Audio/Video Distribution	8
Construction Services	7	Amusement/Recreation Services	7
Food, Drink and Kindered Products	6	Real Estate Investment	9
Firms, Dealers, Exchanges	8	Miscellaneous Trade	11
Financial Institutions	2	Business Services	13
Health and Allied Services	6	Hotels and Motels	4
Total Completed PE Deals: 129			

Table 3 provides descriptive statistics for the whole sample. The valuation measures, in terms of EV1, EV2 and MTB ratio, show that firms included in the sample are, in general, highly valued by the market. This is evident from the mean values of EV1, EV2 and MTB ratio being well over '1'. The mean value of LNTA with a low level of standard deviation indicates that matching was done somewhat accurately so that the firms included in the sample are of similar in size. A high mean value of current ratio indicates that firms included in the sample had higher liquidity on an average. The mean value of leverage ratio of 0.437 with a low level of standard deviation indicates that firms included in the sample are not highly levered. A very low positive mean value of free cash flow indicates that firms included in the sample did not have a high level of free cash flow before the takeover. Board share ownership shows a mean value of only 0.067, which means that the board members of the sample firms did not hold a very large number of ordinary shares.

Table 3: Descriptive Statistics for the Whole Sample

	EV1	EV2	MTB	LNTA	LVG	CURR	FCF	CAPEX	BSO
Mean	2.793	2.809	2.771	18.537	0.437	2.714	0.068	0.097	0.067
Median	1.938	1.684	1.57	18.607	0.421	1.655	0.102	0.041	0.026
Maximum	22.866	65.311	37.24	23.116	2.169	100.85	1.265	1.871	0.878
Minimum	0.035	0.0267	0.16	12.746	0.005	0.11	-3.174	0.00001	0.0002
Std. Dev.	2.864	5.039	3.52	1.888	0.325	6.806	0.351	0.183	0.117
Skewness	2.969	8.472	5.096	-0.124	1.836	12.209	-3.939	6.188	3.353
Kurtosis	14.841	96.926	41.81	2.866	9.593	171.04	36.705	52.835	16.562
Jarque-Bera	1886.3	97924.5	17308.1	0.851	612.16	309962.7	12879.3	28344.5	2460.58
Observations	258	258	258	258	258	258	258	258	258

EV1 is the enterprise value ratio calculated as enterprise value at time t divide by enterprise value at time t – 1. EV2 is the enterprise value ratio calculated as enterprise value at time t divide by enterprise value at time t – 2. MTB is the market-to-book ratio calculated as market value of assets divided by the book value of assets. LNTA is the natural logarithm of total assets. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. BSO is the number of ordinary share held by the members of the board expressed as percentage.

4.2 Univariate Analysis

Table 4 explains the results of Univariate Test. These results support the idea that firms going private through PE takeovers experienced declining market value than those of traditional takeover firms. The mean values of EV1 and MTB ratio of PEs are significantly different from that of Non-PEs at 1% level. In addition, mean values of leverage ratio, current ratio and board share ownership of PE sample also show a significant difference from those of Non-PE sample. Although the mean value of EV2 does not show any significant difference between the two samples, it does show a low average for PE sample in comparison to the Non-PE sample. The mean values of relative free cash flow and capital expenditure are not significantly different from each other. However, the mean value of free cash flow shows a higher value for the PE sample than the Non-PE sample. For both the PE and Non-PE firms, the results of the t-tests show that there are significant differences in mean values of the financial

characteristics of these firms. As explained earlier, it is not surprising that going private firms have different firm attributes. It is this specific feature that we hypothesized earlier. Thus the results of univariate test indicate a good possibility that the predictive model might explain the going private transaction very well.

Table 5 shows the correlation matrix for independent variables generated through Spearman method. High correlations among independent variables indicate the possibility of multicollinearity. The correlation coefficient between MTB ratio and Current ratio is -0.495 and between LNTA and free cash flow is 0.469. These values might indicate the existence of a slight multicollinearity between the variables. Gujarati (2005) argued that slight multicollinearity would not pose any statistical problem as long as the correlation between independent variables in a model is lower than the correlation between each of the independent and dependent variables. EV1 and EV2 ratios will be used in two different regressions; hence a high correlation value, i.e., 0.90, between these two would not affect the analysis. The correlation matrix doesn't exhibit any other significantly high level of correlation among the independent variables. Accordingly, it is not needed to exclude any of the variables from the predictive model to test the hypothesis.

Table 4: Univariate Analysis for PE and Non-PE Samples

Test of Difference of Means between two Samples						
	PE Sample		Non-PE Sample			
	Mean	SD	Mean	SD	t-statistic	p-value
EV1	2.009	2.837	3.586	2.676	4.593	0.000**
EV2	2.486	6.467	3.134	2.989	1.033	0.151
MTB	1.034	0.406	4.508	4.317	9.099	0.000**
LNTA	18.759	1.7143	18.316	2.031	-1.892	0.029*
LVG	0.4957	0.3022	0.3799	0.3359	-2.908	0.002**
CURR	4.095	9.422	1.332	0.6191	-3.324	0.000**
FCF	0.0999	0.2326	0.0369	0.4359	-1.449	0.074
CAPEX	0.0847	0.1178	0.1089	0.2292	1.072	0.142
BSO	0.1007	0.1535	0.0335	0.04239	-4.799	0.000**

Note: * and ** indicate significant at 1% and 5% levels respectively

Table 5: Correlation Matrix

	Spearman Correlation Matrix								
	EV_1	EV_2	MTB	LNTA	LVG	CURR	RFCF	CAPEX	BSO
EV1	1								
EV2	0.904	1							
MTB	0.425	0.312	1						
LNTA	-0.118	-0.059	-0.109	1					
LVG	-0.165	-0.133	-0.208	0.255	1				
CURR	-0.295	-0.257	-0.495	0.031	-0.024	1			
FCF	-0.056	0.017	0.013	0.469	0.217	-0.091	1		
CAPEX	0.007	0.027	0.113	-0.141	-0.149	0.068	0.039	1	
BSO	-0.176	-0.153	-0.212	-0.351	-0.098	0.129	-0.156	0.011	1

4.3 Multivariate Analysis

We employ three sets of regression to test our hypotheses. Table 6 reports the results of first set of logistic regression with only financial variables included in the model. Models 1 through 5 analyze the effect of undervaluation in PE takeovers without governance variables. The analysis reveals that EV1 ratio and MTB ratio significantly affect the decision to go private when they are considered independently. But EV2 ratio is not significant, which means that undervaluation does not affect PTPs from a longer term perspective. A possible explanation for this might be the one that was concluded by Chapple, Clarkson & King (2010) where they empirically claimed that PE firms in Australia play an opportunistic role in the market. The results of models 1.4 and 1.5 suggest that MTB ratio is a stronger predictor of PE takeover than EV1 ratio. This means that MTB ratio affects the going private decision most significantly among the variables that measure undervaluation. The dominance of MTB ratio in explaining going private decisions becomes more plausible when R^2 value becomes more than 0.8 after MTB ratios is added in the model; whereas without the MTB ratio, the R^2 value is only less than 0.4.

Table 6: Multivariate Logit Regression 1 through 5

(Measuring the Effect of Undervaluation without any governance variables)

Variable	Model 1.1	Model 1.2	Model 1.3	Model 1.4	Model 1.5
EV1	-0.241**	---	---	-0.198*	---
	(0.006)			(0.0322)	
EV2	---	-0.003	---	---	-0.033
		(0.916)			(0.421)
MTB	---	---	-6.153**	-7.027**	-6.338**
			(0.000)	(0.000)	(0.000)
LNTA	0.044	0.074	-0.185	-0.281	-0.186
	(0.651)	(0.431)	(0.435)	(0.271)	(0.435)
LVG	1.747**	1.913**	3.274	3.441	3.263
	(0.002)	(0.001)	(0.053)	(0.054)	(0.056)
CURR	1.559**	1.622**	1.989**	2.012**	2.024**
	(0.000)	(0.000)	(0.001)	(0.002)	(0.001)
FCF	0.752	0.824	3.023	3.504	3.094
	(0.2532)	(0.203)	(0.087)	(0.064)	(0.083)
CAPEX	-1.513	-1.345	0.906	-0.616	0.626
	(0.272)	(0.295)	(0.798)	(0.866)	(0.861)
Constant	-3.749*	-5.13**	8.201	11.849*	8.564
	(0.049)	(0.005)	(0.099)	(0.038)	(0.091)
McFadden R^2	0.352	0.324	0.817	0.829	0.818
LR statistic	125.69	115.79	292.17	296.41	292.63
Prob (LR stat)	0.000	0.000	0.000	0.000	0.000
Total obs	258	258	258	258	258

Note: * and ** indicate significant at 1% and 5% levels respectively
Figures in the parentheses represent p-value

Table 7 reports the results of second set of logistic regression. The second set of regressions analyzes the effect of undervaluation in PE takeovers with the issue of governance taken into consideration. The analysis reveals, once again, that EV1 ratio and MTB Ratio significantly affect the decision to go private through PE firms. But EV2 ratio is not significant, which means that undervaluation does not affect PTPs from a longer term perspective. The R^2 once again jumps up to more than 0.8 after we include the MTB ratio in the model. Table 8 reports the results of third and final set of logistic regression. The third set of regressions includes the internal as well as external governance variables to analyze the effect of undervaluation in PE takeovers. Table 8 brings a new and interesting effect of external governance mechanism. The analysis shows that takeover threat is significant which means that market for corporate control is active in Australia. A logical conclusion, thus, emerges that going private through PE takeovers is being used as takeover defense mechanism by target firms in Australia.

Overall, the multivariate regression analyses suggest that undervaluation does play a significant role in going private decision through PE firms in Australia. The model has a prediction accuracy of 86.9% (regression 15) and is highly significant as indicated by LR statistic and the corresponding *p*-value. MTB ratio and EV1 ratio are negative and significant at all times and this was expected. No Australian evidence is available with respect to EV1 ratio. Some UK studies (Weir, Laing & Wright 2005a, 2005b; Weir & Wright 2006) didn't find this ratio significant. A possible reason can be the fact that Australian environment might not be the same as the UK environment. EV2 ratio is used in the analysis to see the longer term effect of the firms being undervalued by the market. However, EV2 ratio is not significant which means that firms going private in Australia had not been undervalued by the market for a longer term perspective. This evidence is, interestingly, consistent with UK studies (Weir, Laing & Wright 2005a, 2005b; Weir and Wright, 2006). The UK studies (Weir, Laing & Wright 2005a, 2005b; Weir and Wright, 2006) used a different variable to show the managerial perception of the going private firms being undervalued by the market for a longer term perspective. This difference can, again, be attributable to the fact that PE firms in Australia are opportunistic (Chapple, Clarkson & King 2010). Our results with MTB ratio also indicate that firms going private through PE firms suffer from market undervaluation relative to the firms that did not go private. This result is consistent with Powell (1997), who hypothesized that firms attempting a going private transaction believed that market had undervalued them. Interestingly, the Australian evidence with MTB ratio, as an explanation of going private decision, is mixed (see, e.g., Chapple, Clarkson & King 2010; Evans, Poa & Rath 2005). From an empirical perspective, a possible reason for this difference might be the differences in approaches in using MTB ratio in different studies. Our measure of MTB ratio is different from that of Evans, Poa & Rath (2005) and Chapple, Clarkson & King (2010) in the sense that we calculated this ratio as a measure of undervaluation rather than a measure of growth prospect.

Table 7: Multivariate Logit Regression 6 through 10

(Measuring the Effect of Undervaluation with the internal governance variables)

Variable	Model 1.6	Model 1.7	Model 1.8	Model 1.9	Model 1.10
EV1	-0.263**	---	---	-0.304*	---
	(0.000)			(0.022)	
EV2	---	-0.034	---	---	-0.034
		(0.242)			(0.513)
MTB	---	---	-6.002**	-6.65**	-6.094**
			(0.000)	(0.000)	(0.000)
LNTA	0.285*	0.305**	0.021	-0.094	0.019
	(0.012)	(0.006)	(0.936)	(0.729)	(0.942)
LVG	2.075**	2.024**	3.744*	3.469	3.677*
	(0.001)	(0.001)	(0.041)	(0.075)	(0.046)
CURR	1.702**	1.705**	1.966**	1.968**	1.989**
	(0.000)	(0.000)	(0.009)	(0.009)	(0.009)
FCF	0.713	0.814	2.063	2.752	2.146
	(0.315)	(0.238)	(0.267)	(0.173)	(0.253)
CAPEX	-0.223	-0.123	3.448	1.604	3.143
	(0.865)	(0.923)	(0.384)	(0.695)	(0.432)
BSO	9.637**	7.033*	8.492	8.001	8.186
	(0.002)	(0.018)	(0.178)	(0.113)	(0.195)
BIND	1.528**	1.521**	1.219	1.078	1.232
	(0.000)	(0.000)	(0.149)	(0.234)	(0.146)
DUAL	0.167	0.255	-0.319	-0.419	-0.255
	(0.781)	(0.662)	(0.771)	(0.704)	(0.815)
Constant	-9.819**	-10.694**	3.046	7.246	3.312
	(0.000)	(0.000)	(0.585)	(0.247)	(0.555)
McFadden R^2	0.461	0.423	0.836	0.848	0.836
LR statistic	164.56	151.14	298.83	303.24	299.13
Prob (LR stat)	0.000	0.000	0.000	0.000	0.000
Total obs	258	258	258	258	258

Note: * and ** indicate significant at 1% and 5% levels respectively

Figures in the parentheses represent p-value

Current ratio is significant and positive in all regressions, revealing a strong positive relationship between liquidity and the likelihood of going private. This result suggests that an important driving factor for going private decision is the existence of high liquidity. This is consistent with the prior Australian findings that going private firms have a significantly higher level of liquidity compared to those remaining public (see, e.g., Evans, Poa & Rath 2005). The results of our study also support the findings by Caroll, Zumpano & Elder (1988) that showed that LBO targets have greater liquidity compared to non-LBOs, although this result is not consistent with Chapple, Clarkson & King (2010) study on Australia. Leverage ratio also becomes significant. It is surprising, though, that the coefficient of leverage ratio takes a positive value which was not expected. This result is in sharp contrast to the empirical literature. Prior empirical studies (Opler & Titman 1993; Evans, Poa & Rath 2005) suggest that going

private firms should have low level of leverage to exhibit a negative relation with going private. Our analysis shows a striking result of higher level of leverage in Australian going private firms. This result does not appear to support the theory of financial slack as advanced by Jensen and Meckling (1976). Given a high current ratio in going private firms, a possible explanation would be the fact that with high level of liquid assets of the target firms, the PE firms in Australia are still interested to take over the firms with high leverage; and this suggests an opportunistic behavior from Australian PE firms (Chapple, Clarkson & King 2010). Free cash flow is found to be insignificant and positive. Empirical evidence on free cash flow as an explanation of going private is mixed. Our finding, in this regard, is consistent with the findings of Weir, Laing and Wright (2005a, 2005b) and the Australian study by Evans, Poa & Rath (2005). The capital expenditure is found to be insignificant and it exhibits a negative relationship with going private. This result is consistent with prior empirical studies on UK and USA (Weir & Wright 2006; Opler & Titman 1993). Doyle and Ammidon (1988) and Kleiman (1988) claimed that going private firms are characterized by a low level of capital expenditure in order for them to be a potential buyout candidate. This is because LBO firms are primarily financed through high leverage which constrains them to make a high level of interest and principal payment.

The internal governance variables have not been significant in the analysis. Board share ownership and board independence were significant when MTB ratio is not included in the model. Once the full model is entered into the regression, BSO and BIND do not remain significant anymore. Duality is also not significant. Thus the internal governance variables do not seem to play any role in Australian PE takeovers. No Australian evidence is available in this respect. The UK evidence shows (Weir, Laing & Wright 2005a, 2005b; Weir & Wright 2006) that board share ownership and duality is an important driving factor in going private decisions. Thus our result, in this regard, is not consistent with the UK studies. A possible reason might be the fact that corporate governance best practice recommendations were in practice only in 2004 in Australia (Henry 2005). As a result, these factors may be quite common in Australian firms. On the other hand, the Cadbury Code of best practice recommendations were developed in 1992 in the UK and the UK quoted companies started adopting the recommendations since 1998 (Weir & Wright 2006).

Table 8: Multivariate Logit Regression 11 through 15

(Measuring the Effect of Undervaluation with internal and external governance variables)

Variable	Model 1.11	Model 1.12	Model 1.13	Model 1.14	Model 1.15
EV1	-0.263**	---	---	-0.351*	---
	(0.000)			(0.013)	
EV2	---	-0.0481	---	---	-0.061
		(0.123)			(0.231)
MTB	---	---	-5.919**	-7.227**	-6.136**
			(0.000)	(0.000)	(0.000)
LNTA	0.177	0.225	-0.164	-0.398	-0.176
	(0.149)	(0.062)	(0.596)	(0.287)	(0.577)
LVG	2.304**	2.331**	4.638*	4.597*	4.581*
	(0.000)	(0.000)	(0.025)	(0.045)	(0.029)
CURR	1.849**	1.875**	1.981**	1.967**	2.011**
	(0.000)	(0.000)	(0.007)	(0.006)	(0.007)
FCF	1.018	1.087	1.469	2.118	1.489
	(0.195)	(0.152)	(0.496)	(0.433)	(0.509)
CAPEX	-0.757	-0.457	-1.006	-4.798	-1.999
	(0.666)	(0.777)	(0.822)	(0.334)	(0.666)
BSO	7.825*	5.664	5.283	5.285	4.739
	(0.018)	(0.074)	(0.413)	(0.297)	(0.457)
BIND	1.578**	1.623**	0.939	0.565	0.926
	(0.001)	(0.000)	(0.283)	(0.567)	(0.295)
DUAL	0.016	0.241	-0.236	-0.586	-0.101
	(0.981)	(0.711)	(0.847)	(0.651)	(0.935)
THREAT	2.291**	2.319**	2.123*	2.647*	2.292*
	(0.000)	(0.000)	(0.021)	(0.016)	(0.017)
Constant	-8.643**	-10.35**	5.843	13.451	6.571
	(0.000)	(0.000)	(0.367)	(0.115)	(0.322)
McFadden R^2	0.545	0.518	0.853	0.869	0.856
LR statistic	195.07	185.21	305.17	310.81	306.04
Prob (LR stat)	0.000	0.000	0.000	0.000	0.000
Total obs	258	258	258	258	258

Note: * and ** indicate significant at 1% and 5% levels respectively

Figures in the parentheses represent p-value

Our analysis brings a striking result in terms of external governance mechanism. The analysis suggests that firms going private in Australia are more likely to experience takeover speculation from the market. Takeover threat represents an external control mechanism in the market for corporate control (Lehn & Poulsen 1989). It may also reflect a market response to an observed exploitation of asymmetric information by the management (Eddey, Lee & Taylor 1996). The UK evidence (Weir, Laing & Wright 2005a, 2005b; Weir & Wright 2006) does not support the idea that PTPs are used as a takeover defense mechanism. A number of US studies (Lehn & Poulsen 1989; Kieschnick 1998; Halpern, Kieschnick & Rotenberg 1999) and prior Australian studies (Eddey, Lee & Taylor 1996; Evans, Poa & Rath 2005) have incorporated takeover speculation variable based on press reports of takeover interest. Our study also includes the same variable on the basis of such interest as reported by the ASX

announcement window within the last 24 months of going private. Weir, Laing & Wright (2005a, UK) only considered the speculation a threat if it was a hostile attempt; while Weir and Wright (2006, UK) considered the rumor as a threat variable. The Australian evidence is mixed in this regard. Eddey, Lee & Taylor (1996) found takeover threat as significant and positive, while Evans, Poa & Rath (2005) found this variable a significant one but with opposite direction. Our result supports the result of Eddey, Lee & Taylor (1996) and is consistent with the prior literature. Since our study covers both the period covered by Eddey, Lee & Taylor (1996) and Evans, Poa & Rath (2005), it can be concluded that this is a new evidence for Australia where going private decision has been used as a takeover defense mechanism. Our findings also support the basic role of market for corporate control as described by Jensen and Meckling (1976) which says that market for corporate control will play its disciplinary role when internal governance mechanism is weak. This seems logical for our analysis since our findings also suggested a possibility that internal governance mechanism did not seem to play its role in Australia.

4.4 Further Analysis

Table 9 shows the undervaluation of sample firms by quintiles. Q1 represents lowest value and Q5 represents highest value of sample firms. In terms of EV1 ratio, more than one-third (35.66%) of the PE target firms are in Q1, while only 3.88% of the non-PE target firms are in the same lowest value quintile. Likewise, more than 60% of non-PE target firms lie in Q4 and Q5 (higher value) with only around 15% of the PE target firms lie in the same higher value quintiles (4 and 5). This picture is more prominent with MTB ratio, where only less than 2% of PE target firms lie in Q4 and Q5 with more than 75% of the non-PE target firms achieved the highest value. The table shows a strong negative relationship between the valuation of firms and going private through PE takeovers underlying the fact that undervaluation is an important driving factor in going private.

Table 9: Undervaluation by Quintiles

	EV1 Ratio					MTB Ratio				
	PE		Non-PE			PE		Non-PE		
	N	Percent	N	Percent	Avg (EV1)	N	Percent	N	Percent	Avg (MTB)
Q 1	46	35.66	5	3.88	0.795	51	39.53	0	0	0.647
Q 2	40	31.01	12	9.30	1.237	49	37.98	3	2.33	1.128
Q 3	23	17.83	29	22.48	1.894	27	20.93	25	19.38	1.608
Q 4	10	7.75	41	31.78	2.868	2	1.55	49	37.98	2.961
Q 5	10	7.75	42	32.56	7.155	0	0	52	40.31	7.474

5. Conclusion

This paper is based on a unique hand collected data of PEs and Non-PEs from various different data sources during the period from 1990 to 2010. Particularly, this paper analyses the effect of managerial private information on going private transactions through PE takeovers in Australian context. It is found that firms taken over by PE firms suffer from market undervaluation, a possible effect due to asymmetric information existing between the market and managerial perception. This managerial perception leads them to believe that market has incorrectly valued their firms. A delisting would therefore be an appropriate action for the management team. This evidence is new and an addition to the prior Australian studies (Eddey, Lee & Taylor 1996; Evans, Poa & Rath 2005) in the sense that undervaluation aspect is measured from a different perspective in our study. Anecdotal evidence in support of this is also available in the UK (see, e.g., Weir, Laing & Wright 2005a, 2005b).

We found current ratio as significant and positive in all regressions, revealing a strong positive relationship between liquidity and the likelihood of going private. This result is consistent with empirical literature suggesting that going private firms have a significantly higher level of liquidity (Carroll, Zumpano & Elder 1988; Evans, Poa & Rath 2005), although it is not consistent with Chapple, Clarkson & King (2010) study on Australia. Our results are surprising with leverage ratio which is significant but takes on positive value. This result is in sharp contrast to the theory of financial slack as advanced by Jensen and Meckling (1976). Given the availability of high liquidity, this striking result suggests that PE firms in Australia are opportunistic and are still interested to take control of the firms with high leverage. We did not find any evidence in support of free cash flows. This is not surprising since empirical evidence

on the role of free cash flow in going private transactions is mixed. Our analysis also suggests that capital expenditure is not an important driving factor in going private and this is consistent with prior empirical studies on UK and USA (Weir & Wright 2006; Opler & Titman 1993).

Our analysis suggests that internal governance mechanisms do not seem to play any role in Australian going private firms. This is not surprising since the corporate governance best practice recommendations were only in practice in Australia in 2004 (Henry 2005). However, we find a negative sign with duality variable which can be explained as a positive internal monitoring mechanism. This finding is consistent with the lack of evidence of excess free cash flow as explained by Weir, Laing & Wright (2005a). The results also show that factors that drive PE transactions in Australia might not be the same as it is in the UK or US. Our findings are new and an addition to the current literature since no Australian evidence is available in this regard. With the finding of weak internal governance mechanism at hand, we find that firms going private in Australia are more likely to experience takeover speculation from the market. Empirical evidence internationally, including Australia, is mixed in saying that firms going private face takeover pressure from the market. This is also a new evidence for Australia where firms are more likely to use PTPs as a takeover defense mechanism. Our findings, thus, support the basic role of market for corporate control as described by Jensen and Meckling (1976) which says that market for corporate control will play its disciplinary role when internal governance mechanism is weak.

