Table of Contents

Thoughts for Practitioners

The Euro

In this article, the history of the European currency—the Euro—is detailed. Further, the relationship between the US dollar and the Euro is explored. For decades, the US dollar has been the "world currency." This has certain benefits for the US and the businesses that operate in the US. Merkel discusses under what conditions the Euro could challenge the US dollar for supremacy as the "world currency." Readers may want to consider what actions by the US and Europe would affect the supremacy of one or the other of these currencies.

Corporate Governance and Ethics

In this article, Flesher, Previts, and Sharp discuss ethical lapses that occurred 150 years ago in the Mobile and Ohio Railroad. The corporate bylaws are included in an appendix, so the reader can learn what the ethical concerns were at that time. It is interesting that the ethical lapses documented in this article concern issues that remain important today, such as personally profiting at the expense of the corporation. After digesting this article, the reader may give additional thought to: (1) the importance of ethical training in the firm, (2) control systems to detect unethical behavior, and (3) proper enforcement systems when unethical behavior is found.

Attracting and Retaining Business Travelers

He, Findley, and Mosley found that people who travel for business differ in their satisfaction from those who travel for personal reasons. This points out for hoteliers the importance of considering the needs and desires of each of their target market segments when designing their services. More generally, every business should consider the needs and desires of their target markets and try to develop a plan that will simultaneously increase the firm's profit and the customers' satisfaction.

Katrina's Impact

Chang and Young trace the effect of Hurricane Katrina on tax revenues for the City of Mobile, Alabama. While New Orleans suffered catastrophic losses, damage in Mobile was relatively light. In fact, the City of Mobile's tax revenues increased because of the increased business activity in Katrina's aftermath. Readers should be aware of the opportunities that exist for businesses to serve victims of catastrophes while also making a fair profit.

The Euro: From Whence It Came and To Where It May Go

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The euro celebrated its tenth anniversary on January 1, 2009. In that this currency sets a new precedent in international finance, the purpose of this study is to first trace its development which originated in Mundell's 1961 American Economic Review (AER) article through its adoption by sixteen European Union (EU) nations and seven non-EU countries. This article traces the development between these two events, including the euro's inception within the 1992 Maastricht Treaty, its fruition under the European Monetary Institute and later implementation by the European Central Bank. Reviewed next is the euro's ten year exchange rate history with the dollar explaining why the euro first fell against the greenback, then appreciated through mid 2008, and proceeded to depreciate during the remainder of the year. This paper concludes by observing how and why the euro may be threatening the dollar's status as the world's vehicle currency.

Introduction

On January 1, 2009 the euro celebrated its tenth anniversary. Introduced as the official currency in eleven nations on January 1, 1999, it replaced the Belgian Franc, the German Mark, the Spanish Peseta, the French Franc, the Irish Punt (Pound), the Italian Lira, the Luxembourg Franc, the Dutch Guilder, the Austrian Schilling, the Portuguese Escudo, and the Finnish Mark. Two years later the Greek Drachma was also superseded by the euro. In that a nation's money is often looked upon by its citizens as a symbol of national autonomy (Galbraith 1975) a three year transitional period allowed consumers in these countries to use both their original currency when conducting day to day cash transactions and to utilize the euro when writing a check, issuing bank drafts and conducting other cashless transactions. Euro banknotes and coins first appeared on January 1, 2002. During 2007, 2008 and 2009 four new members of the European Union (EU), Slovenia, Malta, Cyprus and Slovakia adopted the euro resulting in sixteen of the twenty-seven members now using this new common money. In addition, the small nations of Andorra, Liechtenstein, Monaco, San Marino and the Vatican City, being geographically immersed within but not officially members of the EU, have unilaterally elected to use the euro as have the Balkan countries of Montenegro and Kosovo.

Valdez (2007) notes that this appears to be the first time in man's recorded history that governments, not being under military or colonial pressure, have voluntary eschewed their national money for another. In that the euro is thus setting a new precedent in international finance, it is the goal of this paper to ascertain how and why this came about. The next section traces the evolution of the euro. Starting with Mundell's classic 1961 American Economic Review paper entitled "A Theory of Optimum Currency Areas" the prospect of a common currency was first noted in the 1992 Maastricht Treaty. Next was fruition under the European Monetary Institute (EMI), followed by the creation of the European Central Bank (ECB) and finally the ultimate adoption of the euro by sixteen EU member nations and seven non-members. Part three reviews the ten year history of the euro exchange rate with its principal global competitor, the U.S. Dollar. An attempt is made to explain why the euro's exchange rate value depreciated against the dollar during its first two years of existence, rose to parity during late 2002, and continued to appreciate until mid 2008. Part four cites numerous reasons as to why the dollar's global dominance may be in jeopardy, and part five notes that the euro's fall against the dollar during the second half of 2008 is only a temporary gain for the greenback. This study concludes by observing how the euro may be threatening the dollar's status as the world's vehicle currency. It is possible that the euro may replace the dollar for the same reasons as that the dollar undermined the dominant spot held by the British Pound until after WWII.

The Euro: From Whence It Came

In 1748, Charles de Secondat, Baron de la Brede et de Montesquieu, in a work entitled "L'Esprit des Lois" expounded the idea that "sweet commerce" would replace the repetitive and endemic bellicosity that inflicted Europe during his time. As noted much later by Padoa-Schioppa (1987), who currently serves as the Minister of Finance for the Italian government, the founders and proponents of what eventually would become the European Union premised the goals of economic and political union upon building common interests among all Europeans. By allowing free trade and investment flows among member nations, it was hoped that this would mitigate and eventually eradicate national rivalries and the resulting internecine slaughters. Despite the pauses and occasional retreats from the articles found in the 1957 Treaty of Rome, the European Economic Community (EEC) became a reality which eventually evolved into the current 27 nation EU. Pursuant to the Single European Act ratified in 1986, which provided for the activation of a unified internal market parallel to that of the fifty United States of America, today goods, services, capital and to a large degree people are free to move throughout the EU bloc with minimal restrictions.

Logic would necessitate the eventual use of one currency throughout the EU in order to facilitate further cross border trade and investment flows. This would eliminate the need and the cost of continually exchanging currencies and terminate the trio of well documented foreign exchange rate risks routinely incurred by international traders and investors: the transaction, translation, and economic effects (see Daniels and VanHoose

2005 for an explanation and an example of each variety).

In 1988 Jacques Delors, while serving as President of the European Commission, was charged with the task of studying how these problems could be mitigated and of proposing measures that would lead to a full economic and monetary union within the entire EEC. After the demise of the Bretton Woods fixed exchange rate system, the European Monetary System (EMS) was implemented in 1979 as an attempt to stabilize exchange rates among EEC currencies. Upon reflecting on the erratic if not tumultuous short history of the EMS, Delors concluded that the now infamous "snake in the tunnel" mechanism which limited variations in exchange rates was not working. By this time the UK had already begun hinting that it may leave the EMS and allow the pound sterling to float on its own, which it eventually did in 1992, and other member nations governments, in particular that of Italy, were considering doing the same (De Grauwe 2003). Delors felt that it was time to seriously consider replacing the multiple currencies used throughout the EEC bloc with a single medium of exchange. He based his premise on a path breaking seminal article published by Robert Mundell in 1961 in which the theory of an optimal currency area (OCA) was formulated. Mundell, who later secured a Nobel Prize in 1999 for this work, focused on the economic environment needed to allow nations operating within a trade bloc to replace their currencies with one to be used by all. Supplemented later by McKinnon (1963) and Kenen (1969), the conditions necessary to form an OCA were found to be the following:

1. the relatively free mobility of factors of production throughout the trade bloc nations, especially labor and capital;
2. price and wage flexibility;
3. economic and political openness to trade and investment flows; and
4. a diversification of production in response to Ricardian comparative advantage.

The Delors study culminated in the 1989 Report on Economic and Monetary Union in the European Community, commonly referred to as the Delors' Report, which provided a detailed map to full economic and monetary unification within the EEC. Citing a work published by Padoa-Schioppa (1982), Delors noted the chronic difficulty experienced by the Community when attempting to allow the movement of labor and capital under a fixed exchange rate regime. In tandem with monetary policy being determined autonomously by each country's central bank, it appeared that member nations seemed to be working at cross odds with one another rather than in unison towards the common objective of a single market environment as outlined in the Treaty of Rome. Eichengreen (1990) quickly pointed out that capital mobility, fixed exchange rates, and a freely determined monetary policy implemented by a nation's central bank are mutually unobtainable economic goals among trading partners. Blinder (1998) later referred to this situation as the impossible trilogy. Thus, while the OCA theorized on the possibility of a single currency operative throughout a trade bloc when certain conditions were evident, the above noted impossibility trilogy stressed its absolute necessity.

The stage was set for proposing not only a single currency but also only one overarching central bank deciding upon and implementing monetary policy for the nations using this new money. Pursuant to the impetus provided by the fall of the Berlin Wall and German reunification in 1989, the Maastricht Treaty, which was ratified in 1992, established the concept of the EU and its concurrent single market operations. Two years later, in 1994, the EMI was established. It set constant exchange rates between the currencies although some rate variations were approved by consensus among the member states. The EMI also generated the basic charter for both implementing a single currency and for creating one European Central Bank (ECB) which would supersede in monetary policy authority that of the national central banks. Jacquet and Pisani-Ferry (2001) believe that the Maastricht Treaty was a document (Rose 2000 uses the term constitution) uniquely focusing on monetary issues rather than on political concerns. This treaty did ultimately replace the exchange rate system of the EMS and the domination of the German Mark with ECB and eventually the euro.

In order to assure that a nation's economy was sound enough to join the potential euro-band, the convergence criteria outlined in the Maastricht Treaty requires that a country's government and financial market comply with five conditions prior to adopting the euro. These include:

1. stabilizing the exchange rate with those of the other EU nations currencies for a three year period (for those nations entering the EU after 1999 this means a stable exchange rate with the euro);
2. reducing the domestic rate of inflation to less than 1.5% above the average rate of price increases of three nations with the lowest levels;
3. reducing long term interest rates, normally interpreted as the ten year rate on national government bonds, to no more than 2% above the average of three nations having the lowest percentages;
4. reducing the national budget deficit to under 3% of GDP; and
5. maintaining a national debt no larger than 60% of GDP.

The goal was to introduce the new currency on January 1, 1997 within those nations meeting these conditions. However, most were unable do so and the initiation date was postponed until the first of January, 1999.

To better coordinate the euro's introduction and to insure the stability of its exchange rate value, the ECB was established in June 1998 in Frankfurt, Germany. Membership in the Governing Council, comparable to the Board of Governors of the U.S. Federal Reserve Bank, includes the director of the each euro-band member country's central bank and the six members of the executive council. However, only one monetary policy with regard to the supply of the euro and interest rates would apply throughout all these nations. Note that the U.K., Sweden, and Denmark chose to opt out of the euro and to this day still use the pound and the kroner which fluctuate in exchange rate value to the euro (Padoa-Schioppa 2004). Countries that enter the EU after 1999, as a condition of membership, are obligated to institute the appropriate fiscal and monetary policies so as to meet the five convergence criteria and thus replace national currencies with the euro.

Fruition was finally reached on January 1, 1999. Eleven of the then fifteen EU nations listed in the introduction met the convergence requirements and adopted the euro. In 2001, Greece joined the euro-band bringing the number up to twelve. Euro bank notes and coins came into circulation in January 2002. Under the 2001 Treaty of Nice and the following convention on the Future of Europe held in Brussels one year later, the largest single expansion in EU history occurred in 2004. Ten eastern European nations, eight of them formerly under Soviet domination, become members. These nations were the Czech Republic, Cyprus, Estonia, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia, and Slovakia. In 2007, Romania and Bulgaria were admitted bringing the total membership number to twenty-seven. Also in that year Slovenia replaced its currency, the tolar, with the euro, and on January 1, 2008 it was also adopted by the small island nations of Cyprus and Malta. At the start of 2009 Slovakia joined the euro-band. At present sixteen sovereign countries fully utilize the new currency.

To summarize, the period between 1957 and 2009 evolved from the signing of the original Treaty of Rome to the adoption of the single currency by sixteen nations. This half century also included the creation of a common central bank which assumed control over monetary policy from these nation's central banking authorities. It was also a period during which more than 316 million persons in fifteen sovereign states learned to use an entirely new fiduciary currency in an amazingly short period of time (World Bank 2008). And given the recent astounding rise in the Euro's exchange rate value relative to the U.S. Dollar through mid 2008, which de facto has functioned as the world's global vehicle currency during the last sixty years, this study now turns to an analysis of how and why this has occurred.

The Euro: 1999-2008

The euro was introduced as an accounting unit usable for non-cash transactions on January 1, 1999. It became a day-to-day medium of exchange in twelve nations on January 1, 2001. While circulating with national currencies for as long as an additional year in some countries, the euro thereafter became the sole money used within these nations. The twelve original currencies were entirely withdrawn from circulation by February 2002.

On the day that the euro became a reality, Stevens (1999) noted that this common currency was expected to bring important benefits to participating nations. From an economic perspective it was expected to raise the living standards of Europeans via the elimination of foreign exchange costs, estimated to be one half of one percent of EU GDP. Corden (2002) estimated this savings in 1999 to total about 50 billion euro, which equaled 59 billion USD at the January 1, 1999 exchange rate. Cross border price comparisons on consumer goods and services would be made transparent enhancing overall consumption possibilities. Also EU regional investment, both internal and external in origin, on capital, land, and financial instruments, would be facilitated. Politically the euro was seen as a major step towards a more complete European political union. However the later rejection of the 2004 EU Constitution by Dutch and French voters belied this prospect, and pursuant to the recent Lisbon Treaty, this revised and reworked document is currently under negotiation in Brussels.

The nominal exchange rate per the USD at which the new currency was launched was purported to be a weighted average of the real exchange rates of the eleven currencies consolidated into the euro-band based upon trade volumes with the United States (European Central Bank 2001). As set by the ECB, the rate of 1.17USD/EURO (see table 2) reflected the fact that the U.S. economy in the late 1990s was enjoying its historically longest economic expansion coupled with unusually low rates of inflation. At the same time the average EU rate of unemployment exceeded 10%, more than two and one half times greater than the concurrent rate in America, and U.S. real GDP growth was running at double the EU level. It was expected that the euro would accordingly depreciate against the USD thereby stimulating additional European exports to U.S. consumers and business-

Table 1: Average End of Quarter Exchange Rates 1999-2008 – Euro and the USD

Date	EURO/USD	USD/EURO	Date	EURO/USD	USD/EURO
99-Q1	0.9197	1.0879	04-Q1	0.8154	1.2269
99-Q2	0.9625	1.0395	04-Q2	0.8233	1.2151
99-Q3	0.9535	1.0494	04-Q3	0.8194	1.2208
99-Q4	0.9894	1.0113	04-Q4	0.7466	1.3399
00-Q1	1.0355	0.9663	05-Q1	0.7575	1.3207
00-Q2	1.0534	0.9499	05-Q2	0.8219	1.2171
00-Q3	1.1469	0.8727	05-Q3	0.8150	1.2276
00-Q4	1.1115	0.9007	05-Q4	0.8438	1.1856
01-Q1	1.0990	0.9109	06-Q1	0.8320	1.2023
01-Q2	1.1716	0.8540	06-Q2	0.7893	1.2674
01-Q3	1.0964	0.9126	06-Q3	0.7851	1.2741
01-Q4	1.1213	0.8922	06-Q4	0.7577	1.3202
02-Q1	1.1421	0.8759	07-Q1	0.7555	1.3240
02-Q2	1.0478	0.9552	07-Q2	0.7453	1.3421
02-Q3	1.0207	0.9801	07-Q3	0.7204	1.3888
02-Q4	0.9808	1.0202	07-Q4	0.6860	1.4581
03-Q1	0.9274	1.0788	08-Q1	0.6333	1.5790
03-Q2	0.8569	1.1677	08-Q2	0.6399	1.5628
03-Q3	0.8893	1.1253	08-Q3	0.6922	1.4445
03-Q4	0.8137	1.2296	08-Q4	0.7795	1.2828

Source: Calculated based on data from http:www.oanda.com/convert/fxhistory.

es and further lubricating FDI into the EU (Issing et alia, 2001).

