EMPOWERING YOUNG PEOPLE THROUGH ENTREPRENEURSHIP: AN IN-DEPTH EXPLORATION OF YOUNG ENTREPRENEUR NARRATIVES

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INTRODUCTION

According to Merriam-Webster's dictionary, the definition of an entrepreneur is "one who organizes, manages, and assumes the risks of a business or enterprise." A more interesting definition is that of Peter F. Drucker: an entrepreneur is plainly anyone who wants to work for him or herself, but an entrepreneur is someone who also a person of very high aptitude who pioneers change (Drucker, 2007). Either definition may be valid, but it is important to focus on the unique qualities of the individual that aspires to become an entrepreneur. The act of creating a venture due to the possibility of providing a different and unique experience to a community can be classified as a charitable act. It is a charitable act worthy of acknowledgement as the Franciscan tradition of caring for the prosperity of all. An entrepreneur does not solely assume the risks of a business for self-interest, but also to provide a prosperous experience to the public. There are many qualities that an entrepreneur may exhibit, dependent on his or her environment, upbringing, and natural ambition.

STARTING A BUSINESS

The ability to start a business is a courageous act that exemplifies the ability of an individual to believe he or she has the skills and capabilities to venture into a business. This belief can be classified as overconfidence or a true belief that one can successfully accomplish a task. Entrepreneurs possibly feel overconfident because they have a strong tendency to consider their situation as unique (Koellinger 2007). They understand that they have developed an innovative idea and truly capitalize on the opportunity. Another accountable attribute in starting a business is the influence of an entrepreneur's upbringing or environment. Depending on the situation, an entrepreneur's business venture can be a reflection or the result of his or her environment or upbringing. An entrepreneur's upbringing can determine the quality of their behavior and actions and thus influence an entrepreneur to transform perceived opportunities into actions (Koellinger 2007). There are situations in which an individual creates his or her own business because of some interrupting or influential event. This occurrence is somewhat rare, but can be evident, depending on the actual event.

NARRATIVE AS A TOOL OF QUALITATIVE ANALYSIS

To develop an in-depth understanding of multidimensional, multi-actor process of young entrepreneurs' enterprise creation and nurturing, we turn to qualitative methods of investigation, in particular, analysis of narrative (e.g., Gartner 2007; Baker 2007). In discovering the true ambition, purpose, and reason for becoming an entrepreneur the use of a narrative as a tool of qualitative analysis is quite effective. Storytelling is a unique way of obtaining concrete evidence, behaviors, and implications of the stories being told by the individuals. In this manner, the true account of an individual's path in becoming an entrepreneur becomes more significant in implicating trends among several young entrepreneurs. Another important characteristic of using a narrative is its ability to supply the facts that give access to the world of an entrepreneur (Steyaert 2007). Storytelling allows the audience to become immersed in the world of the particular entrepreneur and allows the entrepreneur to give first-hand accounts to reflect on his or her own path. The underlying concern may be the inability to say anything beyond the person telling their personal story (Fletcher 2007). This may be a significant concern, but the ability to relate to and respect the entrepreneur's personal account outweighs is more important. A narrative may

also prove to be useful if the entrepreneur is asked questions that reflect their path beyond their own personal story.

STUDY OBJECTIVES AND RESEARCH QUESTIONS

In this study, I will conduct voice-recorded interviews with six different student-entrepreneurs with different entrepreneurial ventures. The objective of the study is to conduct in-depth research as to how and why young individuals are empowered to become entrepreneurs. The most immediate and practical significance of this study is that it will provide insight on the initial stages of entrepreneurship. I hope to utilize this study to promote entrepreneurship among students in order to practice the Franciscan tradition of caring for the prosperity of all. This study will also provide pedagogical insights for faculty on nurturing and fostering entrepreneurial spirit in students. It will ultimately advance the theoretic understanding of student entrepreneurship. The research questions that I wish to answer under this study are as follows:

- How do young people develop into entrepreneurs?
- What motivates and influences people to become entrepreneurs?
- How did they get the idea of what to do?
- How did they begin?
- How can institutional education support their needs?
- What are specific hurdles in education (if any)?
- Is there a conflict of interest between one's education and business?
- Has the Franciscan tradition influenced his or her entrepreneurial path?

STUDENT-ENTREPRENEUR NARRATIVES

The six student-entrepreneurs that were interviewed include Kate, John, Daniel, Erin, Samuel, Matthew and they represent a wide array of entrepreneurial possibilities (names were changed to protect their privacy).

Kate

A junior, student-entrepreneur was in the beginning stages of her business in which she sold chicken, turkey, geese, and duck. Under New York State law she was legally allowed to process a thousand chickens or one-hundred turkeys or any combination of both. *Kate* has been in the business for two years and she lived on a farm her whole life and realized her business could be an integration of a new niche market. The idea of her business came about gradually and because she experienced "raising" her whole life. *Kate* quickly became aware of a business opportunity. More specifically, she was once on a website reviewing some prices of organic and free range turkey and chicken and realized that it sold for a lot of money. *Kate* then purchased a book that motivated her to actually start the business and she went on to order turkeys and chickens. *Kate* was quick to acknowledge how much better grass-fed meat is compared to inorganic meat and claimed to know the difference by taste.

In terms of her upbringing, her father is an Information Technology specialist and her mother is a secretary at a school. It was quite interesting that their transition into the rural life was due to her father's respiratory problems and their love for the country. She believed that her parents and neighbors were particularly helpful in establishing her business. When it came to the actual day-to-day to tasks, she claimed that only she could accomplish these tasks because she knew the nuts and bolts of the process of hatching chicks. In thinking of the future, she wishes to raise a larger amount of poultry and to sell them in the farmer's market. *Kate* believes anyone can become an entrepreneur if the individual had the drive and determination. *Kate* believes she is motivated, intelligent, and has the common sense to learn anything. She believes that Siena College could incorporate more business classes into all majors as part of the core curriculum because she feels it is beneficial. She is set apart from other students by exhibiting a plan where other students may not know what they want to do after college. Interestingly enough, she stated that the Franciscan values, such as DORS, has not shaped the way she conducts business because by this point she believes everyone has their own set of values.

John

A junior student-entrepreneur is the lead singer and lead guitarist in a band on campus at Siena College with three other male friends. The band started in 2007 and was motivated by the success of The Lift, a successful Siena College on-campus band. The name of the band is Light the Atlantic and they play alternative, pop-like music. Music was a passion of his since seventh grade and initially drove him to start a band. Both of his parents played the guitar when they were younger and influenced him to learn how to play. His father used to court his mother by singing songs to her when they first began to date. *John* comes from a very musical family, with his mother requiring that all his siblings take at least three years of piano. His mom is a stay-at-home mom, but was an accountant for a little while and is now an eighth grade teacher. By seventh grade he could play the guitar fairly well. *John* exhibited his musical knowledge and experience by being part of a number of bands throughout high school. The current band specifically began after a former band member transferred to another school and the band was in need of another guitar player. A friend approached him and asked if he could be the new guitarist and decided to begin a new band, Light the Atlantic.

A former band mate's father and also his parents, who give monetary assistance, were among the few that helped him on his path to becoming an entrepreneur. He does not really like to think about the future and likes to take everything one step at a time. The band's ultimate goal is to build up as much of a following and have as much fun as possible. He claims that if others wanted to start a band they would have to understand that it takes a lot of work and drive. *John* believes that being in a band separates him from other students in that it gives him a fun way to enjoy his time and it also is an easy way to impress people. He wishes that Siena College would have a facility in which they could practice and the creation of a non-competition event between bands. Franciscan values have not influenced his actions directly.

Daniel

A senior at Siena College and a student-entrepreneur, owns a retail sporting goods store. The store opened in July of 2007 and the idea was brought about five years ago. He created this store because there was a need in the community. There was nothing in the area that was a lacrosse specialty store or that provided that type of service. He went on to discuss how he did some market research before actually venturing forward with the business. The business actually belongs to him and his mother. *Daniel* played lacrosse throughout his childhood and it greatly influenced him in opening a lacrosse specialty store. The idea came about when he was a junior and senior in high school. It was always something him and his mother knew they were going to do, but she was not ready to leave her job. She finally left her job and began preparing for the business in April and then opened in July. The business has two ends, the full retail end which is primarily lacrosse, but also sells other products for soccer and running. The initial instance in which he decided that he wanted to start a business was because he became annoyed at driving to a store thirty minutes away just to buy lacrosse products. *Daniel* did not really find anyone that helped him along his path to opening the business, only his mother. He felt that it was important that Siena College teach students that there is the possibility of having your own business and not just working for someone else. The Franciscan tradition has not influenced the way he practices business.

Erin, a freshman student-entrepreneur, creates evening bags for women. The interesting fact about the bags was that they were made out of women bras. She would go to stores and buy decorative bras and then add some other features and use the bra straps as straps for the bags. *Erin* wore the bag to class; her art teacher loved it and asked her to make her one. She came up with the idea from another individual that made bags and decided to incorporate her own style on her bags. Initially, she found a love for art from a very young age and always knew that she wanted to have a job that had something to do with arts and crafts. *Erin* calls her bags "Brags" which is a quite unique and interesting name for bags. Before she began to make bags she experimented with pot holders and Christmas ornaments made out of clothespins. She claims that there were several people that helped her on her way to becoming an entrepreneur including her teachers and parents. *Erin* does believe that she will continue to make bags while she is in school, but as a freshman she needs to get adjusted to the environment. One needs to have a drive or something that

will keep one pushing forward in order to become an entrepreneur. *Erin* believes that if one has the drive he or she should be able to accomplish anything. She did believe that the Franciscan tradition has influenced the creation of her bags, specifically in the service realm of the Franciscan tradition.

Samuel

A senior student-entrepreneur owns a political consulting business called McKim Strategies. He does political consulting for candidates that are running political races and plays the role of a campaign manager. *Samuel* also does a lot of campaign technology like website design and technology integration. He not only does website design for political candidates, but he also does website design for non-profit agencies. Interestingly enough, ninety-nine percent of what he does is intellectual property and could therefore not be taxed. *Samuel* has had the business officially for about a year and decided to go forward and register his business so that he can have tax write-offs. He had already been involved in politics for about six years before actually filing for his business. *Samuel* built a presence for his business by capitalizing on the idea that older people on the campaign trail do not know about technology as much as he did. He was always interested in politics and began volunteering in political campaigns. Most of his business has been self-taught, especially on the technological side of his business. He learned the campaign strategy side of this business by being around political campaigns.

The person that helped him the most was his boss and political director of the campaign. He has helped him mostly with the campaign management side of business. *Samuel* does not plan to make this his sole career, but wishes to do this in order to have fun. He believes that one can not become an entrepreneur solely for the money, but one has to have a passion for the type of business he or she is considering. *Samuel* also believes that anyone can become and entrepreneur because everyone has a passion to do something. The difference between him and other students is that his business keeps him driven and gives him a purpose. He does not believe that there is anything that can be done to better fulfill his needs as a student at Siena College. The Franciscan tradition has influenced the way he conducts business by walking away from some candidates because of some aspects that he did not like or respect.

Matthew

A senior student-entrepreneur was currently in a band called the lone peaches. The band started two or three years ago, but broke up in January. The band no longer has a business aspect to it, but does play a few shows. *Matthew* started a band because it was always something that he wanted to do and because he feels he is capable of starting a band. He thought it would always be "cool" to start a band when he was younger. He claims that you gain confidence by being in a band, although he always knew that he could be successful in a band. His father is also a musician and plays the blues and country. *Matthew* grew up in a musical environment in which his sister is classically trained, a great vocalist, and proficient in piano. His grandfather played country music as well. All of the band members were musically involved and made up parts to their songs. *Matthew* believes that anyone can become an entrepreneur if you hone your talent and become competent in your instrument. He claims that the Siena experience has taught him how to deal with people in group projects. *Matthew* respects the Franciscan values of Siena College and believes it is beneficial for the community. He does not believe it has shaped him because he has been surrounded by these values his entire life.

DISCUSSION AND IMPLICATIONS

Overall, the narratives address several behaviors and characteristics that are pertinent to young entrepreneurs. There are three general traits that were found among the five respondents. The three traits were overconfidence or a unique belief in oneself, the influence of their environment or upbringing, and the ability to feel unique compared to other students. This unique belief in oneself stems from a natural ability to transform an idea into a business opportunity. The belief also comes from years of growing up in an environment that fosters growth. Most of the respondents had their business because they were brought up in a particular environment. For example, one student-entrepreneur grew up on a farm her whole life, another grew up in a musically-tuned family, another worked with arts and crafts with her mother, and the other was influenced from his participation in lacrosse.

Young people tend to develop into entrepreneur through a certain moment or spark when they realize that they are capable of sustaining a business. This moment can be as miniscule as stumbling upon a website or as important as planning for this long before actually venturing into a business. It is interesting how most can actually pinpoint the specific moment in which they decided that they were going to commit to a venture. Most of the respondents also validated their reasons for going into business. Generally, most student-entrepreneurs fulfilled a need in the community, whether it was directly or indirectly. The lacrosse player fulfilled the need of a lacrosse specialty store within a ten to fifteen minute radius of Ballston Spa, the female that sold poultry knew that there was a need for healthier food consumption, and the female that made bags knew that women would love them after seeing them.

All student-entrepreneurs had a natural ability to motivate themselves and talked about drive and determination as characteristics someone should have in becoming an entrepreneur. Most had a larger picture of their future and what they wanted to do with their businesses. The respondents felt that having a business has set them apart from students because they actually have some type of plan or have something to do to occupy time. In terms of their education in general and at Siena College, most agreed that the college should add some classes or programs that would foster entrepreneurship. For one respondent it was important that the college expose and introduce the idea that an individual does not have to work for someone else or a company, but could actually work for him or herself. Another interesting point was made by a female student-entrepreneur, stating that Siena should require that all majors take business classes as part of the core requirements. She felt that it would be beneficial for all students to have a general understanding of business processes.

The whole idea of the Franciscan tradition influencing the respondents was interesting in itself. Many could not relate their business with the Franciscan tradition of caring for the prosperity of all. Most agreed that their morals and values were set and were not affected by the Franciscan values that are instilled by Siena College (Diversity, Optimism, Respect, and Service). All respondents agreed that they were ethical in their decisions and it was an important part of the way they conducted business. The ability to make ethical decisions was mostly due to their upbringing and the morals instilled by their parents. Interestingly enough, the female student-entrepreneur that made bags insisted that making her bags represented the service aspect of the Franciscan tradition. It represented service because she felt she was providing a service to her customer base.

CONCLUSION AND RECOMMENDATIONS

Becoming an entrepreneur at a young age is a very unique path and worthy of its acknowledgement. Certain traits belong to entrepreneurs such as drive and determination to succeed in their endeavors. Their natural motivation stems from fostering and nurturing environment throughout their upbringing. According to the respondents, Siena College should develop a class that would be offered to non-business majors to fulfill some type of core requirement. This will enrich the academic life of its students and will allow them to become aware of the possibility of becoming an entrepreneur. In terms of the Franciscan tradition, the college only instills its values in certain classes throughout freshman year. It would be essential that the college adopt a plan that not only incorporates the Franciscan tradition in departmental mission statements, but actually apply the idea of DORS to every subject in every class. Siena College is a unique college in that it actually cares for the prosperity of all and it should represent itself in this manner in all realms.

ECONOMETRIC ANALYSIS OF TEEN PREGNANCY AND WHAT INFLUENCES IT

Jim Stevens, Siena College

INTRODUCTION

An anonymous person once said "Teenagers don't have enough in their lives to be getting children": but perhaps it is the exact opposite. This paper is going to attempt to show that the less people have in their lives, the more likely they are to get pregnant as teenagers –fearing the loss of nothing. My hypothesis is that the poorer the teenager is the less they have to loose, therefore they more likely they are willing to engage is sexual activity that has the potential for pregnancy. That teen pregnancy is far more determined by ones economic outlook on life rather than the social structures they have grown up with. The regression will also look at other variables including; percent of the county with a B.A., unemployment, family dysfunction, percent minority, and Healthy New York enrollment and most important Percent of the New York State County living in poverty.

INTRODUCTION TO REGRESSION

In this regression I was trying to prove that the commonly held ideology of teen pregnancy is determined by social and cultural values and believes is the exact opposite of the truth. My hypothesis was that with increasing income (determined by lower percentage of the population living in poverty) the rate of teenage pregnancy would dramatically get lower because the more income ones family brings in the more they have to loose by getting pregnant at an early age. They would be throwing out the opportunity of graduating high school; going to college, meeting a more mature life partner, and the likely hood of maintain the life style their parents have provided for them. This is implying that the less income ones family has the less likely they are to be giving up all of those things, to them getting pregnancy doesn't mean not going to college because that wasn't happening anyway, to them getting pregnant means not starting a minimum wage job a few years earlier than they would have. By looking at teen pregnancy versus poverty and five other variables I tried to disprove this concept to the best of my ability.

REGRESSION FACTS

Regression Formula:

$$Y=\beta_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_7X_7+\mu_1$$

Variables	Definition
Y	The percentage of total teens pregnant in the given county.
β2: MedIncome	The Median Household income per county.
β3: BA	The percent of the county with a B.A. degree or higher.
β4: Unemploy	The percent unemployment for the individual counties.
β5: FamDisFun	As defined by the state of New York Family Dysfunction encompasses the following variables(all defined using an index): Foster Care Admissions Children in Foster Care Preventative Service Openings CPS Indicated Cases CPS Reports – Mandated CPS Reports – Total Received Divorces

β6:	nonWhite	Percent of the county that is non-white. This is determined to be all races other than Caucasian. Including but not limited to: African American, Asian, Native Hawaiian, Pacific Islander ect…
β7:	HNY	Percent of total Healthy New York enrollment that can is assigned by said county.

Sources:

Y	health.state.ny.us
β_2	ers.usda.gov
β_3	quickfacts.census.gov
β_4	ers.usda.gov
β_5	oasas.state.ny.us
β_6	quickfacts.census.gov
β_7	statecoverage.net

HYPOTHESES

β_2 will be negative and significant
The higher the house hold income the lower the teen pregnancy rate because many wealthier girls will have more access to contraceptives, and a greater possibility to pay for a termination

β_3 will be positive and insignificant

β_4 will be positive and insignificant

β_5 will be positive and significant
The more family dysfunction there is in an environment the greater likelihood that teen girls will have a desire to rebel sexually, also there may not be a good roll model to look up to.

β_6 will be positive and significant
I rated this as significant because there is a large stereotype to this idea. I hope to disprove it.

β_7 will be negative and slightly significant
The more people enrolled in a public health care system means the more people that have access to health care. I am using this as a proxy variable for uninsured because that data is not available.

IMPORTANT DATA FROM REGRESSION 1

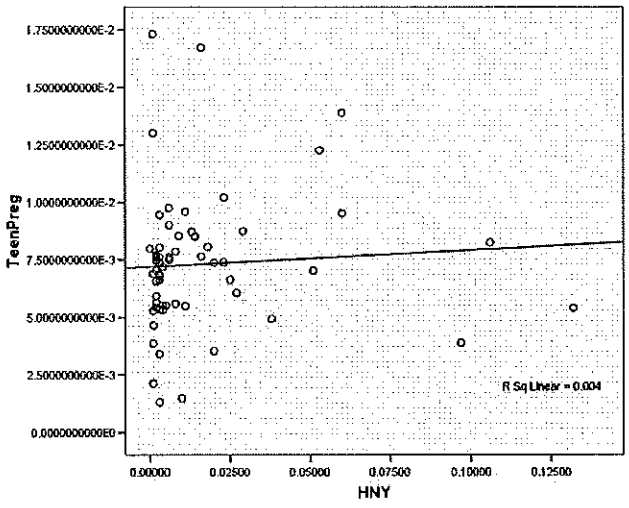
MEAN	Coefficients	t-stat	p-value	
Y	.00731			
MedIncome	31136	.004	-.760	.451
BA	.21519	.007	1.129	.264
Unemploy	.04367	.060	2.457	.017
FamDisFun	48	.000	3.348	.001

nonWhite		.103403 .004	2.714	.009
HNY		.016129 .015	.789	.789

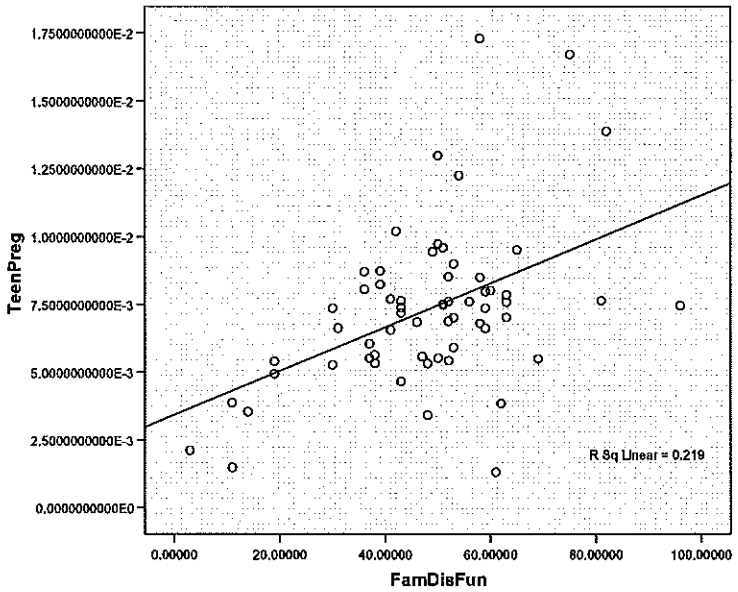
R		.674[a]
R^2		.454
Adj. R^2	.395	
F		7.635

GRAPHS

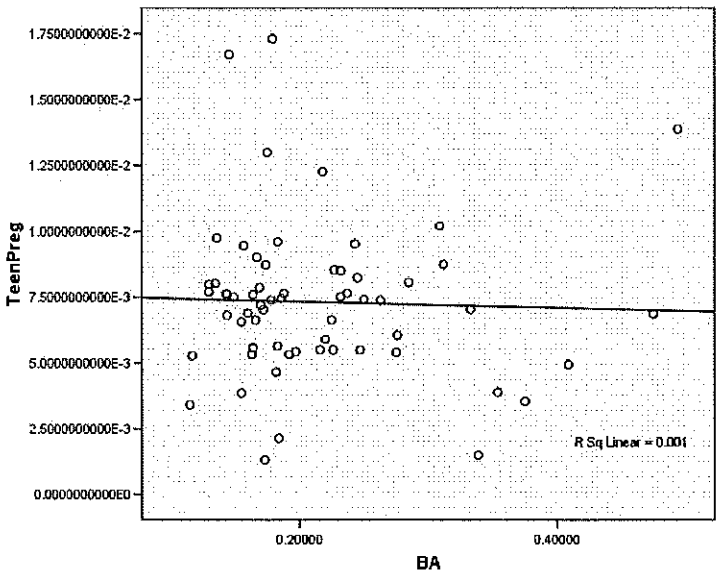
Graph A shows a scatter plot of healthy New York vs. Teen Pregnancy. There is positive correlation with an R^2 of .004



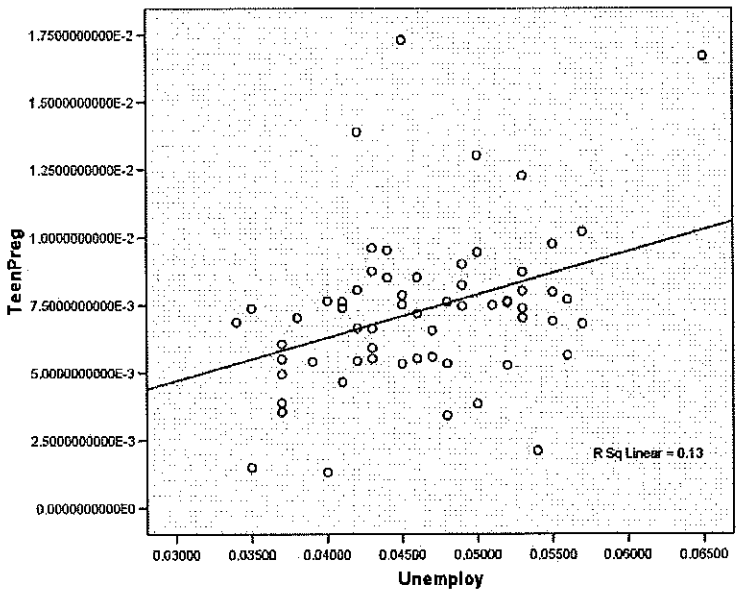
Graph B shows a scatter plot of family dysfunction vs. Teen Pregnancy. There is positive correlation with an R^2 of .219



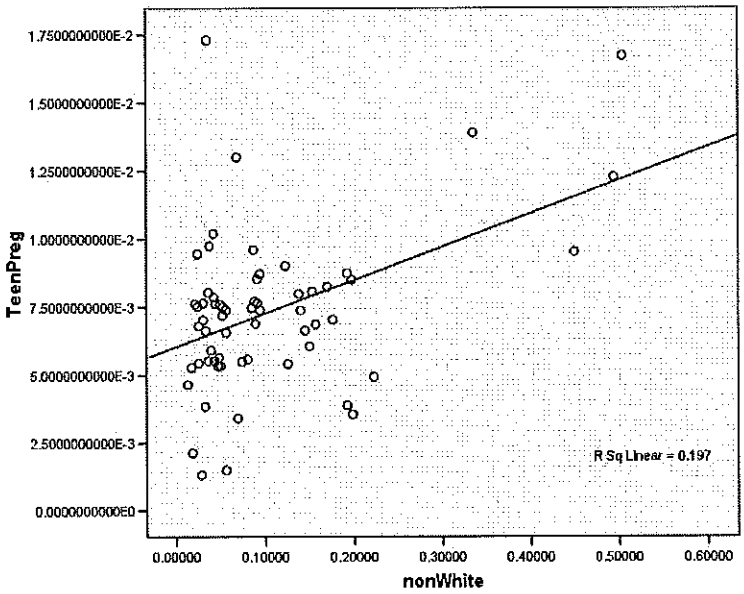
Graph C shows a scatter plot of percent of county with B.A.'s vs. Teen Pregnancy. There is positive correlation with an R^2 of .001



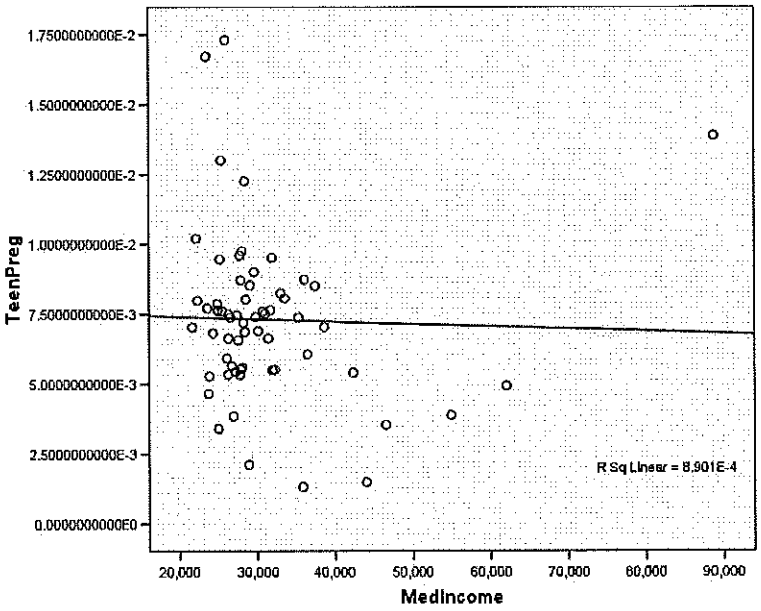
Graph D shows a scatter plot of Unemployment vs. Teen Pregnancy. There is positive correlation with an R^2 of .13



Graph E shows a scatter plot of percent Non-White vs. Teen Pregnancy. There is positive correlation with an R^2 of .197



Graph F shows a scatter plot of Median Family Income vs. Teen Pregnancy. There is positive correlation with an R^2 of .0008901



REGRESSION EXCLUDING THE FIVE BOROUGHS

With the graphs above it was clear that the 5 boroughs of New York City were greatly effect the R^2 line. These 5 counties are so different from the rest of the state in both population density and wealth that they when taken out you get a more accurate reading of all of New York State. In actuality New York City could be reported separately and on most state websites it is.