Overall, our findings are mostly not consistent with prior Australian PE study by Chapple, Clarkson & King (2010). One of the reasons might be the differences in the time period used; our study covers a longer and wider time period than used by Chapple, Clarkson & King (2010). Another reason might be the fact that we used a bigger sample. Our sample consists of 129 PE target firms; whereas Chapple, Clarkson & King (2010) used 23 PE target firms in their sample. However, the results of the predictive model reveal an inverse relationship between undervaluation and the firm's likelihood to go private; and this is consistent with empirical literature. The analysis suggests that private equity firms can play a role as active investors from the governance and strategic perspective in enhancing the performance of corporations when capital markets have failed to do so. The results of this study raise an interesting

issue within the research related to going private transactions. The analysis suggests that the importance of undervaluation measures is dependent on the way the variables were defined. In addition, our study does not include the issue of incentive alignment in the model. The importance of managerial share ownership in going private decisions has already been explored in empirical literature (Weir, Laing & Wright 2005a; Evans, Poa & Rath 2005). As a result further research is warranted, through an inclusion of managerial share ownership that would shed light on explaining the effect of undervaluation and incentive alignment from agency perspective on going private decisions in Australia.

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How related are politics and trade? Impact of deterioration in bilateral political ties upon economic relations between Turkey and Israel

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***Abstract*:** This article investigates the relationship between trade and politics, particularly the effect of improved or deteriorated political ties upon economic relations with particular reference to the bilateral trade and diplomatic relations between Turkey and Israel. The study finds that economic relations were bolstered at times of enhanced political relations whereas visible deterioration or decline was observed in the volume and state of trade relations when diplomatic relations worsened. The findings are consistent with the main arguments in the literature that politics determines trade. The paper concludes that at some critical points where the two countries have experienced difficulties and a state of crisis in their political relations, the volume of bilateral trade has also significantly declined.

***Key words*:** Political Risk; Foreign Trade Volume; Israel; Turkey

1. Introduction

Literature of politics and economics suggests that there is visible connection between improved trade relations and enhancement of political ties. Findings of relevant studies show that nations with a greater trade volume are more likely to have better political ties and relations. As a consequence, these studies further note that enhanced trade promotes cooperation and peace between the trading partners and nations, and minimizes the risk of any conflict. In reliance on these findings, the authors of this paper hypothesize that any deterioration in the political relations should have impact upon trade volume between two nations. To this end, the study analyzes the Turkish-Israeli relations from this perspective, concluding that at some critical points where the two countries have experienced difficulties and a state of

crisis in their political relations, the volume of bilateral trade has also significantly declined. The choice of these two countries is deliberate as this case could be exemplary for the purpose of the study. The political ties between these two nations made a peak in 1990s where they enjoyed a great level of trade partnership as well. However, the ties were considerably undermined by recent developments, including notorious Mavi Marmara raid, suspension of military exercises and controversial TV series. The study finds that the deterioration visibly affects the size of imports and exports between the two countries.

2. Theoretical and conceptual foundation

2.1 Trade and politics relations

The relation between trade and politics has attracted a great deal of scholarly attention. The dominant view in this particular field of the literature upholds that trade improves bilateral political ties and further reduces the likelihood for the outbreak of a violent conflict between the trading partners. Obviously, this approach puts extensive emphasis upon the role and influence of trade, implying that the part of politics could be neglected. It should be, however, also noted that it is a purely economic approach which states that economics should determine politics (Moravcsik, 1997: 514).

The discussion is also closely relevant to the democratic peace theory, suggesting that democracies almost never go to war with each other and resolve their disputes through peaceful settlement. In studying this matter, some scholars find that trade is the key factor. Polachek (1997) concludes that "the fundamental factor in causing bilateral cooperation is trade" and "trading partners are less combative than nontrading nations. Democratic dyads trade more than nondemocratic dyads, and thus exhibit less conflict and more cooperation." Trade is also found to be "a powerful influence for peace, especially among the war-prone, contiguous pairs of states" (Oneal et. al., 1996: 11-28). In another study, Oneal and Russet (1999) find "strong support for the liberals' belief that economic interdependence and democracy have important pacific benefits."

Similarly, Pollins (1989) finds that "trade flows are significantly affected by broad political relations of amity and enmity between nations." Keshk, Pollins and

Reuveny (2004) join this argument, underlying that political matters, and politics in general, enjoy primacy; they recall that "conflict indeed inhibits trade while the effect of dyadic interdependence on the likelihood of conflict is statistically insignificant." Political scientists and scholars of international relations see visible link between pursuit of political goals, mainly those on security, and search for economic welfare. For instance, for Gilpin (1975: 43), there is a "reciprocal and dynamic interaction in international relations of the pursuit of wealth and the pursuit of power." Likewise, Keohane (1984: 21-22) argues that trade and power complement each other in the setting of foreign policy making.

However, scholars, particularly students of postmodern IR theories which avoid simplistic explanations, argue that no single explanation could be adequate to address the relation between trade and matters of high politics including power and security. For instance, Holsti (1989: 669-670) notes:

> The connection between economics and politics cannot be essentially the same in the United States and Fiji, or Japan and Bhutan. All countries have welfare and security goals, yet the manner in which they pursue them varies across time and over different issues. For some states the diplomacy of security and the diplomacy of foreign trade have few links; that is, the criteria and values used in decision making on various issues within the two realms tend to be exclusive and seldom intrude on each other. For others, in contrast, trade and security concerns may be so inextricably woven together that it is impossible to tell where the one ends and the other begins. For these countries, all trade has important diplomatic connotations. Foreign-trade policy must be organized to be consistent with national security requirements, even if considerable economic losses or forsaken opportunities result. Contextual characteristics largely determine the nexus.

Analyzing the relationship between power politics and international trade, Gowa and Mansfield (1993) find that greater volume of trade should be expected between nations enjoying the benefits of an alliance and that this is a more visible tendency within bipolar rather than multipolar gatherings of states. Reuveny and Kang (1998) conclude that the types and nature of goods sometimes matter, affecting the

quality and size of the trade between the parties. For instance, there is a tendency for bilateral trade between US and China to increase in some goods when political ties are enhanced. Robst, Polachek and Chang (2006: 30) find that "trade has a greater effect on conflict" when countries are proximate in geographical terms. As such, it "mitigates the incentives for conflict that exist between close countries." Trade is more effective on cooperation when countries are more distant and "the incentives for cooperation that exist for close countries are not present."

There are competing theories some of which argue that more trade reduces likelihood for a military conflict whereas others assert that bilateral trade increases the possibility of a war. Moderate theories, however, underline that outbreak of a war is not influenced by the size of the trade between nations. Li and Reuveny (2011), on the other hand, argue that "if a country expects its conflict toward a target to reduce the price of its import from or increase the price of its export to a target, it has an economic incentive to initiate conflict, and vice versa." Likewise, Srivastava and Green (1986) note that additional variables should be considered as potential determinants of trade relations between nations and that the trade flow should be analyzed by the type of products being exported and imported.

Reuveny (2001) suggests that "the effect of conflict on trade quantity will be negative" and further notes that "contemporary trade and conflict theories may miss important elements, pointing out the need for richer, more microfounded models." The findings in the literature accounts reviewed so far suggest that the impact of trade upon political ties between nations is controversial and complicated. A study by Sayrs (2008) confirms this conclusion; the study offers three major findings:

> First, trade does not provide an economic incentive to cooperate even though it may serve to diminish the overall level of conflict. Second, trade may diminish conflict even in the absence of the threat of reciprocal action on the part of the trading partner. Third, trade may diminish cooperation in the economic arena where norms of competition dominate or where the U.S. as a trading partner exerts extraordinary influence.

2.2 Brief history of Turkish-Israeli relations

Turkish-Israeli bilateral relations have been experiencing visible deterioration over the last few years mostly due to the political disagreements. The most controversial issues between the two former military allies include the Gaza blockade imposed by Israel, the Palestinian issue and Israel's occasional military operations against alleged terrorist acts. The ties were particularly worsened by the Mavi Marmara incident where 9 Turkish citizens were killed by the Israeli commandos aboard a ship carrying humanitarian cargo. In response to the attack, Turkey has launched an aggressive diplomatic campaign whereby it urged Israel to proceed with reparations for the victims, a formal apology and lifting the blockade in Gaza.

In fact, Mavi Marmara was not the only incident that contributed to the deterioration in the bilateral ties. The degrading treatment of the Israeli authorities vis-à-vis the Turkish ambassador who was humiliated by being asked to have a sit in a chair placed lower than the others occupied by the Israeli counterparts, a controversial TV series depicting the Israeli forces as aggressors aired in the state-run Turkish TV station, as well as the growing anti-Israeli sentiment in Turkey have all contributed to the process.

In a way, this state of deterioration was a visible deviation from the era of relatively smooth relations between the two countries. However, things have not always been great between Turkey and Israel. Even though relations during the first four decade of Israel's existence have been cordial, the both sides "kept a low profile and did not reveal the nature of these ties" (Abadi, 2011). During this period, the bilateral ties were mostly symbolic and "had little content." The relations deteriorated after 1973 when Turkey decided to distance itself from Israel. And this state of coolness has remained for a decade afterwards (Pipes, 1997/98).

The situation has changed in 1990s, partially because of the growing interest by major powers in establishing ties with Israel. In consideration of the growing security concerns in this period, Turkey decided to maintain ties with Israel, particularly in the field of military affairs (Abadi, 2011). A bilateral trade agreement was signed in March 1993; by the end of the same year, relations have significantly improved. A strategic cooperation agreement was concluded between the two countries in this period.

Starting from 1996, the bilateral ties have gained a military aspect. In this year, the two countries signed a comprehensive military coordination agreement. The deal provided for Israeli air forces to use Turkish air space for training purposes. In the same year, they concluded an additional agreement for the exchange of technical knowledge. The military relations have significantly improved since then; the Turkish chief of staff paid a visit to Israel in early 1997, followed by another one to Ankara. The number of visits has radically increased, particularly those between commanding officers from both militaries (Bir and Sherman, 2002).

The 1990s represent a period of diplomatic climax in the relations between Turkey and Israel. Despite a past of partial distrust and controversy, the two countries have paid attention to improving the bilateral ties. Since the upgrading of Turkish-Israeli relations to the ambassadorial level in 1991, bilateral ties have been friendly and cordial. Frequent high level visits have been held between the countries. Under the AK Party rule alone, most of Turkey's top officials, including Prime Minister Erdoğan and former President Ahmet Necdet Sezer have paid visits to Israel. In addition, all Israeli prime ministers, presidents and defense ministers have visited Turkey during the last decade (Bengio, 2009: 48).

However, the overall situation started to change in the relations between Turkey and Israel after the invasion of Iraq by the US in 2003. The war raised criticism and reaction among the public in Turkey against the US and its main regional ally, Israel. The Turkish people also saw Israel as "close to Iraqi Kurdish groups and indirectly to PKK terrorists." The targeted assassinations of Sheikh Ahmad Yassin, the spiritual leader of Hamas, as well as of his successor, Abdulaziz al-Rantisi, attracted strong public reaction, "prompting Prime Minister Erdoğan to call Israel a 'terrorist state.'" (Kösebalaban, 2010: 37).

2.3 Turkey-Israel economic relations

As for the commercial relations, it is obvious that the size of bilateral trade has grown since late 1980s. The amount of trade between Turkey and Israel has dramatically increased from 54$ million in 1987 to $100 million in 1991 and $440 million in 1995. The Israeli-Turkish bilateral trade had become the argest between

any two countries in the Middle East in late 1990s when the two countries also enjoyed a climax in political and diplomatic relations. Until 1993, Israeli exports exceeded Turkish exports to Israel whereas since 1994, "Turkey has steadily pulled ahead, with an annual surplus of $50 million in its favor." (Nachmani, 1998: 19-29).

Table 1. Foreign Trade Volume between Turkey and Israel 2000-2010 (.000 USD)
Source: Office website of Foreign Ministry of Turkey Retrieved 1 December 2011

YEAR	EXPORT	IMPORT	VOLUME	BALANCE
2000	650.142	505.482	144.660	1.155.624
2001	805.218	529.489	275.729	1.334.707
2002	861.434	544.467	316.967	1.405.901
2003	1.066.834	459.186	607.648	1.526.020
2004	1.283.244	713.137	570.107	1.996.381
2005	1.461.239	800.735	660.504	2.262.000
2006	1.527.329	772.310	755.018	2.299.639
2007	1.658.217	1.081.458	576.759	2.739.675
2008	1.935.243	1.447.919	487.324	3.383.162
2009	1.528.852	1.069.538	459.314	2.598.390
2010	2.083.987	1.359.624	724.363	3.443.611

By the nature of the foreign trade, the content of the foreign trade between nations is mostly made up of products and items with greater added value (Ustaoğlu and Yıldız, 2011: 757). The bilateral trade between Turkey and Israel has gained momentum and amounted to a stunning level by a number of bilateral trade agreements that enhanced the economic ties between these countries. The agreements and forums seeking to enhance the trade relations between the two countries include Turkey-Israel Free Trade Agreement (FTA) signed March 14, 1997; the 4th Joint Economic Committee that convened Nov 24, 2009; 8th Economic Consultations held April 22, 2010; the Turkish-Israel Business Council founded March 1, 1999 whose last meeting was held Oct 13, 2004 and the agreement of Joint Tourism Committee which first convened in 1999(Republic of Turkey Ministry of Foreign Affairs, 2008).

Israel reserves 4.5 pct of its national incomes to research and development activities; the Israeli economy mostly focuses on high tech products and arms industry. The major export items of Israeli economy include jewels, products of chemical industry, machines, electronic devices, medical equipments and aero industry products whereas it imports oil, raw materials, rough diamond, food materials, textile products, vehicles, machines, electrical devices, iron and steel

products. Israel has an advanced high-tech arms industry; as a result of this, it undertakes 10 pct of the global arms trade and serves as the 5th largest arms exporter.

The trade between the two countries includes projects of defense industry, contracting services, tourism and reciprocal investments. The size of bilateral trade has declined from $3.3 billion in 2008 to $2.6 billion in the present time. In addition to the political tension and row between the two countries, the global financial crisis also contributed to this state of decline (Republic of Turkey Ministry of Foreign Affairs, 2008).

Overall, it is possible to characterize the bilateral relations between Turkey and Israel as follows:

> The asymmetry in Turkish-Israeli relations exists on a number of levels: declaratory, diplomatic and political. Israel is usually the courting partner—the needy party, politically speaking—and thus the one that initiates actions to maintain good relations. For Israel, relations with Turkey are a source of pride and legitimacy; for the Turkish governments, in contrast, they sometimes serve as an embarrassment or pose a dilemma. Turkish politicians have no qualms about vehemently attacking Israel because of its policies toward the Palestinians, yet Israeli politicians walk on tiptoes regarding any issue that touches on Turkish sensitivities.

3. Methodology

3.1 Scope of the study

This study analyzes the Turkish-Israeli relations from this perspective, concluding that at some critical points where the two countries have experienced difficulties and a state of crisis in their political relations, the volume of bilateral trade has also significantly declined. The choice of these two countries is deliberate as this case could be exemplary for the purpose of the study. The political ties between these two nations made a peak in 1990s where they enjoyed a great level of trade partnership as well. However, the ties were considerably undermined by recent developments, including notorious Mavi Marmara raid, suspension of military

exercises and controversial TV series. The study finds that the deterioration visibly affects the size of imports and exports between the two countries.

The study is composed of three major parts. In the first part, the relevant theoretical and conceptual accounts are analyzed. The second part focuses on a brief historical account of the bilateral political and military relations between Turkey and Israel. In addition to the methodology part, the final section elaborates on the findings, as well as probable policy recommendations based on these findings.

3.2. Data Collection

In this paper, the relevant series of political risks, as well as monthly export and import amounts of two countries, Turkey and Israel, between 01: 2006 and 11: 2011 are utilized. The political risk data for Turkey was retrieved from Business Monitor International (BMI), Middle East Monitor Monthly, Regional Reports Bulletins; and the foreign trade volume data for both countries retrieved from the website of the Turkish Statistical Institute and Turkish Exporters Assembly. In the interpretation of the outputs of the study, the political events published and referred to in the BMI bulletins are mostly utilized; however, the BMI bulletins are not the only references in the evaluation of the political events and risk factors. The tests were performed by Gauss 8.0 software. Because foreign trade transactions usually measured by US dollar currency, exports and imports data used in the study are on the US dollar currency.

3.3 Lee-Strazicich Unit Root Test

Lumsdaine-Papell (1999) test is an example for tests where structural breaks are two and where the breaks are identified internally (Lumsdaine & Papell, 1999). Lee- Strazicich (2003) test's alternative hypothesis points to trend stability without any doubt (Lee & Strazicich, 2003). In other words, Lee-Strazicich (2003, 2004) involve the success of both the alternative and null hypotheses under the breaks (Lee & Strazicich, 2003; 2004). There are three different versions of this situation for Model A, Model B and Model C. Model A refers to a break in level, Model B in trend and Model C in both level and trend. Lee-Strazicich unit root test utilizes Lagrange Multiplier (LM) to help find the two internal breaks. Structural break is used in Model

A. Unit root test is used in Model C for level and trend changes (Temurlenk & Oltulular, 2007).

Model A

$$\Delta y_t = K + \phi y_{t-1} + \beta t + \theta_1 DU1_t + \theta_1 DT2_t + \sum_{j=1}^{k} d_j \Delta y_{t-j} + \varepsilon_t \quad (1)$$

Model B

$$\Delta y_t = K + \phi y_{t-1} + \beta t + \theta_2 DT1_t + \theta_2 DU2_t + \gamma_1 DT_t + \varepsilon t \quad (2)$$

and

Model C

$$\Delta y_t = K + \phi y_{t-1} + \beta t + \theta_1 DU1_t + \theta_2 DT1_t + \theta_2 DU2_t + \theta_1 DT2_t + \gamma_1 DT_t + \sum_{j=1}^{k} d_j \Delta y_{t-j} + \varepsilon_t \quad (3)$$

$$DU_t = \begin{cases} 1 & t > TB \\ 0 & diğer \end{cases}$$

ve and

$$\mathrm{DT_t} = \begin{cases} t - TB & t > TB \\ 0 & diğer \end{cases} \quad (4)$$

Model A (1) shows structural break, Model B (2) structural break in trend and Model C structural break in both level and trend. Rejection of the null hypothesis shows presence of structural break. (4) demonstrates breaks in trend and level based on the values of the optional dummy variables.

Table 2. Lee-Stazicich Test Results

	Model A			**Model C**		
	Min t-stat	**Break 1**	**Break 2**	**Min t-stat**	**Break 1**	**Break 2**
PR	-1.7575	**2007:02(8)*** **[-1.5111]****	**2010:03(8)*** **[-1.3214]****	-5.9552	**2008:03(8)*** **[-4.9552]****	2009:06(8)* [6.1843]**
X	-4.2500	**2009:11(4)*** **[-2.0166]****	**2010:12(4)*** **[0.4831]****	-7.4544	2009:05(2)* [-6.7085]**	**2010:02(2)*** **[4.6719]****
M	-5.3020	**2010:04(2)*** **[0.6018]****	**2010:07(2)*** **[3.6234]****	-6.5151	**2007:09(7)*** **[-5.7060]****	2010:10(7)* [6.3238]**

* The figures in parenthesis refer to lag length picked by the Akaike Information Criteria.
** The critical values compiled from Lee-Strazicich (2003) for the models. For the %1 and %5 significance levels for Model A, it is |-4.54| and |-5.82| respectively, whereas for %1 and %5 significance levels in Model C, it is |-6,32| and |– 5.32| respectively.

The results of the Lee-Strazicich unit root test in Table 3 reveal that the breaks in Model A are statistically significant. In Model C, the break dates, 2009: 6, 2009: 5 and 2010: 7, appear to be statistically insignificant. The breaks which bear significant for both models should be considered as important points where the export and import sizes between the two countries display visible changes. The breaks also demonstrate that the political risks that the Turkish economy carries have impact upon the bilateral relations between Turkey and Israel in the identified dates.

4. Conclusion

The firm relations between Turkey and Israel have started to deteriorate in early 2000s. In 2004, Erdoğan accused Israel of committing 'state terrorism.' However, despite such harsh statements, the ties were restored by the constructive moves of both parties (Tür, 2009: 35-36). But the state of optimism and constructive

approach has become over after the coming of HAMAS to power in Palestine in 2007 (Özcan, 2010: 37). Even though no concrete confrontation has been observed in the bilateral relations between Turkey and Israel in 2007, Turkey established firm contacts with the HAMAS-led government, suggesting that it recognized this Islamist group as the legitimate representative of the Palestinian people.

Unlike its past attitude, Israel did not act leniently towards Turkey's affection with HAMAS as its major strategy required isolation and alienation of the government that it formed. For this reason, Turkey's willingness to recognize the legitimacy and power of HAMAS was unacceptable to Israel, which subsequently led to a state of deterioration in the bilateral relations with Turkey. The break detected in the analysis as depicted in Table 3 may refer to this dramatic change in the political relations between the two countries.

The break in 2008: 03 should be viewed as the manifestation of the deteriorated political ties since HAMAS came to power in 2007. The most striking area of disagreement between Israel and Turkey in 2008 and 2009 has been Israeli attack and military operation held to delegitimize and eliminate the HAMAS rule in Gaza enclave. Turkey strongly reacted to Israeli operation, arguing that it committed international crimes including crimes against humanity and war crimes (Çakmak, 2009: 59-79). Turkey's reaction to the Israeli offensive was strong and influential as evidenced by some announced harsh measures against Israel. For instance, Turkey suspended for the first time the Anatolian Eagle military exercises in late 2009 which have been held since 2001 with the participation of Israeli forces. The crisis was identified as something that would have lasting impacts upon the bilateral relations between the two countries (Tür, 2009: 37-38). The breaks in 2009: 11 and 2010: 02 may refer to this state of affairs.

The most important standoff between Turkey and Israel is indisputably the Mavi Marmara raid in May 2010. The Israeli defense forces stormed a ship, Mavi Marmara, carrying humanitarian cargo to Gaza which was suffering from a longstanding Israeli naval blockade, killing nine Turkish nationals onboard. The raid raised extreme fury and anger in Turkish administration and people, prompting the foreign ministry to secure a presidential statement at the UN Security Council to condemn the attack. Turkey subsequently announced a series of demands in connection with the raid, including payment of reparations to the families of the victims, an official apology and lifting of the Gaza blockade. The Israeli part did not

honor the demands, arguing that it exercised its right to self-defense. The break in 2010: 07 may apply to this incident and ongoing deterioration in the bilateral relations.