By the end of the first quarter of 1999, only three months after its issuance, the euro fell to about 1.09USD/EURO. At the same time the Economist Big Mac Purchasing Power Index (Economist, April 3, 1999, p. 66) noted that "…the current exchange rate…implies that despite its fall, the euro is still 11% overvalued" which was followed by a forecast of a further depreciation. Less than a year later, this index indicated that in January 2000 the level of overvaluation had shrunk to about 2.4% (Economist January 8, 2000, p. 100) relative to the dollar. By the end of the first quarter of 2000 the euro was reported by this index measure to be actually 5% undervalued to the USD (Economist April 29, 2000, p. 75).

Martin Wolf, in a September 27, 2000 Financial Times article entitled "Catching the falling euro" cited a list of reasons explaining the depreciation of the currency based upon IMF data. It included, as noted above:

1. favorable growth in the U.S. economy versus the lower level within the EU in juxtaposition to American unemployment being almost one third that of Europe's;
2. higher short term interest rates paid in the U.S. financial markets from Treasury bills to bank certificates of deposit to money market funds relative to those paid in European capitals;
3. foreign borrowing in the expanding Eurobond market in US currency;
4. the perceived weakness of unified monetary policy within the infant ECB (recall that the directors of each euro nation's central bank serves on the Board of Directors of the ECB so a perennial tug-of-war over monetary policy was anticipated); and
5. the recent record of increasing corporate profitability reflected in rising stock values in the U.S. economy well above comparable levels in Europe.

Ewall (2007) notes that due to the dollar's share of official central bank reserves rising throughout the 1990s and peaking at 72% of global reserves in 2001, more downward pressure was placed on the euro's exchange rate value. Thus currency traders, large investors such as pension and hedge funds, and central banks bet on the USD and against the euro during the new currency's first years of existence.

Table 2: Key Euro and USD Exchange Rate Dates

Date	EURO/USD	USD/EURO	SIGNIFIGANCE
January 1, 1999	0.8570	1.17	Start Date of the Euro
November 1, 2000	1.1780	0.85	Peak Euro/USD Rate
December 5, 2002	0.9999	1.00	Euro/USD Parity Rate
June 20, 2003	0.8530	1.17	Back to Start Date Rate

Source: http:www.oanda.com/convert/fxhistory.

Table 3: U.S. and Euro Band Short term Interest Rates and Current Account Balances*

Date	90 Day Interest Rates		Current Account Balance (last 12 months) (billions USD rounded)	
December 2005	U.S.	4.23%	U.S.	-755
	Euro	2.48%	Euro	47
June 2006	U.S.	5.06%	U.S.	-806
	Euro	2.91%	Euro	67
December 2006	U.S.	5.25%	U.S.	-811
	Euro	3.70%	Euro	- 23
June 2007	U.S.	5.27 %	U.S.	-830
	Euro	4.16%	Euro	8
December 2007	U.S.	4.16%	U.S.	-739
	Euro	4.88%	Euro	52
June 2008	U.S.	2.37%	U.S	-710
	Euro	4.96%	Euro	-3
September 2008	U.S.	2.04%	U.S	-699
	Euro	5.07%	Euro	-32
December 2008	U.S.	1.22%	U.S	-699
	Euro	3.74%	Euro	-51

*Figures registered on the last weekday of the month.

Source: Economist. Various issues. Economic and Financial Indicators.

The euro's value fell to its nadir just prior to the transformation from a virtual to a real "in the hand" currency. On November 1, 2000 (Table 2), it traded at a rate of 0.85USD/EURO. However, the Big Mac Index estimated that by the end of the second quarter of 2000, the euro was actually showing signs of being undervalued against the dollar. In fact by November 2001 (Economist, November 21, 2001, p. 74), this index registered a euro undervaluation of 11%, an exact opposite of its April 3, 1999 overvaluation. Data in Table 1 show that by the end of the fourth quarter of 2000, the euro to dollar exchange rate movement reversed and the euro began its slow but inexorable appreciation against the USD. On the fifth of December of that year, the euro traded at parity with the greenback (Table 2) and during June of 2003, it returned back to its starting exchange rate. A May 20, 2003 Financial Times headline article written by Christopher Swann (2003, p.1) entitled "Dollar slips to euro launch level," touts a warning of a continual rise of the euro and a fall in the dollar while stating (italics added): "The dollar yesterday fell to within a whisker of the level at which the euro was born in January 1999, as financial markets digested indications from the G7 meeting over the weekend that policy makers were abandoning the ailing dollar to its fate". As further stated by Swann, this represented a drop of 24% against the euro since the start of 2002, a sixteen month period. Two days later Kirchhoff (2003, May 22), in a USA Today Moneyline article, stated that Alan Greenspan, former Chair of the Federal Reserve Board of Governors, was hinting at more interest rate cuts in the immediate future. Additionally, (italics added) "[the] combination of a weak U.S. economy and stock market, ballooning budget and trade deficits, low interest rates and a White House that is stepping away from a nearly decade old strong dollar rhetoric, has spooked investors pushing the greenback down… [by] about 25% against the euro alone". The continual fall of the dollar against the euro had begun.

As indicated in Table 1, while the dollar did gain some ground during mid 2004 and mid 2005, from quarter one 2006 to quarter three 2008 the dollar consistently fell in value against the euro. In addition, between its peak value in mid-2001 through the first quarter of 2008, it required those with U.S. currency to spend an additional 85% to purchase one euro. This is markedly more than what the USD has given up to purchase other major trading partner currencies such as the yen and the Mexican Peso. Why has this turnabout occurred? As stated in the Economist (May 10, 2003, p. 66), currencies are now being driven by trade imbalances and interest rate differentials. Table 3 compares the short term interest rates and current account balances in the U.S. and the euro-band economies on a six month basis from December 2005 through the fourth quarter of 2008. Apparently the source of the euro's appreciation after the last quarter of 2000 was initially not short term 90 day money market and government bill rates which impact most heavily liquid "hot money" trans-border investment flows. As seen in Table 3, U.S. short term rates were noticeably above those paid in euro nation markets until late 2007, seven years into the dollar's demise against the euro. However, America's global current account deficit began to surge. Per annual data found in the Bureau of Economic Analysis website (www.bea.gov/international), the current account deficit stood at a negative 302 billion USD in 1999. By the end of 2000, one year later, it rose by more than one-third to a negative $417 billion and has consistently risen to reach a peak of about minus $811 billion in 2006. This was an increase in the deficit on the U.S. international account that tracks goods, services, income flows, and unilateral transfers of 167% over a seven year period. Even with the growth of the current account deficit mitigating during 2007, it still registered a negative balance of $739 billion at the end of the year. With the exception of a slight deficit in the global current account for the euro nations in 2005, the euro-band has run a global surplus in this account every year since the start of this currency in 1999. Thus America's rising trade deficit in juxtaposition to the euro's surplus would explain the rising USD/EURO exchange rate. In addition, America's current account deficit with the euro area rose by a whopping 280% from a negative $21 billion balance in 1999 to its top amount of a minus $80 billion in 2006. The U.S. deficit with the euro nations, as that with the rest of the world, fell in 2007 to a still large negative $53 billion balance. This certainly explains, at least partially, the euro's meteoric jump against the dollar.

However, the rate of dollar depreciation substantially quickened during the first quarter of 2007. As can be tabulated from Table 1, between Q1 2001 and Q4 2006 the euro appreciated by 44 % over this six year inclusive period. However, between Q1 2007 and Q1 2008, a mere five quarters of time, which amounts to only about 1/5th of the period between January 2001 and December 2006, the euro rose by almost 20%, nearly half the appreciation of the previous six years. As reported in table 3, the U.S. experienced its historically largest current account deficit during 2007 which peaked at $830 billion in June. In turn Chairman Bernake of the Fed, in order to lessen the potential impact of the fallout of the sub-prime mortgage on the economy, began lowering interest rates to levels below those paid in Europe.

As the probability of a full blown recession loomed, rates were decreased even more, and by May 2008, euro short term rates were two and one-half times greater that those paid on short term dollar instruments. Rising inflation in the U.S. turned these low rates into negative real returns on U.S. dollar denominated investments. Thus, money began to flow out of the U.S. and into Frankfurt exacerbating the downward pressure on the dollar already cemented by the trade deficit. That trade deficit had risen to a twelve month level of $827 billion in mid 2008. In addition, the collapse of such firms as Enron and World Com shook foreign and domestic confidence in the potential profitability, and for that matter integrity, of U.S. companies. This further drained funds back to Europe. This exodus of money was likely also prodded by the restrictions placed on U.S. firms and financial markets by the Sarbannes-Oxley Act (Lovik and Merkel 2006). To quote a May 10, 2003 Economist article entitled "Super-euro": "The large flows of capital from Europe into the U.S. seen a few years ago have dried up. European investors who suffered big losses on American assets are happy keeping their money at home [sic]" (p. 66). Coupled with the federal government's increasing national budget deficit due to paying for the wars in Iraq and Afghanistan, and in tandem with the

Bush tax cuts, all factors pointed to an extreme fall of the dollar which, not surprisingly, occurred.

Recent Big Mac Indices show that the euro was overvalued by 10% in April 2003 (Economist April 20, 2003, p. 68) which rose to a 13% overvaluation a year later (Economist May 27, 2004). It continued to increase to 17% in June 2005 (Economist June 9 2005 found on www.economist.com/BigMacIndex) to a peak of 22% in both May 2006 (Economist May 27, 2006, p. 74) and in July 2007 (Economist July 7, 2007, p. 74). In that the euro has now been overvalued for more than five years but has until recently stubbornly continued to appreciate against the dollar, could this imply that the dollar is beginning to lose its sixty year privileged position as the world's vehicle currency? Is the euro a viable replacement? In other words, is the dollar today going the way of the pound sterling after WWII? This possibility is examined in the next section.

Is the Dollar's Global Dominance in Jeopardy and Should America Be Concerned?

The concept of an international form of money actually predates Christ. As Karmin (2008) points out, over the last two and one-half millennia more than a dozen forms have been accepted as a transaction medium beyond the borders of the nation of issuance. Included are:

1. the Greek Drachma issued by the fifth century B.C. Athenian city-state;
2. the Liang coin circulated throughout the empire of ancient China;
3. the Roman Sesterce used throughout the Mediterranean Basin for over five centuries;
4. the Islamic Dinar of the Middle Ages;
5. the Venetian Ducat of the Italian Renaissance period;
6. the Dutch Guilder used throughout the seventeenth century from Amsterdam to Indonesia;
7. the British Pound Sterling broadly accepted after the defeat of Napoleon at Waterloo in 1815 to the destruction of Hiroshima in 1945; and lastly, but likely not the last,
8. the U.S. Dollar at present.

Beinhocker (2006), Fischer (1996), Landes (1998), and Kennedy (1987) ubiquitously juxtapose the rise and the inevitable decline of history's great political, military, and economic powers with the waxing and the waning of the hegemonic use of that nation's money in world commerce. Galati and Woodbridge (2006) and Truman (1999) point out that for one country's money to become a true global currency, it must be readily accepted by non-residents as a cross border medium of exchange, store of value, and unit of account. Cohen (1971), when commenting on the decline of the pound and the rise of the dollar after WWII, distinguishes between the private sector utilization of an international currency versus that of official/governmental units. For private sector utilization:

1. this money must function as a universal vehicle currency in foreign exchange markets when operating as a global medium of exchange;
2. be extensively used in banking and related financial market instruments as a relatively constant store of value; and
3. serve as a wide reaching unit of account and a standard of value when invoicing either trade or financial transactions.

In the official realm any international money must be usable:

1. as a medium in foreign exchange market interventions;
2. as a store of value when accumulating and holding onto central bank foreign reserves; and
3. as an account unit which provides a monetary anchor to a nation's currency.

Cohen (1971; 2000) lists four factors that symbiotically and jointly influence how well a single currency can serve these monetary functions on a universal scale. First, the larger a nation's share of both Gross World Product (GWP) and trade flows, the likelier it will be used by private and official parties as global money. Secondly, confidence in this currency must be established and maintained by the issuing country's government. This confidence is achieved in two ways: by implementing fiscal and monetary policies so as to secure internal macroeconomic stability, especially when minimizing inflation, and by consistently meeting and honoring its debt obligations to both domestic and foreign creditors. A pronounced degree of financial market development in scope and in depth is the third factor. As Lane and Milesi-Ferretti (2008) note, achieving a set of deep and extensive stock and bond markets in tandem with banking security meet the requirements of both private traders and central banks by providing liquidity when needed on an international scale. Lastly, the advantage of incumbency pursuant to network externalities creates a self generating demand for the single money. The greater the number of cross border transactions and central banks that already use a currency the more it will continue to be valued as such.

The factors described in the last two paragraphs will now be evaluated in terms of the dollar's share relative to that of the euro. The International Monetary Fund (2008) currency composition of foreign exchange reserves (COFER) database shows only a slight switch out of dollar assets since the introduction of the euro in 1999. In the early 1990s, the dollar's global share was about 45% with the bulk of the remainder divided among the principal European currencies and the yen. By the end of 2001, the percentage of greenback assets worldwide had risen to 72%. With the advent of the euro functioning as an in the hand money, the dollar's slice fell to 66% in 2003 but has remained constant through 2008. During the same period, euro denominated assets rose from 18% of world totals in 1999 to 25% in 2003 and like dollar assets, have remained at about that level to the present. The IMF database notes that the majority of switchover from dollar to euro assets took place in developing markets, primarily throughout Southeast Asian economies. This was likely in response to the 1997-8 financial crises that engulfed the area. Among developed nations, the dollar's share held steady while the euro's increased usage was replacing the yen and not the U.S. currency.

However, other data place the dollar's role as an international currency in a less favorable light. The Bank of International Settlements' (2004 and 2007) recent triennial surveys show that the dollar's share in transactions in foreign exchange markets fell from 94% in 1998 to 86% in 2007. The euro entered on one side of these transactions 37% of the time in 2004? 2007? This registered an increase of more than one-third from its 1999 level. Given the dollar's collapse against the euro over the last three years, it is probable that this trend has continued and will be reported in future surveys. In addition, the U.S. government securities market in 2008 totaled an outstanding net figure of 4.2 trillion dollars, while the aggregated sixteen nation euro government bond market stood at 4.7 trillion dollars (converting euro values to dollars). This now makes the euro public bond market second in capitalization to the yen market and places U.S. Treasuries in the number three position worldwide.

Galati and Woodbridge (2006) take issue with this concern. The market for U.S. Treasuries is much more liquid than that of its euro counterpart with over one trillion dollars, or about 25%, turning over every 90-365 days. Also, U.S. securities have only one issuer, the U.S. Federal government. Eurobonds now have sixteen issuers, making the triple AAA rated U.S. instruments virtually risk free for investors while bonds issued by governments with a more dubious rating, such as Greece and Italy, are less so. The daily churn of Treasuries is more than seven times that of the Euro Band. All this leads to the conclusion that as a medium of exchange, the dollar is not about to be superseded by the euro in the immediate future.

