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CONTENTS

FAITH-BASED ARBITRATION CLAUSES AS A GLOBAL ALTERNATIVE TO DISPUTE RESOLUTION

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ABSTRACT

DynCorp International, LLC, a U.S. company, and Aramco, a Saudi-owned corporation, entered into a contract for a computer system which was to be manufactured in the U.S. and installed at Aramco's facilities in Saudi Arabia. The contract contained a "choice of law" provision requiring the application of Saudi Arabian law even though the contract was entered into and significantly performed in the United States. The contract also contained an arbitration clause, requiring that any disputes be resolved using Sharia law as implemented through an arbitration panel. When a dispute over the ownership of funds arose, DynCorp attempted to bring the matter into the Texas judicial system. In its opinion in the matter (In re Aramco Servs. Co., No. 01-09-00624-CV, 2010 Tex. App. LEXIS 2069, 2010 WL 1241525, Tex. App. Houston 1st Dist. Mar. 19, 2010), the Texas court refused to take up the matter, and effectively upheld the arbitration clause. This paper explores the increasing use and enforceability of faith-based arbitration clauses in international contracts and transactions in light of the Aramco case. The paper concludes that global finance is augmented when parties learn about other faiths (in particular, Islam) so that they can effectively negotiate and, where appropriate, adopt such clauses as a way of making use of alternative dispute resolution.

JEL: K2; K12; K41

KEYWORDS: Faith-Based, Alternative Dispute Resolution, Arbitration, Contracts, Sharia

INTRODUCTION

Arbitration is method of dispute resolution involving one or more neutral third parties who are usually agreed to by the disputing parties and whose decision is binding (Garner & Black, 2004, p. 112).Arbitration is one of several systems of alternative dispute resolution (ADR), that is, procedures for settling dispute by means other than litigation (Garner & Black, 2004, p. 86). Arbitration is not a judicial proceeding that necessarily originates under any particular constitution, statute, regulation, court rule or the common law, but is instead a proceeding which is intended to occur outside of the normal judicial process. By contrast, mediation is an ADR where one or more impartial persons assist the parties in reaching a settlement but do not make a binding determination (Lipsky & Seeber, 1998, p. 134).

Arbitration can in some cases be called for or required by statute or other authority, but is often simply agreed to by private parties as part of their negotiated contracts and transactions. In the former case, there may be formal legal requirements that establish the conditions and parameters of such arbitration. In the latter case, arbitration is the creature of contract and the parties can decide among themselves the range of issues that will be subject to arbitration, the choice of substantive and procedural laws or rules, the extent and scope of possible relief, and any and all other aspects of the agreed-to arbitration. In the former case, arbitration is a required process that is prescribed by law; in the latter, the contracting parties waive their rights to seek redress in traditional processes of law.

Arbitration is often less expensive than traditional civil judicial proceedings, because discovery can be more efficient, the use and cost of attorneys can be minimized, and the proceedings can be structured so that they are less formal and time-consuming.

This paper focuses on those arbitration clauses and systems that draw from religious texts and traditions

for their jurisprudence and procedures. Particular attention is given to the growing use of *Sharia* (Islamic law) within the jurisdictions of the United States legal system. A study of the case of *In re Aramco Servs. Co.* (2010) helps to illuminate the systemic tensions that can arise when Sharia-based arbitration clauses are employed within that legal system. In doing so, this paper expands on the extant literature on faith-based arbitration in the United States. Specifically, it supplements and updates the general observations about faith-based arbitration made by Shippee (2002), Rashid (2004), Kutty (2006) and Wolfe (2006).

To accomplish these objectives, this paper introduces the concept of faith-based arbitration clauses, reviews the policy of judicial deference toward arbitration within the U.S. legal system, and provides a case study that highlights the tension between the Islamic arbitration tradition, on the one hand, and the Western legal tradition on the other. The paper concludes by observing that companies and individuals who negotiate contracts with business entities in predominately Muslim countries will need to educate themselves about such differences and tensions in order to avoid the mistakes that are illustrated in the case study.

LITERATURE VIEW

Faith-Based Arbitration Clauses

Ordinary contract principles determine who is bound by written arbitration provisions. When parties to a contract execute the contract containing an enforceable faith-based arbitration provision, they are consenting to that provision. Two aspects of religious-based arbitration take into account private contracting autonomy: the choice of arbitrators who are versed in the religious law, and the choice of rules of law that align with the expectations of the parties (Dessemontet, 2012, p. 558).

Christian Conciliation: Faith-based arbitration clauses tend to reference the religious laws and principles of the three most widely held monotheistic religions: Christianity, Judaism and Islam. In the Christian religious tradition, over three hundred churches, ministries, and organizations are a part of Peacemakers Ministries, making it is the largest, multi-denominational Christian dispute resolution service in the country (Shippee, 2002, p. 243). The Peacemakers organization emphasizes mediation but will utilize arbitration on occasion. An example of a Peacemakers "conciliation clause" (that allows for arbitration in the event that mediation does not succeed in resolving an issue) is as follows:

> [T]he parties agree that any claim or dispute arising out of or related to this agreement or to any aspect of the employment relationship, including claims under federal, state, and local statutory or common law, the law of contract, and law of tort, shall be settled by biblically based mediation. If the resolution of the dispute and reconciliation do not result from mediation, the matter shall then be submitted to an independent and objective arbitrator for binding arbitration (Peacemaker Ministries, 2013).

Jewish House of Judgment: The most well organized, geographically broad, and widely used religious arbitration system is the *Beth Din* (literally, "House of Judgment") system employed by Jews (Wolfe, 2006, pp. 437-438). Beth Din of America, for example, is an extension of the Rabbinical Council of America, which was established in New York in 1960. The organization regularly arbitrates a wide range of disputes among parties, ranging in value from small claims to litigation involving several million dollars. According to their website, these cases can include: commercial (such as employer-employee, landlord-tenant, real property, business interference, breach of contract, breach of fiduciary duty, investor mismanagement, defective merchandise and unfair competition disputes), communal (such as rabbinic contract disputes and other congregational issues) and familial (such as family business, inheritance and matrimonial) disputes (Beth Din of America, 2013a). A sample arbitration clause reads as follows:

> Any controversy or claim arising out of or relating to this contract, or the breach thereof, shall be settled by arbitration by the Beth Din of America, Inc. currently located at 305 Seventh Avenue, New York, New York, in accordance with the Rules and Procedures of the Beth Din of America, and judgment upon the award rendered by the Beth Din of America may be entered in any court having jurisdiction thereof (Beth Din of America, 2013b).

Sharia Pathway to Submission: *Sharia* (or *Shari'a*) is the Islamic legal system of legal principles that delineates the pathway to submission to God (Esposito 2003, p. 111). The primary source of Sharia is the *Qur'an*, the sacred text of Islam (Kutty 2006, p. 583), which strongly advocates amicable settlement of disputes in an equitable and fair manner and promises divine blessings to those who do so (Rashid, 2004, p.97). Under most interpretations of Quranic legal principles, parties in dispute are strongly encouraged to resort to arbitration only after negotiations and mediation have first been attempted (Rashid, 2004, p.105).

Although both substantive and procedural law under Sharia tends to be somewhat informal, parties to contracts and commercial arrangements can elect arbitration as an ADR by including an arbitration clause that points to a particular Islamic forum such as a local mosque, Islamic center, or Sharia judicial organization. An example of such an arbitration clause is as follows:

Any dispute, controversy or claim arising out of or in connection with or relating to this Agreement or any breach or alleged breach hereof shall, upon the request of any party involved, be submitted to and settled by arbitration before the Arbitration Court of an Islamic Mosque located in the State of Minnesota pursuant to the laws of Islam (or at any other place or under any other form of arbitration mutually acceptable to the parties so involved). Any award rendered shall be final and conclusive upon the parties and a judgment thereon may be entered in the highest court of the forum, state or Federal, having jurisdiction. The expenses of the arbitration shall be borne equally by the parties to the arbitration, provided that each party shall pay for and bear the costs of its own experts, evidence, and counsel (Abd Alla v. Moursi, 2004, p. 570).

Deference to Arbitration Clauses in the U.S.

Deference to Arbitration Decisions Generally: Arbitration clauses of any kind are not explicitly upheld as a matter of routine by the courts in the United States. Although courts to not routinely review arbitration awards for conformity to substantive or procedural law, they will occasionally vacate or set aside arbitration awards that are contrary to public policy (Helfand, 2011, p. 1256). Generally, courts will consider vacatur of an arbitration award only if allowing it to stand would violate a strong public policy, would result in a manifest disregard of the law, would be irrational, or would not manifestly exceed a specific, enumerated limitation on the arbitrator's power (*Action Box Co. v. Panel Prints, Inc.*, 2004, p. 252). Judicial review for manifest disregard of federal law necessarily requires the reviewing court to do two things: first, determine what the federal law is, and second, determine whether the arbitrator's decision manifestly disregarded that law (*Greenberg v. Bear*, 2000, p. 27).

Despite the considerable deference traditionally afforded to the decisions of arbitrators, courts have conducted a more searching review of arbitral awards in certain circumstances. In most U.S. jurisdictions, arbitration can be properly vacated if it violates an explicit Constitutional, legislative or judicial expression of public policy, or when granting finality to the arbitration would be inconsistent with a party's unwaivable rights. Judicial review and vacatur of arbitration award is proper when upholding arbitrator's decision would be inconsistent with the protection of a party's clear rights.

Deference to Faith-Based Arbitration Decisions: Arbitration decisions rendered by faith-based tribunals are generally treated in the same manner as other arbitration decisions, but they present additional

complexity as a result of their connection to religion. Religious laws and customs do not necessarily correspond to or comport with secular rights and traditions. When this occurs, the secular courts must determine how to sort out religious freedoms from secular requirements.

This tension between the sacred and the secular has been addressed by the U.S. Supreme Court on several occasions. In the case of *Employment Division v. Smith* (1990), for example, the Court concluded that religious freedoms do not extend to the point where Native Americans may smoke ceremonial peyote in complete disregard of drug laws. Similarly, the *Court in Board of Education v. Grumet* (1994) determined that a school district may not redraw its coverage map so that it encompasses only members of the Satmar Jewish community.

Faith-based arbitration decisions, similarly, do not enjoy complete immunity from judicial oversight. This is especially true in cases where the procedural rights afforded by the religious legal system (such as the right to cross-examine witnesses or the right to an attorney) are not followed *(Mikel v. Scharf*, 1981), an in cases where the decisions of arbitrators exceed their authority *(Neiman v. Backer*, 1995). Some issues and some subject matter that as a matter of public policy the government reserves to itself, such as child custody, may also be considered outside the jurisdiction of faith-based arbiters (*Stein v. Stein*, 1999).

In short, the deference toward secular arbitration, as generally shown by the U.S. legal system, extends to faith-based arbitration. But just as this deference is not unlimited in regard to secular arbitration, it has its limits in the context of faith-based arbitration. And as more and more Sharia-based arbitration decisions are brought before U.S. courts for judicial review, it becomes necessary to consider whether the same judicial demeanor will be employed as has been the case when arbitrations pursuant to Jewish and Christian protocols have come under judicial review.

THE ARAMCO SERVICES COMPANY CASE

The DynCorp-Aramco Arbitration Agreement: When considering the evolving relationship between Western jurisprudence and Sharia, the case of *In re Aramco Servs. Co.* (2010) is instructive. The facts set forth in the court's ruling in this case indicate that DynCorp International, LLC, a U.S. company, and Aramco, a Saudi-owned corporation, entered into a contract for a computer system which was to be manufactured in the U.S. and installed at Aramco's facilities in Saudi Arabia. The contract, written in English, contained an arbitration agreement which provided, in part:

> The laws of Saudi Arabia shall control the interpretation and the performance of this Contract and any other agreements arising out of or relating to it, regardless of where this Contract shall be entered into or performed. Any dispute, controversy or claim arising out of or relating to this Contract . . . which is not settled by agreement between the parties shall be finally settled in accord with the Arbitration Regulations, Council of Ministers Decision No. 164, dated 21 Jumada II 1403 ("the Regulations") and the Rules For Implementation of the Arbitration Regulations effective as of 10 Shawal 1405 ("the Rules") and any amendments to either then in force, by one or more arbitrators appointed in accordance with the Regulations, the Rules and this Contract (*In re Aramco Servs. Co.*, 2010, p.2).

The "Regulations" as referred to above were a separate document, written in Arabic. These Regulations required that any arbitration decision made by the arbitrator(s) must comply with Sharia. The regulations also provided, in part:

> The Arbitrator must be a Saudi national or a Moslem foreigner chosen amongst the members of the liberal professions or other persons. He may also be chosen amongst state officials after agreement of the authority on which he depends. Should there be several arbitrators, the

> Chairman must know the Shari'a, commercial laws and the customs in force in the Kingdom... Arabic is the official language and must be used for all oral or written submissions to the arbitral tribunal. The arbitrators as well as any other persons present shall only speak in Arabic and a foreigner unable to do so must be accompanied by a sworn translator who shall sign with him the record of his oral arguments in the minutes (*In re Aramco Servs. Co.*, 2010, pp. 5-6).

The translation of an additional provision of the Regulations (known as "Article 10") from Arabic into English appeared to be somewhat unclear. This provision had to do with the procedure for appointing one or more arbitrators in the event that a dispute arises but, after some delay, arbitrators are not yet appointed. Aramco's translation of this provision reads as follows:

> If the parties have not appointed the arbitrators, or if either of them fails to appoint his arbitrator(s) . . . and there is no special agreement between the parties, the Authority originally competent to hear the dispute shall appoint the required arbitrators upon request of the party who is interested in expediting the arbitration, in the presence of the other party or in his absence after being summoned to a meeting to be held for this purpose. The Authority shall appoint as many arbitrators as are necessary to complete the total number of arbitrators agreed to by the parties; the decision taken in this respect shall be final (*In re Aramco Servs. Co.*, 2010, p. 5).

DynCorp's translation of Article 10 of the Regulations from Arabic into English was slightly different, as follows:

> If the disputants fail to appoint the arbiters . . . the authority originally responsible for looking into the case shall appoint the necessary arbiters in response to a request by the party who is interested in expediting the procedure. . . . (*In re Aramco Servs. Co.*, 2010, p. 5, n.4).

Trial Court's Assumption of the Power to Appoint Arbitrators: DynCorp sued Aramco in Houston, Texas, asserting entitlement to certain funds in a letter of credit opened pursuant to the Contract. In response, Aramco filed a motion to compel arbitration in accordance with the arbitration agreement as set forth above. Subsequently, DynCorp filed its own motion to compel arbitration. Specifically, DynCorp sought arbitration before JAMS/Endispute, Inc. ("JAMS"), a private, for-profit dispute resolution company. or the American Arbitration Association ("AAA"). In other words, DynCorp sought to avoid the Sharia-compliant arbitration process to which it had agreed, while Aramco sought to enforce that contractually prescribed process.

In its initial ruling on the competing motions to compel arbitration, the trial court ruled in favor of Aramco, but with a twist. The agreed that the contractually prescribed arbitration should proceed, but the court interpreted Article 10 so as to inject itself into the process. That is, the Texas trial court specifically determines that it was, as set forth in Article 10 (above) "the authority originally responsible for looking into the case." After all, it reasoned, both companies effectively acknowledged the Texas court's authority when they filed competing motions to compel arbitration. Therefore the court determined that it was the authority originally responsible for looking into the case, and assumed to itself the authority to appoint arbitrators.

Aramco disagreed, and filed a motion for clarification and reconsideration, and attached an affidavit of Mohammed Al-Sheikh, an attorney practicing in Riyadh, Saudi Arabia with expertise in Saudi Arabian law. The affidavit provides, in part:

> The paramount body of law in The Kingdom of Saudi Arabia is the *Shari'ah*. The *Shari'ah* is comprised of a collection of fundamental principles derived from a number of different sources, which include the Holy *Qur'an* and the *Sunnah*... Saudi Arabian law, including its Arbitration

> Law, contemplates that the authority originally competent to hear the dispute is a Saudi Arabian court. Council of Ministers Decision No. 221, dated 6 Ramadan 1423 (corresponding to 11 November 2002) grants to Board of Grievances jurisdiction over any Saudi Aramco commercial disputes (including arbitration). . . . Thus, in my opinion, the Saudi Board of Grievances is the authority originally competent to hear this dispute. . .(*In re Aramco Servs. Co.*, 2010, p. 8-9).

In the meantime, Aramco designated Dr. Sherif Hassan, a Muslim, as an arbitrator. DynCorp proposed Ted Akin, Levi Benton, and Trey Bergman, all non-Muslims, as arbitrators. Aramco filed an objection to DynCorp's designation of arbitrators on grounds that the arbitrators proposed by DynCorp were unqualified to serve under the Regulations and Rules because they were neither Muslims nor Saudi nationals. In response to Aramco's objections, the trial court signed an order that overruled Aramco's objections and appointed Dr. Sherif Hassan, Ted Akin, and Trey Bergman as arbitrators. That is, two non-Muslims and one Muslim were appointed.

Appellate Court's Reversal of the Trial Court: In response to the trial court's appointment of a non-Muslim majority of arbitrators, Aramco appealed the matter to the Court of Appeals in Texas. In its appeal, Aramco contended that the trial court should not have designated itself as the "Authority" referenced in Article 10 of the Regulations. Specifically, Aramco asserted that because the term "Authority" is not expressly defined in the Regulations, resort to other Saudi law was necessary to determine its meaning. Aramco states that the term "Authority" is referenced in the Regulations and Rules in a context that did not anticipate application to an American court. Aramco also asserted that the trial court should have relied on, but instead disregarded, Mohammed Al-Sheikh's affidavit stating that the Authority is the Saudi Board of Grievances. Finally, Aramco contended that the trial court could not designate arbitrators because neither party had requested it to do so.

DynCorp responded by claiming that that the trial court properly determined that it was the "Authority" referenced in Article 10, that DynCorp had, in fact, requested the trial court to designate arbitrators in its motion to compel arbitration before JAMS or the AAA, and that Texas procedural laws should apply to the Contract. DynCorp also contends that the Contract is ambiguous and therefore it would be improper for the Texas court to enforce it as written.

The appellate court agreed with Aramco. In its opinion, the appellate court noted that other terminology in the Regulations, like the word "Secretariat" and the expression "clerk of the Authority" seemed to imply that the "Authority" had to be a court of Saudi Arabia. And since the trial court could not act as the "Authority," it did not have the power to appoint arbitrators after all.

Lessons from and Implications of the *Aramco* Case

From the standpoint of the US legal system, this case reflects a growing trend toward a respect for, and an unwillingness to interfere with, faith-based arbitration. The Texas court in this case clearly intended to inject itself and "protect" DynCorp from having its dispute over the ownership of funds arbitrated under Sharia as interpreted and enforced by Muslims of Saudi Arabian nationality in accordance with Saudi Arabia law. There are a number of reasons why the Texas trial court might have been motivated to make this attempt, and it would be both dangerous and pointless to guess at what those motivations might have been. Nevertheless, when it reversed the trial court, the Texas appellate court did what courts are increasingly willing to do in recent years: grant deference to arbitration clauses that point to Sharia law (even though Sharia law essentially involves the interpretation of the Qur'an, a religious sacred text).

From the standpoint of DynCorp, this case serves as a reminder that arbitration clauses, including faith-based arbitration clauses, ought not be entered into lightly. In hindsight, it is likely that the owners and managers of DynCorp now realize that they should have been more careful about agreeing to an

arbitration clause (in English) that incorporates by reference rules and regulations written in Arabic. Even if they had been willing to agree to Sharia law as the choice of law, they might well have been better served if they had been more careful to allow for a broader pool of possible arbitrators (rather than the narrow pool of Muslims of Saudi Arabian origin). Finally, the vagueness about which authority was empowered to appoint arbitrators in the event that the parties were not able to agree to arbitrators, should have been clarified. These are all good lessons for companies doing business with companies from the Middle East whose preference for choice of law is Sharia.

CONCLUSION

Some might argue that the Western legal tradition still carries with it a Judeo-Christian heritage. Others might suggest that that heritage has largely been left in the past, and that the Western legal tradition is now truly secular. Either way, there is within Western jurisprudence, a lack of familiarity with legal institutions like those in Islamic countries in which there is no separation of church and state. This is particularly true in countries where Sharia is the basis for law.

This paper has explored the increasing use and enforceability of faith-based arbitration clauses in international contracts and transactions, and has considered the traps and pitfalls of adopting such clauses in light of the problems that occurred in the *Aramco* case. By using the case study approach, the *Aramco* case was analyzed and shown to be an example of how the tension between the Islamic arbitration tradition, on the one hand, and the Western legal tradition on the other, can be in conflict. While the observations and conclusions drawn from this case study are insightful and significant, the case study method is limited to specific cases and does not afford the opportunity to collect and analyze empirical data in a way that points to trends and statistical phenomena. An understanding of the increasing role of faith-based arbitration clauses generally, and clauses that point to Sharia law in particular, would benefit from future empirical research that would show such trends and statistical phenomena.

Meanwhile, we conclude here that, as Western companies interact increasingly with countries and companies for whom Sharia forms the basis of law, they will more frequently find themselves faced with negotiations over arbitration clauses that point directly to the Qur'an. This can be both a challenge and an opportunity. It is a challenge, because it involves and requires a significant learning curve about Islam, the Qur'an, and Sharia law and procedure. But it is also an opportunity, because without going through the effort to learn about, and become conversational about, the Muslims faith, contract negotiations, for which arbitration clauses can serve as a solution to possible problems, will be neither more robust or more successful.

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SMARTPHONES AND THEIR IMPACT ON NET INCOME PER EMPLOYEE FOR SELECTED U.S. FIRMS

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ABSTRACT

For the last few years, the number of smartphone users has been on a remarkable rise. The number of users increased from 62.6 million in 2010 to 115.8 million in 2012, and expected to increase to 192.4 million by 2016. This increased usage of smartphones by employees poses a dilemma for organizations. Since smartphones can do almost all the tasks (email, internet, and run applications of popular Microsoft software) of a traditional desktop computer, laptop, and phone; smartphone users are expected to be able to do more work outside their normal working hours. Therein lies the possibility that the employees instead of carrying out organizational tasks, may be instead wasting time by of texting, shopping, and using social media. This paper looks at the impact smartphones have on net income per employee at selected U.S. firms. My research shows that use of smartphones has a positive impact on a firm's net income per employee ratio. Alternatively, use of smartphones at these selected U.S. firms does not negatively affect a firm's Net Income per Employee ratio.

KEYWORDS: Productivity, Smartphones, Net Income per Employee

INTRODUCTION

Smartphones have become all pervasive. Global sales of smartphones have skyrocketed from 122 million in 2007 to expected 675 million in 2012 (Statista, 2012). By end of 2017, a third of world population is expected to own and use smartphones (Loveridge, 2013). In terms of revenue, mobile and smartphones had a revenue of $269 billion in 2012 (Evans, 2013). One study states that "more smartphones are activated each day than babies born," and "[t]he average smartphone has 41 apps," (AFP RELAXNEWS, 2013). A survey in early 2012 reported that more than 81% employees use mobile devices at work (Miller-Merrell, 2012). Since smartphones are ubiquitous including at work, it begs the question how employee usage of smartphones affects an organization--especially in terms of productivity.

Many have argued that use of smartphones at work reduces employee productivity and create stress for employees and introduce computer viruses to work computer networks (Tucker, n.d.). However, studies have also shown that smartphones usually have a positive impact on productivity (eWeek, 2012; Mielach, 2013). Although, defining what is productive use of smartphones can mean many things. It can mean anything from saving time in doing a task, work-home commute flexibility, employees' happiness in their ability to read and work on files away from the office and at their preferred time, and quickly access information or communicate with colleagues quickly. At present, most of the studies regarding productivity (or lack of) are based on surveys of employees and or information technology (IT) decision makers. The shortcoming of this approach is that the employees are desirous of smartphones and are unlikely to say anything negative about having smartphones at work. Admission of negative productivity may lead their employer to ban its usage. In addition, the IT decision makers are likely to have a positive outlook because; their continued employment is contingent upon constantly upgrading and working on new hardware and software. Due these shortcomings in previous bodies of work on this topic, there is a need to analyze hard data that shows whether smartphones increase (or decrease) productivity. Additionally, instead of using feel good statistics such as reducing stress, or work home commuting flexibility, there is need to have a variable based on numbers. Therefore, in this study, the concept of Net Income per Employee (NI/E) ratio is used to evaluate productivity. Essentially, this study analyzes

changes in NI/E ratio of selected U.S. companies to determine whether usage of smartphones by their employees increases (or decreases) the NI/E ratio.

This paper in the Introduction section provides background and definition of a smartphone. Followed by an explanation of likely users of smartphones and list of U.S. firms they are most likely to be employed at. Then, under the Discussion and Analysis section, a survey of current literature, along with Data Analysis with use of tables, and t-tests is provided. Finally, the paper has a conclusion section followed by a list of References.

Smartphone

A smartphone is defined as "wireless telephone set with computer enabled features" (Yun, Kettinger, & Lee, 2012, p. 123). Smartphones have revolutionized the way business is conducted. Before their advent, a professional worker needed a separate phone, a laptop computer or a desktop computer with internet connection to accomplish a professional task. This meant that the worker had to be at their desk or near a conference room where different computing and communication devices could be found. Employees were unable to accomplish their work outside of their working hours, and forced to extend their workday. The advent of smartphones has changed all that. A smartphone user can do almost all the office related tasks anywhere where the smartphone device can access voice and data connection. Smartphones have enabled workers to become mobile and accomplish many tasks outside of their normal working hours. Moreover, employers see smartphones as means to increase worker productivity and allowing employees to be able to respond to customer problems and concerns. In turn, employees see smartphones as providing flexibility so that they can be away from the office and still stay connected and get their jobs completed at a more opportune time (Luttenegger, 2010). Ultimately, from an employer's point of view, use of smartphones should lead to improvement in company's bottom line (Net Income).

A detriment of the increased smartphone penetration is that a smartphone user is also likely to use smartphones for non-work related activities. Common non-work use of smartphones are surfing the internet, talking, emailing, shopping, texting/messaging, and greater use of social media sites such as Facebook and Twitter. This not only increases the non-productive use of work time, but also increases the time it takes to get back to work and also gives employees the excuse to procrastinate during the working hours (Shellenbarger, 2012). Additionally, installing software from home and unprotected internet connection may cause harm to a firm's business systems with unsuspecting viruses and worms (Tucker, n.d.). Finally, a lost smartphone can make it difficult to remotely erase company information from the lost device and in case of a disgruntled employee; result in sale of or loss of proprietary information to competitors during employment or after termination (Maltby, 2012). Many firms have struggled with allowing personal use of smartphones for these reasons. Based on these conflicting benefits and harms of smartphones at work, this study looks at impact of smartphones on a firm's NI/E to determine whether smartphones are beneficial for an organization from the employer's point of view.

Users of Smartphones and Research Set up

Although a smartphone user can be anyone, it is most likely that younger workers would be the most likely adopters of this device. Thus, this research focuses on the smartphone users who are born in 1977 and later. Heavy users of smartphones are likely to be persons who are 36 years or younger. Persons born from 1977 to 1994 are known as Generation Y, or Echo Boomers or Millenniums (Schroer, n.d.). Moreover, Generation Y persons "are known as incredibly sophisticated, technology wise (Shrorer, n.d.)." This generation prefers to communicate through e-mail and text messaging rather than face-to-face contact and prefers webinars and online technology to traditional lecture-based presentations (Kane, n.d.). Persons born from 1995 to 2012 are known as Generation Z, and "will grow up with a highly sophisticated media and computer environment and will be more internet savvy and expert than their Gen

Y forerunner" (Shroer, n.d.). They have a high expectation of instant access to information and records (Simons, 2010). Therefore, Generation Y and Z persons are very likely to be smartphone users. Since it is extremely difficult to get data from firms on the number of employees using smartphones, one can extrapolate that firms that are top employers of new college graduates will have high concentration of Gen Y and Z employees in comparison to firms that are not top employers of recent college graduates. Thus, the next step in the analysis was to look at firms that are top employers of recent college graduates in the United States.

Top US Employers of Recent College Graduates and Median Age

Table 1 below lists 31 top employers for college graduates in 2011 along with the median age of employees at these top firms and the percent change in median age (MA) between 2008 to 2012. Median age is defined as half of the employees under the median age and the other half over it. The median age data shows that an overwhelming number of the listed employers' median age is around the cut-off age of (about 35) for Generation Y. *This research paper hypothesizes that since Generation Y and Z are the heaviest users of smartphones, they are going to be working at firms that hire recent college graduates and thus changes in NI/E of these companies determine whether use of smartphones affect a firm's NI/E.* The weakness of this hypothesis is that it also possible that other factors may also lead to changes in a firm's NI/E.

DISCUSSION AND ANALYSIS

Survey of Current Literature

Interest in finding impact of smartphones (m-devices) on work productively is not new. Many researchers have studied this issue as something that either contributes to the enrichment of work or alternatively as a distraction best avoided. An AFPRELAXNEWS (2013) article reported that an average person checks their smartphones 150 times a day or every 6.5 minutes. Gaming is the most popular activity (43%), followed by social networking (26%); while productivity (2%) and health and fitness (1%) are the least popular ways to use smartphones according to the report. A study on recruitment industry concludes that productivity impact (measured in terms of email activity) of multitasking (activities such as landline phones, pagers, conference calling, video conferencing, email, real time data streaming, real time alerts, mobile telephones, sms/text messaging, browsers, chat rooms, on-line messaging, and social networking) followed a U curve. That is, productivity improved when workers moved from single tasking to multitasking, and as the number of tasks increased, productivity leveled off and as critical number of tasks reached, productivity declined (Bannister & Remenyi, 2009).

Another study involving 515 IT users working in the US found that: (i) 57% of work interruptions involve email, social networks, text messaging or switching windows among disparate standalone tools and applications, (ii) assuming an average salary of $30/hour, the per day in wasted money translated to about $10,375 per person per year, and (iii) that addiction to web-based activity is pervasive in the workplace (Harmon.ie., 2011). Another study finds itself advocating the two sides of this issue by summarizing that "while smartphones offer convenience for mobile learning, business transactions, personal use and recreational purposes, etc., they also bring about potential risks and dangers that could cause huge losses in terms of lost company and customer data" (Kahle-Piasecki, Miao, & Ariss, 2012, p. 64). A more nuanced, albeit an older study by IBM & Columbia University notes that IBM employees did not use their smartphones for employee-development mini-courses but rather for in-field performance support from colleagues and for access to late breaking information (Ahmad & Orton, 2010). The Yun et. al (2012) study (based on survey of 3000 smartphone users in South Korea) concludes that smartphones increase work-to-life controversy leading to job stress, yet, smartphones reduce work overload. At the other extreme is a study that analyzes self-reported survey of 80 persons in government and private sector

that finds that "vast majority of Smartphone owners find that their productivity has increased versus those that own standard cell phone" (Kalkbrenner & McCampbell, 2011, p. 1). According to eWeek (2012), nearly ¾ of IT decision makers surveyed thought that use of smartphones led to increase in productivity. This study measured productivity by cost savings that resulted from use of tablets and in sales presentations, replacing printed materials, and workgroup collaboration.

A survey of administrative professionals showed that they feel less stressed when they show up for work on Mondays and they use the smartphones : (i) to track to-dos, maps to pull up restaurant and hotel information for out of state employees visiting corporate offices, (ii) to access documents regardless of location, (ii) use of on the go apps such as sticky notes, check-in lists, and voice memos, (iii) tracking superiors and use of flight tracker, travel arrangements and expense-account management, and (iv) synchronizing work and personal calendars (Administrative Professional Today, 2012). In support of smartphones, another report stated that 97 percent of smartphone users use at least one app and "those smartphone users estimate app usage amounts to 88 minutes of time saved a day or 22 days of free time a year." (Mielach, 2013). This report concluded that text apps saved on average 53 minutes per day, while email apps saved 35 minutes per day; all the saved time resulted in estimated $12,000 in productivity each year.

Data Analysis

As stated above most of the reports and research papers claim that smartphones have boosted productivity. However, there are two weaknesses to those conclusions. First, those results are limited to certain industries and second, the data is self-reported by the smartphone users. Thus, there is lack of research on impact of smartphone usage on a firm's finances and for organizations in different industries. This study links the (i) increased use/penetration of smartphones by employees who are young with (ii) entities that these smartphones users are employed by, and (iii) impact on a firm's financial performance (to Net Income). As indicated previously, Table 1 lists selected U.S. firms that hire new college graduates along with the median ages of its employees in 2008 and 2012.

As the calculation in Table 1 above shows, the percent change in average median age from 2008 to 2012 is 4.37%. Essentially, the median age at employers who are most likely to higher heavy users of smartphones has increased by 4.37%. This increase in median age can be explained by the recession in the United States during 2008-2010 and employees' reluctance to look for new jobs. When put in this context, the increase in median age is insignificant.

Table 2 below lists names of organizations listed in Table 1 along with their (i) net income (NI) for 2008 and 2012, (ii) number of employees (E) during 2008 and 2012, (iii) NI/E in 2008 and 2012, and (iv) percent change in NI/E between 2008 and 2012.

As the calculation in Table 2 above shows, the percent increase in NI/E from 2008 to 2012 is 82.66%. When the average increase in median age is compared with average change in NI/E, it shows that average median age increased 4.37% (from table 1) while NI/E increased 82.66%.

The number of smartphone users in U.S. in 2008 was 21.4 million (Nielsen, 2009), while in 2012 it was 115.8 million (Statista, 2012). That is a 441% percent increase in number of smartphone user. Therefore, when increase in smartphone users is compared with percent change in NI/E from 2008 to 2012 (441% to 82.66%), it can be concluded that the increased use of smartphones does not negatively affect net income of firms. Rather, there is a positive correlation between the increase in smartphone users and net income per employee.

Table 1: Percent change in Median Age from 2008 to 2012 for employees at Selected U.S. Firms

Rank	Company	MA 08	MA 12	% change MA 08-12
1	Google	27.4	29.3	6.93
2	Apple	31.4	31.6	0.64
3	Walt Disney	32.4	33.7	4.01
8	Nike	32.6	33.7	3.37
10	Goldman Sachs	26.6	28.7	7.89
12	Facebook		29.3	
13	Microsoft	30.8	33.7	9.42
14	Coca-Cola	37.0	33.6	-9.19
15	Proctor & Gamble	35.1	35.5	1.14
16	Bank of America	30.4	32.6	7.24
18	Morgan Stanley	30.9	34.7	12.30
20	Johnson & Johnson	34.0	38.3	12.65
23	Coach	27.1	28.7	5.90
24	Sony	33.4	32.7	-2.10
25	Marriot	31.3	34.3	9.58
27	BMW	29.5	34.4	16.61
28	Macy*s	30.0	34.6	15.33
29	Starbucks	26.1	29.3	12.26
31	Target	27.9	28.3	1.43
33	Hyatt	30.6	31.8	3.92
34	Amazon	30.0	32.0	6.67
35	Wells Fargo	29.3	32.4	10.58
36	Southwest Airlines	39.6	39.3	-0.76
37	Adidas	30.9	29.0	-6.15
38	IBM	36.1	38.5	6.65
40	GE	35.1	37.9	7.98
42	Boeing	36.2	37.8	4.42
43	PepsiCo	33.4	33.5	0.30
44	Citigroup	43.5	34.7	-20.23
47	Time Warner	34.7	35.7	2.88
48	Under Armour	28.7	28.5	-0.70
Average				**4.37**

This table shows the percent change in Median Age from 2008 to 2012, where MA is Median Age. The median age data was provided by Steven Gottlieb of Payscale.com on January 16, 2013. The list of employers is provided by Lavelle, L., & Stonington, J., (2011). Top 50 Employers for College Graduates. Retrieved, November 9, 2012 from www.images.businessweek.com/slideshows/20110509/50-top-employers-for-college-grads#slide2. The original list has 50 employers, however, because of lack of data 19 organizations (Ernst & Young, PricewaterhouseCoopers, Deloitte, JP Morgan, KPMG, FBI, United Nations, US State Department, CIA, US Treasury, Hilton Hotels, Federal Reserve, L'Oreal, Peace Corps, Grant Thornton, IRS, American Cancer Society, IKEA, and BCG) were omitted from this analysis.

Alternatively, it can also be argued that (i) increase in NI/E could be due to number of other factors (such as better products, or lower number of employees) and (ii) it is unknown whether the number of smartphone users has increased for these individual firms. These are the two weaknesses of this study. Nevertheless, these weaknesses are tempered by the fact that (i) the number of smartphone users has increased more than 400% in four years in the U.S.; and (ii) these users are also proportionately more likely to be employees who are likely adopters of smartphones at the organizations researched in this study.