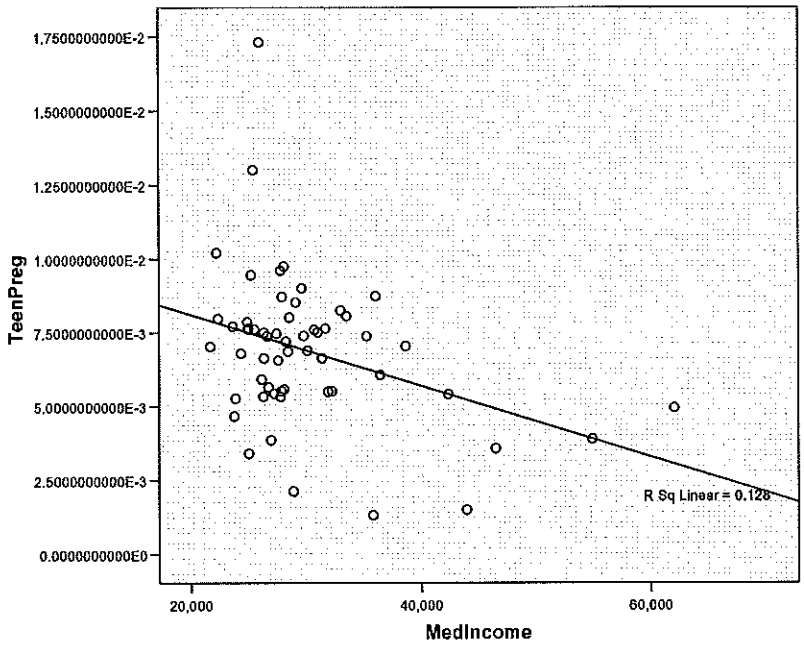
Important Data from Regression 1

	MEAN	Coefficients	t-stat	p-value
Y	.00731			
MedIncome	31136	.000	-2.381	.021
BA	.21519	.007	.664	.522
Unemploy	.04367	.067	1.113	.271
FamDisFun	45	.000	1.831	.073
nonWhite	.103403	.009	1.915	.061
HNY	.016129	.016	.736	.465

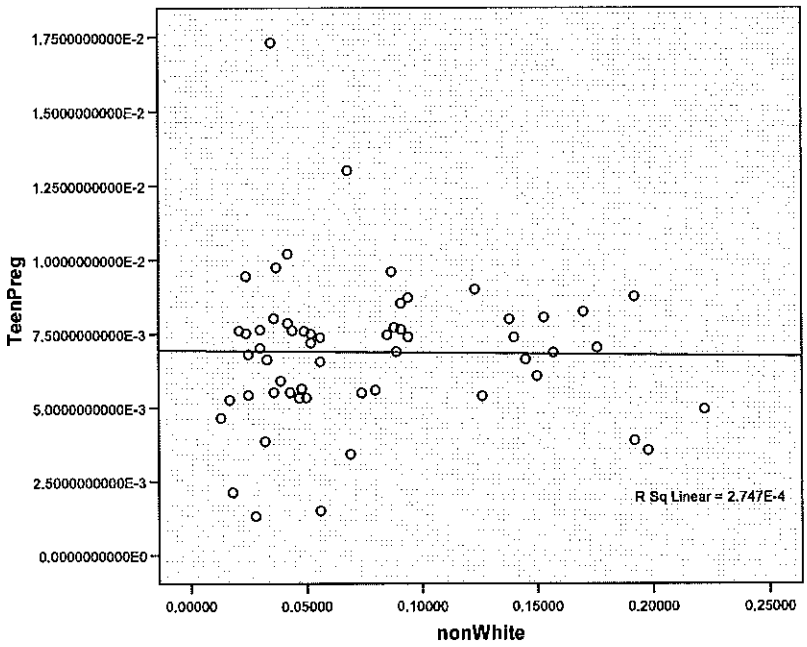
R	.540[a]
R^2	.292
Adj. R^2	.207
F	3.437

Graphs (Without the 5 Boroughs)

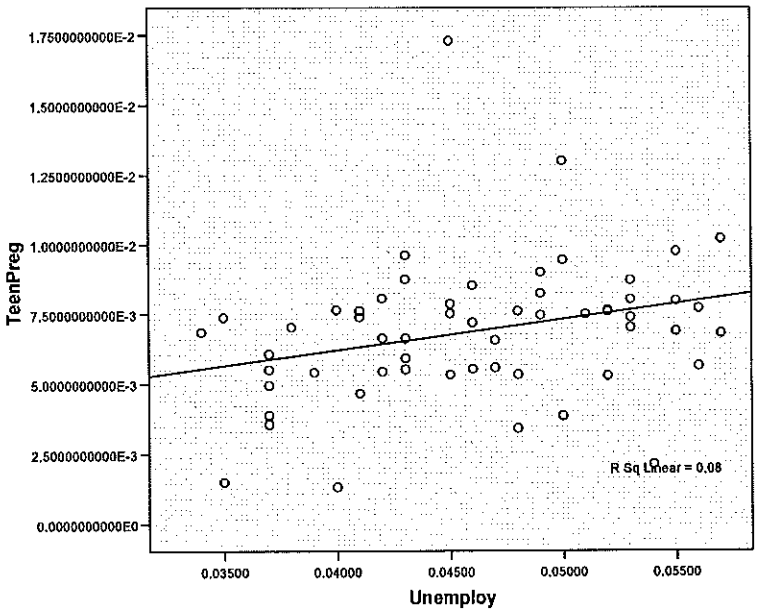
Graph A' shows a scatter plot of Median Family Income vs. Teen Pregnancy. There is positive negative with an R^2 of .128



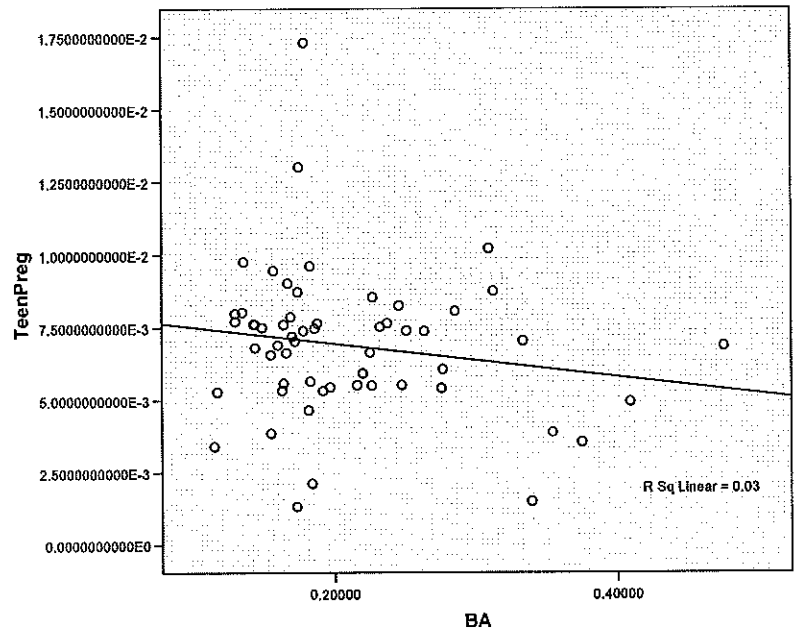
Graph B' shows a scatter plot of percent Non-White vs. Teen Pregnancy. There is negative correlation with an R^2 of .0002747



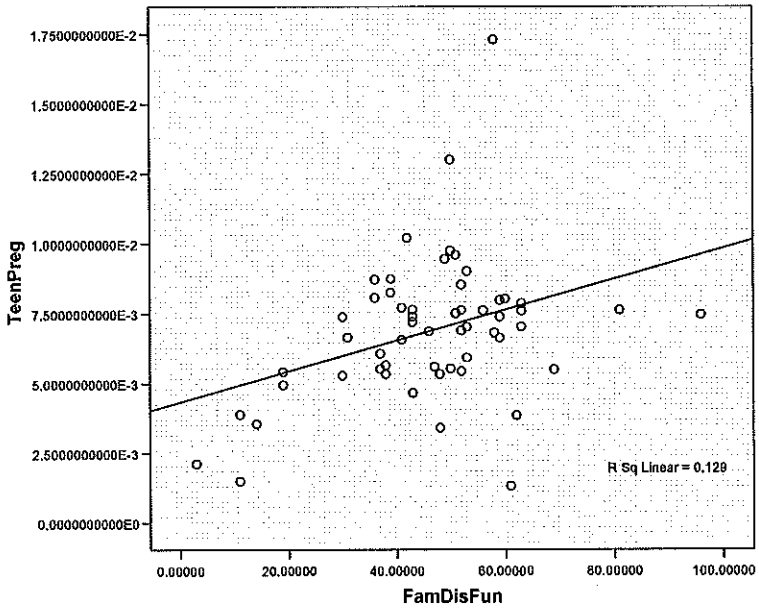
Graph C' shows a scatter plot of Unemployment vs. Teen Pregnancy. There is positive correlation with an R^2 of .08



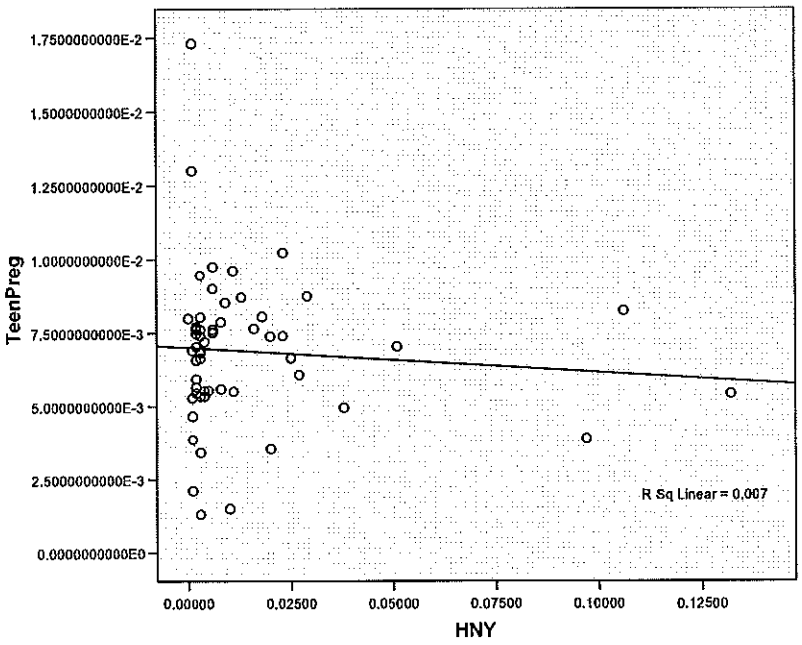
Graph D' shows a scatter plot of percent of county with B.A.'s vs. Teen Pregnancy. There is negative correlation with an R^2 of .03



Graph E' shows a scatter plot of family dysfunction vs. Teen Pregnancy. There is positive correlation with an R^2 of .129



Graph F' shows a scatter plot of healthy New York vs. Teen Pregnancy. There is negative correlation with an R^2 of .007



REGRESSION 2

After running the regression with my originally defined variables, I decided to remove Median Family Income and replace it with Percent of County Population living in poverty. The results and graphs below reflect those regression results. From this point forward all information refers to the regression with percent poverty not median income, as I feel it is a better indicator.

For this regression I redefined by β_2 as PerPoverty

β_2:	PerPoverty	The Percent of the county living in poverty. quickfacts.census.gov

IMPORTANT DATA FROM REGRESSION 2

MEAN	Coefficients	t-stat	p-value
Y	.00731		
PerPoverty	12.12% .031	1.920	.060
BA	.21519 .006	1.169	.247
Unemploy	.04367 .103	1.613	.112
FamDisFun	45 .000	1.847	.070
nonWhite	.103403 .003	.571	.564
HNY	.016129 .008	.736	.570

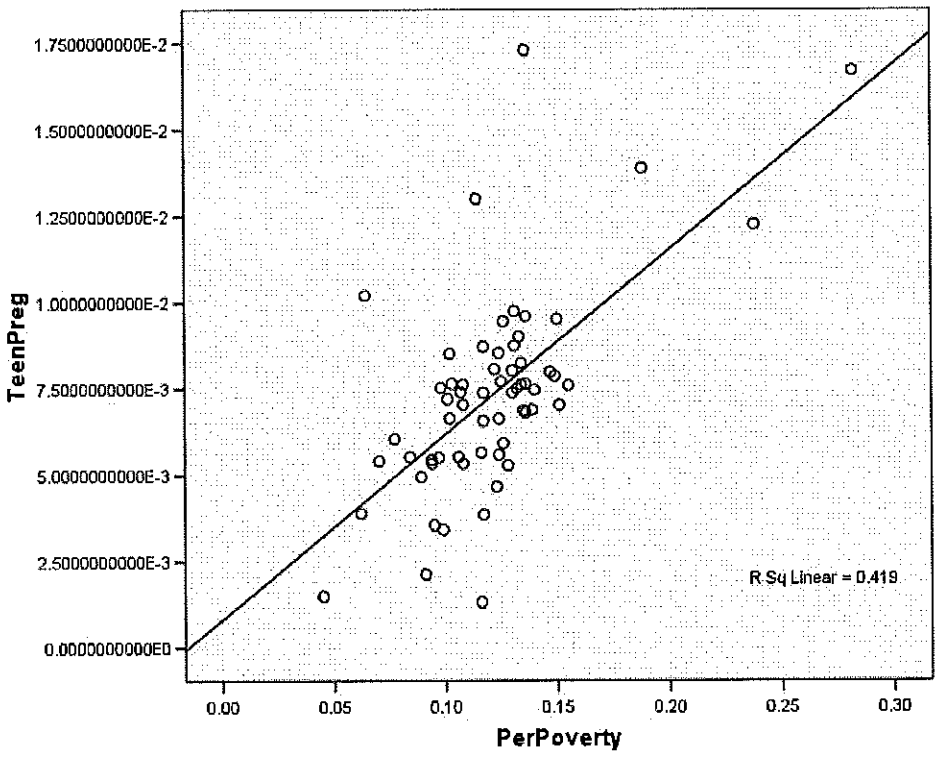
R	.695[a]
R^2	.483
Adj. R^2	.427
F	8.575

With unemployment removed for slight multicollinearity with percent poverty.

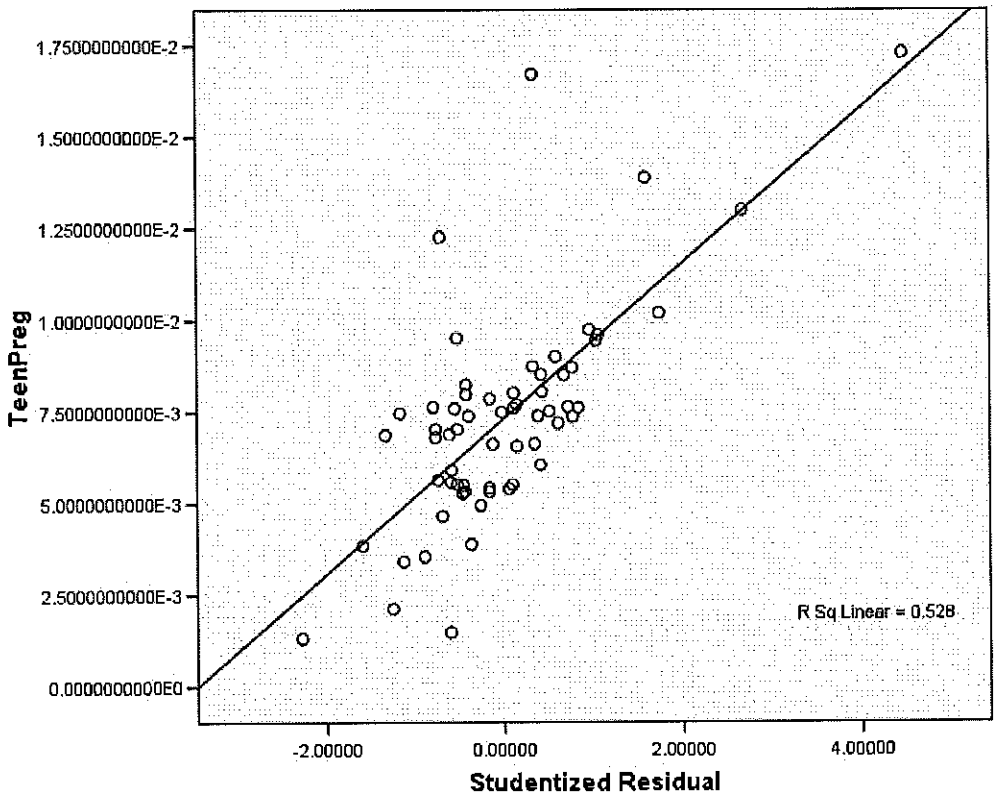
	MEAN	Coefficients	t-stat	p-value
Y	.00731			
PerPoverty	12.12% .041	2.741	.008	
BA	.04367 .002	.427	.671	
FamDisFun	45 .000	1.603	.115	
nonWhite	.103403 .002	.444	.659	
HNY	.016129 .009	.586	.560	

R	.677[a]
R^2	.459
Adj. R^2	.411
F	9.497

Graph H shows a scatter plot of Percent of County Living in Poverty vs. Teen Pregnancy. There is positive correlation with an R^2 of .419



Graph I shows the studentized residual vales plotted. It shows the linear relationship of the regression.



ANALYSIS OF RESULTS FROM RESULTS

In this regression I used teen pregnancy as my dependant variable –showing the percent of total teens (10-19) that get pregnant in a given New York State County. For my Beta's I used Median Family Income per county at first, but then after running several regression I switch to using Percent of the County Living in Poverty because I found this to be a better indicator of how economic status effects teen pregnancy. I also used percent of the county with a B.A, percent of the county that is unemployed, level of family dysfunction in the county (as defined by New York State Department of Health), Percent of the county that is non-white, and the percentage of total Healthy New York enrollment that the particular county accounts for. As can be seen in the above data my only truly significant variable is percent of the population living in poverty, this is a result of both autocorrelation and simply a bad variable (specifically Healthy New York enrollment). The reason for autocorrelation of most of the variables with percent of population living in poverty is because poverty encompasses so much.

With a t-stat of 2.741 (excluding unemployment) Percent of population living in poverty explains much on the variation in y. In running a simple regression with just poverty I was able to explain 41.9% of the variation in teen pregnancy. In my multiple regression poverty has a beta is .031 meaning that a one percent change in poverty rate there is a .031% change in teen pregnancy. My p-value for PerPoverty before correcting for multicollinearity is .060, meaning that .060 is the lowest significance level where the null hypothesis can be rejected –the probability of committing a Type I error (accepting that the r^2 isn't 0 when it actually could be) is 6.0%, therefore I am 94% confident that percent poverty has an impact on teen pregnancy. Since this is a lower confidence level that is generally accepted for an econometric regression I decided to correct for the multicollinearity with unemployment. Once this was corrected for I had a p-value

of .008 for percent poverty. This means that there is only a .008% chance of committing a type one error or, I am 99.2% that poverty has an impact on teen pregnancy.

Percent of county with a B.A, Unemployment, Family Dysfunction, percent of the county non-white, and percentage of total Healthy New York enrollment were all insignificant, and had unacceptable p-values. These p-values indicated that I cannot reject the possibility of them have a 0 relationship with y. I used B.A. to try to explain that if there were a higher percentage of people in a county who went to college then there would be more roll models to look up to for teens. I think this was insignificant because not only is it encompassed in poverty, but the teens who are already in situations where they are willing to engage in high risk sex, are not going to be exposed to the individuals who have B.A.'s. Family Dysfunction was also insignificant; while I had accepted this to be significant I was not terribly surprised it was not, again because it can be explained by poverty. Also since family dysfunction as defined by the state encompasses so many variables in itself it was not a truly reliable beta. Unemployment was probably insignificant again due to poverty. Non-white while in itself is insignificant, which was agaiust the commonly held stereotype. This goes to prove further that teen pregnancy is much more an issue of opportunity cost than race. Teens coming from a poverty stricken background have a much lower opportunity cost of getting pregnant because they think they have nothing to loose in their future. While teen coming from middle or upper class have a much higher opportunity cost of not getting pregnant –with things like college, marriage, and salaries all up for debate.

It must also be noted that I ran two original regressions, one including the five boroughs of New York City the other excluding them. The reason for this was because in many of the regression statistics and graphs these observation points were clearly outliers, often noticeably affecting the r^2 lines. Examining the data after seeing the results of both regressions it was clear however that it is important to leave in New York City when running a state wide regression. Personally I don't feel you can give a true representation of the state while leaving out 42.74% of the states population and statistically it proved for a better regression.

Overall I was able to explain 48.3% of the variation in teen pregnancy, which is indicated by an r^2 of .483.

HETEROSCEDASTICITY

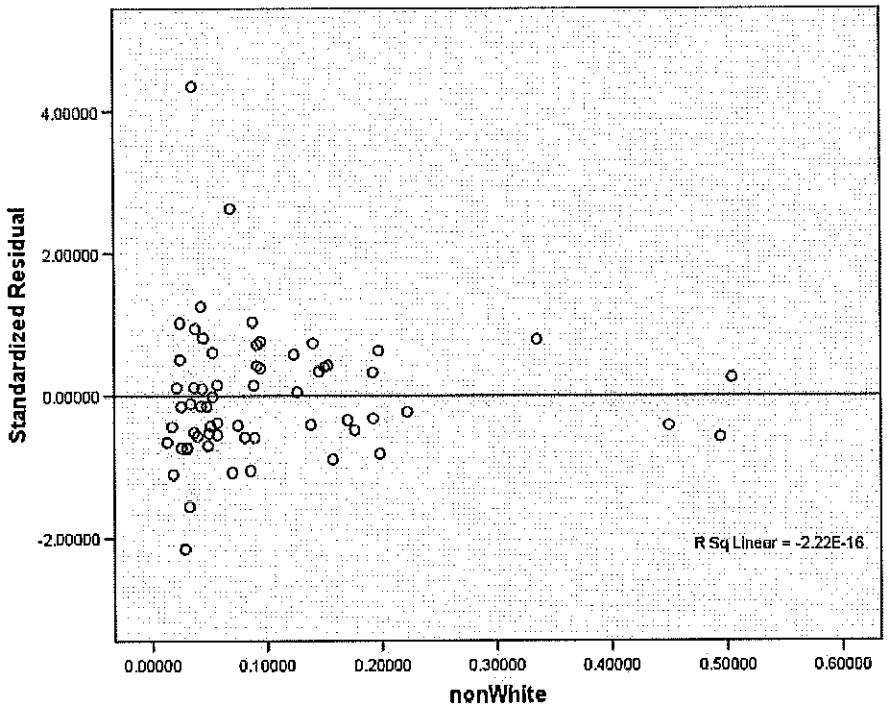
Despite the fact there appeared to be heteroscedasity in the initial regression after running both the spearman Spearman's Rank Correlation Test and taking the natural log of all the x's and the residuals, it was clear that hetroscedasity was not an issue with this regression. These results are further proven on the graphs on the following pages:

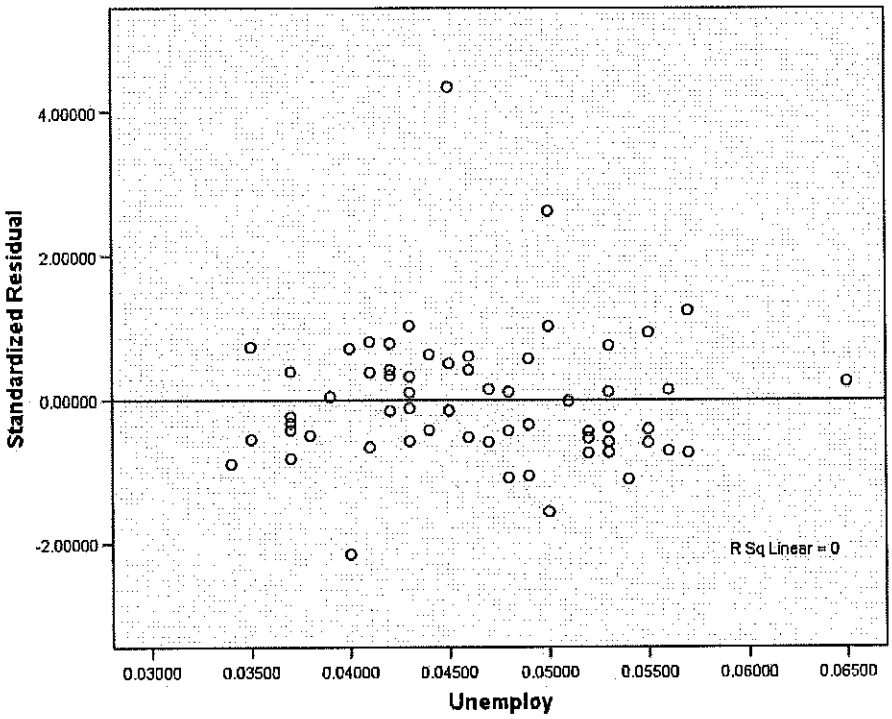
Variable	T-Stat
PerPov	-0.313
nonWhite	-0.871
Unemploy	0.871
BA	1.249
FamDysFun	0.19
HNY	0.63

Spearman's Rank Correlation Test

		MedIncome	nonWhite	Unemploy	BA	FamDisFun	HNY
MedIncome	Correlation Coefficient	1.000	.553(**)	-.623(**)	.697(**)	-.276(*)	.637(**)
	Sig. (2-tailed)	.	.000	.000	.000	.030	.000
	N	62	62	62	62	62	62

nonWhite	Correlation Coefficient	.553(**)	1.000	-.294(*)	.500(**)	-.121	.689(**)
	Sig. (2-tailed)	.000	.	.021	.000	.347	.000
	N	62	62	62	62	62	62
Unemploy	Correlation Coefficient	-.623(**)	-.294(*)	1.000	-.653(**)	.251(*)	-.456(**)
	Sig. (2-tailed)	.000	.021	.	.000	.049	.000
	N	62	62	62	62	62	62
BA	Correlation Coefficient	.697(**)	.500(**)	-.653(**)	1.000	-.319(*)	.628(**)
	Sig. (2-tailed)	.000	.000	.000	.	.011	.000
	N	62	62	62	62	62	62
FamDisFun	Correlation Coefficient	-.276(*)	-.121	.251(*)	-.319(*)	1.000	-.222
	Sig. (2-tailed)	.030	.347	.049	.011	.	.083
	N	62	62	62	62	62	62
HNY	Correlation Coefficient	.637(**)	.689(**)	-.456(**)	.628(**)	-.222	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	.083	.
	N	62	62	62	62	62	62

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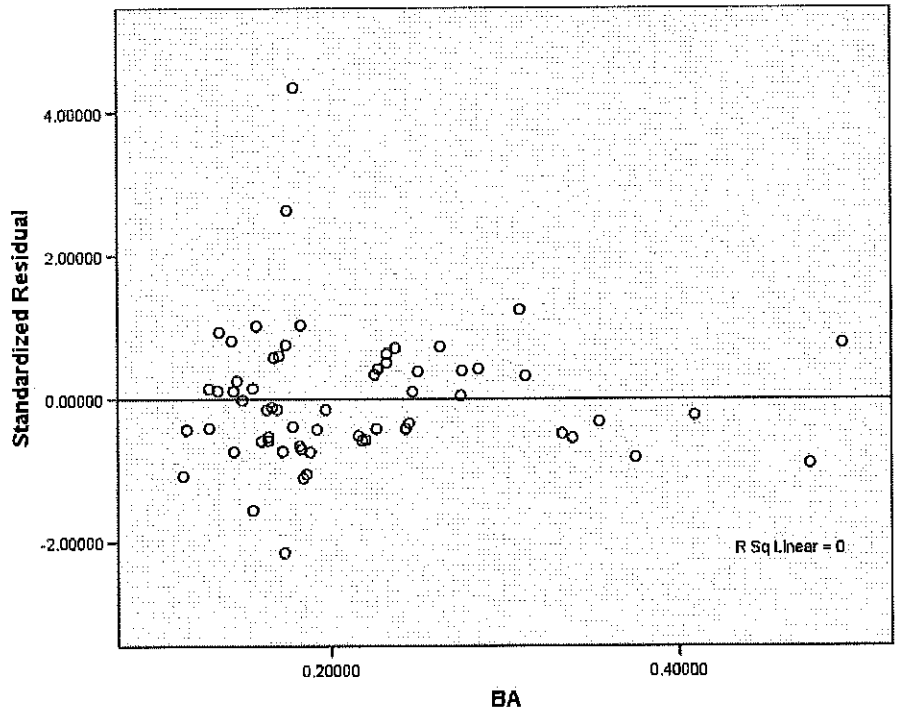
0.06500
Unemploy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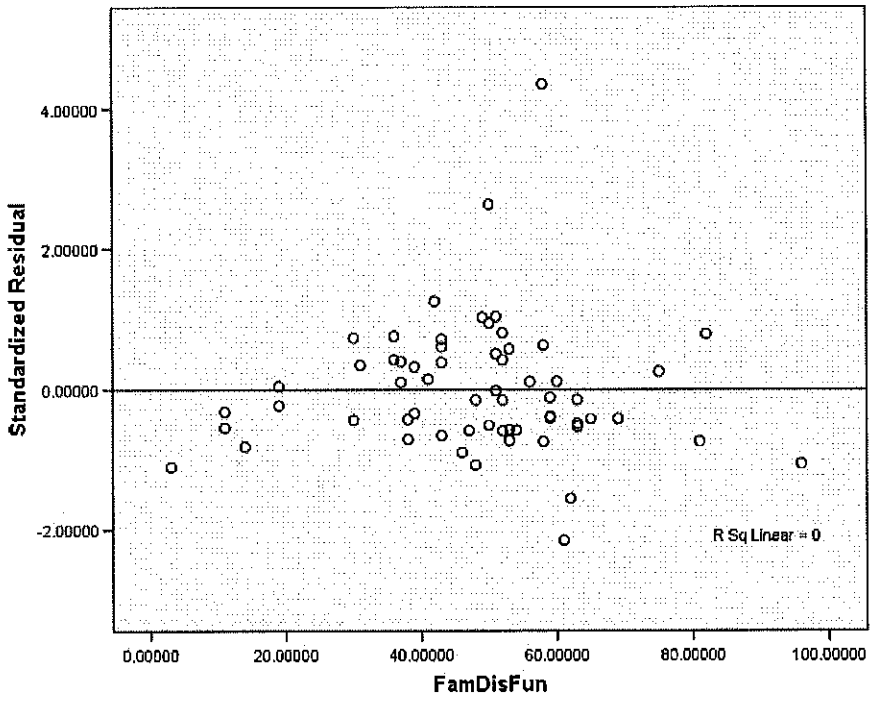
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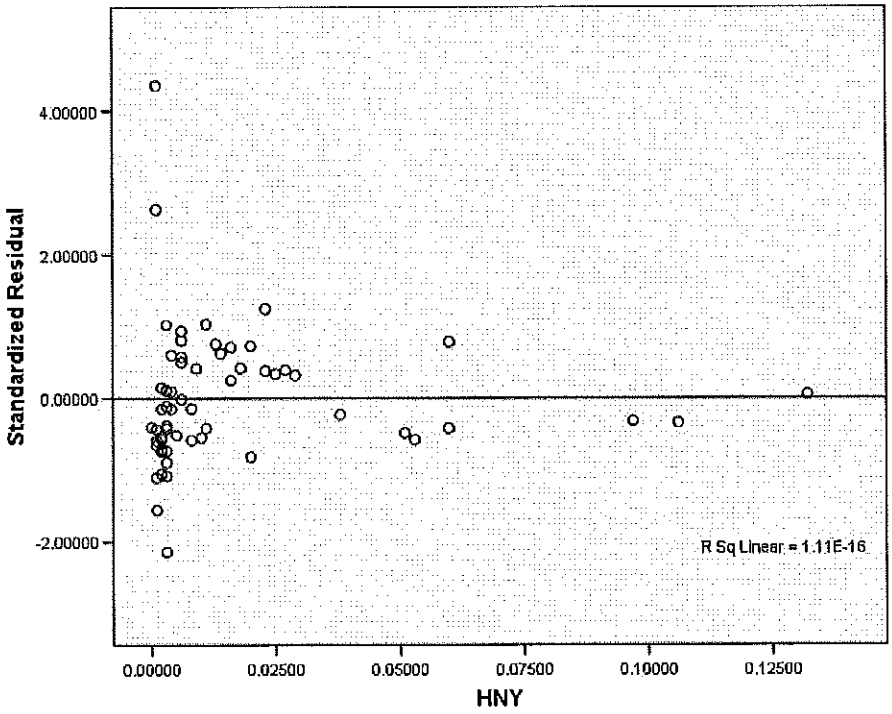
100.00000
FamDisFun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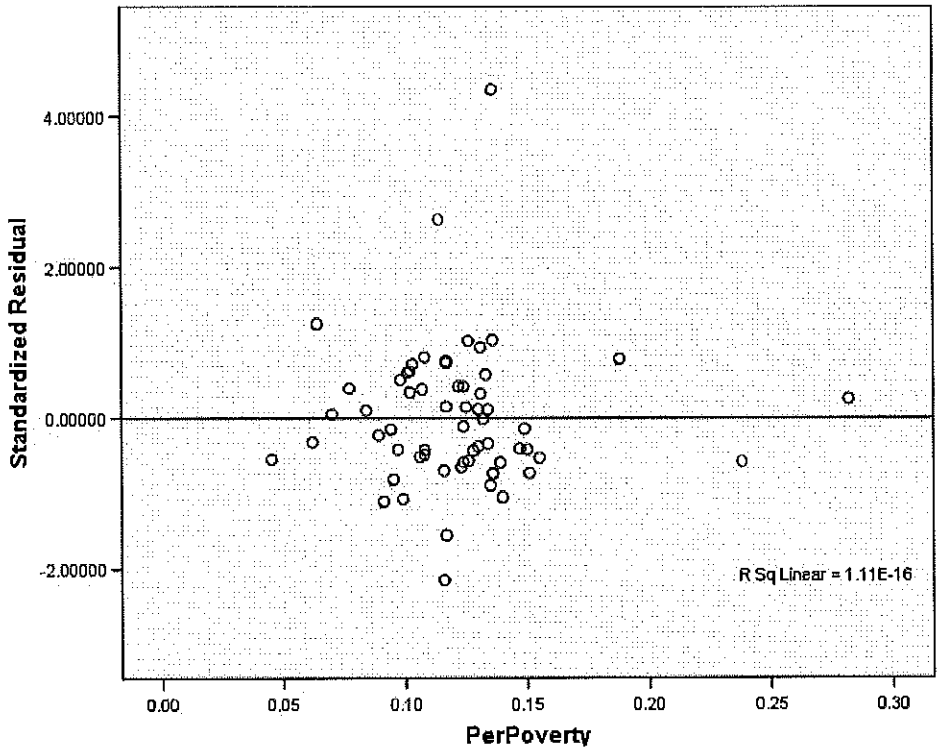
HNY



MULTICOLLINEARITY

There seems to be a problem with multicollinearity in the second regression. At first I was concerned that my variables of unemployment and percent living below poverty would be correlated, but when I checked them against each other as well as removed each from the equation and ran the regressions individually it only proved slight. The true problem is with percent living in poverty and the rest of the variables, also with unemployment and percent B.A. but since B.A. is an overall insignificant variable it is not extremely important to the regression.