To ascertain the dollar's future as a unit of account, studies completed by the ECB in 2005 and 2006 begin by evaluating what is termed in financial parlance as a currency's "gravitational" pull. This is measured by the volatility of its exchange rate over time in conjunction with the sensitivity of a group of other exchange rates to the anchor money (see Frankel and Wei [1995] for a complete explanation). A combination of low exchange rate fluctuations and high exchange rate sensitivity suggests that a global currency such as the dollar, or a prospective one such as the euro, will continue, or will begin, to play a key role as the de facto global reserve currency. Research provided by Galati and Woodbridge (2006) and Elwell (2007) shows that the euro's gravitational pull is on the rise. This is indicated by the exchange rates of European nations outside the euro-band, such as the Swiss Franc and the kroner used in Norway, Denmark, and Sweden, along with virtually all eastern European currencies, such as the Hungarian Forint and the Polish Zloty, tracking from one-half to two-thirds of the euro's movement against the dollar. Even the money issued by Brazil and by Chile has shown approximately identical exchange rate fluctuations in tandem with the euro. During the last two to three years, the Australian, New Zealand, and Canadian Dollars mirror an average of 60%-65% of the euro's movement. Even the Chinese Yuan has recently ended its more than ten year hard peg to the dollar. It now attaches its value to a basket of currencies which includes the euro as well as the dollar and other monies. The exact percentages for this basket of currencies have not been made transparent by Beijing (BIS 2007). Mark Stone (2008) of the IMF reports on the more than 100 countries' currencies that operate on a hard to soft peg. Forty of these currently use the euro, either alone or in conjunction with the dollar and other nation's monies, such as the yen. This is up from fifteen currencies that did so in 2003. While the greenback is still the world's most important monetary anchor, as the prices of most commodities from crude oil to wheat and a wide swath of financial instruments remain listed in dollar figures. However, the evidence provided by the above noted exchange rate co-movements suggests that the euro is playing a larger and growing gravitational role in world commerce. Having become a viable competitor to the dollar's role of universal unit of account, in time this may well tend to boost the euro's attraction as global money.

The overall critical criteria needed by a single currency to function as a worldwide store of value is locked in its innate ability to maintain real purchasing power over time. As seen in the above tables, despite the U.S. enjoying relatively low levels of inflation in recent years, its current account deficit ballooned to almost 5% of GDP in 2008. Thus the prospect of further depreciation against not only the euro but against all the currencies on the major currency index (MCI) is eroding the dollar's ongoing chance of continuing to serve as a universal store of value. Since 2002, the dollar has fallen by almost 35% on the MCI with half the decline occurring during the 2007 to mid-2008 period alone. Thus far, the ultra-high liquidity of the U.S. financial asset market seems to have compensated for the deleterious effects of the return on dollar denominated investments. However, further dollar depreciation will inevitably erase this advantage. As a harbinger of the demise of the storage function of the dollar, the outstanding stock of euro instruments, excluding those issued by governments, now stands at more than 13 trillion dollars. While smaller than America's 22 trillion dollar figure, since 1999 it has been growing at a rate almost 40% faster than that of U.S. issues. Three years ago the outstanding stock of euro instruments surpassed Japan's (Thompson Financial Securities Data-stream 2008). In addition, a study conducted at the Copenhagen Business School by Feldhutter and Lando (2006) indicates that euro securities have become as liquid as dollar ones in the derivative markets. For example, the turnover of euro denominated interest swaps now exceed that of its dollar counterpart by almost one fifth on a daily basis which is probably in response to the dollar's recent plunge. Thus, the prospect of the dollar's future use as a global store of value appears to be at the least under a cloud and at best problematic.

An About Face Afterthought

In 2008, between the ends of quarter 2 and quarter 4, the USD has surprisingly appreciated against the euro by about 18% from \$1.56/E to \$1.28/E (Table 1) and by about 15% against a range of currencies. This unexpected improvement in the dollar's exchange rate came at the time of the American economy's slide into what may be the worst recession since the early 1930s. Despite the:

1. collapse of housing values in the U.S. by as much as 16.6% according to a recent Case-Shiller national index (Economist, December 6, 2008, p. 45),
2. ballooning current account deficit,
3. evaporation of short term credit availability, and
4. rising unemployment,

could this be a harbinger of the recovery of the dollar and its return to global domination?

Behravesh (2008), among others, think not. The single European currency has been unsuccessful in three areas which explain the current exchange rate decline. First, the euro has not made the most indebted euro economies, in particular Belgium, Greece and Italy, more fiscally responsible. While the Maastricht criterion requires a national government debt to GDP ratio of no more than 60%, the percentage remains well above this threshold in these three nations. In fact, Italy's debt to GDP figure exceeds 100%. Secondly, by removing monetary policy as a macroeconomic tool, proponents of the euro assumed that membership in the euro-band would induce structural reforms, particularly in labor markets, and thereby boost productivity. While a number of northern European nations have made some progress in this area southern Europe, primarily Greece, Italy, Portugal and Spain, have not; even France back-peddled when it introduced the 35 hour work week. In addition, the euro has not delivered on its promise of sound growth with minimal inflation. Two non euro-band members, the U.K. and Sweden, actually registered higher growth and lower inflation between 1999 and mid-2008, the current slow down notwithstanding. Thus, global investors when spooked by the international financial crises that began in summer 2008 cashed out of the euro and other currencies and placed funds in the historically most secure market, the U.S. However, as a current Economist (January 3-9, 2009, pp. 50-52) article stresses, the dollar may be merely benefiting from its incumbency as the world's vehicle currency. It still overshadows global currency transactions for such key products as oil and virtually all minerals and food crops, thus accounting for about two-thirds of global reserves compared to a quarter for the euro. This is in spite of the January 24, 2009 Economist Big Mac Index which lists the euro as being 22% overvalued against the dollar. However, this is likely to be a short run aberration in the inexorable long run decline of the dollar. When the global financial and housing markets recover, the greenback's slide in dominance with a concurrent rise of the euro will resume.

Conclusion

Do the above cited statistics and trends allow one to conclude that the dollar is on the way out and the euro on the way in as the new global money? In 2008, Chinn and Frankel (p.3) ask the following: "Is the dollar in danger of losing its exclusive role as premier international currency?" Their reply begins with the observation that the demise of the pound was part of a much larger pattern wherein the U.K. proceeded to lose its:

1. global economic pre-eminence to the U.S.;
2. colonies;
3. perceived military prowess;
4. premier currency status to the dollar.

In turn, at present, the euro is a much more serious threat to the dollar than was the dollar to the pound between the world wars, or was the mark or yen to the greenback during the 1970s and the 1980s. Secondly, the U.S. now has a quarter century history of chronic and rising current account deficits with seemingly no end or solution on the economic horizon. This begs the question of whether the U.S. will be able to depend on foreign largesse via inward investment flows in order to continue financing this account. Note that in an earlier paper, Chinn and Frankel (2005) qualified the euro's supersession of the dollar in the world arena on two criteria:

1. the United Kingdom and enough other EU members join euro-land so that it becomes larger than the U.S. economy, and
2. the U.S. macroeconomic policy eventually eroding and undermining global confidence in the dollar due to internal inflation and currency depreciation.

The replacement of the dollar by the euro as global money ultimately depends on the transaction costs incurred by the rest of the world of holding either currency as a medium of exchange, a unit of account, and a store of value (Goldberg and Tille 2006). This study demonstrates that the dollar is losing ground, albeit in varying amounts and only gradually, in all three of these basic monetary functions. As long as the U.S. keeps on running its inordinately large set of twin deficits on the international and the Federal budget accounts, the foreign exchange markets will continue to exert further depreciating pressure on the dollar. Upon the analysis of the composition of foreign exchange reserves from 1920 to1950, Eichengreen and Flandreau (2008) conclude that the existence of two dominant international currencies coexisting simultaneously has historical precedent. Indeed that was the case for the dollar and the pound during this time period. Eventually and inexorably the advantage of incumbency will become outweighed by the rising transaction costs of holding dollar assets, whether in private portfolios or in central bank reserve accounts. This will most likely generate a liquidation of dollar denominated financial instruments..

Once this watershed is met, the scale will begin to tip in favor of the euro against the dollar at an increasing rate. It happened to the pound which was touted during the reign of Queen Victoria as "mankind's eternal currency" (de Vegh 1939). However, when "it became apparent to the people that a government that has trouble delivering mail on time might have trouble running the [global] currency and overseeing the [world] economy" (Weatherford 1997, pp. 188-189), the costs of holding pound instruments rose by enough to warrant replacing it with the dollar.

In 1919, John Maynard Keynes, in Essays in Persuasion, (p. 3) when impugning the political and economic quagmire that the Versailles Treaty which ended "The Great War" would spawn on the world, made the following quite prescient observation:

> "The power to become habituated in his surroundings is a marked characteristic of mankind. Very few of us realize with conviction the intensely unusual, unstable, complicated, unreliable, temporary nature of economic organizations by which [we] have lived for the last half century. We assume some of the most peculiar and temporary of our late advantages as natural, permanent, and to be depended on, and we lay our plans accordingly".

This quote, while referring to the state of affairs in Europe right after the termination of hostilities, could as well be applied to the dollar today. If the Euro were to overtake the U.S. currency in a few decades, this would indeed be a once in a century occurrence. But it happened to the drachma, the sesterce, and the guilder in history, and it happened to the pound only last century, well within the boundaries of living memory. Who can dare say that it could not happen to the dollar in this one? To believe otherwise, further quoting Keynes, is to place assuredness in the dollar as forever maintaining its dominant global position on a "sandy and false foundation …. mired by unsure delusions and reckless self regard".

Postscript

The euro is currently facing its first major crisis since the inception of the new currency in 1999. Pursuant to rising budget deficit and national debt levels now well above those proscribed in the Maastricht Treaty, the prospect of Greece defaulting on its E106 billion sovereign debt looms. For identical reasons the governments of Portugal, Spain, Ireland and Italy are facing the same dilemma. Note that banks throughout the euro using nations, French and German ones in particular, currently hold E76 billion of Greek government bonds which, via contagion, generate the fear of an EU wide financial collapse. For that matter U.S. banks, while less exposed, do hold E8 worth (Economist, May 1, 2010).

On May 10th, 2010, fearing the global fallout of a Greek default, financial ministers meeting in Brussels agreed upon a rescue package. A stabilization fund worth up to E500 billion would be made available to euro governments whose debt servicing is in jeopardy. This would be made available contingent upon the reduction of both the levels of budgetary deficits and the national debt pursuant to a plan and concurrent timeline for its implementation being approved. Included therein are E60 billion to be financed within 90 days by the sale of bonds. The ECB plans to monetize a large percentage of this short term bailout money by purchasing these euro bonds forthwith. In addition the IMF has committed E250 billion to supplement the stabilization fund if needed (Economist, May 15, 2010).

Not surprisingly this has come with an investor stampede out of short term government issued euro paper and back into Treasury bills and notes notwithstanding U.S. interest rates at that time hovering slightly above 1/4th of 1% on 30 day instruments. This has been reinforced by the exchange rate turning against the euro not only on dollars but other hard currencies as well. Is this a harbinger of an imminent collapse of the euro currency as a potential replacement for the greenback and a return of the latter's secure hegemony? In the short run, probably yes. However, under the Obama bailout plan, according to Congressional Budget Office projections, America's budget deficit will average about 1 trillion USD per year through 2019. Add to that the future costs of the recently passed health care bill and the U.S. Treasury will see an aggregate national debt of more than 75% of GDP within a decade. Inevitably the global investor's taste for Treasuries will likely soon begin to wane. As the 16 (soon to become 17 after Estonia joins next January 2011) euro band nations mitigate the crisis by implementing stabilization fund outlays and the governments of Greece, Portugal, Spain, Ireland and Italy shore up their fiscal positions, the hot money flow will reverse. By avoiding another financial quagmire such as is seen today in the EU and by holding profligate governments culpable for adhering to the requirements of the Maastricht Treaty, the euro will likely resume its inexorable encroachment on the dollar in the medium term.

References

Bank of International Settlements. 2004 and 2007. Central Bank Survey of Foreign Exchange and Derivative Market's
Activity. Basel: BIS.

Behravesh, Nariman. 2008. Spin-Free Economics. New York: McGraw Hill.

Beinhocker, Eric. 2006. The Origin of Wealth. Boston: Harvard Business School Press.

Blinder, Alan. 1998. Central Banking in Theory and Practice. Cambridge, Massachusetts: MIT Press.

Chinn, Menzie & Jeffrey Frenkel. 2005. "Will the Euro Eventually Surpass the Dollar as Leading International Currency?" NBER Working Paper No. 11510. http://www.nber.org/papers/w11510.

___________________________. 2008. "The Euro May over the Next 15 Years Surpass the Dollar as Leading Inter-
national Currency". HKS Working Paper No. RWP08-016. http://ssrn.com/abstract=1083712.

Cohen, Brian. 1971. The Future of Sterling as an International Currency. London: MacMillan.

___________. 2000. Life at the Top: International Currencies in the 21st Century. Princeton, N.J.: Princeton Univer-
sity Press.

Corden, William. Too Sensational: On the Choice of Exchange Rate Regimes. Cambridge, Massachusetts: MIT Press.

Daniels, Joseph & David VanHoose. 2005. International Monetary and Financial Economics. Mason, Ohio: Thomson/
Southwestern.

De Grauwe, Phillip. 2003. The Economics of Monetary Union. Oxford: Oxford University Press.

De Vegh, Irme. 1939. The Pound Sterling. London: Scudder, Stevens and Clark.

Delors, Jacque. 1989. Report on Economic and Monetary Union in the European Community .Luxembourg: Office for
Official Publications of the European Communities.

Economist. Various issues. London: The Economist Ltd.

European Central Bank. 2001. Review of the International Role of the Euro. Frankfurt: ECB.

___________________. 2005. Review of the International Role of the Euro. Frankfurt: ECB.

___________________. 2006, April. Monthly Review. 54-56.

Ewell, Craig. 2007. "The Dollar's Future as the World's Reserve Currency: The Challenge of the Euro". Washington,
D.C.: CRS Report for Congress, Congressional Research Service.

Eichengreen, Barry. 1990 "Is Europe an Optimum Currency Area?" London: CEPR Discussion Paper.

_______________ & Marc Flandreau. 2008. "The Rise and Fall of the Dollar, or When Did the Dollar Replace Sterling
as the Leading International Currency?" NBER Working Paper No. 14154. http://www.nber.org/papers/w14154.

Feldhutter, Peter and D. Lando. 2006. "Decomposing Swap Spreads". Copenhagen: Copenhagen Business School mimeo.

Fischer, David. 1996. The Great Wave: Price Revolutions and the

Rhythm of History. New York: Oxford University Press.
Frankel, John and S. Wei. 1995. "Emerging Currency Blocs" in Genberg, ed., The International Monetary System. Berlin: Springer Verlag.
Galati, Gabriele & Phillip Woodbridge. 2006. "The Euro as a Reserve Currency: A Challenge to the Pre-eminence of the U.S. Dollar". Bank of International Settlements: Working Paper No. 218.
Galbraith, John Kenneth. 1975. Money: Whence It Came, Where It Went. Boston: Houghton Mifflin Company.
Goldberg, Linda and Cedric Tille. 2006, March. "Vehicle Currency Use in International Trade". New York: Federal Reserve Bank.
Issing, Otmar, et alia. Monetary Policy in the Euro Area: Strategy and decision Making at the European Central Bank. Cambridge, U.K.: University of Cambridge.
International Monetary Fund, 2008, November 15. COFER database. www.imf.org.
Jacquet, Pierre & Pisani-Ferry. 2001. Economic Policy Coordination in the Euro Zone. London: CEPR.
Karmin, Craog. 2008. Biography of the Dollar. New York: Crown Publishing Group.
Kenen, Phillip. 1969. "The Optimum Currency Area: An Eclectic View". In R. Mundell and A. Swoboda (eds), Monetary Problems of the International Economy. Chicago: University of Chicago Press, pp. 41-60.
Kennedy, Paul. 1987. The Rise and Fall of the Great Powers. New York: Random House.
Keynes, John Maynard. 1963 [1919]. Essays in Persuasion. New York: Norton and Company.
Kirchhoff, Sue. 2003, May 22. "Greenspan hints at more rate cuts", USA Today, Section B, p 1.
Landes, David. 1998. The Wealth and Poverty of Nations. New York: W.W. Norton and Company.
Lane, Phillip & Gian Milesi-Ferretti. 2008. "The Drivers of Financial Globalization". American Economic Review 96 (2): 327-332.
Lovik, Lawerence & Edward Merkel. 2006. "The Economics of the Sarbanes-Oxley Act". Academy of Economics and Finance Papers and Proceedings 2006 30: 162-166.
.McKinnon, Robert. 1963. "Optimum Currency Areas". American Economic Review 53 (4): 717-725.
Montesquieu, Charles de. 1748. L'Esprit des Lois (The Sprit of Trade)".Paris. Cited in Schumpeter 1954 below.
Mundell, Robert. 1961. "A Theory of Optimum Currency Areas". American Economic Review 51 (4): 717-725.
Padoa-Schioppa. 1982. "Capital Mobility: Why is the Treaty Not Implemented". Address to the Second Symposium. Found in Padoa-Schioppa 2000 below.
_____________. 1987. Efficiency, Stability, and Equity: A Strategy for the Evolution of the Economic System of the European Community. Oxford: Oxford University Press.
_____________. 2000. The Road to Monetary Union in Europe. Oxford: Oxford University Press.
_____________. 2004. The Euro and its Central Bank. Cambridge, Massachusetts: The MIT Press.
Rosamond, Bill. 2000. Theories of European Integration. London: Macmillan.
Rose, A.K. 2000. "One Money, One Market: Estimating the Effect of Common Currencies on Trade". Economic Policy 15 (30):P 9-45.
Schumpeter, Joseph. 1954. History of Economic Analysis. New York: Oxford University Press.
Stevens, Ed. 1999, January 1. "The Euro". Cleveland, Ohio: Federal Reserve Bank of Cleveland Economic Commentary.
Stone, Mark et al. 2008, March. "Exchange Rate regimes: Fix or Float?" Finance and Development, 42-43.
Swann, Christopher. 2003, May 20. "Dollar Slips to Euro Launch Level", Financial Times. London: The Economist Ltd.
Truman, Edward. 1999. "The Evolution of the International Financial System". Tokyo: International Monetary Affairs Eighth Symposium Proceedeings.
Valdez, Stephen. 2007. An Introduction to Global Financial Markets. New York: Palgrave MacMillan.
Weatherford, Jack. 1997. The History of Money. New York: crown Publshers.
Wolf, Martin. 2000, September 27. "Catching the Falling Euro". Financial Times. London: The Economist Ltd.
World Bank 2008. World Development Report 2007: Development and the Next Generation. New York: Oxford Press.