T-Tests

I compared the MA of each company in 2008 vs 2012 and did the test of significance for the increase in MA. Then, did the same for the NI/E for the same companies for 2008 vs. 2012. Below are the test results and conclusions:

Test of significance of difference in MA for 2008 vs. 2012

N = 31

Calculated t-value = 2.09

Critical t-value at 5% level of significance (tc 0.05) = 1.645

Critical t-value at 10% level of significance (tc 0.1) = 1.282

Table 2: Percent Change in Net Income (NI)/Employee (E) from 2008 to 2012

Rank	Company	NI 08	E 08	NI/E 08	NI 12	E 12	NI/E 12	% change NI/E 08-12
1	Google	4,226,858	20,222	209.02	10,737,000	53,861	199.35	-4.63
2	Apple	4,834,000	32,000	151.06	41,733,000	72,800	573.26	279.48
3	Walt Disney	4,427,000	150,000	29.51	6,173,000	166,000	37.19	26.00
8	Nike	1,883,400	32,500	57.95	2,223,000	44,000	50.52	-12.82
10	Goldman Sachs	2,322	30,067	0.08	7,475	32,400	0.23	198.74
12	Facebook	-	-	-	53	4,619	0.01	
13	Microsoft	17,681,000	91,000	194.30	16,978,000	94,000	180.62	-7.04
14	Coca-Cola	5,807,000	92,400	62.85	9,086,000	150,900	60.21	-4.19
15	Proctor & Gamble	12,075	138,000	0.09	10,904	126,000	0.09	-1.10
16	Bank of America	4,008	243,000	0.02	4,188	267,000	0.02	-4.90
18	Morgan Stanley	-1,285,000	46,964	-27.36	716,000	57,061	12.55	-145.86
20	Johnson & Johnson	12,949	118,700	0.11	10,514	127,600	0.08	-24.47
23	Coach	783,055	12,000	65.25	1,038,910	18,000	57.72	-11.55
24	Sony	369,435	-	-	-398,425	162,700	-2.45	
25	Marriot	362	146,000	0.00	571	127,000	0.00	81.33
27	BMW	330	95,453	0.00	5,122	105,876	0.05	1299.32
28	Macy*s	1,256,000	182,000	6.90	893,000	171,000	5.22	-24.33
29	Starbucks	315,500	176,000	1.79	1,384,700	160,000	8.65	382.78
31	Target	2,214	351,000	0.01	2,999	361,000	0.01	31.70
33	Hyatt	170,000	45,000	3.78	87,000	45,000	1.93	-48.82
34	Amazon	645,000	20,700	31.16	-39,000	88,400	-0.44	-101.42
35	Wells Fargo	2,655,000	158,900	16.71	19,368,000	269,200	71.95	330.60
36	Southwest Airlines	178,000	35,499	5.01	421,000	45,861	9.18	83.08
37	Adidas	644	-	-	524	46,824	0.01	
38	IBM	12,334,000	438,080	28.15	16,604,000	434,246	38.24	35.81
40	GE	17,410	323,000	0.05	13,864	305,000	0.05	-15.67
42	Boeing	2,672	162,200	0.02	3,900	174,400	0.02	35.75
43	PepsiCo	5,142,000	198,000	25.97	6,214,000	278,000	22.35	-13.93
44	Citigroup	-	322,800	-	7,541,000	259,000	29.12	
47	Time Warner	-13,402,000	87,000	154.05	3,016,000	34,000	88.71	-157.58
48	Under Armour	38,220	2,200	17.37	128,778	5,900	21.83	25.64
Average								**82.66**

This table shows the percent change in NI/E from 2008 to 2012, where NI is Net Income in U.S. dollar, E is number of employees, and NI/E is Net Income divided by total number of Employees for 2008 and 2012. All net income and employee data was retrieved on March 27, 2013 from Mergentonline.com.

Conclusion: In testing for the increase in the MA for the companies for 2008 versus 2012, given that the calculated t-value falls outside of the critical t-value of 1.645 (at 5% level), the increase in the median age in these companies is found to be statistically significant at 5% level.

Test of significance of difference in NI/E for 2008 vs. 2012
N = 31

Calculated t-value = 1.528

Critical t-value at 5% level of significance (tc 0.05) = 1.645

Critical t-value at 10% level of significance (tc 0.1) = 1.282

Conclusion: In testing for the increase in the average NI/E for the same companies for 2008 versus 2012, the increase in the average NI/E in these companies is found to be statistically significant at 10% level only.

CONCLUSION

The goal of this research paper is to tie early adopters of smartphones in the U.S. who are also most likely to work at U.S. organizations that hire recent college graduates with financial performances of these organizations. The results show that between 2008 to 2010, there is minuscule increase average median age and thus early adopters of smartphone users remaining constant or slight increase does not lead to a decrease in the average NI/E , rather the average NI/E increases. This conclusion is limited by the fact that increase in NI/E may be result of better management, better products, and possibly reduction in number of employees. Further research should be conducted to eliminate these possibilities.

More significantly, the penetration of smartphones will continue to increase throughout the world. The number of smartphone shipments will increase from 717.50 million in 2012 to about 1405.3 million units in 2016 worldwide. That is an astounding 96% rate of increase in smartphone shipments in just 4 years. This poses a dilemma for employers: whether these devices help or hurt the firm's income. It is common knowledge that smartphones provide flexibility that allows workers in getting their work done. Unfortunately, the benefits of flexibility may be outweighed by cyberloafing and work distraction. This research paper shows that the changes in NI/E and corresponding increase in smartphone usage in U.S. at worst does not hurt an organization's bottom line, all the while it may be helping it. It is worthwhile to note that the increases in NI/E may be at the expense of extended workday, increasing health problems, and social isolation for the smartphone using employees.

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THE SUSTAINABILITY OF A NATION´S ECONOMY: AN ANALYSIS FROM THE PERSPECTIVE OF INTERNATIONAL INDICATORS

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ABSTRACT

This paper examines sustainability performance of the Mexican economy from the perspective of three international indexes. Information were gathered from reports published by: Environmental Performance Index, Global Green Economy Index, Carbon Monitoring for Action and the National and Latin-American indexes. The objective was to determine Mexico's levels of performance in each index analyzed and contrast these performances with research results obtained in the northern part of the country. This research used an exploratory and descriptive approach to analyze information obtained from databases. Among the main conclusions, is identification of the most important programs and polices needed for the improvement of the country´s sustainability performance.

JEL: O44

KEYWORDS: Sustainability Performance, Economy, Measurement

INTRODUCTION

Environmental sustainability is a key factor for the development of humankind in the XXI century. All countries need to ensure the quality of its natural resources, ecosystems and species diversity, to maintain a sustained quality of life. However, as the world population continues to grow, the consumption of materials and production technology intensifies, which impacts quantity and quality of natural resources available (Vlek, 2007). For over a decade, several international organizations have invested immense resources and efforts to measure the performance of nation's environmental sustainability. The countries selected for this study have identified the benefits of measuring performance. However, measures of sustainability do not constitute a parameter of success on the road to sustainable development. It is necessary to consider all elements needed to determine how development helps exceed the minimum quality of life levels.

Analysis of official data released by the National Institute of Statistics, Geography and Informatics (INEGI), The Ministry of Environment and the National Institute of Ecology (INE), shows sufficient basis to suggest that México has devastated natural resources with impunity and in dramatic magnitudes. INEGI estimates that, among the countries belonging to the Organization for Economic Cooperation and Development (OECD), the tentative costs of such destruction, represents ten to thirteen percent of the Gross Domestic Product (GDP) generated for the last decade of the past century and close to 11 percent for the first decade of this century. (INEGI, INE, Tijerina, 2002). Real economic growth registered in México in those years, would be negative: between -4.3 and -6.7 percent (INEGI, 2013). At the end of the past century (Hart, 1995, in Senise, 2008) emphasized the need to initiate a drastic change in economic activities, to avoid irreparable damage to basic ecological systems of the planet and ensure ecological sustainability (Senise, 2008). In the context of international cooperation, several agreement have been reached, including those generated in the United Nations Framework Convention on Climate Change to promote climate change mitigation actions (COP-15). According to the México´s National Institute of Ecology (INE), 2009 Copenhagen Summit text, establishes an overall goal of warming by no more than

2°C. It also points out that to achieve this goal, developed countries should reduce their emissions by 25-40% below 1990 levels by 2020 and 80-95% by 2050. The text also indicates that developing countries should achieve a significant reduction in emissions. Another significant agreement reached in this summit, is related to financial support to participating countries, which includes funding in the short and medium term in the range of 30 to 100 billion dollars annually by 2020 (INE, 2010). Table 1 highlights the commitments announced by emerging economies in COP-15.

Table 1: Emission Reduction Commitments Announced by Emerging Economies in COP-15

Country	Proposed Reduction	Remarks
Brazil	36-39% reduction of its emissions compared to BAU (Business as Usual) in 2020	Conditioned to have financial support
South Africa	26% reduction of its emissions compared to BAU in 2020	Up to40% conditioned to have financial support
Indonesia	34% reduction of its emissions compared to BAU in 2020	Conditioned to have financial support
South Korea	30% reduction of its emissions compared to BAU in 2020	Supported with own resources
China	40-45% reduction of its emissions in 2020, compared to 2005	
India	20-25% reduction of its emissions in 2020, compared to 2005	
México	10% reduction of its emissions compared to BAU, supported with own resources	Up to 30% Conditioned to have financial and technological support

This table shows commitments declared by emerging economies, declared towards the end of 2009, during the United Nations Climate Change Conference in Copenhagen – COP15, México is included in this group. During the Summit, participants established that developing countries in general and emerging economies in particular, declare their Nationally Appropriate Mitigation Actions (NAMAS).Adapted from INE, 2010.

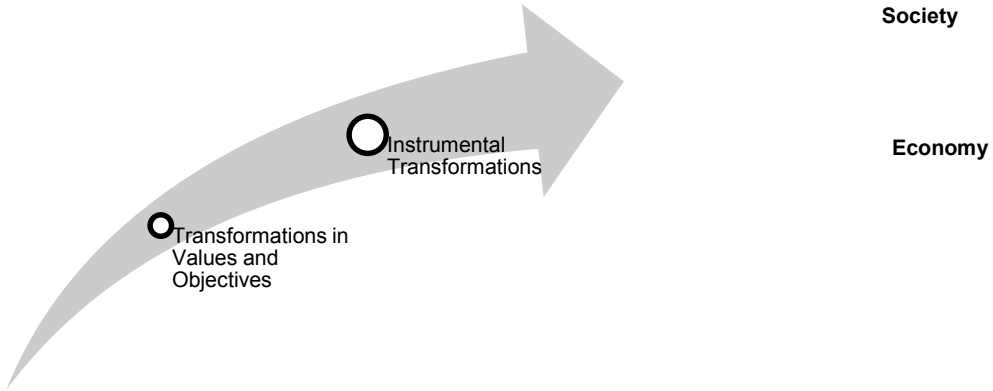
Although a plethora of authors address the issue of sustainable development from many perspectives – political, social, economic, geographic, to name a few – there are few publications that address country performance from the optic of how international organizations measure national economies, considering all levels and scopes of sustainable development. This paper presents a descriptive analysis of scores obtained by México in the international sustainable performance indexes.

LITERATURE REVIEW

The global economy is in a period of decline, requiring urgent review and reconsideration. This change imposes co-evolution between ecosystems, human society and lifestyle within a limited period. The local and regional approach takes a role and responsibility in the success of the process that has no precedent in the economic development history. However, the local and regional approach requires interspatial tuning and cooperation in the path to transform a society, to mobilize it to the acceptance and incorporation of sustainable behaviors, and to be committed to the overall economic process development from the perspective of ecological sustainability (Pulido, 2003).

Initiatives promoted by governments whose strategies include environmental care and innovation, can be of three types: those aimed at reducing the impact on the environment, those that seek to solve environmental problems and those aimed to the development of policies and initiatives to promote eco-efficient actions. (Ramus, 2001). From an analytical and strategic perspective, sustainable economic development is conceived as a process of global structural change involving the transformation of economy and society, both in means (Instrumental) and ends (values and objectives). The basis of this transformation is on the development of strategic capabilities, both economical and extra-economic in nature (Carpi, 2008). Figure 1 shows these relationships.

Figure 1: Economic Development as a Process of Global Structural Change



This figure shows the stages of the process of structural change applied to economic development. It initiates with a level of deep transformation, followed by the instrumental transformation stage (the building of capabilities level) and its impact on society and economy. Own elaboration, based in Carpi, 2008

Empirical data and field studies from Nicol et al.,1999, Humphreys, 1994, and Goñi, 2006, provide a basis for understand how people from different cultures approach and grasp the meaning of the environment as an instrument of comfort, conditioning the way they relate, manage, value and maintain natural resources. From this point of view, we understand the different responses given by different societies to approach the issue of responsible and sustainable environmental management (Chappells, 2005). Goñi (2006) establishes that the conceptual framework discussion of sustainable development should evolve from a formality, to a concept of sustainability applied to society as a whole, not only to specific sectors (e.g., environment, politics, and economics). From this perspective, real sustainable development occurs when society becomes its final beneficiary.

Measures of sustainability considered more strictly "environmentalist", do not constitute a parameter of success on the road to sustainable development, if they do not consider how this development helps exceed the minimum levels of quality of life. The main benefit of measuring performance, relates to improvement in the way participants identify the level of compliance with issues of the indexes in which they participate. Equally important, is that they obtain information regarding their performance, compared with other participants in the measurement exercise. Finally, the data facilitates decision maker's work of designing a public policy framework, to allow the country to address its strategic actions, to improve operation of its structural programs. These advantages have the power to trigger participation and assimilation of the dynamics of performance measurement, as well as to promote and improve the performance of the structural processes, by directing efforts to make better use and management of the Country´s natural resources. Likewise, the country can improve its sustainability and the quality of life of the population. In the classic model of economic development, ecosystems are unending economic goods.

Therefore, the methods used by these models, are not effective for managing most natural resources required for the development of welfare and quality of life. This limitation gives space for emerging alternative economic models. One such model is the so-called "green economy" (Campos, 2011). The green economy concept refers to the use of a set of production models that takes into account integrated, comprehensive environmental and social variables. From this perspective, such an economy produces low carbon emissions, uses resources efficiently and is socially inclusive (UNEP, 2011). The ultimate goal in implementing a green economy model is to improve living conditions of the poor and to reduce social inequality, environmental risks and ecological degradation.

According to Campos (2011), the green economy approach, does not differ from laws governing the market and free trade. It only transcends traditional production method, by means of incorporating social and environmental variables. The concept of "green economy" is not a substitute for the concept of sustainable development, as this is much broader and is a global development model. There is evidence to that sustainable development in not possible without a correct and appropriate economy. In that sense, the green economy becomes a tool to achieve sustainable development and not a synonym or a rival. Green economy recognizes and demonstrates the value of natural capital and seeks to increase it.

METHODOLOGY

The method used in this research was exploratory, longitudinal, non-experimental and descriptive. Information considered for the analysis is from reports published by organizations responsible for the indexes taken into consideration to achieve the objectives established. An analysis of documents was done to determine the level of country performance. The EPI 2008, 2010 and 2012, published by the University of Yale, were reviewed as well as the 2010 report of the Carbon Monitoring for Action (CARMA) and the 2012 International Competitiveness Index (ICI), published by the Mexican Institute for Competitiveness (IMCO)

RESULTS AND DISCUSSION

This section presents the analysis reports reviewed. We summarize key findings regarding performance of México on environmental sustainability. CARMA (Carbon Monitoring for Action), is a database that manages information to monitor carbon dioxide emissions of more than 50,000 energy generation plants and 4,000 companies around the world. They are the first global inventory of environmental emissions by power energy generation which is responsible for over 25% of CO2 emissions worldwide (CARMA, 2012). Table 2 shows selected results of this study, including the performance of Mexico.

Table 2: Select List of Countries That Produce CO2 Emissions from Power Energy Generation

Pos.	COUNTRY	Tons. C02	% Fossil Source	%Hidro Source	%Nuclear Source	% Other Source of RE
1	China	2000: 1,260,000,000	79.61	18.63	1.23	0.18
		2011: 3,120,000,000	82.51	14.51	2.02	0.12
		Future: 5,000,000,000	72.66	19.25	6.68	0.16
2	U. S.	2000: 2,700,000,000	65.88	7.34	20.21	4.14
		2011: 2,820,000,000	68.79	6.57	18.4	4.39
		Future: 3,520,000,000	70.51	5.71	16.86	5.08
3	India	2000: 2,700,000,000	78.39	14.15	2.86	0.79
		2011: 2,820,000,000	76.3	16	2.41	1.6
		Future: 3,520,000,000	77.25	15.33	3.04	0.75
12	Canada	2000: 171,000,000	27.62	52.29	10.17	2.09
		2011: 172,000,000	26.29	49.91	11.95	4.28
		Future: 203,000,000	25.37	49.96	9.62	8.06
16	México	2000: 79,100,000	69.55	19.23	4.58	4.95
		2011: 102,000,000	73.16	13.34	4.66	5.82
		Future: 140,000,000	75.87	12.07	3.66	5.91

Table 2 shows that México is the 16th economy contributing to the emissions of CO2 to the environment. It also shows how in the near future the country will continue generating CO2, given its dependence on fossil sources and the slow growth in the development of renewable sources of energy generation. Source: http://carma.org/

The Environmental Performance Index (EPI), measures the effectiveness of national environmental protection efforts in participating countries. The indicators focus on measurement of outcomes, rather than policy development. The EPI core objectives are Environmental Health, which measures the stressors and their impact on human health; and Ecosystem Vitality, which measures health of the ecosystem and natural resource management. Table 3 shows the EPI components. Table 4 shows the performance of countries on the EPI score. Table 5 shows Mexico's EPI ranking from 2008-2012.

Table 3: Components of the EPI

	CORE OBJECTIVES	POLICY CATEGORIES	PERFORMANCE INDICATORS
EPI	ENVIRONMENTAL HEALTH	Environmental Health	Child Mortality
		Water (Effects on Human Health)	Access to Sanitations Access to Drinking Water
		Air (Effects on Human Health)	Particulate Matter Indoor Air pollution
		Air (Ecosystem Effects)	SO2 per Capita SO2 per GDP
		Water Resources (Ecosystem Effects)	Change in Water Quantity
	ECOSYSTEM VITALITY	Biodiversity and Habitat	Critical Habitat Protection Biome Protection Marine Protected Areas
		Agriculture	Agricultural Subsidies Pesticide Regulation
		Forests	Forest Growing Stock Change in Forest Cover Forest Loss
		Fisheries	Costal Shelf Fishing Pressure Fish Stocks overexploited
		Climate Change and Energy	CO2perCapita CO2 per $GDP CO2 per KWH Renewable Electricity

This table shows variables considered in the generation of the Environmental Protection Index: Environmental Health (EH) and Ecosystem Vitality (EV). The dimensions considered for each variable are 3 for EH and 7 for EV. The last column of the table contains indicators developed to measure each dimension considered in the EPI. Source: Emerson, 2008, 2010, 2012.

Table 4: Country´s Performance in EPI Core Objectives

EPI	CORE OBJECTIVES	SCORE 2008	SCORE 2010	SCORE 2012
MÉXICO	ENVIRONMENTAL HEALTH	91.3	76.63	64.1
	ECOSYSTEM VITALITY	68.3	58.06	42.7

The data in table 4 and 5 shows how Mexico has decreased in the capacity to measure the health of the ecosystem and natural resource management as well as in the overall performance ratio. Source: data from Emerson (2008, 2010, 2012)

Table 5: México´s Ranking in the EPI 2008-2012

Year	Sample*	México´s Rank	EPI Higher Score	EPI Lowest Score	México´s Score
2008	149	47	95.5	39.1	79.8
2010	163	43	93.5	32.1	67.3
2012	132	84	76.7	25.3	

This table explains the performance of Mexico in the EPI. The first column indicates the year of the reports reviewed; the second column indicates the total of countries included in the sample per year; the third column shows how México Ranked; the fourth and fifth column indicates the higher and lowest score in the EPI, respectively and in the last column is the Country´s EPI score. Source: www.epi.yale.edu.

The Mexican Institute for Competitiveness (IMCO), in its International Competitiveness Index, 2011 (ICI), measures the performance of 46 countries from information obtained from the World Bank. The analyses of the ICI are presented disaggregated into ten sub-indexes. The analysis in this paper focuses on results reported by the IMCO in the ICI sub-index named: Sustainable Management of the Environment (SME). According to ICI (2011:294), this sub-index evaluates environmental conservation status, as well as the rate of degradation of key environmental assets and their interaction with production and consumption activities. Therefore, this indicator considers the overall sustainability and the environment prerequisites for growth and long-term sustainable development. The following table summarizes the ICI sub-indexes and highlights the SME, given the interest of this research The IMCO (2011), reports declines in the performance of the Mexican economy. These declines are present in three of its 10 sub-

indexes between 2007 and 2010. These declines are as follows: The Functional and Stable Political System sub-index fell 8%. Sustainable Management of the Environment worsened by 7%. According to Emerson (2012), this decline is due to an increase in ecological tragedies in the country, as there was a greater loss of forest area. At the same time, México continues to increase water consumption and carbon dioxide emissions. These four factors combine to worsen the county´s environmental condition. The Law system reliable and objective, shows a 2% decrease.

CONCLUDING COMMENTS

México´s environmental performance, remains one of the ballasts for its competitiveness. The decline in performance occurred despite the fact the country itself improved in some of the indicators of the sub-index. However, information presented here indicates the country has worsened in ranking as well as score relative to the rest of the world. Even so, over the four year of the reports, it shows more progress lags, implying it is not moving quickly enough to improve its competitiveness in the long term. The ability to be environmentally friendly, includes more than just the presence of skills for action, it also includes the decision to act, beliefs to support actions favorable to conservation, as well as attitudes to promote sustainable development (Baldi and García, 2005). The IMCO (2011), argues México will face the following challenges: reduction of the emissions intensity in CO2; adoption of more sources of clean energy; drastic and radical changes to stop biodiversity loss and better strategies in water management. While the country´s environmental future is not encouraging, it is important to take immediate actions to provoke the structural changes needed to accelerate improvement of the performance.

Table 6: México´s Performance in the Sustainable Management of the Environmental Sub-Index

IMCO	SUBINDEXES	MÉXICO´S SCORE	INDICATORS	MÉXICO´S SCORE
ICI 2011	Stable Macro-Economy	65.1		
	Efficient Market Factors	43.2		
	Precursors World Class Sectors	37.3		
	Sophistication And Innovation In Economic Sectors	17.5		
	Efficient And Effective Governments	55.02		
	Educated And Healthy Inclusive Society	46.14		
	Law System Reliable And Objective	44.32		
	Stable And Functional Political System	54.73		
	Sustainable Management of the Environment	41.2	-Use Of Fertilizers In Agriculture	41.1(Kg. Of Fertilizers Per Ha.)
			-Protected Natural Areas	2,125 (Km2 Por Mm).
			-Aquifer Recharge	1,286 (M3 Per Cápita)
			-Non-Polluting Energy Sources	6.1 %
			-Creating Wealth Without Contamination	
			-Clean Certified Companies	517 (Emisiones De CO2/ PIB)
			-CO2 Emissions	101 (Per Mm PEA)
			-Water Consumption Efficiency	492 (Mm Of Tons.)
			-Change In Forestry Area	.09 (Mm Of M3 Per USD)
			-Ecological Tragedies By Human Intervention	-0.44%
			-Relationship Within Agricultural Production And Water Consumption	8
			-Endangered Species	1.69(M3 Agricultural /Aggregated Agricultural Value)
				304
	Use Of International Relations	36.5		

This table summarizes the ICI sub-indexes and highlights the Sustainable Management of the Environment.Mexico has not been able to improve in four of the 10 sub-index measured by the ICI. (IMCO, 2011)

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MICRO, SMALL AND MEDIUM-SIZED BUSINESSES IN JALISCO: THEIR EVOLUTION, AND STRATEGIC CHALLENGES

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ABSTRACT

The business structure in Jalisco, Mexico is primarily composed of micro, small and medium-sized enterprises (SMEs). Thus, it is fundamentally necessary to understand the dynamics, evolution and above all, the strategic challenges of this sector in order to understand the state's economic performance and the possibilities for future development in Jalisco. As a result, this study analyzes the evolution of the SMEs (known as PyME, in Spanish) in Mexico and Jalisco by using data from the Economic Censuses of 1999, 2004 and 2009 as well as sources such as the Mexican System of Business Information (Sistema de Información Empresarial Mexicano, or SIEM, in Spanish). This analysis includes the distribution of companies by sectors and size. It also makes a comparison between the observed trends at both national and state levels, allowing the identification of significant differences in productivity and the challenges that these small and medium-sized companies face as they seek to modernize and consolidate. We also propose a strategy to boost the performance of SMEs. The following variables are included in this analysis: The number of establishments; Gross fixed capital formation; Gross total production; Gross value added census; Personnel employed; Salary levels; and Hours worked.

JEL: L11, L25, M13

KEYWORDS: SMEs, Performance, Development Strategy

INTRODUCTION

In this paper, we study the relevance of the small and medium-sized business (SMEs) in Mexico. Interest in the study of the SMEs is a relatively recent phenomenon, despite the importance of them, for example, in Mexican economy, represent about 99.5% of economic units and generate 66.2% of jobs. Actually, the first scientific publication dedicated to this topic appeared in 1952. However, it was not until the 1970s that the subject began to be included into general economic theory with some autonomy because of experiences like those associated with the Bolton Commission (1971), referenced in Julien [1998]. There was a growing interest in this topic, which clearly manifested itself in the 1980s. This interest was driven by the realization that these businesses were essential to job creation, economic innovation, the development of entrepreneurs and the entrepreneurial spirit, and long-term economic growth [Storey, 1994; Burns, 1996; Julien, 1998]. Nonetheless, it has been widely observed that the success of the majority of these companies comes from their own survival.

In spite of the recognition of the limits and fragility of individual companies within the grouping of SMEs, there continues to be a consensus regarding this sector's economic and social importance. Actually, these types of businesses are the only employment and economic renovation source in many regions [Julien, 1998]. Furthermore, these businesses' vitality, adaptability and flexibility have played a fundamental role in the development of the knowledge and information economy [Lee, 2001]. Thus, understanding SMEs' dynamics in a determined time and space is the key to comprehending how they work, their performance and their development possibilities within a region.

This document includes an analysis of the distribution of companies by sectors and size. It also presents a comparison between the observed trends at both national and state levels, allowing the identification of significant differences in productivity and the challenges that these small and medium-sized companies face as they seek to modernize and consolidate. Additional, we construct economic and social performance indicators of companies by size, comparing data from three economic censuses.

In the following section, we present the theoretical frame of this work, which includes a brief description of the SMEs as an investigation object, including some statistical data. Later, in the empirical section, we will describe the methodology used and we will discuss the reached results. Finally, the conclusions of the investigation appear.

LITERATURE REVIEW

In order to understand small and medium-sized businesses' productivity, it first necessary to ask exactly what type of businesses are they and what are the characteristics that define them. In many environments, the SMEs are considered like young company in the process of growing until it reaches optimal scale, understood in conventional economic thought, as the level where average long-term costs are minimal and the marginal production costs of company inputs is greater or equal to zero. The idea of optimal scale is normally associated with the status of the Large Corporation (LC).

In this perspective, companies are perceived to be black boxes. It is assumed that the basic difference between a small and medium-sized company and an LC is its size and scale. Using this logic, both small and large companies are viewed as similar organizations, which can be equally explained, by the same theories and respond similarly to economic incentives. However, this is not true. In many cases, the small and medium-sized business cannot or does not want to become a LC. Some reasons for this decision may include the life-style preferences of the owners and market characteristics, especially in a niche market dedicated to luxury and exclusivity. Generally, small business behavior is driven by diverse factors that determine its response to environmental incentives. These factors are clearly distinct from those that affect LCs and they affect small businesses differently and with varying impact. Since the small business is actually quite different from the LC, it is necessary to focus on their differences in order to evaluate their impact on small and medium-sized business competitive behavior. This is a complex task because this sector is anything but homogenous; each business is unique and has special characteristics. Thus, it is practically impossible to give a unique definition or to establish a criteria for "smallness" that is adequate for the entire sector [Storey, 1994 and Burns, 1996].

In spite of these limitations, it is necessary to define which organizations can be considered SMEs. Keeping this in mind, researchers from diverse disciplines as well as political and economic organizations have proposed criteria and typologies to define which companies belong in the SMEs rubric to facilitate comparisons and analyses with a common base.

The Bolton Committee created one of the seminal proposals for the development of this study area. This typology uses economic criteria and statistics to define a small and medium-sized business. The economic criteria established to define small and medium-sized business are: 1. the business possesses a relatively small market share; 2. the owners are at least partially actively involved shareholders; 3. business is conducted in a personalized manner and lacks a formal business structure and 4. It is independent in the sense that it is not part of a large company.

The criteria used by the Bolton Committee refer to an organization lacking market power and whose behavior is similar to that of the productive units described in the perfect competition model. Thus, SMEs is incapable of influencing equilibrium prices and more generally, its environment. Nonetheless, these criteria fail to take into account the fact that the small and medium-sized business often exist in niche markets where they can take advantage of a monopolistic situation to influence market prices [Storey, 1994: 9 and Burns, 1996: 3].

The second criterion established by the Bolton Committee is statistical and it defines the size of the organization using diverse quantitative indicators such as return volumes, or number of employees according to the company's business sector. These criteria were created with the intention of facilitating the comparison of SMEs characteristics in distinct countries and regions. However, the fact that there are a small number of employees does not mean that these businesses are a reduced-scale version of the LC. As mentioned above, small businesses have different characteristics and may respond distinctly to incentives than the LC. These differences are related to the level of uncertainty in which a small business operates and its ability to change and innovate [Fong, 2007]. Yet, these characteristics are also affected by the business sector in which they operate and above all, the technology that is utilized.

In light of this situation, it is clear that no individual criterion in and of itself is capable of completely reflecting the complexity of the small and medium-sized business. However, among the diverse definitions explaining the small and medium-sized company, some factors are considered more representative and adequate than others are. Among these criteria, the most commonly used variable is the number of employees. This leads to the definition that was officially used to describe the small and medium-sized company in Mexico until June 2009, which is illustrated in Table 1.

Table 1: Classification of Businesses by Number of Employees

Size	Industry	Commerce	Sector Service
Micro business	0-10	0-10	0-10
Small business	11-50	11-30	11-50
Medium-sized business	51-250	31-100	51-100
Large company	250 or more	101 or more	101 or more

This table shows the classification criteria of the companies used in Mexico until June 2009, which took into account the number of employees and the industry in which firms were located. Source: Sistema de Información Empresarial Mexicano (SIEM), December 2007.

While this definition is simple and facilitates the classification of companies when there is a lack of other information, it is currently viewed as obsolete. It most likely does not reflect the impact associated with the development of new technologies, especially information and communications. These new technologies have allowed the optimal scale of companies to be reduced and for relatively small companies to have similar productivity levels to that of large ones. As a result, the classification of companies based solely on the number of employees was abandoned and sales revenue was added as a new, additional indicator at the end of June 2009, which is summarized in Table 2.

Table 2: Company Stratification in Mexico (from June 2009)

Size	Sector	Range of number of workers	Range of annual sales amount (MOP= Millions of Pesos)	Maximum Combined Limit*
Micro	All	To 10	To $4	4.6
Small	Commerce	From 11 to 30	From $4.01 to $100	93
	Industry and Services	From 11 to 50	From $4.01 to $100	95
Medium	Commerce	From 31 to 100	From $100.01 to $250	235
	Services	From 51 to 100		
	Industry	From 51 to 250	From $100.01 to $250	250

*Maximum Combined Limit = (Workers) X 10% + (Annual Sales) X 90%.

This table shows the classification criteria of the companies used in Mexico from June 2009 to the present, which in addition to considering the number of employees and the industry in which firms are located, includes its annual sales amount. Source: Diario Oficial de la Federación (Official Diary of the Federation) June 2009.

Here, the size of a company is determined by the score obtained using the following formula: Company Score = (Number of Workers) X 10% + (Annual Sales Revenue) X 90%, which should be less or equal to the Maximum Combined Score for its category. This new definition of the small and medium-sized company means that there are changes in the databases defining and registering their behavior. This will surely allow more complex studies to be carried out, even without differentiating independent companies

from business conglomerates. This is true in spite of the fact that these two types of companies have significantly different behaviors and possibilities. However, due to the period that this study analyzes, the data bases used still correspond to the previous classification.

According to the Economic Census data of 1999, 2004 and 2009 [INEGI, 2012], as can be seen in Table 3, a large majority of the businesses in Mexico were made up of micro, small and medium-sized companies (MiPyME, in Spanish) -in this study, the grouping of SMEs (PyME, in Spanish) is viewed as a relatively small subgroup of the one formed by micro, small and medium sized ones. This is because there are considerable differences between both groups in spite of the fact that they have common traits-. For example, in 1999, 99.81% of all companies in Mexico fell within this category, while in 2004 and 2009; his number remained practically unchanged at 99.53% and 99.57%, respectively. Similarly, these companies were responsible for the majority of employment generation in Mexico. Accordingly, 72% of workers were employed by SMEs in 1999, 63.9% in 2004, and 66.2% in 2009. The Mexican business structure can be seen in detail in Table 3. Here, a comparison is made using the number of companies by size and job creation. This information shows that the average growth during the periods of analysis was 15.6%, while employment growth was an average of 21.7%.

Table 3: Number of Companies by Size and Job Creation in Mexico and Jalisco, 1999-2009

Size	**Economic Units**			**Employment**		
	1999	**2004**	**2009**	**1999**	**2004**	**2009**
			Mexico			
Micro	2,672,520	2,853,291	3,536,178	5,315,309	6,228,784	8,414,444
Small	95,669	112,116	143,273	1,939,169	2,255,493	2,818,995
Medium	26,923	25,490	28,576	2,534,339	1,905,706	2,090,330
Large	5,393	14,139	15,982	3,807,944	5,869,111	6,793,065
Total	2,800,505	3,005,036	3,724,009	13,596,761	16,259,094	20,116,834
			Jalisco			
Micro	190,297	201,689	248,930	421,969	497,936	649,644
Small	7,996	9,856	12,109	163,575	198,719	235,879
Medium	1,942	2,091	2,227	182,679	157,028	165,682
Large	157	915	1,097	232,384	365,894	437,940
Total	200,392	214,551	264,363	1,000,607	1,219,577	1,489,145
Jalisco as a Percentage of the National Total						
Micro	7.10%	7.10%	7.00%	7.90%	8.00%	7.70%
Small	8.40%	8.80%	8.50%	8.40%	8.80%	8.40%
Medium	7.20%	8.20%	7.80%	7.20%	8.20%	7.90%
Large	2.90%	6.50%	6.90%	6.10%	6.20%	6.40%
Total	7.20%	7.10%	7.10%	7.40%	7.50%	7.40%

This table summarizes the composition of Mexico and Jalisco business, distinguishing between the number of economic units and employment generation according to the size of companies. Source: Self-elaboration using Economic Census data 1999, 2004 and 2009. INEGI [2012].

In the case of Jalisco, business composition mirrors the national one. In 1999, micro, small and medium-sized companies represented 99.92% of the economic businesses and generated 70% of the employment in the state. In 2004, those percentages were 99.57% and 70% while in 2009; they were 99.59% and 70.6%, respectively. By analyzing the business structure in Jalisco, (Table 3), one can conclude that the structure is a reflection of the national situation including the fact that the rate of growth is similar since economic units were 15.1% while employment grew an average of 22%.

In light of the parallel movement of the national and Jalisco indicators, it is important to analyze the proportion of the total national economy that Jalisco represents as shown above: the number of companies and employment generated. The last section of the table above presents this information and highlights the fact that the total number of companies as a percentage of the national total is 7.1% and the percentage of Jaliscan employment generation is 7.4%. These percentages have been relatively stable over time and for each of the business classifications, except for the case of large corporations. The 1999 to 2004 census data show a significant jump in the in the number of economic units, increasing by 3.6%. Another constant is the concentration of small and medium-size companies having increased participation in Jalisco in terms

of the number of companies as well as employment generation. In both cases, there was an average participation of 8.5%.

By analyzing the information in Table 4 from the Mexican Business Information System [SIEM, 2012], it can be observed that the majority of businesses nationally are located in the retail sector (68.6% of the total). These are the most common type of micro businesses (71%). In the case of micro, small, and medium-sized companies (MiPyME in Spanish), 68.8% belong to the retail sector, 24.3% are part of the service sector and only 6.9% belong to the industrial sector.