I removed percent poverty and left unemployment, ran the regression again and the results confirmed only slight multicollinearity. Without unemployment the r^2 went down to .459 (from .483) and percent poverty significance went up from 1.920 to 2.741, a total change of .821. Also, as seen in the chart below the tolerance of collinearity was greater than .1, also indicating non-multicolinearity. Adjust r^2 can also be evaluated in the process. Before I removed unemployment I had an r^2 of .483 and an adjusted r^2 of .427, after removing this variable from the regression my r^2 when down to .459 (a change of -.024) and my adjusted r^2 went down to .411 (a change of -.016). What this indicates is that unemployment was 'pulling its weight' in the regression so the slightly lower overall r^2 it may be a sign that leaving unemployment in is a good idea.

Last I removed percent living in poverty and left the rest of the variables in. Even though all of them became significant (t-stat above 2.0) I don't think this shows true relevance because they are encompassed in the percent of the population living in poverty.

Coefficients(a)

Tolerance	VIF
.281	3.559
.452	2.213
.418	2.394
.576	1.735
.545	1.836
.246	4.069

a Dependent Variable: TeenPreg

Also to show the multicollinearity results the Collinearity Diagnostics, shown bellow, you can see that since there is only one variable with a conditional index over 30.00 (38.008) there is not an overly significant a collinearity issue.

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index
1	1	5.697	1.000
	2	.824	2.630
	3	.288	4.448
	4	.120	6.897
	5	.054	10.294
	6	.014	20.483
	7	.004	38.008

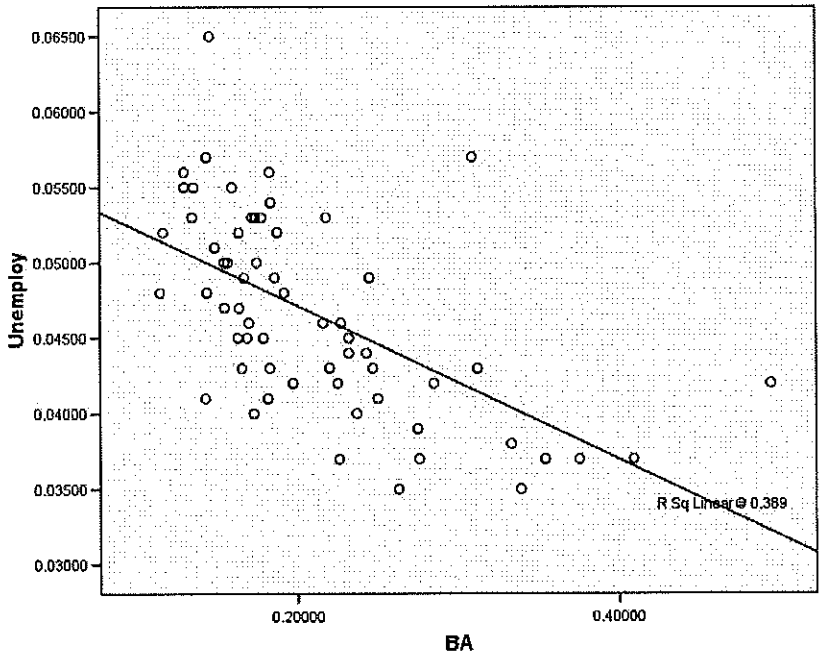
a Dependent Variable: TeenPreg

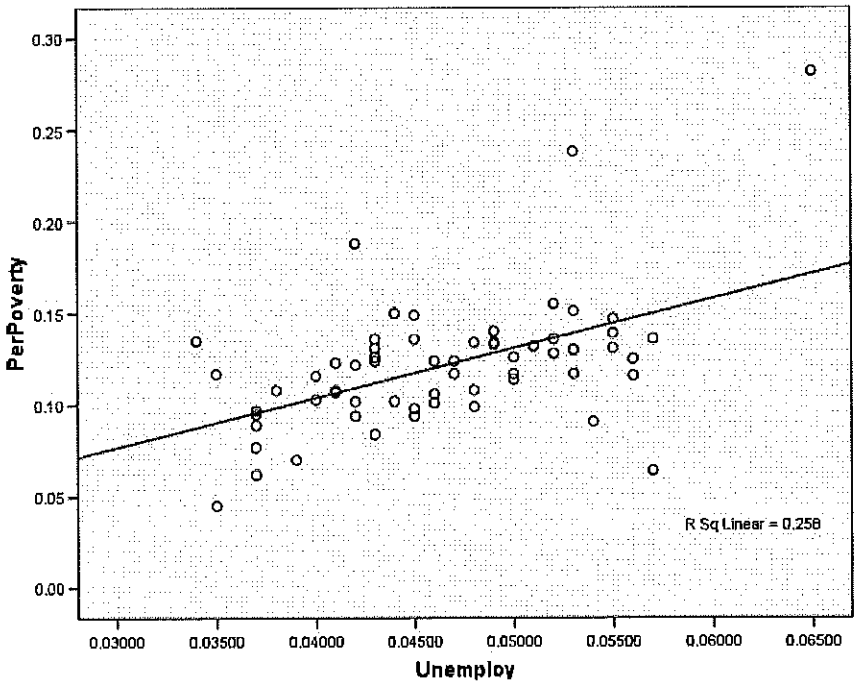
Lastly to help support my conclusions about multicollinearity I ran a Pearson Correlation Test, which can be seen below.

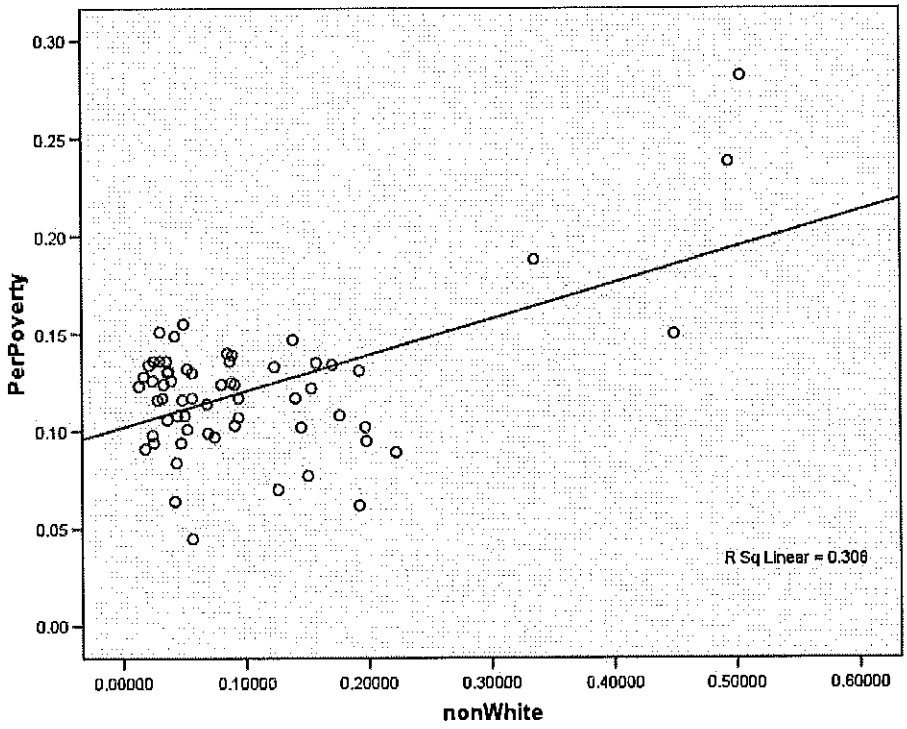
Correlations

		TeenPreg	nonWhite	Unemploy	BA	FamDysFun	HNY	PerPoverty
Pearson Correlation	TeenPreg	1.000	.444	.361	-.033	.468	.064	.647
	nonWhite	.444	1.000	-.021	.406	.102	.517	.555
	Unemploy	.361	-.021	1.000	-.624	.302	-.292	.508
	BA	-.033	.406	-.624	1.000	-.269	.494	-.212
	FamDysFun	.468	.102	.302	-.269	1.000	-.257	.580
	HNY	.064	.517	-.292	.494	-.257	1.000	-.062
	PerPoverty	.647	.555	.508	-.212	.580	-.062	1.000

To give a visual of the multicollinearity issues I included graphs of all variables against percent living in poverty and unemployment against percent of the county with a B.A.



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0.15
0.10
0.05
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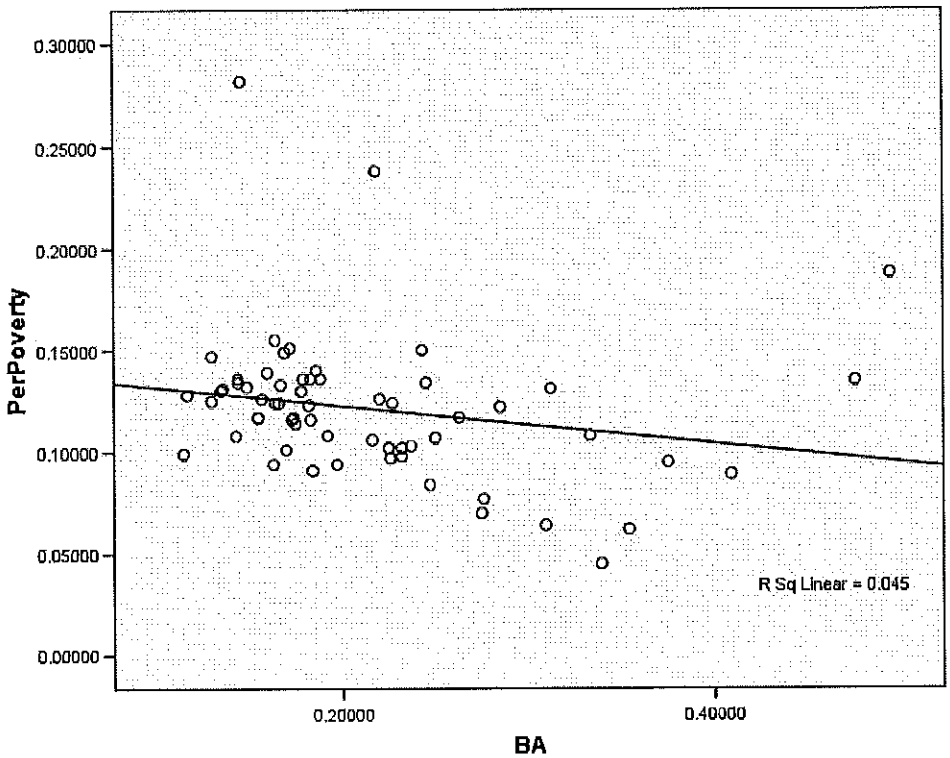
0.40000
0.50000
0.60000
nonWhite


PerPoverty
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0.15000
0.10000
0.05000
0.00000
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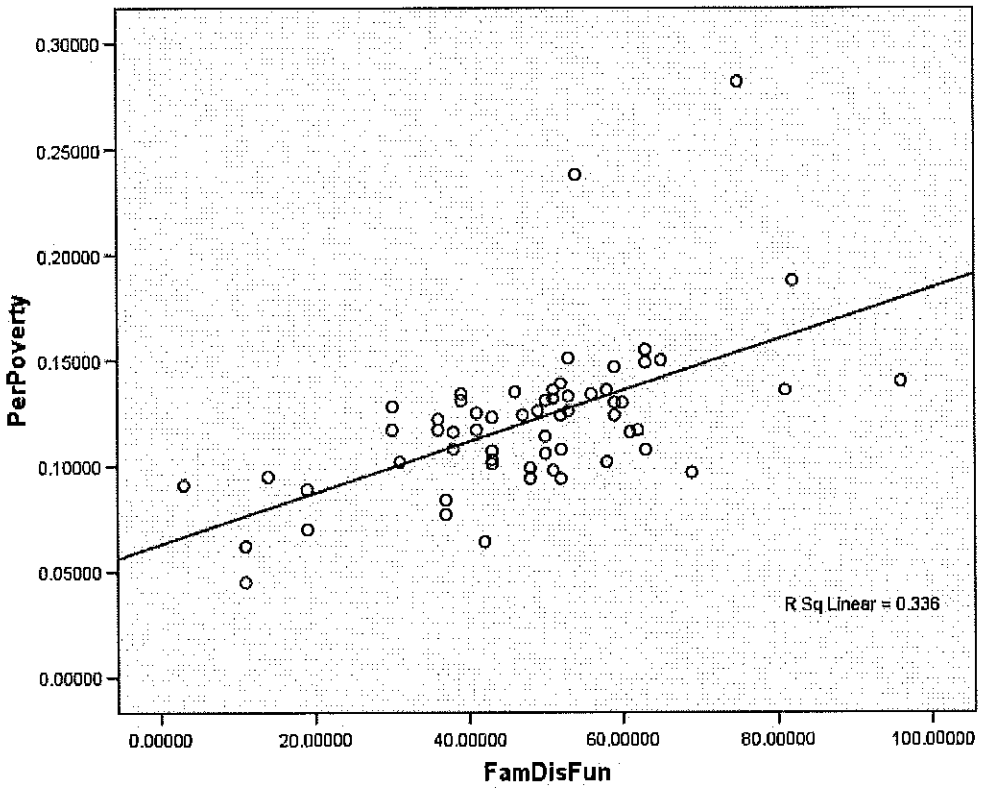
0.40000
BA


PerPoverty
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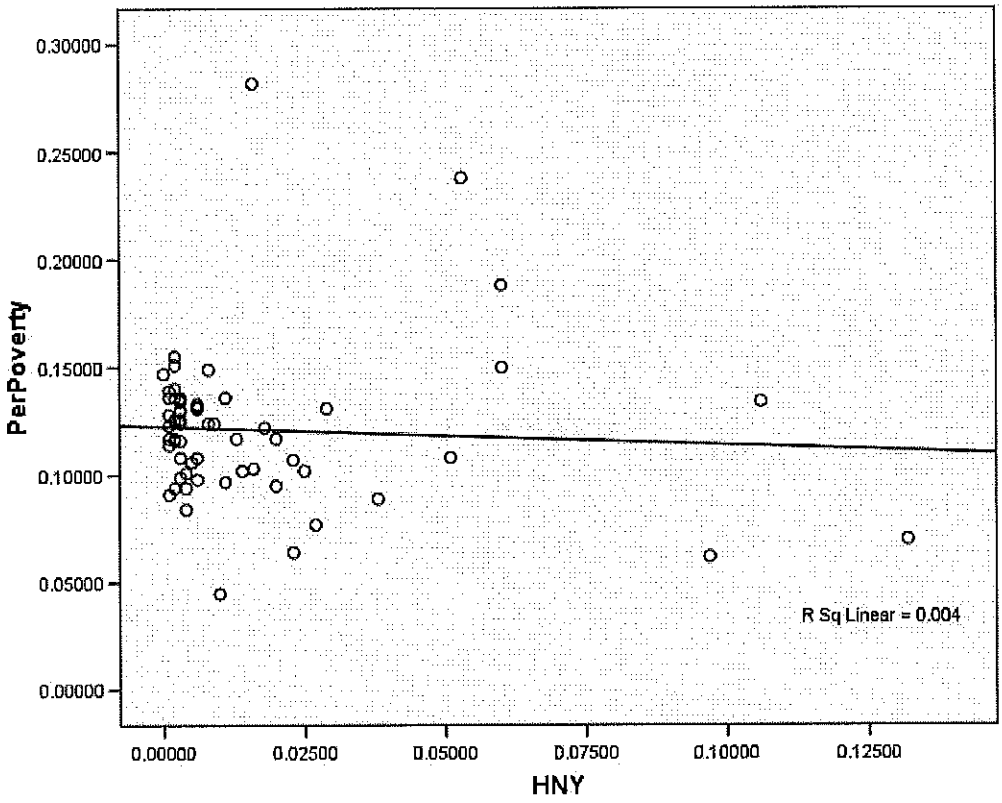
FamDisFun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0.05000
0.00000
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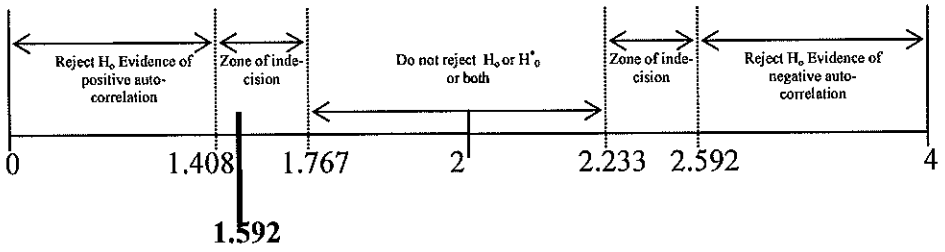
0.02500
0.05000
0.07500
0.10000
0.12500
HNY

AUTOCORRELATION

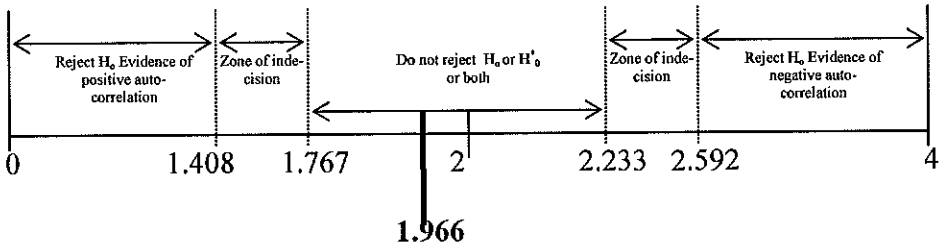
Since the data used for this regression is cross-sectional autocorrelation is not an issue. However, still deciding to check this I used the Durbin-Watson test. The Durbin-Watson statistic came up 1.592. Since this falls between the range of 1.408 and 1.767 (provided by www.csus.edu) I am able to confirm that autocorrelation is not a concern for this regression.

Durbin-Watson Chart

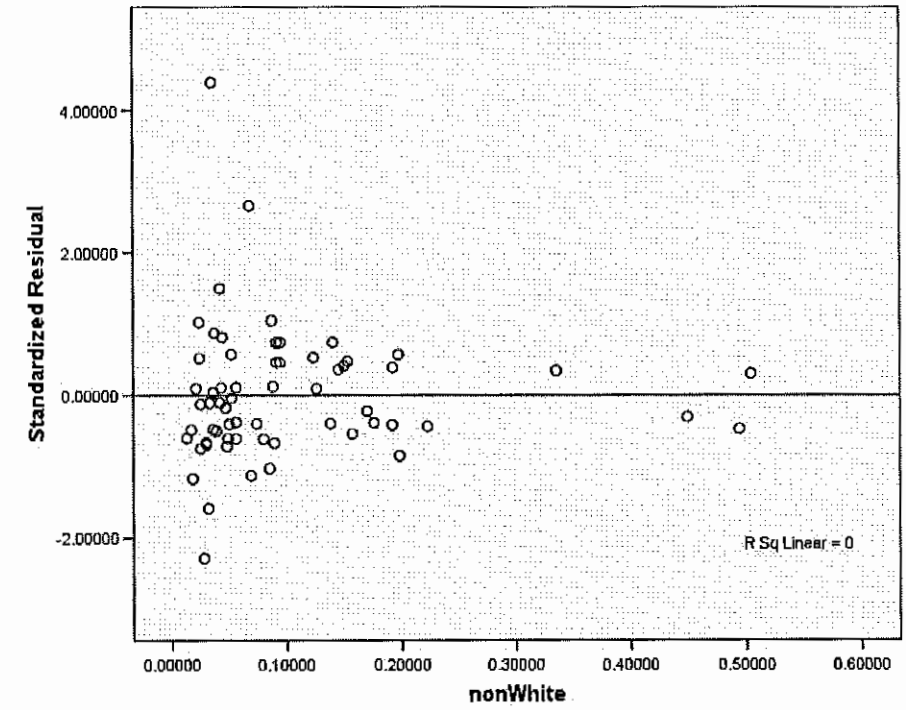


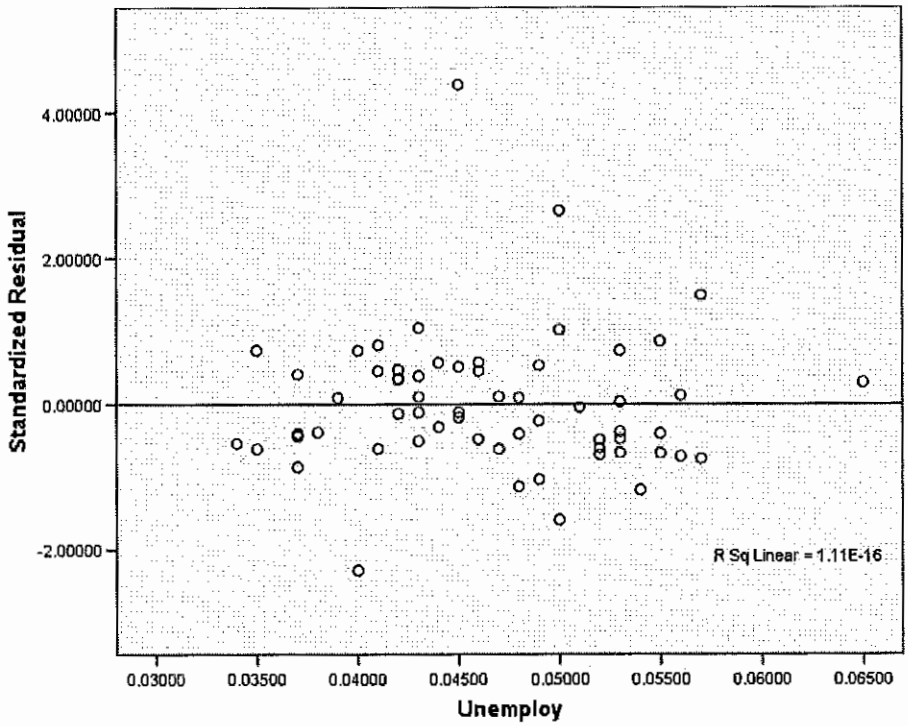
Even though this is in the indecisive zone for k' of 5 and an n of 60 and a significance of .05 I still rule out the problem of autocorrelation because again, the data used in cross sectional.

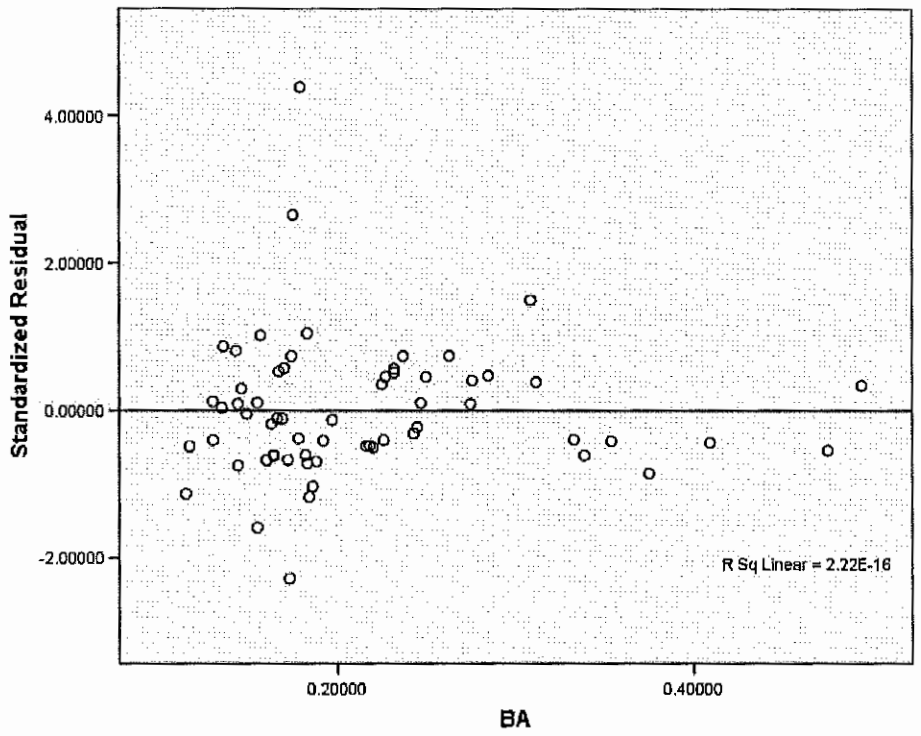
To confirm lack of autocorrelation I re-ran my regression with data points randomly placed. Since the placement of information does not affect r^2 or any other important information the only result is the confirmation of no autocorrelation. This time I got a Durbin-Watson statistic of 1.966, which is clearly in the zone of no autocorrelation. The only explanation for the previous indecisiveness is that the data was accidentally placed in an order that gave a false possibility of autocorrelation.



The following graphs give a visual confirmation that there is no correlation between the residuals since there is no significant pattern. This would only occur if I used times series data.