Corporate Governance and Ethics: The Mobile & Ohio Railroad in the Mid-Nineteenth Century

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The Mobile and Ohio (M&O) Railroad accounting records from the 1850s and 1860s reflect examples of corporate governance and ethics during the antebellum period. Corporate minute books, annual reports, and payroll records provide evidence of conflicts of interest. Transgressions by directors, officers, and employees of corporate bylaws and motions demonstrate undesirable business behavior of the day.

INTRODUCTION

The 2001 bankruptcy of energy giant Enron Corporation represented the largest corporate failure in American history up to that time. Hidden related party transactions with company insiders triggered the collapse. Enron and other entities dealt with a related party that was operated by a senior officer of Enron [McLean, 2001]. Financial transactions with a related party are not arm's-length in nature.

Corporate governance encompasses the firm's organizational structure, including the activities of the audit committee and the board of directors. Understanding a company's governance system entails knowledge of the corporate bylaws and corporate minutes [Arens, et al., p. 204].

Those accounting records that survive the passage of time enable accounting historians to study and often better understand the institutions and values of earlier generations. Archival research makes primary sources available in the form of accounting journals and ledgers, which portray more than numerals, words, transactions, receipts and disbursements. Such records can assist future generations to learn what it was like to have lived in an earlier time. Therefore, analytical implications may flow from the interpretations of accounting when viewed as an important aspect of our socio-economic evolution [Chatfield, p. 3]. This research seeks to identify and determine what evidence is available in the original hand-posted board of directors' minute books of the Mobile and Ohio (M&O) Railroad and accounting records archived from the era of the American Civil War. As such, these accounting records represent a unique, original discovery that may serve to improve understanding of these times and of the operations of the M&O.

This paper is organized into seven sections. It begins with a brief chronology of the construction of the M&O. Then it describes a conflict of interest involving the chief engineer and another officer of the Company. The ethical insights gleaned from the 1862 M&O payroll records are considered next. Coverage of the post-War Southern Railroad's mitigation of incompetent and unfaithful management is provided. Late twentieth century corporate governance issues are summarized. The penultimate section discusses the connection to the present day Sarbanes-Oxley Act. It concludes with a consideration of the findings and with thoughts regarding future research.

CONSTRUCTION OF THE ROAD

Construction of the M&O's 472-mile line commenced in October 1849 from the port city of Mobile, Alabama, north through Mississippi, Tennessee, and Kentucky to reach its destination, the Ohio River [M&O 1850 Annual Report, pp. 4, 13]. By early 1855, the M&O's rail line had been constructed 104 miles from the "Cotton City," Mobile, when construction stopped for three months due to lack of funds. Upon receipt of $706,000 for stock purchased in the city of Columbus, Mississippi, work resumed. These funds were virtually coerced from the town as the tracks had yet to be built to the town and the M&O route could have been altered to bypass it.

In the spring of 1861, Marshall J. D. Baldwyn, the man who first promoted the idea of the Railroad, drove the symbolic silver spike at the junction in Corinth, Mississippi, where the northern and southern portions of the M&O connected. The Company, however, never bridged the Ohio River from Columbus, Kentucky, to Cairo, Illinois—the ultimate destination of the line [Amos-Doss, p. 202]. On April 22, 1861, the M&O line reached its terminus on the south bank of the Ohio River in Kentucky across from Cairo, barely satisfying Congress's ten-year timeline but allowing the M&O to obtain clear title to the 1.15 million federal land grant acres which were allocated to the Road, and represented a large natural resource asset—a lump sum payment in kind. Across the Ohio River, the Road accessed the Illinois Central and then could access Chicago on the shore of Lake Michigan, thus linking the Great Lakes to Mobile, the Gulf of Mexico, and the Atlantic Ocean. Other rail connections further linked the north-south M&O with east-west railroads to Cincinnati, Ohio, and St. Louis, Missouri. The arrival at the Ohio River coincided with the first shots at Fort Sumter, signaling the start of the American Civil War.

CONFLICT OF INTEREST

The 1857 M&O Annual Report [pp. 13-44] detailed the unethical behavior of high-ranking employees of the Company. As the line was built northward, management problems occurred. It was discovered in 1856 that two officers—Capt. John Childe, the chief engineer and general agent, and another of the Company's officers, J. W. Wheeler—had been acquiring land along the route. Wheeler was the active purchaser and Capt. Childe the secret partner. An audit committee was designated by the Board of Directors to investigate the affair. Wheeler tendered his resignation. This conflict of interest involving an officer responsible for deciding the right of way resulted in considerable controversy and the subsequent firing of the chief engineer after due process.

Four of the 1853 M&O bylaws (see Appendix I) dealt with corporate governance and ethics germane to directors and officers of the Company. The chief engineer and land are specifically mentioned.

"Rule 19. The president and chief engineer shall make report of all their proceedings connected with the progress and operations of the road as often" [Minute Book 2, June 2, 1853, p. 28].

"Rule 21. No Director shall, without the consent of the Board, be interested, concerned in, or in any wise connected with any contract for work done or to be done, or materials furnished or to be furnished, for the use of the Rail Road, and for any violation thereof, such Director shall be dismissed from the Board" [Minute Book 2, June 2, 1853, p. 28].

"Rule 22. No officer of this Company, including especially the Chief Engineer and Assistant Engineers and other subordinate officers, as well as the Secretary, shall be in any manner or degree, directly or covertly interested in, or connected with any contract whatsoever, for work to be done on said Road, or for any materials furnished for same. Nor shall they or any of them be, in any manner or degree engaged in any land entries or speculation, on or near the line of said road, or in any private speculations in timber, lumber, or other materials, without the consent of the Board. And for any violation hereof such officer or subordinate shall be dismissed from the service of the Company, and be forever thereafter incapable of holding any office of profit or trust in said Company. This article is to be in force no longer than the completion of the Road" [Minute Book 2, June 2, 1853, p. 28].

"Rule 23. No engineer of the company or person appointed by an engineer shall be a partner with a contractor of the company, whether in business connected with the company or any other business whatever, either within or without the State of Alabama" [Minute Book 2, June 2, 1853, p. 28].

The February 25, 1857, report of the investigating committee (Roby Committee) regarding the Childe case to the convention of stockholders charged Capt. Childe with violating a bylaw (22) of the Company and engaging in certain land speculations on the line, as well as at one of the depot stations. These extensive speculations in real estate occurred at Okalona, near Memphis, Tennessee, about 261 miles from Mobile.

The Roby Committee eloquently wrote of the violation of trust that had been committed. The group's concerns centered on the stockholders, public, and credit of the M&O.

"Men become stockholders in such companies as ours, under the hope, at least, that those entrusted with their management will prosecute the enterprise with an eye single to the common benefit of all concerned" [M&O 1857 Annual Report, p. 31].

"How could such a hope be sustained or such a belief entertained, when it becomes known that the officer whose duty it is to locate the road and select the sites for its depots, has been secretly engaged in purchasing lands on the line of the road and contiguous to its stations? It is not certain that such transactions, when known, must tend to shake the confidence of the Stockholders and of the public in the integrity of his management? And, if continued in his position, could it otherwise than impair the credit of the Company" [M&O 1857 Annual Report, p. 31]?

Childe experienced the conflict between public duty and private investment. Yet, he selected the greedy route of dealing for his own individual profit.

PAYROLL RECORDS

Monthly M&O payroll records from 1862 regarding laborers on various sections of the tracks were discovered in the Company archives during 2002. Extant monthly documents include: January, April, May, June, July, August, September, and November. Thus, eight of twelve months of 1862 can be studied. These records are time sheets related to workers on the First Division—the 126 miles from Mobile to Lauderdale County, Mississippi.

The columnar sheets contain eight pre-printed headings followed by handwritten input data: "names of men" (e.g., Stephen Davis), "how employed" (e.g., Sec. 1), "names of Negroes" (e.g., Lewis), "number of days" (e.g., 26), "rate of pay" (e.g., $15), "amount each" (e.g., $15), "amount due" (e.g., $192), and "signatures of men" (e.g., Paid March 28th). On some of the time sheets, the word "men" in the first column heading is stricken and the word "owner" inserted. The "amount due" represented the total wages earned by all of an owner's slaves leased to the M&O. Records indicate that the slaves were not paid but that their owners received the compensation. The payroll records overall suggest large numbers of "Negroes" were rented to the M&O by their owners. While the term "slaves" is not used in the time sheets, these black laborers are listed in the time sheets by first name only. Descriptions of their work included: laborer, striker, foundry helper, gravel train, cutting wood, and pumping water.

A few additional observations gleaned from the 1862 payroll records deserve mention. Even Milton R. Brown, president of the M&O, rented slaves to the Railroad. The payroll records also provide evidence that O.S. Beers leased slaves to the M&O. According to the 1859 Mobile City Directory, Beers served as the auditor of the M&O.

The 1862 payroll records also reveal information about white workers. During 1862, each month's first sheet listed the pay for the Road Master, Conductor Gravel Train, Pit Boss/Overseer, Section Masters, and Assistant. The same preprinted sheets were used for these workers; however, they must not have been Negroes since the "names of Negroes" column was always blank and they had two names—first and last—listed in the "names of men" column. However, these employees did sign their names on the time sheets in the "signatures of men" column to document receipt of compensation.

Some of the white supervisors rented slaves to the Company. For example, Road Master Geo. H. Hall, Conductor Gravel Train Jacob Sumrall, and Section Master No. 16 R. W. Miller provided slaves. Thus, they received two paychecks. An 1860 Board resolution had already addressed this conflict of interest issue for the M&O:

"As much in convenience arises by the employment of Negroes in the department of their owners, it was on motion, Resolved, That no officer or employee of the Company shall employ his own Negroes to work directly or indirectly under his control. And that the Secretary give a copy of this Resolution to the Chief Engineer J.W. Goodwin, J. Elder and H. Ruggles [Minute Book 2, December 5, 1860, pp. 296-297].

THE SOUTHERN RAILROAD POST-WAR

A September 11, 1865, Circular to the Bondholders and Creditors of the Southern Railroad contains references to the M&O Railroad and corporate governance. According to the Circular [p. 1], "The Southern Railroad is 140 miles long, starting from Vicksburg on the Mississippi river, and running to Meridian on an east and west line, there it connects with the Selma and Meridian Railroad, with the Mobile and Ohio Railroad, and also with the North-east and South-west Alabama Railroad, which, when completed, will connect Meridian and Chattanooga by the shortest practicable line."

Additionally, the Circular [p. 11] states, "There is one important feature in the organization of the Southern Railroad Company, which goes very far toward securing the fullest measure of fidelity and energy in the management of its affairs, and that is the existence of self-interest in a much larger degree than is usually found in the composition of a Railroad Company. The stock of our Company which is four millions of dollars is held by so few persons, and so large in amount held by each, that every one feels a direct interest in the business, management, and conduct of the affairs of the Company. The present Board of Managers, consisting of eleven members, holding more than one half of the whole amount. A Company thus organized constitutes the best possible security against incompetent and unfaithful management."

LATE TWENTIETH CENTURY ISSUES

Scherpenseel [p. 50] provides a perspective on the culture of corporate governance during the 1980s and 1990s. This historical view of the ever-changing corporate governance landscape provides a reflection on why the government enacted recent legislation aimed at public companies.

In the period of the mid-1980s to the mid-1990s, corporations concentrated on a continuous increase in quarterly earnings. Pressure for improved earnings intensified and grew at a steady pace during this time frame. Scherpenseel [p. 50] observed that many thought the financial reporting requirements of the Securities and Exchange Commission (SEC) and generally accepted accounting principles (GAAP) provided the basis for corporate governance. Even the government put its faith in the SEC accounting standards and GAAP to produce honesty in the financial reporting process; however, GAAP specifies accounting methodologies as opposed to requiring integrity and ethics.

Large financial incentives for senior executives of corporations characterized the late 1900s and early 2000s. The outrageous dollar amounts fueled a tremendous attention to revenue growth and profits resulting in increased pressure on the quarterly earnings phenomenon. Public corporations suffered penalties for failing to satisfy their short-term benchmarks set by Wall Street analysts. The management teams of some companies strayed off course and ventured into the forbidden land of fraud. Thus, off-balance sheet transactions persisted as several executives selfishly comported themselves in a manner to benefit their personal growth.

SARBANES-OXLEY

High-profile business failures and related audit failures captured the nation's attention in 2001 and 2002. The rash of these recent accounting scandals, allegations of improprieties, and financial statement restatements have created controversy. Enron and WorldCom ignited the world of corporate fraud. In response, Congress attempted to legislate business behavior in significant ways.

On April 25, 2002, the U.S. House of Representatives overwhelmingly passed the Oxley Bill. Then, on July 15, 2002, the U.S. Senate unanimously passed the Sarbanes Bill. President Bush signed the Sarbanes-Oxley Act of 2002 on July 30, 2002. The Act contains sweeping reforms related to corporate responsibility for management of publicly traded entities.

Under Section 406 of the Act, companies are required to disclose whether they have adopted a code of ethics for their principal executive officer, principal financial officer, principal accounting officer/controller, or other individuals performing similar tasks. Companies that have not adopted a code of ethics for their senior financial officers must disclose this fact and explain why an ethics code has not been adopted. Corporations probably do not want to go there.

Section 406 expects senior financial executives to comport themselves ethically and honestly when handling actual and apparent conflicts of interest. Yet, according to AICPA ethics committee member Nancy Wilgenbusch [Myers, p. 33], a code of ethics will not preclude greedy officers from unethical behavior. They must follow the letter and the spirit of the ethical code. Transgressions should trigger immediate discharge as well as full prosecution under the law.

In accordance with Section 404 of the Act, management must acknowledge its responsibility for establishing and maintaining an adequate system of internal controls/procedures. Additionally, this Section requires management to provide an assessment of the effectiveness of the internal control system. Duffy [p. 58] and Ramos [pp. 76-77] believe a company's character is central to the internal control environment. This includes management's integrity, ethical values, operating philosophy, and commitment to organizational competence. Thus, the ethical climate must be effective.