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Appendix:

Table 3. Turkey's Export to Israel 01:1996-07:2011 (.000 USD)

Year	Total	January	February	March	April	May	June	July	August	September	October	November	December
2011	**1382216**	165 647	188 950	224 692	196 878	186 558	214 144	205 347					
2010	**2080148**	138 258	170 369	195 440	167 982	152 779	159 265	170 308	169 429	151 979	213 801	156 118	234 421
2009	**1522436**	97 409	121 319	135 112	112 642	103 278	132 379	146 402	121 032	113 114	147 455	123 542	168 751
2008	**1935235**	149 305	161 115	186 221	162 722	182 594	164 088	179 063	182 519	192 340	116 438	131 901	126 929
2007	**1658195**	121 303	97 348	143 632	108 411	165 951	135 743	142 636	140 587	123 596	144 074	164 857	170 056
2006	**1529158**	76 901	95 202	120 898	109 481	154 779	157 440	134 486	117 921	138 589	102 104	144 780	176 578
2005	**1466913**	95 051	95 874	126 658	132 570	141 065	142 730	107 329	140 571	142 496	139 205	97 521	105 843
2004	**1315292**	106 271	79 505	94 710	110 850	90 986	115 598	111 038	129 562	104 890	116 452	101 416	154 016
2003	**1082998**	87 365	62 825	80 657	77 511	83 458	84 988	96 709	107 848	109 620	98 293	97 021	96 703
2002	**861434**	62 127	57 569	66 711	58 793	68 650	65 786	84 843	82 601	78 891	78 094	90 266	67 102
2001	**805218**	40 643	56 670	60 998	84 318	75 877	53 991	66 875	69 594	52 162	59 788	66 989	117 313
2000	**650142**	40 103	49 107	58 624	48 846	54 742	51 214	56 910	55 026	61 967	43 849	49 720	80 035
1999	**585239**	48 444	46 161	44 792	39 441	55 064	55 381	52 384	50 608	47 490	46 822	46 771	51 880
1998	**479507**	43 326	37 778	46 288	31 413	36 708	39 592	50 460	43 772	42 520	32 766	35 836	39 048
1997	**391514**	38 188	35 390	33 294	27 947	33 030	24 567	26 660	37 815	29 747	34 264	36 758	33 853
1996	**254853**	25 011	17 766	23 193	21 420	13 344	21 234	18 711	23 128	18 620	28 287	22 589	21 550

Source: Turkish Statistical Institute , 2011

Table 4. Turkey's Import From Israel 01:1996-07:2011 (.000 USD)

Year	Total	January	February	March	April	May	June	July	August	September	October	November	December
2011	**1180857**	76 692	95 080	225 777	194 959	168 577	227 553	192 219					
2010	**1359639**	89 935	97 621	98 179	130 497	130 961	174 618	120 645	87 929	83 349	85 184	127 672	133 047
2009	**1074727**	106 553	97 026	95 186	103 377	75 765	85 227	70 613	103 588	73 174	68 295	78 683	117 239
2008	**1447919**	138 774	108 465	138 027	128 582	177 401	127 957	144 972	126 578	70 986	81 442	91 825	112 908
2007	**1081743**	75 012	74 497	63 906	81 677	92 745	99 223	97 377	88 424	93 041	90 272	121 488	104 081
2006	**782149**	44 180	55 491	69 546	71 855	80 499	71 581	60 824	55 434	65 403	65 328	67 621	74 386
2005	**804691**	41 419	58 541	82 340	54 939	69 247	96 964	72 609	75 036	67 850	64 302	51 296	70 148
2004	**714143**	54 873	32 335	63 237	50 256	73 818	59 856	59 847	52 174	81 455	54 462	58 496	73 335
2003	**459488**	45 932	22 079	38 878	31 780	36 137	41 027	46 376	39 931	41 759	33 038	37 998	44 554
2002	**544467**	44 737	22 518	82 687	37 494	57 743	39 756	63 181	31 633	62 653	38 027	31 524	32 513
2001	**529489**	37 753	56 240	23 232	48 497	31 552	33 824	58 584	51 838	28 647	36 021	76 540	46 761
2000	**505482**	25 155	24 373	43 581	37 082	55 340	61 733	52 502	32 318	53 740	41 061	49 463	29 133
1999	**298257**	10 984	15 717	22 433	23 224	26 083	23 714	28 481	25 555	23 545	30 538	31 015	36 967
1998	**282827**	19 322	27 265	24 905	15 625	26 680	25 123	29 290	25 004	28 783	19 681	18 312	22 836
1997	**233681**	10 662	14 506	17 122	21 766	14 633	16 504	26 144	21 431	25 436	17 589	22 128	25 760
1996	**192627**	14 636	10 189	22 275	11 786	12 679	20 519	27 936	14 409	11 624	16 241	12 103	18 231

Source: Turkish Statistical Institute , 2011

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Intra-Regional Trade, Evidence from the Kingdom of Saudi Arabia (KSA): A Structural Equation Modeling (SEM) Approach

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***Abstract*:** The purpose of this paper is to examine the bilateral trade flows across three Gulf Cooperation Council countries—the Kingdom of Saudi Arabia (KSA), Bahrain (BAH), and Qatar (QAT)—over the last 30 years (1981-2010). The study focuses on the relationships between BAH and QAT, combined as one group, and KSA, which has a relatively larger economic mass and population. The empirical analysis consists of various economic factors, including gross domestic product (GDP), population growth (POP_GR), gross domestic product per capita (GDP/CA), the distance between countries (DIST), and Kingdom of Saudi Arabia Export (KSA_EX). Data related to bilateral trade was collected from the International Monetary Fund (IMF). The proposed model was tested using the structural equation modeling technique. Our results indicated that GDP, POP_GR, and GDP/CA have a positive relationship with the level of KSA_EX, while the DIST related negatively to the level of KSA_EX. This result showed an increase in trade cost as the distance between the two trading partners increased; countries that share a border have more trade with each other than countries that do not share a border.The study shows that all factors are crucial to the success of bilateral trade flow between both parties (BAH and QAT) and KSA because they provide the facts that decision makers need to make the appropriate decisions. Also discussed are the conclusions and the limitations of this study that could be addressed in future research.

Keywords: *Bilateral trade; economic integration; structural equation modeling; GCC; regional integration*

1. Introduction

The Gulf Cooperation Council (GCC) was established 30 years ago in 1981; it encompasses the Kingdom of Saudi Arabia (KSA), United Arab Emirates (UAE), State of Kuwait, State of Qatar (QAT), Kingdom of Bahrain (BAH), and Sultanate of Oman. The main purpose behind this group was to create an economic block. The GCC countries were able to implement a roughly common tariff schedule and execute a migration agreement to ease GCC member travel within the member countries. In 2003, the GCC was able to establish a customs union, one of the intended milestones behind the creation of the GCC. On the other hand, other aspects of integration, such as the creation of a monetary union, were delayed due to the failure to form a free trade zone. Despite that, the GCC integration increased the influence of the member countries in their own areas as well as outside it (Mosad, 1998). The GCC economic block was able to attract foreign domestic investments (FDI) and increase trade, specifically between the periods of 2000 – 2005, where all GCC members showed no vulnerability in exchange rates (Table 1). Furthermore, BAH and Oman are the most integrated countries within the GCC region (Table 2).

Table 1: FDI and increase trade, specifically between the periods of 2000 – 2005

	2000		2001		2002		2003		2004		2005	
Country	ExR[a]	IR (%)[b]	ExR[a]	IR (%)[b]	ExR[a]	IR (%)[b]	ExR[a]	IR (%)[b]	ExR[a]	IR (%)[b]	ExR[a]	IR (%)[b]
UAE	4.71	4.5	4.56	4.5	4.84	2.8	5.32	3.2	5.64	3.2	5.22	10.5
Kuwait	0.39	1.5	0.38	2.5	0.39	2.0	0.42	1.2	0.45	2.3	0.41	4.1
QAT	4.67	2.5	4.61	2.0	4.80	1.9	5.28	2.0	5.59	3.0	5.18	8.8
BAH	0.48	2.0	0.47	1.5	0.49	0.5	0.54	0.4	0.57	2.1	0.53	2.7
KSA	4.80	0.98	4.75	1.9	4.94	1.0	5.44	1.0	5.76	0.8	5.33	0.4
Oman	0.49	0.8	0.48	1.0	0.5	-0.5	0.55	0.3	0.57	0.2	0.54	1.2

Note: Exchange rate is calculated by currency unit per Special Drawing Rights (SDR; 1SDR=1.46USD). This rate, not used in fund transaction, is a reciprocal of SDR per currency. (ExR = Exchange Rate, IR = Inflation Rate)
Source: Exchange rate archives, IMF 2006a, World Fact Book, 2001-2006b

Table 2. Intra-GCC Trade-Integration (Trade Integration Ratios).

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
BAH	48.40	43.60	43.70	36.30	33.20	35.40	38.40	37.90	12.60	10.60
Kuwait	0.70	0.10	0.40	2.50	3.10	3.70	3.40	3.30	3.90	3.00
Oman	28.40	8.80	10.00	15.20	14.70	14.00	13.10	14.70	17.90	16.10
QAT	4.30	4.80	5.10	6.60	6.50	6.40	6.30	5.10	5.70	5.00
KSA	3.20	3.10	2.90	2.90	2.90	3.40	3.70	3.70	3.40	3.10
UAE	4.50	4.50	5.90	6.40	6.50	6.30	5.80	5.90	7.00	7.90

Sources: Compiled from IMF publications.

Trade is intense among the GCC countries, with an export to GDP ratio varying from 74% in BAH to 40% in KSA. The annual exports of the region are around $155 billion; 83% of this is in oil. For the GCC to reach its potential as a trading block competing in the globalizing world economy, there is a need to implement policy reforms to enhance non-oil growth and create employment opportunities for a rapidly increasing labor force, in addition to reducing vulnerability to oil price shocks.

The GCC's income is heavily reliant on oil, which contributes to about one-third of the total Gross Domestic Product (GDP) and accounts for around three-fourths of the annual government revenues and exports. As a block, the GCC has about 45% of the world's proven oil reserves and 25% of crude oil exports, and the GCC holds at least 17% of the proven global natural gas reserves. KSA alone accounts for about 47% of the total of the region's exports and 37% of the region's imports, which makes it a vital driving force in the GCC (Table 3). As many GCC members are major oil exporters, most trade is conducted with non-GCC countries, primarily Japan, the European Union (EU), and the United States (US).

Table 3. Selected socio-economic indicators for the GCC Economics, 2002.

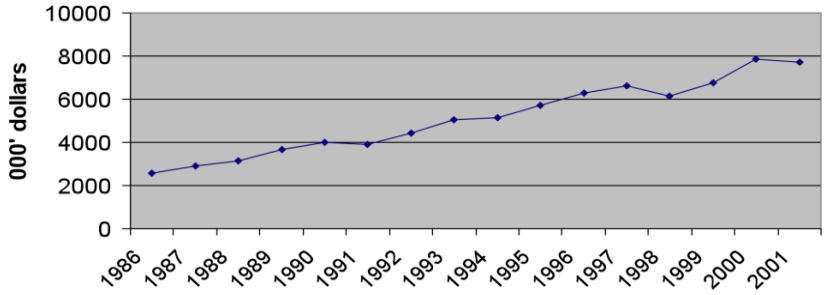
Country	Nominal GDP ($ millions)	Population (Millions)	Government Gross Debt (% of GDP)	Nominal GDP Per Capita ($)	Oil and Gas Exports (% of Total Exports)	Oil Revenues (% of total Revenues)
KSA	188,960	22.1	93.8	8567	81.7	78.0
Kuwait	33,215	2.2	32.9	15098	92.4	66.4
UAE	71,187	3.6	4.5	19,613	45.7	63.3
BAH	8,506	0.7	30.3	116 19	69.8	69.9
QATr	17,321	0.6	58.2	28362	84.2	72.0
Oman	20,290	2.7	16.0	28	77.2	76.7

Sources: Compiled from IMF publications.

The limited diversification of GCC exports offers very limited possibilities of expanding inter-industry trade, hence, the intra-trade between GCC countries is considered small in volume (Sherif, 2008). Furthermore, the existence of similar second industries in the

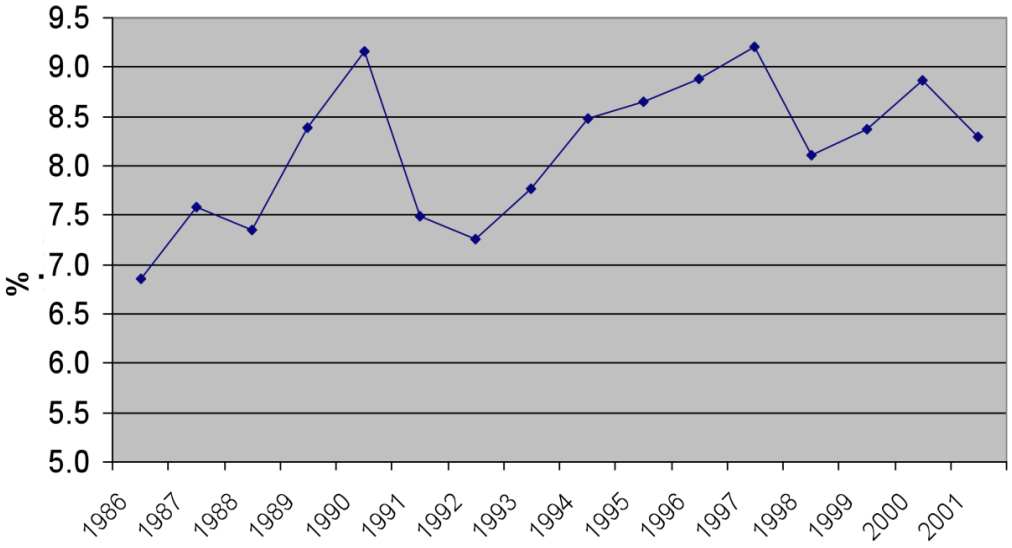
different GCC countries "could generate long-term detrimental structural overlap" that would stifle efforts to develop regional trade, which makes the trade within the GCC bloc weak compared to other economic blocks (Peterson, 1998). GCC trade grew three-fold in the past 15 years, despite trade barriers. Although the size of intra-GCC imports tripled between 1986 and 2001 – from $2.6 billion in 1986 to $8 billion in 2001 – their share in overall imports remained steady and low, at less than 10% (Figures 1 and 2).

Figure 1: Path of Intra-GCC Imports, 1986-2001.



Source: Al-Uwaisheg, (2003)

Figure 2. Path of Share of Intra-GCC Imports in Total Imports.



Source: Al-Uwaisheg, (2003).

Between 1990 and 2000, intra-exports and imports in the GCC were not smooth; however, data provides evidence of increasing trends in 2001 and a dramatic increase in the period between 2002 and 2004 (Table 4). In addition, the period between 1990 and 2003 demonstrated increasing trends in the amounts of manufacturing and high technology exports. The main reason behind those increasing trends is the implementation of the GCC customs union in 2003. Furthermore, the number of joint venture projects, total capital investment, and capital investment per project have also increased dramatically after executing a customs

union. Although trade can offer opportunities for economic gains, the potential is best realized within an environment that is driven by skilled resources, technological development, and sound government institutions. Without these fundamentals, the pursuit of economic gains through regional integration will likely disappoint (Baier et al., 2008).

Table 4: Intra-GCC Trade (Exports and Imports) and Joint Venture Projects, 1990-2004 (million $).

Year	Exports	Imports	Joint Venture Projects Number	Capital	Capital Per Project
1990	4834.5	2703.8	---	---	---
1991	4928.6	3735.6	---	---	---
1992	5557.1	3478.8	---	---	---
1993	6210.6	3891.7	---	---	---
1994	5343.6	4036.7	---	---	---
1995	6255.0	4457.2	---	---	---
1996	7553.0	4709.9	---	---	---
1997	8110.6	5158.5	---	---	---
1998	6603.5	5612.0	---	---	---
1999	7982.2	5531.7	150	2066.2	13.77
2000	7776.9	5700.7	91	290.79	3.19
2001	6394.7	3651.6	206	222.96	1.08
2002	7734.4	7402.7	1013	737.45	0.72
2003	9649.9	8025.6	---	---	---
2004	11934.9	11760.0	583	4529.25	7.76

Source: Data compiled from GCC Achievements, 2004.

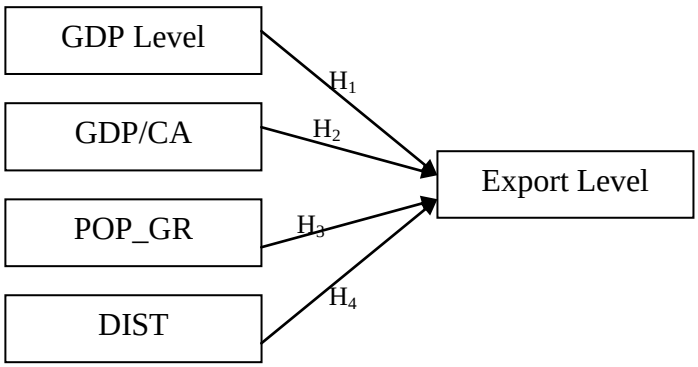
The rest of this paper is structured as follows. In Section 2, we develop the logic of the substantive relationships among the study variables and we state hypotheses. In Section 3, we explain our research methodology and analysis, including the data collection procedure, construct operationalization, and measurement. The testing of hypotheses using a structural model of GCC bilateral framework is discussed in Section 4. Section 5 presents discussion and the study findings. In Section 6, we conclude the study and highlight limitations along with suggestions for future research.

2. Theoretical Framework and Hypotheses

The aim of the study is to shed light on the relationship between the GCC countries in their attempt to achieve regional economic integration. The study focuses on the relationships between two GCC countries BAH and QAT, combined as one group, and KSA, which has a relatively larger economic mass and population. The GCC bilateral trade framework (Figure 3) suggests that trade factors have an impact on export levels. The trade factors included in

this study are GDP, population growth (POP_GR), gross domestic product per capita (GDP/CA), and the distance between countries (DIST). According to the GCC bilateral framework presented in Figure 3, this study proposes the following hypotheses:

Figure 3: GCC Bilateral Trade Framework



2.1 GDP and level of export relationship

In previous studies, the gravity model in its basic form suggests that the volume of bilateral trade between two countries is positively related to their incomes (GDPs). Empirically, previous studies concluded that the conventional gravity model has predicted that the coefficients of the GDP variables of the importers and exporters are positive, indicating that trade increases with the level of the GDP (Siddiq and Vemurim, 2011). Bergstrand (1989) reports a positive GDP per capita coefficient, suggesting that imports and exports are capital intensive in production. According to the GCC bilateral framework presented in Figure 3, this research study proposes the following hypothesis.

H1: GDP of both partners (BAH and QAT) are positively related to the levels of trade export with the KSA.

2.2 GDP per Capita and level of export relationship

As argued in earlier studies, the size of the population will have a significant impact. Larger countries tend to be more self-sufficient or, alternatively, for a given level of GDP poorer countries (larger population) trade less than richer countries (Anderson and Van Wicoop, 2004). The empirical study of six big countries in the Organization of the Islamic Conference (OIC) revealed that the GDP per capita of OIC countries in 2007 was more than double the GDP per capita of OIC countries in 1998 (Statistical Yearbook OIC Member Countries 2008, 2009). Hassan et al. (2010) and Mehanna (2003) find positive income per capita coefficients supporting the idea that higher income per capita leads to more trade. According to Mehanna (2003), it is usual to find a positive impact of GDP per capita on bilateral trade flows in the intra-industry trade models, while the comparative advantage

theory predicts a negative link because it is based on different factor endowments. Following this interpretation, we can expect a positive link between GDP per capita and trade flows for the intra-GCC trade due to the similar factor endowments of many GCC countries. According to the GCC bilateral framework presented in Figure 3, this research study proposes the following hypothesis.

H2: The GDP_P_CA of both partners (Bahrain and Qatar) is positively related to the levels of trade export with the Kingdom of Saudi Arabia.

2.3 Population growth and level of export relationship

Several studies advocated that countries with a larger population tend to buy and sell more than countries with a smaller population. Larger countries trade more with each other than smaller countries as they have a bigger potential for export supply and import demand (Rodrik, 1998). Moreover, the impact of population on trade may also differ depending on the length of the estimation period (short-term vs. long-term). Population may have a positive impact on trade flows in the short-run, while in the long run higher population has a tendency to decrease exports. Matyas (1997) finds that population has a tendency to increase trade and the level of specialization by producing gains from specialization. Furthermore, Kandogan (2008) asserted that there is no question that geopolitics plays an important role in the choices countries make concerning integration. According to the GCC bilateral framework presented in Figure 3, this research study proposes the following hypothesis.

H3: The Population growth of both partners (BAH and QAT) are positively related to the levels of trade export with the KSA.

2.4 Distance and level of export relationship

It has recently been argued (Deardorff, 1998) that the relative distances of trading partners have an impact on the volume of trade. Furthermore, larger distances between countries are expected to decrease bilateral trade (Clark et al., 2004; Glick and Rose, 2002; Rose et al., 2000) by leading to higher transportation costs and some other difficulties to trade such as informational and psychological frictions (Huang, 2007). It is well known that transport costs are an important barrier to trade and, therefore, they tend to reduce the level of international trade (Jacquemin and Sapir, 1988; Neven and Röller, 1991). For instance, Baier and Bergstrand (2004a) provide empirical evidence that pairs of countries that are larger in economic size (GDP), more similar in GDP, closer in distance, and more remote from other countries tend to have a free trade agreement and they provide a theoretical rationale for the

relationship. According to the GCC bilateral framework presented in Figure 3, this research study proposes the following hypothesis.

H4: The DIST of both partners (BAH and QAT) are negatively related to the levels of trade export with the KSA.

3. Research Methodology

The research was based primarily on a quantitative approach using data collected from IMF pertaining to the research hypotheses covering a period of 30 years from 1981-2010. The population for the research included KSA, BAH, and QAT as the GCC members. To identify an initial set of items to measure the components of bilateral trade, an extensive literature review was completed. Therefore, we focus on the relationships between BAH and QAT as a joint group with KSA, which has a relatively larger economic mass and population.

3.1 Operational Measures of the Variables

In this section we will describe items used in measuring the variables in this study. Overall, items were divided into five main factors: gross GDP, POP_GR, GDP/CA, DIST**,** and KSA_EX.

Gross Domestic Product (GDP): A six-item scale was used to measure GDP. Each item measures a span of five years. The first item (GDP81_85) measures the period from ‘81 to ‘85, the second item (GDP86_90) measures the period from ‘86 to ‘90, the third item (GDP91_95) measures the period from ‘91 to ‘95, the fourth item (GDP96_00) measures the period from ‘96 to 2000, the fifth item (GDP01_05) measures the period from 2001 to 2005, and, finally, the sixth item (GDP06_10) measures the period from 2006 to 2010.

Gross Domestic Product per Capita (GDP/CA): A six-item scale was also used to measure (GDP/CA). Similar to the previous variable, each item measures five years. The first item (GP/C81_85) measures the period from ‘81 to ‘85, the second item (GDP/C86_90) measures the period from ‘86 to ‘90, the third item (GDP/C91_95) measures the period from ‘91 to ‘95, the fourth item (GDP/C96_00) measures the period from ‘96 to 2000, the fifth item (GDP/C01_05) measures the period from 20 to 2005, and, finally, the sixth item (GDP/C05_10) measures the period from 2006 to 2010.

Population Growth (POP_GR): A six-item scale was also used to measure (POP_GR). Similar to the previous measurement, each item measures five years. The first item (POPG81_85) measures the period from ‘81 to ‘85, the second item (POPG86_90) measures the period from ‘86 to ‘90, the third item (POPG91_95) measures the period from ‘91 to ‘95, the fourth item (POPG96_00) measures the period from ‘96 to 2000, the fifth item

(POPG01_05) measures the period from 2001 to 2005, and, finally, the sixth item (POPG05_10) measures the period from 2006 to 2010.

Distance (DIST): A two-item scale was used to measure DIST between Saudi Arabia and two members of the group, BAH and QAT. The first item measures the distance between KSA and QAT (DIS_K_QA) while the second item measures the distance between KSA and BAH (DIS_K_BH).

Kingdom of Saudi Arabia Export (KSA_EXP): A six-item scale was used to measure (KSA_EXP). The first item (K_EX81_85) measures the period from '81 to '85, the second item (K_EX86_90) measures the period from '86 to '90, the third item (K_EX91_95) measures the period from '91 to '95, the fourth item (K_EX96_00) measures the period from '96 to 2000, the fifth item (K_EX01_05) measures the period from 2001 to 20005, and the sixth item (K_EX06_10) measures the period from 2006 to 2010.

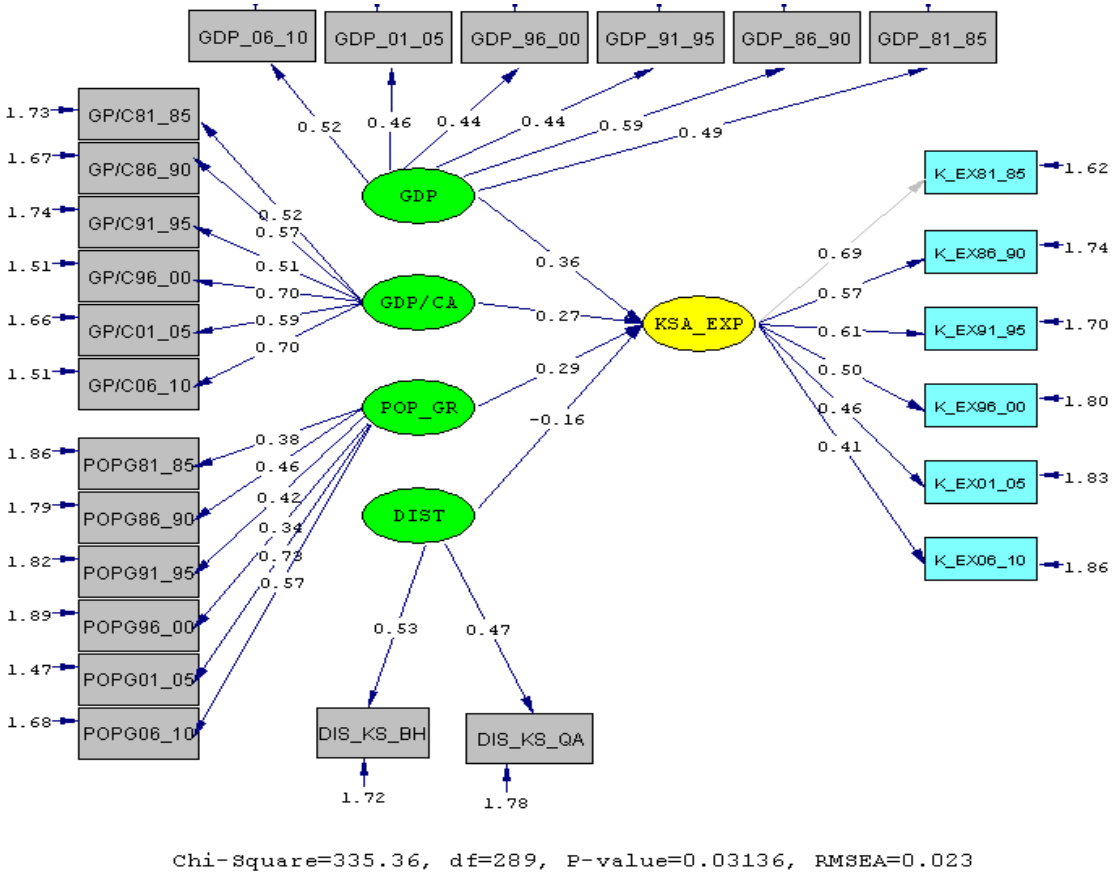
4. Structural Model of GCC Bilateral Framework

The best SEM, obtained from LISREL software, accepted for the study is illustrated in Figure 4, with the structural model determining the significance of the relationships among the independent and dependent variables. The SEM is a multivariate analysis methodology for empirically examining the sets of relationships represented in the form of linear causal models (Joreskog and Sorbom, 2001). Appendix I shows LISREL measurement results, which include the factor loadings and t-statistic for the revised constructs. These results indicate that all the factor loadings are positive and significant at the 1% level.