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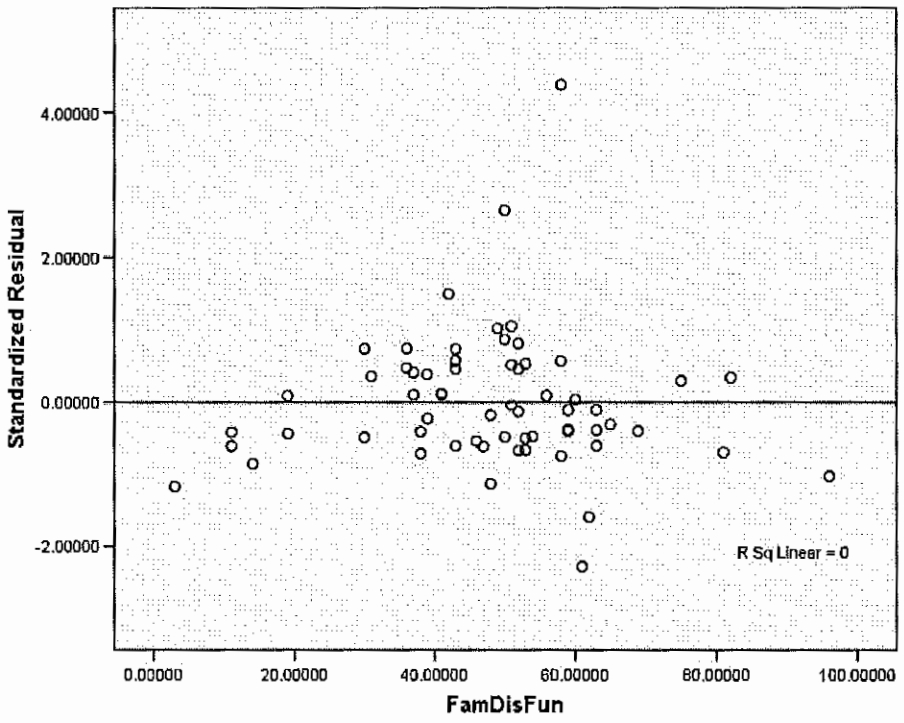
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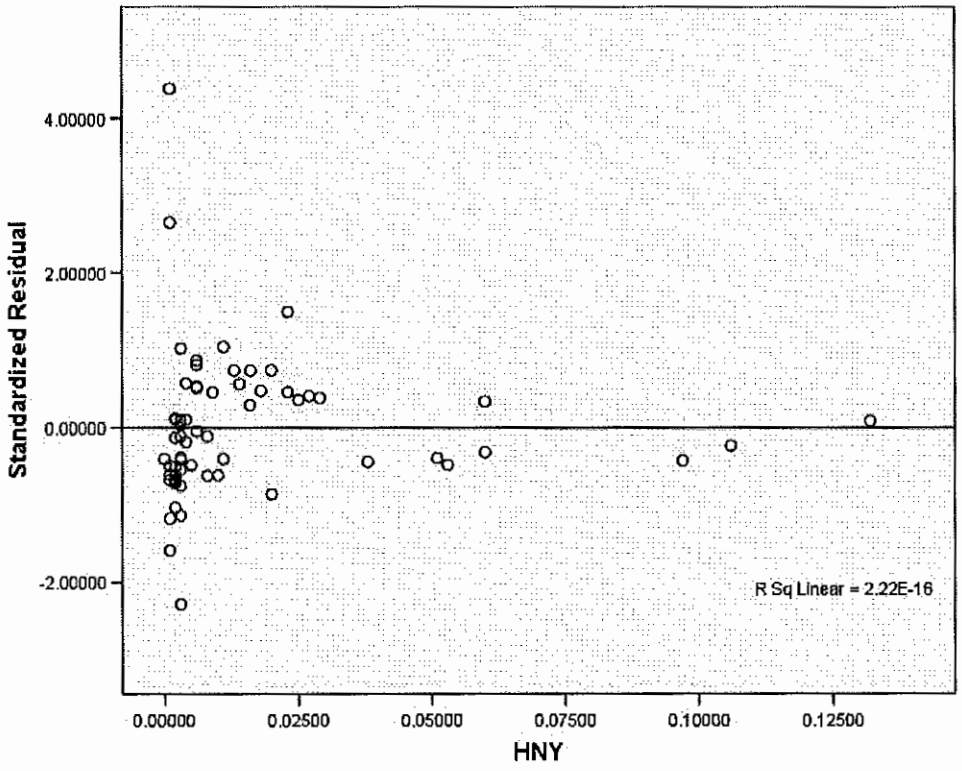
FamDisFun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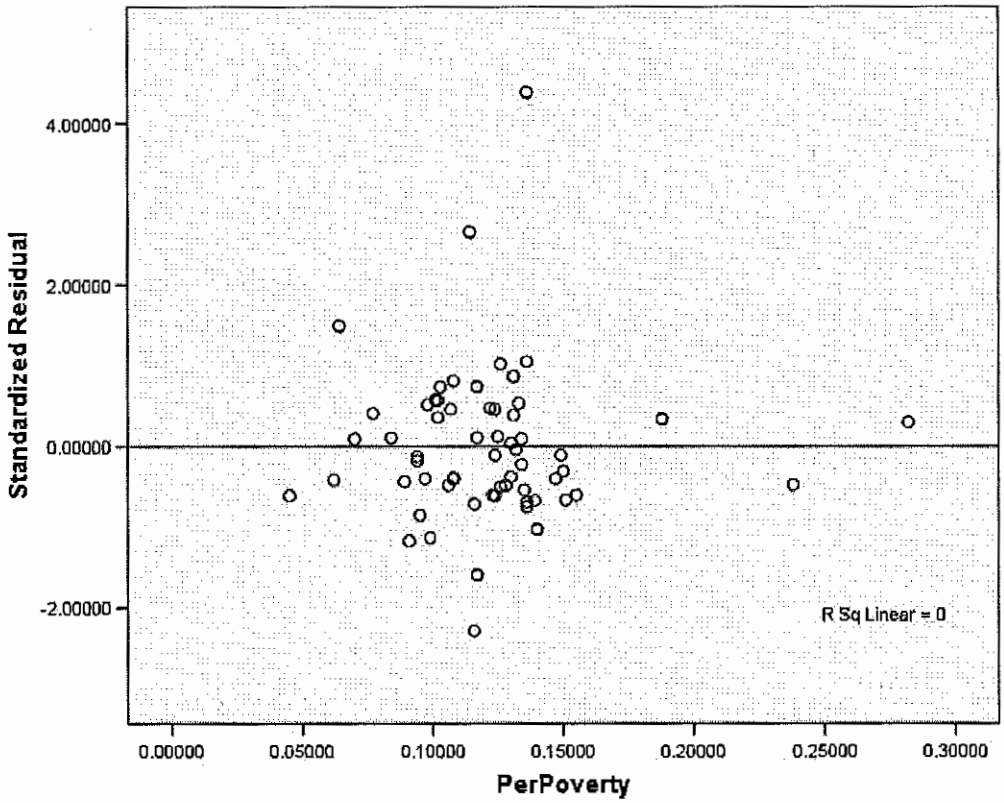
HNY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0.15000
0.20000
0.25000
0.30000
PerPoverty

CONCLUSION

Overall this regression was able to provide a decent insight into what causes teen pregnancy. Being able to explain 48.3% of the variation in teen pregnancy is arguable an accomplishment, but more importantly I was able to disprove that teen pregnancy is a factor of social and moral influences and much more a result of economic status. It is clear that poverty is extremely important in explaining the variation in teen pregnancy, and one's opportunity cost has a huge impact on decisions. The biggest problem I encountered was multicollinearity between county population living below poverty and the rest of my variables. Poverty casts a blanket over so many indicators that it is hard to separate things like race and unemployment from it. Teen pregnancy is simply one more thing that perpetuates the cycles of poverty in this country, and according to my regression education and social services are not going to stop this –the only true solution is to break people away from the serious chains of poverty that are holding them down.

APPENDIX

Counties	Median Family Income '04	Non-White %	Unemployment Rate 2006	% County with B.A.	Family Dysfunction 2000	County Share H.N.Y	Percent Below Poverty	Teen Pregnancy Rate
Manhattan	88797	0.335	0.042	0.494	82	0.06	0.1880	0.0138895
Albany	38652	0.176	0.038	0.333	63	0.051	0.1080	0.0070322
Allegany	21697	0.03	0.053	0.172	53	0.002	0.1510	0.0070245
Bronx	23513	0.504	0.065	0.146	75	0.016	0.2820	0.0167196
Brooklyn	28462	0.494	0.053	0.218	54	0.053	0.2380	0.0122675
Broome	29119	0.091	0.046	0.227	52	0.009	0.1240	0.0085316
Cattaraugus	26359	0.052	0.051	0.149	51	0.006	0.1320	0.0075015
Cayuga	27594	0.056	0.047	0.155	41	0.002	0.1170	0.0065654
Chautauqua	24917	0.042	0.045	0.169	63	0.008	0.1490	0.0078648
Chemung	27456	0.085	0.049	0.186	96	0.002	0.1400	0.0074649
Chenango	25533	0.021	0.048	0.144	56	0.003	0.1340	0.0076128
Clinton	26639	0.056	0.053	0.178	59	0.003	0.1300	0.0073848
Columbia	31937	0.074	0.037	0.226	69	0.011	0.0970	0.0055002
Cortland	25012	0.03	0.052	0.188	81	0.002	0.1360	0.0076427
Delaware	26352	0.033	0.043	0.166	59	0.003	0.1240	0.0066305
Dutchess	36467	0.15	0.037	0.276	37	0.027	0.0770	0.006062
Erie	33039	0.17	0.049	0.245	39	0.106	0.1340	0.0082464
Essex	26757	0.048	0.056	0.183	38	0.002	0.1160	0.0056469
Franklin	22366	0.138	0.055	0.13	59	0	0.1470	0.0079822
Fulton	28578	0.036	0.053	0.135	60	0.003	0.1300	0.0080251
Genesee	27810	0.047	0.045	0.163	48	0.004	0.0940	0.0053319
Greene	28114	0.08	0.047	0.164	47	0.008	0.1240	0.0055863
Hamilton	28904	0.018	0.054	0.184	3	0.001	0.0910	0.0021247
Herkimer	25261	0.024	0.05	0.157	49	0.003	0.1260	0.009454
Jefferson	30137	0.089	0.055	0.16	52	0.001	0.1390	0.0068926
Lewis	23868	0.017	0.052	0.117	30	0.001	0.1280	0.0052798
Livingston	26300	0.05	0.048	0.192	38	0.003	0.1080	0.0053365

Madison	27881	0.036	0.046	0.216	50	0.005	0.1060	0.0055236
Monroe	36062	0.192	0.043	0.312	39	0.029	0.1310	0.0087455
Montgomery	28096	0.037	0.055	0.136	50	0.006	0.1310	0.0097486
Nassau	54941	0.192	0.037	0.354	11	0.097	0.0620	0.0038851
Niagara	27923	0.094	0.053	0.174	36	0.013	0.1170	0.0087166
Oneida	27798	0.087	0.043	0.183	51	0.011	0.1360	0.0096032
Onondaga	33542	0.153	0.042	0.285	36	0.018	0.1220	0.0080636
Ontario	32270	0.043	0.043	0.247	37	0.004	0.0840	0.0055186
Orange	31419	0.145	0.042	0.225	31	0.025	0.1020	0.0066371
Orleans	23637	0.088	0.056	0.13	41	0.002	0.1250	0.007707
Oswego	24367	0.025	0.057	0.144	58	0.003	0.1360	0.0068096
Otsego	26153	0.039	0.043	0.22	53	0.002	0.1260	0.0059193
Putnam	43992	0.056	0.035	0.339	11	0.01	0.0450	0.0014921
Queens	31912	0.449	0.044	0.243	65	0.06	0.1500	0.0095202
Rensselaer	31686	0.091	0.04	0.237	43	0.016	0.1030	0.0076435
Rockland	46505	0.198	0.037	0.375	14	0.02	0.0950	0.0035514
Saratoga	22238	0.042	0.057	0.309	42	0.023	0.0640	0.0102047
Schenectady	35288	0.14	0.035	0.263	30	0.02	0.1170	0.00738
Schoharie	35816	0.028	0.04	0.173	61	0.003	0.1160	0.0013185
Schuyler	26973	0.032	0.05	0.155	62	0.001	0.1170	0.003851
Seneca	25438	0.068	0.05	0.175	50	0.001	0.1140	0.0130046
St. Lawrence	30731	0.049	0.052	0.164	63	0.002	0.1550	0.0075968
Staten Island	37459	0.197	0.044	0.232	58	0.014	0.1020	0.0085117
Steuben	26003	0.035	0.045	0.179	58	0.001	0.1360	0.0173032
Suffolk	42373	0.126	0.039	0.275	19	0.132	0.0700	0.0054089
Sullivan	29645	0.123	0.049	0.167	53	0.006	0.1330	0.0090132
Tioga	27229	0.025	0.042	0.197	52	0.002	0.0940	0.0054363
Tompkins	28462	0.157	0.034	0.475	46	0.003	0.1350	0.0068644
Ulster	29811	0.094	0.041	0.25	43	0.023	0.1070	0.0073956
Warren	31010	0.024	0.045	0.232	51	0.006	0.0980	0.0075224
Washington	24984	0.044	0.041	0.143	52	0.006	0.1080	0.0076196
Wayne	28263	0.052	0.046	0.17	43	0.004	0.1010	0.0071956
Westchester	62045	0.222	0.037	0.409	19	0.038	0.0890	0.0049428
Wyoming	25050	0.069	0.048	0.115	48	0.003	0.0990	0.0034157
Yates	23772	0.013	0.041	0.182	43	0.001	0.1230	0.00466

SOUTH AFRICA

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INTRODUCTION

South Africa is a quickly growing emerging market that has given investors a potential investment opportunity. The JSE stock exchange is the main exchange in South Africa. The country itself has gone through dramatic changes since the 1990's. South Africa has left the old legacy of Apartheid and has moved into large growing economy. The Apartheid divided the South African economy. Sanctions were placed on the country in the 1980's and left a lasting impact on the economy. After holding its first multi-racial elections in 1994, the African National Congress looked to restore the economy. The country has well developed financial, legal, communications, energy, mining, and transportation sectors. South Africa is the world's largest producer of platinum, gold and chromium. Some of the problems South Africa faces are a high unemployment rate of 25.5% (2006 est.), and leftover economic problems from the Apartheid sanctions. The agricultural sector dominated the GDP composition until recently, it only contributes to 2.7% of the country's GDP (2006 est.). Services consist of 66.4% and industry consists of 30.9 % of the GDP. The 2006 estimated real GDP growth rate is 5%. Since 1994 South Africa is attempting to promote domestic competitiveness, GDP growth of 6%, and to reduce unemployment.

OVERVIEW OF THE SOUTH AFRICAN ECONOMIC SITUATION

The South African economy has been attempting to overcome the previous sanctions placed on the country because of the Apartheid. In the middle of the 1990's the sanctions left the country with low growth and a greatly damaged the economy. After the democratic elections took place in 1994 the new government wanted to start economic reforms in order to allow South Africa to be globally competitive. After sanctions were taken off, the International Monetary Fund gave South Africa a much-needed $850 million.

Production in the South African economy has changed over the late 1990's, early 2000's. The economy was formerly dominated by Agriculture, but is becoming more and more industrial. These are the signs of an emerging market. The 2006 GDP by sector was 2.6% in agriculture, 30.3% in industry, and 67.1% in services (CIA FACTBOOK). The new government placed a new economic policy into effect. The Growth, Employment, and Redistribution strategy (GEAR) set goals of sustained annual real GDP growth of 6% or more. The policy also set goals to create 400,000 new jobs each year. South Africa's government was committed to having free trade, open markets, lower inflation, and lower unemployment. The GEAR policy lasted from 1996-2000 and the effects of the policy started taking place after the policy ended. There was success in keeping inflation down from 2001-2005 and because of this the Reserve Bank was able to reduce the interest rate. The goal of creating new jobs did not work as well as the other goals. The unemployment rate in South Africa is 25.5% (2006 est.).

The reductions of the interest rates have resulted in growth in GDP. Since 1999 quarterly GDP has been positive. The GDP growth has not hit the goal of 6%, but the growth has been more consistent and positive. The fact that GDP has been consistent has increased desire for foreign investment. South Africa is the largest producer and exporter of gold and platinum. The country had 59.15 billion in exports (2006 est.)

Table 4 shows how South Africa has improved its real GDP growth. The GDP growth has gone up by about 1.4%. The cumulated market return has gone up drastically. The exchange rate has also been more stable. The table below also allows for a nice comparison between South Africa and the United States. The real GDP growth is similar, but South Africa has higher inflation. Both countries have a negative current account.

Table 4: Comparative Economic Analysis

	South Africa		USA	
	97-02	02-06	97-02	02-06
Cumulated Mkt Return	-5.34%	31.71%	0.02%	9.62%
Current Account as % of GDP	-1.17	-2.40	-3.20	-5.54
Current Account as % of XGS	-3.17	-7.74	-23.27	-42.12
Debt Service ratio	11.23	9.88	26.33	21.18
Exchange Rate Stability	-8.30	6.82	3.90	0.60
GDP per Head of Population	2896.33	4855.00	32955.33	38823.00
Inflation	7.42	5.60	2.37	2.48
International Liquidity	1.55	2.24	1.00	0.70
Real GDP Growth	1.87	3.20	3.18	3.06
Total Foreign Debt	35.08	43.88	1383.26	7579.51

The ICRG Rating System has allowed us to compare major macroeconomic factors between South Africa and USA. There are 40 different risk categories, which are broken down into Economic, Financial, and Political risks. There are three periods from 1997-2007, 1997-2002, and 2002-2007. The values are rated from high to low risk levels. 1 would be extremely risky and 100 would be practically risk free. As you can see below in Table 4, South Africa has improved its economic and financial risk ratings during the two time periods. The political risk rating has worsened. When compared to the Untied States, South Africa has a better economic risk rating. The United States has better financial and political risk ratings. Also listed is the difference and z-significance level of the changes between the two time periods. The three risk factors were correlated between South Africa and United States in each period. Then we took the difference between the two to see if there was any significance in the difference of the correlations. The results that we attained show that South Africa is becoming more and more correlated towards the US, specifically with economic and political risk aspects.

Table 5: Risk Ratings

Panel A: ICRG Country Risk Scores

	South Africa			USA		
Type	1997-2007	1997-2002	2002-2007	1997-2007	1997-2002	2002-2007
Average of Economic Risk Rating	35.9	35.2	36.6	39.6	40.3	39.0
Average of Financial Risk Rating	37.7	36.7	38.8	35.0	37.6	32.4
Average of Political Risk Rating	68.6	69.0	68.1	83.5	86.7	80.3
Average of Bureaucracy Quality (L)	2.1	2.3	2.0	4.0	4.0	4.0
Average of Corruption (F)	2.9	3.4	2.3	4.2	4.0	4.3
Average of Democratic Accountability (K)	4.3	4.1	4.6	5.8	5.7	5.8
Average of Ethnic Tensions (J)	3.5	3.3	3.7	5.0	4.9	5.0
Average of External Conflict (E)	10.4	10.4	10.4	8.0	8.6	7.3
Average of Government Stability (A)	9.5	9.8	9.3	9.7	10.4	9.0
Average of Internal Conflict (D)	8.9	8.9	9.0	10.6	11.0	10.2
Average of Investment Profile (C)	9.8	8.8	10.7	11.0	10.3	11.7
Average of Law & Order (I)	2.3	2.4	2.2	5.5	6.0	5.0
Average of Military in Politics (G)	4.9	5.0	4.9	5.1	5.9	4.3
Average of Religious Tensions (H)	5.4	5.9	5.0	5.6	5.8	5.3
Average of Socioeconomic Conditions (B)	4.5	4.9	4.1	9.1	9.7	8.5
Average of Government Unity	2.8	2.8	2.8	3.8	4.0	3.8
Average of Legislative Strength	3.9	4.0	3.8	3.1	3.2	3.1
Average of Consumer Confidence	2.1	2.3	2.1	2.3	2.7	2.2
Average of Poverty	2.0	2.0	2.0	3.5	3.5	3.5
Average of Contract Viability	3.5	3.5	3.5	3.9	3.7	4.0
Average of Profits Repatriation	3.4	3.6	3.4	3.7	3.7	3.7
Average of Payments Delays	3.8	3.7	3.9	4.0	3.8	4.0
Average of Civil War	4.0	4.0	4.0	4.0	4.0	4.0
Average of Terrorism	2.7	2.2	2.8	2.5	2.8	2.4
Average of Civil Disorder	2.2	2.5	2.2	3.8	3.9	3.8
Average of War	4.0	4.0	4.0	3.1	3.0	3.1
Average of Cross-border Conflict	3.4	3.2	3.5	1.7	2.3	1.6
Average of Foreign Pressures	2.9	2.9	3.0	2.6	2.9	2.5
Average of Risk for GDP per Head	2.1	1.9	2.3	4.9	4.8	5.0
Average of Risk for GDP Growth	7.9	7.5	8.4	8.1	7.9	8.2
Average of Risk for Inflation	8.3	8.1	8.5	9.5	9.5	9.5
Average of Risk for Budget Balance	6.5	6.2	6.8	7.2	7.9	6.5
Average of Risk for Current Account as % of GDP	10.8	10.9	10.6	10.2	10.5	9.8
Average of Risk for Foreign Debt	7.7	7.3	8.1	8.2	9.3	7.1
Average of Risk for Debt Service	9.1	8.9	9.3	7.4	7.0	7.7
Average of Risk for Current Account as % of XGS	11.6	11.8	11.4	9.1	10.0	8.2
Average of Risk for International Liquidity	1.2	0.9	1.4	0.5	0.6	0.4
Average of Risk for Exchange Rate Stability	7.9	7.2	8.6	9.1	9.2	9.0
Average of Popular support	2.6	2.7	2.6	2.4	3.8	2.2
Average of Unemployment	0.0	0.1	0.0	2.8	3.4	2.7

Panel B: Change in ICRG Ratings Correlation

	South Africa			
	1997-2002	2002-2007	Difference	Z-stat
Economic Risk Rating	-0.22722	0.062889	0.290107	1.640294
Financial Risk Rating	-0.12576	0.047021	0.172785	0.97694
Political Risk Rating	0.062955	0.389841	0.326885	1.84824

WOULD YOU INCLUDE THE SOUTH AFRICAN MARKET IN A GLOBALLY DIVERSIFIED PORTFOLIO?

In order to decide whether or not invest in the South African Market we will first look at the reward to risk of South Africa compared to other indices. The indices we will compare them to are the IFCG Asia, IFCG Europe, IFCG ME and Africa, IFCG Latin America, IFCG Composite. The most important information from Table 1 are the monthly market returns and the monthly market standard deviations. When doing comparison these two factors held the most weight.

The three different time periods used are 1997-2007, 1997-2002 and 2002-2007. South Africa appears competitive with the other high performing indices. The most important time period is the most recent 2002-2007. In this time period South Africa finally overcame the majority of their sanctions placed on them. In comparing the two time periods, South Africa's monthly market return has gone up by 2% and monthly standard deviation has gone down by almost 4%. This is an aspect that makes South Africa more attractive, but when you compare them to the other indices they perform poorly. As you can see below they are 4 out of 6 in returns and 4 out of 6 in standard deviation. From these results we can compare the return to risk ratio. In this ranking South Africa is the worst out of the 6. This is one aspect where South Africa is unattractive towards portfolio investors.

In addition to comparing actual monthly returns and monthly standard deviation values, correlation matrices will allow us to compare how South Africa returns move according to other indices. The following tables compare the correlations in US dollars for the time period of 1997-2002 and 2002-2007. In 1997-2002 the South African market is highly correlated to the Middle East and Africa index, which makes sense because of its location. It is expected that the country will have similar returns with the index it is located in. The next time period South Africa becomes significantly less correlated with the Middle East and Africa index. This shows how the South African market is growing apart from the other countries around its location.

Table I: Summary Statistics

	Period	# company	Market Capitalization	Value Traded	Monthly Return	Monthly Std. Dev.	PE	PB	DY
South Africa	1997-2007	84	$119,441.77	$7,844.05	1.19%	8.61%	12.5	2.31	3.46%
	1997-2002	67	$81,057.14	$3,406.51	-0.26%	10.58%	12.21	2.00	3.40%
	2002-2007	100	$154,170.72	$11,838.97	2.25%	6.40%	12.76	2.59	3.48%
IFCG Asia	1997-2007	1106	$800,780.66	$152,126.31	0.86%	7.08%	95.42	1.92	1.81%
	1997-2002	1060	$526,896.50	$96,844.88	-0.51%	8.63%	178.6	1.83	1.41%
	2002-2007	1148	$1,162,866.32	$202,142.85	2.10%	4.92%	20.16	2	2.14%
IFCG Europe	1997-2007	102	$150,229.48	$15,335.26	1.27%	11.11%	21.95	1.39	1.54%
	1997-2002	117	$72,012.16	$2,951.64	-0.64%	14.03%	28.03	1.02	1.32%
	2002-2007	89	$239,092.77	$26,539.49	3.03%	7.21%	16.45	1.72	1.74%
IFCG MEA	1997-2007	375	$306,814.56	$30,178.20	1.12%	5.81%	17.42	2.27	3.14%
	1997-2002	331	$152,119.85	$6,907.10	-0.10%	6.95%	14.09	1.91	3.53%
	2002-2007	414	$446,776.44	$51,233.00	2.23%	4.49%	20.44	3.49	2.78%
IFCG Latin America	1997-2007	277	$289,839.38	$14,295.36	1.33%	8.59%	14.28	1.71	3.45%
	1997-2002	298	$240,380.40	$9,430.12	-0.69%	10.00%	14.43	1.35	3.75%
	2002-2007	258	$334,387.98	$18,697.23	3.15%	6.66%	14.14	2.04	3.23%
IFCG Composite	1997-2007	1938	$1,600,166.16	$221,373.10	1.01%	6.48%	21.15	1.94	2.33%
	1997-2002	1914	$1,048,226.75	$123,088.55	-0.47%	7.89%	24.47	1.69	2.20%
	2002-2007	1960	$2,213,825.62	$308,497.69	2.35%	4.54%	18.15	2.17	2.36%

Table 3 shows the difference in correlation between the two time periods. The only significant change for South Africa is how it became less correlated from the Middle East and Africa index. This is significant because it shows how the South African market is moving away from its local market and towards the EAFE and IFCG Europe indices. The Z score for this statistic is -2.42, which is significant on a 99% level.

Table 2: Monthly Returns Correlation Matrices

Panel A: 1997-2002

	EAFE	USA	Asia	Europe	Latin America	ME & Africa	South Africa
EAFE	1						
USA	0.80	1					
Asia	0.56	0.55	1				
Europe	0.68	0.60	0.53	1			
Latin America	0.70	0.66	0.66	0.70	1		
ME & Africa	0.62	0.51	0.64	0.59	0.69	1	
South Africa	0.61	0.50	0.60	0.57	0.67	0.97	1

Panel B: 2002-2007

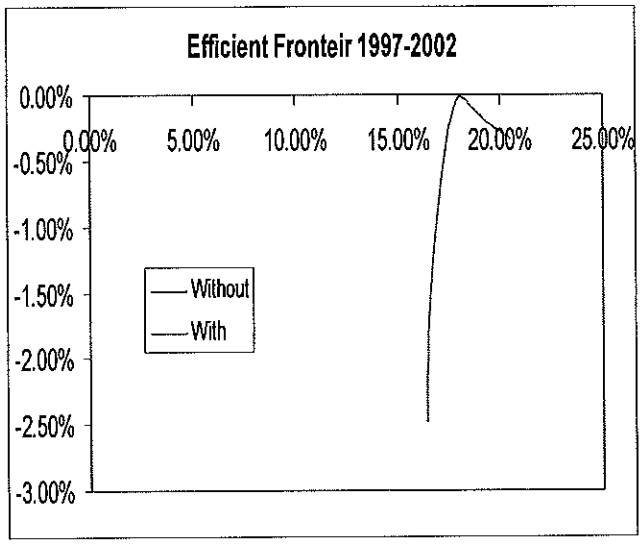
	EAFE	USA	Asia	Europe	Latin America	ME & Africa	South Africa
EAFE	1						
USA	0.85	1					
Asia	0.74	0.65	1				
Europe	0.65	0.42	0.56	1			
Latin America	0.80	0.70	0.67	0.69	1		
ME & Africa	0.45	0.29	0.34	0.40	0.47	1	
South Africa	0.62	0.35	0.49	0.59	0.60	0.61	1

Table 3: Differences in correlation between first and second period

	EAFE	USA	Asia	Europe	Latin America	ME & Africa	South Africa
EAFE							
USA	0.05						
Asia	0.17	0.11					
Europe	-0.03	-0.17	0.03				
Latin America	0.09	0.04	0.01	-0.01			
ME & Africa	-0.17	-0.22	-0.29	-0.19	-0.23		
South Africa	0.01	-0.15	-0.11	0.02	-0.07	-0.36	

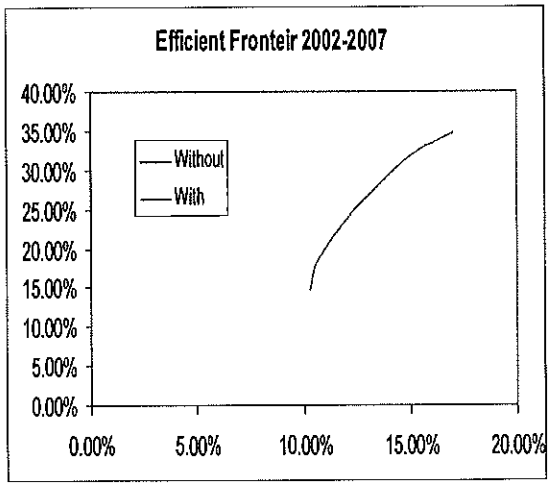
A benefit for a global portfolio investor is to create of well diversified portfolio. In order to do this an investor needs to find indices or stocks that are non-correlated. Diversification will lower risk, while increasing return. The monthly return and the monthly standard deviation data from the indices will allow us to create an efficient frontier. The two efficient frontiers are from the 1997-2002 and 2002-2007 time periods. Figure 1 and figure 2 below will show a portfolio that doesn't have the South African data, and a portfolio that includes the South African data. The 1997-2002 efficient frontier does not include South Africa at all, which means that South Africa is not necessary to improve diversification. This can probably be attributed to the fact that South Africa has the lowest return to risk ratio when compared to the other indices.

Figure 1: Efficient Frontier for the Period 1997-2002



From the time period of 1997-2002 it does not make sense to add South Africa to the portfolio. The efficient frontier line does not include South Africa. The next time period 2002-2007 shows the same thing. South Africa does not benefit a well diversified portfolio. The efficient frontier line does not change at all. This could be attributed to South Africa ranking 4th out of 6 in return and standard deviation. The return to risk ratio ranks South Africa as the worst.

Figure 2: Efficient Frontier for the period 2002-2007



The table below shows the average return of the different sectors in the South African market. The equity breakdown is over 2 periods 1997-2002 and 2002-2007. Energy, telecommunication services, financials, and materials are the biggest sectors in South Africa. The telecommunication sector has had the highest return from 2002-2007, and the 3rd lowest standard deviation. The energy sector has had the lowest standard deviation, but ranks 6 out of 9 in returns. The materials sector has had the highest standard deviation in 2002-2007 and the lowest return. It has basically stayed the same between the two periods. This shows that it is the most volatile sector. All of the other sectors have had a lower standard deviation by at least 4%, some as much as 17%. Overall the volatility in the market has been lower. The overall market has gone down 7% in standard deviation between the two time periods and return has improved by about 44%.

The average investable weight has gone down in every sector between the two time periods. This is an interesting fact, the South African market is allowing less investment as time has gone on. The average PE has gone down from 14.65 to 2.72 in the materials sector, but has gone up from 8.25 to 20.18 in the health care sector. The sectors that have a high PBV such as financials, industrials, and telecommunication services are the growth oriented sectors. The sectors with a low PBV, such as energy, consumer discretionary, information technology, and materials are more value oriented.