CONCLUSIONS

Zeune [p. 280] recounted, "I believe it was Chief Justice Earl Warren who stated that 'the law floats on a sea of ethics.' When the ethics of an organization deteriorate, observance of the law will surely sink with them." He cautions that auditors need to be very perceptive regarding the culture of a client, and they should be highly vigilant upon the detection of a decline in standards of behavior at the upper levels of the firm.

According to Dechow, et al [1996] and Beasley [1996], weak corporate governance is related to financial reporting fraud. Responding to the recent avalanche of high profile corporate financial frauds, the NYSE and NASDAQ have enacted rules to augment the quality of corporate governance requiring member firms to have a majority of independent directors on their boards of directors [Farber, p. 540].

In 1929, Ellen Eastman [p. 139] eloquently wrote of the relationship between accountants and truth. "There has never lived the perfect certified public accountant, possessing all of the much-to-be-desired qualities: trustworthiness, fearlessness, energy, steadfastness, a studious and inquiring turn of mind, ability to seek the truth and to judge fairly and without prejudice or personality. Forgive us shortcomings; we are but human." Eastman [p. 139] further discussed the concept of truth in accounting. "The next in order after a passionate love of figures and things mathematical, comes the ability to seek and to find the truth. One must know how to translate it with the fewest possible processes and by the simplest procedure into those figures which all who can read, if not understand. And that is all there is to it—to find the truth and translate it efficiently into figures."
As seen from the archived M&O corporate records of the antebellum period, unethical behavior in the business environment is not just a 21st century phenomenon. The issues of corporate governance and ethics were impacting America long before the present day Enron, WorldCom, and Sarbanes-Oxley explosion. Greed has been and still is part of the corporate climate. History indeed provides evidence of such.

REFERENCES

Amos-Doss, H.E., Cotton City: Urban Development in Antebellum Mobile (Tuscaloosa: The University of Alabama Press) 1985.

Arens, A.A., Elder, R.J., and Beasley, M.S., Auditing and Assurance Services, ninth edition (Upper Saddle River: Prentice Hall) 2005.

Beasley, M.S., "An Empirical Analysis of the Relation Between the Board of Director Composition and Financial Statement Fraud," The Accounting Review (October 1996), pp. 443-465.

Chatfield, M., A History of Accounting Thought (New York: Kreiger Publishing) 1977.

Circular to the Boldholders and Creditors of the Southern Railroad Company of the State of Mississippi, September 11, 1865.

Dechow, P.M., Sloan, R.G., and Sweeney, A.P., "Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC," Contemporary Accounting Research (Spring 1996), pp. 1-36.

Duffy, M.N., "Section 404 Opens a Door," Journal of Accountancy (March 2004), pp. 55-64.

Eastman, E.L., "Speaking of 'Figgers'," The Certified Public Accountant (May 1929), pp. 139-140, 152.

Farber, D.B., "Restoring Trust After Fraud: Does Corporate Governance Matter?" The Accounting Review (April 2005), pp. 539-561.

Kotheimer Collection of Mobile and Ohio Railroad Payroll Records (1857-1862), University of South Alabama Archives, Mobile, AL.

McLean, B., "Why Enron Went Bust," Fortune (December 24, 2001), pp. 58-68.

Mobile and Ohio Railroad Company Minutes of Meetings Book 2 (December 18, 1852 to April 20, 1866).

Mobile City Directory, 1859.

Myers, R., "Ensuring Ethical Effectiveness," Journal of Accountancy (February 2003), pp. 28-33.

Proceedings of the Second (February 1850) Annual Meeting of the Stockholders of the Mobile and Ohio Railroad Company.

Proceedings of the Ninth (February 1857) Annual Meeting of the Stockholders of the Mobile and Ohio Railroad Company.

Ramos, M., "Evaluate the Control Environment," Journal of Accountancy (May 2004), pp, 75-78.

Sarbanes-Oxley Act of 2002—Public Company Accounting Reform and Investor Protection Act.

Scherpenseel, C., "The Ever-Changing Landscape of Corporate Governance," Journal of Accountancy (October 2004), pp. 49-51.

Zeune, G.D., The CEO's Complete Guide to Committing Fraud (Columbus: Gary D. Zeune) 1994.

Appendix I

Mobile and Ohio Railroad Company
Corporate Bylaws
June 2, 1853

Rule 1. The officers of the company shall consist of a President, Secretary and Treasurer, and such number of clerks and assistants as the board of directors may elect their duties, compensation and secretaries shall be filed by the board.

Rule 2. The president shall be the chief executive officer and responsible head of the company and ex officio member of all standing committees, and to have supervision over every department of the organization. To preside at all meetings of the Board, unless absent on the service of the company or otherwise prevented. ; to be the general agent of the company whenever it shall be required by the board; to have the transactions of all local or special agents of the company under cognizance and cause monthly returns to be made to the office at Mobile for the inspection of the Board; to conduct correspondence of the Company; to sign checks for the payment of moneys; to travel through the country upon the lines of the Road, and to direct the local agents in the exercise of their several duties; to arrange the accounts of the several departments in a systematic and methodical manner; to have full knowledge at all times of the current means and resources of the company, and also of its liabilities; to shape and make these resources available to invest the expenditures as they arise; to originate and present for the action of the Board from time to time, plans for the ordinary and conduct of the company's affairs; to confer with the executive committee upon all questions not "embraced" in the routine of his official duties; and to be governed by their decision respecting such extra official matters and to perform generally all the execution duties which his position as the immediate and responsible agent of the company may require; and to report to the Board at their regular monthly meetings upon all matters connected with his office for confirmation and approval. His undivided time and attention shall be devoted to the business of the company for which a liberal salary shall be paid to be fixed by the board of directors.

Rule 3. The secretary and treasurer shall be chief clerk and treasurer, to have charge of stock and installment books, Law, maps, deeds, records and of all receipts and vouchers, and the accounts of all moneys received and paid; To keep the records and accounts of the running Department; to keep regular accounts of stocks and the transfers of the same and all land sales; to have daily settlement with the ticket clerk, freight master, and conductor, and have weekly settlement of cash, and generally to attend to all duties appertaining to the office of chief clerk and treasurer; to prepare and lay before the board at each regular meeting an abstract containing a statement of committees and duties in their charge. and what reports are due, and what business stands adjourned, The total expenditure for the previous month and upon what account chargeable and from what sources obtained, The receipts and disbursements of the transportation department for the month. All moneys received by him shall be daily deposited in Bank to the credit of the company, and all books, accounts and papers of the company under his control shall be kept at the office of the company, and at all times subject to the examination of the directors. It shall more over be his duty to pay the drafts and negotiations of the chief and resident engineers on account of the construction and engineering of the road and to report the savings to the executive committee at its next meeting thereafter.

Rule 4. An executive committees of these directors shall be elected by the board by ballot one of whom they shall designate as Chairman, which shall have general cognizance over the affairs of the company: to meet twice a week for business or oftener if necessary at the office of the Company, where all letters received and to be kept on file with copies of the replies thereto, accessible to the directors at any and all times: to advise and co-operate with the President when practicable, on matters pertaining to the management of the company, and to be kept fully acquainted with the general condition and progress of its affairs: to have the functions and exercise the powers of the Board in the absence of a quorum and interim keeping records of its proceedings to be reported to the first regular meeting of the Board thereafter for approval, and through the chairman to conduct the executive operations of the company in the absence of the President, during which time any two of its members shall be authorized to sign checks for the payment of money: to examine and pay audit all claims against the company, allowing no money to be withdrawn from the Treasury without their approval, except as above authorized by the President or Board of Directors; except only when the President and a quorum of the directors may at the same time be absent from one city, or fail to attend called or regular meetings.

In the absence of the President, the Chairman of the Executive Committees shall preside at all meetings of the directors.

Rule 5. The regular meetings of the board shall be held on the first Wednesday of every month, when immediately after the readings of the minutes of the proceeding meeting the Secretary and the treasurer shall submit the statement as required in Rule 3.

Rule 6. The routine of business and rules of action at the board after the above, shall be as follows:
1). Call of regular and standing committees for reports and action thereon
2). Call of special committee for reports and action thereon
3). New business
4). New suggestions.

Rule 7. The president, or in his absence, the chairman of the executive committee, may call extra meetings, when in his opinion, it may be required for the interests of the company, and shall also do so, at the written request of any four directors.

Rule 8. A stock ledger shall be carefully kept. All transfers of stock must be made at the office of the company in person or by proxy and the old certificates must first be surrendered. In case of lost certificates, two months notice of such loss shall be given by the owner in a newspaper, designated by the board, with particulars of the certificate. Three months after completion of such notice, a duplicate certificate shall be given provided no good or sufficient cause be shown to the contrary by parties objecting. All certificates of full stock shall be signed by the president and counter signed by the secretary, with seal of office.

Rule 9. The Board of Directors shall have an official seal to be affixed to such documents as may be ordered by them.

Rule 10. No stockholder shall vote at any meeting or election when in default of payment of any installment past due.

Rule 11. Once in every three months a Committee to be elected by ballot by the Board, shall examine the treasurer's accounts, and all vouchers connected with receipt and payment of money and repeat at the next regular meeting of the board.

Rule 12. The election of Directors shall be held on the Second Wednesday in February of each year at the company's office unless otherwise ordered by the board. Previous to which at a called meeting of the stockholders, the directors shall submit a general statement of the affairs of the company and of its proceedings since the last meeting.

Rule 13. By law shall be repealed in whole or in past unless by a vote of seven directors and at least one week's noticed shall be given of an intended change.

Rule 14. All officers shall be elected to hold office until subsequent election of directors.

Rule 15. All contracts and wages for the services of officers of the company shall be determined at the pleasure of the Board for sufficient cause.

Rule16. Any employee of known habits of intemperance of the company shall be dismissed from the service of the company by the president upon the written request of any three directors.

Rule 17. The office shall be opened for business from eight AM to five and a half PM every day, Sundays and legal holidays excepted.

Rule 18. Previous to the annual elections, the board shall appoint three stockholders, not directors, to act as inspectors of election under the provisions of the charter.
Rule 19. The president and chief engineer shall make report of all their proceedings connected with the progress and operations of the road as often.

Rule 20. The business of the board shall be conducted in an ordinary manner, and governed as near as may be by parliamentary rules and rules of debate in public bodies. Each member shall regard it as a point of honor and to divulge the acts or opinions of any member, of decision of the Board, when so requested by the President.

Rule 21. No director shall, without the consent of the Board, be interested, concerned in, or in any wise connected with any contract for work done or to be done, or materials furnished or to be furnished for the use of the Rail Road, and for any violation hereof, the Director shall be dismissed from the Board.

Rule 22. No officer of this Company, including especially the Chief Engineer and Assistant Engineers and other subordinate officers, as well as Secretary, shall be in any manner or degree, directly or covertly interested in, or connected with any contract whatsoever, for work to be done on said Road, or any materials furnished for same. Nor shall they or any of them be, in any manner or degree engaged in any land entities or speculation, on or near the line of said road, or in any private speculation in timber, lumber, or other materials, without the consent of the Board. And for any violation hereof such officer or subordinate shall be dismissed from the service of the Company, and be forever thereafter incapable of holding any office or profit or trust in said Company. This article to be in force no longer than the completion of the Road.

Rule 23. No engineer of the company or person appointed by an engineer shall be a partner with a contractor of the company, either in business connected with the company or any other business whatever, either within or without the State of Alabama.

Rule 24. Such director is to regard himself bound to discharge the duties assigned to him with diligence (and energy) to attend all meetings of the board if practicable and nor to leave the board before the regular business is finished, except for urgent cases. Three months absence without leave shall vacate the seat of a director.

Rule 25. It shall at all times be competent for any director, upon the final action of the board, on motions and resolutions, to demand the yeas and nays, which shall be recorded by the secretary. If the yeas and nays are not called for, the decision of the board shall be regarded as unanimous, and no member thereafter shall to permitted, to plead that his assent was not given.

Rule 26. All rules, by laws and regulations, heretofore agreed upon, are hereby repealed, so far only as the same shall or may conflict with the forgoing.

Source: M&O Minutes of Meetings Book 2, pp. 24-29.
financial market system.

Attracting and Retaining Business Travelers in the Mid-Priced Hotel Segment

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People travel for different reasons, either for pleasure or for business. Business travelers are more likely to have less favorable judgments on their hotel experience as a result of either loneliness or past experience. This study analyzed 640 guest reviews on the hotel experience by both business and leisure travelers. ANOVA test results demonstrate that there are significant differences in terms of the hotel experience between business and leisure travelers.

INTRODUCTION

Travel and tourism has grown rapidly to become a major social and economic force in the world. Travel spending in the United States was projected to reach $625.9 billion in 2006 (Goeldner & Ritchie, 2006).

People travel for different reasons, but the two main reasons are for pleasure and for business (Walker, 2009). Business travel has played a paramount role in the hospitality and tourism industry in terms of revenue generation and job creation. Historically, business travel has accounted for 40 percent of the total U.S. travel market, according to PhoCusWright (Associated Press, 2009).

Because of the ongoing economic crisis, Egencia, a division of Expedia Inc., revealed that 48 percent of the surveyed companies have already slightly or significantly cut back their travel budgets (Anonymous, 2009). The National Business Travel Association (2008) predicts an increase of 5 to 8 percent in business travel costs. While approximately 50 percent of companies across the country will reduce non-essential business travel, the good news to hoteliers is that the other half of the companies expects that their business travel will remain the same (NBTA, 2009).

However, the problem of an oversupply of available rooms together with the economic downturn will impose a major challenge to hoteliers trying to increase their business travelers. Smith Travel Research forecasts that the average occupancy rate will drop 3.5% to 59.1% in 2009 (De Lollis, 2008). Further, business travelers are looking to downgrade the class of service they use by emphasizing mid-priced hotels (NBTA, 2009). While many hotels are offering better hotel room rates and slashing payrolls, business travelers are still demanding high quality of services. This paper compares business and leisure travelers' perceptions of their hotel experiences. Recommendations will be given on how to influence "road warriors" on their hotel choice decision making.

LITERATURE REVIEW

Motivation for Travel

People travel either for pleasure or for business. Goeldner and Ritchie (2006) pointed out that satisfying a need for pleasure is perhaps the strongest of all individual travel motivations. Sharing experiences with family members or friends make the trip more enjoyable. Tourists are also strongly motivated by the romance of a trip, such as honeymoon travel, during which they are thrilled with the romantic aspects of seeing, enjoying, and experiencing the ambiance of tourist destinations.

Business travel is defined as trips and visits made by employees and others in the course of their work, including attending meetings, conferences and exhibitions (Medlik, 2003). Business travelers normally travel alone or with their co-workers. With work assignments on their shoulders, business travelers need to perform their jobs outside of their usual work environment before retiring to the hotel rooms. Even though they may not be driven to the edge of exhaustion by their jobs, the excitement of being surrounded by the new and different surroundings can be severely diminished because business travelers have no family members or close friends to share their experiences with (Garrett, 2008). The loneliness and detachment caused by simply being "on the road" make business travelers miss their pillows back home.

Characteristics of Business Travelers

Business travelers may have to endure the loneliness while traveling because of their jobs. Loneliness is defined as a discrepancy between desired and achieved levels of social interaction (Peplau & Perlman, 1982). Rokach (2004) identified five factors that cause loneliness: personal inadequacy, developmental deficits, unfulfilling intimate relationships, relocation/significant separation, and social marginality. Because of relocation and significant separations, people may develop loneliness which results from the effects of the changes, the situational constraints, and the loss of important relationships (Rokach, 2004; Rook, 1988). When business travelers are on the road away from home and their family members, they may experience loneliness.

Loneliness is painful. It can negatively affect one's emotional, physical, and spiritual well-being (Ernst & Cacioppo, 1999; McWhirter, 1990). McWhirter (1990) pointed out that loneliness is associated with such maladies as depression, suicide, hostility, alcoholism, poor self-concept, and psychosomatic illness. A person's loneliness level has an effect on his/her social stigmatization of other people. When having direct interactions with others, lonely people tend to have negative perceptions of those others as a result of their possible subjective judgments (Lau & Kong, 1999).