Table 4: Companies by Economic Sector and Size in Mexico and Jalisco, 2012

Size	**Industry**	**Retail**	**Services**	**Total**
Mexico				
Micro	37,418	477,413	155,402	670,233
Small	9,055	13,528	17,599	40,182
Medium	3,282	4,200	1,845	9,327
Large	1,419	1,459	1,648	4,526
Total	51,174	496,600	176,494	724,268
Jalisco				
Micro	3,768	55,000	22,391	81,159
Small	1,090	1,963	2,479	5,532
Medium	310	525	202	1,037
Large	87	136	195	418
Total	5,255	57,624	25,267	88,146

This table shows the division of companies, both in Mexico and Jalisco by economic sector and by size. Source: Self-elaboration using data from SIEM [2012].

The statistics in Jalisco are comparable to the national ones. Here, the majority of companies are part of the retail sector (65.4%), while 28.7% belong to the service sector and only 6% are located in the industrial one. Micro, small and medium-sized companies in Jalisco are 65.5% retail, 28.6% services and 5.9% industrial.

If the proportional distribution of companies at both the national and state of Jalisco levels are compared by size and economic sector, it is clear that the business sectors are analogous to each other. In other words, the economy of Jalisco is a good representation of national economic behavior.

Although "the economy of Jalisco," is frequently referred to in this article, it is important to keep in mind that according to the 2009 Economic Census [INEGI, 2012], 55.6% of companies and 66.8% of employees are located within the four municipalities of the Guadalajara Metropolitan Zone. These municipalities are Guadalajara, Zapopan, Tlaquepaque and Tonala. This is a clear indicator of the importance of Guadalajara Metropolitan Zone to the state's economy.

The distribution of distinct industries in Jalisco is shown below according to area of activity. Using data from the Jalisco State Council of Science and Technology [COECYTJAL, 2010], the most important industrial sectors in the state are shown in Table 5. Here, company size, importance, and their destination markets divide them.

Table 5: Jalisco Business Composition

	Company Size				Destination Market Composition			
	Micro	**Small**	**Medium**	**Large**	**International**	**Guadalajara Metropolitan Zone**	**National**	**Nearby States**
Auto parts	20.0%	40.0%	20.0%	20.0%	27.5%	13.8%	38.8%	20.0%
Capital Goods	14.3%	57.1%	0.0%	28.6%	22.9%	13.0%	47.9%	16.3%
Shoe Industry	18.2%	81.8%	0.0%	0.0%	14.1%	22.6%	41.1%	22.2%
Ceramic Industry	40.0%	40.0%	20.0%	0.0%	0.0%	63.8%	2.5%	33.8%
Clothing	22.2%	55.6%	22.2%	0.0%	17.9%	18.7%	25.9%	37.5%
Construction	40.0%	40.0%	20.0%	0.0%	0.0%	63.8%	2.5%	33.8%
Leather	50.0%	33.3%	16.7%	0.0%	2.9%	70.0%	22.1%	5.0%
Candies/chocolates	14.3%	0.0%	28.6%	57.1%	15.8%	6.7%	65.0%	12.5%
Electronics	42.9%	0.0%	0.0%	57.1%	43.0%	13.8%	32.0%	11.3%
Welding and Machinery	33.3%	66.7%	0.0%	0.0%	15.0%	40.0%	43.8%	1.3%
Rubber and Latex	23.1%	69.2%	0.0%	7.7%	2.7%	46.4%	31.9%	19.0%
Jewelry	81.8%	9.1%	9.1%	0.0%	1.2%	35.6%	49.0%	14.1%
Corn	40.0%	20.0%	0.0%	40.0%	5.4%	60.0%	16.6%	18.0%
Furniture	40.0%	40.0%	20.0%	0.0%	0.0%	63.8%	2.5%	33.8%
Plastics	33.3%	33.3%	0.0%	33.3%	1.7%	17.7%	70.0%	10.7%
Salsas	77.8%	22.2%	0.0%	0.0%	1.4%	38.4%	7.0%	53.1%
Software	40.0%	26.7%	13.3%	20.0%	19.6%	30.9%	39.1%	10.4%
Tequila	0.0%	75.0%	0.0%	25.0%	21.5%	30.0%	14.8%	33.8%
Textile	0.0%	100.0%	0.0%	0.0%	0.0%	36.7%	38.3%	25.0%
Average	33.22%	42.63%	8.94%	15.20%	11.19%	36.09%	31.09%	21.66%

This table shows the division of Jalisco companies among the main branches of industry, differentiating its size and target markets for their products. Source: Self-elaboration using data from COECYTJAL [2010].

The table shows that the electronics industry dedicates the greatest percentage of its production to the international market. While the majority of businesses in this field are large companies, it is interesting to note that close to 43% are micro businesses. The auto part, capital goods, tequila and software industries are also active in foreign markets. In contrast, international market participation is insignificant or practically null in other industries. These are the textile, furniture and construction industries. Overall, the majority of the industries shown in Table 5 have limited participation in foreign markets. This is demonstrated by the fact that only 11.19% of the total sales of these industries are to foreign markets.

Large companies dominate two of the industries: electronics, and candy and chocolate. They are followed by the corn industry although LCs are not a majority. On the other hand, the shoe, construction, jewelry and furniture industries have almost no large companies. One can observe the percentages of the most emblematic of these sectors within the total number of exportation companies in Jalisco. This allows the reader to observe the concentration levels of exportation companies in Jaliscan industries. This information is presented in Table 6.

Table 6: Percentage of Exportation Companies in the Guadalajara Metropolitan Zone by Industry

Industry	**Percentage of Total Companies***
Tequila	4.6%
Shoe	4.9%
Plastics	6.1%
Jewelry	7.6%
Software	2.3%
Electronics	4.9%
Auto parts	5.3%
Accumulated	**35.7%**

*This table shows the industries in which are concentrated the majority of exporting companies of Jalisco. *The remaining percentage of exporting companies can be found in the service sector or in areas that are highly atomized. Source: Self-elaboration using data from SIEM, consulted May 12, 2010.*

As can be seen, the context of SMEs in Jalisco is complex and challenging, however, within the sector of micro, small and medium-sized businesses, there is a subgroup of companies that have the potential to grow and be highly successful. These companies could obtain a competitive advantage allowing them to achieve

above-average results. Gazelle companies [Feindt et al, 2002; Hernández et al, 1999 and Julien et al, 2001], technology companies [Barranco, 2001; Fariñas et al, 2006; González, 2000-2003; León, 2000 and Simón, 2003], and *born global* companies [Rialp et al, 2005] are three types of businesses that have been high performing and which we will discuss later.

DATA AND METHODOLOGY

It is necessary to analyze the national and Jaliscan economic and social impact indicators for this sector in order to deepen the understanding of the dynamics, evolution, and above all, strategic challenges that these businesses face. The national data help to give a reference point for similar situations (violence, epidemics, etc.) which give a better context in which to evaluate the relative performance of the Jaliscan small and medium-sized business sector.

In order to analyze the performance of small and medium-sized businesses, it was decided to utilize the methodology proposed by De la O et al [2007]. This methodology is carried up by the construction of indexes and allows diverse dimensions within a group of related variables to be isolated. This method has been utilized in diverse studies recognized at the level of national competitive analyses. It has also been used to calculate the Municipal Marginalization Index of the National Population Council (CONAPO).

This technique was developed using two components that are identified analytically as *economic participation* and *social participation.* One reason for this choice of methodology is that it permits the results to be compared. This is especially relevant because De la O's work et al [2007] was done during the period of 1998-2003. In addition, it is useful to put small and medium-sized companies into separate categories because there are significant differences between the two. Furthermore, it was necessary to substitute the variable of personnel employed in relation to the economically active population used in the above-mentioned work with hours worked. This was a direct result of the characteristics of the 2009 Economic Census.

The term *economic participation* refers to differences in the economic structure due to size, wealth creation and growth potential. Note that the presented variables also correspond to the available statistical information all the measurement units utilized. The selected variables for *economic participation* are: 1. The number of establishments; 2. Gross fixed capital formation; 3. Gross total production; 4. Gross value added census.

The variables for *social participation* include job creation, general employment opportunities, salaries and wages. For this reason, the following variables were selected: 5. Personnel employed; 6. Salaries and Wages; 7. Hours worked.

Based on this model, the following index for each variable can be applied:

$$\Sigma(x-\mu)^2 \tag{1}$$

$$\sigma^2 = \Sigma(x-\mu)^2/N \tag{2}$$

$$\mathrm{Z} = (x-\mu)/\sigma \tag{3}$$

Where:

$x =$ The percentage of observed units by each type of company in relation to the total.

$\mu =$ The average of the total observations of x.
$Z =$ Participation Index for each variable.
The sum of the indexes for each variable is used to create a general economic and social index.

The results of the economic participation index and the social participation index are shown below in Table 7 and Table 8, respectively:

Table 7: Economic Participation Index in Mexico and Jalisco (1999-2009)

			Micro		Small		Medium		Large	
			%	Index	%	Index	%	Index	%	Index
	Mexico	Establishments	95.38	1.50	3.52	-0.71	0.72	-0.781	0.38	-0.79
		Gross Fixed Capital Formation	6.84	-0.79	7.42	-0.77	12.45	-0.59	73.30	1.56
		Gross Total Production	10.06	-0.77	9.13	-0.81	15.24	-0.55	65.57	1.57
		Gross Value-Added Census	13.69	-0.72	11.47	-0.83	15.61	-0.62	59.23	1.55
		Participation Index		**-0.77**		**-3.12**		**-2.55**		**3.89**
2009	Jalisco	Establishments	94.5	1.73	4.29	-0.52	0.80	-0.60	0.36	-0.61
		Gross Fixed Capital Formation	9.67	-0.67	9.63	-0.67	15.95	-0.39	64.01	1.72
		Gross Total Production	12.98	-0.71	12.32	-0.75	20.80	-0.24	53.50	1.70
		Gross Value-Added Census	16.30	-0.58	13.87	-0.748	19.20	-0.39	50.04	1.72
		Participation Index		**-0.23**		**-2.68**		**-1.62**		**4.52**
	Mexico	Establishments	95.63	1.50	3.241	-0.72	0.76	-0.78	0.37	-0.79
		Gross Fixed Capital Formation	13.77	-0.72	11.88	-0.82	14.81	-0.67	59.54	1.54
		Gross Total Production	13.77	-0.71	10.82	-0.86	16.46	-0.57	58.95	1.56
		Gross Value-Added Census	18.93	-0.55	12.47	-0.95	15.77	-0.75	52.84	1.50
		Participation Index		**-0.48**		**-3.33**		**-2.77**		**3.81**
2004	Jalisco	Establishments	94.50	1.50	4.22	-0.70	0.93	-0.78	0.33	-0.80
		Gross Fixed Capital Formation	13.30	-0.80	13.80	-0.77	17.47	-0.56	55.41	1.57
		Gross Total Production	15.10	-0.76	13.91	-0.84	19.81	-0.45	51.15	1.59
		Gross Value-Added Census	21.90	-0.50	16.74	-0.97	18.25	-0.83	43.14	1.46
		Participation Index		**-0.55**		**-3.27**		**-2.63**		**3.82**
	Mexico	Establishments	95.91	1.51	3.08	-0.72	0.71	-0.78	0.31	-0.79
		Gross Fixed Capital Formation	16.33	-0.55	7.14	-0.99	16.48	-0.55	60.05	1.55
		Gross Total Production	22.75	-0.33	10.89	-1.12	16.74	-0.73	49.62	1.45
		Gross Value-Added Census	26.16	-0.14	12.72	-1.18	15.95	-0.93	45.17	1.32
		Participation Index		**0.48**		**-4.01**		**-2.98**		**3.53**
1999	Jalisco	Establishments	95.19	1.50	3.77	-0.71	0.75	-0.78	0.20	-0.79
		Gross Fixed Capital Formation	23.75	-0.27	8.55	-1.15	15.16	-0.77	52.55	1.42
		Gross Total Production	33.43	0.54	11.57	-1.45	17.65	-0.89	37.36	0.90
		Gross Value-Added Census	29.59	0.22	12.28	-1.39	18.43	-0.82	39.70	1.17
		Participation Index		**2.01**		**-4.70**		**-3.26**		**2.69**

Source: Self-elaboration. This table shows the estimated economic participation index by company size, both for Mexico to Jalisco, based on the variables described.

These indicators prove that the national and Jaliscan impact of micro, small, and medium-sized companies was reduced during the analysis period. Conversely, large company participation and impact increased even while their actual number was reduced. This trend can clearly be seen during the period of 2003-2009. The Participation Index totals for Jalisco considerably surpassed the nation ones.

There was a similar trend for social impact: SMES lost their impact in the face of large and micro ones. Nevertheless, it is important to highlight the fact that micro businesses increased their impact due to personnel employed and hours worked but not in terms of salaries and wages. This can be observed in the fact that there was no improvement in the marginal labor productivity rate. This allows one to assume that

this growth was associated with the need to develop self-employment as opposed to an increase in business opportunities.

Table 8: Social Participation Index in Mexico and Jalisco, 1999-2009

			Micro		Small		Medium		Large	
			%	Index	%	Index	%	Index	%	Index
		Personnel Employed	45.07	1.65	15.01	-0.82	15.50	-0.78	24.42	-0.05
		Salaries and Wages	11.72	-0.82	14.37	-0.66	21.49	-0.22	52.42	1.69
	Mexico	Hours Worked	25.30	0.05	20.40	-0.81	20.10	-0.86	34.21	1.62
2009		Participation Index		**0.88**		**-2.28**		**-1.86**		**3.26**
		Personnel Employed	45.96	1.70	16.81	-0.66	15.30	-0.79	21.93	-0.25
		Salaries and Wages	15.93	-0.93	19.42	-0.57	23.43	-0.16	41.22	1.67
	Jalisco	Hours Worked	27.85	0.93	23.90	-0.36	20.47	-1.48	27.78	0.91
		Participation Index		**1.69**		**-1.60**		**-2.42**		**2.33**
		Personnel Employed	41.58	1.58	15.12	-0.94	16.78	-0.78	26.53	0.15
		Salaries and Wages	10.91	-0.87	14.50	-0.65	22.38	-0.16	52.22	1.68
	Mexico	Hours Worked	44.64	1.65	15.02	-0.84	15.89	-0.76	24.46	-0.05
2004		Participation Index		**2.36**		**-2.42**		**-1.71**		**1.77**
		Personnel Employed	43.27	1.71	17.73	-0.68	17.25	-0.73	21.75	-0.30
		Salaries and Wages	15.12	-1.20	20.39	-0.56	27.28	0.28	37.21	1.48
	Jalisco	Hours Worked	45.59	1.72	17.21	-0.65	16.47	-0.71	20.74	-0.36
		Participation Index		**2.23**		**-1.89**		**-1.16**		**0.82**
		Personnel Employed	41.94	1.60	15.34	-0.91	16.66	-0.79	26.06	0.10
		Salaries and Wages	11.08	-0.91	15.03	-0.65	23.48	-0.10	50.42	1.66
	Mexico	Hours Worked	42.13	1.60	15.26	-0.91	16.77	-0.77	25.84	0.08
1999		Participation Index		**2.29**		**-2.47**		**-1.66**		**1.84**
		Personnel Employed	44.61	1.71	17.63	-0.64	16.51	-0.74	21.26	-0.33
		Salary and Wages	15.11	-1.22	19.52	-0.68	29.73	0.58	35.66	1.31
	Jalisco	Hours Worked	44.08	1.71	17.30	-0.69	16.92	-0.72	21.70	-0.30
		Participation Index		**2.20**		**-2.01**		**-0.88**		**0.69**

Source: Self-elaboration. This table shows the estimated social participation index by company size, both for Mexico to Jalisco, based on the variables described.

The economic and social impact of SMEs has been slightly higher in Jalisco than nationally. Conversely, large companies have also had less of an impact in Jalisco that at the national level. However, this has not led to increasing productivity for SMEs. Actually, the number of SMEs in the Jaliscan industrial sector is lower than the national average and only 11.19% of this sector's sales are to international markets. This demonstrates a lack of support for the factors that could strengthen industrial SMEs

SMEs industrial behavior is an important economic performance indicator in the region because this is the sector, which most clearly demonstrates and receives public administration support, as well as assistance from other organizations like universities and business associations. The sector is driven by social and political pushes towards increased performance, innovation, exports, etc. This is because SMEs industrial are where the one primarily sees the knowledge and innovations developed by public and private research put into practice. Furthermore, unlike large corporations, SMEs are usually composed of local capital; respond to regional incentives and are unaffected by multinational corporate decisions. SMEs are also more regionally based. In contrast, micro businesses are usually focused on the self-employment market.

RESULTS

The above-mentioned description of micro, small, and medium-sized businesses in Jalisco demonstrates the diverse challenges and opportunities associated with improving this sector's performance. The first of these challenges is how to provide development and support to a sector with such a high level of heterogeneity. It is necessary to design differentiated strategies for the diverse typologies of this sector in order to achieve the distinct desired objectives.

This analysis proposes that the policies to promote micro, small and medium-sized companies should have at least two major components. The first component is to provide support and attention to those companies that have self-employment and subsistence as its principal objective. This description applies to the majority of micro and small businesses and they can be considered as "life style" companies, as defined by Pirnay et al [2003], since their behavior is more reflective of the owner's choices than the intention to compete in the marketplace. There are multiple examples of how the business owners' lifestyles affect their companies' behavior. One instance would be in their level of proactive behaviors. Owners may actually prefer to maintain a lower level of activity because it is more compatible with their lifestyles. It could also be the case that they lack the necessary skills to carry out growth strategies or improve their market share.

There is a significant opportunity to improve "life style" companies' productivity through training for owners, entrepreneurs, and their employees. These companies often need to formalize and consolidate their businesses through the development and application of basic business competencies. Being able to learn and develop these, basic skills would benefit them more than using innovative technologies or promoting products for export. Many of the standard programs catering to micro, small and medium-sized businesses are not viable for many small business owners due to their lack of basic business and managerial skills. This situation leaves many small business owners unable to absorb available information, innovative technologies and even to utilize financial support from the public sector.

In order to correct this situation, it is essential that a company exist in formal terms. This needs to occur through the least bureaucratic and most inexpensive registration process possible. The most desirable situation would be that business owners (when he/she is the only person who will tend to the business throughout its existence) have basic skills in business management. This would allow them to make their project/business a viable one in the medium and long term, even if the company's nature and performance does not allow it to transcend self-employment and micro business status.

One of the keys to improving micro, small and medium-sized businesses' productivity would be to have policies and business skill development programs that reach out to entrepreneurs and business owners in the informal sector as well as those sectors that are underdeveloped in both urban and rural areas. The goal would be to improve employment creation and strengthen the basic skills that allow companies to achieve better economic performance. Nevertheless, this strategy faces diverse problems. One problem would be how to reach out to agents who often do not consider themselves as business owners, including professionals like architects, lawyers, scientists and researchers who have the potential to begin and manage projects using the latest technology as well as humble street venders, which means that programs must be flexible and capable of adjusting to very idiosyncratic situations. They frequently do not have time for training or they lack basic educational skills to begin with. They are often disperse and hard to reach, both in regional terms and in their specific work area. However, if we want to improve the performance of micro, small and medium-sized businesses, it is essential that their owners at least have the basic skills to manage their companies and projects.

The second component of policies to promote small businesses needs to focus on companies with high performance potential. Currently, the vast majority of micro, small and medium-sized businesses have little

interest in investing in "impractical" areas like basic scientific and technological research or internationalization. However, these areas are precisely where a robust economic development for the future of Jalisco can be built. This is especially true if they are accompanied by mechanisms that allow linkages to form a chain beginning with the development of new knowledge and ending with its utilization to meet market demands.

Within the sector of micro, small and medium-sized businesses, there is a subgroup of companies that have the potential to grow and be highly successful. These companies could obtain a competitive advantage allowing them to achieve above-average results. If they could reach this goal, they would have the ability to achieve a variety of objectives such as growth, increased market share, innovation, internationalization, etc. In analyses of the entire sector of micro, small and medium-sized businesses, those companies with a competitive advantage tend to go unnoticed because they are relatively rare. There is a tendency for these types of companies to be considered as having limited economic viability. Nonetheless, large corporations began as micro businesses. Actually, scientific and technological developments have reduced the optimal production scale in many sectors and increasingly smaller companies have been able to have efficiency levels similar to those of large corporations.

The more companies develop competitive advantages, the better the performance of the entire small business sector will be. Overall, economic performance would improve via knowledge transfers and competitive imitation, increasing the average performance throughout the whole sector. Thus, it is necessary to understand the mechanisms that lead to the creation of competitive advantages for the small business sector. The problem with focusing on the competitive advantage concept is that it often emphasizes exceptional cases and not common ones. This difficulty is compounded by the fact that the small business sector is highly heterogeneous. General analyses are often inefficient and it is necessary to establish more homogenous subgroups within this sector. These groupings allow for a more precise analysis of factors related to economic performance and competitive advantages, thus permitting the introduction of specific and efficient business promotion strategies.

By specifically focusing on homogenous groups, adequate programs can be established, leading to the founding of companies with characteristics allowing them to achieve success. This is one of the key factors to developing a strategy to improve the economic performance of SMEs sector. This could increase the number of large corporations (keep in mind that currently, they are only 5.42% of companies in Jalisco) as well as assist micro businesses to achieve small business status by facilitating their creation and formalization.

In any case, the creation a company is a complex process. To create successful businesses, it is not enough to reduce paperwork, for example. Actually, one of the facts that stand out in various studies of distinct business development initiatives [Serarols et al*,* 2006] is that the phenomenon of business creation in and of itself is insufficient to achieve economic growth and development objectives. Rather, it is essential that newly created companies achieve the necessary efficiency rates to be successful in the marketplace after the period in which they receive fiscal subsidies ends.

Here, the fundamental question shifts from how to assist with the creation of more businesses to how to obtain the creation of more businesses that have the necessary characteristics to be successful in the market. To resolve this question, small business sector research focused on entrepreneurs and business creation (*entrepreneurship*) as well as economic behavior factors has identified certain typologies whose performance is above average. This research has demonstrated that initiatives focused on business creation should abandon general approaches and shift their attention to the creation of businesses that fall within these typologies, since they have more potential for success.

Gazelle companies[Feindt et al, 2002; Hernández et al, 1999 and Julien et al, 2001], technology companies [Barranco, 2001; Fariñas et al, 2006; González, 2000-2003; León, 2000 and Simón, 2003], and *born global* companies [Rialp et al, 2005] are three types of businesses that have been high performing. While none of these categories were specifically constructed to analyze small and medium-sized businesses, everyone refers to them. These categories are frequently used to describe companies founding and initial development, even if the organization is no longer part of the small business sector at the time of the analysis. Researchers have identified these specific characteristics as the ones that led to company growth and consolidation.

Gazelle companies are able to achieve above-average growth in a sustained manner without sacrificing profitability. Obviously, there are gazelle companies in the SMEs sector. It is often easier and more essential for young small companies to grow than for large consolidated ones. Nevertheless, researchers have identified gazelle companies in mature sectors using traditional technologies. This allows one to suppose that a company's growth potential not only lies in external factors, but can also be found within the companies themselves.

Technology companies often have competitive advantages associated with their founding, since they are frequently created to exploit new and innovative technologies [Capaldo et al, 2003; Gisbert, 2005; Solá et al, 2006; Sánchez, 2005 and Scott, 2006], These ideas and products are usually developed and created by universities and other research centers. By taking advantage of their competitive advantages, these start-ups often are able to drive their own growth, consolidation and internationalization. At the same time, they benefit society by providing consumers with products and services that offer advanced solutions to their needs. The relationship between technology companies and cutting-edge research has been strong from the beginning and many of these businesses are university *spin-offs* [Agrawal, 2001 and 2006; Boccardelli et al, 2006; European Commission, 2002; Fong, 2010; Gübelli et al, 2005; Heirman et al, 2005; Serarols et al, 2006; Rubiralta, 2004; Vohora et al, 2003 and Walter et al, 2006].

This has two important implications. First, universities repay society for the resources they receive through research results that lead to the development of new companies. Aside from meeting consumer demand, these companies create quality jobs. Second, economic promotion public policies, through the creation of spin-off university companies, lead to the absorption of scientific-technological knowledge and innovation into the productive apparatus. This contributes to general increases in modernization and efficiency.

Born global companies [Rialp et al, 2005] are those that have manifested a clear international vocation since their beginning. They entered international markets without going through the stages of development that are traditionally expected for SMEs. The fact that born global companies exist is a result of growing globalization allowing increasingly smaller and smaller companies to take advantages of open markets and new technologies to internationalize. By intensely utilizing these advantages, they benefit from a lack of large physical investments and are not limited by local markets.

These three types of companies actually coincide with each other in terms of resources and strategic skills. It is easy to imagine companies that can be simultaneously considered technological, with high growth potential and are born global. However, they are usually treated as separate categories in analytical terms because they tend to emphasize different aspects such as growth rates, R and D investments and international commitments. In addition, many companies that fall within all three categories often decide to focus on one of these areas more than others do. Decision-makers and entrepreneurs are not homogenous and do not respond in a standardized manner to economic and institutional incentives. While it is necessary to analyze economic and institutional conditions in order to understand and organize patterns of competitive business creation, it is not enough. It is necessary to focus on entrepreneurs' motivational factors and responses to incentives as well.

The need for public policies to have this double focus regarding business creation has been recognized by distinct international organizations like the Inter-American Development bank (IAD). In their report *Entrepreneur Development: Latin America and the International Experience,* they authors point out that "The role of government is to facilitate the development of the private sector. Through public policy, governments need to create a formal business environment so that entrepreneurs can develop their businesses and receive its benefits. In order for these policies to be effective, they should be based on precise information about problems and the manner in which entrepreneurs operate" [Kantis, 2004: 5].

In Mexico and Jalisco, public policies have recognized the need to accelerate economic growth. To achieve this, business creation must play an important role in improving efficiency. Of course, there have been clear efforts on the part of diverse administrations and institutions to facilitate innovation and the creation of competitive companies, efforts that have resulted in innovation measures, the creation of technology incubators and parks, the development of academic programs aimed at entrepreneurs, etc. However, the evidence presented in this study clearly demonstrates that the achievements associated with these efforts have been insufficient and there is a need to find mechanisms that allow for greater advancement if the goal is to create and support a robust and competitive small and medium-sized business sector. To achieve this, an important first step is to do more research in order to have a deeper understanding of the types of competitive companies in Jalisco. This implies diverse challenges and the first one is regarding currently available information.

The lack of information is obvious when one tries to work with concepts such as gazelle companies. It is necessary to utilize historical data about these companies' economic performance since this category implies high growth levels over time and not for only one year. This could lead to grave mistakes. Measurements of only one business cycle do not allow researchers to identify if the growth is due to company efficiency, or to industry behavior. It also does not allow for the isolation of other variables. It is also insufficient to allow researchers to identify if the growth strategy comes at the cost of profitability or even the company's survival.

It is also necessary to develop research strategies allowing investigators to work with companies that are extraordinary and are subsequently eliminated from conventional statistical analyses. However, it is precisely the fact that they are atypical outliers, which make them interesting to analyze. These companies represent the future because they have competitive advantages and new competitive strategies. One way in which these companies could be analyzed would be to utilize the case study method that would provide successful models for other companies to follow.

The viability of this strategy has been demonstrated by the results obtained by Fong et al [2011], Fong and Ocampo [2010], Fong and Alarcón [2010]. Aside from identifying competitive company types like the ones mentioned above, they have also identified particular behaviors that have not been described in the international literature. By using case studies, Fong and Ocampo [2010] discovered that business owners considering early internationalization found information about other companies that went through the same process to be as valuable as access to financing. Thus, a case study data bank that allows information about successful business strategies to be reported and shared would be useful to many others and could be used to help improve sector performance.

CONCLUDING COMMENTS

The situation of the micro, small and medium-sized business sector has been presented in this paper. Understanding the small business sector is key factor to comprehending economic performance in Jalisco and its potential for future development. The data used was taken from the 1999, 2004 and 2009 Economic Census as well as other sources like the Mexican Business Information System (Sistema de Información Empresarial Mexicano or SIEM in Spanish). This information has given us a picture of the composition,

dynamics, evolution and above all, the strategic challenges of the micro, small and medium-sized sector. This analysis includes company distribution by sector and size, international market participation, and a social and economic impact index. Furthermore, a regional and national comparison of current observed trends was provided. This has led to the identification of differences in economic performance levels. It has served as a method to define the challenges that the small business sector faces in Jalisco as it seeks to modernize and consolidate.

The evidence shown here demonstrates that in spite of the efforts of distinct administrations, public policies and small business outreach programs, the sector has not achieved the performance levels that they had hoped. In particular, the small business industrial sector has many observed weaknesses and this area should be the starting point for state development strategies.

Any strategy to promote the growth and development of the micro, small and medium-sized business sector needs to have at least two components. The first part of the strategy should be aimed at the formalization and consolidation of companies whose primary objective is self-employment. They second component should be focused on small business that have a high growth potential. Technology, (especially university spin-offs), born global and gazelle companies should be supported and encouraged.

The promotion of and support for these companies requires a better understanding of their creation and development mechanisms. This implies a need for more and better research of the sector. This research should then be compiled into a case study data bank. By registering successful experiences, the case studies could serve as a model for other companies to follow. Small business promotion and improving sector performance are complex tasks that require multiple agents and institutions. Nevertheless, the importance of the sector justifies all possible efforts since the future of Jalisco depends on its success to a great measure, both in economic and development terms.

The results described, open the door to future studies. For example, as these differences detected in the business dynamics of Jalisco against the nation, raise the possibility of establishing a public policy guideline that can promote micro and small businesses in specific areas, as in gross fixed capital formation. As the results obtained indicate that SMEs are composed of businesses that are doing what is necessary to survive, but are not investing needed to compete with big business, much less internationally.

In addition to the already mentioned, it is important that the indexes created are limited to competition between micro, small, medium and large companies, however it is desirable to compare these companies not only in the national context but internationally. However, this is complicated by variations in industrial classifications in the different regions of the world, so that at first, only you could make the comparison with companies in the United States and Canada, it would be the next step in this line of research.

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FISCAL POLICY RULES: EVIDENCE FROM CHILEAN ECONOMY

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ABSTRACT

This paper analyzes, structural budget surplus (SBS) rule evidence for the Chilean economy. We examine its effect on macroeconomic variables, such as credit worthiness, output volatility, policy effectiveness ,and welfare level gains over time due to economic growth. Thus, SBS becomes a public good with undeniable positive externalities which government authorities are called to provide. Moreover, countries depending upon commodities exports, must deal with the implications of associated prices increases and impact on expectations about spending; the risk of inflationary pressures; internal and external imbalances . Fiscal rules instead, provide a safety net for public income fluctuations, keeping stable cyclical adjusted spending , and saving the surplus due to higher public incomes.

JEL: H5, E62

KEYWORDS: Rules, Budget Surplus, Policy Coordination

INTRODUCTION

Fiscal Policy in Latin America has traditionally focused on distribution and taxes, but has also been a source of conflicts and unstable volatile growth (Lozano, 2008). For most of the twentieth century, its outcome as a macroeconomic tool, has been neither better income distribution nor efficient spending. The fiscal policy scope did not usually go beyond government priorities. The majority focused only on the short run. The fiscal deficit in many countries reached such a level that it became a real threat for democracy and its values (Lozano, 2008).

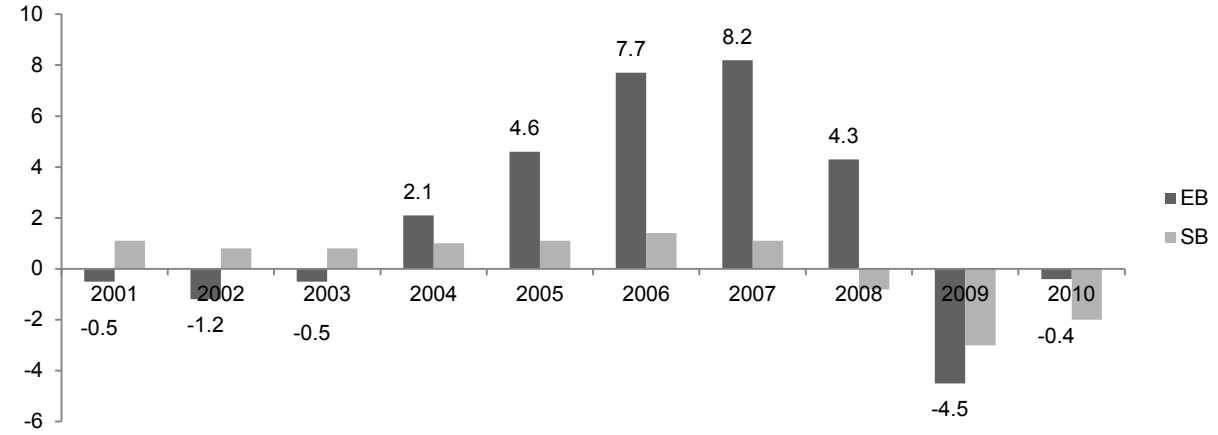
The implications were not just inefficiency, volatility, instability, and short run political setting. Fiscal policy became the missing policy for macroeconomic targets, such as better income distribution, higher levels of employment ,foreign investment, and credit worthiness. It failed to what Mundell(2008) called the main target of fiscal policy: Internal stability.

Fiscal Policy based on surplus is a new option for Latin American economies. Its implications and consequences are the subject of this paper. Budget surpluses arises in a country when total revenue is higher than public expenditures in a particular fiscal year. Budget surpluses are important because they cover budget deficits thereby keeping the net public debt under control. The surplus policy, allows without additional debt; higher spending as a countercyclical resource. It follows that fiscal policy becomes a complement for monetary policy decisions. Administrators have at their disposal effective policies.

Normally, it is not essential for Governments to maintain a budget surplus, especially when there are social demands, inequality, or because of policy decision such as the European Union case and its 3% deficit rule. Chilean economy authorities have designed and applied a fiscal policy, after learning from past experiences. These experiences concern the implications of overspending. After twenty years of fiscal responsibility, public authorities and politicians were well aware at the beginning of the decade, about the cost of deviating from it. Thus, the scenario was sufficiently mature to go further with the next step in the year 2001. The objective was to implement a structural budget surplus (SBS). Figures 1 and 2

show a summary of the impact of such a policy for the Chilean economy. It became a public surplus country, and net creditor.

Figure1: Chile Efective and Structural Balance 2001-2010



Source: Chilean Budget Office, Ministry of Finance

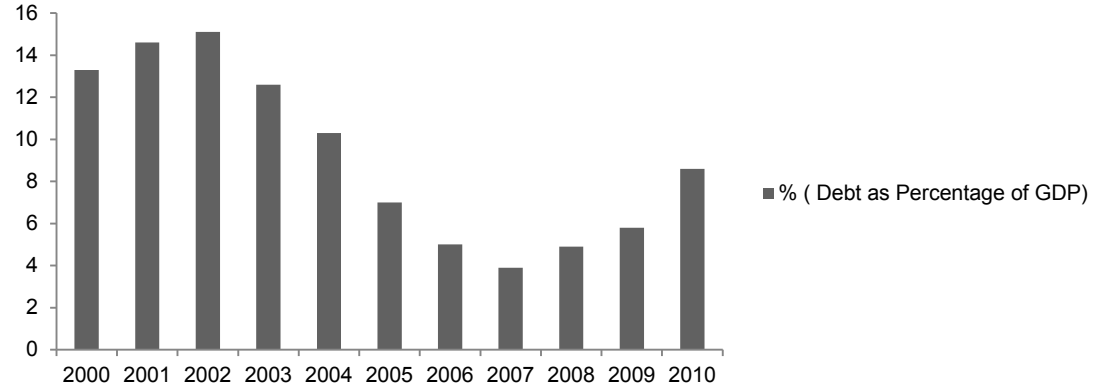
When government debts increase, interest payments goes up as a proportion of the country's Gross Domestic Products (GDP). Moreover, the interest payment, imposes an additional burden on the country's risk level, fiscal balances and constraint monetary policy decisions when it needs to use the interest rate as a tool for stabilization purposes. A rise in the interest load indicates that a higher proportion of government revenues cover financial costs rather than being used for the country's social and investment needs. The consequence, is a reduction in economic growth potential.

These issues are widely analyzed in the literature, which can be segmented in three areas; Theory and analysis (Mundell, 2008, Gordon, 1983, Mitchell, 2012), Learning from past experiences: (Lozano, 2008, Frankel, 2011, Engel, 2007, Arellano, 2005) SBS outcomes and implications, (Marcel,2001, Larraín, 2011, Schmidt-Hebbel, 2012) . These three categories, do not intend to constraint the discussion about fiscal policy as a whole, but are useful as a means to organize the analysis, the justification, characteristics, outcomes and implications of applying SBS in the Chilean economy in particular.