Table 6: South African Equity Market Characteristics by Economic Sector

Sector	Period	Avg. of Return	StdDev	Avg. MrktVal	Avg. Val Traded	Avg.Shrs Traded	Avg.Day sTraded	Avg. of PE	Avg PBV	Avg.InvWeight
Cons. Disc.	97-02	-3.06%	18.77%	$472.31	$17.71	11.24	20.57	16.59	2.33	86.76%
	02-07	2.99%	9.93%	$1,168.52	$82.93	18.83	20.10	13.09	3.33	73.21%
Con. Stap.	97-02	-0.99%	15.39%	$1,163.67	$31.41	12.99	20.45	13.94	3.20	76.36%
	02-07	2.46%	8.67%	$1,234.73	$60.27	16.22	20.40	9.81	5.09	68.69%
Energy	97-02	-0.79%	14.36%	$4,009.95	$162.72	22.20	20.78	9.47	1.84	92.49%
	02-07	2.35%	7.64%	$16,272.45	$1,129.30	43.62	20.52	11.88	2.76	87.93%
Financials	97-02	-1.60%	13.71%	$2,318.81	$63.42	26.42	20.60	13.92	3.81	81.75%
	02-07	1.93%	9.26%	$3,060.21	$133.75	33.92	20.29	16.19	17.78	68.41%
Health Care	97-02	-9.36%	25.93%	$675.80	$26.77	8.93	20.56	8.25	2.55	96.91%
	02-07	2.62%	8.79%	$1,640.63	$77.20	39.75	20.36	20.18	6.27	79.65%
Industrials	97-02	-1.64%	15.44%	$1,103.14	$37.03	12.40	20.63	8.91	1.78	88.46%
	02-07	2.70%	9.04%	$1,677.97	$100.48	13.19	20.00	14.76	27.26	67.78%
Inf Tech	97-02	-3.67%	22.19%	$1,005.32	$66.91	19.57	20.69	18.68	10.70	94.13%
	02-07	1.65%	12.72%	$563.68	$27.11	7.39	20.23	11.85	3.08	76.43%
Materials	97-02	-0.19%	16.17%	$1,801.01	$65.44	10.25	20.39	14.65	4.59	69.95%
	02-07	1.64%	16.14%	$3,334.78	$170.38	14.10	20.32	2.72	3.33	61.45%
Tel Serv	97-02	-2.26%	12.76%	$2,705.49	$73.23	22.67	20.72	19.03	1.60	88.06%
	02-07	3.11%	8.92%	$7,347.04	$455.52	53.43	20.52	15.30	6.98	66.68%
Market	97-02	-23.57%	17.19%							
	02-07	21.45%	10.13%							

In Table 7 we looked at the premiums that result from categorizing the available stocks into certain portfolios. The different portfolios we analyzed are the high beta companies minus the low beta companies, small companies minus the big companies, the value oriented companies minus the growth oriented companies, the typical high return companies minus the typical low return companies, and the high investable companies minus the low investable companies.

Table 7: Sorted Portfolio Returns

Data	1997-2002	2002-2007
High Minus Low Beta Portfolio Premium	-2.09%	0.014966
(Standard Error)	0.009345	0.006387
T-Stat	-2.23434	2.343105
Small Minus Big Company Premium	-3.52%	-0.01013
(Standard Error)	0.00884	0.00541
T-Stat	-3.98087	-1.87252
Value Minus Growth Portfolio Premium	-2.29%	-0.01998
(Standard Error)	0.009125	0.005904
T-Stat	-2.50765	-3.38403
Winners Minus Losers Portfolio Premium	1.37%	0.00882
(Standard Error)	0.00992	0.004674
T-Stat	1.381369	1.887003
High Minus Low Investability Premium	-1.34%	0.000968
(Standard Error)	0.005684	0.002897
T-Stat	-2.36148	0.334255

First we analyze high minus low beta companies. Usually companies that have a higher beta are expected to return more than companies with a lower beta. When we look at the first time period, this assumption is not true. The companies with a low beta out performed the companies with a higher beta by 2.09%. In the next time period the high beta companies do outperform the low beta companies by 1.5%.

Next we analyze the size premium. Theoretically speaking small companies have outperformed larger companies. In the case of South Africa this theory does not work. In both time periods big companies out performed smaller companies by 3.52% and 1.01% respectively. In emerging markets this usually happens because big companies are supposed to be safer than smaller companies. Large developed markets are also supposed to be safer than these emerging markets. Investors may not be willing to take on the risk of both an emerging market and a small company.

The next step is to analyze companies with low price to book ratios against companies with high price to book ratios. In theory companies with low PB (value) are supposed to outperform companies with high PB (growth). This is not true in South Africa. Growth companies have outperformed value companies by 2.29% and 1.99% in the respective time periods.

The momentum effect states that historic winners should outperform historic losers. Companies that formerly have high returns are theoretically supposed to outperform companies with low or negative returns. This does hold true in South Africa. Winners outperform losers by 1.37% in 97-02 and .88% in 02-07.

Finally companies that have a high investability should outperform companies that have a low investability. The investable premium from 1997-2002 is negative, and the premium for 2002-2007 is positive. This shows that as time has gone on, the return for high investability companies has been positive.

DETERMINING COST OF CAPITAL AND FORECASTING SOUTH AFRICAN STOCK RETURNS

This section uses a conditional 7 factor CAPM model based on risk premium, size premium, value premium, momentum premium, liquidity premium, and investable premium. The conditional 7 factor model is as followed:

Conditional 7 factor CAPM model:

$$r_{i,t} = \alpha_i + \beta_{1,i} r_{SouthAfrte} + \beta_{2,i} r_{World} + \beta_{3,i} SMB + \beta_{4,i} HMLBP + \beta_{5,i} MOM + \beta_{6,i} IP + Z_{t-1}(\beta_{1,i} r_{SouthAfrint} + \beta_{2,i} r_{World} + \beta_{3,i} SMB + \beta_{4,i} HMLBP + \beta_{5,i} MOM + \beta_{6,i} IP) + \varepsilon_{i,t}$$

$r_{i,t}$, $r_{SouthAfrica,t}$, and $r_{World,t}$ are risk premia. SMB is the size premium, HMLBP is the value premium, MOM is the momentum premium, LIQ is the liquidity premium, and IP is the investable premium. Z_{t-1} are instruments consisting of local and global variables. Local risk factors (lagged 1 month) are the discount factors for South Africa's economic, financial, and political risk ratings (% change in risk rating/ [1+% change in risk rating]). Global factors (lagged 1 month) are the discount factors for GDP-weighted world political, economic and financial risk ratings.

Table 8 shows the top ten and bottom ten forecasted returns using the conditional 7 factor CAPM model. The returns range from 64.65% to -14.42%. An interesting part of this forecast is that all but two of the bottom ten are expected to have positive returns. The expected return for the market is 33.34%. All of the top 10 securities are expected to have higher returns than this. The forecast stays somewhat consistent with the premiums we calculated before. The small minus big and value minus growth portfolios are still expected to work against the theory talked about above.

Table 8: Regression of Individual Stocks Excess Returns

	Out of Sample Forecasts 2007	
Security	1 Year Return	Standard Deviation
Top 10		
African Rainbow Minerals	64.65%	30.64%
Merafe Resources Limited	58.22%	36.94%
Harmony	50.75%	52.89%
M&R Hld	48.75%	29.00%
Implats	48.39%	23.15%
Gold Reef Casino Resorts	47.31%	23.53%
Mittal Steel South Africa	46.93%	28.77%
Barloworld Ltd.	46.85%	28.96%
Highveld Steel and Vanadi	46.49%	33.35%
MTN Group Ltd.	45.10%	25.04%
Bottom 10		
Delta Electrical Industri	11.09%	30.71%
Afrox	11.00%	19.83%
Aspen Pharmaceuticals	10.18%	25.62%
JD Group	9.90%	32.50%
Datatec	7.21%	26.40%
Cadiz Holdings Ltd	6.39%	27.22%
Tiger Wheels	3.68%	32.89%
DRDGOLD	2.24%	47.17%
Steinhoff	-0.37%	28.48%
Mustek Ltd	-14.42%	21.74%
Independent Variable		
Market	33.35%	20.11%
Small Minus Big	-7.81%	8.24%
Value minus Growth	-26.96%	5.11%
Winners Minus Losers	16.86%	6.20%
High minus Low Inv.	-14.85%	5.76%

Harmony has the 3rd highest expected return and the highest standard deviation. "Merafe Resources Limited (Merafe Resources) through the Xstrata-Merafe Chrome Venture (the Venture), participates in chrome mining and the beneficiation of chrome ore into ferrochrome. Its principal assets consist of the Kenana UG2 beneficiation plant, a ferrochrome smelter at Boshoek in the North West Province of South Africa at which chrome ore is beneficiated into ferrochrome and Horizon chrome mine, which produces chrome ore." (Reuters). The company has a slightly higher PE in comparison to the industry, but a significantly lower PE when compared to the sector. The beta of 1.4 is consistent with the sector and industry. Over the pas 52 weeks Harmony has had a return of 190.5% return.

Table 9: Individual Stock Analysis – Top 10

	Company	Industry	Sector	S&P 500
P/E Ratio (TTM)	19.63	15.31	36.29	20.66
P/E High – Last 5 Yrs.	NM	40.73	43.63	32.40
P/E Low – Last 5 Yrs.	NM	7.04	10.73	13.98
Beta	1.40	1.48	1.38	1.00
Price to Sales (TTM)	3.59	4.51	3.79	2.98
Price to Book (MRQ)	4.25	10.92	7.36	4.38
Price to Tangible Book (MRQ)	4.25	10.92	7.36	8.87
Price to Cash Flow (TTM)	17.74	12.74	13.00	14.97
Price to Free Cash Flow (TTM)	16.35	163.20	132.26	31.90

Steinhoff has the 2nd lowest expected return and a standard deviation of 28.48%. "Steinhoff International Holdings is a multinational, integrated lifestyle supplier of furniture, beds, related homeware, and automotive products and vehicles with approximately 45 000 people serving markets in southern Africa, Europe and the Pacific Rim. The products range from household goods, building supplies to vehicles and automotive components."(Reuters). The company has a lower PE ratio when compared to both the industry and sector. The price to sales, price to book, price to cash flow, and price to free cash flow are all lower than the industry and sector. This can be the reason why the company is expected to do poorly in the next year. Over the last 52 weeks the Steinhoff has had -17.4% returns.

Table 10: Individual Stock Analysis- Bottom 10

	Company	Industry	Sector	S&P 500
P/E Ratio (TTM)	10.72	19.66	16.27	20.66
P/E High – Last 5 Yrs.	NM	29.74	27.70	32.40
P/E Low – Last 5 Yrs.	NM	12.73	13.27	13.98
Beta	1.11	1.16	0.99	1.00
Price to Sales (TTM)	0.72	0.86	4.01	2.98
Price to Book (MRQ)	1.53	3.51	2.95	4.38
Price to Tangible Book (MRQ)	3.53	6.44	2.95	8.87
Price to Cash Flow (TTM)	8.51	11.63	13.19	14.97
Price to Free Cash Flow (TTM)	9.59	16.54	80.62	31.90

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SUMMARY AND CONCLUSION

By calculating the information researched throughout this paper, we are able to say whether or not South Africa should be included in a global portfolio. First we compared it to other markets around the world. The efficient frontier shows that South Africa as a whole should not be included with other global markets. The fact that the forecast did not include South Africa shows that it is not help out with diversification. The economic research conducted shows the pros and cons with South Africa. GDP growth has been more stable over the last decade. The large amount of natural resources also makes South Africa attractive.

South Africa on a macro level is still risky. The ICRG country risk chart shows that South Africa has made attempts to become more correlated with the Unites States in economic, political, and financial risks, but is still significantly more risky. Next comparison is to break up the markets up into different sectors. This will show which sector has outperformed the others. Instead of investing in the market as a whole a portfolio manager can take advantage of the sectors that are performing above average. Finally an investor will be able to take advantage of selecting individual companies. Overall the South African market as a whole should not be included in a separate asset class, but investors can take advantage of selecting individual sectors or stocks in order to gain abnormal positive returns.

PHILIPPINE EQUITY– A GOOD INVESTMENT?

Nicole Cappuzzo, Siena College

INTRODUCTION

The Philippines is emerging into a financially stable market over the recent years. There are two stock exchanges in the Philippines, the Philippine Dealing Exchange (PDEx) and the Philippine Stock Exchange (PSE). The Philippine Stock Exchange is the largest and most major financial market in Southeast Asia. The Philippines is part of Asia, and was therefore hit by the Asian Crisis of 1998. It however, was not hit as hard as other countries due to a moderate amount of debt and help from overseas workers. High inflation, abundant poverty, and a huge increase in population have caused economic problems until 2004. The Philippines was able to rebound from their failures in the economy and in 2004 created reforms for potential investment growth. These reforms decreased a good amount of their debt and improved the GDP. There has been an increase in investments over the years, however Philippines still has far to go in order to become a very profitable market. As an emerging market, I believe they can become a very beneficial investment.

According to a recent article on Bloomberg, Philippine stocks are reaching an all time high in two months.[1] There is also prediction that the United States will decrease interest rates so that the Philippines can in turn also decrease theirs. This would essentially avoid any downfalls in the economy and make investments more worthwhile. With this assumed collective collaboration, we can believe that in the future there will be successes in the Philippines. It is an emerging market with high potential to become a dominant player in the financial markets.

In the following I will analyze the correlation of the Philippines with other countries which will allow us to see if adding them to our portfolio will be beneficially. Next I will create an efficient frontier, showing the risk to reward ratio for not adding and adding Philippines to our portfolio. Looking at the economic situation will follow, where I will examine whether the country is stable enough to handle future growth. I will then look at the various macro and micro risk factors that come into play when evaluating the country as a whole. Finally I will create a model which encompasses all of the factors into a forecast for the Philippines future returns. This will allow me to make a final decision of whether or not to include this emerging market in a globally diversified portfolio.

WOULD YOU CONSIDER PHILIPPINES IN A GLOBALLY DIVERSIFIED PORTFOLIO?

There are many things to consider when evaluating whether or not you should consider Philippines for a globally diversified portfolio. You first need to compare its risk to reward distinctiveness to other markets throughout the world. As you can see in Table 1, risk to reward and other factors have been calculated for the Philippines are well as for other countries. IFCG Asia, IFCG Composite, IFCG Eastern Europe, IFCG Latin America and IFCG Middle East and Africa have been compared to the Philippines. We should first recognize that with a high amount of risk comes a high return. A more conservative approach allows a small amount of risk to produce smaller returns.

In the last 10 years the Philippines has shown to have a negative return in comparison to the other indices. From 1997-2002, we see the highest overall return, however, in the past five years, we see a large negative return. This is not a positive sign from an investor's standpoint and therefore other factors need to be considered when making investment decisions. The Philippines have shown to have decreased the number of companies traded in the last 5 years. We have to wonder if this is due to the overall negative

[1] Ian C. Sayson , "Philippine Stocks Advance for Sixth Day: World's Biggest Mover" *Bloomberg*, 6 December 2007, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a1ZnhQ2qa3Hk

return of the country. Companies are proving to have increased their dividends paid out, as seen from the significant increase in dividend yield. This might be an incentive for an investment in Philippine stocks.

Table 1: Summary Statistics

	Period	Market Capitalization	Value Traded	Monthly Return	Monthly Std Dev	PE	PB	DY
Philippines	1997-2007	$16,321.35	$543.36	-0.48%	8.89%	23.52	1.30	1.65
	1997-2002	$17,412.03	$568.36	1.44%	11.32%	27.42	1.16	1.16
	2002-2007	$15,212.19	$517.94	-2.43%	4.78%	19.55	1.45	2.15
IFCG Asia	1997-2007	$860,780.66	$152,126.31	0.15%	14.51%	95.42	1.92	1.81
	1997-2002	$526,582.37	$95,964.96	0.42%	8.26%	170.90	1.81	1.46
	2002-2007	$1,194,978.94	$208,287.67	-0.12%	18.87%	19.94	2.03	2.16
IFCG Composite	1997-2007	$1,660,166.16	$221,373.10	-0.97%	6.62%	21.15	1.94	2.33
	1997-2002	$1,038,447.77	$123,832.86	0.36%	7.58%	24.19	1.67	2.30
	2002-2007	$2,281,884.54	$318,913.34	-2.29%	5.23%	18.12	2.20	2.35
IFCG E. Europe	1997-2007	$150,229.48	$15,335.26	0.87%	26.59%	21.95	1.39	1.54
	1997-2002	$52,833.67	$3,002.19	0.53%	13.79%	27.09	1.01	1.39
	2002-2007	$247,625.30	$27,668.33	1.21%	35.15%	16.80	1.76	1.69
IFCG Latin America	1997-2007	$289,839.38	$14,295.36	0.92%	27.91%	14.28	1.71	3.48
	1997-2002	$234,274.41	$9,198.45	0.54%	10.02%	14.43	1.34	3.78
	2002-2007	$345,404.34	$19,392.26	1.29%	38.34%	14.13	2.08	3.17
IFCG ME & Africa	1997-2007	$306,814.56	$30,178.20	-2.80%	18.28%	17.42	2.77	3.14
	1997-2002	$151,174.90	$7,003.13	-0.06%	6.65%	14.23	1.97	3.53
	2002-2007	$462,454.22	$53,353.27	-5.55%	24.78%	20.62	3.57	2.74

As shown reward to risk is a very important factor to consider when allocating your portfolio between global countries. However, it is also essential to consider the correlation with different world indices when deciding whether or not to add Philippines to your globally diversified portfolio. In Table 2 you can see this correlation between EAFE, USA, Asia, Europe, Latin America, and the Middle East and Africa. This correlation is separated into two different 5 years periods, to show the difference as time goes on. Panel A highlights 1997 – 2002 and Panel B highlights 2002 – 2007. Table 3 shows the difference between the two periods. As you can see the correlations have decreased over the 5 year period. From 1997 – 2002 you can see the Philippines is slightly correlated with the other countries. It is between 0.37 and 0.70, which is approximately fairly correlated. From 2002-2007 however, the numbers decrease to an interval of -0.13 to .23, showing a dramatic decrease in correlation. This means that in a diversified global portfolio, Philippines would not be very correlated with the other countries. All of the countries compared to except EAFE, are significant at a 90% significance level, ME and Africa being significant at 99% significance level.

Table 2: Monthly Returns Correlation Matrices
Panel A: 1997 – 2002

	EAFE	*USA*	*Asia*	*Europe*	*Latin America*	*ME & Africa*	*Philpippines*
EAFE	1.00						
USA	0.80	1.00					
Asia	0.56	0.55	1.00				
Europe	0.68	0.60	0.53	1.00			
Latin America	0.70	0.66	0.66	0.70	1.00		
ME & Africa	0.62	0.51	0.64	0.59	0.69	1.00	
Philippines	0.48	0.51	0.70	0.37	0.54	0.61	1.00

Panel B: 2002 – 2007

	EAFE	*USA*	*Asia*	*Europe*	*Latin America*	*ME & Africa*	*Philpippines*
EAFE	1.00						
USA	0.85	1.00					
Asia	0.74	0.65	1.00				
Europe	0.65	0.42	0.56	1.00			
Latin America	0.80	0.70	0.67	0.69	1.00		
ME & Africa	0.45	0.29	0.34	0.40	0.47	1.00	
Philippines	0.20	0.15	0.23	0.03	0.18	-0.13	1.00

Table 3: Difference in Correlation between First (1997-2002) and Second (2002-2007) Period

	Cor (97-02)	Cor (03-07)	Delta Cor	Z statistic
EAFE	0.48	0.20	-0.29	-1.52
USA	0.51	0.15	-0.36	-1.94 *
Asia	0.70	0.23	-0.47	-2.50 **
Europe	0.37	0.03	-0.34	-1.82 *
Latin America	0.54	0.18	-0.36	-1.93 *
ME & Africa	0.61	-0.13	-0.73	-3.92 ***

It is important to consider diversification when creating a portfolio because it minimizes your risk. By creating an efficient frontier you can see where you will earn the most return for the least amount of risk. Figure 1 and Figure 2 show the efficient frontier with and without adding Philippines to the globally diversified portfolio. I have used monthly returns to create the efficient frontier and have seen significant results. Figure 1 show the years 1997 – 2002 and is proving that adding Philippines would have no significant impact on the returns generated by the portfolio. Figure 2 shows the years 2002 – 2007 and is showing that adding Philippines to the portfolio will have a huge impact on the returns generated. This is the opposite from what Table 1 and the summary statistics have shown us. But it therefore showing that adding the Philippines with other countries, will prove to have higher returns for the amount of risk. Even though the Philippines have decreased its correlation over the last five years, it is still proving to generate high returns when added to the portfolio. This overall, is the most important factor.

Figure 1: Efficient Frontier 1997 – 2002

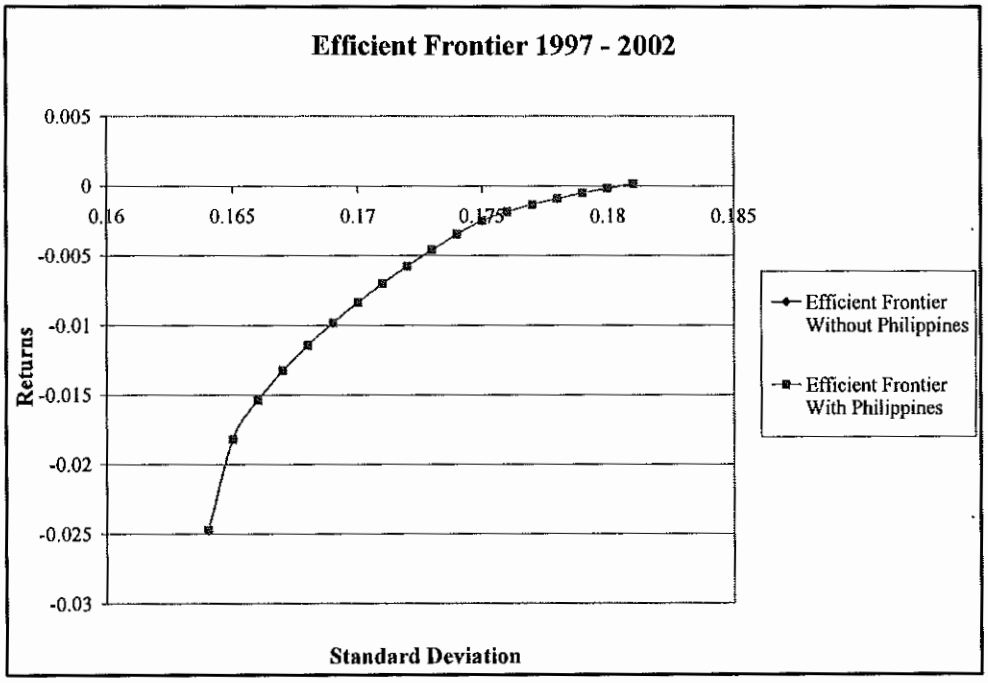
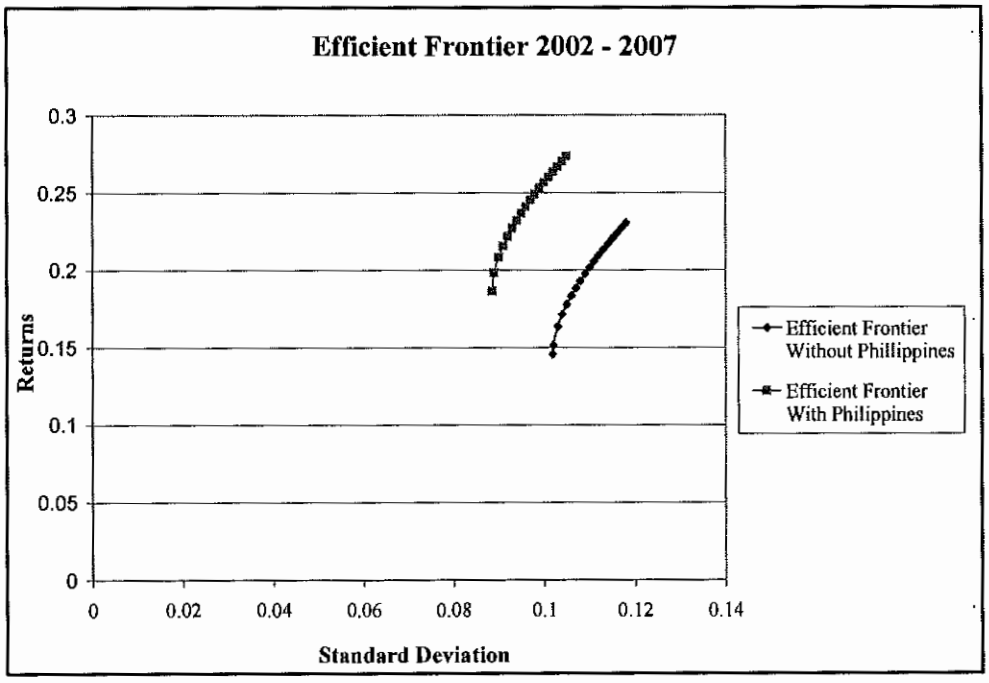


Figure 2: Efficient Frontier 2002 – 2007



PHILIPPINES ECONOMIC SITUATION

The Philippines have shown to have a very diversified economy. It is broken up into mainly three sectors; agricultural, industrial, and services. The economy has proven to not be very stable over the years. The Asian crisis of 1998 affected them, however not nearly as much as other countries. This was due to a moderate amount of debt and help from overseas workers.[2] They were able to bounce back fairly quickly, and increase their GDP. The percentages representing this are as follows: 0.6% decline in 1998, 2.4% increase in 1999, and 4.4% increase in 2000. Due to increase in population and large amount of poverty however, the Philippines has endured a large amount of debt and use of financial resources in 2000. A decrease of 3.2% GDP in 2001 resulted in this.

In 2004 the Philippines introduced a large amount of economic reforms, in hope to increase the economic situation. The reforms have significantly improved the economy and they have performed very strongly. They hope to keep increasing the economic reforms and finding a way to sustain the positive results that have come. The GDP has significantly increased due to the reforms. The growth has been 5% from years 2002 to 2006. Even though this increase is promising for the Philippines, it is crucial that they continually increase investments and the economy. Currently they are experiencing a large population, high oil prices, high interest rates, and inflation. Large amounts of money have been used to try and repay the country's debt.[3]

As you can see in Table 4, the Philippines have experienced a large GDP growth over the last five years, while the United States has seen a decrease in growth. Inflation has decreased over the five year period in the Philippines, but it still much higher than the United States. There has also been an increase in international liquidity for the Philippines, with a corresponding decrease in international liquidity for the United States. It is a good sign to see a decrease in inflation, increase in GDP and increase in international liquidity for the Philippines. These changes allow us to recognize that they are becoming a more economically stable country and a good investment.

Table 4: Comparative Economic Analysis - Philippines and the USA

	Philippines			USA		
	1997-2006	1997-2001	2001-2006	1997-2006	1997-2001	2001-2006
Budget Balance as % of GDP	-2.53	-1.48	-3.58	-1.11	0.48	-2.70
Current Account as % of GDP	2.12	0.90	3.34	-4.26	-2.98	-5.54
Current Account as % of XGS	2.69	-0.02	5.40	-31.94	-21.76	-42.12
Debt Service as % of XGS	14.25	13.68	14.82	23.79	26.40	21.18
GDP per Head of Population	1,073.40	1,096.20	1,050.60	35,588.10	32,353.20	38,823.00
Inflation	5.99	6.40	5.58	2.49	2.50	2.48
International Liquidity	2.44	2.28	2.60	0.87	1.04	0.70
Real GDP Growth	3.86	3.18	4.54	3.20	3.34	3.06
Total Foreign Debt	51.67	48.65	54.69	4,380.75	1,181.98	7,579.51

[2] *Country Watch Database*, http://www.countrywatch.com/cw_topic.aspx?type=text&vcountry=137&topic=INFIC

[3] *Central Intelligence Agency*, https://www.cia.gov/library/publications/the-world-factbook/geos/rp.html#Econ

MACRO RISK FACTORS

It is important to consider the IRCG risk factors of the Philippines economy when deciding whether to invest in the country. With high risk comes high return, so analyzing the risk factors is important. As shown in Table 5, Panel A, the risk factors have been broken down into various sectors for the Philippines and the United States. It is important to have a benchmark to compare your risk factors to. The data has been broken up into three different time increments, 1997-2007, 1997-2002, and 2002-2007. It is critical that we analyze the risk factors for all components to have overall view of how well the country is performing.

The three most important risk ratings are economic, political and financial factors. These overall will tell you the risk of the country. The political risk factors are rated from 1 to 100, 1 being the most risky and 100 being least risky. The economic and financial risk factors are rated 1 to 50, 1 being the most risky and 50 being least risky. Looking at economic risk ratings first, over the past 10 years the Philippines has shown a slight increase in economic risk rating, while the United States has shown a slight decrease. This is because of the economic reforms the Philippines have implemented and the improvements we have seen in the country. Financially we have also seen an increase in rating for Philippines with a large decrease for the United States. Even though the financial and economic situation of the Philippines is not where it should necessarily be, we can see that there is an improvement to have very small amounts of investment risk. The political risk rating has decreased for both countries over the past ten years. This is showing that politically Philippines and the United States are becoming more risky. It is important to look further into these factors to see why there has been a decrease in economic and financial risk and an increase in political risk. There has been a decrease in internal conflict, corruption, and government stability risk factors. This is due to the increase in terrorism. The Philippines faces three threats of terrorist groups from the United States Governments Foreign Terrorist Organization list. GDP growth and inflation have seen an increase in risk rating for Philippines, showing that it is becoming less risky. Even though there is turmoil, and an increase in inflation, it is showing to be less risky, which is a good sign for investing in the Philippines.

In Panel B you can see the correlation associated with Philippines and United States risk factors. There has been an increase in economic correlation, going from negative to positive relationships and a slight increase in correlation of financial risk ratings. There has been a decrease in correlation of political risk ratings between the two countries. The Z-test shows that the significance level between the two periods is not very strong.

Having political turmoil and an increase in terrorism has resulted in an increase in political risk for the Philippines and the United States. However, while the United States has shown an increase in economic and financial risk, the Philippines have shown a decrease. This is promising for the investment in the Philippines.