4.1 Model Identification

Before analyzing the GCC bilateral framework structural model, it is important to check the model identification to obtain the correct estimate of the parameter values. The SEM is over-identified with 26 observed variables – there are (26*27)/2 = 351 observations. The number of parameters to be estimated is 56, including the variances of 26 variables (20 exogenous and six indigenous variables that are the disturbance), 26 direct loading on each latent variable, and a total of four direct effects. Furthermore, six error co-variances were set to free. Thus, the model degrees of freedom are 351 – 56 – 6 = 289 (see Figure 4, df = 289). Since the number of observations is greater than the number of parameters to be estimated, we conclude that the GCC bilateral model is over-identified and can be tested statistically.

Figure 4: SEM of GCC Bilateral Framework



Chi-Square=335.36, df=289, P-value=0.03136, RMSEA=0.023

4.2 Model Goodness of Fit

The literature mentions many goodness of fit statistics to check the fitness of the model with the data. The three most commonly used indices are Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Normed Fit Index (NFI). Another goodness of fit statistic is chi-square, which was used in many studies but has severe limitations because it is affected by the size of the data; when the data goes beyond 200 cases, it usually gives a significant result. The best SEM, obtained from LISREL software, accepted for the research model is illustrated in Figure 3, with the structural model determining the significance of the relationships between the independent and dependent variables. The research model presented in Figure 3 shows a good fit of GDP, POP_GR, GDP/CA, DIST and KSA_EX to the empirical data. The observed Chi Square was $\chi^2 = 335.36$, the degree of freedom *df* = 289, the P-value = 0.03136, and the RMSEA = 0.023. Generally, a rule of thumb is that RMSEA $\leq$ 0.05 indicates close approximate fit and values between 0.05 and 0.08 suggest a reasonable error of approximation (GFI = 0.99, AGFI = 0.93, NFI = 0.98, NNFI = 0.97, and CFI = 0.99); these all represent a good fit (Bentler and Bonett, 1980).

5 Results and Data Analysis

To test hypotheses H_1, H_2, H_3, and H_4 the regression results and the standardized path coefficients representing the direct effects of each factor dimension GDP, POP_GR, GDP/CA, and the DIST with KSA_EX are shown in Table 5. For hypothesis H_1, the path coefficient for GDP and KSA_EX was 0.36, significant at the 1 percent level and positively correlated. The total nominal GDP of the GCC economies has more than doubled since 2001, adding the equivalent of an economy the size of Sweden (World Bank Report, 2010). Furthermore, according to Al Awad (2010), if we look at the profile of overall GDP in these countries we observe that over the past 10 years the importance of the oil sector was growing relative to shares of manufacturing and all other non-oil components in the GCC region. The share of oil in real GDP was around 33.5% in 1997 and it increased to 48% in 2007 (Al Awad, 2010). The GCC countries have accumulated large fiscal and current account surpluses in recent years. For hypothesis H_2, the path coefficient for GDP/CP and KSA_EX was 0.27; it was significant at the one percent level and positively correlated. This is not a surprising result, since GDP/CA in 2007 ranged from about US$ 15,000 in Oman to US$ 62,000 in QAT (World Bank Report, 2010). For hypothesis H_3, the path coefficient for POP_GR and KSA_EX was 0.29; it was significant at the one percent level and positively correlated. However, for hypothesis H_4, the path coefficient for DIST and KSA_EX was -0.16; it was significant at the five percent level and negatively correlated. Additional factors may contribute to the negative relationships, such as border and customs restrictions. GCC members continue to undertake border and customs inspections of other GCC members (World Bank Report, 2010). Trade restrictions vary from the requirement that national transportation carriers be used for some products to standard bureaucratic delays in customs clearance. The relative sizes of the three economies, adjacency of the three nations, common history, languages, and customs may, in fact, result in trade volumes even higher than predicted by SEM model.

Table 5: Hypotheses Relationships

Kingdom of Saudi Arabia Export Level	Hypotheses Relationship				
	H_1	H_2	H_3	H_4	
	GDP	GPA/CA	POP_GR	DIST	
KSA_EX	**0.36** **(0.15)** **2.13**	**0.27** **(0.10)** **2.7**	**0.29** **(0.13)** **2.24**	**-0.16*** **(-0.084)** **1.90**	Path coefficient Standard Error t-Statistics

The current results of the regression analysis in this study matched the results presented in earlier studies. The results provide evidence that KSA's exports trade

significantly depends on the economic sizes of the other countries and the DIST. Holding other factors unchanged, export volume is likely to increase by about 0.9099 with one point unit increase in GDP for other countries while the exports reduced by 2.5346 when distances are higher between KSA and another country (Siddiq, and Vemurim,, 2011).

6. Conclusion, limitations, and further research direction

In conclusion, our findings include several empirical results regarding the relationships among GDP, POP_GR, GDP/CA, DIST, and KSA_EX. From our study, we can conclude with some degree of certainty that all variables appear to be critical and have a significant impact on the level of export. Trade is fairly intense among the GCC countries. Thus, their actions as decision makers may take into account their impact on GCC export levels and economic activities. The findings provide evidence of the direct positive effects of the antecedent factors on KSA_EX and the negative relationship of the DIST with KAS_EX. The findings indicate that trade is actually higher than expected on the basis of underlying trade determinants, regardless of the fact that the share of GCC intra-trade included in this study is too small in absolute terms. The coefficients of the GDP variables of the importers and exporters are positive, indicating that trade increases with the level of the GDP. On the other hand, a higher GDP per capita means enhanced demand for differentiated products as well, which has a tendency to increase the level of imports.

However, the potential of trade among GCC countries in this study has been exhausted during the early years of the establishment of the GCC trade arrangement. The developing member countries with similar incomes would trade more extensively with each other. This result can be partly explained by Hanink's income threshold concept, which argues that the income similarity effect is only applicable to developed countries with very small difference in incomes (Tang 2005). The newly created GCC Custom Union is, therefore, promising in enhancing new opportunities of trade as it goes beyond the removal of tariffs to the elimination of non-tariff barriers and the establishment of common standards and regulatory regimes.

As these countries become more industrialized, they can then start to produce more manufactured rather than primary goods for export. As Tang (2005) mentions, the emphasis on the production of tradable goods would facilitate high trade between these rapidly growing developing countries in the long run. The bilateral economic and trade relationship with BAH and QAT is of interest to KSA policymakers because of BAH and QAT's proximity to the KSA and because of the strong cultural and economic ties that connect the GCC countries.

The negative relationships between the distance and the level of export calls for developing strong infrastructures among the GCC countries; elimination of trade barriers,

easing entry and licensing restrictions for domestic firms, and the subsequent enlargement of markets would help to attract investment and promote growth in the tradable sector. It would appear that the development of a bilateral relationship among BAH, QAT, and the KSA should be motivated strongly by economic considerations (rather than being strategic or event driven). In conclusion, our study provided empirical evidence that all factors are crucial to enhance the bilateral trade among GCC countries.

While we hope this study has enhanced the state of empirical research in the context of the economic field, our results should be taken as no more than a preliminary step towards understanding the complex, multidimensional concept of bilateral economic trade relationships among members of the GCC. The measures of GDP, POP_GR, GDP/CA, and DIST, dimensions used to rate the level of export, are a possible limitation of the research study. Since the data of the study was collected from only three GCC countries, results of the study may not be able to be directly applied to other countries. The results of this study may vary with the GDP level, population, and geographic locations; this suggests future research opportunities. In addition, a similar study could be conducted in other countries, which will make it possible to find differences among nations. Future studies should focus on identifying which attributes – in addition to GDP, POP_GR, GDP/CA, and DIST – impact the level of export.

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Appendix I LISREL Measurement Results

Constructs	Items	Loadings	Stoddard Error	t-statistics
Kingdom of Saudi Arabia Export (KSA_EXP)	K_EX81_85	0.69	(0.14)	4.93
	K_EX86_90	0.57	(0.15)	3.92
	K_EX91_95	0.61	(0.15)	4.08
	K_EX96_00	0.50	(0.14)	3.59
	K_EX01_05	0.46	(0.14)	3.37
	K_EX06_10	0.41	(0.13)	3.12
Gross Domestic Product (GDP)	GDP81_85	0.49	(0.11)	4.69
	GDP86_90	0.59	(0.11)	5.56
	GDP91_95	0.44	(0.11)	4.15
	GDP96_00	0.44	(0.11)	4.22
	GDP01_05	0.46	(0.11)	4.40
	GDP06_10	0.52	(0.11)	4.93
Gross Domestic Product per Capita (GDP/CA)	POPG81_85	0.52	(0.10)	5.16
	POPG86_90	0.57	(0.10)	5.75
	POPG91_95	0.51	(0.10)	5.10
	POPG96_00	0.70	(0.10)	7.06
	POPG01_05	0.59	(0.10)	5.87
	POPG05_10	0.70	(0.10)	7.04
Population Growth (POP_GR)	POPG81_85	0.38	(0.09)	4.13
	POPG86_90	0.46	(0.09)	5.03
	POPG91_95	0.42	(0.09)	4.59
	POPG96_00	0.34	(0.09)	3.69
	POPG01_05	0.73	(0.09)	7.96
	POPG05_10	0.57	(0.09)	6.22
Distance (DIST)	DIS_K_BH	0.53	(0.13)	4.08
	DIS_K_QA	0.47	(0.12)	3.67

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Foreign trade, FDI, and their impact on growth in GCC countries:

Evidence from qualitative and quantitative approaches

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Abstract: This paper aims to measure the impact of foreign trade and FDI in GCC economies. We found that the role of FDI is positive in UAE and negative in Saudi Arabia, while it has no effect on the rest of the GCC countries. In addition, the study confirms the continued importance of oil exports, except for Bahrain. Furthermore, the non-oil coefficient did not affect economic growth, and the commodity imports have a positive impact except for the UAE.

Keywords: Economic growth, foreign trade, FDI, GCC countries.

1. Introduction:

This paper focuses on analysing foreign trade and FDI in GCC countries over the period 1998-2008. It analyses key criteria of economic growth, namely, size of GDP, and its per capita, and share of export in GDP. Moreover, we will analyse the FDI flows and their relative importance in GCC economies by using two important indicators – FDI as a percentage of gross fixed capital formation, and FDI as a percentage of GDP – in order to explain the role of these investments during the period 1998-2008. Furthermore, the study also explores the role of foreign investment

in these economies, especially those that suffer from narrowness of local market, such as Bahrain and Qatar.

In addition, this study aims to measure the impact of foreign trade and foreign direct investment on GDP, where a positive value will reflect their role in enhancing GDP growth rates. In other words, it reflects the growth of per capita GDP and the increasing ratio of exports to GDP. Therefore, we will examine five independent variables: oil export, non-oil export, imports, FDI flows, and FDI out flows.

The FDI flows are considered an important indicator for integration with the world economy, where it usually enhances the level of GDP, and increases other economic activities that lead to exploiting the available resources. Furthermore, foreign trade has a significant role in supporting economic growth as a key criterion in the view of foreign investors, where it leads to attract more foreign direct investments. However, GCC countries aim to attract more FDI in order to improve the level of growth, as well as, to reduce the share of oil export in the total GDP since 1981 when these countries unified their economic policy in this respect.

2. Literature review:

Anderson, and Ronald (2008) focused on two fundamental problems relating to empirical testing between foreign trade and economic growth. The first problem is that foreign trade does not clearly lead to growth, or maybe growth does not cause trade. Second, the study found difficulty in developing a measure that includes all aspects of how trade affects growth.

However, it concluded that there is a positive relationship between foreign trade and economic growth through improving the level of productivity. This study stresses the roles of education and property rights as key factors for enhancing various economic institutions.

Bouklia, and Nagat Zatla (2001) analysed determinants of FDI, and economic growth in South and East Mediterranean, where they addressed key variables in their study – per capita GDP growth rate, investment of infrastructure, degree of economic openness as a ratio of GDP, inflation rate, loans granted to the private sector as a proportion of GDP, and the budget deficit as a proportion of GDP.

The study found the variables above had a weak impact in attracting foreign direct investments, except the variable of degree of economic openness, which contributed significantly to attract foreign direct investment over the period 1976-1997.

Katerina, Lyroudi, et al.(2004) investigated the existence and nature of the effect of FDI on the growth rate of 17 transition economies: Albania, Azerbaijan, Belarus, Bosnia, Georgia, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Mongolia, Romania, Russia, Slovenia, Tajikistan, Turkmenistan, and Uzbekistan.

The study shows that the FDI does not represent any significant relationship with economic growth for the transition countries. Moreover, the study derives the same conclusions after splitting the study sample into two groups, low- and high-income countries.

Moudatsou, Argiro(2001) addressed the causality between FDI inflows and economic growth in 14 European Union countries. His study investigated three possible cases: growth driven FDI, is the case when the growth of the host country attracts FDI. Second, FDI led growth is the case when the FDI improves the rate of growth of the host country, and third; the causal link between them. The empirical result supports the hypothesis of GDP driven FDI for 4 out of the 14 investigated countries (Italy, Finland, Span and Ireland), in Ireland and Finland the growth was very attractive for FDI because of their small economies.

In addition, the study found FDI driven growth in 8 cases (Belgium, Denmark, Greece, Germany, France, Netherlands, Austria, Portugal and the UK), and that there is no causality between FDI and GDP for Sweden.

Trufin, Ovidiu Serafim (2010) determined that the impact of FDI on economic growth in Romania significantly depends on governmental policies, which are applied by decisional factors. The study reports that the economic practice prove the importance of applying some active measures of orienting the attracted FDI, and of the host country actions towards modernising the infrastructure and raising the qualification level of the population.

Balasubramanyam, etal.(1996) analysed the impact of foreign direct investment on economic growth during the period 1970-1985 for a sample of 46 developing countries. These countries were classified into two groups: The first group included countries that had followed the policy of export, the second set were countries that

had pursued a policy of import substitution. The study found a key result, which confirms that the positive role of foreign direct investment in countries that pursued a policy of export is greater than the countries that adopted a policy of import substitution.

Blin, and Bazoumana Duattara(2009) addressed the important question of whether foreign direct investment enhances economic growth in Mauritius. Their study is based on time series data for the period 1975-2001. Domestic private and public investments are also used to estimate a neoclassical production function in the long-term, as well as in the short-term.

The results of the study indicate that foreign direct investments have a significant impact on economic growth in Mauritius. In respect of domestic investments, the study shows that only private investments have a positive effect on economic growth.

Pfaffermayr, (1994) Explained the relationship between FDI, and the growth of exports in Austria, where he used the test of Granger causality to determine the total impact of foreign direct investment and exports on the Austrian economy. The study concluded that there is a significant causal link between foreign direct investment and exports and that there is potential to achieve a positive impact of exports by increasing foreign direct investment in the host country, especially in sectors that have modest value added where FDI is considered a good way towards economic diversification.

Toulaboe, Dosse, et al.(2008) stressed that foreign direct investment contributes to increase fixed capital formation, technological progress, and that these investments are a good catalyst for improving the economic growth. The researchers identified several testable hypotheses; first, the foreign direct investment has economic benefit to the host countries. Second, the direct impact of foreign investment is substantial in more developed economies. Third, foreign direct investment has indirect economic implications in host countries because of the positive relationship between foreign direct investment and the level of human capital formation. Finally, the indirect effect is significant in developed economies.

Borensztein, E et al. (1998) tested the effect of FDI on economic growth by using data of FDI flows from industrial countries to 69 developing countries during the period 1970-1989. The study found that FDI is an important vehicle for technology transfer,

as well as contributing relatively more in achieving economic growth than domestic investments.

Salts, I. S.(1992)analysed the level of FDI on the growth rate of GDP in 75 developing countries, and concluded that there is a reverse link between FDI and the rate of GDP growth over the period 1975 - 1980. Salts made clear that the reason for this inverse relationship is attributed to the failure of the economic policy of the host country in its attempt to attract more foreign direct investment not leading to an increased level of value added, where these investments have not achieved substantial and rapid economic growth. In addition, he analysed the main reason for this failure, which he attributed to certain factors like economic instability, shortage of incentives and basic facilities that do not attract foreign direct investment.

Atique, Zeshan, et al.(2004) found that the foreign trade policy regime followed by Pakistan has a significant impact on the amount of FDI inflows, and economic growth rate, and that the government should emphasise both export promotion policy, and FDI inflows to achieve sustained economic growth.

Schmidt, Rodney (2008) analysed the relationship between FDI, growth, and cross-country income convergence in 128 countries over the period 1970-1999. The study is based on the non-linear growth regression model. It concluded that a country must receive a minimum amount of FDI before its macroeconomic growth rate responds. Furthermore, the study found that FDI makes an important contribution to economic growth because of its role in enhancing and improving the growth rate of GDP per capita by between 0.83 and 1.57 percentage points each year, depending on the actual amount of FDI. In addition, the study confirms that the FDI is the main channel of technology transmission across countries.

Ruxanda, Gheorghe, and Andreea Muraru (2010) investigated whether FDI's have an impact on the Romanian economic growth by using simultaneous equation methods to analyse the linkage between economic growth and the share of FDI in GDP. This attempt revealed a bi-directional relation between the study variables. In addition, the study highlighted the importance of economic growth for all other independent variables, where FDI positively affects economic growth, and, in turn, the higher GDP attracts FDI. The study result converges the idea of a causality relation between FDI and GDP. Moreover, the study proved that labour cost has a significant role in attracting foreign direct investment.

Research Gap:

According to the literature review of the study, we note that most of the studies have been conducted in respect of more diversified economies, where we record that the quantitative approach of these studies is mostly based on total foreign trade as an independent variable. In this study, and for analysing the role of foreign trade of GCC countries, we have used three independent variables to represent the aspects of foreign trade, namely; oil export, non-oil export, and imports of goods, as well as, FDI, inflows and outflows. The main reason is to identify the role of each variable and its effect on economic growth.

Finally, and for continuing with the literature of the study, our study tries to link the three key topics, foreign trade, foreign direct investment and growth. For achieving the objectives of the study, we will use two approaches, first, the analytical approach enhanced by tables and graphics. This approach will focus on the analysis of the variables of the study, for which it will use the quantitative approach, in order to make a clear picture about the GCC economies during the period 1998-2008. Second, the quantitative approach is used to examine the variables that affect the economic growth of GCC countries.

3. Methodology:

This study relies on the neoclassical and endogenous growth theories, which confirm that FDI will enhance economic growth by increasing the efficiency of investment, as well as leading to various technologies (Romer, 1986), in order to determine whether the FDI has a positive or negative impact on the economic growth in GCC countries over the period of study.

Furthermore, we will add three independent variables, which represent oil export, non-oil export, and commodity imports. We have added these variables based on the comparative advantage, and endogenous growth theories, which indicated that the open trade policy promotes the level of investment efficiency by reinforcement sectors that have a comparative advantage in trade (Balasubramanyam, 1996), where a more open trade economy allows a country to reorient factors of production to increase the level of GDP, and its growth. However, the results of this model will

determine whether the GCC's economic policy has achieved its target or not. In other words, we will determine the reality of the economic policy of these countries over the period 1998-2008.

3.1 Assumption of the model: this model will focus on the following assumption:

Commodity trade and FDI had a positive effect on GDP in GCC countries over the period 1998-2008.

3.2 Formulation of the model:

The main formulation can be expressed by the form of economic growth of GDP as a function of FDI inflows, FDI out flows, oil export, non-oil commodity export and commodity imports, in the following form:

$$GDP = f\,(FDin, FDout, Oilx, Noilx, M)$$

Where:

GDP: Gross domestic product.

FDin: Foreign direct investment inflows.

FDout: Foreign direct investment outflows.

Oilx: Crude oil exports.

Noilx: Non-oil commodity exports.

M: Commodity imports.

Ui: Error term.

(*) FDin and FDout are measured as a ratio of GDP.

(**) GDP, Oilx, Noilx and M are measured by natural logarithmic.

3.3 Description of the model:

After adding error term variable, the final model will be as the following form:

$$Log\,(GDP) = a + B1\,(FDin) + B2\,(FDout) + B3\,Log\,(Oilx) + B4\,Log\,(Noilx) + B5\,Log\,(M) + Ui$$

Where:

a: constant.

B1, B2, B3, B4 and B5: coefficients.

4. The Key criteria of economic growth in GCC countries:

4.1 GDP

As known, GDP represents the size of the economy. It is a significant indicator of economic activities of the country, where it is considered a good measurement from the perspective of foreign investors. Therefore, the GDP and its growth level are important factors in attracting more foreign direct investment (FDI), for countries that have positive growth rates. In this respect, we can say that the increased FDI will come to the big local markets, where there is a positive relation between FDI and size of GDP (Dritsaki, et al., 2004, p230).

The GCC countries witnessed increased growth level, over the period 1998-2008, especially the year 2000 (Arab league, et al., 2009, p266), where the total GDP reached USD (341373) Million, due to the high level of the oil sector and manufacturing industries in general. However, it dropped again in the year 2001 (Arab league, op cit) because of the weak level of world economic growth, which affected the oil prices of GCC countries (Al-Rawi, 2003). In this context, the growth rates in developed countries dropped from 4.6% in 2000 to 2.5% in 2001, and in developing countries from 5.8% to 4.2% for the said years (Arab League, 2005). This decline resulted in a lowering of oil prices. In other words, the GCC economies suffered a negative effect because of their high reliance on the oil sector, and its fluctuations with the global economy. Therefore, we noted in the UAE, the GDP has dropped as a result of the dropping of crude oil export revenues, as well as in the rest of GCC countries, especially in Saudi Arabia, Qatar and Kuwait. However, in Oman, we see that there is a modest drop in its GDP, which could be attributed to the significant role of the gas industry and other sectors that are associated with it (Arab league, Op cit). In other words, increasing the added value of these industries has reduced the negative impact of global fluctuations of crude oil demands. The following table shows the level of GDP of GCC countries over the period of study.

Table (1): Level of gross domestic product in the GCC during the period 1998-2008 (million USD)

Year	UAE	Bahrain	KSA	Oman	Qatar	Kuwait
1998	48500	6184	145967	14086	10255	25941
1999	55193	6621	160957	15710	12393	30126
2000	69979	8028	188442	19450	17760	37714
2001	68909	7971	183012	19399	17538	34906
2002	73635	8491	188551	20048	19364	38129
2003	86686	9747	214573	21543	23534	47869
2004	104180	11235	250339	24674	31734	59439
2005	138331	13459	315337	30905	42463	80799
2006	168384	15852	356155	36804	56770	101549
2007	196643	18447	383871	41639	71041	114585
2008	250517	24338	468800	59945	102303	148165
Average 98-2008 (*)	114,632	11,852	259,636	27,654	36,832	65,383
Growth rate (**)	16%	13%	11%	14%	23%	17%

Sources: League of Arab states, (2004), (in Arabic) Joint Arab economic report, Abu Dhabi, annex 2 / 2.
League of Arab states, (2009), (in Arabic), Joint Arab economic report, Abu Dhabi p266.
(*), (**) Calculated by the researcher.

Table (1) shows that during the years 2002-2008, GCC countries achieved an increased level of GDP, which can be attributed to many reasons, the first being the increase of oil revenue especially for year 2004, which amounted to 40% in Kuwait, 29.7% in Qatar, and 35.8% in UAE (OPEC, 2008, p47). This helped to increase the investive expenditure, as well as to achieve the economic reform programme and played a significant role in the private sector, which led to enhancing the economic performance in GCC countries thereby enabling them to achieve high growth rates.

In addition, we can link the positive growth of GDP in GCC countries with the increased growth rates in developed countries, which increased in ratios of 4.7%, 6.4%, 5.1% in the years 2002, 2003, 2004, respectively, as well as in developing countries, which achieved 4.7%, 6.4%, 7.2%, respectively (Arab League, 2008, p38).The increased global growth led to increased demand for crude oil, which had a positive effect on the economic growth in GCC countries.

Finally, it is clear that the GCC growth rates is linked to the changes that occur in the global economy, however, in general, it can be seen that the GCC countries have attracted FDI due to the positive growth of these economies which ranged between 23% in Qatar and 11% in Saudi Arabia during the period 1998-2008, and, consequently, it can be said that the size of GDP in GCC countries is a positive criterion for attracting more foreign direct investment.