The literature is quite clear about the impact of better coordinated and consistent macroeconomic policies, on output volatility (Larrain and Parro, 2006), inefficiencies and welfare losses (Kumhof and Laxton, 2009), interest rate (Rodriguez, 2006), and exchange rate volatility (Velasco, 2010). The literature allows us to set as a starting point, that fiscal policy rules indeed, have a positive effect related to the effectiveness of the institutional framework for macroeconomic policy design and growth expectations. This paper is focused on the evidence of implementing structural budget rules in the Chilean economy. It does not address the implications of improving the institutional framework after the rule is imposed.

The paper is organized as follow. Section I, includes a literature review to focus attention on key issues concerning the role of fiscal policy, beyond distributive issues, its stand for economic growth, and the implications of following fiscal rules. Section 2, reviews the Chilean economy evidence concerning structural budget surplus rule, supporting factors, positive externalities associated with the SBS, implications for macroeconomic policies aimed at economic growth, and the effect of countercyclical fiscal policy on key policy issues such the Impossibility triangle, and sudden stops cases. Section 3 provides suggest a path for the future and concluding remarks.

Figure 2: Debt as Percentage of GDP



Source: Budget Office Chilean Government, Ministry of Finance

LITERATURE REVIEW

Following Frankel (2011), the importance of Institution actions such as Fiscal Policy has been widely examined by different authors such as: Alesina y Perotti (1995,1996), Poterba(1997), Poterba and Von Hagen (1999), Persson y Tabellini (2004), Wyplostz (2005), Calderon y Schmidt-Hebbel (2008), Calderon, Duncan, and Schmitt-Hebbel (2010). Authors examining fiscal institutions for commodities exporters are Davis (2001, 2003), Alesina (1999), Perry (2003), and Schmidt-Hebbel(2012). Pro cyclical fiscal policy is the main characteristic of less developed countries. More so in those cases which have strong dependence from commodity price fluctuations.

The SBS supports both economic recovery and smoothing of the business cycle. When the economy is in recession tax income drops, therefore the fiscal deficit increases as long as the pace of expenditure do not change. When economic growth gets back to its potential, tax revenues adjust to its previous level, closing the gap with fiscal expenditures (Gordon 1983).

The issue with public saving (SBS) arise, because both public revenues and expenditures do not have the same elasticity pattern. While tax revenues follows the output trend (tax revenues output elasticity is around 1), public expenditure elasticity is lower. It follows, that it takes more time to adjust expenditures down after a recession is over. Therefore, a deficit situation may last longer than expected with social cost crowding out effect, efficiency losses because of resource misallocation, productivity and competitiveness losses.

In the current integrated world, these costs are not trivial. It is better to be well aware of its consequences (capital outflow, inflationary expectations, increasing debt, higher country risk level, and uncertainty). Thus, while fiscal policy may help economic recovery , it may become a constraint for keeping a sustainable economic growth pattern when deficits are usual (Pastén and Cover 2010). Besides, there are lags in fiscal policy reactions arising from both lack of information and legislature procedures, all of which makes complications harder to handle.

Fiscal policy rule, like structural budget surplus (SBS), is based on the political commitment to control the fiscal situation and its exposure to short run political pressures. However, this does not imply creating a structural budget surplus as a fixed target.

The Chilean experience worked the structural budget surplus out in two phases. The first (2001-2008) with a 1% structural surplus, and the second (2009-2010) with a 0.5- 0.0% structural fiscal surplus. This signals the relevance of flexibility to adapt the rule to differing conditions concerning either economic

growth prospect. The proposed objectives or institutional framework surrounding its implementation may differ (Vergara ,2002; Rodriguez, 2007; Frankel, 2011; Larraín, 2011; Schmidt-Hebbel, 2012).

When the economy falters, governments often use stimulus spending projects as a way to recover the economy and get people back to work. Countries which have budget surpluses in good times, have a better chance to stimulate spending in bad times. If the country has a budget surplus in place, it can spend part of that surplus to stimulate the economy reducing the recession duration. Fiscal policy becomes counter cyclical. But when the country goes into recession without surplus, it has fewer options to stimulate the economy implying higher deficits or higher debt. Fiscal policy becomes pro cyclical. Moreover, debt accumulation is finite in capacity because at some point the susceptibility of the balance sheet to cyclical movements rise, and the risk of default increases (Mitchell, 2012).

In the Chilean case, the gross debt/GDP ratio, decreased from 23% (1990-2000) to 9% (2001-2011). Before the fiscal policy rule was applied, Chile was a net debtor to the equivalent of 9% of GDP. With the fiscal policy rule in place, it became a net creditor to the equivalent of 4% of GDP. A responsible fiscal policy demonstrated a public commitment to stability. That reputation for responsible fiscal policies translated into the ability to borrow money at favorable (lower) rates. Lenders look at the overall health of the economy and its ability to manage its resources wisely as a proxy for lower risk level (Frankel ,2011). In Chile, between 1999-2011 borrowing costs went down from 7% (1999), to 3.35% (2011) (Larrain, 2011).

On the other hand, in the period 1999-2005 with the budget surplus rule in place, output volatility in the Chilean economy decreased by 32-33%. Coupled with other policy decisions (such as changing the exchange rate regime from a crawling peg to a flexible exchange in the year 2000) made the impact of the fiscal rule stronger pushing down volatility even further by 25-27% .

Budget surplus also contributes to the efficiency and effectiveness of macro-economic policy as a whole. (Larraín and Parro, 2006; Kumhof and Laxton, 2010). It has been argued that free capital flows, exchange rate regime (fixed or flexible) ,and autonomous independent monetary policy, do not fit well along the economic cycle. In fact those targets cannot be achieved simultaneously. Sooner or later, one of those variables has to be modified for keeping monetary policy effective enough to keep aggregate economic activity stable. If the interest rate has to be raised, there is no way to do so without capital controls. This is the impossibility triangle, which make fiscal policy fully effective with fixed exchange rates, and monetary policy fully effective with flexible exchange rates, ruling out the chance of coordination to make the triangle work. If a country wants to achieve an autonomous interest rate policy, and stabilize the exchange rate at the same time, it has to introduce capital controls Mundell (1963).

But what a difference does the SBS rule make?. Capital flows have an impact on exchange rates in smaller economies. Exchange rates fluctuations depend on whether there are capital inflows (appreciation) ,or outflows (depreciation). These exchange rate variations are not neutral. Leaving aside distributive effects, these variations have an impact on both banks with heavy foreign currency debt after the depreciation, (financial side), and the competitiveness of the export sector due to appreciation (real side).

Given exchange rate fluctuations, monetary policy should change the interest rate to cope with its implications. But, as long as it lacks complementary fiscal policy, it has to deal with key constraints which affect its independence and effectiveness.

Whether the options are increasing interest rates (exchange rates depreciation) or reducing interest rates (exchange rates appreciation), it needs capital controls, and along with it the risk of aggregate demand contraction in the former case (increasing interest rates), or an overexpansion of aggregate demand in the

latter case (reducing interest rates). Thus, monetary policy is constrained in its ability to correct distortions arising from exchange rates fluctuations.

However, in the case contractive monetary policy (higher interest rate) is applied, a fiscal policy rule (budget surplus rule) can mitigate the impact on economic activity. It allows self-stabilizing factors to take place. Previous public savings are available for counter cyclical spending, reducing the impact of higher interest rates on the economy and the along with it a better control of the chance of a recession. In the case of lower interest rates, the rule of saving excess of income over the cyclical adjusted expenditures, compensates the expansionary pressures in aggregate demand, allowing fiscal policy to keep internal stability (Mundell 1968).

Therefore, with this fiscal policy rule, monetary policy has a back up for more flexibility and independence to manage the effect of capital flows fluctuations. The argument can go even further with the "sudden stop" scenario Calvo (2003). The expected reaction of monetary policy in such a case, can be complemented in the midterm with the SBS rule, softening the impact on growth.

The Chilean evidence, support that fiscal policy became less correlated with the economic cycle after the structural budget surplus was applied, decreasing from 0.77 (1990-2000) to 0.57 (2001-2011). Therefore, a countercyclical fiscal policy complements monetary policy in such a way that output volatility decreases (Larraín, 2011). Furthermore, it makes the three variables of the triangle: exchange rate regime, capital flow and the independent monetary policy, work together in such a way that it ends up reducing the welfare loses arising from capital flow fluctuations.

Mundell(1968) demonstrated that in countries where employment and balance of payment policies, are restricted to fiscal and monetary instruments, monetary policy should be reserved for external balances, and fiscal policy for preserving internal stability. This is related to what it is called the Principle of effective market Classification. Policies should be paired with the objectives on which they have the most influence. Fiscal policy can contribute in a more efficient way to internal stability, with a countercyclical stand. If interest rates must be raised, the current budget surplus can be reduced, compensating the impact on aggregated demand. It follows that budget surplus allows monetary policy more independence and effectiveness to cope with external imbalances.

On the other side, Mitchell (2012) examine the implications of different options with budget surplus. In case there is an external surplus, (the case of high commodity prices), which would add to aggregate demand, and the private sector is spending more than what it is earning, the government would have to ensure a budget surplus of sufficient size to make sure the economy does not overheat and exhaust its productive capacity.

EVIDENCE FROM CHILE

Starting in the year 2001,the fiscal policy in Chile was based on a structural surplus rule. The introduction of this rule intensified Chile's commitment to fiscal responsibility implemented since the mid-1980s, by introducing a more explicit medium-term orientation guide (Marcel 2001; Arellano, 2005). The rule was initially not regulated by law. However, this changed with the 2006 Fiscal Responsibility Law which also introduced new rules about the investment of accumulating assets. The structural surplus rule, only covers the central government and deals only with income, keeping expenditure on its mid-term cyclical trend.

It also assumes the tax structure is neutral concerning its distributive effects, assuming an output tax elasticity of 1.0. An alternative case would be to have a progressive tax rate, in such a case this elasticity would be higher (1.5 – 2.0). In the Chilean case, elasticity ranges from 1.0 - 2.4 depending the tax source, although for the structural budget proposal, it was considered close to 1 (1.05). The implications of this

progressiveness is a higher impact on government revenues when output increase (steeper budget surplus line). This makes the structural budget surplus more cautious in the growth path, and more countercyclical in recessions, which seems to suggest the impact of structural budget surplus is also related with the tax structure (Gordon 1983; Taylor 1993).

The existence of additional conditions, both institutional and economic, were relevant to the implementation of this rule and its target (Marcel, 2001; Arellano, 2005). In the Chilean case these were: The Independent Central Bank, which set an inflation targeted monetary policy at an annual level of 3%. Global economy fluctuations, require economic policy tools to be able to deal properly with external shocks (Elbadawi, 2011; Schmidt- Hebbel 2012). The structural surplus rule implies a counter-cyclical behavior of fiscal policy, which became necessarily due to expected higher copper prices. The rule stated the central government's overall structural balance should in every year be equal a surplus of 1% (0.5% , from 2008) of actual GDP. The structural balance equals structural revenues plus interest on net government assets (which are positive in Chile), minus actual expenditures on goods and services.

Structural revenue is determined by two independent panels of experts, and reflects what tax revenue would have been if the economy had operated at potential rather than actual output, and what copper revenue and other derivatives would have been at a long-term reference of world copper prices, rather than the actual price. The resulting counter-cyclicality of government deficits isolates government expenditures on goods and services from the cycle, and keeps them growing following the output trend. No distinction is made between government consumption and investment expenditures because this is difficult to do in practice. The main organisms of the public sector left outside for this rule are: the central bank, public non-financial enterprises, the defense sector and municipalities (local government).

This positive fiscal rule was supported by certain features that are not core to it, but they are optional for its implementation. A key feature, was the level which the structural balance was targeted. During the first years, a structural surplus target equivalent to 1% of GDP was aimed at ensuring the accumulation of assets to reduce liabilities inherited from the debt crisis in the 1980´s, and to meet future public sector commitments, such as contingent liabilities generated by the guaranteed minimum retirement payment, and older-age beneficiaries arising from reforms implemented in 1980. Another argument for maintaining a structural surplus, was the structural deficit of the Central Bank of Chile, as a result of losses arising from the bailout of the private banking system during the 1982 economic crisis.

The 2006 Fiscal Responsibility Law, formalized this by establishing rules for investment of those surpluses. These rules envision investment in a government pension fund, central bank recapitalization, a Fund for Economic and Social Stabilization (FESS) and a Retirement Reserve Fund with resources equivalent to a minimum of 0.2% and up to a maximum of 0.5% of GDP. These funds will be ready for spending following 10 years of interest gains accumulation. In May 2007, it was announced that based on an expert panel recommendation, a reduction in the surplus target from 1% to 0.5%, would be applied, starting in the fiscal 2008 year.

There were important reasons for changing the target down to 0.5% structural surplus: the initial target of 1% implied that government asset accumulation over time (2007-2016), was on average 10% of GDP , which is hard to justify when it comes to meeting social demands arising from growth (Engel, Marcel, and Meller , 2007). Besides, there was evidence that welfare gains from following this rule as a fixed percentage, are lower (18%) than those obtainable by implementing fiscal policy rules with a flexible clause to break the transitory rule down (Engel, Neilson and Valdes, 2011).

Most initial justifications for such a target were fulfilled a few years before 2008. In 2005 the Central Bank operational deficit was equivalent to 0.005% of the Chilean economy GDP, down from 1% at the end of the nineties. After years of fiscal saving , the National Treasury became a net creditor to the rest

of the world. By late 2008, the Economic and Social Stabilization Fund and the Retirement Reserve Fund had accumulated the equivalent of 18% of GDP, while fiscal liabilities were negligible after significant amortizations were made with the previous accumulated surpluses in the fiscal balance.

The spillover effects of the global financial crisis (2008), led in 2009 to further reduction of the structural balance to 0% . Moreover, the earthquake of 2010 , moved the target further into negative territory to an structural deficit of -1%. In 2010, a pannel of experts was set to propose recommendations to improve the quality of the rule to make it more credible. Among the recomendations were to establish a fiscal policy council to advise the Ministry of Finance. (See Schmidt-Hebbel, 2012).

A PATH FOR THE FUTURE

Since the nineties, a growing number of countries have implemented different fiscal policy rules, starting with 10 countries in 1990 up to 51 in 2011. However, only 10 countries have rules aimed at stabilizing cyclically adjusted balances, for implementing counter cyclical fiscal policy, or at least avoiding pro-cyclical fiscal policy bias, (IMF 2009). Fiscal rules implemented by the EU (A deficit limit of 3% of GDP), have a key weakness: when the economy goes into recession, there is no way to keep the rule in place Frankel (2011).

Past experience and learning concerning fiscal policy, has allowed evolution concerning its focus, consistency, transparency and role for macroeconomic coordination, and growth, within an institutional framework designed to improve the quality of signals for investment and growth, reducing the sources of instability and uncertainty. As the concept of the structural budget has improved its credibility, it has been easier to introduce corrections and discretionary windows in emergency cases (external shocks). For example allowing an unprecedented expansive expenditure reaction to the 2008 financial crisis, to reducing the GDP losses. The Chilean evidence shows the importance of both the introduction of structural budget rules as a principle, and the value of learning about macroeconomic policy coordination in policy making for small economies as a practical guidance. It reinforced the role of fiscal policy as a key engine for growth, which departs from its conventional focus on distribution and taxes.

Better coordinated and consistent macroeconomic policies, mean less output volatility (Larrain and Parro, 2006), less inefficiencies and welfare losses (Kumhof and Laxton, 2009), less interest rate volatility (Rodriguez, 2006), and less exchange rate volatility (Velasco, 2010) thereby increasing effectiveness of the institutional framework for economic policy design and economic growth expectations. The demands for keeping economic growth, makes all of these externalities key arguments for pursuing further this kind of policy approach.

Asmall economy, highly integrated to the global economy gains benefits from these positive externalities as long as it reduces the financing cost of new investment projects. In fact, Chile has become a low risk country ,which allows it to secure better financial arrangements. As foreign direct investment receivers in 2012, it placed 11th among world economies (Ministry of Economy 2012). Key challenges for the future, are a better understanding these guiding principles for the macroeconomic effect of fiscal policy on economic activity, prices and exchange rate determination, along with its stabilizing and complementary role of monetary policy, and its stand for economic growth other than just distribution.

Progress in fiscal policy management has contributed to improvement in counter-cyclical capacity for controlling both aggregate demand and exchange rate fluctuations. This is not a minor issue. In the 1990s, even though Chile had a successful experience with counter-cyclical regulation of financial inflows and achievement of comprehensive real macroeconomic balances, some flaws in its fiscal policy design did not allow full avoidance of external shocks (sudden stop in financial flows and drop in export), arising from the Asian economic crisis (1997-1998).

As long as the global economy is risk averse , policy rules help implement a more consistent and efficient policy framework to mitigating uncertainty. Productive resources need to know the rules. The 'no rules' alternative, means speculative forces flourish, and economic agents make their bets for what comes next within the uncertainty scenario, deteriorating the productive investment prospect and resources allocation (Taylor ,1993). Thus, the global economy needs not only better policy, but also better rules (coordination) for policy implementation reducing volatility, uncertainty and welfare losses.

CONCLUSION

The goal of this paper was to analyze Fiscal policy rules, and how it matters for better effectiveness of macroeconomic policies, in small economies integrated into the global economy. Fiscal policy becomes a useful tool for economic growth, because of its complementary stand for other policies decisions (monetary policy). Moreover, its conventional focus only on distributive issues sets a limit to what a powerful fiscal policy may achieve as its best outcome. It is meaningful to have fiscal policy rules, aimed at improving the effectiveness of macroeconomic policies as a whole, and the stability of growth in particular. A combination of political, economic and institutional settings helped the implementation of the fiscal policy rule in Chile.

The literature review provides evidence from positive externalities linked to fiscal policy rules, which reinforce a virtuous circle of growth, as long as volatility decrease and welfare levels may improve steadily. Furthermore, fiscal policy rules reduce the country risk level which is a key factor for attracting additional foreign investment flows.

Because of its scope and purpose, this paper does not use statistical analysis. It deals with analyzing facts about a fiscal policy prescriptions successfully applied in Chile. Looking beyond the scope of this paper, it is clear that Government accountability, and modern public policy institutions, should be aimed at fitting the conditions for steady output growth in the global economy. Fiscal policy, should not be restricted to a distributive focus because it may be a useful player for policies decisions dealing with external shocks. However, although there have been an increasing number of countries which apply fiscal rules, just a few of them follow a structural budget surplus rule as a fiscal policy approach. This is especially worrisome for countries which are exposed to commodity prices changes. The expected downward adjustment in those prices, make it more relevant to keep a structural budget surplus.

Some limitations of this research, deal with leaving tax policies as a secondary issue. A further area of research might focus on the relevance of tax progressiveness. Somehow the need for public saving (budget surplus rules), may be both influenced and complemented by the proper (progressive) tax policies such that the percentage of budget surplus. The budget surplus does not need to be substantial, under more progressive tax systems. A second limitation, arises from conditions which prevail in the Chilean economy for implementing this policy, which are not widely experienced in the majority of Latin America economies. Thus, no matter the advantages of such a fiscal policy rule, the superlative conditions required for its successful implementation make it more difficult to be applied everywhere.

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ANALYTICS-BASED MANAGEMENT OF INFORMATION SYSTEMS

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ABSTRACT

Information technologies penetrate virtually every division in contemporary organizations. Organizations deploy a spectrum of information technologies with aim of alleviating operating efficiency. Knowledge workers increasingly depend on deployed information systems to accomplish their tasks. Well-deployed and managed information systems have a potential to increase effectiveness and efficiency in organizations; whereas poorly deployed and managed systems may have significant negative impact. Strategic deployment and management of information systems play the key roles in attaining beneficial impacts for organizations. Conventionally, information technology managers have relied primarily on tacit knowledge. Such knowledge and experiences have been accumulated over a number of years. However, information technologies progress at a rapid pace and early adopters gain considerable strategic advantages. Information technology managers cannot afford spending years accumulating tacit knowledge. Viable solution to this problem is to adopt an analytics-based management. We explore pertinent aspects of analytics-based management of information systems in organizations.

JEL: M15; M21; O32; O33; O22; O43; L15; L21; L25; L86

KEYWORDS: Information Technology Management, Analytics-Based Management, Information Systems, Actionable Knowledge, Tacit Knowledge, Explicit Knowledge.

INTRODUCTION

Organizations deploy a variety of information technologies ranging from communication infrastructures, through computing hardware, to software systems. Different technologies have different lifecycles (Lehmann et al., 2010). Generally, internal communication infrastructures have the longest lifetimes, followed by computing hardware, and software systems with the shortest lifetimes.

Progress in information technology development has been exhibiting shortening lifetime with each successive technology generation (Devarajan, 1996). New generations of technologies are being developed and marketed at an increasing pace. Organizations are under pressure to innovate and deploy novel technologies faster. Older technologies often need to be replaced before the end of their originally projected lifetime. Early adopters of new technologies are able to gain strategic advantages over late adopters (Droge et al., 2010). Organizations cannot afford to ignore information technology progress. Late adoptions of progressive information technologies result in various losses for organizations. They are generally reflected in operating inefficiencies, lower productivity and loss of strategic advantages.

Information technologies provide operational support without which many contemporary organizations would be unable to function. They are among the core assets of many knowledge-intensive organizations (Alvesson, 2004). Knowledge workers increasingly rely on information systems and services (Davenport, 2005). They often incorporate essential business processes that have been transferred from their former forms into digital ones. Transformation of business processes into digital forms facilitates improved working efficiency, productivity, automation of tasks, as well as accessibility of information, documents

and resources. Proper management of information technologies is crucial (Turban and Volonino, 2011). Inappropriate management of information systems may have numerous adverse effects.

Conventionally, management of information systems relied on valuable experience accumulated by managers over a number of years (Hunter, 2007). Years of management experience have led to accrued tacit knowledge. When progress in information technology development was slow, this experience-based management style was adequate. Experience and tacit knowledge gained by managers were sufficient to achieve a suitable level of management efficiency and extract a satisfactory value from deployed information technologies. After sufficient value had been extracted and novel technologies have become available, new information technologies have replaced older ones. This practice has been repeated for several generations of technologies.

With gradually faster technology progress, the traditional experience-based management style has been met with challenges. Increasing pace of development and availability of novel information technologies has led to shortening lifetimes of successive technology generations (Devarajan, 1996). This trend presented new challenges for managers of information systems. If managers maintained lifetimes of older technologies, the gaps between availability of new technologies and their deployment in organizations have become gradually greater. On the other hand, if older technologies have been replaced by new ones before their projected lifetimes, the conventional experience-based management faced difficulties with extracting sufficient value and utility. In both cases, the experience-based management has led to losses for organizations. Needs for better information technology management have emerged.

A viable solution to the problems associated with the experience-based management has been to employ analytics and transition to analytics-based management (Davenport et al., 2010). Analytics permit more effective transformation of tacit to explicit knowledge and extraction of actionable knowledge from data in a timely manner. Unfortunately, majority of organizations have neither viable analytical capability nor a detailed plan to develop one (Davenport and Harris, 2007). Absence of analytical capabilities presents missing opportunity and inability to employ analytics-based management.

Analytics-based management has a potential to reach higher management efficiency of information systems faster. Thus, greater value and utility can be extracted quicker and novel technologies can replace older ones sooner. Consequently, the formerly increasing gaps between availability and deployments of technologies do not increase, but may eventually decrease. Analytics-based management is new and lacks elucidation and proper attention from scientific and academic community (Hamel, 2007). Our work attempts to fill this gap and explore advantages of analytics-based management in light of issues with experience-based management.

The manuscript is organized as follows. The literature review section is followed by the 'Experience-based Management Challenges' section. It highlights the primary challenges associated with the conventional experience-based management of information technologies. The next section, 'Analytics-based Management Advantages', explains natural transition from experience-based management style to this novel management style and explores its benefits. The section 'Discussions' elaborates on several issues with analytics deployment and adoption of analytics-based management. The presentation finishes with a concise summary in of the essential points in the section 'Conclusions'.

LITERATURE REVIEW AND HISTORICAL PERCEPTION

Analytics-based management of information systems have arisen as a solution to issues inherent in experience-based approach. It extends the experience-based management with a new dimension of analytics. Effective utilization of analytics permits greater flexibility and leads to increase of management efficiency (Davenport et al., 2010). Extracted actionable knowledge by analytics is a potent

tool in the absence of experience. It fills the information gap and lowers the level of uncertainty in managerial decision-making.

Analytics-based and experience-based management styles are not mutually exclusive. They are symbiotic. Managers can reasonably rely on actionable knowledge provided by analytics if they do not have proper experience with the difficulties they face. In such case, analytics have greater weight. On the other hand, if managers have a suitable experience, then analytics may still provide valuable additional information. However, greater weight is placed on experience. This balancing of analytics-based and experience-based approaches allows addressing a broader range of managerial issues with greater efficiency. To understand this symbiosis better, it is useful to explore how information technologies have been adopted by contemporary organizations.

Although adoption of information technologies by organizations has been varying–depending on organization–one can notice a prevailing pattern. In early days, each organization had its own way of building information technology capabilities, resources and infrastructures. This period is characterized by a relative absence of dedicated information technology departments. There was also absence of coordinated long-term strategy and planning (Butler and Murphy, 2007). Various departments within organizations implemented their own information systems—meeting only their local requirements (Palanisamy et al., 2010). However, information technology companies provided multi-purpose hardware and software. This has led to diversity of systems at various departments having overlapping functionalities and components, but lacking interoperability (Papastathopoulou et al., 2007). Information technology costs have been rising sharply.

A need to coordinate strategy, planning and deployment of information technologies within organizations has emerged (Georgantzas and Katsamakas, 2010; Boar, 2000). However, radical reengineering of systems would hinder operating efficiency of organizations. Solutions that could utilize existing legacy technologies have been favored. A viable solution has been a deployment of organizational portals providing single-point access to systems and services distributed over various departments (Oertel et al., 2010; Sullivan, 2004; Collins, 2000). Standardized network communication protocols, web, and service-oriented architecture and design have been the enabling technologies (Rosen et al., 2008).
Web servers have featured data logging capabilities that paved the way for web analytics. Log data analysis is capable of providing a reasonable level of detail on system functions and users' interactions with organizational portals and services (Kaushik, 2009). However, log data has disadvantages: it grows rapidly, is significantly contaminated, and requires substantial pre-processing. This has led to development of other data collection technologies using client-side scripts and tracking options. Data collection technologies expanded to specialized hardware tools that allow deep inspection of communication packets and system functions. While advanced data acquisition technologies are valuable for analytics, they also raise concerns about security and privacy (Anthes, 2010; Lanois, 2010).

EXPERIENCE-BASED MANAGEMENT CHALLENGES

Contemporary experience-based management of information technologies relies extensively on tacit knowledge. Managers accumulate tacit knowledge concerning organizational information system management over several years of experience. Their management efficiency grows with accumulated experience.

Overreliance on experience-based tacit knowledge has both positive and negative aspects. Positive side of experience-based management is experience. Managers gain hands-on experience with issues directly and/or indirectly related to organizational information systems. Negative traits of experience-based management originate from the nature of tacit knowledge and its acquisition time. Tacit knowledge is difficult to transfer into explicit form (Palanisamy, 2012). This causes difficulties in passing knowledge

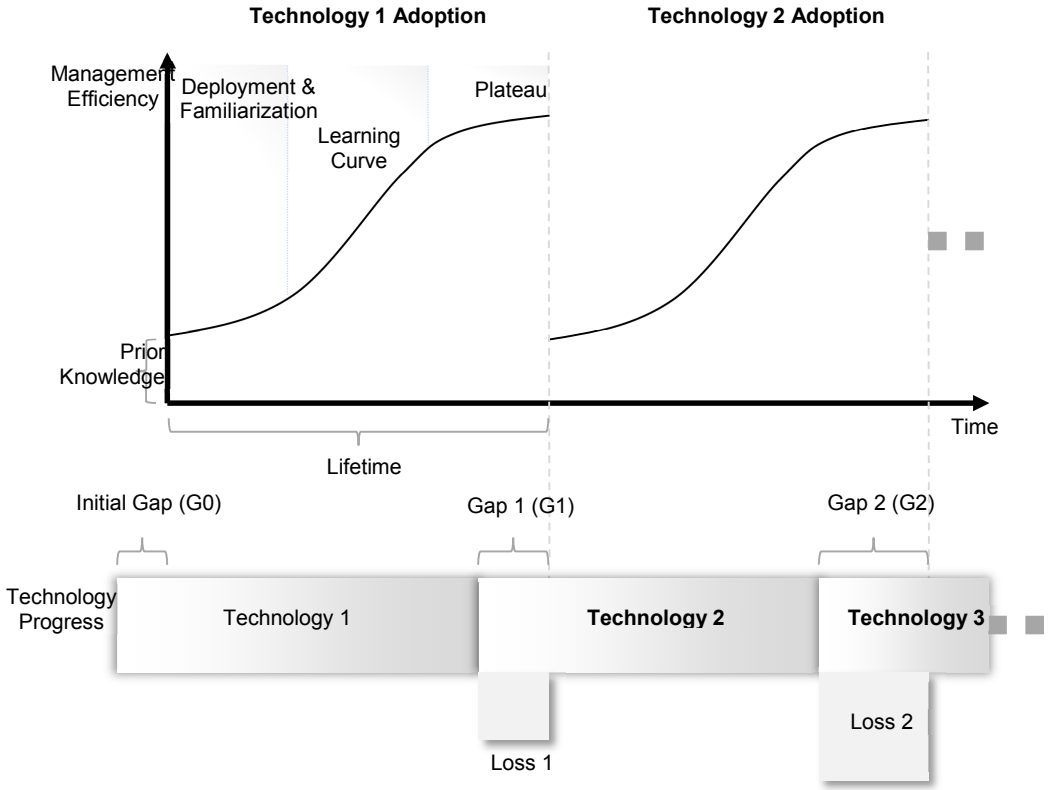
to other managers—whether substitute or subordinate. Acquisition time plays also imperative role. Rapid pace of progress in information technologies does not allow for extensive accumulation time. Hence, there is a pressure on managers to acquire valuable experience in a relatively short time.

Information technologies have been experiencing growing progress in complexity, usability and development (Resmini, 2012). Greater usability has a positive impact primarily for end-users. Growing complexity and shorter development times present challenges for managers of information technologies.

Managers are required to efficiently manage information technology resources and innovate information systems in organizations. To do so, they must have appropriate knowledge and skills. Acquisition of such knowledge and skills through experience takes time. Increasing complexities of systems demand longer time. However, shortening technology development times do not allow expansion of time required for acquisition of proper knowledge and skills through experience—just the opposite.

These conflicting issues pose significant challenges for experience-based management. They result in increasing gaps between availability and deployment of novel technologies. Furthermore, they hinder innovation and lead to expanding losses. Interplay between experience-based management and technology progress is depicted in Figure 1 and elucidated in the following paragraphs.

Figure 1: Illustration of Relation between Technology Progress and Experience-based Management



Experience-based management of information systems builds on tacit knowledge accumulated by managers over extensive periods during the lifetime of technology adoption. Management efficiency progresses over time along a sigmoidal curve. There is a level of prior knowledge at the time of deployment. During the lifetime of technology adoption, there are three distinguishable stages. The first stage begins with slower progress in management efficiency after the initial deployment and during the familiarization. It is followed by a sharper learning curve in the second stage. The third stage culminates

with a plateauing state. Technology development progresses at an increasing rate. Faster technology progress leads to increasing gaps between availability of technologies and their deployment. This results in losses for organizations.

Increasing gaps between developments of novel technologies and their deployments arise from shortening development times of new technologies while maintaining lifetimes of older technologies. This challenge is illustrated in the bottom part of Figure 1. Unless the organization is the early adopter of a new information technology or service, it starts with a certain initial gap, G0. After deployment of a novel technology, organizations have a tendency to maintain progressing along the same or related technology line for several generations; i.e. technology 1 → technology 2 → technology 3, etc. This is logical, since radical reengineering or complete system change is costly and resource demanding. Thus, organizations attempt to extract the greatest value from deployed technologies over their lifetimes.

Technology developers, on the other hand, strive to shorten development cycles in order to gain early-releaser advantage and expand market share. New technologies and services, that are superior to older ones, are released before lifetimes of older technologies expire. As a result, the gaps between technology releases and their adoptions by organizations tend to increase: $G0 < G1 < G2$. After several generations of releases, the gaps may widen to such an extent that managers may even decide to skip one generation release and adopt the next one. Increasing gaps between deployments of new technologies and innovations result in various losses for organizations.

While incremental technology improvements aim at smaller innovations and fixes, generational technology improvements present greater progressive shifts. For instance, software products, such as large-scale database or server systems, maintain incremental innovations and improvements via subversions and generational changes via new versions. Subversions are usually delivered as updates and new versions as upgrades. Although licensing agreements vary, updates are commonly a part of the version license. Transitions to new versions are normally associated with new licensing agreements and higher costs.

New generation of technologies generally provides notable utility improvements, novel and better functionality, and possibly improved integration with other organizational systems and other new technologies. These improvements translate to benefits for organizations. Improved utility and usability improve working efficiency of users and increase productivity. Novel functionality and improved existing system functions also positively contribute to efficiency and productivity. Enhanced integration improves overall functioning of organizational information systems and facilitates better management. Absence of these benefits translates to potential losses for organizations. Losses are reflected in lower user productivity as well as in greater management and overhead costs. Late deployments of new systems may result in losses that outweigh initial costs associated with transitions to new technologies.

ANALYTICS-BASED MANAGEMENT ADVANTAGES

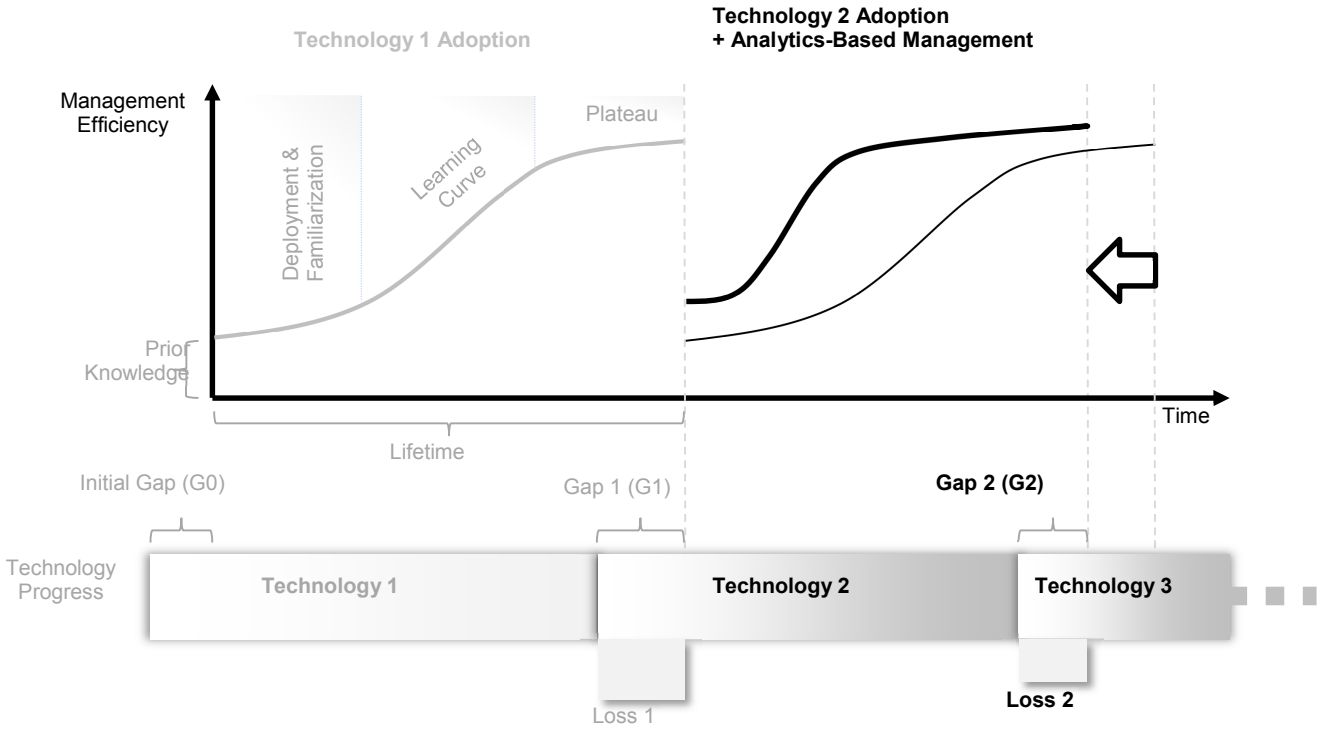
Analytics-based management approach adds a novel dimension to the conventional experience-based management: deployment and utilization of analytics. It enriches and progressively transforms the traditional experience-based management style rather than replaces it (Davenport et al., 2010). Deployment and utilization of analytics is a novel stage in evolution of information system management. It balances utilization of analytics and experience.