Table 5: Risk Rating
Panel A: Country Risk Scores

Risk Component	Philippines			United States		
	1997-2007	1997-2002	2002-2007	1997-2007	1997-2002	2002-2007
Economic Risk Rating	36.6915	36.0955	37.3254	39.6377	40.3269	38.8629
Financial Risk Rating	36.2500	35.1567	37.4127	34.9692	37.5000	32.2419
Political Risk Rating	66.7038	68.9552	64.3095	83.4885	86.4776	80.3710
Risk Points for GDP per Head	0.6423	0.7761	0.5000	4.9146	4.8343	5.0000
Risk Points for GDP Growth	8.4438	7.8015	9.1270	8.0731	7.9478	8.2016
Risk Points for Inflation	8.2346	8.0970	8.3810	9.4615	9.4552	9.4677
Risk Points for Budget Balance	6.3977	6.6970	6.0794	7.1962	7.8806	6.4435
Risk Points for Current Account as % of GDP	12.6169	12.0328	13.2381	10.1646	10.5433	9.7500
Risk Points for Foreign Debt	4.7923	4.9403	4.6349	8.2192	9.3358	6.9919
Risk Points for Debt Service	8.5423	8.5373	8.5476	7.3615	7.0000	7.7581
Risk Points for Current Account as % of XGS	12.5308	12.2388	12.8413	9.1000	10.0149	8.1048
Risk Points for International Liquidity	1.4692	1.4552	1.4841	0.5269	0.6269	0.4194
Risk Points for Exchange Rate Stability	8.6654	7.5000	9.9048	9.0692	9.1791	8.9677
Government Stability	8.6846	9.7761	7.5238	9.6962	10.4179	8.9113
Law & Order	2.7615	3.2687	2.2222	5.4885	6.0000	4.9435
Internal Conflict	8.2308	8.9701	7.4444	10.5577	10.9179	10.1855
External Conflict	10.5577	10.1418	11.0000	7.9538	8.5299	7.3790
Corruption	2.3846	2.7985	1.9444	4.1692	4.0299	4.3306
Socioeconomic Conditions	5.1808	5.1940	5.1667	9.0962	9.6940	8.4758
Investment Profile	8.9115	8.5522	9.2937	11.0269	10.3657	11.7339
Military in Politics	3.8462	3.9701	3.7143	5.0923	5.8358	4.2903
Religious Tensions	2.9846	2.9701	3.0000	5.5500	5.7985	5.2903
Ethnic Tensions	5.0000	5.0000	5.0000	4.9615	4.9254	5.0000
Democratic Accountability	5.2154	5.4179	5.0000	5.7808	5.7388	5.8306
Bureaucracy Quality	2.9462	2.8955	3.0000	4.0000	4.0000	4.0000
Government Unity	2.9416	3.0000	2.9274	3.8117	4.0000	3.7623
Legislative Strength	2.7143	3.4333	2.5403	3.0974	3.1000	3.1066
Popular support	2.2792	3.0333	2.0968	2.4481	3.8333	2.0902
Consumer Confidence	2.5844	2.5000	2.6048	2.3117	2.6333	2.2459
Unemployment	2.0844	2.2000	2.0565	2.8377	3.3000	2.7295
Poverty	0.5000	0.5000	0.5000	3.5000	3.5000	3.5000
Contract Viability	3.2987	3.5000	3.2500	3.9481	3.7333	4.0000
Profits Repatriation	2.8766	3.2667	2.7823	3.7078	3.6333	3.7295
Payments Delays	3.3117	3.5000	3.2661	3.9740	3.8667	4.0000
Civil War	3.2208	3.2333	3.2177	4.0000	4.0000	4.0000
Terrorism	1.8506	2.3667	1.7258	2.4545	2.6667	2.4180
War	4.0000	4.0000	4.0000	3.1169	2.9333	3.1721
Civil Disorder	2.5584	2.7333	2.5161	3.8052	3.9333	3.7705
Cross-border Conflict	3.4481	3.2333	3.5000	1.7208	2.1000	1.6393
Foreign Pressures	3.5455	3.7333	3.5000	2.5909	2.7333	2.5738

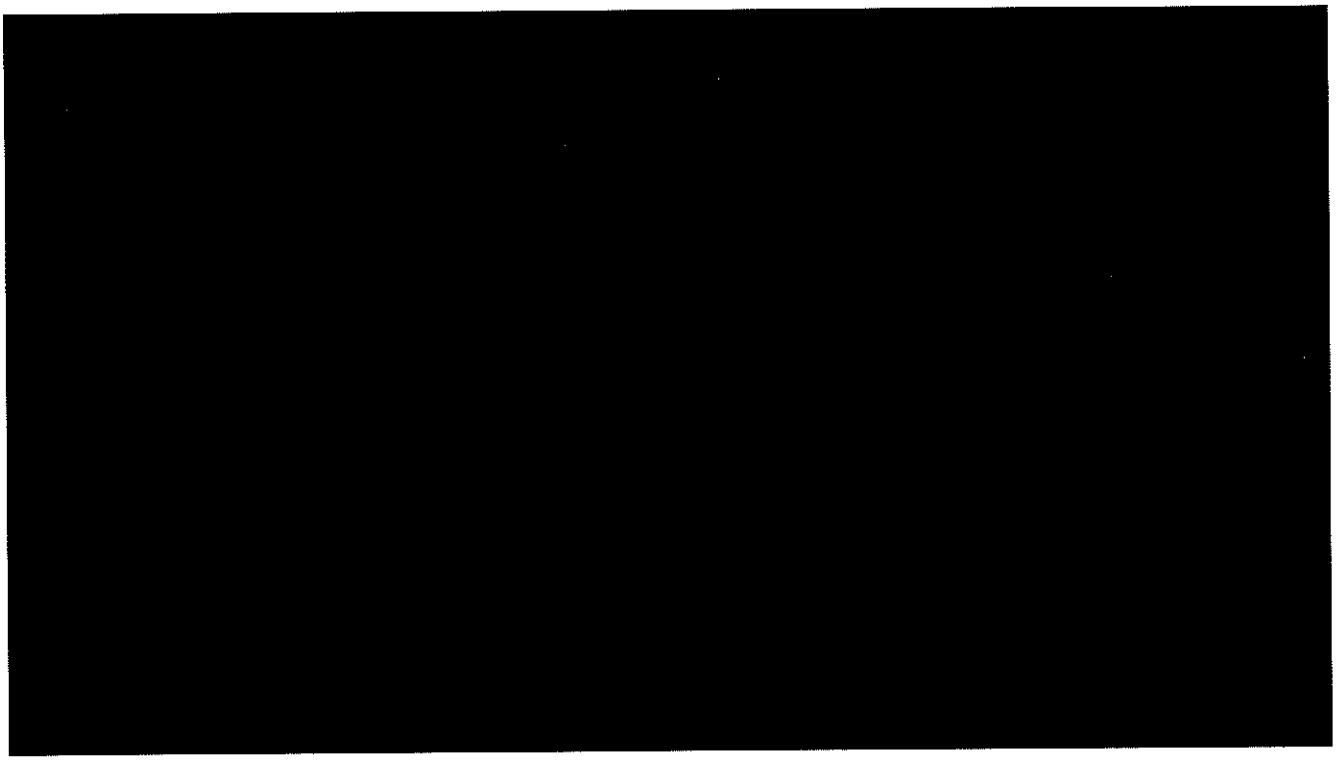
Panel B: Correlation in Risk ratings

Correlation	Philippines			
	1997-2002	2002-2007	Difference	Z-stat
ER	-0.025479	0.0990225	0.1245012	0.7068398
FR	0.2244051	0.2414894	0.0170843	0.096596
PR	0.029566	0.0001978	-0.029368	-0.166051

MICRO RISK FACTORS

When examining micro risk factors for Philippines, it is important to analyze the equity market characteristics. In Table 6 you can see the characteristics organized by sector. The sectors include consumer discretionary, consumer staples, energy, financials, industrial, information technology, materials, telecommunication services and utilities. In a ten year period, the average returns were all negative aside from utilities. However you can see that in the past five year period all of the returns are positive. There has been a huge increase in returns over the past five years. There has also been a stability or decrease in volatility, represented by standard deviation. This is showing us that Philippines is earning a larger return for a smaller amount of risk in the last five years. This theory is what we always hope to achieve in portfolio management. Consumer discretionary, consumer staples, financials, industrials materials, telecommunication services and utilities have shown a dramatic increase in size. For an emerging market, the average price to earnings ratio is fairly high. Consumer discretionary shows a large negative and information technology shows a very significant positive. This is impressive for the Philippines. Aside from consumer discretionary, who shows a current price to book ratio of 650, the ratios are fairly constant with numbers between 0 and 3. The investability weight is also showing constant numbers in between a 0 from materials and .43 from utilities. This table is evaluating overall that investments in the equity market have increased over the last five years. Industrials would be a sector that should be focused on investing in because of high return and fairly low risk, and information technology should not be invested in, because of very low return and very high risk.

Table 6: Philippine Equity Market Characteristics by Sector



Next I have conducted many factors that are necessary to compute the CAPM as seen in section 6. I have taken the average of all of these factors which are shown in Table 7. WML has an average in the Philippines of 0.16%, which tells us that there are slightly more winners in the market than losers. HMLPB is negative, proving that there are more growth firms in the market than value firms. The companies are emerging in the industry. Finally, SMB is negative, showing that there are more small-cap companies than large-cap. Also shown are Economic, Political, and Financial Risk factors for the local Philippines and

globally. These will help us determine our forecasts for the growing, small-cap, winning companies in the Philippines market.

Table 7: Sorted Portfolio Returns

		Philippines Average	Standard Error	T-statistic
Return	1997-2007	0.36%	0.0082	0.44
Market	1997-2002	-1.56%	0.0147	-1.06
	2002-2007	2.28%	0.0063	3.62
WML	1997-2007	-0.56%	0.0087	-0.65
	1997-2002	-1.28%	0.0156	-0.82
	2002-2007	0.16%	0.0075	0.22
HMLPB	1997-2007	-2.96%	0.01	-4.11
	1997-2002	-4.80%	0.01	-4.06
	2002-2007	-1.12%	0.01	-1.46
INV	1997-2007	-0.95%	0.0045	-2.12
	1997-2002	-1.53%	0.0070	-2.17
	2002-2007	-0.37%	0.0055	-0.68
HML Beta	1997-2007	-0.62%	0.01	-0.59
	1997-2002	-1.87%	0.02	-0.99
	2002-2007	0.64%	0.01	0.71
SMB	1997-2007	-2.28%	0.01	-3.02
	1997-2002	-4.06%	0.01	-3.35
	2002-2007	-0.50%	0.01	-0.58
ER Local	1997-2007	36.55	0.1614	226.44
	1997-2002	35.82	0.2568	139.44
	2002-2007	37.29	0.1437	259.43
FR Local	1997-2007	36.07	0.2442	147.70
	1997-2002	34.77	0.4059	85.65
	2002-2007	37.38	0.1348	277.29
PR Local	1997-2007	66.45	0.3997	166.22
	1997-2002	68.63	0.6233	110.11
	2002-2007	64.26	0.3064	209.75
ER World	1997-2007	39.85	0.1217	327.38
	1997-2002	40.86	0.1258	324.76
	2002-2007	38.84	0.0976	397.82
FR World	1997-2007	34.13	0.2421	140.94
	1997-2002	36.03	0.2886	124.84
	2002-2007	32.22	0.1724	186.90
PR World	1997-2007	83.38	0.3765	221.49
	1997-2002	86.26	0.4772	180.75
	2002-2007	80.51	0.2525	318.81

DETERMINING THE COST OF CAPITAL AND FORECASTING PHILIPPINE STOCK RETURNS

Through my aggressive analysis of various risk factors and returns in the Philippines I can finally come to an investment decision and forecast for the future. In order to forecast the returns of my globally diversified portfolios I used the conditional 5-factor CAPM:

$$R_{i,t} = \alpha_i + \beta_{1i}r_{Philippines,t} + \beta_{2,i}r_{World,t} + \beta_{3,i}SMB_t + \beta_{4,i}HMLPB_t + \beta_{5,}iWMLt + \beta_{6,i}INV_t + Z_{t-1}(\beta_{1i}r_{Philippines,t} + \beta_{2,i}r_{World,t} + \beta_{3,i}SMB_t + \beta_{4,i}HMLPB_t + \beta_{5,}iWMLt + \beta_{6,i}INV_t) + \epsilon_{i,t}$$

$r_{Philippines,t}$ and $r_{Philippines,t}$ are risk premium, SMB is the size premium, HMLBP is the value premium, WML is the performing premium, and INV is the investable premium. Z_{t-1} are instruments consisting of local and global variables. Local risk factors (lagged 1 month) are the discount factors for China's economic, financial, and political risk ratings (% change in risk rating/ [1+% change in risk rating]). Global factors (lagged 1 month) are the discount factors for GDP-weighted world political, economic and financial risk ratings.[4]

Using the conditional 5-factor CAPM model, I was able to create forecasts for all of the stocks in Philippines. Table 8 consists of the forecast of the top ten and bottom ten performing stocks in the Philippines for year 2008. The volatility of the security, represented by standard deviation is also shown in this table. As you can see, every security is performing and showing a buy and hold positive return for 1 year. In particular, the number one performing stock has a 91.45% return, and a 44.20% volatility. This is a risky stock, but a very profitable one as well. The least performing security shows a 7.97% return, still a very profitable earning. The average of the 20 securities show a 32.67% return, which is very high showing the Philippines will be a very good company to add to a globally diversified portfolio.

[4] Girard E., (2007). Chinese Stocks: A Separate Asset Class? Working Paper.

Table 8: Regression of Individnal Stock Excess Return – Forecasts

Security	OUT OF THE SAMPLE FORECAST 10/07 - 9/08	
TOP 10	**Buy and Hold 1 Year Return**	**Volatility/ SD**
Manila Electric	91.45%	44.20%
J.G. Summit	55.93%	33.85%
Metrobank	46.36%	26.83%
Megaworld	42.74%	29.26%
First Phil Holdings	42.69%	27.45%
Aboitiz Equity Ventures	41.81%	22.72%
Filinvest Land	40.31%	29.76%
SM Prime	39.92%	16.28%
Ayala Land	37.00%	26.63%
Ayala Corp.	36.59%	24.84%
BOTTOM 10		
Bank of the Philippine Is	30.11%	20.94%
Globe Telecom GMCR	29.62%	19.00%
PNB	25.30%	30.35%
Universal Robina	24.05%	29.54%
I.C.T.	20.46%	24.18%
Union Bank	17.79%	20.51%
San Miguel-B	10.41%	16.01%
PETRON	9.89%	24.11%
China Banking	9.46%	19.50%
San Miguel-A	7.97%	13.16%
INDEPENDENT VARIABLES		
High Minus Low	-42.17%	14.87%
Investable	3.03%	9.05%
Return on Market	32.67%	13.64%
Small Minus Big	-8.73%	13.29%
Winners Minus Loser	24.67%	13.25%

It is important to not only forecast the securities that are trading in the Philippines, but also to research what kind of companies they are. By using data from Reuters Knowledge, I was able to accurate determining whether the company was a good or bad investment. I have evaluated the top five and bottom five performing securities. They are, Manila Electric Co, J.G. Summit Holdings Inc, Metrobank, Megaworld Corp, First Philippines Holding Corp, San Miguel Corp A, China Banking Corp, Petron Corp, San Miguel Corp B, and Union Bank.

Manila Electric Company is in the Electric Utilities industry and is a company that distributes and sells electric energy. At the end of 2006 they showed $190,787M in revenue with $13,686M net income and a 12.43 Diluted EPS. Their stock price last closed at $86.50 and they have a 1.13 2 year Beta with 1.01B shares outstanding. Finally, they have a 4.97 Gross Profit Margin which is showing that they make 4.97 cents for every dollar in sales, an average number. I have forecasted Manila Electric to have a 91.45% return with 44.20% volatility. I am certain that with this information, Manila Electric is a good company to add to my portfolio. They have a lot of income, and are able to generate good dividends. They are a very risky company, but have a high return for the risk.

JG Summit Holdings Inc is a company associated with branded consumer foods, agro-industrial and commodity food products, real property development, hotel management, textiles, banking and financial services, telecommunications, petrochemicals, air transportation and power generation. They are mainly associated with the Food Processing industry and have a wide range of capabilities. JG Summit

Holdings had $86,062.47M in revenue at the end of 2006 with $6,578.48M net income and a 0.97 Diluted EPS. The last traded price was $10.50 and they have a 0.70 2 year Beta with 6.8B shares outstanding. They have a very high Gross Profit Margin of 33.63%. I have forecasted the return for JG Summit to be 55.93% with a volatility of 33.85%. They are still fairly risky, but overall a good investment.

Metrobank is a state chartered commercial bank in the S&Ls/Savings Bank Industry of Reuters. They have $66.6M in revenue, with $8.15M in net income at the end of 1994 and a 1.47 diluted EPS. They have 5.480M shares outstanding and a P/E ratio of 21.09. The data is too old to predict whether or not they would be a good investment. I have forecasted their return to be 46.36% with a volatility of 26.83%.

Megaworld Corp is a real estate development, leasing and marketing company associated with the Real Estate Operations Industry of Reuters. They are responsible for condominium units, subdivision lots and townhouses, and office properties and retail space. They are aggressively growing their business and revenues have soared. At the end of 2006 their revenues were $9,368.83M with a net income of $2,037.71M and a Diluted EPS of 0.15. Their last traded price was $4.25 and 2 year Beta is 1.32. They also have a Gross Profit Margin of 30.53% and 20.64B shares outstanding. I have forecasted their return to be 42.74% with a volatility of 29.26% in 2008. They are a good company to invest in because of their growth over the last couple of years.

First Philippines Holdings Corp is a utilities company that performs holdings in subsidiaries and associates who are responsible for power generation, distribution, roads and tollways operations, pipeline services, real estate development, manufacturing, construction, and securities transfer services and financing. They are 44.6% owned by Benpres Holdings Corporation and at the end of 2006 have revenues of $59,572M with net income of $8,699M and a 14.98 Diluted EPS. Their stock last traded for $74.50 with a 2 year Beta of 0.83. They have a Gross Profit Margin of 29.15% and 588.42M shares outstanding. They have had growth over the last couple of years and I have forecasted their return for 2008 to be 42.69% with a volatility of 27.45%. These top five companies are very good to invest in, but do have a high amount of risk, something that needs to be taken into consideration.

San Miguel Corporation is broken up into "A" and "B" and is in the bottom five performing securities. It is a beverages industry company whose portfolio includes beer, hard liquor, carbonated and non-carbonated, non-alcoholic beverages, processed and packaged food products, meat, poultry, dairy products and a number of packaging products. At the end of 2006 they had revenues of $249,650M with net income of $10,566M and a 3.36 diluted EPS. They have consolidated with National Foods, and this has allowed them to grow their revenues. Their last traded price was $1.39 and they have a Beta of 0.19, both very low. They have a 29.85% gross profit margin and 3.16M shares outstanding. I have forecasted San Miguel A to have a return of 7.97% with 13.16% volatility and forecasted San Miguel B to have a return of 10.41% and a volatility of 16.01%.

China Banking Corp is a commercial bank in China that provided commercials banking products and services, such as deposit products, loans and trade finance, domestic and foreign fund transfer, treasury products, trust products, foreign exchange, corporate finance and other investment services. At the end of 2006 they had revenues of $11,188.59M with net income of $3,539.22 and a 45.92 Diluted EPS. Their stock last traded at 660 with a 2 year Beta of 0.27. I have forecasted their 2008 return to be 9.46% with a volatility of 19.50%.

Petron Corp is an oil refining and marketing company that refines crude oil and markets and distributes petroleum products. They sell mostly to the Philippines market and have seen revenues drop in 2007. At the end of 2006 their revenues were $211,726M with a net income of $6,011M and a 0.64 EPS. The stock last traded at $6.10 and they have a 1.13 2 year Beta. I have forecasted Petron's 2008 return to be 9.89% with a 24.11% volatility.

Union Bank of the Philippines provides commercial, retail and corporate banking products and services. They mainly provide services of corporate cash management, payment services, foreign exchange, capital markets, corporate finance and consumer finance. They had 11,626,000,000 sales at the end of 2006 and I have forecasted their 2008 returns to be 17.79% with 20.51% volatility.

SUMMARY AND CONCLUSION

The Philippines is a significant emerging market in today's financial world. After analyzing the top and bottom five securities for the Philippines, the risk to reward factors on the efficient frontier, correlations with other countries, the current and past economic situation, macro risk factors, country risk scores (economic, political and financial compared to the United Stated), micro risk facts by equity market sector, as well as the cost of capital using CAPM it is a good idea to add the emerging market of Philippines in a globally diversified portfolio. Adding all of the top and bottom securities would not be a good idea however, because of the high risk they incur. It is important to pick the stocks with the highest return and lowest risk. Adding Philippines to the portfolio will increase diversification as well as generate high returns for the future. In conclusion, I have identified that there is an individual low risk and low return for the Philippines, however adding them to other countries will make the efficient frontier generate much more return for the amount of risk. With recent economic reforms, the GDP is increasing and there is a hope for a future increase in economic growth. Economic and financial risks have declined while political risk has increased according to the country risk scores. The equity market sectors have proven to have increased over the last five years, showing industrials as the best place to invest and information technology as the worst place to invest. Also our forecasted returns on the top and bottom five securities of the Philippines are all positive. After this analysis, I have come to the final conclusion to add Philippines to my globally diversified portfolio.

ECONOMETRIC ANALYSIS OF OBESITY RATE IN THE UNITED STATES

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ABSTRACT

This regression attempts to explain the variation in obesity rate per state in the United States with five lifestyle variables. Out of the five variables considered, the percentage of the population below poverty level and the percentage of the population who participated in physical activity in the past month proved insignificant. The number of fast food restaurants per state, the percent of adults who consume fruits or vegetables five or more times per day, and the percentage of the population who are everyday smokers proved to be significant indicators of obesity rate. The regression as a whole explains 59.8% of the variation in obesity rate by state.

INTRODUCTION

Obesity has become a very controversial topic in the United States in the twenty-first century. It is a dangerous health condition, and medical professionals recognize that the percentage of Americans who are classified as obese is intolerably high. Many people, both in the medical profession and in society in general, have begun exploring possible reasons for which Americans may have become so obese in the hopes of identifying the causes of the problem and developing solutions. Since obesity is such a significant problem in our country, I decided to test the effects of several variables on the variation in obesity rates between states in the United States. I hypothesized that a lack of physical exercise and routine meals at fast food restaurants were the main causes of obesity. As a culture, we have become so engrossed in our busy daily schedules that we have failed to set aside time to exercise on a daily basis, which naturally could lead to weight-gain amongst other side effects. Therefore, I predicted that physical activity and obesity prevalence are inversely related, meaning that a lack of exercise could contribute to a higher percentage of obese people. To explore the effects of fast food eating on obesity prevalence, I included the number of fast food restaurants per capita per state in my regression. I predicted that the more fast food restaurants per capita in a state, the higher the obesity rate would be in that state.

As control variables, I included poverty rate, education level, fruits and vegetables consumption, and percentage of everyday smokers in my regression. I believe that in some cases people are forced to maintain an unhealthy diet due to an inability to afford healthier options. When daily meals are a financial struggle, the McDonald's dollar menu looks more promising than a home-cooked turkey dinner or a Lean Cuisine meal. Therefore, I predicted that a higher poverty rate in a state may contribute to a higher obesity rate. I also considered the idea that for lack of a higher education, a person may not be aware of the risks associated with being overweight or the methods through which a person may maintain a healthy lifestyle. I included fruits and vegetables consumption as a variable in my regression because I thought that nutritional eating could be a factor against weight gain and obesity. I predicted that those states which a higher percentage of people who regularly consume the recommended serving of fruits and vegetables may also have a lower obesity rate. I was also interested in analyzing the impact of smoking cigarettes on the obesity rate. Since cigarettes are considered to be appetite suppressers, I predicted that a higher percentage of everyday smokers in a state would lead to a lower percentage of obese people.

VARIABLE MODEL

Original approved model

	Variable Name	Definition	Anticipated Slope	Robust?	Source
Y	Obesity Rate	% adults that are obese, 2001	N/A	N/A	statemaster.com (statehealthfacts.org)
B2	Poverty Rate	% of population below poverty level, 2004	Positive	Yes	statemaster.com (American Community Survey 2004)
B3	Education	% of population w/ bachelor's degree or higher, 2004	Negative	No	statemaster.com (U.S. Census Bureau 2004)
B4	Restaurants	# of eating/drinking venues per 100,000 ppl, 2004	Positive	Yes	statemaster.com (National Restaurant Association)
B5	Exercise	% of population who participated in physical activity in past month	Negative	Yes	statemaster.com (Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2004)
B6	Nutrition	% adults who have consumed fruits or vegetables 5 or more times per day, 2003	Negative	Yes	statemaster.com (Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2003)
B7	Tobacco Use	% of population who are everyday smokers	Negative	No	statemaster.com (Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2004)

Revised Model: Y = B1 + B2PovertyRate + B3Exercise + B4Nutrition + B5TobaccoUse + B6FastFood

	Variable Name	Definition	Anticipated Slope	Robust?	Source
Y	Obesity Rate	% adults that are obese, 2001	N/A	N/A	statemaster.com (statehealthfacts.org)
B2	Poverty Rate	% of population below poverty level, 2004	Positive	Yes	statemaster.com (American Community Survey 2004)
B3	Exercise	% of population who participated in physical activity in past month	Negative	Yes	statemaster.com (Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2004)
B4	Nutrition	% adults who have consumed fruits or vegetables 5 or more times per day, 2003	Negative	Yes	statemaster.com (Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2003)
B5	Tobacco Use	% of population who are everyday smokers	Negative	No	statemaster.com (Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2004)
B6	Fast Food	# of fast food restaurants per 100,000 ppl, 2004	Positive	Yes	http://search.census.gov/search?entqr=0&access=p&output=xml_no_dtd&sort=date%3AD%3AL%3Ad1&ie=UTF-8&client=subsite&q=fast+food+per+state&filter=0&ud=1&spell=1&oe=UTF-8&proxystylesheet=subsite&ip=208.125.84.138&subtitle=aff&start=0 ; statemaster.com

NOTES ABOUT VARIABLES

Obesity rate

The data I was able to obtain concerning obesity rate per state is from 2001. It would have been ideal to find 2005 – 2007 obesity statistics to show the lag time in the effects of my other variables which consist of 2003 and 2004 data. For lack of resources, I was unable to find this information; however since the majority of my variables are lifestyle statistics or, in the case of fast food restaurants per capita, infrastructure, I do not feel that this is a large impediment to my regression.

Fast food

I was originally planning on using the number of eating and drinking venues per 100,000 people in my regression; however upon further research I was able to find data on fast food restaurants in particular. There are some upscale restaurants that offer healthy meal options, and I wanted to exclude those from my study. A McDonalds Big Mac would have more of a negative effect on a person's general health and weight than a soup and salad option at Panera, for example.

Education

I wanted to include a variable for education in my regression; however upon running the regression I found that it was collinear with my variables for smoking, fruit and vegetable consumption, and percent of the population below poverty level. Taking education out of the model solved most of the multicollinearity issues in the regression, and I felt that everyday smoking and fruits and vegetables consumption were more direct indicators of a healthy or unhealthy lifestyle than education. As is shown in the regressions below, R squared only decreased from .609 to .598 when education was removed from the regression. This entails that, with education considered, variables in the regression as a whole account for 60.9% of the variation in obesity rate whereas without education the variables account for 59.8% of the variation in obesity rate. This is not a significant difference, and it was important to me to prevent the education variable from masking the effects of cigarette smoking, fruits and vegetables consumption, and poverty rate in the regression.

Smoking

I was unable to find data on the percentage of everyday smokers in the state of Hawaii, so there are only 49 observations for this variable.

REGRESSION

As is evident from the R squared value in the model summary below, this regression explains 59.8% of the variation in obesity rate per state.

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
I	# fast food restaurants per 100,000 ppl, % of ppl who participated in physical activity in past month, % of population that is everyday smokers, % of adults who have consumed fruits or veggies 5 or more times/day, % of population below poverty level(a)	.	Enter

a All requested variables entered.
b Dependent Variable: % of adults that are obese

Model Summary (b)

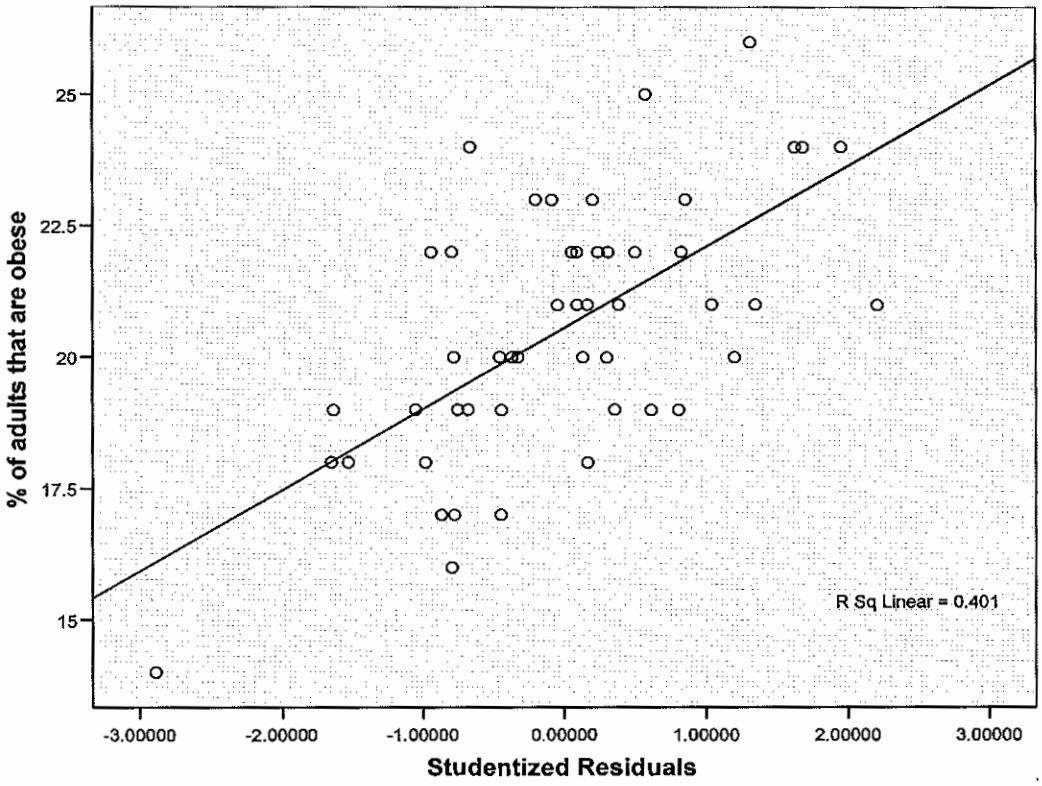
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.774(a)	.598	.552	1.640	.598	12.814	5	43	.000	2.498

From the t-statistics below, it is clear that the fruits and vegetables consumption, everyday smokers, and fast food restaurants variables are significant. These three variables have t-stats of -2.229, 3.562, -2.063 respectively and significance values of .031, .001, and .045 respectively. By the "2-t rule of thumb", these numbers demonstrate that we can reject the null hypothesis that the slopes of the lines representing the relationships between these variables and the dependent are zero with at least 95% confidence. Therefore, these variables, unlike the other two, have an impact on the obesity rate.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.307	6.437		4.087	.000
	% of population below poverty level	.142	.087	.191	1.627	.111
	% of ppl who participated in physical activity in past month	-.048	.064	-.075	-.739	.464
	% of adults who have consumed fruits or veggies 5 or more times/day	-.175	.079	-.261	-2.229	.031
	% of population that is everyday smokers	.321	.090	.376	3.562	.001
	# fast food restaurants per 100,000 ppl	-.061	.029	-.220	-2.063	.045

Below is a graph of the regression with the studentized residuals plotted against the dependent variable, obesity rate. This shows the linear relationship of the regression.