Besides loneliness, business travelers may have developed higher expectations for their hotel stay based on their past experience. Boulding and colleagues (1993) suggested that consumers would develop the upper "should" level of expectations and lower "will" level of expectations. Consumers will then adjust their upper/lower level of expectations based on the prior upper/lower level of expectations. Although both expectations can be adjusted, the upper level of expectations will remain more stable (Boulding, Kalra, Staelin, & Zeithaml, 1993). Within the corporate travel spectrum, savvy business travelers may have stayed at different properties across the country or in other parts of the world, often at high end hotels. Therefore, business travelers may expect to receive desired service quality because of the hard-to-change upper level of expectation. When evaluating their overall stay at a hotel, business travelers compare the perceptions of performance against their expectations (Parasuraman, Zeithaml, & Berry, 1985), which then influence their satisfaction level and possibly future purchase intention (Bolton & Drew, 1991).

Although the relocation loneliness experienced by business travelers is temporary, the negative results of loneliness are still felt and real. In addition, the upper level of expectations of these business travelers will remain high. They may have a four-star hotel service expectation when they actually stay at a three-star hotel. Therefore, it is hypothesized that business travelers will have subjectively less satisfying hotel stay experiences with lower service evaluation than will leisure travelers when they stay at low end hotels, such as three-star hotels. Based on this dynamic for meeting expectations, the following hypotheses are offered for testing.

H1: Business travelers will rate their 2 _ to three-star hotel experience less favorably than will leisure travelers.

H2: Business travelers will rate their 3 _ to four-star hotel experience the same as will leisure travelers.

METHODOLOGY

Sample and Data Collection

The data was collected from the customer service evaluation section of Hotels.com, an operating company of Expedia, Inc. Hotels.com is a popular website, offering consumers discounted hotel rooms in major cities (Wikipedia, 2009). The website encourages its customers to post guest reviews about hotels via http://www.hotels.com/review.do?TSRC=1&PSRC=ORG100. To post a review, a guest must have booked a hotel through hotels.com and completed the stay. He/she can then click on Post a Review form in the Customer Care section to access the survey. A booking number is needed to complete the posting. The unbiased hotel reviews from discerning guests may serve as recommendations for other upcoming trips (Hotels, n.d.). The sample in this study came from the guest reviews on a 2 _-star hotel and a 3 _-star hotel in New York City. The reviews were posted between January 1, 2007 and December 31, 2008. All of guest reviews posted for this two year period with the trip types of "business", "romance", "family", and "with friends", a total of 834, were obtained for analysis. Eighty reviews were randomly selected for each type of trip (business, romance, family, and with friends) for each of the selected hotels. This produced a total sample size of 640 reviews.

Measures

To evaluate hotel stay experience, scholars have developed measurement instruments to measure service quality that incorporate both tangible and intangible variables. One example of such scale is the 22-item SERVQUAL questionnaire developed by Parasuraman and colleagues in 1988 and revised by the same scholars in 1991. The Hotels.com website allows hotel users to rate their hotel experiences on four single-item variables representing both tangibles and intangibles. The four variables are: hotel service, hotel condition, room comfort, and room cleanliness. In general terms, these four variables examine the same concept of service quality that Parasuraman et al. (1988, 1991) researched.

More specifically, when posting a review, the guest needs to check the trip type from the listing on the website: business, romance, family, with friends, and all others. Then the guest can rate the experience in four categories on a 5-point scale, with "1" indicating "extremely unsatisfied" and "5" indicating "extremely satisfied." The four variables are: hotel service, hotel condition, room comfort, and room cleanliness.

The survey questions on the website are:

1. How would you rate the customer service of the hotel on a scale between 1 and 5?
2. How would you rate the condition of the hotel on a scale between 1 and 5?
3. How would you rate the room comfort of the hotel on a scale between 1 and 5?
4. How would you rate the room cleanliness of the hotel on a scale between 1 and 5?

After a customer has posted the review on a hotel stay based on the four variables, the website will automatically average the four values to form an overall rating of the hotel experience.

Statistics

The analysis of variance (ANOVA) technique was adopted to analyze the group differences. It is recommended that the sample size should meet several requirements:

1) The sample in each group must be greater than the number of dependent variables;
2) Each group should have at least 20 observations;
3) Researchers should strive to maintain equal or approximately equal sample size per group (Hair, Black, Babin, Anderson, & Tatham, 2006).

In this case study, 80 cases were randomly selected within each group for each hotel, with a total of 640 cases for four groups, i.e., "business", "romance", "family", and "with friends".

Reliability

Reliability refers to the measurement that is free from error and provides consistent results (Zikmind, 1997). The overall reliability is assessed by computing the Cronbach's alpha along with the correlation of each item to the construct. In this case the construct, hotel experience, is represented by the overall rating, which is a summated scale created by averaging the four variables out. Cronbach's alpha above .70 is generally considered acceptable for exploratory research purposes (Nunnally, 1978). In this study, the Cronbach's alpha for the construct – hotel experience – is .928 (see Table 2). Since this exceeds Nunnally's .70 criteria, there is a strong evidence of reliability.

Findings

The analysis of variance (ANOVA) was conducted to test the equality of dependent variable means across groups. Table 3 shows that there was a significant difference among the four groups in the Hotel 1 experience rating with a significance level at .034; but there was no significant difference among the four groups in the hotel 2 experience rating. Thus, both H1 and H2 were supported.

The descriptive statistics (Table 1) indicates that business travelers rated every item at a lower level than the other three groups when they stayed at Hotel 1. The overall rating for business travelers was 3.263, while family travelers rated this item the highest at 3.750, followed by romance travelers with 3.738. The Tukey test (see Table 4) further identified that the mean difference between business travelers and family travelers was -.488 (p = .049), significant at .05 level.

Analysis of Hotel 1 ANOVA results show that there were significant differences in terms of hotel service (p = .006) and room cleanliness (p = .005) among four groups. Multiple comparisons (see Table 4) indicated business travelers perceived hotel service significantly differently when compared to romance travelers and family travelers respectively. The mean difference between business travelers and family travelers was -.550 (p = .012), and the mean difference between business travelers and romance travelers was -.538 (p = .015). In the evaluation of room cleanliness, there was a significant difference between business travelers and romance travelers, with a mean difference of -.663 (p = .002).

It is worth mentioning that even though the overall experience at Hotel 2 showed no statistically significant differences, business travelers evaluated room cleanliness significantly differently than did romance travelers, with a p value of .016. Business travelers also rated the overall experience, hotel condition, and hotel comfort lower than the other three groups, a difference in the hypothesized direction, even if the difference did not reach the level of statistical significance.

Table 1. Descriptive statistics

		Hotel 1			Hotel 2		
	Variables	*N*	*Mean*	*Std. Deviation*	*N*	*Mean*	*Std. Deviation*
Overall Rating	Business	80	3.263	1.300	80	3.9875	.88491
	Romance	80	3.738	1.199	80	4.2875	.78363
	Family	80	3.750	1.164	80	4.0625	.96086
	Friends	80	3.600	1.086	80	4.2438	.85126
	Total	320	3.588	1.200	320	4.1453	.87725
Hotel Service	Business	80	3.513	1.293	80	1.011	.113
	Romance	80	4.050	1.123	80	1.070	.120
	Family	80	4.063	.972	80	1.196	.134
	Friends	80	3.813	1.092	80	1.014	.113
	Total	320	3.860	1.143	320	1.076	.060
Hotel Condition	Business	80	3.150	1.313	80	3.91	1.034
	Romance	80	3.638	1.193	80	4.30	.786
	Family	80	3.500	1.222	80	4.11	1.006
	Friends	80	3.250	1.217	80	4.18	1.016
	Total	320	3.384	1.247	320	4.13	.971
Room Comfort	Business	80	3.038	1.237	80	3.93	1.041
	Romance	80	3.463	1.282	80	4.20	.999
	Family	80	3.500	1.253	80	4.06	1.095
	Friends	80	3.263	1.220	80	4.14	.978
	Total	320	3.316	1.256	320	4.08	1.029
Room Cleanliness	Business	80	3.300	1.277	80	3.99	1.097
	Romance	80	3.963	1.061	80	4.41	.822
	Family	80	3.663	1.211	80	4.06	1.162
	Friends	80	3.550	1.113	80	4.35	.887
	Total	320	3.619	1.287	320	4.20	1.014

Note: Hotel 1 = 2 1/2-star hotel, Hotel 2 = 3 1/2-star hotel

*Table 2. Correlations

	Overall	Hotel Service	Hotel Condition	Room Comfort	Room Cleanliness
Hotel 1					
Overall Rating	1				
Hotel Service	.730 *	1			
Hotel Condition	.802 *	.639 *	1		
Room Comfort	.796 *	.592 *	.741 *	1	
Room Cleanliness	.758 *	.603 *	.805 *	.718 *	1
Hotel 2					
Overall Rating	1				
Hotel Service	.818 *	1			
Hotel Condition	.758 *	.639 *	1		
Room Comfort	.800 *	.633 *	.667 *	1	
Room Cleanliness	.715 *	.620 *	.694 *	.639 *	1

Note: 1) * $p < .05$
2) Cronbach's alpha .928
3) Hotel 1 = 2 1/2-star hotel, Hotel 2 = 3 1/2-star hotel

*Table 3. Tests of between-subjects effects for study variables (business vs. romance, family, and with friends)

	Hotel 1			Hotel 2		
	df	F.	sig.	df	F.	sig.
Overall Rating	3	2.915	.034*	3	2.160	.093
Hotel Service	3	4.209	.006*	3	1.192	.313
Hotel Condition	3	2.621	.051	3	2.243	.083
Room Comfort	3	2.324	.075	3	1.059	.367
Room cleanliness	3	4.423	.005*	3	3.497	.016*

Note: 1) * $p < .05$
2) Hotel 1 = 2 1/2-star hotel, Hotel 2 = 3 1/2-star hotel

*Table 4. Multiple comparison (Tukey HSD)

Dependent Variable		(I) Type	(J) Type	Mean Difference (I-J)	Sig.
Hotel 1					
	Overall Rating	Business	Family	-.488	.049 *
		Business	Romance	-.475	.058
		Business	Friends	-.338	.278
	Hotel Service	Business	Romance	-.538	.015 *
		Business	Family	-.550	.012 *
		Business	Friends	-.300	.333
	Room Cleanliness	Business	Romance	-.663	.002 *
		Business	Family	-.363	.205
		Business	Friends	-.250	.530
Hotel 2					
	Room Cleanliness	Business	Romance	-.425	.038 *
		Business	Family	.075	.965
		Business	Friends	-.363	.103

Note: 1) * $p < .05$
2) Hotel 1 = 2 1/2-star hotel, Hotel 2 = 3 1/2-star hotel

DISCUSSION AND MANAGERIAL IMPLICATIONS

The study shows that business travelers tend to rate their low end hotel experience least favorably compared with the leisure traveler groups. This may imply that business travelers are harder to please than the other groups studied. The reason behind the lower ratings may be a combination of loneliness and higher expectations.

Hotels provide accommodation, food and drink, mainly to serve travelers and temporary residents (Medlik, 2003). Due to the intangibility of service, hotels find it difficult to standardize their services. Even with employee training and experience, the performance may vary because of the heterogeneity of the service, customer expectations and demands, and differing circumstances of service during peak and slack demand time periods. Even the standardized performance may be perceived differently as a result of customer participation. With the growing supply of rooms and current economic slowdown, many hotels have strived to attract and retain customers by providing discounted room rates, implementing innovative strategies, discounting room rates, and customizing service. With a combination of newer tangible products and better intangible service, hotels do hope to weather these difficult times.

Improving Service Quality

Understanding the customers' wants and needs is crucial to the success of hotel companies. This study's findings indicate that business travelers felt more comfortable staying at a 3 _-star hotel than a 2 _-star hotel. The major difference lies in the service provision. Significant differences between business travelers and leisure travelers were found when these two groups compared services at the 2 _-star hotel when service was evaluated between business travelers and leisure travelers. This may result from the higher upper level of expectations by business travelers. Hoteliers should empathize with the feelings of the business travelers by recognizing their loneliness, anxiety, restlessness, and stress. Offering a "home away from home" enables the business travelers to relax and feel at ease. Hotels need to implement systems and train their employees to extend hospitality—thus combating loneliness, anxiety, restlessness, and stress—as a standard operating procedure (Bardi, 2007), even at a 2-star hotel. Barsky and Nash (2003) suggested that hotel guests would feel more satisfied with their hotel experiences if the hotel employees were friendly, knowledgeable and helpful. Since the front line employees are the ones to directly interact with the customers, hotel organizations need to empower them to delight customers, and eventually meet and/or exceed customers' expectations. It may start with a sincere and genuine greeting, and end with a fond farewell.

For most solo business travelers, there are not many activities to choose from after retiring to their rooms in the evening. Their real choices could be limited to watching TV or ordering pizza to eat in their rooms. A social networking website, SkyLounge, sees the opportunity and helps business travelers connect around the world. Members who happen to be in the same city can hit the town and even talk about business. A women-only network called Maiden Voyage was founded in the UK (www.maidenvoyage.com), through which female business travelers can meet peers to have dinners or plan weekend activities (Garrett, 2008). What can hotels learn from this? Hotels may borrow this idea of connecting business travelers in town by organizing social events at the properties, such as business lunches or dinners at the hotel's restaurant, or by creating a designated area for business travelers to read and relax. Further, a free (just like home) wine-and-cheese twilight "hour" (e.g., 5-8 PM) could fight the loneliness by allowing business travelers to gather socially to fill a dreadfully lonely period of time after work.

Maintaining Room Cleanliness

Besides high service expectations, business travelers do care a lot about the hotel room cleanliness—they insist on it. At both the 2 1/2- and 3 1/2-star hotels, business travelers significantly rated the room cleanliness lower than did leisure travelers. For the past ten years or so, major hotel chains have been engaging in "bed wars" in order to attract and impress customers. Billions of dollars have been spent to upgrade the bedding, starting from the Westin's Heavenly Bed and Hilton's Serenity Bed, to Marriott's 300-thread-count sheets, stylish pillow shams, and extra pillows (Elliott, 2006). For the lower end hotels that can not afford those luxuries, keeping and maintaining exceptional cleanliness in the guest rooms seems to the only possible way to stay competitive. This may imply that lower end hotels should implement vigorous room cleanliness standards and inspection procedures.

Meeting Customers' Expectations: Convenience and Value

Hoteliers need to fully analyze the market and identify the needs and wants of customers from different demographic segments. Convenience and value are still most sought-after by frequent business travelers—the "road warriors". Hotel managers also need to identify the trade-offs made by business travelers and leisure travelers when choosing a hotel. Hotel services have a large impact on the hotel choice for both business and leisure travelers. For instance, leisure travelers are more likely to choose a hotel with child care or in-room kitchen than are business travelers, while business travelers are more likely to prefer midrange and upscale hotels with in-room internet access, a business center, and online booking of reservations (Victorino, Verma, Plaschka, & Dev, 2005). Ricca (2007) suggested that free wireless and wired internet access were important for both business and leisure travelers. In response, Holiday Inn is planning a $10 million campaign promoting free high-speed internet and other perks to attract business travelers (Beirne, 2008).

Dunn and Gonzalez (2007) found out that remote check-in and out via the Internet, a kiosk, PDA, or cell phone is important for business travelers, especially for females. Country Inns & Suites introduced The Good for Business package, which includes free high-speed internet access, free hot breakfast, and bonus frequent guest program points, as well as free books on CD or a downloadable audiobook. Country Inn hopes this promotion will help road warriors to relax (Anonymous, 2008).

Lower end hotels should attempt to provide features that business travelers prefer to have. Although lower end hotels may not have the resources to offer services businesspeople might prefer, inclusion of internet access and a "comfort lounge" with coffee, snacks, books and magazines, etc. could increase occupancy enough to justify themselves. These might be particularly attractive to business travelers operating on a per diem basis rather than receiving full employer reimbursement.