Analytics-based orientation has greater weight initially—in early stages of new technology deployment. This is natural, since there is an obvious absence of experience. However, as managers gain experience with the adopted technology, analytics-based management is beneficially balanced by experience-based insights. In this way, both analytics-based and experience-based management styles constructively

complement each other. Unfortunately, majority of organizations do not take advantage of these opportunities (Davenport, 2007).

At the core of analytics-based management are analytics (Laursen and Thorlund, 2010). Deployment of analytics incorporates three major processes: data collection, analysis and actionable knowledge extraction. Analytics-based management necessitates persistent collection of reliable data about organizational systems, their use and performance. Data collection methods should be transparent to users, in order to keep natural interactions of users with systems undisturbed. Non-invasiveness of data collection methods also facilitates uninterrupted utilization of systems by members of an organization in carrying out their work related tasks. Collected data should be appropriately analyzed. Some data analysis should be performed on-the-fly while other may be performed later; e.g. during night hours when users are inactive and greater computing power is available. From suitably analyzed data, pertinent actionable knowledge should be extracted.

Figure 2: Difference between Analytics-based and Experience-based Management



Analytics-based management style is contrasted with experience-based management in the right-hand side of the chart—in the stage of technology 2 adoption. Effects of analytics-based management are illustrated in the following features: greater initial management efficiency than prior knowledge, shorter initial familiarization stage, sharper learning curve, and faster plateauing at higher management efficiency level.

Benefits of analytics-based management of information systems are notable during early stages of new technology deployment. As the adopted technology approaches its end of lifetime these advantages are balanced by accumulated experience. Illustration of advantages is presented in Figure 2. The analytics-based management is compared to the conventional experience-based management. The following effects are distinguishable: higher initial management efficiency than prior knowledge, shorter initial familiarization stage at the beginning of technology adoption, sharper learning curve, and early plateauing

of management efficiency at higher level. These benefits facilitate extraction of greater value from technology deployment and permit faster adoption of new technologies. Early adoption of new technologies brings strategic advantages and leads to lower potential losses.

Greater initial management efficiency at the point of adoption of new technology is a result of suitable mixture of prior knowledge and analytics. Analytics enable automation of some information technology management tasks. The automation can be partial or complete. Hence, managers may focus on other issues requiring attention. Adding automation of some management tasks to prior knowledge of managers results in greater management efficiency.

Shorter familiarization stage during the initial period of lifetime of adopted technology is a reflection of suitable extraction of actionable knowledge from viable analytics. Actionable knowledge extraction facilitates conversion of tacit to explicit knowledge. While experience-based management style relied primarily on tacit knowledge gained by experience, analytics-based management employs analytics for suitable extraction of viable knowledge from collected data. Hence, managers are provided with actionable knowledge in a timely manner, rather than needing to acquire it through experience.

Sharper learning curve is further reflection of tacit to explicit knowledge conversion coupled with appropriate management of information overload (Woolfson, 2012). Analytics are capable of providing insights into information technology operations to a considerable detail and with a notable speed. Excessive details contribute to information overload that decreases management efficiency. Thus, proper extraction of relevant knowledge at a suitable time is pertinent. Timely extracted actionable knowledge allows appropriate prioritization and targeting of management efforts. Proper prioritization places pressing managerial tasks before residual issues. A suitable dynamic prioritization positively contributes to faster knowledge acquisition.

Quicker plateauing of management efficiency at a higher level is a consequence of faster learning and timely experience acquisition. Sharper learning curve and faster knowledge acquisition provide more opportunities for exercising relevant managerial tasks at higher levels. Consequently, this leads to appositely acquired experience. Faster plateauing of management efficiency also facilitates greater utility extraction and faster adoption of new technologies.

DISCUSSIONS

Analytics-based management relies on appropriate analytics (Davenport and Harris, 2007). Deployment of analytics requires an initial investment. Majority of the initial cost of analytics deployment is distributed among the following domains: data collection systems, analytic and knowledge extraction tools, and computing power. Additional management information systems, or their extensions, may also be employed. However, they usually provide higher-level perspective and lack sufficient details.

Data collection systems may range from embedded functionality of already deployed systems to specialized hardware. For instance, a cost-effective way of acquiring data about users' interactions with organizational portals and services is to use web logs (and/or specialized scripts). Majority of web servers have logging capabilities. Managers and system administrators can readily utilize web logs for analyzing usability and interactions of users with web-based systems. On the other side of the spectrum are specialized packet sniffing and deep packet exploration tools. These tools allow significantly deeper inspections, but are also costly. While web logging functionality is embedded in web servers, it adds extra load. Packet inspection tools operate separately from web servers and do not generally influence their load.

Analytic and knowledge extraction tools are interrelated with computing power. Data acquisition tools accumulate extensive amounts of data about information systems and their users. Data may grow large rapidly. Table 1 shows basic statistics of real-world web log data collected from an organizational portal in our case study (Géczy et al., 2011). Data volume is in excess of sixty gigabytes.

Table 1. Basic Statistics for Web Log Data Collected at Organizational Information System

Data Volume	~60 GB
Number of Services	855
Number of Log Records	315,005,952
Number of Resources	3,015,848
Time Period	1 Year

Six web servers collected data over the period of one year. The data contained over three-hundred-million log records. Organizational web-based portal contained significant numbers of services and resources—over three-million resources and eight-hundred-fifty-five services.

Large volumes of data may pose challenges for analysis and knowledge extraction tools. Data needs to be appropriately processed (Bernhardt, 2004). Processing incorporates several stages (Beydoun, 2013). For instance, the starting stage includes initial filtering, pre-processing, segmentation and databasing. After that, data is ready for analysis. Knowledge extraction follows the analysis. Depending on complexity and desired depth, analysis and knowledge extraction tools may be costly.

Processing of large data volumes demands notable computing power (Frischbier and Petrov, 2010). Thus, data processing and analytic tools should be supplied with adequate computing power. Although cost of computing power has been steadily decreasing, it is still significant—particularly for big data processing. Organizations may utilize computing power of their own, or that of external providers.

Contemporary cloud computing technologies provide solutions that enable efficient utilization of both organizations' own resources and those of external providers (Géczy et al., 2012). Cloud computing allows flexible utilization of computing power. Cloud systems are dynamically scalable according to demand. Private clouds are the most beneficial. They are owned by organizations and permit flexible use of resources. If private cloud resources are insufficient, organizations may employ external providers until they acquire sufficient resources to meet their needs. Presently, use of resources from external providers is economical in a short term (Mann, 2011; Morton and Alford, 2009). If organizations plan to use computing resources for longer term, it is advisable to invest in their own private cloud capabilities.

Running costs associated with deployment of analytics are relatively small in comparison to the initial costs. Utilization of private cloud technologies enables flexible use of computing resources. Further optimization of use of computing resources for analytics is possible by segmenting analytics into online and offline categories. The online analytics need to be performed on-the-fly, i.e. as soon as data is available in real time. The offline analytics may be carried out at later time; for instance, during night hours and weekends (or holidays). During night, users are mostly inactive and electricity is cheaper, so more computing resources may be provided for analytics.

CONCLUSIONS

The analytics-based management of information systems facilitates improved management efficiency over the traditional experience-based management. The experience-based management is largely dependent on experiential tacit knowledge accumulated over extensive periods. Tacit experiential knowledge is associated with several challenges in contemporary technological environments. Tacit knowledge is difficult to transfer into explicit form and extend to new managers in a timely and effective

manner. These two primary aspects of tacit knowledge present complications for efficient management of information systems. They lead to knowledge deficiencies because increasing pace of technological progress does not allow sufficient time for gaining proper experience.

New information technologies are being developed at a quickening pace, hence, lifetimes of older technologies expire faster. Maintaining older information technologies to their expected lifetimes leads to increasing gaps in adoptions of novel technologies. Shortening lifetimes of older technologies, on the other hand, decreases returns—under experience-based management. In both cases, reliance on experience-based management results in losses for organizations. It is therefore desirable to achieve higher management efficiency quicker and to extract greater value sooner. This would permit faster adoption of novel technologies. Analytics-based management targets these desirable solutions by employing analytics.

The analytics-based management presents a new dimension in management of information systems that suitably complements experience. Actionable knowledge extracted by analytics from collected data substitutes the absence of viable experience—particularly in the early deployment stages of new technologies. Proper utilization of analytics facilitates transformation of tacit to explicit knowledge, permits automation of managerial tasks, and allows reaching higher management efficiency faster. These effects enable shortening of deployment times of technologies and earlier adoption of new technologies. Deployment of analytics requires proper data acquisition, processing, analysis and knowledge extraction. These requirements are associated with costs. Well-managed deployment of analytics aims at minimizing associated costs while maintaining benefits of analytics.

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METAPHORS OF ORGANIZATIONAL CREATIVITY: FROM SYMBOLIC INTERACTIONISM AND CONSTRUCTIVISM

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ABSTRACT

We used metaphors to explain several processes in organizations over the years. The metaphorical analysis allows us to transfer concepts from one domain of knowledge to another, improving our understanding of organizations. As a psychological process, we analyzed creativity through the lenses of particular abilities of certain people. But, is it possible to personify organizations and consider them as creative entities? How powerful had been the use of metaphors to explain creativity as organizational process in the past? The purpose of this conceptual work, based on discourse or textual analysis, is to explain how two recent developed metaphors could be used as to increase our understanding of the creative process exhibited in organizations: from conceptual ideas of the symbolic interactionism, the creativity as a "role"; from theory of constructivism, the creativity as a "zone of potential development".

JEL: D21, D23, M14, M54

KEYWORDS: Creativity, Organizational Culture, Organizational Climate

INTRODUCTION

The use of metaphors characterizes our way of thinking, acting, and our search for meaning (Grant & Oswick, 1996). Metaphors are the result of a cognitive process by which a concept or word that we apply to a new context in a figurative sense and in a different but plausible way. In management research, metaphors serve as mechanisms to study organizations from different perspectives. Morgan (2006) state that metaphors help companies to analyze organizations from a "mosaic of different lenses or images". Bolman and Deal (2008), stresses that companies are ambiguous, contradictory and uncertain, thus metaphors help administrators to cut the confusion caused by managing such a complex phenomenon.

Managing creativity in organizations is subject to analysis from multiple perspectives. Creativity integrates mental processes belonging to different planes of reality: psychological, cultural, political, structural and others. Therefore, making an exclusive analysis of the creative process in organizations from only one of its many visions is too simple (Pabón, 2001).

Therefore, a metaphorical analysis could be a useful tool to analyze management of creativity in organizations. In fact, the purpose of this paper is to explore two recently used metaphors associated with theoretical construction of creativity in management's literature: from social psychology, the reference to creativity as a "role"; from cognitive psychology and constructivism, creativity as a "zone of potential development".

First, we will consider how important metaphors are in organization theory, including characteristics which are relevant to organizations' context. Second, based on textual analysis, a research technique under discourse or content analysis, we will look at classical texts related to interactionist and constructivist psychological views, to discover possible metaphors which will serve to understand the creative process. Finally, we will show why these positions represent, possibly, a relevant approach to the study creativity in organizations.

LITERATURE REVIEW

Since philosophers Plato and Aristotle established the concepts of mimesis and representation as the basis of poetry and literary fiction, metaphor has been a primary force through which humans create meaning. Metaphors allow us to link experiences in different areas, which help us to understand various concepts in different ways. Grant and Oswick (1996) stated that metaphors produce a new view of reality. The value of metaphors resides in how they help to acquire new knowledge and let to explain various aspects of a phenomenon (Tsoukas, 1991). What were the metaphors used over the years to explain the concept of creativity? Several years ago, creativity was an "attribute of some exceptional human beings" (Woodman and Schoendfelt, 2010). Brown (2010) cited three prolific researchers on creativity and their positions: Spearman said that be creative is to have general ability or talent, not a measurable characteristic: Guilford stated that creative talent is an individual phenomenon, not subject to analysis from social context; but Torrance developed tests to "measure" creative thinking, as the intelligence tests do.

To some researchers (Brown, 2010), we should analyze creativity from a biological standpoint, as a process of adjustment between the organism and the environment. For Romo (1997) and psychoanalysis creativity is “sublimation of conflict". For her, our instincts will be in opposite direction to the goals pursued and there will be an “unconscious fight” to meet high cultural values and behavior socially acceptable. This struggle will release the creative potential.

For behavioral researchers, a product or performance is creative only to the extent that it is novel and useful response to a problem or situation. For Skinner (1986) creativity is "programmed instruction", that is, if we internalize a repeated pattern of responses, we will reinforce our creativity. The cognitive school, moreover, established the computer metaphor as a tool to solve major problems, including those related to creative thinking (Gardner, 2010; Varela, 2000).

But metaphors considered above put human beings at the center, whether it alludes to biological or environmental factors, measurable or not measurable skills, something already programmed or stimulated. However, those metaphors do not address the serious implications of the social context and the possible interactions with "other" human beings, important issues related to free creative spirit in organizations, today.

Thus, what about metaphors in organizations? Over the years we have used metaphorical analysis to approach organizational culture, design and development studies (Morgan, 2006; Bolman & Deal, 2008). For example, two different metaphors stand out today as opposing views about the way companies organize and develop them: the mechanistic vision and the organic vision. The first view related to the metaphor of organizations as “machines”, implying that the structural aspects of business and management are of greater importance. The second view focuses on the metaphor of the company as an “organism”, which implies that the adaptation, stability, and survival, as well as aspects related to human resource management, is the main orientation in organizations (Morgan, 2006).

What implications over management in organizations have these views or metaphors? When managers view organizations as machines, they design them rationally, with fixed and predetermined goals to follow and specific descriptions of jobs to do. The principal assumption here is that businesses run within a stable and efficient environment. Human resources, under this view, should adjust to task requirements and organizations’ processes (Bolman & Deal, 2008). In case of the organic view, metaphor serves to compare companies with "organisms", which implies that the processes of adaptation, stability and survival, as well as aspects related to human resource management, are the main motivations in organizations (Morgan, 2006). Therefore, under this approach, the tasks match to the needs and expectations of the people, while we should use a lateral communication.

The use of metaphors has allowed researchers to focus on organizational problems from several angles. In fact, if managers could understand the power of metaphors and integrate them as a basis to the study of organizations, their understanding of such entities will increase (Grant & Oswick, 1996).

However, we cannot liberally use metaphors as sole explanations of the organizational problems or processes, nor think that we have an indefinite number of possible approaches to the study of organizations through the use of metaphors (Mangham and Overrington, 1987). For example, Tsoukas (1991) says that operational definitions of organizational concepts are not possible by means of metaphors. So why some authors use different metaphors to conceptualize several aspects associated with organizations in recent years? (Morgan, 2006; Bolman & Deal, 2008).

Pabón (2001) explained that, while the concept of creativity as so many definitions in management's literature, the typical notion of creativity in use by organizations is a technical one. In fact, the difference between innovation and creativity is not clear for managers in various organizations. However, he stated that to understand creativity in terms of its procedural and technical aspects only, this implies forgetting its ontological dimension. Creativity is an inherent human capacity and, therefore, implicitly present in all organizations as groups of human beings.

METHODOLOGY

Creativity is a human ability exhibited in two ways, personally and socially. But companies are emphasizing the personal creative spirit only, not the interaction among all members of the organization (Ray & Myers, 1989). In other words, there is a tendency to think of creativity in organizations as a mere management tool for quality improvement in goods and services over time.

However, companies have gone to the other end, too. Companies have raised various questions about the problem of creativity and how the "creative spirit can manifest, learn or develop" (Ray & Myers, 1989). Do they mean the rare person that manifests it? If this is true, does it make sense to speak of organizational creativity? Is it possible to have "better explanation and direction" over creativity management in organizations through metaphorical analysis?

As we will see, it is only when the process of continuous interaction among all members of an organization, together with an adequate management of organizational context, that we can "build" an environment that promotes the creative spirit in business. The ability of members of an organization to take on different roles and to activate their potential development areas is significant, too. We will examine classical texts on social and cognitive psychology, through textual analysis technique, to do this.

Discourse and content analysis refers to processes of search of meaning of texts. Whenever we use one of their related techniques, textual analysis, the goal is, not to look at the text itself, but something implicit which shows his "sense" (Andreu Abela, 2010). To conduct such a textual analysis, we should follow some steps.

First, we should determine the object of analysis. In our research, the unit of analysis will be classical books in social and cognitive psychology, fundamental texts related to psychological processes present on human interaction. Secondly, we should determine the encoding rules and categorization of discourses present on those texts. In our case, we will apply an analysis to discover if we find some metaphors related to group dynamics in those books. Finally, we will make some inferences upon such categorization, that is, to prove if such discovered metaphors could serve as better explanation on organizational creativity.

ANALYSIS

The crisis of the social psychology of the 1960's, produced an interest in interactionist and cognitive theories (Ibáñez, 1990). First, it highlighted the roles played by both people and researchers, under the experimental situation. Second, it drew attention to the importance it had the meaning attributed to the situation by people. Finally, it fostered the experiments validity, putting in doubt any investigation that wasn't strictly experimental.

Mead (1990) says that the category "individual" is only possible on the basis of their membership in society. However, we do not internalize an abstract society, but we reproduce in ourselves, a concrete society, historically determined. In other words, society is "not a thing out there" but emerges in interaction. Individuals are dynamic and constantly changing structures. Thus, we become people in as we understand the roles or specific terms that make us stand out as members of a group.

His proposal gave birth to symbolic interactionism, whose claim is to find the processes by which people interpret their social environment, give meaning to their actions and those of others, and form an accurate representation of the their immediate reality, so that they can develop appropriately within them. Man is not a passive observer of environmental stimuli, but an active agent.

One of its main theorists, Herbert Blumer (1986), tells us that it studies the construction of social meanings through human interactions. Blumer was a prolific researcher in sociology of representations implicit in human interaction, thus his work represents one of our classical texts to be examine in present research. According to him, social facts do not determine human behavior from the outside, but they are the result of human behavior that occurs continuously through their practical activity.

Blumer states that human beings are active agents capable of articulating roer ways to define, depending on the circumstances, the meanings of social situations where they interact. The symbolic interactionism emphasizes the dynamic interaction among people, that is, the way we act, perceive, interpret, and exchange with "other" humans and, in return, such "others" intertwined wit tem.

The symbols, in this context, are social objects used for representation and communication. They are representative of something more and we act on them in accordance to the meaning they promote; they're social in the sense that they mean something to more than one individual. They are critical because they shape our reality and allow our complex individual and group life. Symbols allow us to develop and keep up shared meanings. Social life depends on symbols and they produce mutual understanding and knowledge accumulation.

Furthermore, Blumer says, "roles" are different cognitive structures that allow us to adjust to different social situations. Every role is a holistic idea around which people act, but they don't set up how they work specifically. They shape the identity as a set of perspectives that the person assumes in the process of explaining the meaning of what is happening around them.

The world consists of objects toward which we act in a meaningful way. We interpret the objects, especially the abstract, and this interpretation influences and directs our behavior. What immediate application can we make within the organizational context, particularly as related to creativity?

Csikszentmihalyi (1998), for example, states that it is easier to enhance creativity by changing environmental circumstances than trying to make people think in a more creative way, since creative achievement is not the result of a sudden intuition. Therefore, creativity does not happen in the head of people, neither isolating individuals and their work history and social environment, but in the interaction between a person's thoughts and a sociocultural context.

The symbolic interaction helps us understand the organizational reality. For example, when an employee gets new responsibilities and asked to monitor certain processes that he had not supervised before, he is in a new role, which will challenge his creative abilities. On the one hand, he will feel the responsibility to control the consequences of his actions and, on the other, he feel that he feels the need to work freely and creatively.

However, what will help him to fulfill his new role? Before that change of roles, the employee was an appendage by management in decision-making, but once e as a new responsibility, he internalized a new role and is in control of his own situation and produced a sense of commitment that he did not have before. From social constructivism, the world is socially constructed, so it subscribes to an alternate view of reality, one that is the product of social interaction between human beings. According to this notion, communication serves as a mean to "connect minds" and show the state of knowledge at specific time. (Ibáñez, 1990).

Presumably, after new interactions between human beings are more stable, the individuals involved in them accept new rules to act within the system. This perspective focuses, then, not on the individual but on recurring patterns in interactions within a work situation. From a constructionist's standpoint, there is no such thing as a fixed or objective reality (Weick, 1995). When we say that knowledge is socially constructed, what we attempt to show is that perceptions about what is reality differ among people because of their specific social contexts.

Maturana and Varela (1990), say that "all cognitive experience involves humans, as subjects of knowledge, personally and biologically…in a solitude that only transcends the world that is created with it." Therefore, we are aware that we are in a world that the more we examine it, the more we find that we cannot separate our story from how this world is going to appear. "Doing is to know and all knowing is doing", says Maturana and Varela, so that is why we cannot take out of context human beings in the process of knowing, "since that everything that is said is said by someone."

Due to the importance of the historical context and cultural construction in social interaction to understand higher psychological processes, such task occupied the life and research of Lev Vygotsky. His research demonstrated the priority of human interaction over cognitive processes, thus his work represented a classical text selected for this purpose. For Vygotsky (2012) human psychological reality (or intra-level 'psychological reality) is a result of the internalization of the forms of social relationship.

Vygotsky continues: "any role in the cultural development ... first appears on the social level and then at a psychological level. It first appears between people as an interpsychological category and then ... as an intrapsychological category". He posits a dialectical relationship: the human beings have historic and cultural determined dimensions and they can transform their immediate reality through them. In other words, although human psychological reality has a social origin, the human being internalized the ability to act creatively and transforming his or her context.

Symbols are cultural products which we take ownership through education, first informally and then formally, and are considered in any explanation of the learning process, which includes organizations. According to Moll (1995), a central role of education and training in organizations is to create adequate social contexts where the conscious use of cultural tools, such as language, serves to the purpose of people formation.

Vygotsky states that the current level of execution in the task represents the cognitive development retrospectively, while the potential level of execution represents cognitive development prospectively So, if an employee interacts continually with a more capable or creative peer, he/she can develop this potential. For this reason, he called them, zones of proximal development.

As stated Rodríguez Arocho (1995), "... human beings transform their natural and social world through the use of tools and, in the process, transform themselves". Conceptualizes a socially constructed mind implies that mental activity is not the result of internal physiological reactions or responses to external stimuli. Any human production, and creativity is one of them, should refer always to situational aspects.

How can we apply these theories to the study of creativity in organizations? We have new creative metaphors as are the "roles", "construction of reality" and "development potential." Can they serve as bases for the development and organizational conceptualization of the creative process? Is it possible to speak about organizational creativity?

RESULTS- IMPLICATIONS FOR ORGANIZATIONAL CREATIVITY

Pabón (2001) defines creativity as "the connection of different levels of experience over previously unconnected frames of reference". Interestingly, he assigned to creativity notion, something related to one of primary functions of metaphor: conceptual associations between different experiences. He says that, "creativity is an attribute of the person and there is no such thing as a creative organization, in the same way that there is no collective mind." But he recognizes that can we can develop organizations into a community of people who promote an organizational culture that has creative production as a center.

Woodman & Schoendfelt (2010), however, define organizational creativity as "the creation of services, products, ideas, processes and procedures that people get by working together in complex social systems". Thus, we must understand that people should interact with processes, products and situations, before be creative. It is clear that people in isolation can lead to creative products, but in social interaction they may "build" spaces tending to liberate the creative spirit throughout the company.

From symbolic interactionism, creativity is transformation, manipulation of symbols, definition and generalization of roles. From constructivism creativity is context, community, always potential development area and integration. Therefore, these approaches can help management in organizations to "enhance" creativity, not as a process or collection of attributes, but as a culture.

From constructivism, Vygotsky talks about context preponderance, and proposes a sustained dynamic between humans involved in and other symbolic behavior. An organizational transformation through a sustained staff development, a critical and productive dialogue and collaborative efforts are necessary, as he stated. In light of what Vygotsky says, the company should give a continuous job enrichment that allows employees, guided by experts, to "try all the time its different zones of proximal development. Companies need to show themselves as community spaces where they could develop a sense of identity, unity of purpose and context of shared meanings among its members.

However, according to Goleman, Kaufman and Ray (1995), this demands an atmosphere of respect, an environment where people are confident sharing their "inspirations" with others. The point is that once people feels the responsibility and understand how to share meaning, and employees develop a moral conscience and freedom to produce, we will have the most imaginative solutions to organizational problems.

Creativity is a critical element in companies. It should never be promoted the idea that organizational processes are serious business work, but creativity is a matter of conceptual or ideological nature. Furthermore, attitudes are not built-in a vacuum, but we have to ask what characteristics and values in our organizations are fostering an attitude of carelessness, indifference and lack of motivation which will kill any possible creative spirit.

CONCLUSION

Ray and Myers (1989) argue that creativity depends more on the people of the organization for which they work and working conditions. This means that no one can speak of organizational creativity without reference to creativity manifested by individuals who compose it.

Thus, to support its competitive edge in a deceptive environment, organizations need to develop their capacity to deal with the complex, contextual and circumstantial. To do this, management has to promote, among all members of the organization, a continuous wish to increase the stock of skills and abilities with which the company can count on.

The organizational design should be flexible enough so that you can influence the conduct of members of the organization, so that there is congruence between the purposes and goals of the business and of each person as part of it. To promote the creative spirit will be decisive in this regard.

This research showed that if we make sure that will be a full cooperation and interaction among all members of the organization and employees develop their capabilities to the fullest, we will produce a truly creative environment. The greater the degree of involvement of all human resources in companies in the process of participating and taking over the interactionist discourse of creativity, the greater the effect on the organizational creativity.

However, due to the qualitative nature of this research, we proposed a future survey research of what are the best practices in business innovation in United States, to prove if such companies show this discourse on creativity on their daily practices.

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A QUALITATIVE STUDY OF INTERNATIONAL ORGANIZATIONAL BUYER BEHAVIOR

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ABSTRACT

The primary goal of this qualitative research was to gather information from practitioners about the buying process used by companies in the United States and Germany when purchasing customized software. Before using a popular organizational buyer behavior process model for an international study the author believed it was important to examine whether companies in the countries in the study actually used each step of the model. A multiple-case study design was chosen, since it allowed both for a better understanding of the actual software buying process used by companies and for a comparison of buying processes between companies. The author observed and interviewed individuals at four company's corporate headquarters, two companies in the United States and two companies in Germany. The study found that both Americans and German companies do, to varying degrees, go through each stage of a widely used organizational buyer behavior model. It was also observed, however, that the amount of time and effort dedicated to different stages of the model varied by country. The study also identified differences between buyers in the United States and Germany in regard to the perceived importance of certain vendor selection criteria, which provides support for future empirical studies.

JEL: M16, M31

KEYWORDS: International Organization Buyer Behavior, International Vendor Selection

INTRODUCTION

This qualitative study examines the buying behavior of companies in the United States and Germany, to determine if companies in both countries engage in each step of a widely used organizational buyer behavior (OBB) model (the Robinson, Faris and Wind OBB Model, 1967). While this model is often cited in domestic buyer behavior studies, the appropriateness of using the model in an international trade setting has not been studied. The study of international trade has taken on increased importance as merchandise trade grew by 20% in 2011 (3.7% a year since 2005) and commercial trade grew by 11% in 2011 (WTO, 2012). The countries used in the study, the United States and Germany, are the two largest commercial services traders in the world (WTO, 2012), which is appropriate as the study examined the purchase of a commercial services product.

While the field of buyer behavior has flourished in respect to domestic studies, and to a lesser extent international consumer buyer behavior studies, there has not been a comparable development of international B2B buyer behavior research. After reviewing the literature in the area of international business exchange Liang and Parkhe (1999) concluded that "our knowledge in the area of importer behavior remains fragmented, nascent, and incomplete" (496). One of the weaknesses in studies comparing buyer behavior across countries is the use of different products in different countries. This study examined buyer behavior across countries when purchasing the same product (intellectual property software) to eliminate this weakness. Another important contribution of this research is addressing the question of whether companies in different countries follow the steps of an organizational buyer behavior model. It is critical to answer this question before using one of the popular organizational buyer behavior models in an international setting. Finally, any differences across countries in buyer behavior, such as differences in vendor selection criteria importance, supports future research to better understand these differences and the impact on international marketing. This paper will examine the organizational buyer behavior and international vendor selection literature relevant to this study, will discuss the data and

methodology used in the study, provide the study's results, and will conclude with a discussion of the relevance and importance of the findings.

LITERATURE REVIEW

Three seminal works, by Robinson, Faris and Wind (1967), Sheth (1973), and Webster and Wind (1972), have been credited with laying "the conceptual foundation for the study of organizational buying behavior" (Johnston and Lewin, 1996). Each of these works incorporates middle range models, which have been described as helpful in organizing frameworks for empirical analysis (Wilson, 1996). Robinson, Faris and Wind (1967) developed the first of these models of organizational buying behavior (Kaufman, 1996; Johnston and Lewin, 1996), which is used as a framework for this study. This two dimensional model, called the Buygrid model, is a combination of the authors' Buyphase and Buyclass models. The buyphase dimension represents the process of organizational buying, and reflects the stages of activities performed in a buying situation. These activities are detailed in Table 1 below.

Table 1: Robinson, Faris and Wind OBB Model Buyphase Dimensions

Anticipation or recognition of a problem (need) and a general solution
Determination of characteristics and quantity of needed items
Description of characteristics and quantity of needed item
Search for and qualification of potential sources
Acquisition and analysis of proposals
Evaluation of proposals and selection of suppliers
Selection of an order routine
Performance feedback and evaluation

This table shows the Robinson, Faris and Wind Model Dimensions.

The second dimension of the Buygrid Model is the Buyclass model. The Buyclass model incorporates the important element of the buying situation into the Buygrid framework. There are three buyclasses: new task, modified rebuy and straight rebuy. The buyclassses "represent a continuum ranging from the purchase of products the firm has not previously purchased (new task) to products the firm buys regularly in routine fashion (straight rebuy)" (Bellizi and McVey, 1981, p. 57). The Buyclass concept is seen as critical to the Buygrid model since the three types of buyclasses impact the number of stages undertaken and the intensity of effort expanded in those stages when purchasing a service or good. It has been found that in situations where the modified rebuy involves a more expensive/complicated purchase buyers will proceed through each of the stages of the model, similar to a new task purchase (Bellizi and McVey 1983). Intellectual property software would be considered an expensive, complicated purchase by most companies. Johnson and Lewin (1996) examined the organization buying behavior research published in six leading marketing journals during the twenty five years following the works of Robinson, Faris and Wind (1967), Webster and Wind (1972) and Sheth (1973). They located 165 articles dealing directly with organizational buying behavior and concluded that "much of the variation in organization buying behavior appears to be related to the levels of risk associated with a given purchase situation." (Johnson and Lewin, 1996, p8). Due to the cost and risk (the potential to lose valuable intellectual property rights) involved in the purchase of intellectual property software there is potential for differences to be seen in the purchase of organization buyer behavior across countries.

One area of difference in buyer behavior that has been identified by earlier studies is the importance placed on various vendor selection criteria by buyers. As important as it is to identify similarities in buyer behavior across countries, it is also critical to identify differences. As the service trade expands internationally it will be helpful for exporters to understand what vendor selection criteria are perceived by purchasers as being the most important in different markets. There have been a limited number of studies that have looked at importer vendor search behavior in different countries, and those countries include: Israel (Ghymn and Jaffe, 2003), Sweden (Ghymn K., Mattsson and Cho, 2001), Australia

(Ghymn, Liesch and Mattson, 1999), Japan (Ghymn and Jacobs, 1993), China (Ghymn, Johnson and Zhang, 1993), Thailand (Ghymn, Srinil and Johnson, 1993), United States (Ghymn and Jacobs, 1983), Canada (Thaver and Wilcock, 2006).

Each of the studies conducted by Ghymn (in conjunction with other researchers) were similar in nature. The studies involved surveys containing lists of vendor, regulation and product variables; and purchasers were requested to rate the importance of each variable to their buying decision. While there were differences identified in the perceived importance of vendor selection criteria across countries, there were also close similarities between certain countries. The exact buying situation and product under consideration were often not mentioned in the studies, as the main focus was to determine the perceived importance of various import decision variables to managers. Several of the studies cited the need for additional research examining differences in import decision variables across countries, regions and industries (Ghymn, Liesch and Mattsson, 1999, Ghymn and Jaffe, 2003, Ghymn and Jacobs, 1993).
The Thaver and Wilcock (2006) study examined the perceived importance of vendor section criteria of Canadian industrial buyers when purchasing overseas. The buyers rated 16 different criteria used to select overseas vendors. Three of the top six criteria involved pricing. In order of perceived importance the criteria rated highest were: competitive prices, quality of samples, willingness to negotiate prices, delivery, prompt quotations and effective communications.

Rao and Seshadri (1996) identified differences across countries (India and Nigeria) in the importance placed on selected supplier-attributes by industrial buyers. The results of the study supported the hypothesis that there were differences in the importance placed on supplier-attributes by industrial buyers across the two countries. In addition, it was discovered that Nigerian buyers placed a higher importance on a greater number of attributes overall. Two U. S. based studies, by Scully and Fawcett (1994) and Alguire, Frear and Metcalf (1994), examined organization's motivation for sourcing internationally. The interesting finding was that the only purchasing factor emphasized in both studies was price. Few companies mentioned quality or better technology as potential benefits for sourcing abroad. Differences across countries were found in the perceived importance of vendor selection criteria in these earlier studies. However, there were limitations in the research that make it impossible to conclude with certainty that these differences in the perceived importance of vendor selection criteria were related to country differences. The reason for this uncertainty is that the studies examined different products (or unidentified products) in different countries, used different types of contact lists and data was often gathered during different time frames. These OBB differences do, however, provide incentive for further studies using the same product across countries, as has been suggested in the literature (Ghymn, Liesch and Mattsson, 1999, Ghymn and Jaffe, 2003, Ghymn and Jacobs, 1993).

DATA AND METHODOLOGY

A multiple-case study research methodology was used for the qualitative study. The four companies included in the study had recently purchased, or were in the process of purchasing, intellectual property (IP) software. The multiple-case study design was chosen since it allowed for both a better understanding of the actual software buying process used by companies and for a comparison of buying processes between companies. The researcher visited and observed individuals at the four company's corporate headquarters during the summer of 2009. Two of the companies were headquartered in the United States and two were headquartered in Germany. Interviews were conducted with the individuals responsible for the purchase of the IP systems, as well as with other individuals in the legal departments. Follow-up telephone calls and emails were used when necessary to gather additional information, including emails generated by respondents as they recalled additional details. Respondents were encouraged with open ended questions to slowly walk through the IP software buying process undertaken by their company. To begin each interview, respondent were asked to "Please describe in detail how you went about the purchase of your IP software, from the time you first discovered a need for software until it was installed

and evaluated". However, an interview protocol was also used to assess whether each stage of the buying process was used, and to collect additional information such as what caused the respondents to believe their organization needed a new system. As the respondents were users of legal software, not organizational buyers, it was important to give respondents the time and probing necessary to fully recall their buying process. The same protocol was used with each organization.

A weakness in earlier studies of international organizational buyer behavior is that buyer behavior was being observed when different products were being purchased in different countries. It is difficult to evaluate, and make conclusions, about buyer behavior across countries when different products are being purchased in each country. Therefore, for this study it was decided organizational buyer behavior would be observed across countries when companies were purchasing a nearly duplicate product. The product being purchased in this study is IP software. IP software is used by corporations to track their portfolios of patents and trademarks. A key function of the software is the generation of due dates for patents and trademark around the world, as every country has its own patent and trademark laws.

The software is a high involvement purchase situation, as the software helps safeguard a company's patent and trademarks rights, these rights are often among a company's most valued assets. Companies do have the option of developing the software internally, but due to the lack of internal intellectual property knowledge and the cost of development, this option is rarely chosen. There are four primary suppliers of IP software, along with several smaller suppliers. Employees responsible for the purchase, or future purchase, of IP software were interviewed and observed at two companies in the United States and two companies in Germany. Each of the participating companies was given a pseudo name. GER1 Corporation is a large German chemical company, while GER2 Corporation is a pharmaceutical company headquartered in Germany. USA1 Corporation is a defense contracting and technology services company based on the east coast of the United States, and USA2 Corporation specializes in designer clothes and accessories. Following is an overview of the information gathered from individuals at each of the participating companies in regard to the buying process they used in their latest purchase of IP software.

Individuals in the IP department at GER1 Corporation realized they had a need for a new system when they were considering adding new features to their existing system and noticed that currently available systems had many new desirable features available. At this point they decided it made sense to purchase a new system, as opposed to continuing to modify their old software. At the time of the interview GER1 Corporation was undergoing the process of purchasing a new system and had formally planned out each step of the process. Rather than develop specifications, and then examine what was available in the marketplace to meet their needs, it was decided that GER1 Corporation would look at the systems available from each of the major system suppliers and then develop specifications. This approach had the advantage of allowing the company to see the features available in each system and deciding which features would be most beneficial to the company.