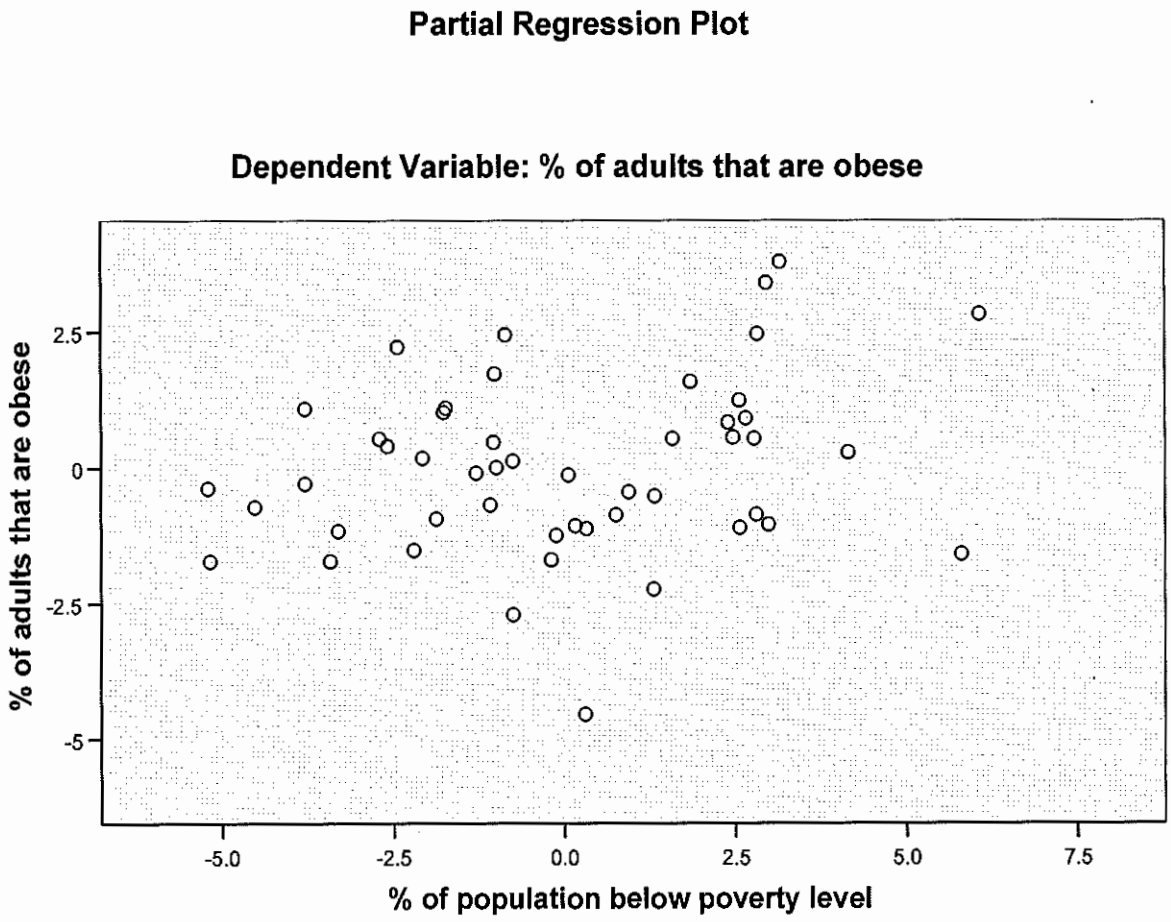
Graph 1


% of adults that are obese
25
22.5
20
17.5
15
-3.00000
-2.00000
-1.00000
0.00000
1.00000
2.00000
3.00000
Studentized Residuals
R Sq Linear = 0.401

GRAPHS

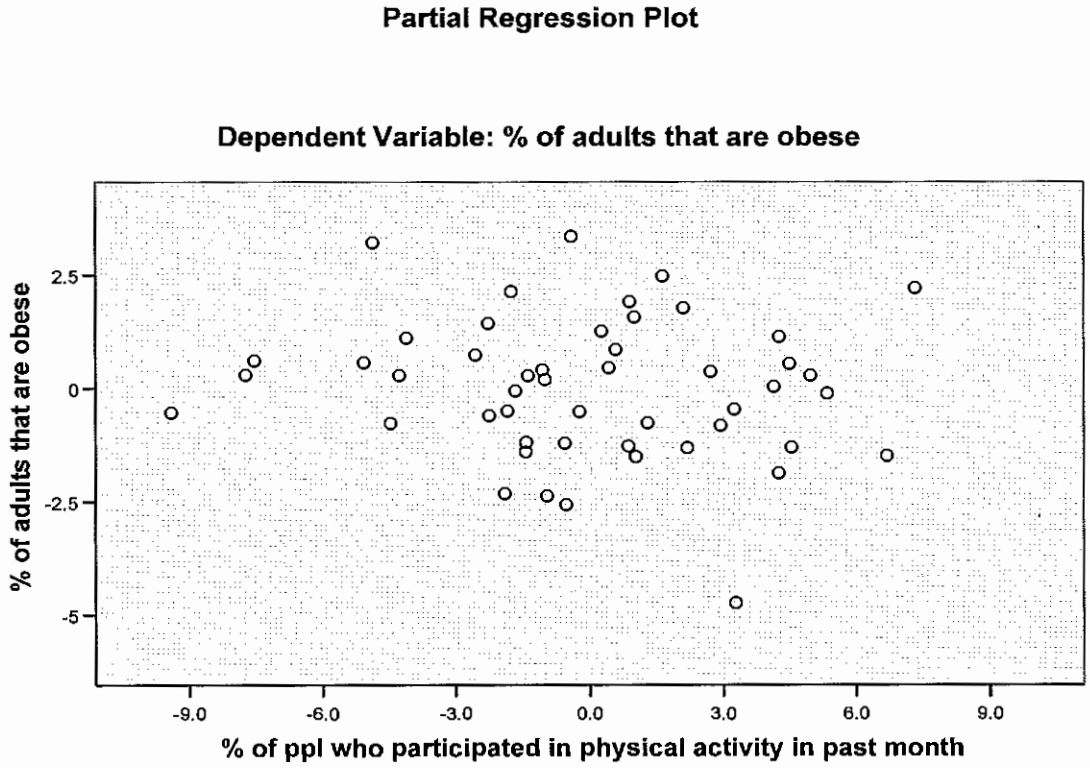
Below is the scatter plot showing the relationship between poverty level and obesity rate. This graph shows an almost horizontal relationship between the two variables, which indicates that poverty level does not have an affect on obesity rate.

Graph 2



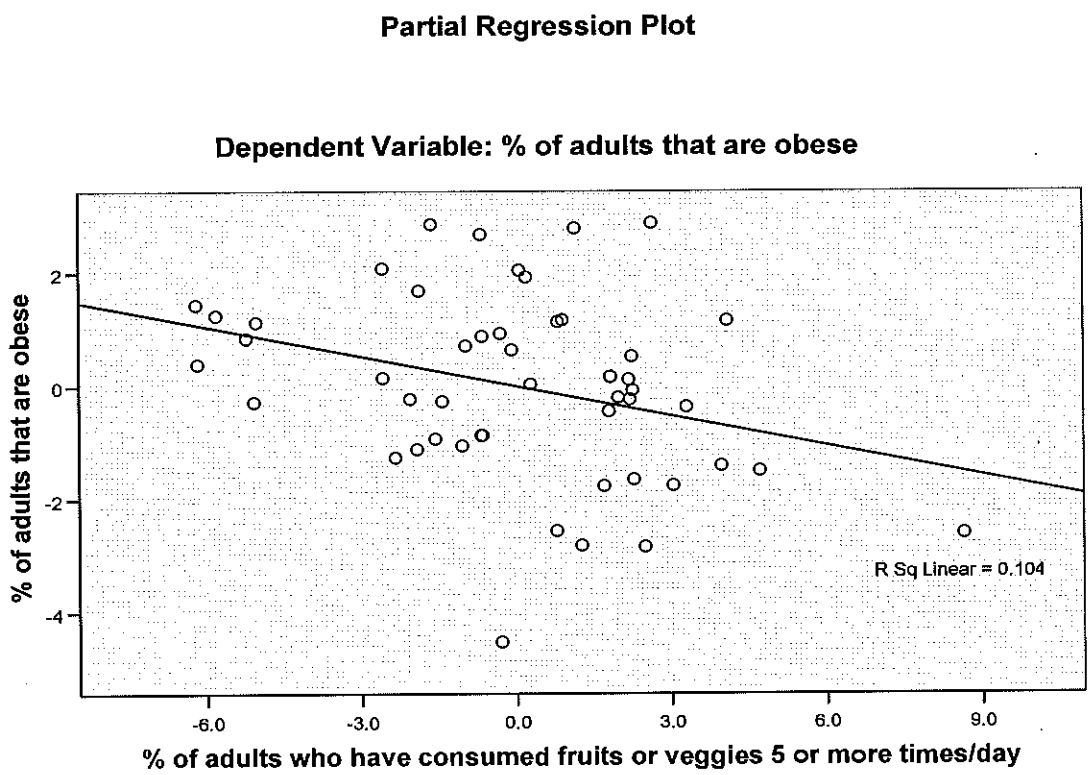
Below is a graph showing the relationship between physical activity and obesity rate. The results are very similar to the graph above, thus indicating that the percentage of people who participated in physical activity in the past month does not impact the obesity rate in a state. For lack of resources I was not able to find data on the percentage of the population who exercises regularly, which I feel would have had an impact on obesity rate per state.

Graph 3



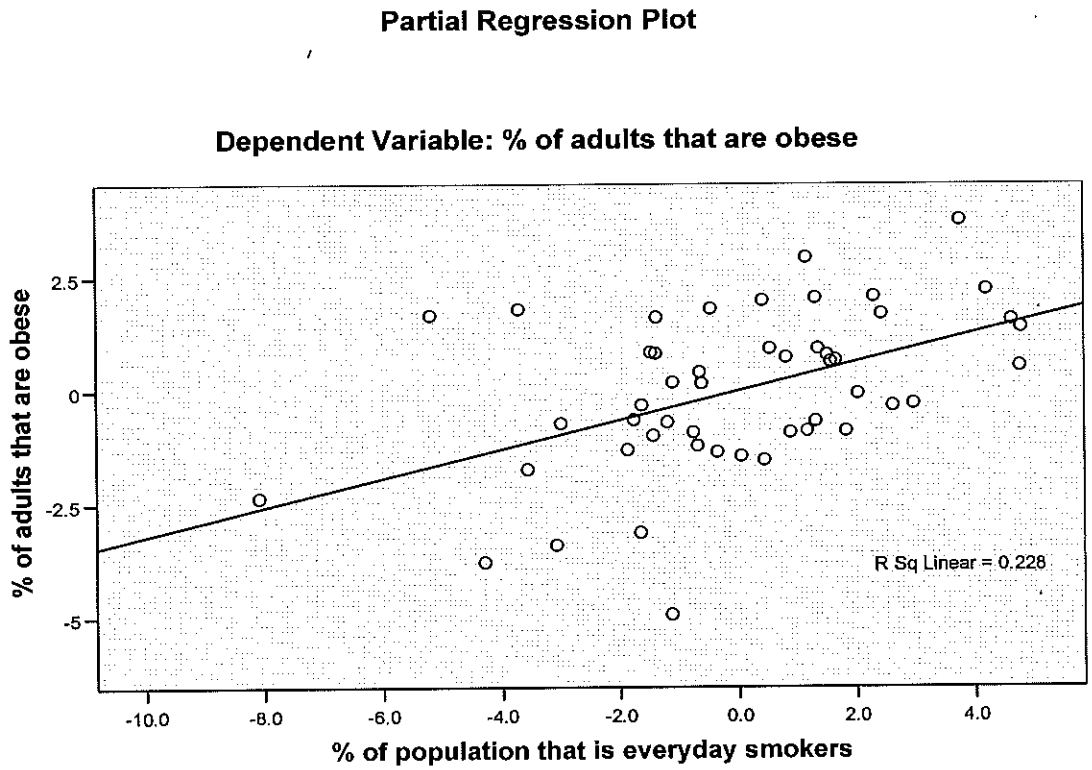
The graph below shows the relationship between the percentage of adults who consume fruits or vegetables five or more times per day and the obesity rate per state. The graph indicates a linear and slightly negatively sloped relationship between the variables. As explained earlier, this variable is significant, however the shallow slope indicates that fruit and vegetable consumption does not greatly impact obesity rate. Since the R squared value is 0.104, it is clear that fruit and vegetable consumption accounts for 10.4% of the variation in obesity rate.

Graph 4



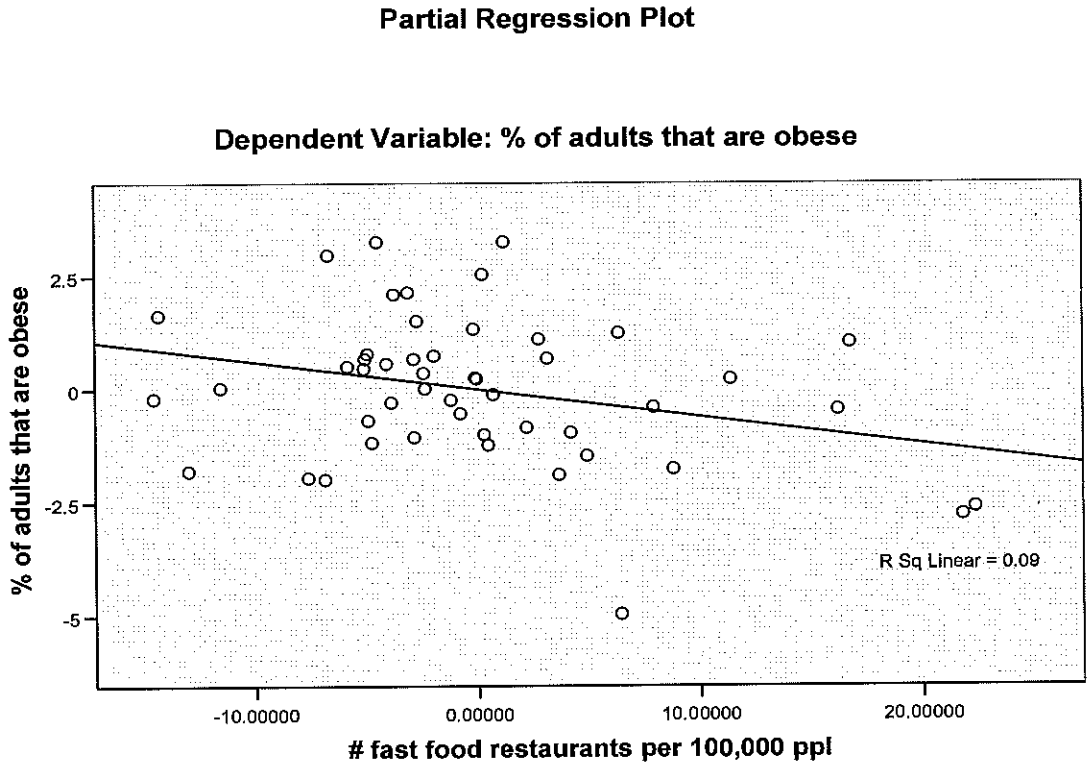
The graph below shows the linear and positively sloped relationship between the percentage of the population that are everyday smokers and obesity rate. An R squared value of 0.228 indicates that this variable accounts for 22.8% of the variation in obesity rate.

Graph 5



The following graph shows the relationship between the number of fast food restaurants per capita and the obesity rate. The linear relationship between these two variables is slightly negative, and the R squared value indicates that the number of fast food restaurants per capita accounts for 9% of the variation in obesity rate.

Graph 6


Partial Regression Plot
Dependent Variable: % of adults that are obese
% of adults that are obese
2.5
0
-2.5
-5
R Sq Linear = 0.09
-10.00000
0.00000
10.00000
20.00000
fast food restaurants per 100,000 ppl

ANALYSIS

Overall, this regression explains 59.8% of the variation in obesity rate per state, which is significant. The adjusted R squared value of .552 indicates that most of the variables in the regression do in fact account for some of the variation in the dependent variable because it is only slightly less than the R squared value of .598. The first two variables considered in the regression, percent of the population below poverty level and percent of people who participated in physical activity in the past month were proven insignificant. The t-stats for these variables are less than two, and the significance values were both significantly greater than .05. Before running this regression, I predicted that both of these variables would be robust. Again, I feel that if I had been able to find data on the percentage of the population that engages in daily exercise, the exercise variable would have been significant.

As predicted, the percentage of adults who consume fruits or vegetables more than five times a day is a significant variable in this regression. The t-stat for this variable is -2.229 and the significance value is .031, so we can reject the null hypothesis that the slope of the relationship is zero with 96.9% confidence. Also as predicted, the slope of the relationship is negative, meaning that a higher percentage of people who consume fruits or vegetables in any given state has an effect on lowering the obesity level in the state. This makes intuitive sense because fruits and vegetables are low in fat content and calories, and people who make sure to eat the number of suggested daily servings of these food groups often lead healthy lifestyles in general. The Beta value is -.175, which indicates that a 1 % increase in the percentage of people who consume fruits and vegetables five or more times per day causes a .175% decrease in the obesity rate in any given state. The effect of this change is not substantially large, which indicates that although this variable does impact obesity rate, the impact is miniscule.

The percent of the population this is everyday smokers was also proven to be a significant variable since the t-stat is 3.562 and the significance value is .001. The significance level indicates that the null hypothesis that Beta equals zero (meaning the variable has no effect on the dependent variable) can be rejected with 99.9% confidence. The Beta value for this variable is positively sloped, which I did not expect. I included the smoking variable in my regression under the pretense that cigarette smoking is an appetite inhibitor, so a higher percentage of cigarette smokers might indicate a smaller obesity rate. Looking into the variable further, however, a positively sloped relationship also makes intuitive sense. Since smoking is widely recognized as an extremely unhealthy habit, many people who smoke cigarette also engage in other unhealthy lifestyle habits, which may include eating fattening, greasy, or high-calorie foods. The Beta value is .321, which indicates that a 1 % increase in the percent of the population that are everyday smokers causes a .321% increase in the percent of the population that is obese. Although this is also not an extremely large number, this variable has the largest impact on obesity out of the three significant variables.

The variable for fast food restaurant prevalence proved to be very surprising. I had predicted that it would be significant, which it is with a t-stat of -2.063 and a significance value of .045 (reject null hypothesis with 95.5% confidence). The Beta value for this variable, however, is negatively sloped at -.061. This indicates that a one percent increase in the number of fast food restaurants per 100,000 people causes a .061% decrease in the obesity rate. This change is miniscule, but it cannot be ignored that the slope is negative. It would make more sense that a higher number of fast food restaurants would indicate that fast food is more popular in a state and thus people consume more fast food and are more likely to lead unhealthy lifestyles and become obese. The slope could be negative, however, because fast food restaurants have recently been attempting to provide more healthy options for their customers. It is possible that consumers are going to fast food restaurants to take advantage of the quick service and low price; however they are selecting the healthiest options from the menu. This regression would have been better if I had had access to data on the percentage of people who routinely eat at fast food restaurants; however this data was not available. The fact that there are more fast food restaurants per capita in a state does not necessarily mean that there is a higher percentage of regular fast food-eaters in that state than in another.

This regression was difficult because I believe that genetics plays a significant role in obesity rate; however I did not have access on data on the percentage of the population that has an obese parent or relative. Lifestyle choices are important in maintaining good health in general; however unfortunately there

are some people who, due to medical conditions, gain weight easily and have difficulty losing it no matter what they eat or how much they exercise. In addition, I am exploring a microeconomic question on a macroeconomic level, so having per capita data would have made this regression better.

TESTS FOR VIOLATIONS OF ASSUMPTIONS

Multicollinearity

When I tested for multicollinearity, I found that my variable for education level, percent of population with a bachelor's degree or higher, was collinear with my variables for poverty, fruits and vegetables consumption, and smoking. In the Pearson's Correlation chart, a correlation of .6 or higher is evidence of strong multicollinearity. As can be seen in the chart below, the education variable paired with each of the other three produced correlation values higher than .6. The condition index chart supports this finding because a condition index greater than 30 is evidence of strong multicollinearity. To test this problem further, I graphed the percent of the population with a bachelor's degree or higher against the percent of the population below poverty level, the percent of the population who consume fruits and vegetables five or more times per day, and the percent of the population that are everyday smokers separately. A linear relationship is visible in all three graphs, which further indicates that each pair is collinear.

Collinearity Diagnostics(a)

a Dependent Variable: % of adults that are obese

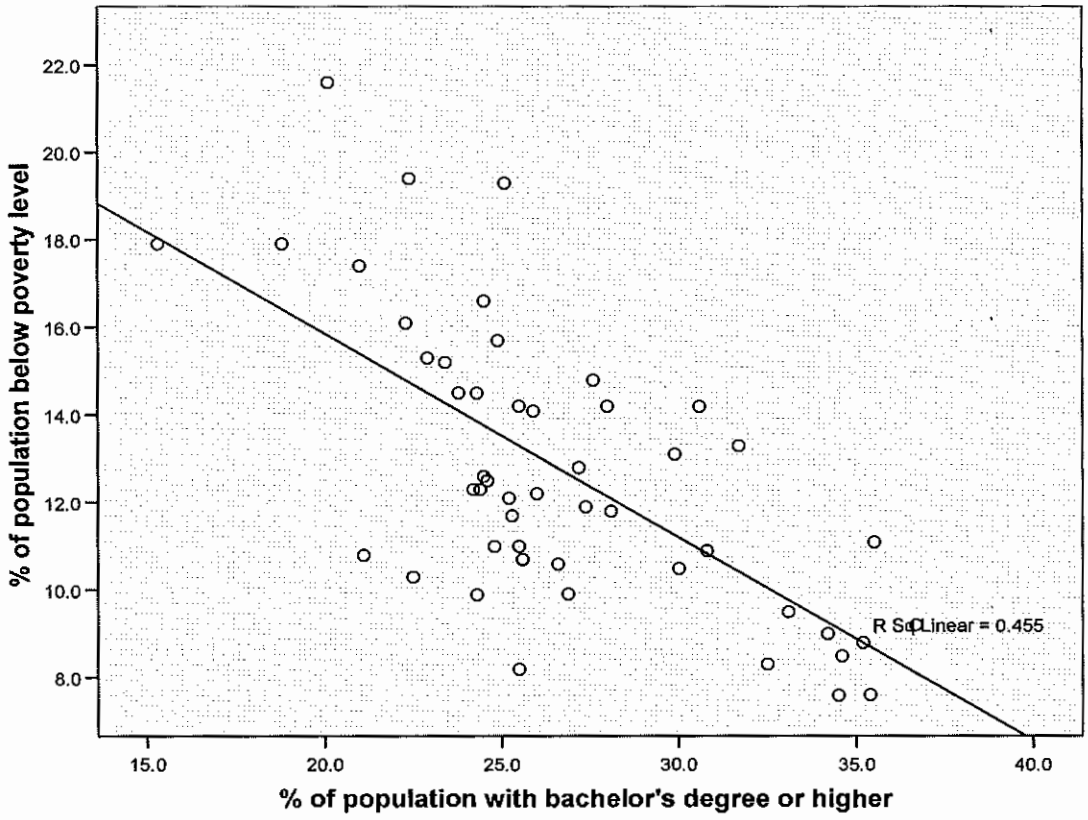
Model	Dimension	Eigenvalue	Condition Index
1	1	6.849	1.000
	2	.101	8.249
	3	.027	15.816
	4	.011	25.252
	5	.007	30.846
	6	.004	41.454
	7	.001	92.141

Correlations

		% of adults that are obese	% of population below poverty level	% of population with bachelor's degree or higher	% of ppl who participated in physical activity in past month	% of adults who have consumed fruits or veggies 5 or more times/day	% of population that is everyday smokers	# fast food restaurants per 100,000 ppl
Pearson Correlation	% of adults that are obese	1	0.534	-0.695	-0.26	-0.572	0.591	-0.48
	% of population below poverty level	0.534	1	-0.678	-0.26	-0.495	0.318	-0.339
	% of population with bachelor's degree or higher	-0.695	-0.678	1	0.209	0.702	-0.61	0.388
	% of ppl who participated in physical activity in past month	-0.26	-0.26	0.209	1	0.12	-0.184	0.161
	% of adults who have consumed fruits or veggies 5 or more times/day	-0.572	-0.495	0.702	0.12	1	-0.34	0.364
	% of population that is everyday smokers	0.591	0.318	-0.61	-0.184	-0.34	1	-0.234
	# fast food restaurants per 100,000 ppl	-0.48	-0.339	0.388	0.161	0.364	-0.234	1

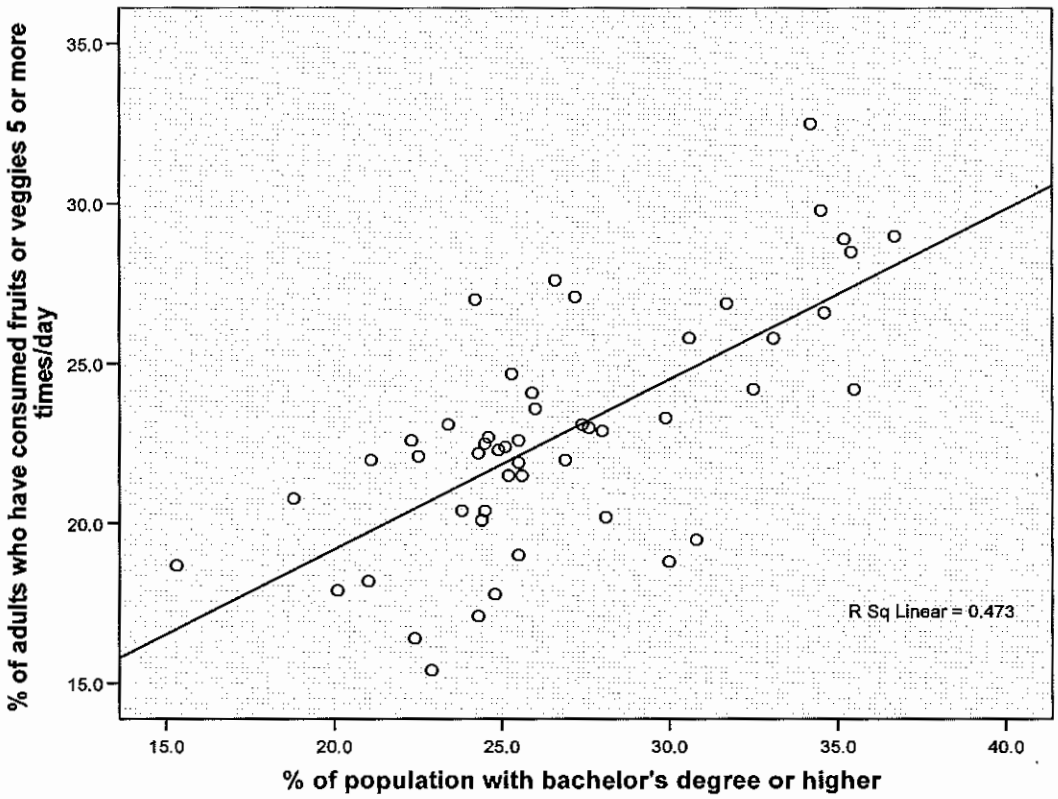
The graph below shows that the percent of population with a bachelor's degree or higher accounts for 45.5% of the variance in the percent of the population below poverty level. There is a clear collinear relationship between these variables as indicated.

Graph 7



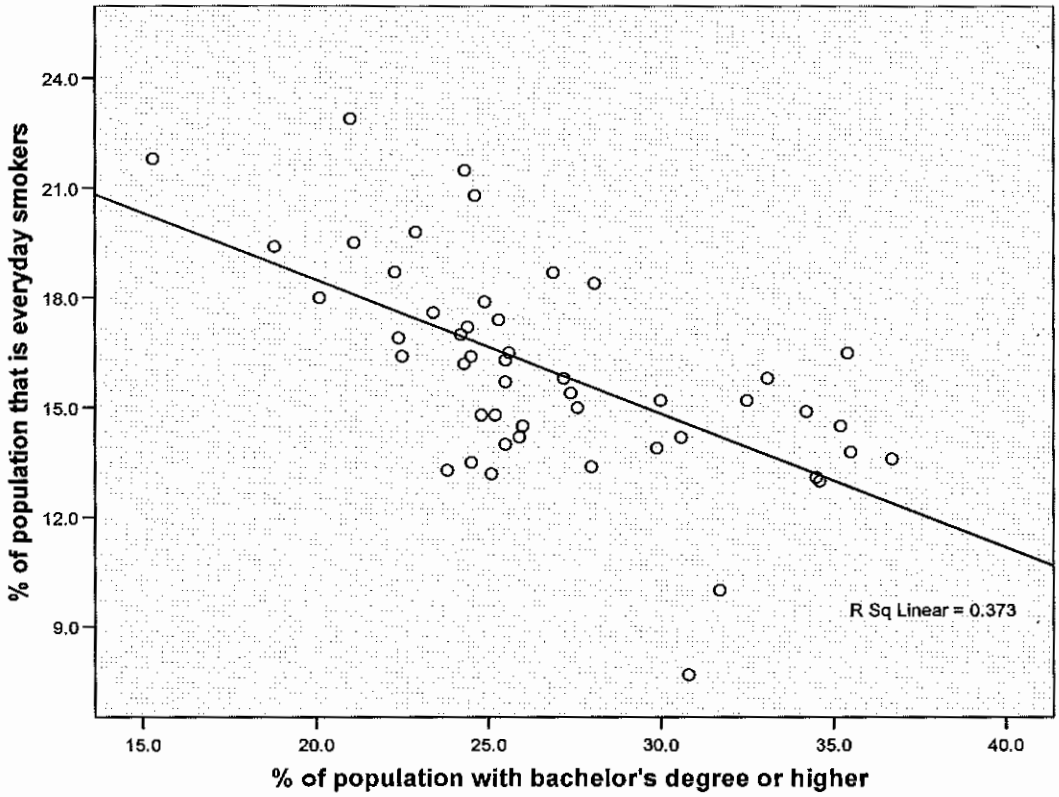
The graph below shows the linear relationship between the percent of the population with a bachelor's degree or higher and the percent of adults who consume fruits or veggies 5 or more times per day. The percent of the population with a bachelor's degree or higher accounts for 47.3% of the variation in the percent of adults who consume fruits or veggies 5 or more times per day.

Graph 8



The graph below shows the linear relationship between the percent of the population with a bachelor's degree or higher and percent of the population that is everyday smokers. The percent of the population with a bachelor's degree or higher accounts for 37.3% of the variance in the percent of the population that are everyday smokers.