Although hoteliers should strive for higher levels of customer satisfaction, the real goal is for higher levels of customer loyalty and higher levels of positive word-of-mouth promotion—since higher levels of these two variables are likely to be related to higher occupancy rates. However, previous research has found that the relationship between customer satisfaction and brand loyalty is weak (Bowden, 2009; Garbarino & Johnson, 1999; Santos & Boote, 2003). Perhaps the dynamic between customer satisfaction and brand loyalty is like the dynamic in Herzberg's motivation-hygiene theory (1987). Where Herzberg states that certain things are expected from an employer and do not motivate employees to work harder, the contention here is that certain things are expected from a hotel stay and do not lead to brand loyalty. Herzberg also holds that certain variables truly motivate people to do a better job, while our contention is that certain experiences push past customer satisfaction to customer delight and brand loyalty.

For example, if a guest expects a clean, comfortable room and very quick check-in and check-out procedures and receives exactly that, it may lead to a high level of customer satisfaction. However, since this is only what the guest expected, the hotelier doesn't get extra credit for providing what the guest feels was his/her "just due" for the price paid for the room. In order for the guest to feel delighted—like he or she has really been treated in an "extra special" manner—the hotelier will have to exceed the guest's expectations in some noticeable ways. This "delight" response has been found to have a stronger relationship with brand loyalty than the customer satisfaction and brand loyalty relationship (Crotts, Mason, & Davis, 2009; Vanhamme, 2008).

Thus, hoteliers would be well advised to promise 95% of what they can deliver. This could allow the extra five percent "good surprises" to work toward the guest's delight factor. Working toward increased customer satisfaction is a necessary condition for increasing customer loyalty, while the delight factor of exceeded expectations becomes the sufficient one.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Although this study provides some evidence in assessing the different perceptions on hotel experience between business travelers and leisure travelers, certain limitations arise because of the practical considerations of data collection. First, the sample came from guest reviews on two mid-priced hotels in New York City. The sample may not represent the whole population of business and leisure travelers. Further, the hotels may not represent the average mid-priced hotel in the USA because New York City is a very expensive hotel market. Many guests commented on the small size of the rooms, which may have had a negative impact on the rating. Second, loneliness was introduced as a main factor for business travelers to rate the hotel experience less favorably. However, no measurement instrument was used to test if there was truly an association between loneliness and service perception.

Each construct—other than the global "overall rating"—was measured with a single item. Hence, no internal consistency measure could be used for the constructs "customer service", "hotel condition", "hotel comfort", and "room cleanliness". Although the sample was a random sample of those who stayed in one of these hotels and chose to evaluate it, it was not a random sample of those who stayed in these hotels. There is no evidence that those who stayed in one of these hotels and chose NOT to evaluate it are either the same or different from those who chose to evaluate their hotel experience.

In the future, the study could be duplicated in other hotels. Multi-item scales could be used to measure the variables of interest. With the cooperation of the hotels involved, some information could be obtained from those who have stayed at the hotels without evaluating them—thus addressing the "non-respondent" concern. The constructs – loneliness and expectation – could be included in the analysis. It would be interesting to see if there would be a causal effect of loneliness and expectation on service evaluation. As Rokach and Brock (1996) suggested that loneliness is associated with one's personality, living conditions, and age. Future study could incorporate other demographic factors and beyond, such as gender, job position, length of business trip, domestic or international trip, frequency of business travel, etc.

In conclusion, this study provides new insights into the differences in perceptions of the lower-end hotel experience between business and leisure travelers. These insights suggest that business travelers are harder to please than leisure travelers, perhaps because of their higher expectations and/or their lower level of positive affect caused by loneliness.

REFERENCES

Anonymous. (2008). Targeting business travelers. Lodging Hospitality, 64 (13), 8.

Anonymous. (2009). Business travel trends. Financial Executive, 25 (1), 12.

Associated Press. (August 3, 2009). Report: US business travel down 15 percent in '09. Retrieved August 17, 2009, from http://news.yahoo.com/s/ap_travel/20090803/ap_tr_ge/us_travel_brief_business_travel

Association of Corporate Travel Executives. (2008). ACTE 2009 business travel spend survey predicts tighter purse strings and reduced spending for 2009. Retrieved January 22, 2009, from http://www.acte.org/resources/press_release.php?id=353

Bardi, J. A. (2007). Hotel front office management (4th ed.). Hoboken, NJ: John Wiley & Sons, Inc.

Barsky, J., & Nash, L. (2003). Customer satisfaction: Applying concepts to industry-wise measures. Cornell Hotel and Restaurant Administration Quarterly, 44 (5/6), 173-183.

Beirne, M.(2008). Holiday Inn sees new in with business travelers. Brandweek, 49 (18), 10.

Bolton, R. N., & Drew, J. H. (1991). A multistage model of customers' assessments of service quality and value. Journal of Consumer Research, 17 (4), 375-384.

Boulding, W., Kalra, A., Staelin, R., & Zeithaml. V. A. (1993). A dynamic process model of service quality: from expectations to behavioral intentions. Journal of Marketing Research, 30 (1), 7-27.

Bowden, J. L-H. (2009). The process of consumer engagement: a conceptual framework. Journal of Marketing Theory and Practice, 17 (1), 63-74.

Crotts, J. C., Mason, P. R., & Davis, B. (2009). Measuring guest satisfaction and competitive position in the hospitality and tourism industry: an application of stance-shift analysis to travel blog narratives. Journal of Travel Research, 48 (2), 139ff.

De Lollis, B. (2008). Most hotels likely to see occupancy rates fall next year. USA Today. 11/11/2008. Retrieved January 25, 2009, from http://www.usatoday.com/travel/hotels/2008-11-10-hotels-occupancy-rates-decline_N.htm

Dunn, G., Gonzalez, E. (2007). Business travelers interested in remote check-in/out. Hotel and Motel Management, 222 (16), 48.

Earnst, J.M., & Cacioppo, J.T. (1999). Lonely hearts: Psychological perspectives on loneliness. Applied and Preventative Psychology, 8, 1-22.

Elliott, C. (2006). Détente in the hotel bed war. Retrieved October 22, 2009, from http://travel.nytimes.com/2006/01/31/business/31soff.html

Garbarino, E., & Johnson, M. S. (1999). The different roles of satisfaction, trust, and commitment in customer relationship. Journal of Marketing, 63 (2), 70-87.

Garrett, A. (2008). Alone in a strange city? Management Today, 7, (40-43). Retrieved January 27, 2009, from ABI/INFORM Global database. (Document ID: 1547396701).

Goeldner, C. R., & Ritchie, J. R. B. (2006). Tourism: principles, practices, philosophies (10th ed.). Hoboken, N.J.: John Wiley & Sons, Inc.

Hertzberg, F. (1987). One more time: How do you motivate employees? Harvard Business Review, 65 (5), 109-120.

Hotels. (n.d.). Frequently asked questions: How do I write a guest review about a hotel? Retrieved January 25, 2009, from http://www.hotels.com/faqs.do?reqType=getQuestions&cmsFaqId=

Lau, S., & Kong, C. T. (1999). The acceptance of lonely others: Effects of loneliness and gender of the target person and loneliness of the perceiver. The Journal of Social Psychology, 139 (2), 229-241.

McWhirter, B.T. (1990). Loneliness: A review of current literature with implications for counseling and research. Journal of Counseling and Development, 68, 417-423.

Medlik, S. (2003). Dictionary of travel, tourism, and hospitality (3rd ed.). Oxford, UK: Butterworth-Heinemann.

National Business Travel Association. (2008). NBTA predicts cost cutting measures to continue into 2009 as a result of economic slowdown. Retrieved January 22, 2008, from http://www.nbta.org/About/News/Releases2008/rls111108.htm

National Business Travel Association. (2009). Business travel outlook. Retrieved January 22, 2009, from http://www.nbta.org/NBTATV.htm#BusinessTravelOutlook

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). New York: McGraw-Hill.

Parasuraman, A., Berry, L.L., & Zeithaml, V.A. (1991). Refinement and reassessment of the SERVQUAL scale. Journal of Retailing, 67 (4), 420-450.

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1988). SERVQUAL: A multiple-item scale for measuring customer perceptions of service quality. Journal of Retailing, 64 (1), 12-40.

Peplau, L. A., & Perlman, D. (1982). Perspectives on loneliness. In L. A. Peplau & D.Perlman (Eds.), Loneliness: A sourcebook of current theory, research and therapy (pp.1–18). New York: Wiley.

Ricca, S. (2007). Interne, breakfast top consumer wish lists. Hotel and Motel Management, 222(22), 106. Retrieved January 27, 2009, from ABI/INFORM Global database. (Document ID: 1409252651).

Rokach, A., & Brock, H. (1998). Coping with loneliness. The Journal of Psychology, 132 (1),107–128.

Rokach, A. (2004). The lonely and homeless: Causes and consequences. Social Indicators Research, 69(1), 37-50. Retrieved January 27, 2009, from ABI/INFORM Global database. (Document ID: 679243271).

Rook, K.S. (1988). Toward a more differentiated view of loneliness, in S. Duck (ed.), Handbook of personal relationships: Theory, research and intervention. Toronto: Wiley, pp. 571-589.

Rubenstein, C. M., & Shaver, P. (1982). The experience of loneliness. In L. A. Peplau & D. Perlman (Eds.), Loneliness: A sourcebook of current theory, research and therapy(pp. 206–223). New York: Wiley.

Santos, J., & Boote, J. (2003). A theoretical exploration and model of consumer expectations, post-purchase affective states and affective behavior. Journal of Consumer Behavior, 3 (2), 142-156.

Vanhamme, J. (2008). The surprise-delight relationship revisited in the management of experience. Recherche et Applications et Marketing (English Ed.), 2 (3), 113-138.

Victorino, L., Verma, R., Plaschka, G., & Dev, C. (2005). Service innovation and customer choices in the hospitality industry. Managing Service Quality, 15 (6), 555-576.

Walker, J. R. (2009). Introduction to hospitality. Upper Saddle River, NJ: Pearson Prentice Hall.

Wikipedia. (2009). Hotel.com. Retrieved January 25, 2009, from http://en.wikipedia.org/wiki/Hotels.com

Zikmund, W. G. (1997). Business research methods. Fort Worth, TX: The Dryden Press.

Katrina's Impact on the City of Mobile's Tax Revenues

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Hurricane Katrina hit the Mississippi-Louisiana border on August 29, 2005.
The economic impact of Katrina during the following years varied widely depending on the location of the impact areas. This paper is a case study which estimates Katrina's impact on tax revenues of a major city located near coastal Mississippi that was hit directly by the hurricane.

Review of Literature

Recent journal publications on the economic impact of natural disasters are focused on estimation of losses to the impact area. Smith and McCarty, for instance, measured the effects of Hurricane Andrew, and conclude that "more than half of the housing units in Dade County were damaged by Hurricane Andrew; that more than 353,000 people were forced to leave their homes, at least temporarily; and that almost 40,000 people left the county permanently as a direct result of the hurricane." (Smith and McCarty 1996, p. 265) Hurricane Andrew hit south Florida on August 24, 1992 with winds gusting up to 175 miles per hour. Webb et al examines long-term recovery outcomes of businesses impacted by the 1989 Loma Prieta, CA earthquake as well as Hurricane Andrew, and conclude that long-term recovery of businesses depends on "many factors, including the economic sector in which a business operates, its age and financial condition, and the scope of its primary market." (Web et al 2002, p. 45)

Chang and Falit-Baiamonte examine the impact of the February 28, 2001, Nisqually,WA earthquake to find that "the 'hidden' economic costs of disasters, particularly business losses, are at least as important as the documented costs," suggesting that "the economic consequences of natural disasters are generally much higher than commonly acknowledged, especially at the regional level." (Chang and Falit-Baiamonte 2002, p. 69) Rose et al simulates a major earthquake in the New Madrid Seismic Zone near Memphis, TN to conclude that "the potential production loss over the recovery period could amount to as much as 7 percent of gross regional product." (Rose et al 1997, p. 437) It may be noted that "The largest earthquake in the recorded history of the United States took place during the winter of 1811-1812 in the New Madrid Seismic Zone." (Rose et al 1997, p. 438) Interestingly, Stehr opines that "An inherent problem in the structure of disaster assistance is the fact that the mitigation and preparedness are largely the responsibility of local governments while the economic costs of recovery and reconstruction are borne elsewhere," such as insurance companies and federal government. (Stehr 2006, p. 496) This opinion may imply that local governments would prepare better for natural disasters if they had to pay much of the recovery costs.

Even in the area hit directly by natural disasters, studies indicate the possibility of a booming construction industry. In a study on the recovery from Hurricane Andrew's damage, Vogel states that "The Construction sector received the greatest impact. Comparative statistics show a sharp and immediate increase in sectoral employment, with strong expansion running through the fourth quarter of 1993, before tapering off." (Vogel 1998, p. 118) A recent study by Baade et al also finds that "The initial devastation wrought by Hurricane Andrew was followed by a surge in economic activity in the south Florida area as residents and businesses returned flush with private and public insurance payments earmarked for rebuilding." (Baade et al 2007, p. 2062)

On August 29, 2005, Hurricane Katrina made landfall on the northern Gulf Coast near the border between Louisiana and Mississippi. The devastating impact of Katrina on the impact areas has been well documented and reported. In New Orleans alone, the over-the-year loss to the area's employment "averaged 95,000 jobs during the first 10 months after the hurricane," and the loss in wages during the same 10 months was "approximately $2.9 billion, with 76 percent of it, or $2.2 billion, associated with the private sector." (Dolfman et al 2007, p. 3) Damages were large; so were claims. The U.S. Army Corps of Engineers faces more than 489,000 claims for the damage and deaths in the post-Katrina flooding. Of these, 247 seek $1 billion or more. "One claim alone seeks $3 quadrillion in damages, almost all of it is for personal injury. That's a 3 followed by 15 zeros – about 250 times the nation's gross domestic product. A resident of a section of New Orleans that includes the hard-hit Lower 9th Ward filed another claim for $6 trillion, double the annual federal budget." (Heath 2008) By comparison, "the Louisiana Recovery Authority estimates that Hurricanes Katrina and Rita in 2005 together caused about $100 billion in physical damage statewide. The federal government already dedicated more than $130 billion on recovery from the hurricanes." (Heath 2008)

Little noticed is the observation that recovery efforts in the impact area are likely to generate positive economic impact in citlocated near the directly-impacted area. Mobile, AL, adjacent to the eastern end of coastal Mississippi, felt the impact in two different ways. One is the negative impact through the massive flooding in the fishing town of Bayou La Batre in Mobile County, where the fishing industry was shut down for several months (See Chang et al, 2006). The other is the positive impact in the relatively unscathed metro area adjacent to the devastated coastal Mississippi; Mobile became a key area providing logistic support of all kinds in coastal Mississippi's recovery efforts. These recovery efforts led to a significant increase in tax revenues to the City of Mobile as disasters often do to the impact area or areas close to the impact area. (See Chang 1983) This paper calculates the impact of Hurricane Katrina on the tax revenues of the City of Mobile.