The company developed its list of potential IP software providers from several sources, including prior internal knowledge, IP law conventions, trade journals and the internet (although their internet search provided no new vendors). At the time of the interviews GER1 Corporation had been in contact with each of the companies it believed to be a qualified supplier and had obtained system information. Based on a review of the system information, it was anticipated that each of these top five or six vendors would be invited to corporate headquarters for the opportunity to demonstrate its software. Each of the major suppliers offers evaluation systems, which GER1 planned to have installed at their headquarters location. Based on these evaluations the company will develop a needs document, which will detail the features desired in the new software. The requirements in the needs documents will be used to develop a request for proposals, which will be sent to each of the vendors.

The final phase includes evaluating the proposals and the selection of a vendor. In addition, the timing of the purchase also has to be determined. If the cost of the software is higher than the amount budgeted for the system acquisition, the purchase would be postponed until the following year when additional funds for the software could be included in the budget.

Respondents at GER1 Corporation mentioned three points related to the purchase of new software: 1) All vendors would be considered equally, meaning the current vendor would not begin the process with an advantage over the other vendors, 2) The best company would be selected, no preference would be given to the geographical location of a vendor, and 3) The company providing the highest quality software and support would be selected. The long term cost, not purchase price, of the software is a secondary consideration. The respondents had already begun collecting information on the perceived quality of the vendor's offerings through informal discussions with peers at other large German companies. The purchase decision discussed with IP professionals at GER2 Corporation was the acquisition of a new IP software system several years earlier. The need to obtain a new software system became evident when users of the system realized their existing system did not provide certain desired functionality and they became aware that those functionalities were available on newer IP software offerings. A needs document was developed, which included system requirements along with "nice to have" items.

Four vendors were invited to visit and present their systems and company philosophy at GER2's corporate headquarters in Ingelheim, Germany. The primary purchaser felt that the competing systems were very similar. To obtain a better understanding of the systems in use, and the company support behind the systems, the purchaser visited and spoke with several large corporations to obtain their opinions. These companies included Bayer, Schering-Plough, Novartis, and Henkel. Based on the combination of the vendor demonstrations, responses to the needs document and peer input, a system was selected. The respondent mentioned that the initial cost of the system was not a great consideration. However, the ongoing cost of system support, or the even greater cost of poor system support, was a major consideration. Therefore, the opinions of other companies in regard to the quality of the competing systems and their support services, was important to GER2 Corporation. The respondent also stressed that the system is continually evaluated, as are other available systems, to see what improvements can be made to improve the department's productivity.

USA1 Corporation's need for a new system became apparent when there became a strong desire among employees to be able to access the companies IP portfolio from remote sites. Their six year old IP system did not have this capability, but it was now available from IP system vendors. The current system, which had been slightly modified, was reviewed and a needs document was developed which included similar modifications. The respondent knew of the major vendors in the marketplace, and had perceptions about the quality and pricing of each. However, only the current system supplier was invited to corporate headquarters to demonstrate its latest system. The vendor was provided a copy of the needs document and responded with a proposal that was accepted. In describing the buying process, the respondent mentioned that the decision was easy because USA1 Corporation was satisfied with its current vendor, the decision was very time efficient for her, the systems could be delivered quickly and the cost was under budget. It was also mentioned that it was less expensive to migrate from their current system, than to purchase a new system from a different vendor.

Due to the increased workload caused by a corporate merger, USA2 Corporation decided that there was a need to purchase its first IP software system. Although several individuals attended the system demonstrations, one individual had responsibility for scheduling the demonstrations and ultimately selecting a system. The primary decision maker had knowledge of the four major IP system vendors, and also knew of a smaller New York based system supplier. No search was conducted to locate any other potential vendors. The five software vendors were invited to demonstrate their systems in New York City and each participated. Based on the demonstrations a Request for Proposal was developed and sent to

each of the system vendors. Since each of the systems was perceived as being similar in functionality, the decision maker indicated that price and the impression left by the vendor played a large role in USA2's final vendor selection decision. By "impression", what the respondent from USA2 Corporation said she meant was that the company was looking for a vendor with a positive attitude that would fit with the culture at USA2 Corporation. In regard to price, the respondent mentioned it was not just the initial price that was a factor, but potential ongoing costs were a concern as well. USA2 Corporation did not contact any references for information, although several vendors provided reference contact information with their proposal. The IP vendor who was selected had the second lowest price, but, in the opinion of USA2, had the highest quality system.

RESULTS

The qualitative study did identify similarities and differences between companies located in the United States and Germany in their organizational buying processes. The finding that each of the companies did, to at least some degree, proceed through each of the stages of the Robinson, Faris and Wind (1967) Organizational Buyer Behavior Model was among the most important similarities identified. That said, the companies did vary in areas such as the intensity, order, and time spent on various steps of the organizational buying process Three of the companies, one in the United States and two in Germany, perceived a need for a new system that was caused by a desire for features that were available in the marketplace, but were not a part of their current system. The remaining USA based company had a need for a new system based on an increased IP workload. Every company developed specifications, did at least an internal search for potential sources, acquired proposals and selected a vendor. However, the order of these steps varied among companies.

The selection of an order routine was similar for each of the companies, in that a deposit would be required and the balance would be due upon a successful installation of the system. Each company had plans to test the new software to insure the software met the system specifications in their signed agreements. Each of the three companies that already had their system installed expressed satisfaction with their IP system and vendor. A surprising similarity that was discovered was that there was one individual that was primarily responsible for the purchase decision at each company, whereas buying centers often are considered being responsible for major business purchases. However, this finding supports previous research by Patton (1997), whose study involving 431 industrial buyers found that a majority of industrial vendor selection decisions are made by individuals, as opposed to buying centers.

Areas of differences between the companies included price and quality perceptions. Price was mentioned as a key factor by both U.S. based companies in selecting a vendor. USA2 Corporation, which was looking at systems for the first time, mentioned that price and vendor attitude were important since they found the systems quite similar. The other U. S. company said the "existing client" discount they would receive if they purchased from their existing vendor was a major factor in their system selection. The two German companies indicated that price was not one of the more important variables in selecting a system. The difference in the importance attributed to price can also be reflected in the relationship to company's budgets. For instance, one of the German companies mentioned that if the system selected did not fit within the department's budget this year, they would wait a year until they had a larger budget. Whereas, one of the U.S. companies mentioned that one of the reasons it selected a system from its existing vendor was that it enabled the company to get a system within that year's budget.

Identifying a difference in the perceived importance of quality does not indicate that any company did not want to purchase a high quality system, just as a difference in the perceived importance in price does not indicate any company believed price was not important. The differences in the emphasis on quality was based on observations such as the German companies willingness to spend as many months or years as it would take until they believed they had identified the highest quality system, and their insistence that

their existing vendors would be treated no differently than other vendors (even if purchasing from an existing vendor would lead to a significantly less expensive system) The two U.S. based company purchasers mentioned a more balanced approach, looking more for the best combination of quality, price and delivery schedule. The emphasis on quality by the German companies was also reflected in both companies visiting other companies (including competitors) to see various systems in use and to obtain opinions on systems and vendors. While both of the US based competitors obtained reference contact information, they did not contact any of the vendor's references.

CONCLUSION

The goal of this study was to determine if companies in different countries, in this case the United States and Germany, engage in each step of a widely used organizational buyer behavior (OBB) model. This question is important to answer before using such a model in an international setting. A multiple-case study research methodology was used for the qualitative study. Individuals at four companies that had recently purchased, or were in the process of purchasing, IP software were interviewed. Two of the companies were headquartered in the United States and two were headquartered in Germany. All interviews were conducted in the legal departments located at the company's headquarters.

While this research is only an initial exploratory study into the buying behavior of four companies it does provide preliminary support for using an organizational buyer behavior model, such as the Robinson, Faris and Wind (1967) Organizational Buying Behavior Model, in an international setting. Though companies varied across countries in regard to the timing of when they completed stages and the emphasis placed on various stages, every company in the study worked through each stage of the model. Beyond this critical similarity there were also differences found across countries, such as the importance placed on different vendor selection criteria. The importance of pricing was one difference that was identified between the respondents in each country. The initial price of the IP software was mentioned as being of importance by individuals at both U.S. based companies, whereas the purchasers at the Germany based companies said it was of little importance (apart from meeting their budgetary requirements).

Individuals at all the companies mentioned the importance of locating a high quality IP system. However, whereas the German respondents stressed the importance of taking their time in locating the highest quality IP system, the U.S. respondents focused on the price and time advantage an existing vendor would have in meeting their needs. Although the paper did support the use of a popular OBB model in an international setting there are several limitations of the research that need to be considered. An important limitation to be noted is the study included organizations located in the United States and Germany. Therefore, the results of the study cannot be generalized to other countries without further research. Another limitation to take into consideration is that the buying behavior being studied involves the purchase of IP software. Although it can be suggested that similar results would be obtained when examining other high involvement purchase decisions, it cannot be assumed that the results of the study can be applied to other services without future research. This paper highlights the need for additional research in several areas. First, the limitations of this research can be addressed by expanding the research to additional countries and by observing international buying behavior in relationship to different services and goods. Another interesting area for further research is the exploration of the organization buyer behavior differences across countries that were observed. While differences across countries were identified in this qualitative study, the reasons for these differences have not been identified.

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BIOGRAPHY

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THE IRISH BANKING CRISIS

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CASE DESCRIPTION

The 2007 financial crisis led to a steep decline in the supply of capital to organizations around the world. As liquidity dried up, countries such as Ireland with fragile and overextended credit environments, overpriced asset markets, and accommodative regulatory systems were vulnerable to the resulting shock waves. This case explores Ireland's economic and financial circumstances before and during the crisis, and its response to the crisis in the face of mounting pressure from the European Commission, the European Central Bank and the IMF for action that would help bring Ireland and other stressed euro zone countries back from the brink. At the close of 2010, Minister for Finance Brian Lenihan Jr. needed to decide whether to accept financial assistance from Europe and the IMF or have Ireland go it alone.
The case has a difficulty level appropriate for masters' level or upper level bachelors' students in finance or economics. It is most effectively taught to students who have been exposed to macroeconomics and introductory finance. The case is designed to be taught in 1.5-2 class hours and should require 2-4 hours of outside preparation by students.

JEL: E44, G01, G21

KEYWORDS: Financial Crisis, Property Bubble, Banking Crisis, Government Policy

INTRODUCTION

The US financial crisis that began in August 2007 led to a steep decline in the supply of capital to financial institutions and corporations around the world resulting in deteriorating economic conditions on a global scale. The crisis began with a huge growth in the market for subprime mortgages and a U.S. credit boom and housing bubble over the 2002-2007 period. It was aided by the emergence of a global savings glut within high exporting, low consumption countries, notably China, that contributed to low, long-term interest rates worldwide. These factors were amplified by structural weaknesses in the world's financial regulatory system, and by the growth in leverage, the dependence on short-term funding, the use of risky structured financial instruments, and poor risk management in major financial firms.

While the crisis originated in the world's most sophisticated financial centers with the most highly developed markets and institutions, it consequently eroded the confidence of issuers and investors worldwide in the system's ability to maintain credit flows and economic stability. As liquidity dried up, countries such as Ireland with fragile and overextended credit environments, overpriced asset markets, lax mortgage lending standards, and weak regulatory systems were particularly vulnerable to the resulting shock waves.

At the close of 2010 when important decisions needed to be made, the key decision maker was Brian Lenihan Jr., the Irish Minister for Finance. Lenihan needed to decide, and recommend to Brian Cowen, the Prime Minister, whether Ireland should attempt to resolve the crisis and store market confidence and economic growth on its own, or surrender its fiscal sovereignty by accepting financial assistance from European Commission, the European Central Bank and the IMF (the troika).

The case begins with background information regarding the country and its people, the political situation at the time of the crisis, the Irish economy, and its central bank. This is followed by an exposition of the property explosion that led to the credit crisis and a discussion of its impact on the Irish banking system.

The role of the Irish financial regulatory system in the crisis is explored, along with the steps taken by both the Irish government and the European community to resolve the crisis. The case concludes with the question of whether the Irish government, facing a deteriorating economic and financial situation, would agree to accept financial assistance from Europe and the IMF or have Ireland go it alone and potentially undermine the very existence of the euro.

IRELAND

The Republic of Ireland occupies 70,282 sq. km. (27,136 sq. mi.) of the island of Ireland, which has a total area of 84,421 sq. km. It is located in north-west of the European continent and lies west of the United Kingdom across a narrow strip of the Irish Sea.

In 2008, as shown in Table 1 below, the island had a population of 4.4 million having grown from 3.8 million in 2001 due to strong internal population growth and sizable net migration inflows. The Irish represent the main ethnic group and the main languages spoken are English and Gaelic. The literacy rate is 99%. The island's labor force of 2.1 million people is divided among services 74%, industry 21%, and agriculture 5%. Approximately 75% of all households live in owner-occupied housing.

GDP per capita rose from €30,396 in 2001 to €40,702 in 2008, the fifth highest per capita GDP among OECD countries. Ireland enjoys relatively low taxes, an educated workforce, high average life expectancy, low infant mortality rates, and high internet and communications usage.

Table 1: Ireland Social Statistics, 2008

Population (millions)	4.4
GDP per capita (euros)	40,702
Taxes on the average worker (% of labor cost)	22.9
Life expectancy – Males (years)	77.4
Life expectancy – Females (years)	82.1
Infant mortality (per 100 live births)	3.1
Internet connections (% of households)	62
Mobile phone ownership (% of population)	121

This table shows select social statistics for Ireland in 2008. GDP per capita was €40,702 and taxes on the average worker represented 22.9% of all labor costs. Life expectancy is relatively high for both men (77.4 years) and women (82.1 years), and the infant mortality rate is only 3.1 out of a 100 live births. Sixty-two percent of households have internet connections, and the Irish population own multiple cell phones. Sources: Central Bank of Ireland, IMF, OECD Factbook 2010

Ireland entered the European Union, a zone for the free movement of goods, services, capital and people in 1973. The country became one of the original 11 members of the European Monetary Union (Eurosystem) in 1999 and the euro has been the official currency of Ireland since that time.

The Political Situation

The government is a Parliamentary system composed of an executive branch with a president who serves as head of state in a largely ceremonial role, and a prime minister who acts as the head of the government; a legislative branch with a bicameral national parliament: the House of Representatives (Dáil Éireann) and Senate (Seanad Éireann); and a judicial branch composed of a Supreme Court, Court of Criminal Appeal, High Court, Circuit Court, and District Court.

Irish politics remain dominated by two political parties. Fianna Fail historically is Ireland's largest political party and has dominated the government since the 1930's. Fine Gael is Ireland's smaller second party and has held the top government positions only intermittently over the years. Labour, Sinn Fein, the Greens, and the Progressive Democrats are the other significant parties. In May 2007, national elections brought the Fianna Fail party back to power in a coalition government with the Greens and Progressive Democrats for an unprecedented third 5-year term and its leader Bertie Ahern for a third term as the Prime Minister.

Ahern's third term tenure was short lived, however. Under increasing pressure due to allegations of personal financial irregularities and ethics violations, and amid signs of severe stress in the Irish economy and financial markets, Ahern resigned as the PM and party leader in May 2008. Brian Cowen, the Deputy Head of Government, was elected by the Fianna Fail party as the new as party leader, and Ireland's President appointed Cowen as the new PM. Cowen appointed Brian Lenihan Jr. as his Minister for Finance. Lenihan was trained in law at Trinity College, Dublin and Cambridge University, England and became a barrister in private practice and lecturer in law at Trinity College. He was a member of a prominent Irish political dynasty that included legislators and cabinet ministers going back to the mid 1950's. When his father, Brian Sr. died in 1996, Brian Jr. ran successfully for his Dáil seat in Dublin West.

In 2002, Lenihan became a junior minister at the Department of Health, with responsibility for children, and in 2007, he was promoted to a full ministerial portfolio as Minister for Justice. In 2008, Cowen appointed him Minister for Finance just in time for the start of the global financial crisis and an Irish banking crisis.

The Irish Economy

Ireland is a small, trade-dependent economy with a nominal GDP of €160 billion in 2009. Services represent 69% of GDP, industry 29% and agriculture 2%. International trade in 2010 amounted to $117 billion in exports (excluding services), and $60 billion in imports (excluding services). Major suppliers to Ireland include Great Britain and Northern Ireland 30%, U.S. 18%, France 5%, Germany 7%, China 6%, and Japan 2%. As a member of the European Monetary Union (EMU), Ireland's currency is the euro.
After a long period of economic stagnation and emigration, Ireland enjoyed strong economic growth over the 1994-2006 period and became known internationally as the "Celtic Tiger". As shown in Table 2 below, annual growth in real GDP was strong and the unemployment rate fell from 12.1% in 1995 to roughly 4.5% in the early 2000's. Consumer price inflation remained close to the euro area average during the period except for a brief, four year period from 2000 to 2003 when prices rose above those in the euro area. Once Ireland became a member of the European Monetary Union (EMU) in 1999, the country's nominal interest rates became set by the ECB at a lower level for the benefit of the larger euro area. Inflation in Ireland became difficult to control and real interest rates sometimes turned negative, providing a strong incentive to borrow while raising asset prices. On the positive side, Ireland's overall growth led to a dramatic decline in government debt from €74 billion in 1996 (74.3% of GDP) to €25 billion in 2006 (24.9% of GDP).

In the period prior to 2000, this growth was driven by a progressive economic strategy based on inward foreign investment and exports of high value products such as microchips, software and pharmaceuticals. Ireland's economic model led to a high level of international competitiveness and the country's success reflected a number of attractive features.

Table 2: Ireland: Selected Annual Statistics, 1995-2010 (Annual change unless otherwise noted)

Year	Real GDP	Consumer Prices[1]	Unemployment Rate	Government Debt (% GDP)
1995	9.5	--	12.1	83.6
1996	7.7	2.1	11.5	74.3
1997	10.7	2.1	9.8	65.1
1998	8.6	2.2	7.4	55.1
1999	11.1	2.5	5.6	49.3
2000	9.9	5.2	4.3	38.3
2001	5.9	4.0	3.9	35.4
2002	6.4	4.7	4.4	32.1
2003	4.5	4.0	4.7	31.1
2004	4.7	2.3	4.5	29.4
2005	6.2	2.2	4.4	27.3
2006	5.4	2.7	4.4	24.9
2007	5.6	2.9	4.6	25.0
2008	-3.0	3.1	6.3	44.4
2009	-7.0	-1.7	11.8	65.5
2010	-0.4	-1.6	13.6	92.5

Table 2 shows select economic statistics for Ireland over the 1996-2010 period: real GDP, consumer price inflation, unemployment rate, and government debt as a percent of GDP. The data show a relatively strong period of growth and economic performance until the crisis in 2008.
Source: IMF. [1]Harmonized Index of Consumer Prices, average annual

These included a stable macroeconomic and political environment; a 12.5% corporate tax rate for domestic and foreign firms; a flexible, English-speaking work force; cooperative labor relations; high productivity, pro-business government policies; a transparent judicial system; strong intellectual property protection; proximity to European markets, and the pulling power of existing companies operating successfully that attracted others to locate near them.

Immigration expanded to take advantage of the increasing job opportunities and foreign workers, mostly from the new EU member states, increased the country's population. Despite this surge in population, per capita income levels increased 122% over the 1994-2006 period.

The Central Bank of Ireland

The Central Bank of Ireland was established in 1943 and became a founding member of the Euro system in 1999. The Euro system comprises the European Central Bank (ECB) and the national central banks of the countries that have adopted the euro. The primary monetary policy objective of the ECB is the maintenance of price stability in the euro area. As a member of the Eurosystem, the Central Bank of Ireland is responsible for maintaining price stability in Ireland through the implementation of ECB decisions on monetary policy. Thus, the Central Bank of Ireland does not determine and implement its own monetary policy.

The Governor of the Central Bank of Ireland is a member of the ECB Governing Council, which sets interest rates for the euro area, and thus has direct input into monetary policy decisions and other policy areas of the ECB. The Governor of the Central Bank of Ireland is appointed by the President of Ireland for a seven-year term.

After joining the Euro currency union in 1999, Ireland enjoyed relatively low nominal interest rates set by the ECB. The ECB's primary goal of price stability is defined as an inflation level just below 2%, and upon creation in 1999, the bank set its overnight policy rate at 3% as a benchmark to achieve its price stability mandate. This rate was raised gradually to 4.25% in June 2000 and remained at that level until October 2008, a month after the collapse of Lehman, when it was reduced to 3.25%. As the crisis deteriorated, the ECB lowered the policy rate to 1% in May 2009 and kept the rate at that level throughout 2010.

For comparison, the U.S. Fed had been raising its federal funds policy rate during the dot.com boom of the late 1990's and it peaked at 6.5% in May 2000. The subsequent U.S. recession saw a gradual lowering of the rate to 1% in June 2003 where it remained until June 2004 when it was gradually raised to 5.25% by June 2006. Subsequent federal funds rate decreases in response to the U.S. financial crisis resulted in a target rate of 0-.25% in December 2008, with Fed projections for an equally accommodative monetary policy through the end of 2015. Table 3 shows that during the critical 2001 through 2005 period of rapid economic growth in Ireland, when house purchase loan rates were declining (Table 4) the ECB target policy rate was actually above the U.S. target federal funds rate, except for May 2001 when the U.S. target rate was 0.25% higher than the ECB target rate

Table 3: ECB Target Policy Interest Rate with Corresponding U.S. Target Federal Funds Rate (In Percent)

ECB Meeting Dates		ECB	U.S.
1999	1-Jan	3.00	4.75
	22-Jan	3.00	4.75
	9-Apr	2.50	4.75
	5-Nov	3.00	5.25
2000	4-Feb	3.25	5.75
	17-Mar	3.50	5.75
	28-Apr	3.75	6.00
	9-Jun	4.25	6.50
	1-Sep	4.25	6.50
	6-Oct	4.25	6.50
2001	11-May	4.25	4.50
	31-Aug	4.25	3.50
	18-Sep	4.25	3.00
	9-Nov	4.25	2.00
2002	6-Dec	4.25	1.25
2003	7-Mar	4.25	1.25
	6-Jun	4.25	1.25
2005	6-Dec	4.25	4.00
2006	8-Mar	4.25	4.50
	15-Jun	4.25	5.00
	9-Aug	4.25	5.25
	11-Oct	4.25	5.25
	13-Dec	4.25	5.25
2007	14-Mar	4.25	4.50
	13-Jun	4.25	4.50
2008	9-Jul	4.25	2.00
	8-Oct	4.25	1.50
	12-Nov	3.25	1.00
	10-Dec	2.50	1.00
2009	21-Jan	2.00	0 - 0.25
	11-Mar	1.50	0 - 0.25
	8-Apr	1.25	0 - 0.25
	13-May	1.00	0 - 0.25

Table 3 shows the European Central Bank (ECB) target policy rate versus the corresponding US target policy rate, the federal funds rate, over the 1999-2009 period. It shows that during the critical 2001 through 2005 period of rapid economic growth in Ireland, when house purchase loan rates were declining the ECB target policy rate was actually above the U.S. target federal funds rate, except for May 2001 when the U.S. target rate was 0.25% higher than the ECB target rate. Source: ECB, U.S. Federal Reserve Board

The Property Explosion

By 2000, the economic boom in Ireland and the confidence it generated led to a substantial growth in financial markets and residential and commercial property markets. Residential property prices rose over 400% during the 1994-2006 period as supply was unable to keep up with demand for owner-occupied housing and for the rapidly growing buy-to-lease market. Commercial property prices remained strong into 2007. Aggressive bank lending fueled both demand by homebuyers and speculative building by

developers. The government's favorable tax treatment of housing, particularly compared to other EU countries, helped to fuel the expansion. For example, households are permitted a tax deduction on mortgage interest payments, and enjoy limited taxes on capital gains from the sale of residential property. As a result, property prices, both real and nominal, rose more rapidly in Ireland in the decade leading up to 2007 than in any other developed economy in the world. Table 5 shows average annual home prices in Ireland over the 2000-10 period in euros. The average price of new construction in the country increased 91% from €169,191 in 2000 to a high of €322,634 in 2007, while second-hand home prices rose 98% from €190,550 to €377,850 over the same period. New home and second-hand construction in Dublin, the capital, increased 88% from €221,724 in 2000 to €416,225 in 2007, and second-hand home prices rose 107% from €247,039 in 2000 to a high of €512,461 in 2006.

Table 4: Home Purchase Lending Rates (In percent per annum)

Year End	House Purchase Loan Rates
1999	3.69-4.39
2000	5.59-6.15
2001	4.25-4.75
2002	3.85-4.70
2003	3.30-3.60
2004	3.25-3.60
2005	3.32-3.78
2006	4.49-5.03
2007	5.10-5.53
2008	3.75-5.79
2009	2.45-5.90

Table 4 shows select home purchase lending rates in Ireland over the 1999-2009 period. House purchase loan rates were declining during the period of rapid economic growth in Ireland from 2001 through 2005, when the ECB target policy rate was largely above the U.S. target federal funds rate. Sources: CBI Quarterly Bulletin Winter 2000, Winter 2001, Winter 2002, Winter 2003, Autumn 2004, July 2005, July 2007, April 2008, April 2009

Table 5: House Prices in Ireland and Year-to-Year Percentage Change: 2000-2010 (Prices in euros)

	New Construction		Second-hand		New Construction (Dublin)		Second-hand (Dublin)	
	Average price	% Change	Average price	% Change	Average price	% Change	Average price	% Change
2000	169,191	13.9%	190,550	16.7%	221,724	14.6%	247,039	17.3%
2001	182,863	8.1%	206,117	8.2%	243,095	9.6%	267,939	8.5%
2002	198,087	8.3%	227,799	10.5%	256,109	5.4%	297,424	11.0%
2003	224,567	13.4%	264,898	16.3%	291,646	13.9%	355,451	19.5%
2004	249,191	11.0%	294,667	11.2%	322,628	10.6%	389,791	9.7%
2005	276,221	10.8%	330,399	12.0%	350,891	8.8%	438,790	12.6%
2006	305,637	10.6%	371,447	12.4%	405,957	15.7%	512,461	16.8%
2007	322,634	5.6%	377,850	1.7%	416,225	2.5%	495,576	-3.3%
2008	305,269	-5.4%	348,804	-7.7%	370,495	-11.0%	444,207	-10.4%
2009	242,033	-20.7%	275,250	-21.1%	260,170	-29.8%	345,444	-22.2%
2010	228,268	-5.7%	274,125	-0.4%	251,629	-3.3%	344,891	-0.2%

Table 5 shows the rapid rise of average property prices in Ireland and the year-to-year percentage change over the period 2000-2010. The average price of new construction in the country increased 91% from €169,191 in 2000 to a high of €322,634 in 2007, while second-hand home prices rose 98% from €190,550 to €377,850 over the same period. New home and second-hand construction in Dublin, the capital, increased 88% from €221,724 in 2000 to €416,225 in 2007, and second-hand home prices rose 107% from €247,039 in 2000 to a high of €512,461 in 2006. Sources: Department of Finance Monthly Economic Bulletin: March 2001, December 2002-2011

The construction sector accounted for approximately one-quarter of the new jobs created over this period. The share of the workforce engaged in construction increased from 7% in the mid-1990's to over 13% by 2007 (Honohan, 2009). As a result, Ireland went from getting 4-6% of its national income from home

building in the 1990's to approximately 15% in 2006-7, at the peak of the property bubble, with an additional 6% from other construction (excluding road construction). This construction boom led to a significant increase in the demand for labor. Labor bottlenecks emerged in construction and public services, and wages rose throughout the economy putting pressure on Ireland's wage competitiveness. Over the 1996-2006 period, the average annual growth rate of real disposable income per capita in Ireland grew at an average annual rate of 9.1% compared to 4% in EU-15 countries (Malzubris, 2008). This growth in income generated a return of residents who had emigrated in past years, and a substantial increase in tax revenue and government spending (Kelly, 2009).

However, Ireland's small, open economy was vulnerable to external shocks. With the onset of the global financial crisis in 2007, housing prices and new construction began to decline exerting a drag on GDP growth. The Irish economy's competitiveness began to erode. The country entered into a recession in 2008, with GDP falling by 3.5% in 2008, 7.6% in 2009, and 1% in 2010. The real estate market and construction industry collapsed and unemployment rose to double-digit levels. Deflation, a decline in credit availability, lower business investment outlays, weak domestic spending, and lower consumer confidence contributed to bleak economic conditions. A deepening government budget deficit ensued, approximately 14.2% of GDP in 2009, as revenues from property transactions and the value-added tax declined while welfare costs rose. Gross public debt increased from 25% of GDP in 2006 to almost 93% of GDP in 2010. See Table 2 above. As a member of the euro zone, Ireland could not be expected to devalue its currency in order to improve its international competitiveness. Moreover, as the data in Table 6 demonstrate, the euro rose steeply in value against the U.S. dollar over the 2002-2008 period, leading to a series of trade deficits. Ireland's property bubble only made the situation graver. Ireland's internal competitive devaluation exhibited by falling prices and wages may have been considered a positive development. But, the "Celtic Tiger" had lost its roar.

Table 6: U.S. Dollar/Euro Foreign Exchange Rate: 1999-2011

Date	Value[1]
January 1, 1999	1.0653
January 1, 2000	0.9232
January 1, 2001	0.8952
January 1, 2002	0.9454
January 1, 2003	1.1321
January 1, 2004	1.2438
January 1, 2005	1.2449
January 1, 2006	1.2563
January 1, 2007	1.3711
January 1, 2008	1.4726
January 1, 2009	1.3935
January 1, 2010	1.3261
January 1, 2011	1.3931

Table 6 shows the appreciation of the euro against the dollar over the 2000-2008 period, which hurt Irish exports. As a member of the European Monetary Union (EMU), Ireland did not have a national currency that it could devalue to boost its competitiveness in international markets. Source: Federal Reserve Bank of St. Louis, FRED Economic Data. [1]Annaual average of daily figures

THE IRISH CREDIT CRISIS

What had started as a real economic boom in the 1990's turned into a property bubble fueled by a huge increase in bank lending that ultimately led to the country's credit crisis. A high percentage of the loans went to property developers to finance housing and commercial projects, homebuilders and homebuyers. In 1997, Irish banks were lending €10 billion (2009 prices) to developers and by 2008, the value of this lending had risen to eleven times its 1997 value. Similarly, in 1997, the banks were lending €20 billion (2009 prices) in mortgages and by 2008, the value of this lending had risen to seven times its 1997 value. Household indebtedness in Ireland was among the highest in the euro area at 81% of GDP, much of it

secured on property Malzubris, 2008). The banks, in turn, were highly vulnerable to any decline in property prices.

The rise in home and commercial property prices over the 1995-2000 period was significantly faster than earnings. In 1995 the average price of a new or pre-owned home in Ireland cost an amount equal to four years' average industry earnings. By 2006, new home prices had risen to ten times earnings and pre-owned Dublin homes sold for seventeen times earnings. As the number and size of the mortgages grew and home prices soared, a feedback loop developed between mortgages and prices with larger mortgages driving up home prices. With rising collateral values, banks were incentivized to grant even larger mortgages thereby encouraging developers to build even more homes. Thus, with home supply fixed in the short run and with home prices increasing as the size of mortgages increased, Ireland's economy was now being driven by the easy availability of credit rather than by its fundamental international competitiveness (Kelly, 2009).

In a classic bubble, buyers come to believe that a commodity's prices can only rise and are thus willing to take on increasing amounts of debt in order to take advantage of the rising prices. When borrowers become reluctant to take on additional levels of debt, or when the commodity's supply, such as housing stock, begins to catch up with demand, both borrowing and commodity prices start to decline. In the Irish situation, domestic lending to property borrowers declined significantly and home prices continued to decline while unemployment continued to rise.

The Irish Banking System

Ireland had seven major national banks and credit institutions as well as a number of international banks with branches across the country. The two largest Irish banks as of June 2010 were the Bank of Ireland with assets of €256.98 billion and Allied Irish Banks with assets of €249.26 billion. Other large Irish banks and credit institutions were Anglo Irish Bank, EBS Building Society, Irish Nationwide Building Society, Irish Life and Permanent, and the Postbank Ireland Limited.

As Ireland became increasingly financially open, and as the global financial services industry trended toward liberalization, innovation, competition and consolidation, the Irish banking system became increasingly exposed internationally. At the same time, however, the Irish domestic banking system remained relatively concentrated, with the Bank of Ireland, Allied Irish Banks, and Anglo Irish Bank representing about 45 percent of total banking assets but nearly 80 percent of the domestic retail market (Duggar and Mitra, 2007).

Ireland's banks began to change their operations after the country joined the Euro currency area in 1999 and continued to adapt throughout the period up to 2008. The banks transitioned from a business model dominated primarily by deposit funding to one focused on short-term borrowing in international wholesale markets awash with low cost funds due partly to a global savings glut. They issued short-term euro-denominated bonds and sold them to euro area banks in the interbank market, thus incurring no exchange rate risk. This allowed Irish banks to extend long-term credit in the property markets at lower cost, up to 35 years or longer for some mortgages. In addition, since the interest rate on many of these mortgages was set as a fixed markup over low European Central Bank (ECB) rates, there was little opportunity for Irish banks to recover through higher lending spreads. Net indebtedness of Irish banks to the rest of the world totaled 10% of GDP in 2003 and rose to 60% of GDP in 2008 (Honohan, 2009). In addition, non-financial lending increased from 60% of GDP in 1997 to over 200% of GDP in 2008, the highest level of any euro zone country. Total bank lending by 2008 had risen to 250% of GDP while deposits had risen only to 125% of GDP. By 2008, total assets in large Irish financial institutions were 4.4 times Ireland's GDP (Dwyer, 2011).

Irish Banks and the Crisis

As shown in Table 7 below, over the 1999-2008 period the liability side of Irish banks' balance sheets changed dramatically. Liabilities grew more than 650% from €78.5 trillion to €514 trillion, with a sharp drop in capital and reserves from 8.9% to 3.8% of total liabilities. In 1999 the deposits of the Irish public accounted for approximately 45% of all bank liabilities, and deposits from Irish and non-Irish credit institutions amounted to another 28%. By 2008, Irish customer deposits had fallen to 22% of total liabilities, while deposits from Irish and non-Irish credit institutions rose to over 46%, and Irish and non-Irish debt securities accounted for another 12.2% of liabilities. Non-Irish interbank borrowing and bond issuance had become large and fast growing liabilities. Credit was flowing into Ireland and contributing to the housing and construction bubble and, as discussed below, regulatory authorities took little action to curtail this credit inflow.

Mortgage borrowing peaked in the third quarter of 2006 and the number of unsold housing units began to rise by mid-2007 (Kelly, 2009). Falling home prices and a decline in demand for commercial properties, well before the start of the global financial crisis, led to an increase in the default rate on loans to property developers, builders and homeowners. Irish banks were forced to take losses against many of these loans. As a result, share prices of Irish financial services institutions, which had risen in value three times faster than overall equity prices in Ireland over the 2000-2007 period, began to decline in March 2007.

Table 7: Composition of Irish Banking Liabilities, 1999 and 2008 (Numbers in Millions of Euros)

Deposits from non-Irish credit institutions	Dec-99	Dec-08	Dec-99	Dec-08
Deposits from Irish customers	15,542	149,465	19.8%	29.1%
Deposits from Irish credit institutions	35,142	114,235	44.8%	22.2%
Other liabilities	6,472	87,196	8.2%	17.0%
Debt securities, non-Irish	9,671	57,227	12.3%	11.1%
Deposits from non-Irish customers	71	43,574	0.1%	8.5%
Debt securities to Irish residents	4,336	23,415	5.5%	4.6%
Capital and reserves	241	19,092	0.3%	3.7%
	6,990	19,746	8.9%	3.8%
	78,465	513,950	100.0%	100.0%

Table 7 shows the composition of Irish banking liabilities over the 1999-2008 period. Liabilities grew more than 650% from €78.5 trillion to €514 trillion, with a sharp drop in capital and reserves from 8.9% to 3.8% of total liabilities. Moreover, the period also saw a shift in the composition of Irish banks' balance sheet from traditional deposit-based funding to international borrowing. Deposits from Irish customers decreased from 44.8% of all bank liabilities in 1999 to 22.2% in 2008, while deposits from non-Irish credit institutions increased from 19.8% of all bank liabilities in 1999 to 29.1% in 2008. Source: Central Bank and Financial Services Authority of Ireland. Table C4, Quarterly Bulletin

This pattern is evident in the share prices of three large Irish banks which fell sharply relative to overall stock prices in Ireland and greater than other Euro-zone countries. The Bank of Ireland, had a peak share price of €18.65 in February 2007 and a share price of €0.12 in March 2009; Allied Irish Banks had a peak share price of €23.95 in February 2007 and a share price of €0.28 in March 2009, and Anglo Irish Bank had a peak share price of €17.53 in February 2007 and a share price of €0.12 in March 2009. Anglo Irish Bank suffered a market run in September 2008 in the midst of the collapse of Lehman Brothers and tightened access to wholesale funding. The global financial crisis had now arrived in Ireland. Irish banks found it difficult to roll over their foreign debt. Their liabilities to international bondholders rose and foreign lending sources dried up. As a result, Irish banks turned increasingly to borrowing from the ECB and from the inter-bank market (Kelly, 2009). As Irish property values declined and as households and firms deleveraged, and as depositors switched their savings to stronger non-Irish banks, Irish banks experienced a loss in deposits and a reduced ability to extend new credit to the Irish economy even if demand were to rise.