4.2 Per capita GDP

Per capita GDP shows the power of local demand, and is a significant indicator to measure the wage rates and consumption level. Per capita GDP in GCC countries has increased over the period 1998-2008 due to the superior growth rate of GDP compared to the population's growth rates during the same period (Arab League, 2009, p16).

In table (2), and figure (1), we note that the positive growth rate of per capita is attributed to the high increase of crude oil exports as the main reason for maximising its share in GDP over the period 1998-2008. Qatar and the UAE reflect the high level of their per capita GDP. In other words, these two countries distinguished in increased local demand, which is considered a good indicator for encouraging foreign direct investment during the period of study.

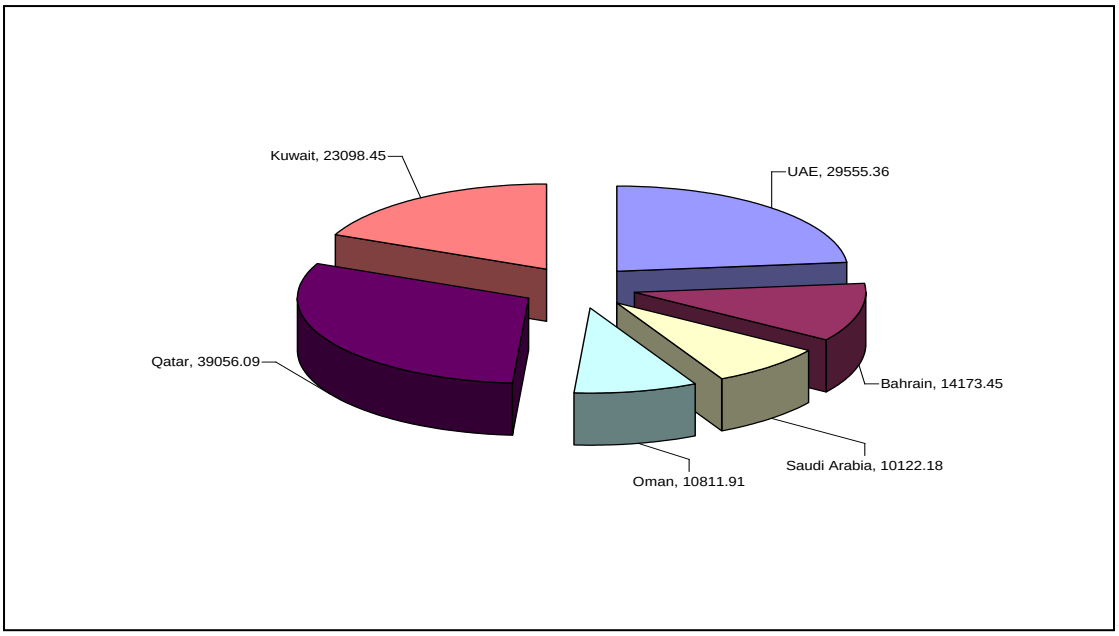
Table (2): Per capita GDP in GCC countries 1998- 2008 (US Dollar)

Year	UAE	Bahrain	KSA	Oman	Qatar	Kuwait
1998	17119	9660	7484	6467	18306	11425
1999	18194	10026	8085	6546	21390	13358
2000	23365	12582	9203	8097	28784	16927
2001	21758	12169	8723	7829	27024	15562
2002	21987	12635	8772	7899	28393	16136
2003	24412	14127	9743	9202	32777	19271
2004	28379	13635	11095	10213	41976	22472
2005	33690	15140	13640	12318	47818	28182
2006	39816	16512	15041	14282	54534	33273
2007	43815	17754	9038	15180	57964	34431
2008	52574	21668	10520	20898	70651	43046
Average 98-2008	29555.36	14173.45	10122.18	10811.91	39056.09	23098.45
Growth rate 98-2008 (*)	10.7	7.6	3.1	11.2	13.0	12.8

Source: By researcher depending on joint Arab economic report, different issues.

SESRIC, (2007) statistical year book, statistical, economics and social research and training centre for OIC countries, Turkey.

Figure (1): Average of Per capita GDP in GCC countries – 1998-2008 (Dollar)



Source: Based on table (2)

Figure (1) indicates that Qatar fell in the first level in terms of per capita GDP and its growth over the period of study, where the economic growth reached 13%. This reflects high economic performance that attracted foreign direct investment to the commodity sectors, particularly the mining sector and other industries that are associated with oil. The UAE comes in the second level. However, what distinguished the economy of the UAE is its dependence on the oil sector. Its revenue is less than that of Qatar, which we can confirm from table (4) that indicates that the share of extractive industry in Qatar is about 61.7% as average of GDP over the study period, 1998-2008, while its contribution in UAE is 38.2%. Therefore, we can say that the economic growth in UAE is better than Qatar in terms of its stability, which reduce the effect of fluctuations of global oil prices. In other words, any world crisis in the oil market will affect the Qatar economy more than UAE, which is considered more stable compared with the other GCC countries in general.

Kuwait dominates on the third level, where per capita GDP reached USD 23098.45 dollars per year, on average, and the oil sector constituted a high ratio in GDP. Also, Bahrain, Oman, and Saudi Arabia represent a lower share in this regard in comparison with other GCC countries, where their per capita GDP amounted to USD 14173.45, 10811.91, and 10122.18 dollar, respectively.

From the above, we can see that both Bahrain and Oman share a common problem, which is represented by the narrowness of their local markets resulting from the small size of their GDP despite the small population of the two countries. However, we note the importance of enhancing the level of economic growth by encouraging foreign investors and attracting more FDI. It is considered a good policy to expand the local markets and create new economic outlets that stimulate the economic growth, as well as investing the surplus of oil revenues in non-oil industries, in order to reduce the impact of world fluctuations in the global oil markets on these economies, which affect economic growth.

Furthermore, we note that the per capita GDP in GCC countries is still significantly linked with oil export revenues. Meaning that the global fluctuations resulting from oil prices have a direct impact on these economies, also, we can say that there is an indirect positive relationship between the economic growth in developed countries and the average of per capita GDP in GCC countries according to the relation between the oil global demand and increasing crude oil export, which affects an increase in the total oil revenues and then per capita GDP. Therefore, this issue will reflect the developmental impact by investing the achievable surplus in various projects that increase the level of value added.

In conclusion, and according to the positive growth of GDP in GCC countries during the period 1998-2008, which ranged between 11% and 23%(*), we can say that the large local power demand in GCC countries is a positive factor encouraging the foreign companies to increase their investment to create a new market outlet, which has a positive effect on achieving surplus production in the GCC countries.

4.3 Export ratio to GDP:

The export ratio of GDP is an important indicator for attracting foreign direct investment. It shows the economic openness level, and competitive ability, as well as being a criterion of economic efficiency, where increasing export ratios is a good evidence of trade surplus. The following table shows the export share in GDP during the period 1998-2008.

(*) Look at table (1)

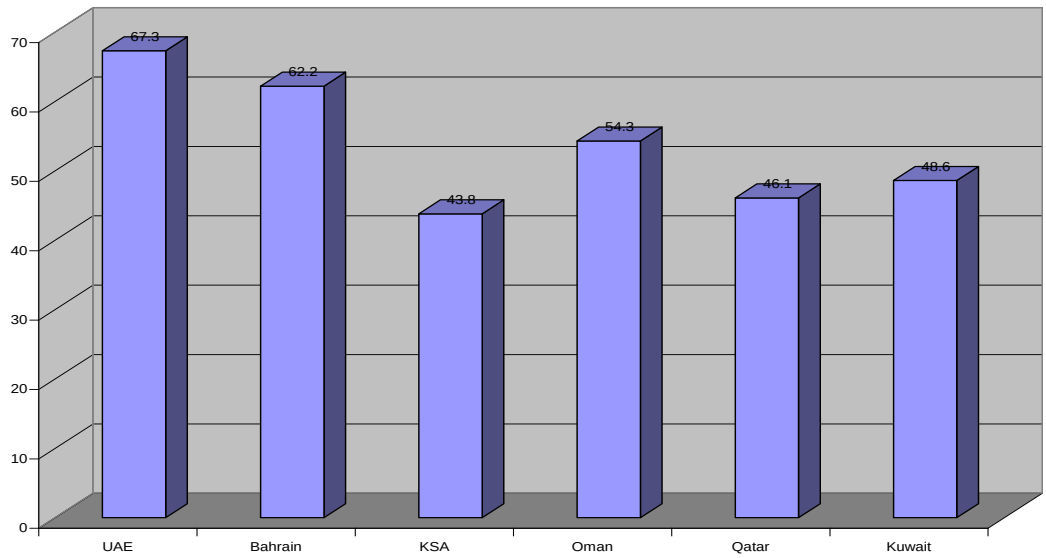
Table (3): The export share to GDP in GCC countries 1998-2008 (percentages)

Year	UAE	Bahrain	KSA	Oman	Qatar	Kuwait
1998	83.3	71.0	41.5	54.3	37.6	55.0
1999	61.3	49.3	42.7	72.1	40.6	60.6
2000	52.1	54.2	41.7	61.2	54.7	60.2
2001	72.3	78.2	42.4	58.3	66.1	49.3
2002	65.7	66.4	36.1	55.2	56.1	50.8
2003	59.6	60.4	34.0	51.9	46.6	50.7
2004	64.0	59.8	37.2	55.4	42.1	30.9
2005	65.7	56.8	47.4	43.7	44.0	37.2
2006	69.6	65.3	50.6	50.7	45.4	46.3
2007	74.0	66.9	54.8	51.9	37.9	51.2
2008	72.5	56.6	53.2	42.6	36.9	42.9
Average 98-2008	67.3	62.2	43.8	54.3	46.1	48.6

Source: By the researcher depending on the following:
Arab League (2009) (in Arabic) Joint Arab economic report, Abu Dhabi, pp 266-328
Arab League (2008) (in Arabic) Joint Arab economic report, Abu Dhabi, p 338.
Arab League (2005) (in Arabic) Joint Arab economic report, Abu Dhabi, Annex 5/5
Arab League (2003) (in Arabic) Joint Arab economic report, Abu Dhabi, Annex 5/5
Arab League (2004) (in Arabic) Joint Arab economic report, Abu Dhabi, Annex 2/2

Table (3) shows that, on average, the average of export ratios of GDP range between 43.8% in Saudi Arabia and 67.3% in the UAE during the period of study, which confirms the role of exports in all GCC countries. Moreover, the fluctuations of oil markets have a direct impact on the economic performance of these economies. In addition, the GCC's exports contributed in achieving high oil revenues, which lead to enhanced economic growth with a significant increase in the GDP, as shown in the following figure:

Figure (2): Average of share of export to GDP in GCC -1998-2008 (Million USD)



Source: Based on table (3).

From the figure above, we note that the commodity exports represent high ratios in UAE and Bahrain (67.3%) and (62.2%), respectively, as well as the other GCC countries. These percentages confirm the role of oil exports in GCC economies, particularly, in Saudi Arabia as a main producer and exporter of crude oil.

In table (4) we note that the extractive industry sectors in GCC countries have high value added compared with manufacturing industries over the period of study, where the achieved value added is attributed to the revenues of the oil sector in general. Therefore, the GCC policy is still targeting improving the industrial sectors by the establishment of many industrial projects in an attempt to enhance the investment climate, encouraging the role of the private sector, and diversifying the non-oil products to increase the export revenue of manufactured goods (Arab League, 2008, p45).This has a positive affect in raising the contribution of the industrial sector to GDP, where increasing the produced goods has a significant role in enhancing the foreign trade and gains high revenue to invest in other projects that lead to high value added, as well as reducing the imported goods. The following table shows the average of the value added of the industrial sector and its share in GDP during the period 1998-2008.

Table (4): Average of added value and its share in GDP- 1998-2008

Country	Extractive Industry		Manufacturing		Total industrial sector	
_____	Added value	Share in GDP (%)	Added value	Share in GDP (%)	Added Value	Share in GDP (%)
UAE	43789.4	**38.2**	14443.6	**12.6**	58228.4	**50.8**
Bahrain	3081.5	**26**	1635.5	**13.8**	4717.0	**39.8**
KSA	148511.8	**57.2**	21549.7	**8.3**	146434.7	**56.4**
Oman	14214.1	**51.4**	2820.7	**10.2**	17062.5	**61.7**
Qatar	22725.3	**61.7**	2504.5	**6.8**	25229.9	**68.5**
Kuwait	38902.8	**59.5**	3661.4	**5.6**	42498.9	**65**

Source: League of Arab states,(2000.2009) Joint Arab economic report, Abu Dhabi, different issues .

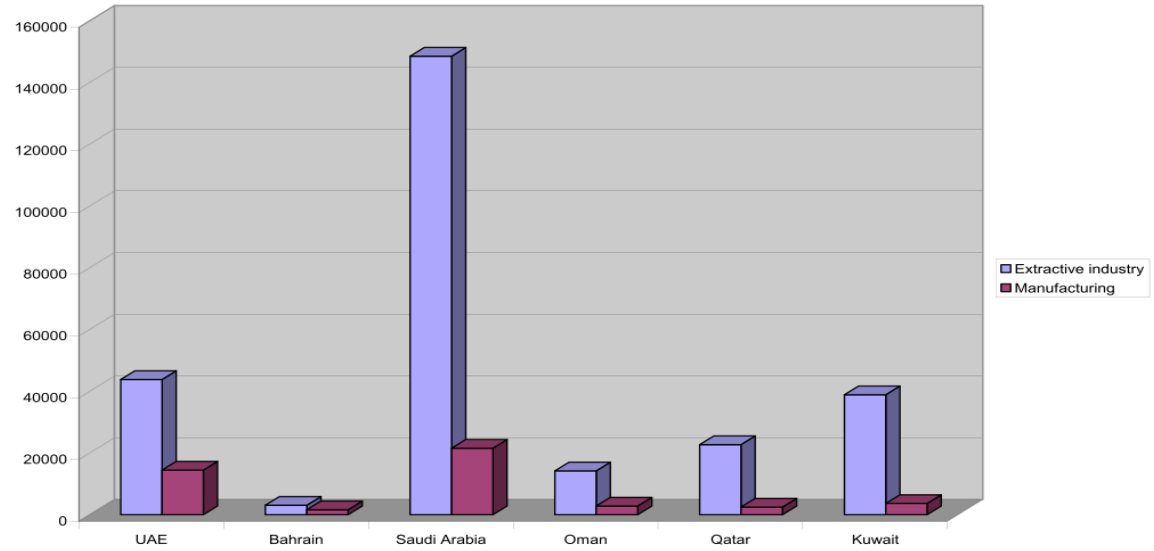
In addition, the table above shows that the manufacturing industries have achieved high value added in both the UAE and Saudi Arabia in comparison with the rest of the GCC countries, with their contribution amounting to USD 148511.8 and 43789.4 million dollars, respectively. The other GCC countries suffered from the continued weakness of the contribution of manufacturing industries over the same period, where extractive industry sectors are still the main source of income.

Figure (3) shows the important role of the extractive sector in GCC countries, where Qatar represents a significant ratio, which amounted to 61.7% of its total GDP on average over the period 1998-2008. Moreover, in respect of manufacturing industries, we note the UAE and Bahrain have the highest ratios, which amounted to 13.8% and 12.6%, respectively. This confirms the role of the manufacturing sector in these economies, and the success of the diversification efforts compared with other GCC countries for the same period. However, we also note that Bahrain has focused on increasing its share of the manufacturing sector to increase the level of its commodity exports as it suffers a weakness of crude oil exports compared with other GCC countries. Therefore, increasing the role of the manufacturing sector is considered a suitable strategy in order to raise the level of value added.

In Kuwait, we see the opposite scenario to that of Bahrain, where the level of the extracting industries sector achieved a high ratio of 59.5%, and its contribution reached USD 38902.8 million, while its manufacturing sector only achieved USD 3661.4 Million on average of value added for the period 1998-2008. We can conclude from this modest contribution the inability of the economic policy in Kuwait to increase the contribution of manufacturing industries. It was still too reliant on the oil

sector during the study period. The following figure shows the average of value added of the industrial sectors in GCC countries over the period 1998-2008:

Figure (3): Average of value Added in Industrial sector – 1998-2008, (Million USD)



Source: by researcher depending on table (4).

Through the above, we can say that the reinforcement contributions of the non-oil industrial sector will have a positive impact, and achieve an increased value added, which will lead to a reduction in the import level and enhance the level of trade balance. Therefore, it is apparent that attracting foreign direct investment to the industrial sectors in the GCC countries could positively affect achieving more value added if these investments help to allocate advanced technologies with increasing levels of productivity. In other words, attracting FDI is a good substitution for imports, whereas, the host country will be able to increase the local production and enhance the foreign trade commodity gradually. However, the FDI is a significant way for financing and achieving the economic reform programme in GCC countries.

In addition, foreign direct investments can lead to maximising the industrial growth in GCC countries by creating a linkage between local and foreign companies, whereas the possibility of encouraging the local investors for enhancing their relation with foreign investors. Meaning that, the FDI is also a good way to expand the local economy towards the regional and global markets after enhancing the production capacity of the non-oil industrial sector in GCC countries.

5. FDI flows in GCC countries:

5.1 FDI inflows to GCC countries:

FDI inflows to GCC countries are characterised by their fluctuations. During the period 1998-2008, Saudi Arabia was the main host country which is dominant on 44% of total foreign direct investment in GCC countries for the said period. The UAE represents the second level, which amounted to 39.6% of the total FDI of GCC. Kuwait represents a low ratio, less than 0.5%.

In respect of Saudi Arabia and the UAE, we note that eliminating investment barriers in 1999 is a key reason for attracting more foreign direct investment. The main investors are France, Germany, India, Japan, the UK and the USA (ESCWA, 2005, p84), and the most investment is concentrated in manufacturing sectors. Similarly, Bahrain achieved an acceptable level in this respect. The following table shows the FDI inflows in GCC countries during the period 1998-2008.

Table (5): FDI inflows to GCC countries 1998-2008 (Million USD)

Year	UAE	Bahrain	KSA	Oman	Qatar	Kuwait	Total average
1998	257.66	179.52	94.00	101.44	347.30	59.06	__
1999	-985.34	453.72	123.00	39.01	113.25	72.28	__
2000	-506.33	363.56	183.00	83.20	251.60	16.30	__
2001	1183.84	80.40	504.00	5.20	295.52	-175.00	__
2002	1314.27	217.02	453.00	122.24	623.92	3.62	__
2003	4255.96	516.70	778.46	26.01	624.92	-68.00	__
2004	10004.08	865.31	1942.00	111.05	1198.97	23.75	__
2005	10899.93	1048.67	12097.00	1538.36	2500.00	234.00	__
2006	12805.99	2914.89	17140.00	1596.88	3500.00	122.00	__
2007	14186.52	1756.11	22821.07	3331.60	4700.00	116.00	__
2008	13700.00	1793.88	38151.47	2358.91	4107.00	-51.00	__
98-2008	6101.51	926.34	8571.54	846.72	1660.22	32.09	18138.42
Share in total average (%)	33.6	5.1	47.3	4.7	9.1	0.2	100%
Share in average GDP	5.3	7.8	3.3	3.0	4.5	0.0	__

Source: UNCTAD, Data base of FDI.
AIECGC, (2010), Statistic of Arab Investment and Export Credit Guarantee Corporation.
SESRIC, Database of statistical, economics and social research and training.

Table (5) shows that Saudi Arabia represents the first level in terms of attracting the FDI for the period 1998-2008, especially for the years 2005-2008 (UNCTAD,2010, p212). This progress is attributed to the following reasons: (Al-Hasham, 2009, p22).

1- Establishment of important projects to meet the local demand and support the projects that aim to increase the export level.

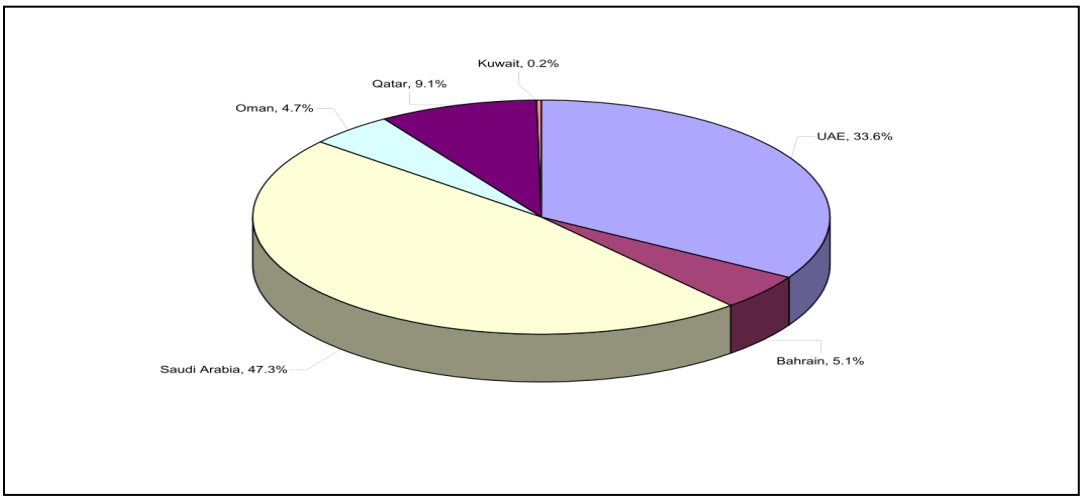
2- Exploiting the comparative advantage of industries that are based on crude materials such as crude oil, and gas.

3-Encouraging the increase in the companies that have advanced technology through the partnership relations with foreign companies or by getting the property rights.

4- Easing restrictions on foreign ownership (Al-Nakib, 2010, p3)

The UAE and Qatar are coming in the second and third level, respectively, where the FDI represents about 33.6% in UAE and 9.1% in Qatar as a percentage of average total FDI flows to GCC countries during the period 1998-2008. While the other GCC countries – Bahrain, Oman and Kuwait – witnessed weak contributions, which amounted to 5.1%, 4.7%, 0.2%, respectively, as shown in the following figure:

Figure (4): Relative contribution of FDI inflows to GCC countries – 1998-2008 (percentages)



Source: based on table (5).

Figure (4) confirms the weak level of foreign direct investment flows to Kuwait, as well as, Bahrain and Oman. Accordingly, the economic policy of these countries should be followed by real attempts to attract FDI flows, particularly in sectors that have a low contribution to GDP, in order to enhance the economic growth and

diversify the structure of production. However, the role of FDI not only leads to an increase in the production, but is also a good way to overcome the problem of the narrowness of local markets in these economies and enhances the partnership between local and foreign investors to exploit the competitive advantage of GCC countries – abundant labour and cheap energy resources.

Moreover, the FDI inflows is considered a significant factor for funding many economic enterprises without government budget, as well as creating new job opportunities and expanding the local market of the host economies. Hence, the unified economic policy of the GCC countries should attempt to increase the level of FDI inflows, especially in Kuwait.

In conclusion, the FDIs have a significant role in these economies because of their small GDP size, which explains the big role of FDI in these economies despite their low level of FDI compared with Saudi Arabia and UAE. In other words, the FDI has a good role in small economies such as Oman and Bahrain. However, if we go back to table (1) we will note that Bahrain, Oman, Qatar and Kuwait have small GDPs compared with Saudi and UAE, where we note that the FDI has a positive effect on the economies that suffer narrowness of the local market. Therefore, the inflows of foreign investments to these economies enhance the level of economic growth. In this context, we can say that these investments enhance the economic efficiency through optimal use of available resources, in order to increase the capacity. This means that the FDI is a good stimulation for economic activities, and, in turn, economic development.

5.2 FDI out flows from GCC countries:

The UAE and Saudi Arabia have dominated on a major ratio of total FDI outflows of GCC countries over the period 1998-2008, where, on average, the UAE represents 38.5% of total FDI outflows, and is considered the first investor in this respect. Accordingly, we note that the main reason for a high level of outflows is attributed to the role of emirates companies, such as International Petroleum Investment Company (IPIC), Abu Dhabi future company, and Abu Dhabi Investment Authority (ADIA), where the FDI outflows of UAE have increased since 2002. (GIH, 2010, p12).Saudi Arabia is the second investor, with its share, on average, amounting to 23.7% of FDI outflows during the said period; the amount of these investments is about USD

2780.55 Million. The following table shows the FDI outflows during the period 1998-2008.

Table (6): FDI out flows in GCC countries – 1998-2008 (Million USD)

Year	UAE	Bahrain	KSA	Oman	Qatar	Kuwait
1998	127.30	180.80	140.65	- 4.73	21.43	- 1866.86
1999	317.11	163.40	97.38	3.39	7.20	23.00
2000	423.67	9.57	1550.00	- 2.00	17.75	- 303.14
2001	213.70	215.96	45.63	54.99	17.21	- 242.00
2002	441.12	190.16	2020.03	0.03	- 21.04	- 78.00
2003	991.15	741.35	473.00	88.43	88.17	- 5016.00
2004	2208.30	1035.64	78.74	41.61	437.92	2581.00
2005	3749.49	1135.37	6602.86	233.55	351.91	5142.10
2006	10891.76	980.05	5397.57	274.64	127.43	8240.00
2007	14567.73	1669.14	12729.91	- 36.41	5160.25	10156.00
2008	15800.00	1620.47	1450.33	585.18	6028.68	8858.00
98-2008(*)	4521.03	721.99	2780.55	112.60	1112.44	2499.95
Share in total (%)(**)	38.5	6.1	23.7	0.9	9.5	21.3
Share in Average GDP (***)	3.9	6.0	1.1	0.4	3.0	3.8

Source: AIECGC, Arab Investment and export credit guarantee corporation, statistics.