The Model

The approach employed in this paper is to collect information on revenues of all individual sources that comprise total general fund and capital fund revenues of the City of Mobile, and calculate the impact of Katrina on individual sources of revenue through a simple regression:

$$Ri = b0 + \sum_{i=1}^{n} Di + bn{+}1K$$

in which R refers to revenues of individual sources and D refers to determinants of these revenues, including monthly dummy variables, and K represents a dummy variable for Katrina's impact. Implicit to the simple model is the hypothesis that natural disasters such as major hurricanes tend to increase tax revenues to local governmental units surrounding the impact area. Individual sources of revenue are listed below. In the list, "City" refers to the City of Mobile, while PJ refers to the police jurisdiction of the City of Mobile which extends three miles from the city limits and in which the city has taxing authority on selected revenues at half the city rates. Although all revenues are those of the City of Mobile, the distinction between City and PJ is made to calculate the impact in as much detail as possible for individual sources of revenue. The order of the list is the same as that shown in the Excel table made available by the City of Mobile Budget Office:

Property–real estate	Restaurant tax
Property–motor vehicle	Gasoline tax - City
Sales tax – City	Gasoline tax – PJ
Sales tax – PJ	Car rental – City
Lease/rental tax – City	Car rental – PJ
Lease/rental tax – PJ	Police fines
Room tax – City	Inspection fees
Room tax – PJ	County collection
Beer tax	Business license – City
Liquor tax	Business licenses – PJ
Wine tax	Motor vehicle licenses
Cigarette tax	Franchise fees
Other tobacco	Business license – apartments

The following independent variables were identified as determinants of the tax revenues. Data for all variables are monthly except real GDP which is quarterly:

- Real GDP - quarterly
- Employment in Mobile County
- Home sales through the Mobile County Multiple Listing Service
- Average price of homes sold through the Multiple Listing Service
- Carnival Holiday cruise ship passengers departing from Mobile
- Net gaming revenues of the Mississippi Gulf Coast casinos
- Deplaned passengers at the Mobile Regional Airport
- U.S. consumer price index
- Consumer price index for gasoline
- Dummy variable for Hurricane Katrina
- Dummy variable for annexation
- Dummy variables for months excluding February
- Trend beginning with 1 for October 1999

Other variables such as per capita personal income for Mobile County, the rate of unemployment in Mobile County, and a dummy variable for Hurricane Ivan that hit the Alabama-Florida line in September 2004 were also included in the beginning but were deleted mostly for statistical insignificance. Katrina hit the area on August 29, 2005. The dummy variable for Hurricane Katrina covers the 12 month period from September 2005 to August 2006. Another major event that had a significant impact on the City of Mobile tax revenues is the city's annexation of an area with major business activities in west Mobile as well as the Mobile Regional Airport in late 2007. The City of Mobile promised not to collect the city's property tax from the annexed area for the following five years, but started collecting the city sales taxes from the annexed area beginning on November 1, 2007. The dummy variable for annexation, therefore, is marked with 1 beginning with December 2007 tax collections.

Revenue data for this paper were collected by month from October 1999, which is the beginning month of FY 2000, to April 2008. Data cover 103 observations for 8 years and 7 months. Determinants of revenues are also collected for the same time period. It may be noted that taxes reported during a given month, January 2008 for instance, are collected during the preceding month in December 2007. In regression estimation, therefore, tax revenues of a given month are matched to data for independent variables of the preceding month. Estimated regression equations are summarized in the Appendix.

Impact of Katrina on the City of Mobile Revenues

The impact of Hurricane Katrina on the city's tax revenues is summarized in Table 1. In deriving Table 1, only those estimated coefficients in Appendix 1 that are statistically significant at least at the 10 percent level are reprinted. Figures in Table 1 measure an average impact on monthly tax revenues during the impact period. For Katrina, the significant impact lasted about 12 months following its landing in late August 2005. On the average, for instance, recovery activities from Katrina increased the city sales tax revenue by $1,420,355 during each of the 12 months after Katrina. When revenue impacts on individual sources of revenue are added, the impact of Katrina on the City of Mobile tax revenues was $2,084,070 per month during the 12-month impact period. All sources of revenue in Table 1 are self-explanatory except restaurant tax and

Table 1. Monthly Impact of Katrina by Source

Sources of Revenue	Katrina (FY 2005-06)
Sales tax City	$ 1,420,355
Sales tax PJ	364,828
Room tax City	176,833
Room tax PJ	22,893
Liquor tax City	5,769
Other tobacco	3,135
Restaurant tax	56,059
Gasoline tax PJ	14,385
County collection	19,813
Total	$ 2,084,070

county collection. Restaurant tax is a one percent sales tax levied on restaurant meals to pay for the convention center, while county collection refers to the fee that the City of Mobile charges to Mobile County for collecting sales tax revenues for Mobile County. Increased county collection fee is a reflection of increased sales tax revenue to Mobile County owing to Katrina.

Alternatively, Katrina's impact on the City of Mobile revenues was also estimated through a regression of total revenues by month, rather than individual sources of revenue by month. The estimated regression equation for total revenues is summarized in Table 2. For the total revenue model, t-values for estimated coefficients are also presented, and coefficients that are statistically significant at least at 10 percent level of significance are bold-faced. When the impact is estimated directly from total revenue regression, the estimated impact is virtually the same at $1,917,385 per month as indicated in the estimated coefficient of the dummy variable for Katrina, which is very close to $2,084,070, obtained by adding impacts on individual sources of revenue.

Table 2. Estimated Regression Model for Total Revenue

Independent Variables	Total Revenue coefficients	t-values
Intercept	**-35,079,349**	-2.2765
RGDP	**3,700**	2.4300
Employment	2.7089	0.0892
U.S. CPI	70,528	0.5931
D-Katrina	**1,917,385**	4.0262
D-annexation	**1,653,599**	2.0397
D-January	**5,378,670**	9.8327
D-March	**-998,569**	-1.7779
D-April	**-2,280,975**	-3.9131
D-May	**-2,231,775**	-3.8133
D-June	**-1,927,415**	-3.2822
D-July	**-2,644,095**	-4.5955
D-August	**-1,790,540**	-3.1098
D-September	**-2,305,006**	-4.1881
D-October	**-1,507,815**	-2.7367
D-December	**23,437,365**	42.1317
Time	-62,528	-1.4297
R-squared	0.97	
Durbin-Watson	1.75	

Conclusions

Recovery efforts from Hurricane Katrina led to an increase in the City of Mobile's tax revenues by about $24 million during the 12-month period following Katrina's landing on August 29, 2005. The exact annual impact was $25,008,840 when the impact was calculated from regression of individual sources of revenue, and $23,008,620 when the impact was calculated from regression of total revenues by month. The average of the two figures is $24,008,730. During the same 12-month period from September 2005 to August 2006, the sum of monthly total revenues predicted by the model in Table 2 was $205,155,987 when the hurricane impact was excluded. The impact of Hurricane Katrina on the City of Mobile tax revenues was approximately 11.7 percent, obtained by dividing $24,008,730 by $205,155,987. The amount of total tax revenues during the preceding fiscal year 2004-05 was $200,698,398.

It may also be noted in Table 1 that the sales tax revenue collected within the city limits was $1,420,355 per month or $17,044,260, while the sales tax revenue collected from the city's police jurisdiction was $364,828 per month, or $4,377,936 per year. Since the city sales tax rate within the city limits is 4 percent and the city sales tax rate in the police jurisdiction is 2 percent, the total amount of taxable retail sales that generated the Katrina's impact on the City of Mobile tax revenues can be calculated:

$$17,044,260/0.04 + 4,377,936/0.02 = 645,003,300$$

A RIMS II economic impact model, developed specifically for Mobile County (Chang 2006), indicates that in order to generate retail sales of $645,003,300 during the 12-month period following Katrina, the gross economic impact, called the output impact in RIMS II model, has to be $1,458,293,692, obtained by dividing $645,003,300 by 0.4423 which is the earnings multiplier for Mobile County. Since the City of Mobile and its police jurisdiction cover almost all retail activities except those in the small cities of Mobile County, it appears that the amount of money that flowed through Mobile County during the 12-month period following Katrina is approximately $1.5 billion. During that period in Mobile, all apartments were full, most restaurants were full all day and all week long, and traffic with many Mississippi car tags was the heaviest that the area had experienced for many years. This is a small consolation considering that "Katrina was the costliest natural disaster in U.S. history with insured losses of $81 billion, and the death toll (including indirect deaths) was over 1800." (Ewing, Kruse, and Sutter 2009, p. 1)

References

Baade, Robert A., Robert Baumann, and Victor Matheson, "Estimating the Economic Impact of Natural and Social Disasters, with an Application to Hurricane Katrina," Urban Studies, 44(October 2007), 2061-2076.

Chang, Semoon, Chris Denson, and Kevin Anson, "Estimation of Financial Losses to Alabama's Seafood Industry Due to Hurricane Katrina," International Journal of Mass Emergencies and Disasters, 24(November 2006), 391-402.

Chang, Semoon, "Disasters and Fiscal Policy: Hurricane Impact upon Municipal Revenue," Urban Affairs Quarterly, 18(June, 1983), 511 523.

Chang, Semoon, "RIMS II-Based Model of Estimating Economic Impacts: An Illustration Based on the Mobile, Alabama, Area Study" Applied Research in Economic Development, Vol. 3, No. 2, 2006, pp. 88-100.

Chang, Stephanie E., "Disaster Vulnerability of Businesses in the 2001 Nisqually Earthquake," Environmental Hazards, 4(2002), 59-71.

Dolfman, Michael L., Solidelle Fortier Wasser, and Bruce Bergman, "The Effects of Hurricane Katrina on the New Orleans Economy," Monthly Labor Review, June 2007, 3-18.

Ewing, Bradley T., Jamie Brown Kruse, and Daniel Sutter, "An Overview of Hurricane Katrina and Economic Loss," Journal of

Business Valuation and Economic Loss Analysis: Vol. 4 : Iss. 2, Article 1 (2009), 1-12.

Heath, Brad, "Katrina Victims Swamp Corps for Trillions in Claims," USA Today, January 7, 2008, A1

Rose, Adam, Juan Benavides, Stephanie E. Chang, Philip Szezesniak, and Dongsoon Lim, "The Regional Economic Impact of an Earthquake: Direct and Indirect Effects of Electricity Lifeline Disruptions," Journal of Regional Science, 37(1997), 437-458.

Smith, Stanley K., and Christopher McCarty, "Demographic Effects of Natural Disasters: A Case Study of Hurricane Andrew," Demography, 33(May 1996), 265-275.

Stehr, Steven D., "The Political Economy of Urban Disaster Assistance," Urban Affairs Review, 41(March 2006), 492-500.

Vogel, Richard, "The Impact of Natural Disaster on Urban Economic Structure," Review of Radical Political Economics, 30(September 1998), 114-122.

Webb, Gary R., Kathleen J. Tierney, and James D. Dahlhammer, "Predicting Long-term Business Recovery from Disaster: A Comparison of the Loma Prieta Earthquake and Hurricane Andrew," Environmental Hazards, 4(2002), 45-58.

Appendix

Estimated regression equations are summarized below. In the summary table, t-values are not presented. Instead, all estimated coefficients that are statistically significant at least at 10 percent level of significance are bold-faced.

Appendix 1. Estimated Regression Models for Individual Sources of Revenue

Independent Variables	Property tax real estate	Property tax cars	Sales tax City	Sales tax PJ	Lease rental tax City	Lease rental tax PJ	Room tax City	Room tax PJ	Beer tax
Intercept	-2,703,693	-72,669	**-19,927,255**	2,577,842	**-3,093,074**	-140,757	-935,565	-57,756	10,597
RGDP			**1,583**	-231	**115**	**-61.0574**	103	6.5341	
Employment	16.2670	0.7797	9.9303		**1.8999**	**0.4672**			0.4901
Cruise passengers			**35.8497**	7.6412			4.6144	**0.7924**	
Home sales	1,715								
Casino revenues			-0.0003						
Deplanements							**6.1498**	**0.4176**	
U.S. CPI			61,727	3,524	**12,488**	**4,177**			
CPI gasoline		179					-190	-35.1177	
D-Katrina	-125,907	-1,744	**1,420,355**	**364,828**	6,226	-5,218	**176,833**	**22,893**	6,297
D-annexation	414,887	-26,755	**1,161,838**	**-848,266**	-11,763	-2,282	**103,836**	1,711	437
D-January	**1,553,186**								
D-March	**-1,013,658**		**686,415**	**195,434**	**25,855**				
D-April	**-862,145**		**-323,480**	58,174			-38,434	**-3,444**	
D-May	**-1,111,261**			**99,251**			-47,305	-2,462	18,610
D-June	**-1,063,712**			66,349			-33,410		
D-July	**-1,076,031**		**-417,982**	33,214					
D-August	**-1,107,721**	**166,857**		**98,481**	**-39,839**	-5,715	-36,949		**118,469**
D-September	**-766,760**	**-108,687**		40,837					**-129,007**
D-October		**72,281**		35,550	-15,160				**18,737**
D-November	**923,187**	**63,113**	225,776		**-25,158**			**-5,484**	15,131
D-December	**2,014,603**	-62,242	**2,983,481**	465,929	**23,978**		**-81,099**	**-4,353**	
Time	-633	217	**-45,894**	**11,626**	**-7,704**	**-747**	339	106	-104
R-squared	0.74	0.77	0.91	0.91	0.63	0.69	0.71	0.87	**0.76**
Durbin-Watson	2.44	3.02	1.36	1.26	1.44	1.52	1.24	1.16	2.82

Appendix 1. Continued

Independent Variables	Liquor tax	Wine tax	Cigarette tax	Other tobacco tax	Restaurant tax	Gas tax City	Gas tax PJ	Car rental tax City	Car rental tax PJ
Intercept	-17,185	12,500	**756,650**	51973	**-1,108,573**	**379,957**	**50,667**	192,426	-457,242
RGDP								-12.7935	49.1961
Employment	0.2009	-0.0104	**-4.6614**	-0.1421	1.0037	-0.6453			
Cruise passengers						**2.0734**	0.0705		
Casino revenues			**0.0008**		0.0002			**-0.0002**	**-0.0003**
Deplanements						**2.6816**	**0.6853**		
U.S. CPI					**7,788**				
CPI gasoline			**649**			-58.7541	4.7304		
D-Katrina	**5,769**	521	36,919	**3135**	**56,059**	12,574	**14,385**	5,864	-3,001
D-annexation	5,074	802	-38,890	-4271	**70,496**	11,958	**-11,001**	**15,519**	**-7,680**
D-March								**16,904**	**8,257**
D-April					**-33,233**				
D-May					**-37,780**				
D-June					-16,932				
D-July					**-43,330**				
D-August	**18,309**	**6,693**	**65,298**		**-30,695**		4,741		
D-September	**-23,096**	**-9,182**	**-58,809**		**-32,577**				
D-October			23,146		**-38,557**				
D-November		1,398	**58,310**		**-51,602**				
D-December	**9,466**	1,085	**45,009**		**40,433**				
Time	**166**	10.8119	330	**214**	**-1,782**	1.9679	**195**	566	-979
R-squared	0.71	0.40	**0.66**	0.23	**0.86**	0.16	0.52	0.49	0.65
Durbin-Watson	2.04	1.66	2.13	2.69	1.53	1.89	1.58	2.13	1.91

Appendix 1. Continued

Independent Variables	Police fine	Inspect fees	County collection	Business licenses City	Business licenses PJ	Motor vehicle licenses	Franchise fees	Business licenses apartment
Intercept	-73,017	**96,575**	**-387,047**	95,601	-44,274	-37,149.1638	**215,615**	17,939
RGDP			**44.9778**					
Employment	0.9627		**0.5749**	7.4917		0.4271		
Home price								-0.1831
CPI gasoline			**160**					
D-Katrina	-3,543	5,663	**19,813**	82,892	-4,337	8,231.0375	-19,405	2,148
D-annexation	25,819	-2,091	-9,763	**893,657**	82,877	-5,630.1680	-139,571	6,978
D-January	**20,495**		**-17,038**	**3,548,020**	**439,988**			**66,921**
D-March			**11,747**	**-1,432,541**			**-190,642**	
D-April	**-27,591**		-6,179	**-1,555,139**				
D-May				**-1,665,561**			**-210,683**	
D-June	-17,949			**-1,701,405**			**-266,689**	
D-July			**-13,626**	**-1,726,705**				
D-August				**-1,721,203**				
D-September				**-1,680,327**		**14,989.8703**	**-191,745**	
D-October	**-24,734**			**-1,741,291**		**31,179.9556**	**-263,593**	
D-November	**-28,622**	**-30,301**		**-1,837,250**		**34,565.0560**	**-252,838**	
D-December			**55,841**	**15,544,190**	**1,801,907**	**-13,343.8283**		**151,326**
Time	**567**	**744**	**-579**	**6,788**	**1,271**	106.1039	1,191	144
R-squared	0.35	0.26	0.86	0.98	0.95	0.32	**0.18**	0.89
Durbin-Watson	2.55	1.95	1.88	2.27	2.00	2.58	2.45	2.90