By 2009, loans from the ECB became a regular source of credit on bank balance sheets. During the early years of the financial crisis, the ECB conducted liquidity-providing longer-term refinancing operations with a maturity of up to 12 months that allowed euro zone banks to borrow with liberalized collateral

requirements at a 1% interest rate. As this enhanced facility began to wind down at the end of 2009, Irish banks faced higher borrowing costs as wholesale funding tightened during the crisis, thus making it difficult to fund mortgages paying only 3-4% interest.

The Irish banks' problems on the liability side of their balance sheets, combined with their lack of diversification on the asset side, made Irish banks highly vulnerable to the global liquidity crisis. Assets were concentrated in speculative development loans, most of which the banks held on their books along with the credit risk, rather than being securitized and distributed to investors along the lines of U.S. banks at the time. Significant mortgage defaults and losses on business loans due to the drop in home prices and rise in unemployment resulted in an erosion of the banks' core equity capital. This needed to be addressed, and soon.

FINANCIAL REGULATION IN IRELAND

In 2002, the government of Ireland transitioned to a new regulatory environment. It created, for the first time, a single regulatory authority for financial services housed within the Central Bank of Ireland. The role of the new entity, the Irish Financial Services Regulatory Authority (IFSRA), was to coordinate, integrate and oversee the supervision of Irish financial institutions such as banks, insurance and securities companies, and to protect consumer interests as they relate to financial institutions. While operating within the Central Bank of Ireland, however, the IFSRA had its own Chief Executive, Chairperson, Board and staff in order to carry out its functions independently. The new, combined entity was called the Central Bank and the Financial Services Authority of Ireland (CBFSAI).

The economic climate that led to the pre-crisis rise of the Celtic Tiger included a weak financial regulatory regime from both micro-prudential and macro-prudential perspectives. Irish regulators adopted a "principles-based" and highly deferential regulatory approach to the banking industry, including a heavy reliance on the banks' own internal risk models. Connor et.al. (2010) reported on a number of cases of regulatory forbearance during the pre-crisis period, including instances where questionable or fraudulent accounting practices were ignored or worse, condoned.

More importantly, the regulators may have missed two warning signs that systemic risk was building up in the banking system. One was the rapid, higher than average balance sheet growth over the 1998-2007 period. The other was the highly concentrated and high-risk nature of the banking sector's loan activities to property developers. For example, Irish Nationwide, a large bank with a mission to provide credit to retail customers, aggressively built up a property development loan portfolio to an amount equal to 80% of its outstanding loan funds (Connor et al., 2010). Also, according to Kelly Irish regulators failed to contain the hyper-aggressiveness of Anglo-Irish Bank which grew from a small merchant bank in the 1990's to one of the largest banks in Ireland by 2007, forcing other large Irish banks to match their aggressive growth in order to survive (Kelly, 2009). Finally, weak bank stress testing criteria and the lack of supervisory follow-through and decisive action contributed to the emerging crisis. For example, regulators took no action even when they identified serious weaknesses in need of corrective action such as the lack of reliability and rigor in bank risk-management models.

Throughout the highly competitive, market share driven banking sector, lending standards were loosened substantially. In addition to high income multiples, lengthy maturities and interest only periods, the credit quality of new residential mortgages declined precipitously over the pre-crisis period. The percent of mortgages with high loan-to-value (LTV) ratios rose substantially. By 2006, two-thirds of loans to first time buyers had LTV ratios greater than 90% and one-third had LTV ratios of 100% (Honohan, 2009). Moreover, as the number of interest only loans grew, the regulators did not limit the amount of debt that homeowners may amass in purchasing homes, nor did they curtail the non-collateralized loans banks made to wealthy developers, written against "personal guarantees" in the event of a default. During this

period, the CBFSAI took only a weak step to reduce the decline in lending standards. The regulator increased to 100% the risk-weight on the portion of a residential mortgage that was written above an 80% LTV level (Connor et al., 2010).

The Rating Agencies Make Their Move

As the situation deteriorated in Ireland, the rating agencies (Moody's, S&P, and Fitch) punished both the banks and Irish government bonds. Throughout the crisis, the rating agencies downgraded the largest banks in Ireland several notches, and by early 2011, their grades had been reduced to speculative and near speculative levels. The downgrade of Anglo Irish Bank was particularly severe, resulting in an S&P rating of B- by February 2011. Irish depositors withdrew €18.5 billion from their bank accounts in 2010 alone, approximately 10% of total bank deposits. Irish government bonds fared no better. In 2010, S&P downgraded Irish 10 year bonds from AA to A-, a very low investment grade. By the end of the year, borrowing costs had soared to approximately 9.5%, about three times the rate paid by AAA rated Germany.

THE GOVERNMENT'S RESPONSE

The government had become increasingly dependent on the tax revenue generated by the property sector, and provided a number of tax incentives to property investors in hotels and to investors in homes in designated rural areas. When Lenihan took over as Minister for Finance in 2008, in response to the global financial crisis and the ensuing Irish banking crisis, he wanted to reassure the public that Irish banks were healthy. He told *Six One News* in September 2008 "Our financial sector is sound and we are determined to ensure that continues". Likewise, he wanted to reassure financial markets that the government was committed to fiscal discipline. Over a period of fourteen months, he proposed three increasingly austere budgets that cut both capital expenditures and operational spending across many programs. The budgets included cuts in pay for public service workers and allocations for social welfare programs, while reinstituting university fees and raising excise taxes and income taxes on higher income workers. The ensuing recession led to higher unemployment, close to 14% in 2010. In November 2010, Lenihan introduced a four-year plan to stabilize the economy by 2014 which included even further cuts in social welfare programs, cuts in the minimum wage, and an increase in the value added tax. Demonstrators took to the streets to protest the severe austerity measures and several coalition members resigned from the government. Among European governing circles, however, Lenihan and the Irish government were viewed as decisive and courageous for making tough fiscal decisions.

The government took additional steps to avoid a collapse of the banking system and ensure investors of the banking sector's liquidity and strength. In September 2008, as a supplement to the limited deposit insurance offered by the government, 90% of €20,000, the government guaranteed all the retail and corporate deposits, interbank deposits, covered bonds and senior debt of six major Irish banks and credit institutions. Lenihan assured the public again on *Six One News* that "there will be no exposure to the taxpayer on this". The guarantee created a government contingent liability equal to 200% of GDP, and essentially converted private losses into public obligations. With Irish creditworthiness in international credit markets at a low point, the cost of credit default swaps on Irish government debt increased 300 basis points between September 2008 and January 2009 (Connor et al., 2010).

Despite the government guarantee of the liabilities of Irish banks, the government recognized that the banks would need recapitalization to remain operating. In February 2009, the government directly injected equity capital into the two largest banks, Allied Irish Banks and the Bank of Ireland, in the form of a purchase of preferred shares amounting to €3.5 billion each. These banks, as well as other Irish banks, sought to raise private capital by selling some of their assets including overseas loan portfolios and

businesses. Anglo Irish Bank, however, was facing a much more serious liquidity crisis in early 2009, unable to roll over its foreign borrowings and short of collateral to refinance at the ECB. The government nationalized the bank in January 2009, injecting €4 billion, and took majority control (93%) in December 2010. The government set aside approximately €35 billion to recapitalize the other banks as the crisis progressed (Enrich, 2010, Brown and Hudson, 2011).
During this period, however, Lenihan was continuing his positive message. In February 2009, he stated on the weekly TV program, *The Week in Politics*, that "We are now going to commit an investment for a definite return to the taxpayer. This is not bailing out the banks. This is a commercial investment for the state…"

The National Asset Management Agency

In April 2009, Lenihan announced the creation of the National Asset Management Agency (NAMA), a "bad bank" which would buy, at a discount, the riskier performing and non-performing land, property development, and commercial loans from banks. NAMA would purchase approximately €80 billion in assets and manage them with the aim of achieving the best possible financial return over the long term (7-10 years). This would cleanse the balance sheets of the most systemically important banks of risky, difficult to value loans and keep their equity capital from deteriorating further. Perhaps more importantly, the balance sheet restructuring would enable the banks to access funds in international financial markets and return to lending thus stabilizing the Irish economy and financial system. NAMA operates under the aegis of Ireland's National Treasury Management Agency and is overseen by a seven member Board appointed by the Minister of Finance and managed by a Chief Executive.

By the end of 2011, NAMA had acquired €74 billion in property loans from five participating institutions for a total of €31.8 billion, an average discount of 57% from book value. See Table 8. The purchases were made through the issuance of government securities or NAMA-guaranteed securities that pay a floating rate of interest based on the cash flow, i.e. the interest due, from the acquired assets. The participating banks could use these securities as collateral against loans from the ECB or from market counterparties. By late 2009, Lenihan was convinced that Ireland was on the road to recovery. He told *Six One News* in December 2009 "The worst is over, we've turned a corner".

Central Bank Reorganization

On the regulatory front, in the aftermath of the financial crisis the government passed the Central Bank Reform Act of 2010, which created a single consolidated organization – the Central Bank of Ireland – with responsibility for both central banking and financial regulation of banks, building societies and other designated credit institutions in Ireland. The new structure replaces the Central Bank and Financial Services Authority of Ireland with its two component entities – the Central Bank and Financial Regulator – each with its own responsibilities and governance structure.

The reorganized bank is headed by a 10 member Commission, chaired by the Governor. The Governor, Patrick Honohan since 2009, is supported by a Deputy Governor for Central Banking, a Deputy Governor for Financial Regulation, and a Chief Operations Officer. The main goals of the reorganized Central Bank, in addition to price stability, are to contribute to financial stability both in Ireland and across the euro area through macroprudential oversight, including monitoring overall liquidity for the banking system; to ensure proper and effective microprudential regulation of financial institutions and markets; and to protect customers and investors.

EUROPE TO THE RESCUE

The Maastricht Treaty that created the European Monetary Union (EMU) in 1992 allowed Euro-zone countries to set their own fiscal policy. Subsequent to joining the EMU, a number of Euro-zone countries such as Ireland, Italy, Greece, Portugal, and Spain ran high budget deficits, incurred high debt loads and issued a large amount of bonds to finance the debt. The interest payments on the debt added to their rising budget deficits. These countries were unable to devalue their currencies or monetize their debt, and bond yields reached unsustainable levels when investors began to lose confidence in their ability to repay the debt. By early 2010, interbank lending among European banks was drying up. Europe needed to take action. European Union finance ministers together with the IMF created the European Financial Stability Facility (ESFS) in May 2010 in order to safeguard financial stability through financial assistance to euro zone countries. The purpose of the ESFS was specifically to help resolve the resulting European debt crisis, calm financial markets, restore confidence in the euro, and prevent contagion to other euro zone countries and banks holding large amounts of European government debt.

The European Financial Stability Facility

The European Financial Stability Facility (EFSF) was designed as a special purpose vehicle with a three-year tenure, through June 2013. It was based in Luxembourg and headed by Klaus Regling, former Director-General for economic and financial affairs for the European Commission, the governing body of the EU in Brussels. If a euro zone country experienced difficulties in refinancing their deficits or repaying their debt obligations the EFSF, upon receipt of a request for assistance from the struggling country, was authorized to issue up to €440 billion of bonds and loan the proceeds to the country in financial difficulty. The EFSF bonds were part of an overall €780 billion rescue package of loan guarantees and credits, which also included €60 billion from the European Commission and €280 billion from the IMF. Countries that received the aid would be subject to austerity conditions including tax and pension reform, lower wages for public employees, and privatization of public entities.

In addition to the aid provided by the EFSF, the ECB agreed to purchase euro zone government and private debt in order to provide liquidity to those securities markets facing difficulties. The purchases would be sterilized to avoid any risk of inflation. The ECB also made it easier for countries like Greece and Ireland to borrow by suspending collateral rules that required a minimum investment grade rating. The ECB, for example, accepted Greek government bonds despite their speculative rating by the three major rating agencies.

During the discussions that resulted in the rescue package, a key issue was whether sovereign bondholders would be required to bear losses from any future bailout. Germany pushed for this outcome and argued that the ensuing higher borrowing costs would restrain countries from accumulating huge amounts of debt. A compromise brokered by France called for bondholders to share the cost of any debt restructuring on a case-by-case basis beginning in 2013. Greece immediately requested aid. European leaders believed that a rescue of Ireland would stop the crisis from spreading to other euro zone weak spots like Spain and Portugal. Since the rescue fund required indebted countries to apply for aid before any consideration would be given, Europe waited for Ireland to request the aid.

WHAT NOW?

In October 2010, Lenihan was quoted in the *Irish Times* stating that he was "absolutely" sure the country will not need to seek a bailout from the European Union and IMF. By late 2010, however, despite the government's efforts to resolve the crisis, Ireland's situation was precarious. The country's foreign exchange reserves had dropped from €2.7 billion in December 2003 to €278 million in February 2010. Ireland's budget deficit and interest rates on government debt continued to rise. The 10-year bond was

rising from a record low of 3.1% in September 2005 to a record high of 14% in July 2011. The market's fear of contagion to other vulnerable euro zone countries was very real as economic conditions in peripheral euro zone countries were deteriorating. The euro dropped below $1.36, bond markets were turbulent and the European stock market experienced steep declines, particularly the stocks of those of banks with exposure to Ireland. The survival of the euro was at stake. EU President Herman Van Rompuy framed the crisis in Ireland as a decisive moment for Europe and the euro. He said: "We all have to work together in order to survive with the euro zone, because if we don't survive with the euro zone, we will not survive with the European Union" (Walker et al., 2010, November 17).
Irish officials, fearful of the political stigma, were reluctant to surrender their fiscal sovereignty to Europe and the IMF. They remained hopeful that government efforts to stem the crisis would be sufficient. The challenge Lenihan faced was not whether he could make tough decisions. He had already demonstrated that he could. The question was whether Ireland should attempt to resolve the crisis and restore market confidence and economic growth on its own, or subject the Irish people to the humiliation of proceeding hat in hand to the European Commission, the European central Bank and the IMF to seek financial assistance.

The situation was desperate and deteriorating fast. Prime Minister Cowen called Lenihan into his office. Europe wanted a response. What was his recommendation?

QUESTIONS

A. Issues Related to the Financial Crisis

1. What were the major factors that contributed to the financial crisis in Ireland?
2. What factors relating to Ireland's EMU membership may have played a role in its financial crisis?
3. Was the Central Bank of Ireland a contributor to the financial crisis?
4. At the start of the credit crisis in Ireland, what were some of the major risks faced by the banking sector?
5. Why would the existence of government guarantees on bank liabilities not remove the need for additional bank capital?
6. To what extent did moral hazard play a role in the Irish financial crisis?
7. What was the problem with the business model of Irish banks? Why?
8. Analyze the various trends in economic and financial indicators in Ireland over the last 10-15 years. (Case Tables 2, 4, 5, 7)

B. Issues Related to the Decision

1. If Lenihan were to seek a financial rescue package with the euro zone and IMF, what are the difficult choices and fundamental changes to be considered in the request?
2. If Ireland attempted to resolve the crisis without outside assistance they, like other countries in crisis, feared a negative feedback loop between sovereign and bank risk. What were the issues and circumstances surrounding this fear, and a potential remedy?
3. Rather than providing a financial rescue package for Ireland and other struggling euro zone economies, would it have been more efficient and fairer if these countries had simply defaulted on their debt payments to lenders?
4. What was the ultimate decision on the Irish Bailout Plan?

THE IRISH BANKING CRISIS

TEACHING NOTES

Arthur L. Centonze, Pace University

CASE DESCRIPTION

The 2007 financial crisis led to a steep decline in the supply of capital to organizations around the world. As liquidity dried up, countries such as Ireland with fragile and overextended credit environments, overpriced asset markets, and accommodative regulatory systems were vulnerable to the resulting shock waves. This case explores Ireland's economic and financial circumstances before and during the crisis, and its response to the crisis in the face of mounting pressure from the European Commission, the European Central Bank and the IMF for action that would help bring Ireland and other stressed euro zone countries back from the brink. At the close of 2010, Minister for Finance Brian Lenihan Jr. needed to decide whether to accept financial assistance from Europe and the IMF or have Ireland go it alone.
The case has a difficulty level appropriate for masters' level or upper level bachelors' students in finance or economics. It is most effectively taught to students who have been exposed to macroeconomics and introductory finance. The case is designed to be taught in 1.5-2 class hours and should require 2-4 hours of outside preparation by students.

GENERAL COMMENTS

The case can be taught in a course on International Economics, International Banking, International Monetary Economics, Money and Capital Markets or Money and Banking where the emphasis is on banking, central banking, and monetary policy and strategy. The case exposes students to important issues in economics and finance. It was prepared solely as a basis for class discussion and is not intended to serve as a source of primary data or to illustrate effective or ineffective management or leadership. Students should be able to understand, analyze and discuss:

1. The impact of the global financial crisis on a rapidly expanding developed country such as Ireland given its economic structure, and banking and financial system;
2. The implications of aggressively expanding banking credit, bank capital market funding, property bubbles, and a fiscal system dependent on the rise in property values;
3. The advantages and disadvantages of membership in a multi-country monetary system in a period of economic and financial distress;
4. Government decision-making under duress with economic, financial and political implications.

SOLUTIONS

Case Discussion Questions are provided below. They may or may not be assigned to students in advance of their discussion in class. Some or all of them can be assigned in advance as a student project to enhance the learning experience for students, particularly undergraduate students, or simply used as a guide to classroom discussion of key topics.

The case discussion questions are divided into two sections: section A refers to issues central to the financial crisis in Ireland, and section B refers to issues central to the decision in the case.

A. Issues Related to the Financial Crisis

Question 1A: What were the major factors that contributed to the financial crisis in Ireland?

Solution 1A: In the 1994-2000 period the Irish economy enjoyed high export-led growth, moderate wage and price inflation, and sound government finances. The post 2000 period up to the 2007 financial crisis saw significantly rising residential and commercial property prices. Coupled with aggressive bank lending and the government's favorable tax treatment of housing, this irrational exuberance fueled an unsustainable economic expansion. The construction boom led to a significant increase in the demand for labor and wages rose throughout the economy putting pressure on Ireland's wage competitiveness. The country's weak and deferential regulatory regime contributed to the emerging crisis. Ireland's growth model had changed and the country had become more susceptible to a global recession and poorly positioned to handle it when it arrived.

With the onset of the global financial crisis in 2007, housing prices and construction activity declined exerting a drag on wages and tax revenues. The real estate market and construction industry collapsed and unemployment rose to double-digit levels. Deflation, a decline in credit availability, lower business investment outlays, weak domestic spending, and lower consumer confidence contributed to lower GDP growth. A deepening government budget deficit ensued and gross public debt increased. Ireland could not devalue its currency in order to improve its international competitiveness and the euro's rise in value made the situation graver.

The collapse of the property and construction bubble pointed to weaknesses in the banking sector. After Ireland joined the euro currency area in 1999, Irish banks transitioned from a business model dominated primarily by deposit funding to one focused on short-term borrowing in international wholesale markets. This large inflow of credit from abroad, which regulatory authorities did little to stem, allowed Irish banks to extend long-term credit to non-financial companies at a lower cost. A high percentage of the loans went to property developers to finance housing and commercial projects, home builders and home buyers. As a result, home and commercial property prices rose significantly, much higher than those in the U.S.

Banks eased lending standards, which regulatory authorities did little to stop, and the number and size of the mortgages grew. As home prices soared, banks granted even larger mortgages and developers built even more homes. Ireland's economy was now being driven by the easy availability of credit, which regulatory authorities did little to curtail, rather than by its fundamental international competitiveness. When borrowers became reluctant to take on additional levels of debt, and when property supply caught up with demand, both borrowing and property prices declined. Default rates on loans to property developers rose and Irish banks were forced to take write-offs against many of these loans.

Irish banks saw their liabilities to international bondholders rise and foreign lending sources dry up. The 2007 collapse of the construction boom and resulting loan defaults by developers, builders and homeowners led to mounting losses for Irish banks and deterioration in share prices. As Irish property values declined, as households and firms deleveraged, and as depositors switched their savings to stronger non-Irish banks, Irish banks experienced a loss in deposits and a reduced ability to extend new credit to the Irish economy.

Question 2A: What factors relating to Ireland's EMU membership may have played a role in its financial crisis?

Solution 2A: After the EMU began in 1999, relatively low nominal interest rates set by the ECB and even lower real rates (an average of -1% over the 1999-2007 period), at a time when demand and wage pressures in Ireland were already building, helped to facilitate the Irish property boom. Moreover, Ireland's business cycle was not synchronized with rest of the euro area, and the euro area monetary policy did not contain inflationary pressures in Ireland. The Irish authorities' inability to control interest rates and exchange rates in a manner consistent with domestic circumstances meant that these rates were uncoupled from domestic realities and authorities had little in the way of policy restraint to exert. The

EMU introduced an element of uncertainly that domestic policymakers were unable to detect or overcome through tighter fiscal policy, stiffer bank regulation etc….

Ireland's banks began to change their operations after the country joined the EMU in 1999. The banks transitioned from a business model dominated primarily by deposit funding to one focused on short-term borrowing in international wholesale markets. They issued short-term Euro-denominated bonds and sold them to Euro-area banks in the interbank market, thus incurring no currency risk. This allowed Irish banks to extend long-term credit in the property markets at a lower cost. And since the interest rate on many of these mortgages was set as a fixed markup over low European Central Bank (ECB) rates, there was little opportunity for Irish banks to recover through higher lending spreads. Moreover, the heavy borrowing did not result in increases in interest rates because exchange rate risk was nonexistent.

Question 3A: Was the Central Bank of Ireland a contributor to the financial crisis?

Solution 3A: The Central Bank, with no power to set interest rates and control prices, made no attempt to restrain the credit expansion of Irish banks through active regulation and oversight prior to the crisis. For example, the Central Bank through its Irish Financial Services Regulatory Authority (IFSRA) could have restricted mortgage origination to traditional levels of 80% of LTV and perhaps 400% of income. Housing prices would have risen more closely with income levels rather than the boom levels experienced over the 1995-2007 period.

Moreover, as the number of interest only loans grew, the financial regulators could have limited the amount of debt that homeowners amassed in purchasing homes, and they could have curtailed the non-collateralized loans banks made to wealthy developers, written against "personal guarantees" against which the banks would have recourse to the borrower's personal assets in the event of a default. After the crisis hit, the regulators took only a weak step to reduce the decline in lending standards.

Given the small size of Ireland and the domestic market dominance and growth of Irish banks during this period, it is likely that the banks became too connected, politically, to fail. The construction boom led to a rise in jobs, income, spending, economic growth and tax revenue. Under these circumstances, the government's incentive to reign in the banks was greatly diminished. Also, it may have been difficult for regulators and others to distinguish the shift from the "Celtic Tiger" competitive driven growth during the pre-2000 period from the credit-induced expansion that followed. Or again, they simply didn't want to bring it all to an end.

Question 4A: At the start of the credit crisis in Ireland, what were some of the major risks faced by the banking sector?

Solution 4A: The banking sector faced several major risks: liquidity risk from a sudden increase in withdrawals by depositors, and an inability to raise sufficient funding to pay depositors in the face of a collapse of capital market funding on which the banks were increasingly reliant; default risk due to the inability of developers and households to repay property loans, particularly as the collateral underlying those loans deteriorated in value; interest rate risk due to a maturity mismatch when interest rates are volatile; and insolvency risk due to insufficient capital to cover loan losses.

Question 5A: Why would the existence of government guarantees on bank liabilities not remove the need for additional bank capital?

Solution 5A: Undercapitalized banks still require a capital cushion to overcome greater than usual incentives for risk-taking, e.g. with depositor funds, when there is little to lose. The guarantees socialize any losses from unsuccessful risk-taking rather than assign them to shareholders, including bank

managers with stock options. More capital is needed, especially from outside investors, so that owners share both gains and losses and the incentive to take outsized risks is reduced. This is the case even in those situations where the compensation of bank managers is not tied to stock values. In crisis situations and with low capital levels these bank managers tend to become more risk averse to avoid bankruptcy. This leads to highly conservative lending and other activities which can exacerbate an already stagnating economy.

Question 6A: To what extent did moral hazard play a role in the Irish financial crisis?

Solution 6A: Moral hazard arises when an agent has an incentive to behave inefficiently or with a high degree of risk because the agent is insulated from the consequences of the behavior. The potential for moral hazard manifested itself in several forms in the crisis. Like in the U.S., there were misaligned compensation incentives for executives, loan officers and investment managers towards excessive risk-taking without the fear of consequences for any losses. For example, Irish banks borrowed cheap short term funds in the interbank euro market and extended long-term credit to property developers and home buyers. This maturity mismatch bears a potentially high risk, especially during a financial crisis in which money and capital markets freeze up and assets cannot be sold quickly at an acceptable price in the face of a run or panic.

The practice of providing loans to wealthy and politically connected property developers with only personal guarantees, rather than skin in the game, coupled with weak personal bankruptcy regulations and enforcement in Ireland, suggest other potential sources of moral hazard during the construction bubble period.

As mentioned previously, the government's bailout policies, not known ex-ante by the banks but perhaps envisioned in the face of a crisis, is another potential source of moral hazard by inculcating a "too big to fail" culture within the banking sector. The government's guarantee of all domestic Irish banks' liabilities and its direct recapitalization of Irish banks which protected equity holders is an example. The government's move to establish NAMA to cleanse and improve bank balance sheets in order to restore the market's confidence in Irish banks is another example of the potential for moral hazard. Relatedly, the moral hazard problems associated with deposit insurance has been extensively studied and reported. While government supported deposit insurance reduces the risk of bank runs, it can potentially add to risk in two ways. Depositors have little incentive to investigate bank riskiness before depositing their funds, and banks have an incentive to engage in risky behavior because they are insulated from losses up to the deposit insurance ceiling.

Question 7A: What was the problem with the business model of Irish banks? Why?

Solution 7A: After joining the euro area in 1999, Irish banks transitioned from a business model dominated primarily by deposit funding to one focused on short-term borrowing in international wholesale markets. They issued short-term euro-denominated bonds and sold them to euro area banks in the interbank market, thus incurring no exchange rate risk. This allowed Irish banks to extend long-term credit in the property markets, up to 35 years or longer for some mortgages, at a lower cost. And since the interest rate on many of these mortgages was set as a fixed markup over low European Central Bank (ECB) rates, there was little opportunity for Irish banks to recover through higher lending spreads. Irish banks' balance sheets grew more than 650% over the 1999-2008 period (Exhibit 4). This interest rate maturity mismatch between their long-term assets and short-term liabilities bears a potentially high risk in a period of volatile and increasing interest rates and leads to tighter net interest margins and declining profits.

To manage this interest rate risk, banks can manage their balance sheets by shortening the duration of their assets to increase their sensitivity to rate increases or lengthening the duration of their liabilities.

Alternatively, banks can reduce their interest rate exposure through the use of financial derivatives such as forwards, futures, options and swaps.

Question 8A: Analyze the various trends in economic and financial indicators in Ireland over the last 10-15 years. (Case Tables 2, 4, 5, 7)

Solution 8A: Data in Case Table 2 indicate that real GDP growth in Ireland remained strong over the 1996-2007 period, then contracted into a serious recession, among the worst in modern Irish history. The deflation in consumer prices beginning in 2009 and the steep rise in unemployment are consistent with this contraction. Government debt, which had declined to 24.9% of GDP in 2006 ballooned over the 2008-10 period to 92.5% of GDP as the annual government budget balance moved to a strong deficit position and foreign trade collapsed amid a world-wide economic slowdown.

Case Table 4 shows falling interest rates over the 1999-2005 period as banks enticed borrowers with easy loan standards, longer loan maturities, and increasingly attractive financing costs. Case Table 5 points to rapidly rising home prices (in euros) over the 2000-7 period (91% increase) then, beginning in late 2007, falling precipitously and rapidly over the 2008-10 period (25%). By 2006, however, interest rates began to rise (Case Exhibit 5) due partly to the demand/supply strains that were beginning to be felt in housing markets.

In addition, Case Table 7 shows that between 1999 – 2008 Irish bank balance sheets expanded over 650%. Irish customer deposits fell to 22% of total liabilities, while deposits from Irish and non-Irish credit institutions rose to over 46%. Moreover, Irish bank balance sheets experienced a significant rise in non-Irish debt securities from 0.1% of all Irish banking liabilities to 8.5% (total Irish and non-Irish debt securities rose from 0.4% to 12.2% of bank liabilities) through short term borrowing in the global repo market. Non-Irish interbank borrowing and bond issuance had become large and fast growing liabilities. Credit was flowing into Ireland and contributing to the housing and construction bubble while regulatory authorities did little to curtail this credit inflow. Funding tightened as investors began to recognize the economic and financial strains and demanded higher yields to hold Irish government debt. Falling home prices and a decline in demand for commercial properties led to an increase in the default rate on property loans. Irish banks were forced to take losses against many of these loans and, as a result, share prices of Irish financial services institutions began to decline in early 2007.

Domestic consumption and GDP growth is expected to decline in 2012 due to the continued decrease in house prices, increase in household saving and deleveraging, and to the recession in the euro area, the UK, and elsewhere. Unemployment will likely remain high and structural unemployment may rise. Government debt levels are expected to remain high, reaching 118.4% of GDP in 2013, or higher if growth were to weaken. Low overall inflation, a weaker euro, a continuing growth in FDI, and a return to net export growth may offset some of the negative factors but on balance the outlook is mixed. Without a credible long-term euro zone fiscal plan it is uncertain whether Ireland will be able to return to international bonds markets as planned in 2013 and end its reliance on loans from the EU and IMF. Nevertheless, the IMF expects that the government's fiscal deficit will continue to decline in 2012 to 8.6% of GDP and, assuming no significant macroeconomic shocks and no further fiscal consolidation beyond what is already planned, the government will achieve its deficit goal of 3% of GDP in 2015.

B. Issues Related to the Decision

Question 1B: If Lenihan were to seek a financial rescue package with the euro zone and IMF, what are the difficult choices and fundamental changes to be considered in the request?

Solution 1B: How much of a bailout fund would Lenihan request, how would it be financed, and at what

interest rate and maturity? Would the funds be used only to recapitalize the banks or would a Larger package be needed to cover the government's financing needs for the next few years? Would Ireland, as a condition of receiving rescue funds, be willing to accept additional austerity measures such as further spending cuts and tax increases to cut its deficit? Over what time period would any austerity measures extend and what fiscal benchmarks would Ireland be obliged to achieve? Would austerity, in fact, raise investor confidence in Irish financial markets, lead to economic growth and facilitate the repayment of sovereign debt? What oversight would Ireland be willing to accept from the euro zone and IMF? Would they agree to an increase in the country's low, 12.5%, corporate tax rate? Would Irish banks be restructured and downsized?

Question 2B: If Ireland attempted to resolve the crisis without outside assistance they, like other countries in crisis, feared a negative feedback loop between sovereign and bank risk. What were the issues and circumstances surrounding this fear, and a potential remedy?

Solution 2B: Euro zone countries with impaired balance sheets needed to issue sovereign debt in order to rescue their banks. Once the borrowed funds were allocated to recapitalize their banks and help them deal with rising loan portfolio losses, the funds remained sovereign debt subject to default.

Moreover, as Europe's debt crisis spread over time beyond Greece and Ireland to Spain, Italy and other periphery euro zone countries, these countries found it difficult to repay existing debt or fund new debt in worldwide capital markets as interest rates rose despite the single policy rate set by the ECB. They resorted to selling bonds to their own banks, aided by low interest loans from the ECB. Often, undercapitalized or overly aggressive banks, as in Ireland, in turn undermined the financial credibility of the countries in which they resided. This negative feedback loop between sovereign and bank risks, and a loss of investor confidence in Europe's ability to contain the crisis drove bond yields increasingly higher, particularly in Spain and Italy.

It was becoming increasingly clear to policymakers within Europe, including within the ECB, that the euro, if it were to survive, would need to be supported by a banking union. This union would decouple the link between sovereign and bank risk so that banks are not penalized, through lower bond ratings for example, for the fiscal irresponsibility of their national governments. The union would include euro-wide bank supervision of national banks, deposit guarantees, crisis resolution authority to wind down troubled banks, and a centralized institutional structure to oversee the implementation of the reforms.

Germany, however, the largest economy in Europe and the euro zone's main economic driver, has to date only agreed to ECB supervision of large banks, with smaller banks remaining the responsibility of national central banks. Also, Germany has yet to agree to any scheme involving centralized pools of funds for euro-wide deposit guarantees or bank crisis resolution, nor has it agreed to the joint issuing of bonds by euro zone governments (Eurobonds) without more rigorous euro-wide control over fiscal decision-making within the region, i.e. how governments spend their money. A more comprehensive economic union and accompanying loss of sovereignty, with euro zone nations taking responsibility for each other's' budgets and banks, would require a new EU treaty and constitutional changes within member states. This could take a long time to accomplish, perhaps a decade or more, assuming it were possible at all.

Question 3B: Rather than providing a financial rescue package for Ireland and other struggling euro zone economies, would it have been more efficient and fairer if these countries had simply defaulted on their debt payments to lenders?

Solution 3B: Some experts believe that forcing bondholders to accept negotiated losses, haircuts, on their investments is a good idea. For example, the investors who enabled Ireland's external debt to grow to 10

times GDP should absorb the losses and share the pain. They believe this option is less drastic than having countries like Ireland further damage their economies by drastically cutting their budgets and raising taxes in order to bring their deficits down: in Ireland's case from 32% of GDP to 3% by 2015. An organized restructuring would reduce the debt owed and, combined with a rescue package, would provide for a quicker recovery and a lower probability of sovereign default in the future. Moreover, these experts assert that holding bondholders harmless contributes to moral hazard and increases risk elsewhere in financial markets.

Default proponents point to the success of Russia in 1998 and Argentina in 2002 after their successful debt restructurings. Both countries were able to devalue their currencies and grow their economies by improving their competitive positioning through increased exports, something Ireland is unable to do while remaining in the euro zone.

Other experts believe that the imposition of bond haircuts by a country can lead to a lack of capital market access in the future, as happened to Russia and Argentina, or a significant increase in future borrowing costs for this country and for other countries in a similar weakened state. Also, a debt restructuring is very difficult to accomplish politically. The primary creditor banks that stand to lose, both locally and in countries like the U.S., Britain, Germany, and France would be against such a move. In addition, because Ireland's budget deficit was so large, about 10 times GDP, any threat of a capital markets lockout would create further economic and political unrest.

Question 4B: What was the ultimate decision on the Irish Bailout Plan?

Solution 4B: In late 2010, European experts from the ECB, European Commission and the IMF travelled to Dublin to assess the country's financial needs and the banks' capital needs. Brian Lenihan, the minister for Finance, was under considerable pressure from financial markets and leaders from other euro-zone countries concerned about financial panic and contagion. He ultimately acknowledged in a national television broadcast that "we have to find a resolution to our banking difficulties with whatever external assistance is appropriate" (Enrich and Forelle, 2010).

The government was now ready to engage in discussions on a financial rescue program with the IMF, ECB and European Commission. The discussions focused on a number of issues central to Ireland's political and financial sovereignty. For example, whether the funds would be used only to recapitalize its banks or whether a larger package would be needed to cover the government's financing needs for the next few years, enabling the country to temporarily withdraw from the sovereign debt market. Also, as a condition of receiving the rescue funds, discussions centered on whether Ireland should be required to impose severe austerity measures including an increase in its low, 12.5%, corporate tax rate. France and Germany considered this rate to be an intra-European distortion while Ireland insisted it was necessary to attract investment and create the growth needed to overcome the crisis.