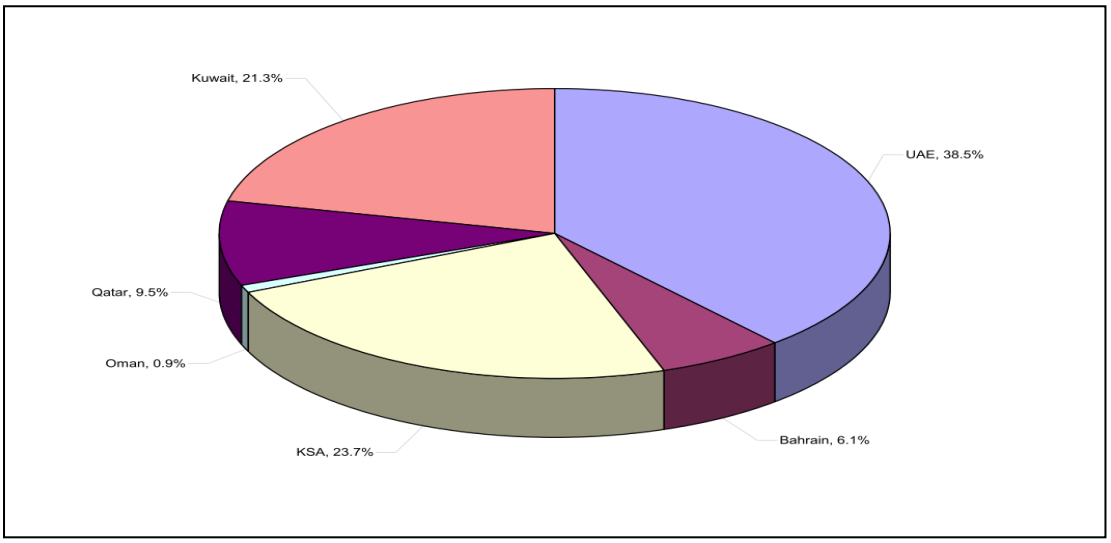
UNCTAD, world investment report, 2009, p260.

SESRIC, Data base of statistical, economics and social research and training.

(*) (**)(***) Calculated by the researcher.

In table (6) we note that the Kuwaiti FDI outflows increased rapidly from USD 2581 Million in 2004 reaching to USD (8858) Million in the year 2008. Kuwait occupies 21.3% of total of average FDI outflows of GCC over the period 1998-2008, which is considered the third GCC investor (AL-Nakib, 2010).We note the years 2004-2008 are characterised by a continued positive increase. In this respect, we can refer the high level of Kuwaiti FDI outflows to the increased oil export revenues, which encourage more FDI outflows to meet the notable weakness of FDI inflows in Kuwait, where it exploits its oil export surplus abroad. The following figure shows the relative contribution of FDI outflows of GCC countries during the period 1998-2008:

Figure (5): Relative contribution of FDI outflows of GCC countries – 1998-2008 (percentages)

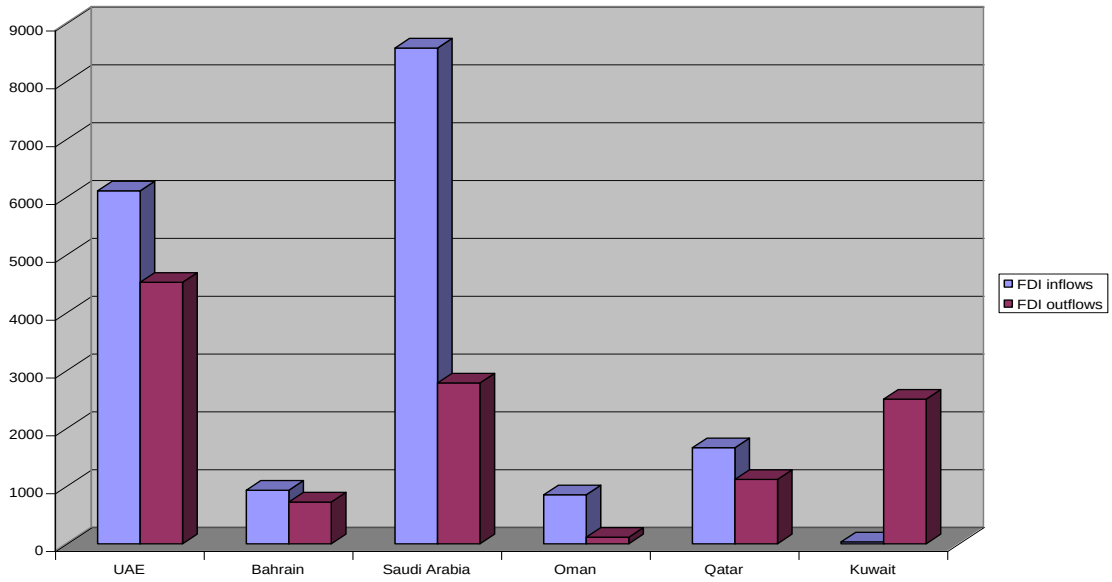


Source: Based on table (6).

Over the period 1998-2008, foreign direct investment outflows from Qatar, Bahrain and Oman represent insignificant ratios. These countries have achieved averages of 6.1%, 9.5%, 0.9, respectively. However, we see that the small size of GDP is the main reason for the low level of FDI outflows of the said economies. This case explains the positive relation between FDI and the level of the local market represented by size of GDP.

Furthermore, figure (5) illustrates the relatively high contribution of FDI outflows of Saudi Arabia, and Kuwait. The significant issue in this regard is that the FDI outflows show an importance for funding new investments across the country, which expresses the role of economic policy in its attempt to expand income resources, and gain more non-oil revenues. In addition, it is considered a good catalyser for doing business and enhancing the economic relations with countries that host the GCC's investments, where exploiting the surplus of oil export revenues in many projects leads to more value added, and then reinforces the economic growth, particularly in Oman, Bahrain and Qatar in order to reduce the high share of extractive industry to GDP, as well as increasing level of foreign investments. However, the FDI, Inflows and outflows is still a main target of GCC economies and important means to diversify the level of production. The following figure represents the FDI outflows in comparison with FDI inflows as average over the period 1998-2008.

Figure (6): Average of FDI, inflows and outflows during the period 1998-2008 (Million USD)



Source: Prepared by the researcher based on tables (5) and (6).

The figure above confirms that, on average, both Saudi Arabia and UAE dominate the significant share of FDI flows during the period 1998-2008, while the other GCC countries achieved low levels, especially Kuwait compared with Saudi Arabia and the UAE.

Also, in terms of FDI out flows, we see that the UAE and Saudi Arabia are the main contributors, as well as Kuwait, whose FDI outflows have emerged as a significant ratio for the period 1998-2008. Oman, Qatar and Bahrain showed a low level in this respect, as mentioned before.

Finally, we note that there is a positive relation between FDI and size of GCC economies, as measured by GDP. This issue clearly confirmed that Saudi Arabia and the UAE are major economies in comparison with other GCC countries. This analysis is consistent with our previous analysis, which confirms that the size of GDP is a good motivation for attracting more foreign direct investment, as well as the legislation that is associated with it, where its necessity is emerging in this regard, and through it we can identify the reason for the decreasing foreign direct investment inflows to Kuwait. As there is no competition legislation in Kuwait compared with other GCC countries, due to the bureaucracy, stringent regulations, limited foreign ownership and inflexible labour laws (Al-Nakib, Opcit),it is trying to regulate a new

law for foreign direct investment as a good means for attracting the foreign companies for investing in Kuwait.

6. The relative importance of FDI in GCC countries:

The relative importance of FDI and its role could be measured by two indicators, FDI as a ratio of fixed capital formation and GDP.

6.1 Ratio of FDI to gross fixed capital formation:

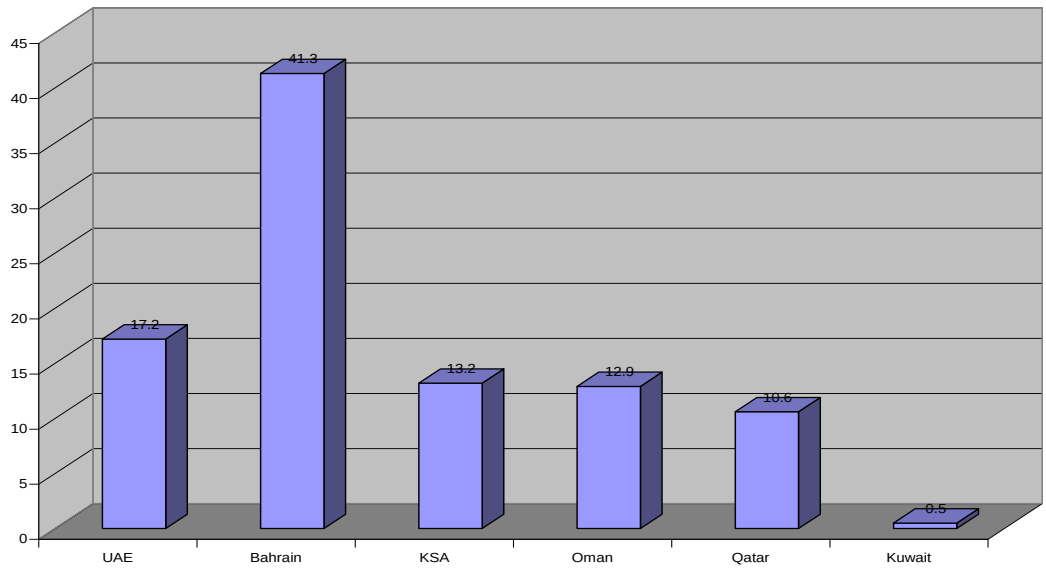
The average of FDI in GCC countries ranges between 0.5% in Kuwait, and 41.3% in Bahrain for the period 1998-2008. Table (7) shows the contribution of FDI as a percentage of fixed capital formation in GCC countries, where Bahrain represents a significant ratio of FDI compared with other GCC countries due to the role of economic reformation policies and legislation that are associated with FDI (ESCWA, 2008,p16). These factors have facilitated attracting foreign direct investment to this country. The UAE is coming in the second level in terms of its relative importance, where these investments concentrated in construction and sectors that are related with energy, such as iron and aluminium. Oman and Saudi Arabia dominate in the third and fourth level, respectively (Ibid).

Table (7): FDI as a percentage of gross fixed capital formation 1998-2008 (Percentages)

Year	UAE	Bahrain	KSA	Oman	Qatar	Kuwait
1998	2.6	24.5	0.7	2.0	11.2	2.0
1999	7.8	50.5	2.5	1.7	5	1.6
2000	3.9	33.8	5.7	0.7	7.3	0.6
2001	9.1	7.7	0.1	3.3	7.6	-5.0
2002	6.5	23.0	1.9	0.9	19.7	0.2
2003	3.7	50.4	0.6	5.5	11.4	2.2
2004	4.6	41.1	4.3	-0.5	13.4	-0.5
2005	38.6	39.8	23.2	30.2	9.1	1.7
2006	30.4	92.2	29.7	30.4	1.0	0.8
2007	26.7	44.7	30.1	39.7	5.4	0.8
2008	55.0	46.9	45.6	28.5	26.3	1.2
98-2008	17.2	41.3	13.2	12.9	10.6	0.5

Source: UNCTAD, World investment report, 2004, p394.
UNCTAD, world investment report, 2005, pp 320-321.
UNCTAD, world investment report, 2006, pp313-314
UNCTAD, world investment report, 2008, pp267-268
SESRIC, Data base of statistical, economics and social research and training.
AIECGC, Arab Investment and export credit guarantee corporation, statistics.

Figure (7): FDI flows as a ratio of GFCF in GCC countries – 1998-2008 (percentages).



Source: Based on table (7).

Figure (7) shows the role of FDI flows as a ratio of gross fixed capital formation (GFCF), where Bahrain emerges with its significant contribution, which, on average, amounted to 41.3% over the period 1998-2008. However, FDI has a big role in increasing the level of value added, especially the Bahrain economy, which is not reliant on the oil sector as a main source of income. This feature confirms the importance of FDI flows in Bahrain, and according to that, we can say that the achieved economic growth in Bahrain during the period of study is significantly associated with the FDI flows, which stimulate economic activities, especially in the non-oil sectors.

In Kuwait, we note that the FDI has a modest ratio 0.5%, which proves that the FDI has an insignificant impact on the Kuwaiti economy, because of its low level during the said period.

Accordingly, we note there is an important issue concerning the negative relation between the size of FDI flows and the gross fixed capital formation, which is linked to the size of the economy. Accordingly, we see that these investments achieve a clear contribution in the small economies of the GCC – Bahrain, Oman, and Qatar –while, in general, the role of FDI in GCC countries reflects the efficiency of foreign companies, as well as the pattern of these investments and the added value that could be achieved via FDI flows.

6.2 Ratio of FDI to GDP:

The FDI as a percentage of GDP is characterised by its fluctuations during the period 1998-2008.The main reason for which is the different size of GDP in GCC countries, as well as the different law frameworks that help to attract foreign direct investments and the quality of foreign companies in respect of the level of value added.

Table (8) shows the state of fluctuations of FDI flows to GCC countries as a percentage of GDP, which ranges between 0.5% as the average in Kuwait to 45.1% in Bahrain due its high level of economic freedom, where it dominates on the first level in Arab homeland and ninth global level among 155 countries according to the Heritage index for economic freedom in 2001 (Hussien, 2007, p3).

Table (8): FDI flows as a percentage of GDP 1998-2008(*) (Percentages)

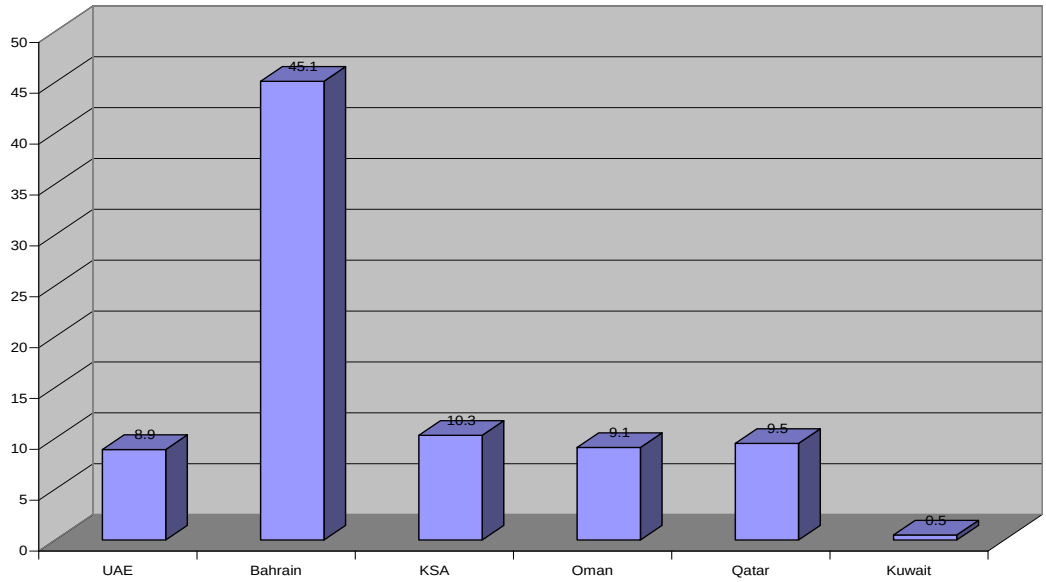
Year	UAE	Bahrain	KSA	Oman	Qatar	Kuwait
1998	1.0	5.8	0.2	0.7	3.6	- 6.9
1999	-1.5	9.3	0.1	0.3	1.0	0.3
2000	1.5	74.1	13.8	12.5	10.8	1.6
2001	2.0	60.2	0.3	0.6	2.0	- 1.2
2002	4.3	73.7	13.5	12.9	16.3	1.3
2003	4.4	72.4	12.1	12.6	16.0	1.2
2004	4.6	70.5	8.2	14.0	14.6	0.7
2005	21.1	11.9	8.5	13.3	16.2	0.9
2006	23.3	38.9	28.7	14.0	13.5	0.8
2007	25.2	65.9	20.2	14.7	10.7	0.8
2008	11.7	14.0	8.4	5.0	10.0	5.9
Average 98-2008(**)	8.9	45.1	10.3	9.1	9.5	0.5

Source: UNCTAD, World investment report, 2004, pp 406-407
UNCTAD, world investment report, 2005, pp 320-321.
UNCTAD, world investment report, 2006, pp313-314
UNCTAD, world investment report, 2008, pp267-268
(*) The years (1998, 1999, 2001, 2008) calculated by the researcher depending on:
SESRIC, Data base of statistical, economics and social research and training.
AIECGC, Arab Investment and export credit guarantee corporation, statistics.
(**) Calculated by the researcher.

Moreover, Bahrain has applied a free trade agreement with the United States of America since August 2006; the USA being the main exporter of FDI, which amounted to 30% of the total world investment (Ibid). Therefore, according to this agreement, we see that the American investment prefers to invest in Bahrain.

In addition, we note there is a big drop in FDI flows to Kuwait compared to the other GCC countries, where Bahrain, Saudi Arabia and Qatar represent a significant relative importance in terms of the average of FDI as a percentage of GDP during the period 1998-2008. However, Bahrain dominates on the first level, and Saudi Arabia comes in at second level (10.3%). Also, Qatar occupies the third level, which represents 9.5%. The figure below shows the FDI flows as a ratio of GDP over the period 1998-2008.

Figure (8): FDI flows as ratio of GDP in GCC countries – 1998-2008 (Percentages)



Source: Based on data of table (8).

From figure (8), we note that the Bahraini economy is more integrated with the world economy via FDI's, where the economic policy of this country has targeted to attract more foreign investment to overcome its economic problems in terms of the small size of GDP. Therefore, in this case the FDI could lead an increase in the level of economic growth, on the one hand. However, on the other hand, we see that this high reliance on FDI in Bahrain could be affected negatively in the case of the flight of these investments in conditions of economic crisis that occur regionally and globally where the host country will be effected and lead to the status of non-economic stability, and then dropping the level of economic growth.

In Kuwait, the FDI's have an obvious role, while in Saudi Arabia and UAE, we can say that these investments could be affected positively through the increased level of value added and enhanced growth of GDP, and vice versa in the case of its failure,

where it may have a negative effect on the GDP of the host economy and its growth. In Oman and Qatar, we see that the FDI achieved a close relative contribution compared with Saudi Arabia and UAE, (10.3% and 8.9%), respectively.

However, we can say that the increase of share of FDI in GDP contributes in reducing the fluctuations that affect the industrial sectors in GCC countries, especially the extracting industry sectors, due to oil export fluctuations, which have a negative effect on the local economy in GCC countries, therefore, the role of FDI should concentrate on improving the non-oil sectors and achieve stable economic growth. However, the FDI significantly contributes to enhancing the economic activities and reduces the fluctuations resulting from the high reliance on crude oil export revenues.

In conclusion, the role of foreign direct investment is specific to the country; therefore, we will examine that role empirically in the next article by adding FDI, inflows and out flows as independent variables to find out the real impact of foreign direct investments in GCC countries over the period of study.

6. The Model:

The specific model combines the foreign trade commodity, foreign direct investment over the period 1998-2008. We have built this model according to the literature reviews that emphasise the positive effect of FDI and foreign trade, as well as, neoclassical and endogenous growth theories.

To examine the role of FDI in GCC countries, the model will include foreign direct inflows (FDin), and foreign direct investment outflows (FDout) as a ratio of GDP over the period 1998-2008.

In respect of foreign trade, we will use three independent variables that include non-oil commodity export (noilx), oil export (oilx), and commodity imports (M). All the mentioned variables are independent, and the gross domestic product (GDP) will be the dependent variable of the specific model of this study.

7.1 The Model estimation:

The model has been estimated by using the ordinary least squares (OLS) with panel data technique. By using SPSS software, we have obtained the following model:

Table (9): Regression result for the model

Country	Model	Unstandardized Coefficient		t	Sig.
GCC		**B**	**Std. Error**		
UAE	(Constant)	0.173	0.441	0.391	0.698
	FDin	1.662E-02	0.009	1.897	0.066 (***)
	FDout	5.284E-02	0.015	3.455	0.001 (*)
	Oilx	3.819	0.550	6.941	0.000 (*)
	Noilx	6.035E-02	0.102	0.593	0.557
	M	0.150	0.174	0.866	0.393
Bahrain	FDin	-2.19E-03	0.007	-0.311	0.758
	FDout	4.698E-03	0.010	0.476	0.637
	Oilx	0.166	0.104	1.590	0.121
	Noilx	-2.39E-02	0.113	-0.211	0.834
	M	0.923	0.200	4.619	0.000 (*)
Saudi Arabia	FDin	-5.56E-02	0.012	-4.496	0.000 (*)
	FDout	5.123E-03	0.037	0.137	0.892
	Oilx	0.401	0.144	2.793	0.008 (*)
	Noilx	-1.54E-03	0.026	-0.059	0.953
	M	0.734	0.172	4.272	0.000 (*)
Oman	FDin				
	FDout	-2.78E-03	0.012	-0.236	0.815
	Oilx	0.119	0.098	1.217	0.232
	Noilx	0.517	0.108	4.803	0.000 (*)
	M	3.966E-02	0.032	1.235	0.225
		0.552	0.124	4.434	0.000 (*)
Qatar	FDin				
	FDout	2.298E-02	0.018	1.274	0.211
	Oilx	3.967E-04	0.014	0.028	0.977
	Noilx	0.747	0.091	8.219	0.000(*)
	M	2.898E-02	0.036	0.798	0.430
		0.341	0.092	3.721	0.001(*)
Kuwait	FDin				
	FDout	2.621E-02	0.138	0.189	0.851
	Oilx	3.039E-02	0.015	2.037	0.049 (**)
	Noilx	0.620	0.112	5.535	0.000 (*)
	M	1.362E-02	0.041	0.335	0.740
		0.460	0.155	2.969	0.005 (*)

Source: prepared by using SPSS software, and panel data technique.

(*), (**),(***) indicate statistically significant at the (1%), (5%) and (10%) levels, respectively.

$R^2 = 0.998$ adjusted. $R^2 = 0.996$ F = 483.075 P = 0.000 D.W = 2.281

In the model above, the estimated values show that this model is statistically significant at the level of 0.01. In addition, the (F) value is 483.075, and the adjusted R^2 is about 0.996. This means there is a significant relation between the independent variables and dependent variable of this study, and shows the importance of using this model to analyse the effect of FDI and foreign trade on GDP growth. Moreover the (D.W.) value is about 2.281 which confirms that there is no auto-correlation because

the (D.W.) value is located within the accepted statistics area. Therefore, we can rely on this model in analysing the impact of independent variables on the GDP and economic growth in GCC countries over the period 1998-2008.

7.2 Model Analysis:

The most estimated variables are statistically significant at the 0.01 level; however, the impact of each variable on GDP has a different influence in GCC countries, as we will note by the following specific analyses:

UAE: There are three significant coefficients: FDI inflows, FDI outflows, and oil exports. In respect of FDI outflows, the (t) test refers to the strength relationship and significant effect of this variable compared with FDI inflows. We can explain this issue from the evident role of FDI outflows that are linked with the local economy because most of the FDI outflows are owned by the public sector, where the UAE invests the surplus of crude oil export revenue that have achieved a positive effect on GDP over the period 1998-2008.

In addition, we note that the FDI inflows reflect a weak impact on the GDP of the UAE, where increasing the FDI inflows by one time leads to an increase in GDP by 0.001662 times. While the FDI outflows coefficient indicates that an increase of FDI outflows by one time will lead to an increase the GDP in UAE by 0.00528 times. This result confirms an important issue. This means that the size of FDI does not reflect the real picture of its role in the local economy. Moreover, the FDI inflows have achieved a positive growth, which reached about 5% (*) over the period 1998-2008, where the average of FDI inflows of the UAE is about USD 6101.51 Million. In contrast, the average of FDI outflows amounted to USD 3099.03 Million and its growth rate amounted to be 2%. However, we found that the FDI outflows have a more positive effect compared with FDI inflows over the period of study. In addition, it is worth noting in this context, that the economic policy of GCC countries, especially in the UAE, aims to attract more foreign direct investments, which is considered a good indicator for the decision-makers, and obvious evidence of the success of the investment and trade policy in the UAE (Ministry of UAE economy, 2008, p32). Furthermore, the UAE is considered as a gateway for the regional markets.

(*) Calculated by the researcher based on the table (5),

Furthermore, the oil export coefficient is statistically significant at the 0.01 level, and it has a strong relation with the dependent variable compared to the independent variables above, where increasing the oil export revenues by one time leads to an increase in the GDP by 3.819 times. In this respect, we can say that the oil export revenues still represent a significant source of income of the UAE economy despite its big efforts to diversify the structure of production. In contrast, we note the weak role of non-oil commodity exports, where its coefficient is insignificant in this model because of a high reliance on oil export revenue, which, on average, dominate with about 29.2% (*) of GDP for the period 1998-2008.

Finally, we see also that the economic growth level in the UAE is still reliant on the oil sector and its export revenue, where rising global oil prices reflect high revenues that feed other economic sectors, as well as engaging the surplus to increase the FDI out flows. In other words, there is a positive relation between the increase in oil prices, GDP growth and FDI out flows of UAE, and vice versa in the case of a drop in oil prices; therefore, the UAE economy is still influenced by global oil prices and its fluctuations.

Bahrain: In respect of the Bahraini economy, all of model coefficients were statistically insignificant, except the commodity imports coefficient, which was statistically significant at the 0.01 level; where increasing commodity imports by one time leads to an increase in the GDP in Bahrain of about 0.923 times. This result confirms the positive role of imports and its evident effect on the economic growth in Bahrain.

In this respect, we see that this result is related to the increasing level of capital imports that include machinery and transportation equipment, which, on average, amounted to 28% (**)of total commodity imports, also manufacturing goods amounted to 15%, while food and beverages were, on average, about 7% over the period 1998-2008. In this context, we note that the capital imports represent the significant relative importance of the main total imports of Bahrain; therefore, this analysis is compatible with the specific model. Meaning that the capital imports of Bahrain reflect a positive

(*) Based on data of the Unified Economic Report of Arab countries, and annual statistical bulletin, different pages.

(**) Based on data of the Arab Monetary Fund (AMF), www.amf.org.ae

effect on the GDP, where these imports have activated the production process, and enhanced the level of GDP growth over the period of study.

Moreover, we have noted already that the Bahraini economy only represents 2% of the average total of GDP of GCC countries over the period 1998-2008, where it is considered a smaller economy compared with the other GCC countries. Therefore, the capital imports have improved the economic activities that enhance the GDP in Bahrain. In addition, the crude oil exports are not considered of high importance compared with the other GCC countries. The estimated model has enhanced this fact in that the oil export coefficient is statistically insignificant, which confirms the weak role of the oil sector in Bahrain, as mentioned before.

Finally, we can conclude that the small size of the GDP of Bahrain is the main reason for its greater dependence on imports than the other economic variables.

Saudi Arabia: The estimated model refers that the FDI inflows have a slight negative effect on the Saudi economy over the period 1998-2008, where increasing the FDI inflows by one time leads to a drop in the GDP by 0.0005 times. However, this effect is relatively weak, which we can conclude is because of the big role of FDI inflows in competing with the local investment in Saudi Arabia. This affects the Saudi economy despite the huge size of the FDI inflows compared with the other GCC economies, where, on average, the FDI inflows have risen from 0.3% in the year 1998 to 46% in the year 2008, of fixed capital formation over the period 1998-2008.Therefore, we can justify the negative role of FDI for this reason. In addition, this result confirms that there is no significant linkage between the FDI inflows and the local economy represented by the GDP, which indicates that most of the profit of foreign direct investment in Saudi Arabia is going back to their motherlands. Accordingly, we can conclude that the foreign investors strategies are not compatible with the strategy of economic development of Saudi Arabia over the period 1998-2008. However, the empirical result shows that the FDI inflows in Saudi Arabia have not achieved the required result, which aimed to diversify the commodity production, because it has not increased the non-oil commodity foreign trade; the estimated model confirms its insignificant coefficient.

Through the above, the foreign direct investment inflows have not achieved a developmental role, where its impact has a negative effect on the Saudi economy by competing with the local investments, which lack the experience of foreign investors.

In respect of the oil export variable, the estimated model indicates that it is statistically significant at the 0.01 level, and, according to this result, its impact will be important, where increasing the crude oil export by one time leads to an increase in the Saudi GDP by 0.401 times. This reflects the necessity of this variable and its positive effect in enhancing the economic growth in Saudi Arabia. This result is acceptable practically, because Saudi Arabia is considered as a main oil exporter in the Middle East in general, where Saudi oil exports have achieved a high growth rate, which amounted to 20% over the period 1998-2008.In addition, the relative importance of oil exports form about 55.3% (*), as an average of the total oil export revenues of GCC countries during the said period.

The third significant coefficient is the commodity imports, which has a clear positive effect on Saudi's GDP, where increasing the commodity imports by one time leads to increase the GDP by 0.734 times. This result confirms that the Saudi imports have a big role in enhancing the Saudi economy, as a result for relative importance of capital imports, the average of which was about 49% (**), as the average of total commodity Saudi imports during the period 1998-2008.

Oman: In Oman, the result of the estimated model shows that the role of oil exports is statistically significant at the 0.01 level, which confirms the positive impact of Oil revenues in increasing the Omani GDP, where raising the crude oil revenue by one time leads to an increase in the GDP by 0.517 time. This result ensures the strength of the relationship between the oil export and growth of the GDP. This is consistent with the real situation, which indicates that the oil export revenues form 38.5% (***), as the ratio of average GDP of Oman, during the period 1998-2008. Moreover, these revenues have achieved a growth rate of 17% (****) over the said period, which shows the significant economic role of crude oil revenue, which has a positive effect on the Omani GDP and enhances other economic activities in general. In other words, it is clear that the economic growth in Oman is still associated with the oil sector and its growth. Furthermore, the obtained model result indicates that the intention to diversify the Omani economy by increasing the share of non-oil commodity exports has not reached an acceptable level in this regard, because the coefficient of non-oil

(*) Calculated based on OPEC, annual statistical bulletin, 2010, p81.
(**) Based on data of foreign trade of GCC, Arab Monetary Fund (AMF), Kuwait, different tables.
(***), (****) Based on Joint Arab Economic Report, Arab League, different issues.

commodity exports were statistically insignificant, which confirms the real situation of the Omani economy.

In addition, the imports coefficient refers to its positive role, where increasing the commodity imports level by one time leads to an increase in the Omani GDP by 0.552 times. In this context, on average, the commodity imports of machinery and transportation equipment form about 28% for the period 1998-2008, while the manufacturing imports amounted to 24%, food and beverages 15% over the period of study, where the capital imports are dominated on the highest ratio, and thus reflects its role in enhancing GDP growth.

Qatar: The crude oil exports represent a big effect on the Qatari GDP, where an increase in oil export revenue by one time leads to an increase in the GDP by 0.747 times; this result confirms the important role of the oil sector in Qatar.

In respect of commodity imports, we note that it has a positive impact on the GDP growth over the period 1998-2008, where its increase has led to an increase in the GDP by 0.341 time.

The other variables, FDI inflows, FDI outflows, and non-oil commodity exports are statistically insignificant, as shown in the estimated model, where the economic situation in Qatar is no different in comparison with other GCC countries, as the oil export revenue is the predominant source of income. Accordingly, we can say that the FDI, inflows and outflows have no positive effect on GDP and its growth over the study period.

Kuwait: The coefficient of FDI outflows is significant statistically, which reflects its limited positive effect on the Kuwaiti GDP, where increasing the FDI outflows by one time leads to an increase in the GDP in Kuwait by 0.003093 times, as shown in the estimated model.

It is worth noting that the FDI outflows increased from USD 1866.86 million in year 1998 to USD 8858.00 million in year 2008 (AIECGC, 2010). In this context we can say that the positive effect of FDI outflows in Kuwait is based on the linkage between these investments and the local economy, where the model result shows that the FDI outflows reflected positively on the Kuwaiti economy over the period 1998-2008.

The oil export coefficient is statistically significant, and has a positive signal, which confirms the major role of crude oil export revenues on GDP over the said period; an

increase by one time leads to an increase in GDP of 0.620 times. In respect of the commodity imports we note through the estimated model that the coefficient was statistically significant. This means that an increase in commodity imports by one time raises the Kuwaiti GDP by 0.460 times, which reflects the role of capital commodity imports in improving the production level and growing the GDP in general. The commodity imports of Kuwait represent the third rank, after Saudi Arabia and Oman. However, on average, the machinery and transportation equipment dominated 40 %(*) the total commodity imports during the period 1998-2008, while the manufacturing goods was about 13%, beverage and food about 34%. The significant ratio represents the big role that enhances the various economic activities resulting in an increasing size of GDP.

There is no doubt, and as we have noted empirically, the important role of crude oil export revenue has a positive influence on the size of GDP in Kuwait and the rest of the GCC countries. The oil export coefficients are significant in all GCC countries, except Bahrain, where the necessity of these revenues emerged to meet the shortage of various goods, especially the capital goods. In general, the results of the model have proven the continuous reliance of GCC countries on the oil sector. In other words, the significant role of foreign trade, oil exports, and commodity imports, is the coefficients of which were statistically significant, except Bahrain. Moreover, this analysis is compatible with our analytical approach, which already confirmed the high reliance of GCC countries on the oil sector and its revenue over the period 1998-2008. Therefore, we can say that the results of the estimated model and analytical approach have proved that the GCC countries are more integrated with the non-GCC countries as a result of their crude oil exports, which means that the GCC countries are still reacting to the oil market fluctuations and their effect on their local economies due to the change in global oil prices that occur from time to other, and that the economic growth level in GCC countries will remain positive in relation to the global economic growth.

8. Conclusions:

1. The foreign direct investments, inflows and outflows have achieved a significant role in the UAE, in which there is a positive relation between the FDI and GDP

(*) Calculated based on statistical tables of Arab Monetary Fund, (AMF), www.amf.org.ae

variables. In Kuwait we have concluded that the positive effect on GDP was only achieved by FDI outflows as a result of its rapid increase over the period 1998-2008.

The estimated model confirms the negative relation between the FDI inflows and GDP of Saudi Arabia because the FDI inflows caused unequal competition in respect of the local investment, as well as the weak linkage between the FDI inflows and the local economy, where most of the FDI profits were going to the home country of the foreign investors.

3. The model confirms the continuous role of crude oil exports in growing the GDP of GCC countries, except Bahrain, over the period 1998-2008. Its importance is obvious in the UAE, Qatar, and Kuwait, which proves the significant share of oil exports in the GDP of GCC countries.

4. There are insignificant levels of non-oil export coefficients in all of the GCC countries, which show the failure of GCC efforts to improve the non-oil commodity sectors. However, this result disagrees with the main target of the unified economic policy in the GCC countries over the study period.

5. The commodity imports have achieved a positive effect in growing the GDP in GCC countries, except the UAE, which is explained by the importance of commodity imports – practically capital imports that influence or activate production of various goods – and thus increasing the GDP of GCC countries.

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Financial development and poverty: econometric assessment of the direct effect on a panel of lower and middle income countries

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***Abstract*:** This paper empirically examines the existence of a direct effect of financial development on poverty reduction in 67 low and middle income countries over the period 1986-2009. The results obtained suggest that the financial development contributes directly to the reduction of poverty, and this, independently of the econometric method used. On the other hand, instability related to the financial development would penalize the poor population and would annihilate the positive effects of financial development. Thus, is it necessary to find a trade-off between the financial development and its instability in order to ensure a pro-poor growth? Does Islamic finance constitute, in this direction, a panacea?

***Key words*:** financial development, poverty, instrumental variables, Islamic finance.

1. Introduction

The battle against poverty is considered as one of the main objectives of the development policies and strategies. Consequently, international institutions such as World Bank, IMF, OECD, etc. direct their policies and efforts towards the reduction of poverty.

It is largely allowed that the economic growth is one of the engines intervening in the reduction of poverty. However, it should be stressed that in some countries the benefit of the growth are reduced or destroyed by the increase in inequalities. Indeed, many factors which are considered by the literature as affecting the economic growth, such as macroeconomic stability, the opening to the international business, the importance

of the public expenditure, the legal rules and the civil liberty, the political stability, the financial development and so much of others, can also influence the share of the income of the poor in the national income. This is why nowadays, in the international community, the objective is to make the economic growth more favorable to the poor (the pro-poor growth), and thus due to specific public interventions, in the fields of health, education and productivity in the rural areas (Dollar and Kraay, 2002).

The supply of financial services adapted to the poor occupies a dominating place in this strategy. All the poverty reduction programs committed these last years by the developing countries contain an aspect devoted to the micro-credits. The microfinance can thus contribute to reduce the poverty and the vulnerability of the poor, and this, through the diversification of the sources of revenue by auto-employment and by the support for the income-generating activities.

What is it with the financial development? The financial development can contribute directly to the reduction of poverty by improving deposit and credit facilities offered to the poor. Thus, the contribution of the financial development to the growth is exerted, on the one hand, through the influence of the financial system on the trade or the intensity of the exchanges and, on the other hand, on the volume and the quality of the investment by allocating the capital to the most productive projects generators of growth. The growth is likely to reduce poverty. The financial development can thus reduce the poverty in two ways: either directly or indirectly through its effect on the economic growth.

The indirect impact of the financial development on poverty was thus studied in a dichotomy way. Many works found a positive correlation between the financial development and the economic growth (King and Levine, 1993a; Levine, 1997; etc.). Only some others found an increasing relation between the evolution of the average income and the income of the poor (Ravallion, 1993; Bruno and al., 1998; Dollar and Kraay, 2000). The merit returns to Jalilian and Kirkpatrick (2001), Kpodar (2004), Honohan (2004), Beck and Levine (2007) and Jeanneney and Kpodar (2008) who were interested in pooling the two sets works by explaining the impact, both direct and indirect, of the financial development on poverty.

The object of this work consists in elucidating the relation between the financial development and poverty as well on the theoretical as on the empirical level. The

main question consists at studying the direct effect of the financial development on poverty reduction. The remainder of paper will be organized as follows.

The second section will be interested theoretically to clarify the direct relationship between the financial development and poverty. This section comprises an explanation of the relation between the financial development and poverty while taking into account the existence of the problem of financial instability.

As for the third section, it constitutes an empirical validation of the relationship between financial development and poverty. With this intention, two sub-sections will be studied. The first constitutes a review of principal empirical works as for the contribution of the financial development in the poverty reduction. The second constitutes an econometric validation on a panel of 67 low and middle income countries over the period 1986-2009. We run regressions using OLS. Then, to take into account country-specific effects and address the issues of endogeneity, measurement errors, and omitted variables, we use instrumental variables estimators. To test the validity of the instruments, we use the standard Hansen test of over-identifying restrictions, where the null hypothesis is that the instrumental variables are not correlated with the residual, and the serial correlation test, where the null hypothesis is that the errors exhibit no second-order serial correlation. In our regressions, both tests suggest that we cannot reject the null hypotheses.

The fourth section concludes the paper by putting forward some suggestions and recommendations.

2. Related theoretical literature

The eradication and the fight against poverty are a key objective of policies and development strategies. As a result, several international institutions, namely, the World Bank, IMF, OECD, etc. consider this goal as one of their major concerns. Certainly, the policy of battle against poverty is applied for several decades, which led to the achievement of a significant drop in the total population living with less than one dollar a day in the developed and developing countries. However, it should be noted that much remains to be done. For this reason, the fight against poverty is ranked among the eight Millennium Development Goals (MDGs) to achieve by 2015.

According to the theoretical literature on the poverty issue, we see that the majority of work examines the impact of economic growth on poverty. However, few studies

examine how financial development can contribute directly to solving the problem of poverty.

2.1. Financial development–poverty nexus

The poor like the rich, need financing and want to save financial institutions in order to increase their productive assets, improve their incomes and guarding themselves against economic crises. To achieve these objectives, the poor need access to various financial services such as loans, deposits, loans, insurance, money transfers, etc. However, there is a major difficulty regarding access to financial services. Based on this difficulty, Kpodar (2006) identified two direct effects of financial development on poverty: the capital conduit effect and the threshold effect.

Capital conduit effect

According to Kpodar (2004), this effect was developed by McKinnon in 1973. First, it should be noted that McKinnon (1973) is sited in an economy characterized by a lack of organized financial markets and the absence of a distinction between savers and investors. These characteristics are consistent with economies of most developing countries where investors are themselves savers. The financial system is characterized by the weakness or the absence of external funding, which encourages agents, in particular the poor, to focus on the accumulation required in the form of real assets or as cash monetary, in order to achieve coverage of private investment spending. This is to achieve a great deal of self-financed investments to total investments. And, on the basis of self-financing, there is complementarity between money and real assets, due to the parallel increase in real yields of money detention on the one hand, and the incentives to invest on the other hand. This means that real yields of money increase, which encourages the poor to hold money and therefore a large part of investment, will be self-financing. This effect reflects the concept of money as a "capital conduit" (Kpodar, 2006).

In the same context, McKinnon explained that the cash reserves are essential to capital formation. For this reason, liquid savings and capital accumulation vary in the same direction. Note therefore the importance of a developed financial system in providing opportunities for deposits and financial services to all economic agents, particularly for the poor in order to diversify self-financing possibilities.

If the poor find that holding money is more attractive, the opportunity cost of saving is automatically reduced and therefore the McKinnon conduit capital was amplified and financial development does not contribute to reducing poverty.

Finally, McKinnon said, in the early 70s, the need to liberalize the financial systems from constraints and restrictions preventing their development such as: the control of interest rates, high rates of requirement reserves, the excessive intervention of government in investment and saving's activities, etc.

The threshold effect

The threshold effect is the second one suggested by Kpodar in 2004. It was deduced from the direct relationship between financial development and poverty based on the following hypothesis: "As the financial system develops, it may extend its services to the poor". In other words, in order to facilitate the access of the poor to financial services, it is necessary that the financial system reaches a certain threshold of development enabling it to be more efficient and competitive in providing services to poor.

In the case of developing countries, the poor are faced with three main factors blocking their access to formal credit markets and/or limiting their access to financial services. These factors are the lack of adequate guarantees, the existence of physical constraints and the lack of financial institutions specialized in providing financial services for the poor. Regarding the lack of guarantee, it is essentially due to the existence of significant imperfect information in the financial market. In other words, the lack of complete information and transparency on the market are a major problem between lenders and borrowers or between financial intermediaries and the poor. Financial development intervenes thus through the improve of financial services supply, the diversification of financial institutions, the reduction of costs of information acquirement and the facility of transferring funds to finance insufficient collateral projects.

As for physical constraints, they are due to the bad localization of financial institutions limiting poor's access to financial services and consequently preventing capital "conduit effect" to play its role. Also, they are due to the minimum amount of deposits required by banks excluding a significant number of poor from the formal financial sector.

2.2. Financial development, financial instability and poverty

The relationship between financial development and poverty is very complex. This complexity is mainly due to the existence of several restrictions which hamper the role played by financial development in poverty reduction. Financial instability is one of them; it is mainly due to the presence of difficulties and disruptions in the financial system regarding generally the elements of the financial sector as financial intermediaries, especially banks (Minsky, 1982). Financial instability hinders the reduction of poverty directly or indirectly.

The direct effect

According to Jeanneney and Kpodar (2006), the direct effect of financial instability on poverty is explained by the presence of the poor's vulnerability to financial and banking crises. In most developing countries, there is a lack of confidence vis-à-vis banks because of the inability to provide liquidity to investors, hence alleviating the McKinnon "effect conduit". The poor are particularly affected by the deposit freezing that often accompanies banking crises since they have fewer opportunities to diversify their assets and cannot place their funds abroad.

Furthermore, when banks are in difficulty, they decided to reduce the granting of loans to small borrowers for two reasons: firstly, these loans are less profitable for banks and secondly, the poor have a low bargaining power.

The indirect effect

The indirect effect is mainly due to the presence of a relationship between financial instability and poverty through economic growth. In this case, financial instability causes economic growth instability which consequently induces an adverse effect on the poor. According to Ramey and Ramey (1995), "there is a negative statistical relationship between the average growth rate and the instability of annual rates". It is therefore possible that financial instability causes instability in growth rate and eliminating the positive effect of financial development on growth.

One of the main objectives of financial development is the incentive to invest by offering funding opportunities. But with the presence of financial instability, the investment financing is becoming increasingly difficult, which consequently induces

the same effect on the economic growth rate. In addition to its effect on the investment rate, financial instability led to the volatility of relative prices as the prices of various goods and services are not similarly influenced by changes in the availability of credits: tradable goods prices are determined by international prices and the nominal exchange rate, while those of non-tradable goods depend on domestic supply and demand and therefore are directly related to the credits volume (Jeanneney and Kpodar, 2006).

In conclusion, we can say that financial development can contribute directly and positively to poverty reduction. This direct relationship is explained by the McKinnon conduit effect and the threshold effect showing the importance of liberalizing and developing financial systems in the provision of financial services to the poor. However, financial instability is considered as disrupting financial system and the poor have neither the power nor the ability to guard against disruptions caused by financial instability. Finally, financial instability led to instability in the investment and exchange rates which consequently influence unfavorably economic growth, aggravating as a result the vulnerability of the poor.

3. Empirical evidence of the relationship between financial development and poverty on a sample of low-and middle-income countries

This section is devoted to an econometric study of the impact of financial development on poverty. We present firstly a review of the major empirical studies relating to the relationship between financial development and poverty. Secondly, we test an econometric model on a panel of 67 low and middle income countries[8] over the period 1986-2009.

3.1. Brief overview of the empirical literature

There are many empirical studies on the nature of the relationship between financial development and economic growth but they are not unanimous about the causality direction. This unanimity is due to many factors such as the diversity of econometric methods (cross-sectional regressions, panel data estimations, etc.). Moreover, the empirical literature on the relationship between economic growth and poverty is

[8] The list of the countries is in appendix

abundant. However, and given the multiplicity of these works, few empirical applications concerning the relationship between financial development and poverty. Thus, the main empirical works selected are those of Jalilian and Kirkpatrick (2001), Kpodar (2004) and Jeanneney and Kpodar (2008).

In their empirical study, Jalilian and Kirkpatrick (2001) have attempted to examine the causal link between financial development, economic growth and poverty. The main issue in this study concerns the indirect effect of financial development on poverty. The authors concluded that an exogenous 1 percentage point increase in the financial development indicator leads to an improvement of 0.4 percentage point in the income of the poor people in developing countries.

In addition to the indirect effect (through growth) of financial development on poverty, Kpodar (2004) has studied the direct effect. The results confirm the hypothesis that financial development contributes positively to the reduction of poverty. Thus, an increase of 1 percentage point in the financial development indicator induces a 0.28 percent decrease of the poverty rate.

Finally, Jeanneney and Kpodar (2008) take into account the effect of financial instability. Their results are strongly linked on the one hand to the estimation method used and, on the other hand, to the financial development indicator. Thus, the M3/GDP indicator is positively correlated with the average income of the poor, and this, independently of the estimation method. This is not the case for the bank credit to GDP ratio.

This result indicates that in developing countries, poor people's access to credit remains a challenge and the main channel of the impact of financial development on poverty is the McKinnon conduit effect captured by the liquidity ratio. Can we therefore say that an increase in the private credit ration does not improve the welfare of the poor?

3.2. Econometric study of the relationship between financial development and poverty

The Model

We assume, initially, that financial development has a positive impact on economic growth. Then, thanks to the McKinnon conduit effect, we assume that financial development has a direct and positive effect on the incomes of the poor. However, in

regions where financial instability is associated with financial development, it has a negative effect as well on the economic growth as on poverty reduction, which reduces the positive effects of financial development.

The specification adopted indicates that the average per capita income of the poorest countries is explained by the level of real per capita GDP, the level of financial development and its instability, and a vector of control variables.

Referring to Jeanneney and Kpodar (2008), the baseline specification is:

$$Pov_{it} = \beta_0 + \beta_1 Log\ GDP_{it} + \beta_2 FD_{iT} + \beta_3 FI_{iT} + A' X_{it} + u_i + \varepsilon_{it}$$

Pov is the poverty indicator, GDP is the gross domestic product per capita, FD is the level of financial development, FI represents the level of financial instability, X_{it} is a vector of control variables namely: inflation rate, commercial openness, financial openness, etc. u_i unobserved country-specific effect, ε_{it} the error term, i the individual dimension of the panel (country), t the year of poverty and income measures.