A deal was reached in November 2010 between Ireland and the IMF, the euro zone's European Financial Stability Facility (EFSF), and the European Commission's European Financial Stability Mechanism (EFSM). Ireland, upon its request, would receive a three-year package of loans to cover financing needs up to €85 billion. Prime Minister Brian Cowen announced that two funds would be created. One to recapitalize Irish banks and help them deal with rising losses on their loan portfolios, and another to help fund the government's budget deficit without resorting to the bond markets. Irish banks would be restructured and the largest banks, Bank of Ireland and Allied Irish Banks, downsized by shedding assets including overseas operations that were not essential to the banks' and the country's future growth. The government agreed, despite public protests, on an austerity program to cut €15 billion from its deficit over the 2011-14 fiscal years through spending cuts and tax increases, and to reduce the budget deficit from

32% of GDP to 3% by 2014. The agreement called for no change in the 12.5% corporate tax rate so that Ireland's economic recovery and debt repayment would be easier to achieve.
The arrangement would be reviewed quarterly against quantitative performance criteria and benchmarks, in conjunction with the IMF, in order to ensure timely and appropriate implementation.

In December 2010 the Irish parliament voted to request a €67.5 billion EU/IMF bailout package. The funds would come equally (€22.5 billion each) from the EFSF at 6.05% interest (includes bilateral loans of €4.8 billion from the UK, Sweden and Denmark), and the EFSM and IMF at 5.7% interest. The average life of the borrowings, which include both short and long dated maturities, is 7.5 years. Ireland would contribute €17.5 of its own funds to the package from its accumulated cash balances and national pension reserve fund. At a Dublin news conference Prime Minister Cowen said that the package would provide Ireland with the vital time and space the country needed to address the problems the country had been dealing with since the global economic crisis began (Forelle and Walter, 2010).

A request by Ireland to the ECB to extend its payment schedule on the borrowed funds was approved in early 2013 in return for the liquidation of the successor bank to Anglo Irish Bank at the expense of bondholders.

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BIOGRAPHY

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CREATING ORGANIZATIONAL SUSTAINABILITY IN SOCIAL ENTERPRISES: THE USE OF EVIDENCE-BASED POSITIONING AND MARKET ORIENTATION

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ABSTRACT

Social enterprises represent the evolution of the private sector with the social and public sector. The focus of this paper is to examine social enterprises and the creation of organizational sustainability through the use of the key marketing concepts of positioning and orientation. Evidence-based practices are studied as a means to enhance the effectiveness and impact of the two strategies. A key theme of the paper is the impact of stakeholders on the creation of organizational sustainability.

JEL: M00, Q56

KEYWORDS: Social Enterprise, Organizational Sustainability, Positioning, Market Orientation, Evidence-based Practices, Legitimacy, Competitiveness

INTRODUCTION

Human society has been built around organizations. As the fundamental element of construction, organizations are as diverse as the cultures of the human experience. Within the economic sector, three primary models co-exist. Business, governmental, and non-profit comprise the three organizational types which constitute the private, public, and social sectors.

The three primary models have historically existed in a mutually exclusive environment. Within the last ten years, the boundaries between the private, public, and non-profit sectors have been blurring (Fourth Sector Network Concept Working Group, 2009). Businesses that were focused on profit creation are now shifting resources to the creation of social benefits while non-profit organizations have become more business-like by adopting commercial enterprise strategy and market orientation (Foster & Bradach, 2005).

The creation of organizations that integrate social purpose with business methods is the genesis of social enterprises (Moizer & Tracey, 2010). Social enterprises represent the evolution of the private sector with the social and public sector. As with all organizations, they face many challenges. Social enterprises are organizations in transition (Jegers & Lapsley, 2001). Where they once could rely on their non-profit orientation, they are being forced to adopt business-like practices which emphasize value creation to ensure organizational sustainability. To meet this challenge, social enterprises must adopt key elements of the for-profit sector. Two of the key elements for adoption are market orientation and positioning (Shoham, Ruvio, Vigoda-Gadot, & Schwabsky, 2006).

To successfully transition to a market orientation, social enterprises need to adopt for-profit management concepts that emphasize evidence-based practices. To understand this evolving concept, this paper will present a literature review to explore the concept of social enterprises and the creation of organizational sustainability. This will be followed by a section addressing sustainability in relation to the development of market orientation and positioning through the use of evidence-based practices. The authors will then present a path forward and end with concluding comments.

LITERATURE REVIEW

To begin to understand the concept of social enterprises, one must have a clear and concise definition. Unfortunately, a simple definition does not exist (Harding, 2004). Debate around a single definition is complicated by the various stakeholders involved with social enterprises. A simple definition offered by Moizer and Tracey (2010) states social enterprises are non-profit organizations that seek to achieve social goals through commercial activities. Other authors expand this definition to include for-profit organizations which focus on promoting social welfare (Weerawardnea, McDonald, & Mort, 2010). An all-encompassing concept focuses on organizations that promote a social mission through the use of commercial activities. For the purposes of this paper, the focus will remain on non-profit organizations.

Social enterprises are an effective mechanism for generating value in societal, economic and environmental arenas. They deal with customers, suppliers, barriers to entry, rivalry, and issues around operations. In terms of value generation, their scope is enormous. In the United States, social enterprises employ 1.6 million people which are 8% of the workforce (Murphy & Coombes, 2009). From the perspective of income, they supply 7% of the national income. Due to changes in the public sector where welfare is now provided by agencies, social enterprises are becoming larger and continuing to grow. As a result, they are providing a growing contribution to global economies (Weerawardnea et al., 2010).

The role of social enterprises in creating economic and social value is an evolving proposition. Social enterprises create a number of profound impacts. They provide a means of regenerating deprived communities by delivering key services (Harding, 2004). They are capable of rebuilding and developing social capital which is key to disadvantaged communities. Social enterprises have been identified as vital to the development and delivery of innovative ways of tackling social problems which cannot be resolved through traditional public, voluntary, or community mechanisms (Shaw, 2004). In market economies, they are playing a prominent role as mechanisms for addressing social problems (Moizer & Tracey, 2010).

To assess the overall impact of social enterprises a method must be developed to measure levels of activity and the impact they have in terms of value creation (Harding, 2004). While this may seem simple in concept, many challenges exist to accomplishing the goal.

The challenges facing social enterprises can be grouped into three categories. Social enterprises need to demonstrate a link between economic and financial performance, social effectiveness, and institutional legitimacy (Bagnoli & Megali, 2009). In attempting to address the three major challenges, social enterprise organizations are now being forced to act as a business for they are under the same pressures as for-profit entities.

The development of a for-profit mindset is not at odds with the overall vision of a social enterprise. They need to adopt business practices similar to the for-profit sector to address the various challenges presented within the market space (Jegers & Lapsley, 2001). Competitive pressures require social enterprises to implement significant organizational restructuring, repositioning, and the adoption of professional management practices (Chew, 2006).

All organizations, whether for-profit, non-profit, or voluntary, must develop a strategy for ensuring sustainability. Organizational sustainability is a major challenge for social enterprises. For organizational sustainability to be created, social enterprises must clearly define what it is, how it can be created, and the key marketing concepts which can be applied to foster the development.
The creation of organizational sustainability is a challenge regardless of the business model. In the for-profit sector, sustainability is built around competitive advantage, profit generation, and shareholder

wealth creation (Pride & Ferrell, 2007). Social enterprises differ from for-profit organizations in a number of key areas in relation to the creation of organizational sustainability.

One key area is in the development of financial resources to enable the enterprise to deliver social value. A second area is the question of shareholders versus stakeholders. Social enterprise stakeholders are comprised of groups who use their services or products, supporters who provide funding or donations, and in some markets competing organizations (Shoham et al., 2006). The multiple stakeholders of a social enterprise influence both the services delivered and the overall strategic direction of the organization (Weerawardnea, McDonald, & Mort, 2010).

Market orientation and positioning attempt to address the issue of stakeholder influence in the development of organizational sustainability. By examining these two key factors, one can begin to address the idea of value creation which is essential for establishing organizational sustainability in social enterprises.

One of the key constructs of any social enterprise is to develop strategic clarity (Stid & Bradach, 2009). Clarity involves establishing key priorities and very clear goals. By establishing an internal understanding of what is important organizations can begin to impart a vision on their key stakeholders.

The creation of an organization's identity in the minds of a target audience is positioning (Pride & Ferrell, 2007). The economic changes of the last five years have created enormous pressures on social enterprises to manage their operations to satisfy both their short-term and longer-term positioning strategies. Positioning is an important tool in the overall management of strategy (Chew, 2006). It occurs at three levels: the organizational, product and service, and brand. Just as the organization needs to have clear priorities and goals, their positioning strategy also needs to be aligned with these objectives.

The adoption of positioning strategies by social enterprises has increased due to a number of factors. The impact of the external environment and global economic challenges has created an increase in competition between organizations in the non-profit sector (Chew, 2006). The increase in the number of organizations vying for funding and support necessitates the adoption of brand differentiation. If social enterprises are to benefit from the use of positioning, they must understand how different strategies can create an advantage in a particular market (Bagnoli & Megali, 2009; Chew, 2006). While positioning attempts to create awareness, it does not address how the organization will meet the stated or hidden needs of stakeholders.

Positioning only assures that an organization has made its case to the public. From the perspective of a social enterprise, the public is their stakeholders (Frumkin & Kim, May 2001). Market orientation attempts to address how an organization will meet the needs of its customers. For a social enterprise, customer is replaced with stakeholder.

The implementation of a market orientation characterizes a firm's intentions to deliver superior value to its stakeholders (Kara, Spillan, & DeShields Jr., spring 2004). For the stakeholder group who uses the services of a social enterprise, this may be characterized by receiving the services or products they desire. For the organization's donors, the need may be to be reassured the funding they have provided is being used in the most efficient manner.

From the perspective of the social enterprise, a market orientation strategy provides a number of benefits. The first benefit is better opportunities and methods are created for understanding the needs of the end user as well has how to meet those needs (Pavcic, Renko, & Alfirevic, 2001). Second, they improve their methods for securing financial, human, and other resources for the implementation of their missions.

From an operational perspective, planning and organizing functions are improved. All of these actions lead to an improvement in competitiveness and value. The work by Pavicic, Renko and Alfirevic (2001) demonstrates a positive correlation between market orientation and competitiveness. Kara, Spillan and DeShields (2004) argue there is a strong link between market orientation and the business practices adopted by an organization. The final question is how can positioning and market orientation be further enhanced through the adoption of evidence-based practices?

A PATH FORWARD

The need to have processes and systems capable of measuring the creation of value is important (Emerson, 2003). For social enterprises to create true organizational sustainability, they need to adopt practices used in the for-profit sector. To address the increasing competitive environment, social enterprises need to organize operations and adopt business practices that maximize overall efficiency (Jegers & Lapsley, 2001). This may be a major challenge for they typically lack a true business perspective (Foster & Bradach, 2005). In addition, they must transition from previous experience-based actions and adopt decision making processes which are focused on developing innovative practices and strategies (Weerawardnea et al., 2010).

An emerging concept which may aid social enterprises in developing a true business orientation is evidence-based practice (Miklovich, 2011). Evidence-based practice is grounded in a "strategy of getting the right knowledge to the right people at the right time, and helping people share and put information into action in ways that strive to improve organizational performance" (Kalseth & Cummings, 2001, p. 167). It moves decisions away from personal preference and experience by uncovering the assumptions that form the basis for potential choices and applying evidence to select the best direction (Pfeffer & Sutton, 2006; Rousseau, 2006).

The practice is based on the key constructs of integrating the best research evidence with decision maker expertise and client/customer preferences to achieve desired results (Rousseau, 2006). The focus on client/customer preferences is a key link to the ideas of market orientation and positioning as it relates to the involvement of stakeholders in developing organizational sustainability.

CONCLUDING COMMENTS

The use of evidence in organizational decision processes aids in the development of organizational legitimacy (Davis, 2002). For social enterprises a key to developing organizational sustainability is the development of organizational legitimacy. In the nonprofit sector, legitimacy is linked with competitiveness for it addresses concerns among stakeholders as to the viability of the organization (Moizer & Tracey, 2010).

The adoption of evidence-based practices offers an exciting new mode of operation for social enterprises. The use of evidence-based practices creates an environment where decision processes are repeatable and scalable across multiple situations (Rousseau, 2006). The ability to improve decision processes allows the organization to align its data collection efforts with strategic drivers. In the end, this will aid in increasing an organization's competitive advantage by aligning market orientation and positioning strategies with operational objectives (Kalseth & Cummings, 2001).

Social enterprises represent the evolution of the private sector with the social and public sector. As with all organizations, they face many challenges. One key challenge is the creation of organizational sustainability. The adoption of a positioning strategy provides social enterprises the ability to create organizational identity in the minds of their stakeholders. Once an identity is created, market orientation identifies how the organization can address the needs of the stakeholders. Both strategies, when executed

using evidence-based practices, combine to increase the competitiveness of the enterprise which aids in value creation and legitimacy with stakeholders.

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DEREGULATION & PRIVATIZATION: TEXAS ELECTRIC POWER MARKET EVIDENCE

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ABSTRACT

The electric power industry is moving away from a regulated utility model, toward a deregulated market-based model—thereby intending to improve system efficiency by reducing generation costs and customer prices, while at the same time improving capital expenditures and service reliability. This paper is the first in the literature to statistically test Texas' electricity prices, relative to U.S. electricity prices—and use energy emergency alerts and reserve margin forecasts to determine Texas' power system reliability—since deregulation in 2002. Implementation of suggested reforms will help ensure the market-based design succeeds. Recommendations are offered for future research.

JEL: G31, G38, H44, K23

KEYWORDS: Texas Electricity Market, Deregulation, Privatization, Reserve Margins

INTRODUCTION

Electricity is important. The Edison Electric Institute (May 2013) reports the United States (U.S.) electric power industry is an $840-billion dollar a year business—totaling 5.25% of GDP. Electric power is the most capital-intensive U.S. industry, and is planning to spend $85 billion a year, through 2015, for new, energy-efficient and environmentally friendly generation capacity, including advancements in transmission, distribution, and smart-grid system upgrades.

The electrical power grid in Texas is an interconnected system, providing electricity from supply generation to end-use consumers, over a wide geographical area. In the U.S. there are three major wide-area synchronous electric power grids: 1) Western Interconnection, serving the western states (excluding Alaska and Hawaii); 2) Eastern Interconnection, serving the eastern states; and 3) Texas Interconnection, serving only Texas. Interestingly, Texas is unique; it has a separate power grid from the rest of the country. Consequently, the Texas deregulated and privatized electric power market is an excellent subject to study and compare with what is occurring across the U.S.

The Electric Reliability Council of Texas (ERCOT) (2013) administers the Texas Interconnection grid for 23 million Texas customers. ERCOT is an independent system operator (ISO)—consisting of consumers, cooperatives, electric power generators, retail electric providers, electric power marketers, investor-owned electric utilities and municipal-owned electric utilities. ERCOT schedules electricity delivery on the Texas Interconnection grid linking 40,500 miles of transmission and distribution lines, with more than 550 power generating units. ERCOT is a membership-based 501(c) (4) nonprofit corporation, governed by a board of directors, overseen by the Public Utility Commission of Texas (PUCT) and the Texas Legislature.

This research tests whether ERCOT is achieving its stated mission, "to ensure a reliable electric grid and efficient electricity market." This is the first research in the literature to use means testing to statistically analyze electricity prices for the Texas Interconnection grid, pre-and-post 2002 deregulation, relative to U.S. electricity prices. Energy emergency alerts, since 2006, and ERCOT reserve margin forecasts, through 2023, are presented to determine Texas' power system reliability.

Beginning in the 1990s, the literature describes countries from around the world that deregulate their electric power markets. Expectations were that prices would naturally fall under "free market" competition and reliability would improve. Results for retail customers worldwide disappoint. Electricity prices globally, after deregulation, far exceed general price and wage gains.

The rest of the paper's organization is as follows. Section 2 discusses relevant electricity market deregulation literature. Section 3 provides the data source and statistical methods used. Energy emergency alert and reserve margin system reliability indicators are explained. Section 4 presents the empirical results and a discussion of electric power deregulation in Texas, including bankruptcy. Section 5 offers concluding remarks and recommendations for future research.

LITERATURE REVIEW

Internationally, in the early 2000s, Turkey restructures its electricity market, establishing an independent regulatory authority, privatization of state-owned electrical generation and distribution companies, development of a wholesale market for electricity, and increased retail competition designed to improve diversification and better utilize renewable energy sources (Ertuna, 2010). Nevertheless, significant deficiencies in the Turkish electricity market become evident. Wholesale market participants act irresponsibly, and new regulation becomes necessary. Also, transparency and accountability in the Turkish electric market require improvements. For instance, regulators should announce all decisions and their justifications, up-front and publicly. In addition, the market/system operator must share market data, providing symmetric information availability among market participants (Camadan and Kölmek, 2013).

India opens its electric power industry to foreign companies' direct investment, by developing the Dabhol Power Project. Nine fast-track private electric power plants are constructed across India. The disappointing results are nothing like the foreign companies' initial promises of lower prices and higher reliability. This conclusion is based on key participants' information and archival data. Instead, the foreign companies manipulate India's social institutions including the Congress party that initially approved the new electricity market policy and the legal systems and regulations implemented to assist foreign direct energy investments (Ahmed, 2010).

Harvey (2005, 2006) and Peet (2007) contend that the electric power deregulation experience in India shows the true intent of the market-based model, which is that international corporations are in search of ever-increasing profit at the expense of electricity power consumers. Deregulation and privatization are not about "free markets," but the extraction of profits from "new markets." That is, previously public assets that were considered off-limits to corporate revenue, prior to deregulation. Those that acclaim the unassailable benefits of deregulated "free markets," do so only from the standpoint of financial markets and multinational corporations, not from the viewpoint of protecting retail consumers' pocketbooks (Peck, 2001, Peck and Tickell, 2002).

Since late 1998, the majority of electricity generated in Australian is traded on a newly created national wholesale market. Government monopolies are dissolved, and many of the new companies are sold privately. Electrical generation and retail sectors were expected to invite competition (Chester and Morris, 2011). The majority of Australian households choose their own electricity supplier. Unfortunately for most Australian households, a rapid increase in electricity prices, well above 50%, started about a decade after deregulating the electricity industry began. Electricity prices, after deregulation, have experienced increases far exceeding general price and wage gains, making the general Australian population poorer, but the power generators and retailers richer (Chester, 2013).

Notwithstanding the many different approaches used to restructure electricity into market-based sectors around the world, one of the consistent trends has been the rapid escalation in electricity prices paid by

households, after deregulation. This is in direct opposition to the purported benefit of electricity deregulation—that is, lower prices (Anderson, 2009). Nominal percentage increases in household electricity prices, because of market-based deregulation in the following countries, from 2000-2010, are: Canada; +72%; Chile, +166%; Czech Republic +133%; Hungary, +117%; Ireland, +100%, New Zeeland, +203%; Norway, +106%; Sweden, +88%; United Kingdom, +86%; and the United States, +42% (Marcus, 2011, Lagendijk, 2011). The premise that market-based electricity deregulation, using a "free market" model, is efficient is not evident in the resulting high-priced electricity in countries worldwide.

California deregulated electrical generation and retail power industry, in the late 1990s, with the assumption that prices would naturally fall under "free market" competition. However, wholesale electricity prices soared 800% because of market manipulation, including megawatt laundering and overscheduling by trading companies such as Enron, triggering California's electricity crisis of 2000-01. Retail electricity prices were fixed in California causing the power companies to become unprofitable and driving Pacific Gas & Electric Co into bankruptcy because they were required to purchase electricity on the wholesale market at prohibitively uncompetitive prices. California's electric power market became overpriced and unreliable, experiencing rotating blackouts throughout California (Chick, 2007, Hausman, 2010).

The Bonneville Power Administration in the Pacific Northwest, produces inexpensive hydroelectric power, for about half the U.S. price for electricity, and attracts many electricity-intensive industries to Washington State such as aluminum production and airline manufacturing. Coupal and Holland (2002) develop a 31-sector computable general equilibrium model to evaluate the impact on Washington's economy, as a result of electricity deregulation. In the model, electricity is sold to high-priced regions, reducing Washington's gross state product as a result of higher electricity prices. This translates into lower wages, lower employment, and lower industry profits, except for power generators and retailers, who increase profits.

National electricity price movements mask regional variations. For example, U.S. prices, post−restructuring, increase over 40%, between 2000 and 2010 (Marcus 2011). However, household electricity prices in 12 American states undergoing deregulation, between 1999 and 2007, surge by more than 50%, with the highest gain being 74% in Texas (Showalter 2008). In U.S. states that have deregulated their electricity sectors, household prices are at least 10% higher than elsewhere (Anderson 2009). Assuming that deregulation and "free markets" will automatically produce efficient industries, without a well thought out business-oriented plan, is not proven historically (Prentis, 2013).

The move to a decentralized market-based design highlights the need for efficient demand-response for power by consumers. The expectation was that the market-based system would provide accurate price signals along the electricity supply chain, making the delivery of electricity less costly and more efficient**.** However, ERCOT's demand-response capability is trailing levels achieved prior to restructuring. The experience in Texas, to properly value and accommodate demand-response, demonstrates the degree of demand-response participation—in a deregulated market—is dependent on market design and new regulatory requirements. Special high-tech demand-side programs are required to encourage better demand-response capabilities (Zarnikau, 2010).

Market-based reforms have fragmented electricity supply, now associated with many independent power generation companies. Decentralized electricity supply reduces coordination among generators. The ability to optimally match volatile electrical supply with final demand is central to a well-functioning electric power supply chain. Consequently, centrally controlled and synchronized electricity systems are most efficient. The independent system operator (ISO)—which monitors, coordinates and controls the operation of the electric power system, usually within a single state—has the best information about the entire power system, to manage commitment and dispatch decisions (Hunt, 2002).

The just-in-time quality of well-functioning electric power systems necessitates electricity supply and demand to be constantly and exactly balanced—at every node location in the electrical network—using Kirchhoff's and Ohm's laws (Chaniotakis and Cory, 2006). If not, the resulting voltage or frequency deviations will damage electrical generators, customer electrical appliances, and jeopardize power system stability. In addition, Kirchhoff's laws govern power flows within a transmission network, which defy direction. The uniqueness of the electric power industry and electricity economics favor centralized control, rather than a decentralized market-based design (Sioshansi and Nicholson, 2011), localized electric power production in fixed geographic markets (Robinson, 2009), and a just-in-time supply chain that exactly balances constantly changing electricity demand with supply generation (Sioshansi and Tignor, 2012).

Sioshansi et al. (2008, 2012) use a one-day ISO New England data set to evaluate settlement costs and efficiency of centralized control of power generation versus decentralized market-based systems. The evidence shows that even when assuming perfect competition, loss of coordination in a decentralized design decreases efficiency by 4%, and increases settlement costs by 85%. Sioshansi and Nicholson (2011) use a symmetric duopoly model to test the effects of relaxing the perfect market competition hypothesis. They show the decentralized market-based design is more costly than the centralized power control design, depending on the Nash equilibrium the ISO follows to balance supply and demand. These important high-tech demand-response capabilities can be incorporated in the market-based design's laws and regulations.

DATA AND METHODOLOGY

In 1977, the Department of Energy (DOE) establishes the U.S. Energy Information Administration (EIA) (2013), as the sole authority for energy statistics and information. EIA is the source of electric power price data for this study, both for the Texas Interconnection grid and for the U.S. electrical power system.

Electric power price data for the Texas Interconnection grid, from 1970-through-2011, are analyzed in comparison to U.S. electricity prices. Linear least squares trend lines are fit to the Texas Interconnection electricity price data, as well as for the U.S.—using Excel—to produce comparison equations of price increases, representing electrical operating efficiency.

The SPSS statistical program is used to compare relative price changes in Texas Interconnection electric power data, compared to U.S. electric power prices, pre-and-post Texas 2002 electricity deregulation—utilizing one-way ANOVA. The null hypothesis of the equality of the two population sample means, for each year, is tested, to determine if there is a significant difference in relative means for Texas' electricity prices, to U.S. electricity prices—before and after Texas' 2002 electricity deregulation.

The inferential statistic, homogeneity of variance Levene's test is performed to exam the equality of group variances in the data. If the equal variance assumption is found to be violated in the Levene's test, the more generalized Welch test is performed, which assumes the data do not have identical standard deviations. In addition, the Brown-Forsythe test, which uses group median instead of the mean calculations, will be presented, to provide robustness against using non-normal data. The nonparametric Mann-Whitney U test—which compares mean ranks, is employed because it is very robust, even when sample populations do not represent any specific distributions, and insures against falsely rejecting a true null hypothesis. Consequently, the significance of the results presented in this study are extensively tested and assured.

The North American Electric Reliability Corporation (NERC) (2013) is a nonprofit company, whose mission is to safeguard the reliability of the electric power system in North America. NERC is certified by the Federal Energy Regulatory Commission and establishes U.S. electrical reliability standards for the three major electrical interconnection grids and issues yearly, a reliability assessment. The reliability of the Texas Interconnection grid, since 2006, is analyzed using NERC energy emergency alert reliability indicators.

The Electric Reliability Council of Texas (ERCOT) (2013) is the Texas region's independent system operator (ISO), and performs financial settlement for the competitive wholesale bulk-electricity market and manages retail power switching for 6.7 million locations in competitive choice markets. ERCOT forecasts electricity power reserve margins for the Texas Interconnection grid—from 2014-through-2023—which are presented and explained.

RESULTS AND DISCUSSION

United States electric power prices, represented by its linear least squares trend line ($y = 0.0402 x + 0.74$), shows U.S. prices increasing about 4% a year, from 1970-through-2011. Over the same period, Texas Interconnection electric power prices, represented by its linear least squares trend line ($y = 0.0649 x + 0.56$), increase by about 6.5% a year. Texas Interconnection grid electricity prices rise about 60% faster than electricity prices throughout the U.S., from 1970-2011.

Electric power prices for the U.S. and the Texas Interconnection grid change yearly. To identify when prices are rising the fastest in Texas, relative price changes are calculated. The electric prices for the U.S. are subtracted from the prices in Texas, for each year, from 1970-2011. Deregulation of the retail electric power market in Texas occurs in 2002. By comparing relative electric power price sample means for the U.S. and Texas, it is determined if electric power prices in Texas are rising faster under deregulation and privatization of Texas' electricity market, when compared to the rest of the U.S.

The one-way ANOVA, for the regulated versus deregulated data sets, shows a significance level of 0.000. However, the Levene statistical significance is 0.002, therefore, a difference between population variances is assumed. The Welch test, used when standard deviations are different, reports a significance level of 0.005. The Brown-Forsythe test, used for non-normal data, also reports a significant level of 0.005. The nonparametric Mann-Whitney U test, which has no assumptions on data distributions, shows a significance level of 0.003.

This study's highest statistical p-value of 0.005 is much less than this study's predetermined alpha value of 0.05. Therefore, the statistically significant results are very strong evidence against accepting the null hypothesis. Consequently, the equality-of-means null hypothesis is rejected. There is a highly significant difference between the mean price data, prior to the 2002 deregulation in Texas, than after deregulation.

The relative electric power price mean for 1970-to-2001is 0.1938, and for 2002-to-2011 is 0.7970. Relative to U.S. electricity prices, Texas has electric prices, during the market-based deregulation and privatization period, from 2002-2011, increase about four times faster than increases in electricity prices prior to deregulation, from 1970-2001. Significantly higher relative prices, evident after deregulation, are a new burden on Texas' electricity customers—putting Texas at a competitive disadvantage when trying to attract new industry and jobs.

The North American Electric Reliability Corporation (NERC) reports on deficient capacity electrical power levels during peak load periods. Energy emergency alerts are a leading indicator of electrical capacity shortfalls, which may lead to electricity brownouts, defined as a reduction or decrease in electric power due to a shortage of supply, and possibly, system-wide blackouts, with no electrical power available throughout the system. Different levels of energy emergency alerts are defined as:

Energy Emergency Alert 1 (EEA1): All available resources are in use.

Energy Emergency Alert 2 (EEA2): Electricity load management is in effect and residential, commercial or industrial users, who have agreed to rotate power curtailments, may now be affected.

Energy Emergency Alert 3 (EEA3): Emergency procedures for EEA1 and EEA2 are in effect. In addition, electricity availability to all power users may experience rotating power curtailments. This is done to protect the electric power grid from the possibility of a cascading power shut down, causing a widespread blackout, with no electrical power throughout the system.

Since 2006, the following EEA2 and EEA3 events have occurred in the Texas Interconnection grid, yearly by quarter (Q).

Texas EEA2 events have occurred in:
2008 1Q
2009 4Q
2011 3Q

Texas EEA3 events have occurred in:
2011 1Q
2012 2Q

The Texas Interconnection grid is increasingly under stress, as shown by three Energy Emergency Alert 2 (EEA2) events and two more severe Energy Emergency Alert 3 (EEA3) events, occurring since 2006.

The electrical power industry follows a straightforward yet effective strategy for maintaining system reliability. That is, "always have more electrical supply available than may be needed, at any time." This is called reserve margin, defined as: "capacity" minus "demand," divided by "demand." Where "capacity" is the expected maximum available electrical supply, and "demand" is expected peak electrical demand in the system. Reserve margins are calculated for individual electrical systems or for a larger region, consisting of a number of electrical systems. A reserve margin of 30% indicates the electrical system has excess capacity totaling 30% of expected peak demand, and prior to deregulation in Texas, was the target norm.

The North American Electric Reliability Corporation (NERC) analyses and disseminates historical reserve margin data for the Texas Interconnection grid in Figure 1: NERC Historical Reserve Margin Analysis of Texas Summer Peak 1st Year Forecasts. Values represent reserve margins forecast for the next year. The Texas electrical power system actual reserve margins approach the NERC target standard of 13.75%, in 2006, and drop below 13.75%, for two years, beginning in 2007.

Texas is not constructing enough electric power generation plants to meet the NERC power demand reserve margin target of 13.75%. The Electrical Reliability Council of Texas (ERCOT) (2013) forecasts Texas' electric power reserve margins. In the 2013 ERCOT Report on the Capacity, Demand and Reserves in the Texas Interconnection grid, the forecast Texas reserve margins are shown in Table 2. ERCOT Forecasts: Texas Electric Power Reserve Margins. Based on current information, concerning future-planned electric power generation for the Texas Interconnect grid, Texas will significantly fall below the NERC mandated planning reserve margin target of 13.75%, beginning in 2015 and continuing through 2023.

Capital expenditures in Texas' electric power industry, because of market-based reforms, are lagging demand. Predictably, brownouts and system-wide blackouts may result. TXU Corporation, headquarter in Dallas, TX, was the leading provider of electricity and natural gas in Texas. In the largest private equity leveraged buyout, valued at $48 billion dollars in 2007, at the top of the last credit bubble, Kohlberg Kravis Roberts & Co., Texas Pacific Group, and Goldman Sachs Capital Partners took TXU private, through a forward triangular cash merger, and renamed the new company Energy Future Holdings Corporation (EFHC). In 2009, EFHC violated certain loan covenants and wrote down $8 billion of assets, thereby admitting EFHC paid too much for TXU (DePamphilis, 2011).

Table 1: NERC Historical Reserve Margin Analysis of Texas Summer Peak, 1st Year Forecasts.

Year	Actual Reserve Margin	Target Reserve Margin	Year	Actual Reserve Margin	Target Reserve Margin
1990	0.2690	0.1375	2002	0.3215	0.1375
1991	0.2420	0.1375	2003	0.3449	0.1375
1992	0.2005	0.1375	2004	0.2499	0.1375
1993	0.2255	0.1375	2005	0.1461	0.1375
1994	0.2286	0.1375	2006	0.1383	0.1375
1995	0.1946	0.1375	2007	**0.1245	0.1375
1996	0.1686	0.1375	2008	0.1377	0.1375
1997	0.1483	0.1375	2009	0.1576	0.1375
1998	0.0987	0.1375	2010	0.2046	0.1375
1999	0.1212	0.1375	2011	0.1711	0.1375
2000	0.1942	0.1375	2012	**0.1340	0.1375
2001	0.2306	0.1375			

*Values represent reserve margin forecast for the next year. The Texas electrical power system actual reserve margins approach the NERC target standard of 13.75%, in 2006, and drop below 13.75%, for two years, beginning in 2007. ** The Texas electrical power system actual reserve margins approach the NERC target standard of 13.75%, in 2006, and drop below 13.75%, for two years, beginning in 2007. Source: North American Electric Reliability Corporation (NERC), office of Reliability Assessment.*

Table 2: ERCOT Forecast: Texas Electric Power Reserve Margins

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Texas Reserve Margin	13.8%	11.6%	10.4%	10.5%	9.4%	7.4%	6.5%	6.0%	5.2%	4.5%

Texas Electric Power Reserve Margins. Based on current information, concerning future-planned electric power generation for the Texas Interconnect grid, Texas will significantly fall below the NERC mandated planning reserve margin target of 13.75%, beginning in 2015 and continuing through 2023. Source: ERCOT Report on the Capacity, Demand and Reserves in the Texas Interconnection grid

EFHC reportedly, cannot meet the $20 billion in debt repayments maturing in 2014, and is exploring a pre-packed bankruptcy with creditors, representing the largest non-financial bankruptcy in 30 years. During this uncertain time, EFHC cannot look ahead and invest in new plants and equipment to meet expected future consumer demand. This threatens the Texas electricity market. The lack of reserve margin in Texas is crucial. Because the Texas electric power market is a separate power grid, being its own interconnection, it is not synchronous with the rest of the country. Therefore, Texas cannot rely on excess power from Eastern or Western Interconnection grids, during any expected future energy emergency alert events.

The Texas Interconnection grid has two characteristics unique to the U.S. First, the Electricity Reliability Council of Texas (ERCOT) is regulated solely by the Public Utility Commission of Texas (PUCT), outside the control of the Federal Energy Regulatory Commission. Second, Texas did not adopt the installed-capacity type market, based upon resource adequacy requirements to meet consumer demand, but has an energy only market, utilizing a scarcity-pricing model. Thereby implementing the Australian approach, along with other polices, hoping that energy-only pricing is sufficient to compensate owners adequately to supply generation for peak demand, while protecting consumers from unreasonably high electricity prices (Felder 2011). Consequently, the Texas electric market lacks incentives or requirements for the construction of excess generation capacity to maintain NERC planning reserve margin standards. This policy is in jeopardy and requires revision.

The existing Texas electric power industry marketplace design needs reform to become competitive. This includes reducing the barriers to entry and exit, ensuring access of primary energy sources, and addressing economies of scale, advertising and market structure. Guarding against market manipulation and

anticompetitive special interest laws and regulations, such as attempts to exploit consumers through biases of framing effects, availability heuristics, decoy options, sunk cost fallacy and bounded rationality—rather than wholesale and retail companies competing on price and reliability. An example of anticompetitive special interest laws and regulations, in the electric power market, is charging a monthly minimum access fee that is not dependent on electricity usage.

Economic theory and experience worldwide show the successful conversion to market-based wholesale and retail markets is not automatic. Doing it correctly necessitates implementing market regulations that ensure competition, rather than allowing practices that subvert it (Hess, 2011). Appropriate application and enforcement of antitrust laws are essential to secure the advantages of competition benefit retail consumers and corporations.

CONCLUDING COMMENTS

The goal of this research is to determine whether the Electrical Reliability Council of Texas (ERCOT) is achieving its stated mission, "to ensure a reliable electric grid and efficient electricity market." U.S. Energy Information Administration (EIA) data are analyzed, from 1970-2011, using one-way ANOVA means testing to identify significant difference between electricity prices in the Texas Interconnection grid, relative to U.S. electricity prices, pre-and-post 2002 Texas deregulation. North American Electric Reliability Corporation (NERC) energy emergency alerts, since 2006, and ERCOT's planning reserve margin forecasts for Texas, through 2023, are presented to determine Texas' power system reliability.

From 1970-2011, Texas Interconnection grid electricity prices rise about 60% faster than electricity prices throughout the U.S. This study's statistical p-value of 0.005 is highly significant, thus the equality-of-means null hypothesis is rejected. Relative to U.S. electricity prices, Texas has electric prices, during the market-based deregulation and privatization period, increase about four times faster than increases in electricity prices prior to deregulation— rising from 0.1938 during 1970-to-2001, to 0.7970 during 2002-to-2011.

NERC data shows the Texas Interconnection grid is increasingly under stress, with three Energy Emergency Alert 2 events and two more severe Energy Emergency Alert 3 events, occurring since 2006. Based on future-planned electric power generation for the Texas Interconnect grid, ERCOT forecasts Texas will significantly fall below the NERC mandated planning reserve margin target of 13.75%, beginning in 2015 and continuing through 2023.

Price and reliability evidence, since deregulation, suggest ERCOT is failing in its mission. To correct this, the Public Utility Commission of Texas (PUCT) and Texas Legislature should pass laws and set regulations in the electric power market to incorporate high-tech demand-response capabilities, ensure competition in the Texas Interconnection grid market by prohibiting anticompetitive special interest laws—such as charging a monthly minimum access fee—and mandate capital expenditures on new generating plants to meet expected future demand, subject to penalties. Future research should statistically test and analyze the Eastern and Western Interconnection grids.

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