Definition and sources of data

Variables		**Sources**
Poverty indicators	Log of mean income of the poorest 20%	Dollar and Kraay (2002)
	Poverty gap	World Development Indicators, World Bank 2010
Log of real GDP per capita	Log of GDP per capita based on purchasing power parity (PPP), constant 2000 US $	World Development Indicators, World Bank 2010
Financial development	Private Credit by Deposit Money Banks to GDP	
	Liquid liabilities as a percentage of GDP: M3/GDP	
	Bank concentration: Assets of three largest banks as a share of assets of all commercial banks	Financial Structure Dataset, World Bank 2010
Financial instability	The most common indicator of instability is the standard deviation of the considered variable	Autor calculations
Control variables (macroeconomic and institutional framework)	Inflation rate	World Development Indicators, World Bank 2010
	Government consumption/GDP	
Control variables (macroeconomic and institutional framework)	Inflation rate	World Development Indicators, World Bank 2010
	Government consumption/GDP	
	le déficit budgétaire en proportion du PIB.	
	Trade openness: (exports + imports)/GDP	
	Financial openess Sum of short and long term private debts, publicly or not guaranteed, divided by GDP	
	Political instability: Number of riots, attacks, strikes and coup d'état	Freedom House database
	Civil liberties index	

Econometric methodology

In the context of panel data, there are several ways to model individual heterogeneity, including: The fixed effects model and random effects model. Fixed effects estimations can be made by the OLS within. For the random effects model, the GLS estimator is the best one (Dormont, 2002). To choose between the two models we use

the Hausman test which is a test of no correlation between specific effects and regressors. Under the null hypothesis, the OLS method (fixed effects) is recommended, whereas a weak probability (near to zero) pleads in favor of introducing instrumental variables. It allows correcting the bias that exists in the estimated coefficients when the assumption of non correlation of observed variables with error terms is not checked. The basic idea of this method is to find an additional variable that is correlated with the level of poverty but has no direct influence on the variable of interest in the study.

Finally, we should test the validity of the variable chosen as instrument. With this intention, we use the standard Hansen test of over-identifying restrictions, where the null hypothesis is that the instrumental variables are not correlated with the residual, and the serial correlation test, where the null hypothesis is that the errors exhibit no second-order serial correlation. In our regressions, both tests suggest that we accept the null hypotheses.

The results

The income of the poorest 20 percent of the population as endogenous variable

Tables 1 and 2 present the regression results of the impact of financial development on poverty. They differ in the measure of financial development. Specifically, in table 1, the ratio M3/GDP is used while in table 2, it is the bank credit to GDP ratio. The variables of interest in our model are the real GDP per capita, the level of financial development and the level of financial instability.

Table 1: financial development, financial instability and income of the poor
Financial development indicator : M3/PIB
Endogenous variable: Log of the income of the poorest 20 percent of the population

	OLS with fixed effect		Instrumental variables						
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Log of GDP per capita	1,17	1,17	1,38	1,26	0,84	1,31	1,26	1,26	1,55
	(21,15)***	(24,25)***	(11,25)***	(14,25)***	(7,24)***	(9,12)***	(13,33)***	(13,12)***	(10,25)***
M3/GDP	0,41	0,65	0,09	0,55	0,43	0,47	0,44	0,55	0,54
	(3,27)***	(2,97)***	(0,45)	(2,01)*	(2,01)*	(2,00)*	(1,81)*	(1,89)*	(1,92)*
Instability of M3/GDP		-4,62		-5,70	-5,10	-5,05	-4,96	-5,77	-6,11
		(-1,81)*		(-2,22)**	(-1,98)*	(-1,79)*	(-1,92)*	(-2,00)**	(-1,88)*
Inflation	-0,15	0,01	-0,31	-0,01	-0,05	0,05	0,04	-0,13	0,05
	(-0,87)	(0,10)	(-0,79)	(-0,06)	(-0,33)	(0,32)	(0,24)	(-0,29)	(0,37)
Log of the initial income of the poorest 20%					0,43				
					(3,42)***				
GDP per capita growth						0,01			
						(1,83)*			
Growth instability							-1,85		
							(-0,62)		
Inflation instability								0,27	
								(0,60)	
(M3/GDP)*(Bank concentration)									0,02
									(2,28)**
Constant	-1,31	-1,30	-2,79	-1,95	-1,31	-2,39	-1,84	-1,94	-2,27
	(-2,51)***	(-3,24)***	(-2,79)***	(-2,97)**	(-1,99)*	(-3,12)***	(-2,75)**	(-2,58)**	(-0,80)
R^2	0,59	0,67							
Number of countries			67	67	67	67	67	67	67
Hausman test (prob)	0,02	0,03							
Hansen test (prob)			0,42	0,96	0,71	0,75	0,98	0,96	0,95
AR(2) (prob)			0,47	0,83	0,18	0,87	0,78	0,50	0,70

* significant at 10%; ** significant at 5%; *** significant at 1%. AR(2): Arellano and Bond test of second order autocorrelation. Values in brackets are the robust *t* statistics.

In table 1, the results suggest that the level of real GDP per capita and the level of financial development (M3/GDP) are significantly correlated with the average income of the poor. In this case, the hypothesis of a direct and positive effect of financial development on the standard of living of the poor is confirmed. In the first two columns, an improvement of 1 percentage point of GDP per capita (in logarithm) increases the average income of the poor of 1.17 percentage point. Regarding the indicator of financial development, an increase of 1 percentage point of the liquidity ratio M3/GDP led to an improvement of 0.65 percentage point of the standard of living of the poorest 20% of the population.

On the other hand, the results for the third variable of interest, the level of financial instability, are significant. Thus, all coefficients of the instability of M3/GDP are negative. These results are interpreted by the presence of a negative impact of financial instability on the living standard of the poor. In other words, the more there is a disruption to financial development, the higher the income of the poor are threatened and even reduced. Specifically, in the second column, an increase of 1 percentage point of financial instability induces a decrease of 4.62 percentage point of the average income of the poorest 20%. Finally, as for the inflation, the results are not significant and most coefficients are negative; thus, inflation has an adverse impact on the income of the poor.

In columns 3 and 4, the financial development and the Log of GDP per capita are assumed endogenous. Thus, we introduce their one period lagged value as instruments. From column 5, we introduce new variables as instruments. In this case, an increase of 1 percentage point of initial income of the poorest 20% led to an improvement of the average income of the poor by 0.43 percentage points. The second instrument introduced in the column 6 is the growth rate of GDP per capita which is positively correlated with the level of living of the poorest 20%. In column 7, the volatility of growth led to significantly decrease of poverty (the coefficient is about -1.85). Contrary to inflation, volatility of inflation (column 8) indicates a positive effect in improving the average income of the poorest 20%.

The interaction term between the liquidity ratio (M3/GDP) and banking concentration has a positive and significant coefficient (column 9). This explains that geographical coverage of banks helps to improve the level of financial development, which consequently has a positive impact on the income of the poor.

Table 2: Financial development, financial instability and income of poor
Financial development indicator: Bank credit/GDP
Endogenous variable: Log of the income of the poorest 20 percent of the population

	OLS with fixed effect		Instrumental variables						
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Log of GDP per capita	1,53	1,53	1,81	1,65	1,10	1,72	1,64	1,65	2,02
	(25,1)***	(26,21)***	(13,02)***	(12,12)***	(8,14)***	(9,17)***	(9,33)***	(12,9)***	(9,55)***
Bank credits/GDP	0,53	0,85	0,11	0,72	0,56	0,61	0,58	0,73	0,71
	(3,17)***	(3,04)***	0,45	(2,22)*	(2,42)*	(2,08)*	(1,92)*	(1,79)*	(1,89)*
Instability of bank credits/GDP		-6,04		-7,46	-6,67	-6,61	-6,49	-7,54	-8,00
		(-1,91)*		(-2,31)**	(-1,89)*	(-1,88)*	(-1,94)*	(-2,22)**	(-1,79)*
Inflation	-0,20	0,02	-0,40	-0,02	-0,06	0,07	0,05	-0,17	0,06
	(-0,87)	(0,10)	(-0,79)	(-0,06)	(-0,33)	(0,32)	(0,24)	(-0,29)	(0,37)
Log of the initial income of the poorest 20%					0,56				
					(4,08)***				
GDP per capita growth						0,02			
						(1,99)*			
Growth instability							-2,42		
							(-0,62)		
Inflation instability								0,35	
								(0,60)	
(Bank credits/GDP)*(Bank concentration)									0,03
									(2,85)**
Constant	-1,72	-1,70	-3,65	-2,55	-1,72	-3,13	-2,41		-2,97
	(-2,66)***	(-3,85)***	(-2,59)***	(-2,81)**	(-1,89)*	(-3,22)***	(-2,68)**	(2,58)**	(-0,80)
R^2	0,77	0,88							
Number of countries			67	67	67	67	67	67	67
Hausman Test (prob)	0,01	0,02							
Hansen Test (prob)			0,55	1,25	0,93	0,98	1,28	1,25	1,24
AR(2) (prob)			0,62	1,08	0,23	1,13	1,02	0,66	0,92

* significant at 10%; ** significant at 5%; *** significant at 1%. AR(2): Arellano and Bond test of second order autocorrelation. Values in brackets are the robust *t* statistics.

In Table 2, only the indicator of financial development is changing and we use bank credit to GDP instead of M3/GDP. The results are very close to each other. Specifically, the results related to the variables of interest are significant. Thus, an increase of GDP per capita and bank loans leads to higher income of the poor. Furthermore, we note a negative impact of financial instability on the average income of the poorest 20%. Also, for inflation the majority of results indicate the presence of an adverse effect hampering the improvement of the standard of living of the poor and hence preventing the reduction of poverty.

In sum, independently of the indicator used to measure the level of financial development, it induces a positive direct effect in improving the incomes of the poor and hence in poverty reduction.

The poverty gap as endogenous variable

In this section, poverty is measured by the poverty gap (expressed as a percentage of the poverty line). Unlike the poverty index, poverty gap is more sensitive to an improvement or deterioration in the situation of the poor whose incomes are below the poverty line. As before, the regression results are presented in two tables (3 and 4) as the indicator of financial development is measured by the ratio M3/GDP or by bank credit to GDP.

Table 3: financial development, financial instability and income of the poor
Financial development indicator : M3/PIB
Endogenous variable: poverty gap

	OLS with fixed effect		Instrumental variables					
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Log of GDP per capita	-0,08	-0,09	-0,08	-0,10	-0,09	-0,11	-0,12	-0,12
	(-5,98)***	(-6,12)***	(-2,87)**	(-4,68)***	(-2,95)***	(-3,98)***	(-2,57)***	(-3,27)***
M3/GDP	-0,16	-0,23	-0,07	-0,18	-0,23	-0,17	0,00	-0,12
	(-3,11)***	(-4,44)***	(-0,79)	(-2,17)**	(-2,84)***	(-2,66)**	(0,22)	(-1,37)
Instability of M3/GDP		1,19		1,21	1,21	1,38	-1,01	1,20
		(1,94)*		(1,91)*	(1,89)*	(1,88)*	(-1,12)	(1,97)*
Inflation	0,03	-0,03	0,04	-0,03	-0,03	-0,04	-0,09	-0,04
	(1,96)*	(-0,84)	(2,12)**	(-0,75)	(-0,76)	(-0,87)	(-1,00)	(-0,85)
GDP per capita growth					0,00			
					(0,41)			
Growth instability						-0,53		
						(-0,93)		
Inflation instability							0,35	
							(2,77)***	
(M3/GDP)*(Bank concentration)								-0,01
								(-2,08)**
Constant	0,79	0,85	0,78	0,95	0,85	1,00	1,07	1,06
	(7,21)***	(6,99)***	(2,88)***	(4,85)***	(3,99)***	(4,78)***	(4,01)***	(4,11)***
R^2	0,41	0,45						
Number of countries			63	63	63	63	63	63
Hausman test (prob)	0,00	0,02						
Hansen test (prob)			0,69	0,43	0,55	0,84	0,81	0,74
AR(2) (prob)			0,38	0,37	0,38	0,39	0,36	0,38

* significant at 10%; ** significant at 5%; *** significant at 1%. AR(2): Arellano and Bond test of second order autocorrelation. Values in brackets are the robust *t* statistics.

In columns 1 and 2 of Table 3, the two variables of interest, the level of GDP per capita and the level of financial development are negatively and significantly correlated with the poverty gap. Specifically, any increase in the level of GDP per capita or in the level of financial development leads to reducing the poverty gap inducing a poverty reduction. Concerning the instability of financial development, the results show that a disturbance in financial development induces an increase in the poverty gap.

In column 5, while the growth rate of GDP had no effect on the poverty gap, instability growth is negatively correlated with the poverty gap (column 6), reducing in that way poverty. Moreover, instability in inflation increases the poverty gap by 0.35 percentage point. Finally, the combined M3/GDP and bank concentration has a negative and significant impact on the poverty gap. Thus, the increased number of banking financial institutions and the sophistication and diversification of financial products allow the reduction of poverty.

Tableau 4: Financial development, financial instability and income of poor
Financial development indicator: Bank credit/GDP
Endogenous variable: poverty gap

	OLS with fixed effect		Instrumental variables method					
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Log of GDP per capita	-0,08	-0,09	-0,08	-0,10	-0,08	-0,11	-0,12	-0,11
	(-5,88)***	(-6,12)***	(-2,45)**	(-3,78)***	(-2,96)***	(-3,48)***	(-2,65)***	(-3,22)***
Bank credits/GDP	-0,15	-0,23	-0,07	-0,17	-0,23	-0,17	0,00	-0,12
	(-3,65)***	(-4,98)***	(-0,85)	(-2,28)**	(-2,77)***	(-2,33)**	(0,11)	(-1,31)
Instability of bank credits/GDP		1,17		1,19	1,20	1,36	-1,00	1,19
		(1,97)*		(1,88)*	(1,89)*	(1,86)*	(-1,03)	(1,94)*
Inflation	0,03	-0,03	0,04	-0,03	-0,03	-0,04	-0,09	-0,04
	(1,91)*	(-0,84)	(2,31)**	(-0,75)	(-0,76)	(-0,87)	(-1,00)	(-0,85)
GDP per capita growth					0,00			
					(0,41)			
Growth instability						-0,52		
						(-0,93)		
Inflation instability							0,34	
							(2,77)***	
(Bank credits/GDP)*(Bank concentration)								-0,01
								(-2,33)**
Constant	0,78	0,84	0,77	0,94	0,84	0,99	1,06	0,00
	(7,57)***	(7,12)***	(2,99)***	(4,77)***	(4,11)***	(4,88)***	(4,17)***	(3,18)***
R^2	0,40	0,45						
Number of countries			63	63	63	63	63	63
Hausman test (prob)	0,00	0,00						
Hansen test (prob)			0,68	0,42	0,54	0,83	0,80	0,73
AR(2) (prob)			0,38	0,37	0,38	0,39	0,35	0,38

* significant at 10%; ** significant at 5%; *** significant at 1%. AR(2): Arellano and Bond test of second order autocorrelation. Values in brackets are the robust *t* statistics.

In Table 4, we change the indicator of financial development; so we use the ratio of bank credits/GDP instead of M3/GDP (table 3). The results obtained are almost the same ones. Thus, the logarithm of GDP per capita and the ratio of bank credits/GDP are negatively and significantly correlated to poverty gap. Furthermore, the variables used as instruments have the same effects as those of the third table. The main result to be stressed concerns the volatility of inflation that appears having a detrimental effect on the poor by increasing the poverty gap (column 7). Regarding the interaction term (bank credit/GDP*bank concentration), its negative effect indicates that the increase in the number of banking agencies helps the poor to profit more from bank credits, to increase their saving and to earn more remuneration on their deposits, which is likely to reduce the poverty gap.

Sensitivity analysis: introduction of new control variables

This section presents the test of the impact of financial development on poverty, taking into consideration several variables of macroeconomic control and using just the instrumental variables method. Thus, the control variables used in the estimation of the model are: government consumption to GDP, civil liberty index and trade openness. The results are presented in tables 5.

According to previous estimates, the variables of interest (the level of financial development and the Log of GDP per capita) have a positive impact on poverty reduction. As regards to the variables introduced, an increase in the government consumption to GDP ratio leads to the reduction of the average income of the poor. However, the results show the absence of significant positive effects of the civil liberty index on the improvement of the standard of living of poor and hence on the poverty reduction. Furthermore, considered alone, trade openness has no significant effect on reducing poverty, while its effect is negative and significant once associated to other control variables. As a consequence, a commercial environment respecting civil liberties can contribute to poverty reduction.

Table 5: financial development, financial instability and the income of the poor : introduction of control variables
Financial development indicator: M3/GDP

Endogenous variable : Log of the income of the poorest 20 percent of the population

	Instrumental variables method							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Log of GDP per capita	0,83	0,80	0,84	0,82	0,94	0,82	0,81	0,79
	(11,12)***	(9,98)***	(10,75)***	(11,12)***	(9,71)***	(11,89)***	(12,45)***	(16,10)***
M3/GDP	0,97	0,33	0,43	0,44	0,40	0,33	0,45	0,70
	(2,78)**	(1,89)*	(2,18)**	(2,55)**	(1,92)*	(1,98)*	(2,99)***	(3,25)***
Instability of M3/GDP	-2,93	-3,09	-3,77	-2,33	-4,22	-3,85	-3,12	-2,57
	(-1,82)*	(-1,88)*	(-2,10)**	(-1,25)	(-2,23)**	(-1,91)*	(-1,90)*	(-1,72)*
Inflation	-0,02		-0,17	-0,08	-0,08	-0,00	-0,05	-0,18
	(-0,22)		(-0,78)	(-0,35)	(-0,41)	(-0,08)	(-0,58)	(-0,79)
Government Consumption /GDP				-2,21				-0,85
				(-2,69)**				(-0,88)
Civil liberty index					-0,01			0,00
					(-0,21)			(0,10)
Trade openness							0,00	-0,01
							(1,78)*	(-3,78)***
Constant	-1,26	-0,71	-0,94	-0,72	-1,68	-1,28	-1,16	0,20
	(-2,62)**	(-1,32)	(-1,98)*	(-1,32)	(-2,87)***	(-2,65)**	(-2,68)**	(0,63)
Number of countries	67	66	44	67	67	65	66	42
Hansen Test (prob)	0,83	0,83	0,70	0,77	0,76	0,79	0,67	0,90
AR(2) (prob)	0,78	0,54	0,72	0,41	0,14	0,64	0,69	0,18

* significant at 10%; ** significant at 5%; *** significant at 1%. AR(2): Arellano and Bond test of second order autocorrelation. Values in brackets are the robust *t* statistics.

4. Conclusion and recommendations

In this paper, we examined the various aspects of the relationship between financial development and poverty. We run regressions using OLS and instrumental variables methods for a sample of 67 low and middle income countries over the period 1986-2009. The main results are as follows: independently of the estimation method and the indicators of poverty and financial development used, financial development contributes directly to reducing poverty, and this, by increasing the access of the poor to various sources of funding. Finance facilitates transactions, provides the opportunity to accumulate assets and to smooth consumption.

However, financial instability presents a problem that particularly threatens the poor and reduces the benefits of financial development: finance also poses risks. A developed financial sector opens the door to speculation and bubbles, which can increase volatility and therefore the risk of financial crises. The presence of liquidity constraints is the main obstacle for the poor making the financing of their investments more and more difficult. In this case, the most beneficial is to multiply the number of financial intermediaries and institutions which constitute a real opportunities for deposits.

In sum, financial development should be encouraged to reduce poverty, but financial instability must be controlled. Financial liberalization is one of the policies that foster financial development. In this sense, a stable macroeconomic environment, a macro-prudential supervision in the banking system and an appropriate institutional environment, etc. constitute the main conditions to the success of financial liberalization policy.

Moreover, this liberalized market economy ignoring the needs of the poor, whose the number is increasing over the years can only lead to the impasse. Low and middle income countries have to incorporate in their political and economic approaches the human and spiritual dimensions. Any efforts to poverty eradication and to genuine development are at that price. The principles of Islam provide precisely the principles and framework for this purpose. Thus, any economic development effort must include among its priorities the fight against poverty and economic inequality. Islamic finance can it be considered as a pro-poor finance? Some arguments will be presented.

Are Islamic banks more efficient and more stable than conventional banks?

Generally, Islamic banks are characterized by the use and provision of financial products and services that comply with Islamic practices and religious laws. These Islamic financial services are characterized by a prohibition of the payment and receipt of a fixed or predetermined interest rate.

Theoretically, Islamic banks are considered as more effective than conventional ones because they are not founded on the principle of the volatility of interest rates. Friedman (1969) showed that a zero nominal interest rate is a necessary condition for optimal resources allocation. In the case of a zero interest rate, the traders have no reason to substitute real assets to money, so more resources will be allocated to additional investment projects. The author has empirically demonstrated that a zero interest rate is both a necessary and sufficient condition for an efficient allocation in general equilibrium models.

Islamic banks include the real economy through the use rate "no interest" such as the rate of participation in the profits of the "*Mousharaka*" and the rate of margins of the "*Moudharaba*". In doing so, Islamic banks could operate more efficiently and are thus less inflationary than conventional banks. Khan (1987) explained that the model of Islamic banking is familiar with economic literature; Friedman (1969) has already proposed a similar model of bank transactions to avoid banking panics.

Aggarwal and Yousef (1996) have studied the set of instruments used by Islamic banks to finance projects in Islamic countries. The main implications of their analysis are that in economies characterized by adverse selection and moral hazard, debt will become the dominant instrument of finance. Thus, the use of debt-like instruments is a rational endogenous response on the part of Islamic banks to informational asymmetries in the environments in which they operate.

Empirically, some comparative studies have demonstrated the performance of individual Islamic banks and have proved that they are considerably better than conventional ones. Iqbal and al. (1998), by comparing the top ten banks in the world, in Asia, in the Middle East and the first ten Islamic banks, prove the performance of Islamic banks in a capitalist economy where the conventional system dominates. The authors assume that in a purely Islamic environment, we expect higher performance of Islamic banking.

Kader and Asarpota (2006) examine the performance of Islamic banks in terms of return and risk, liquidity, solvency and efficiency over the period 2000-2004 in the UAE where Islamic funds are highly concentrated. The study showed that the UAE Islamic banks are relatively more profitable, less liquid, less risky and more efficient compared to conventional banks. The authors relate this performance to the profit-and-loss sharing paradigm.

Finally, Cihák and Hesse (2008), adopting an analysis in terms of z-scores, showed that the Islamic banking system is financially more stable and less risky than conventional banks. Thus, in a conventional system, the depreciation of assets following an exogenous shock causes the deterioration of the equity of the bank, which may cause a bankruptcy. In an Islamic system, the profit-and-loss sharing principle plays a crucial role in maintaining financial stability. As a financial intermediaries between agents having a capacity of financing and those having a financing need, Islamic banks will convert the investment deposits into loans based on the profit-and-loss sharing paradigm. Since neither the principal nor the return on investment deposits are not guaranteed, any loss of the asset side will be fully absorbed by the liabilities side. Thus, if the value of assets declined, the liabilities value will decline respectively. Therefore, the profit-and-loss sharing principle allows to the bank to maintain its net equity in the case of banking crisis.

In conclusion, the prohibition of Riba allows the prevention of financial crises (Ahmed 2002). Thus, financial assets and derivatives based on other debt securities cannot be negotiated and there will be no chance for the speculative behavior leading to instability as in the case of the recent subprime crisis in the United States.

Islamic finance and poverty eradication

Knowing that Islamic finance, and as we have just stressed it, provides funds on the basis of profit-and-loss sharing principle giving then an exclusive importance to the profitability and the yield return, the poor could have essential competences to the success of their projects.

Also, we should note the experience of Islamic banks in the eradication of poverty through the use of "Zakat" funds used to give the poor a combination of productive resources in order to support at least one household. The idea is to make the poor

more productive and contributing to the economic development. Many examples of the contribution of "Zakat" funds can be given. Jordan Islamic Bank is the example of a bank in the MENA region without oil manna and which has established a special fund for interest-free loans to needy persons in order to maintain them over time. During the period 2001-2003, this Fund paid $ 22 million to over 40000 beneficiaries, an amount that represents about 230% of total net profits realized by the bank during this period (Goaied and Sassi, 2010).

Appendix

List of countries

Selected countries respect the World Bank classification:
Algeria, Argentina, Bangladesh, Benin, Bolivia, Brazil, Burkina Faso, Cambodia, Chad, Chile, China, Colombia, Costa Rica, Côte d'Ivoire, Dominican Republic, Ecuador, Egypt, El Salvador , Gambia, Ghana, Guinea, Guyana, Honduras, Hungary, India, Indonesia, Jamaica, Jordan, Kazakhstan, Kenya, Kyrgyz Republic, Madagascar, Malawi, Malaysia, Mauritania, Mauritius, Mexico, Morocco, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Romania, Russia, Rwanda, Senegal, Sierra Leone, Sri Lanka, Swaziland, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Uganda, Ukraine, Venezuela, Vietnam, Yemen, Zambia, Zimbabwe.

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