Graph 9



These collinearity statistics indicate that education level has a strong impact on the degree to which people lead a healthy lifestyle. Clearly, knowing what to do to maintain a healthy lifestyle and being aware of the consequences of not doing so has an impact on the lifestyle decisions people make.

In order to account for this problem, I decided to remove the education variable from my regression for the reasons stated above. As the collinearity chart below shows, without education, multicollinearity is much less prominent.

Correlations

		% of adults that are obese	% of population below poverty level	% of ppl who participated in physical activity in past month	% of adults who have consumed fruits or veggies 5 or more times/day	% of population that is everyday smokers	# fast food restaurants per 100,000 ppl
Pearson Correlation	% of adults that are obese	1.000	.534	-.260	-.572	.591	-.480
	% of population below poverty level	.534	1.000	-.260	-.495	.318	-.339
	% of ppl who participated in physical activity in past month	-.260	-.260	1.000	.120	-.184	.161
	% of adults who have consumed fruits or veggies 5 or more times/day	-.572	-.495	.120	1.000	-.340	.364
	% of population that is everyday smokers	.591	.318	-.184	-.340	1.000	-.234
	# fast food restaurants per 100,000 ppl	-.480	-.339	.161	.364	-.234	1.000

Heteroscedasticity

It is clear by looking at the graphs of each variable set against the dependent variable (graphs 2-6) that there is no heteroscedasticity in this regression. None of the graphs have the classic bow-tie or cone shape typical of heteroscedastic relationships. To further test this conclusion, the results in the descriptive statistics chart and the runs test below illustrate that the variables in this regression are, in fact, normally distributed. In the descriptive statistics chart, if the absolute value of the difference between the median 25th percentile value and the median 50th percentile value is approximately equal to the absolute value of the difference between the median 50th percentile value and the median 75th percentile value, the variable is normally distributed. For the obesity variable, these values are exactly the same at 1.5% and for the rest of the variables these values differ by a number that is 19% or less of the standard deviation. This indicates that the numbers are close enough in numerical value to imply normal distribution.

The Runs Test chart indicates that all variables in this regression are randomly ordered because each variable has an Asymp. Sig. (2-tailed) value greater than .05.

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
% of adults that are obese	50	20.50	2.452	14	26	19.00	20.50	22.00
% of population below poverty level	50	12.698	3.2786	7.6	21.6	10.450	12.250	14.575
% of ppl who participated in physical activity in past month	50	77.002	3.8524	68.6	84.1	74.525	77.100	80.225
% of adults who have consumed fruits or veggies 5 or more times/day	50	22.814	3.6783	15.4	32.5	20.350	22.550	24.975
# fast food restaurants per 100,000 ppl	50	83.9882732	10.18577578	69.79455	119.88851	76.6571682	81.4487032	88.1650846
% of population that is everyday smokers	49	16.006	2.8751	7.7	22.9	14.100	15.800	17.750

Runs Test

	% of adults that are obese	% of population below poverty level	% of ppl who participated in physical activity in past month	% of adults who have consumed fruits or veggies 5 or more times/day	# fast food restaurants per 100,000 ppl	% of population that is everyday smokers
Test Value(a)	21	12.3	77.1	22.6	81.44870	15.8
Cases < Test Value	25	25	25	25	25	24
Cases >= Test Value	25	25	25	25	25	25
Total Cases	50	50	50	50	50	49
Number of Runs	20	28	26	22	26	27
Z	-1.715	.572	.000	-1.143	.000	.292
Asymp. Sig. (2-tailed)	.086	.568	1.000	.253	1.000	.770

a Median

Autocorrelation

Since the data used in this regression is cross-sectional by state and the Durbin-Watson statistic is

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.774(a)	.598	.552	1.640	.598	12.814	5	43	.000	2.498

2.498, there is no autocorrelation in this regression.

a. Predictors: (Constant), # fast food restaurants per 100,000 ppl, % of ppl who participated in physical activity in past month, % of population that is everyday smokers, % of adults who have consumed fruits or veggies 5 or more times/day, % of population below poverty level
b. Dependent Variable: % of adults that are obese

CONCLUSION

In conclusion, this regression illustrates that lifestyle choices account for about half of the variation in obesity rates per state; however the impacts of these effects are not substantially large. The lifestyle choices that proved significant in this regression are the percentage of the population who are everyday smokers and the percentage who consume fruits or vegetables five or more times per day. The everyday cigarette smoking variable is a proxy for people who lead healthy lifestyles in general, and the regression showed that those who smoke despite overwhelming statistics supporting the negative effects of the habit are also more likely to assume other unhealthy habits such as maintaining diets high in calories and fat content that could lead to obesity. The fruits and vegetable consumption variable was not surprising because these healthy food options are an important part of a healthy diet. They have nutritional value, and they are low in calories and fat content.

In the regression, it seems that poverty and physical exercise do not effect the obesity rate, however when considered separately poverty becomes a significant variable with a Beta value of .403 and an R squared value of .291. This indicates that poverty may have a slight affect on the obesity rate; however when considered with other variables that are definitely significant, poverty becomes trivial. The most surprising variable in this regression is the number of fast food restaurants per capita per state. The variable is significant; however it is negatively related to obesity. As discussed earlier, a variable for the percentage of the population that regularly dines at fast food restaurants would have been more effective and probably positively correlated to obesity.

This regression would have been better if I had had access to per capita data and a variable for the impact of genetics on obesity. It would also be interesting to test the effects of these variables on the percentage of the population that is overweight as opposed to obese. I feel that lifestyle factors would account for most of the variation in the percentage of those who are overweight whereas getting to the point of obesity is due more to genetics.

APPENDIX

Variables considered "for fun"

	Variable Name	Definition	Anticipated Slope	Robust?	Source
B8	Binge Drinking	% of adults having 5 or more drinks on one occasion, 2004	Positive	No	statemaster.com (Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2004)
B9	Grandparents' Influence	% of grandparents responsible for grandchildren, 2004	Positive	No	statemaster.com (American Community Survey 2004)

Since I came across data for the two variables above, I decided to run a regression with each of these against the dependent variable separately to test whether or not they had an effect on the obesity rate. I assumed before doing so that these variables would be insignificant, but I found it interesting to test them.

As expected, the regression output below illustrates that binge drinking is not a significant variable and therefore does not have an effect on the obesity rate. Although alcohol does have a lot of calories and drinking in excess is evidence of an unhealthy lifestyle, it does not go so far as to lead to obesity. This variable also only captures those who have had five or more drinks on one occasion. In my opinion, having five drinks at a time does not constitute binge drinking. Depending on one's body mass, five drinks may be appropriate. In addition, it would have been more effective for this study to investigate the effects of a variable for those who drink on a daily basis.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.046(a)	.002	-.019	2.474

a Predictors: (Constant), % of adults having 5 or more drinks on one occasion

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	19.950	1.775		11.243	.000
	% of adults having 5 or more drinks on one occasion	.037	.118	.046	.316	.753

a Dependent Variable: % of adults that are obese

Surprisingly, the variable for grandparents who are responsible for their grandchildren proved to be significant, but only when considered separately from all other variables. The t-stat for the variable is 3.901 and the significance value is .000, so the null hypothesis can be rejected with over 99.9% confidence. The R squared is .241, which indicates that this variable accounts for 24.1% of the variation in obesity rate. The Beta value, however, is quite small at .110. This indicates that a one percent increase in the percentage of grandparents responsible for their grandchildren would cause a .11% increase in the obesity rate. This variable is quite interesting because it tests the myth that grandparents are more lenient with their grandchildren and allow them to eat any number of sweets and desserts that children love. If a child develops unhealthy eating habits as a child because they are under their grandparents' care, this may lead to weight gain and unhealthy diets in the future. When considered in the regression with all other variables, however, grandparents' influence is proven insignificant with a t-stat of -1.161 and a significance value of .252.

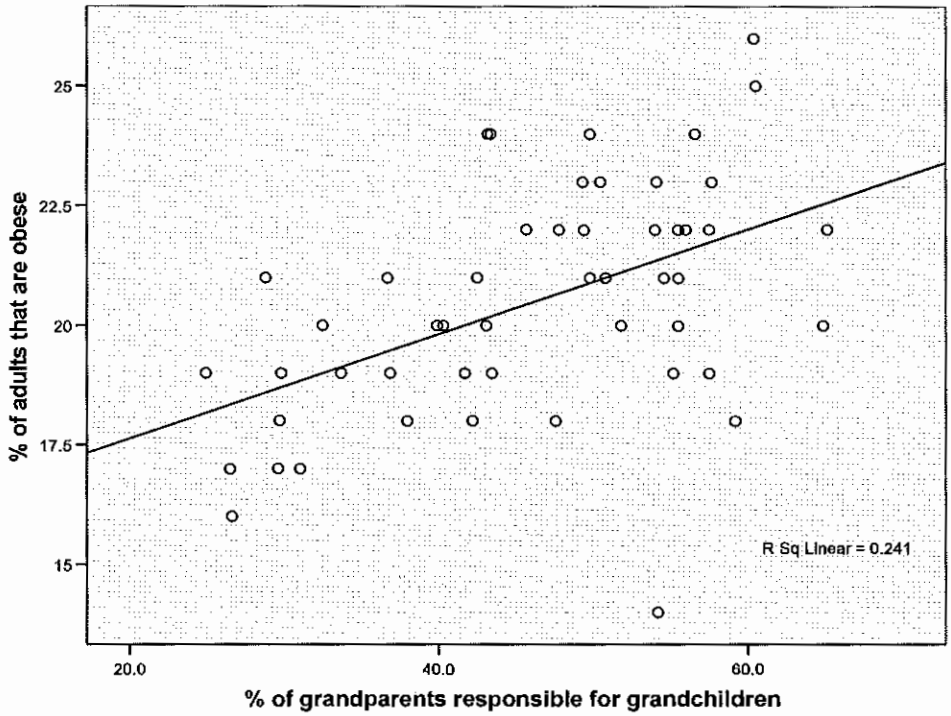
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491(a)	.241	.225	2.158

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.439	1.333		11.584	.000
	% of grandparents responsible for grandchildren	.110	.028	.491	3.901	.000

a. Dependent Variable: % of adults that are obese

Graph 10



DATA

State	Obesity Rate	Poverty	Educ.	Restaurant	Exercise	Nutri-tion	Tobacco Use	Alcohol	G'parent Influence	Fast Food
Alabama	23	16.1	22.3	199	70.3	22.6	18.7	12.7	57.7	75.7585
Alaska	21	8.2	25.5	283	79.4	22.6	16.3	16.3	50.8	91.9999
Arizona	18	14.2	28	199	75.7	22.9	13.4	15.5	47.6	75.5247
Arkansas	22	17.9	18.8	199	73.4	20.8	19.4	11.2	65.1	73.4938
California	21	13.3	31.7	241	77.2	26.9	10	14.7	28.8	88.2464

Colorado	14	11.1	35.5	265	81.2	24.2	13.8	17.2	54.2	92.6239 2
Connecticut	17	7.6	34.5	258	81.1	29.8	13.1	14.8	26.5	79.6893 7
Delaware	20	9.9	26.9	225	78.1	22	18.7	17.4	51.8	80.8079 3
Florida	18	12.2	26	236	76.3	23.6	14.5	12.4	38	71.2989 9
Georgia	22	14.8	27.6	232	74.2	23	15	12.1	54	82.0782 2
Hawaii	18	10.6	26.6	298	80.9	27.6	.	12.6	29.7	119.888 5
Idaho	20	14.5	23.8	245	75.1	20.4	13.3	17.5	43.1	80.6739 9
Illinois	21	11.9	27.4	236	74.6	23.1	15.4	14.4	42.5	81.6918 3
Indiana	24	10.8	21.1	217	78.6	22	19.5	18.9	56.6	83.3818 4
Iowa	22	9.9	24.3	256	76.7	17.1	16.2	12.8	47.8	76.1562 8
Kansas	21	10.5	30	235	70.1	18.8	15.2	9.6	54.6	81.8131 4
Kentucky	24	17.4	21	194	70.2	18.2	22.9	14.2	49.8	75.8576 7
Louisiana	23	19.4	22.4	238	78.4	16.4	16.9	14.9	54.1	75.2474 1
Maine	19	12.3	24.2	268	78.1	27	17	12.8	43.5	88.1379 7
Maryland	20	8.8	35.2	230	80	28.9	14.5	16.9	40.3	85.8753 2
Massachusetts	16	9.2	36.7	282	77.8	29	13.6	16.1	26.6	98.1687 1
Michigan	24	12.3	24.4	219	84.1	20.1	17.2	19.8	43.2	76.0930 4
Minnesota	19	8.3	32.5	214	68.6	24.2	15.2	10.4	33.7	80.1418 1
Mississi	26	21.6	20.1	198	75.1	17.9	18	16.2	60.4	72.3

ppi										7425
Missouri	23	11.8	28.1	223	81.1	20.2	18.4	17	50.5	79.58825
Montana	18	14.2	25.5	354	78.4	21.9	15.7	17.6	59.2	104.2223
Nebraska	20	11	24.8	259	75.7	17.8	14.8	18	64.8	85.50756
Nevada	19	12.6	24.5	219	81.4	20.4	16.4	16	41.7	86.26114
New Hampshire	19	7.6	35.4	252	74.3	28.5	16.5	14.4	24.9	99.88457
New Jersey	19	8.5	34.6	265	78.8	26.6	13	13	29.8	91.37959
New Mexico	19	19.3	25.1	210	73.4	22.4	13.2	15.2	55.2	73.29418
New York	20	14.2	30.6	301	75.2	25.8	14.2	9.5	32.5	82.12372
North Carolina	22	15.2	23.4	216	78.6	23.1	17.6	20.4	56	79.33292
North Dakota	20	12.1	25.2	293	77	21.5	14.8	16.9	55.5	79.29177
Ohio	22	12.5	24.6	237	72.2	22.7	20.8	13	45.7	89.27472
Oklahoma	22	15.3	22.9	238	82.8	15.4	19.8	13.1	57.5	82.70061
Oregon	21	14.1	25.9	267	75.6	24.1	14.2	17.6	49.8	100.4566
Pennsylvania	21	11.7	25.3	253	75.7	24.7	17.4	18.2	36.7	78.50049
Rhode Island	17	12.8	27.2	304	76.1	27.1	15.8	13.5	31	108.0849
South Carolina	22	15.7	24.9	233	81	22.3	17.9	16.9	55.5	76.70195
South Dakota	21	11	25.5	275	70.3	19	14	8.2	55.5	81.20558
Tennessee	23	14.5	24.3	221	73.8	22.2	21.5	15.6	49.3	77.8347

										7
Texas	24	16.6	24.5	235	71.2	22.5	13.5	13.6	43.4	76.5228 2
Utah	18	10.9	30.8	190	83.1	19.5	7.7	9.2	42.2	85.3481 3
Vermont	17	9	34.2	303	81.8	32.5	14.9	16.1	29.6	77.2456 8
Virginia	20	9.5	33.1	213	78	25.8	15.8	13.7	39.9	81.8651 7
Washington	19	13.1	29.9	242	82.7	23.3	13.9	14.2	36.9	101.147 9
West Virginia	25	17.9	15.3	214	75.4	18.7	21.8	9.7	60.5	79.9293 1
Wisconsin	22	10.7	25.6	279	81.5	21.5	16.5	21.8	49.4	69.7945 5
Wyoming	19	10.3	22.5	295	79.8	22.1	16.4	16.1	57.5	84.8914 9

INDONESIA: A GOOD ADDITION TO YOUR PORTFOLIO?

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INTRODUCTION

Over the last ten years Indonesia has experienced economic turmoil, and environmental distress. Natural disasters have put the Indonesian lifestyle at the brink of collapse. The recovery efforts of the government have proven to be costly and time consuming. The tsunami in December of 2004 strangled the already unstable nation. The tsunami killed a confirmed amount of over 130,000 people and left 500,000 more, homeless. This natural disaster has forced President, Susilo Bambang into action to recuperate his country. His plan for future growth is dependent on the idea of three variables; internal reform, improved confidence of international and domestic investors and strong growth in the global economy. The confidence of international investors has been tainted and beat up since the Asian Financial Crisis. The Indonesian currency, the Rupiah, struggled through those difficult economic times. The Asian Crisis hit Indonesia hard in August of 1997. The deterioration of the Rupiah crippled the Indonesian economy. The population who fell under the poverty level grew exponentially, unemployment was on the rise, and there was an inadequate infrastructure, endemic corruption, a fragile banking sector, and an overall poor investment climate.

The purpose of this paper is to illustrate the opportunities and threats in investing in Indonesia, as an addition to a globally diversified portfolio. I carefully researched the improvements over the last ten years and evaluated the general investing environment. I took both a micro and macro perspective by comparing the risk exposure of Indonesia to other markets, more developed ones. I did this through a multifactor expression which accounts for both micro and macro risks.

WOULD YOU INCLUDE THE INDONESIA MARKET IN A GLOBAL PORTFOLIO?

When investing a portfolio in globally diversified assets, US investors take on a risk that is otherwise not prevalent in domestic equities. These risks are realized with the expectation of different reporting guidelines, government regulations and political control of the economics for the nation. However, the risk is exemplified when investing in Emerging Markets. Emerging Markets need to be carefully analyzed before someone invests in them. When evaluating these markets, one must analyze specific risk, return and correlation characteristics.

The table below (Table 1) illustrates the risks and returns of Indonesia as well as five other common indices: IFCG Asia, IFCG Composite, IFCG E. Europe, IFCG Latin America and IFCG ME & Africa, for the past ten years. The measure of risk (standard deviation) is important to note. These emerging markets incur a much higher threat than those of developed markets. In the case of Indonesia, the standard deviation between the years of 1997-2002 is dramatically higher than that of 2002-2007. The economic risk settled over time and the Asian Financial Crisis was put to rest. Over the first five years studied, the returns were negative and the risk was escalated. From 2002-2007, the standard deviation decreased dramatically, while the returns proved to be the most profitable out of the studied markets. This sort of change in a market is very attractive to global investors. If a market proves to be successful at reducing risk (standard deviation) and increasing returns, they will experience an increase in investors.

Reward to risk is a vital factor when determining country allocation. However, when building a portfolio of a combination of global assets, the correlation between the emerging market's returns and the rest of the portfolio is crucial too. Thus, in Table 2, I calculate the monthly return correlations based on the US-dollar-adjusted returns between seven series (EAFE, USA, Asia, Europe, Latin America, Middle East and Africa and Indonesia). To determine the degree to which correlations have changed, the data has been

divided into two equal sub periods (1997-2002 and 2002-2007). Table 3 exemplifies test statistics on the significance of the difference in correlation between 1997-2002 and 2002-2007.

Table 1: Summary Statistics

Country	Period	# Companies	Market Capitalization	Value Traded	Return	Std Dev.	PE	PB	Dividend Yield
Indonesia	1997-2002	61	$11,969.15	$795.75	-23.43%	66.81%	-1.66	1.75	2.05
	2002-2007	56	$22,797.55	$2,566.22	40.60%	25.81%	20.56	2.38	2.99
	1997-2007	59	$17,246.86	$1,658.66	7.77%	51.75%	9.17	2.06	2.51
IFCG Asia	1997-2002	1058	$526,100.52	$95,776.42	-3.35%	26.46%	168.48	1.81	1.47
	2002-2007	1156	$1,206,805.88	$210,386.38	0.64%	65.90%	19.89	2.04	2.17
	1997-2007	1106	$860,780.66	$1,658.66	11.60%	50.25%	95.42	1.92	1.81
IFCG Composite	1997-2002	1906	$1,035,160.17	$123,547.23	-3.35%	26.12%	24.09	1.67	2.31
	2002-2007	1971	$2,306,358.79	$322,515.10	27.05%	18.25%	18.12	2.22	2.35
	1997-2007	1938	$1,660,166.16	$221,373.10	11.60%	22.93%	21.15	1.94	2.33
IFCG E. Europe	1997-2002	115	$53,183.73	$3,034.47	-6.14%	47.38%	26.82	1.01	1.40
	2002-2007	89	$250,564.92	$28,053.02	-14.88%	122.82%	16.91	1.77	1.68
	1997-2007	102	$150,229.48	$15,335.26	-10.44%	92.11%	21.95	1.39	1.54
IFCG Latin America	1997-2002	295	$232,391.70	$9,125.14	-5.70%	34.48%	14.45	1.34	3.79
	2002-2007	258	$349,234.43	$19,640.83	-16.49%	133.93%	14.11	2.10	3.16
	1997-2007	277	$289,839.38	$14,295.36	-11.01%	96.67%	14.28	1.71	3.48
IFCG ME & Africa	1997-2002	333	$150,894.64	$7,015.12	1.52%	22.91%	14.25	1.97	3.53
	2002-2007	418	$468,019.90	$54,126.46	-1.10%	67.43%	20.71	3.60	2.73
	1997-2007	375	$306,814.56	$30,178.20	0.23%	49.81%	17.42	2.77	3.14

Table 2: Monthly Returns Pairwise Correlation Matrices

Panel A: 1997-2002

	EAFE	*USA*	*Asia*	*Europe*	*Latin America*	*Middle East & Africa*	*Indonesia*
EAFE	1						
USA	0.80	1					
Asia	0.56	0.55	1				
Surope	0.68	0.60	0.53	1			
Latin America	0.70	0.66	0.66	0.70	1		
Middle East & Africa	0.62	0.51	0.64	0.59	0.69	1	
Indonesia	0.52	0.47	0.52	0.75	0.69	0.57	1

Panel B: 2002-2007

	EAFE	*USA*	*Asia*	*Europe*	*Latin America*	*Middle East & Africa*	*Indonesia*
EAFE	1						
USA	0.85	1					
Asia	0.74	0.65	1				
Europe	0.65	0.42	0.56	1			
Latin America	0.80	0.70	0.67	0.69	1		
Middle East & Africa	0.45	0.29	0.34	0.40	0.47	1	
Indonesia	0.09	0.03	0.23	-0.11	-0.05	-0.07	1

Table 3: Test of Difference in Correlation between the First (1997-2002) and the Second (2002-2007) Period

	EAFE	USA	Asia	Europe	Latin America	Middle East & Africa	Indonesia
EAFE	1						
USA	0.046	1					
Asia	0.172	0.107	1				
Europe	-0.032	-0.173	0.031	1			
Latin America	0.094	0.036	0.007	-0.010	1		
Middle East & Africa	-0.170	-0.225	-0.295	-0.185	-0.227	1	
Indonesia	-0.425	-0.434	-0.294	-0.659	-0.742	-0.633	1

Z-statistic is computed as "$\Delta r/[1/(n_1-3)+1/(n_2-3)]^{1/2}$", "**" and "*" indicate significance at the 99 and 95 percent level, respectively.

*The difference in correlation is significant in the relationships of Indonesia to EAFE, the USA, Europe, Latin America, and the Middle East & Africa.

Figure 1 and 2 are efficient frontiers, based on monthly country index returns, for respectively the 1997-2002 and 2002-2007 periods with Indonesia included and without. Figure 1 shows that the allocation of the portfolio does not change whether Indonesia is in the portfolio or not. This is because Indonesia has had a negative return associated with a very high level of risk and therefore it is evident that Indonesia is not a valuable investment as a separate asset class, during this time period. The negative returns and higher risk can be attributed to the Financial Crisis. However, in Figure 2 the decrease in risk (as measured by Standard Deviation) and increase in return proves that Indonesia would make a valuable addition to a globally diversified portfolio.

Figure 1: Efficient Frontier for the Period 1997 to 2002

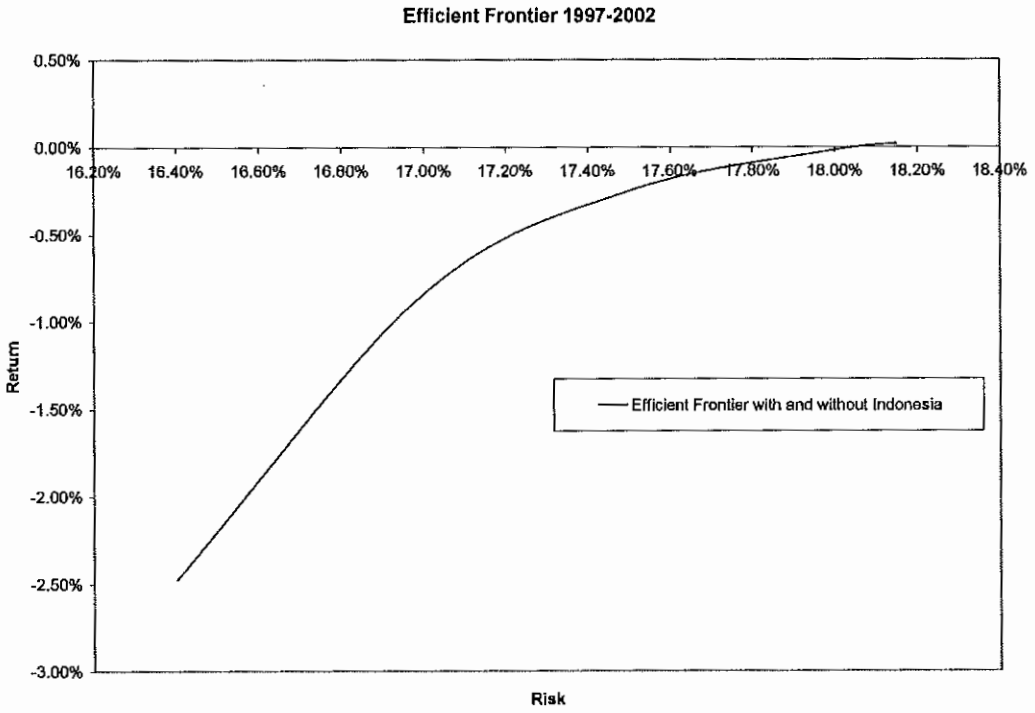
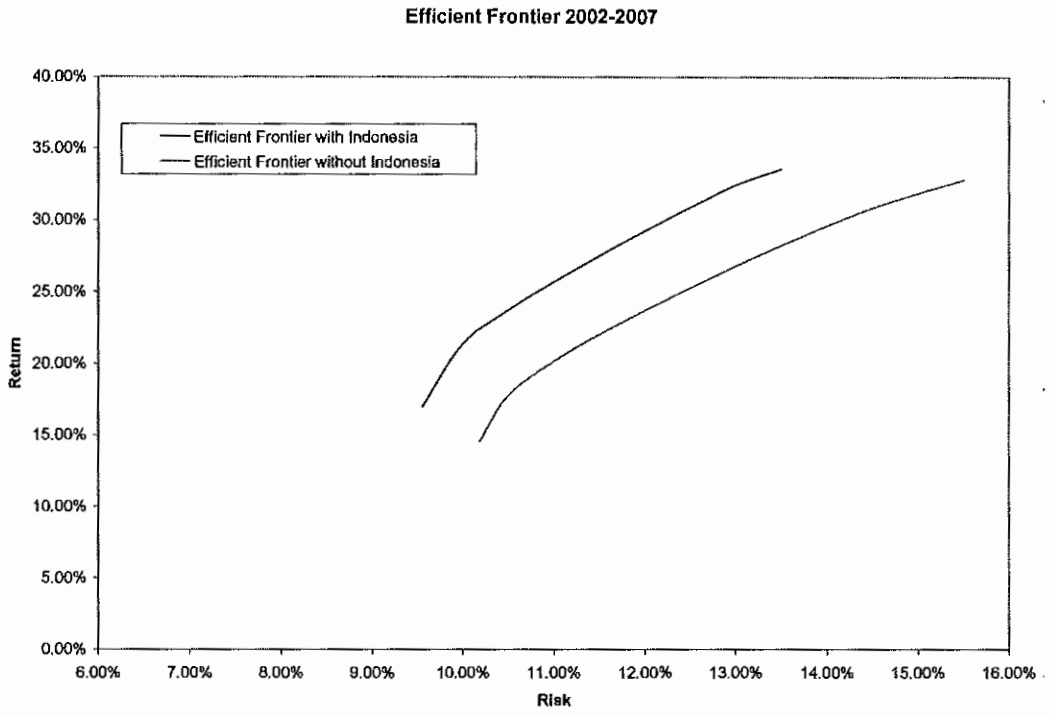


Figure 2: Efficient Frontier for the Period 2002 to 2007



Asset Classes: IFCG Indonesia, MSCI USA, IFCG Asia, IFCG Europe, IFCG MEA, IFCG Latin America, MSCI EAFE

INDONESIA: THE ECONOMY

With such an extreme unemployment rate, 10.3% and more than 25% of their population under the poverty level, one must be weary when having a positive outlook on the Indonesian economy. In 1997, when the Asian economic crisis hit home the government took control of the majority of the private sector assets by purchasing underperforming bank loans. The crisis emerged in Thailand with the collapse of the Thai baht. The cause of this was due to the Thai government deciding to float the baht, rather then continuing to keep the baht pegged to the US Dollar. The demise spread through most of Southeast Asia. The currencies depreciated, stocks collapsed and private debt increased dramatically. Now, since the government has stepped in and instilled a lively democracy, they have reached a balance for the Rupiah and have allowed Indonesia a solid experience of strong growth. Most Indonesia exports are sent to Japanese, the US and other South Eastern Asian countries. These exports include oil, gas, plywood and textiles. The equity markets have become constant and GDP is moving upward.

The economy of Indonesia is dependent on many other variables. One of these factors is the Indonesian environment. The natural resources of this country are the backbone for exports and domestic consumption. Their growth can be directly attributed to their valuable resources. However, some issues that may affect the longevity of these natural resources are the rapid urbanization of their urban cities, the increased rate of deforestation and forest fires that have been a detriment to thousands of acres of land each year. Another variable is the political situation of Indonesia. As mentioned above, Indonesia is now a democracy. This however, was not always the case. Not too long ago, Indonesia experienced turmoil and instability. Currently, Indonesia has partnered with the United States with the War on Terror. By having the United States, a developed nation, in a partnership with Indonesia, it could prove some sort of security for potential investors. Finally, the strength of the social situation of Indonesia will affect the economy. Over the most recent three years, GDP has increased at a 5.6%. With the increasing cost on oil and gas, as an exporter, Indonesia has enjoyed the ride up. Also, the housing market has been doing extremely well, which is a good judge for the health of the nation.

Indonesia is growing at a healthy rate and benefiting from the current situation facing the global economy. With mid-east tension, supply issues for oil and natural disasters, driving the price of oil up; it looks as though Indonesia will be able to sustain this consistent growth going forward and looks to be an attractive area for investment within the emerging markets.

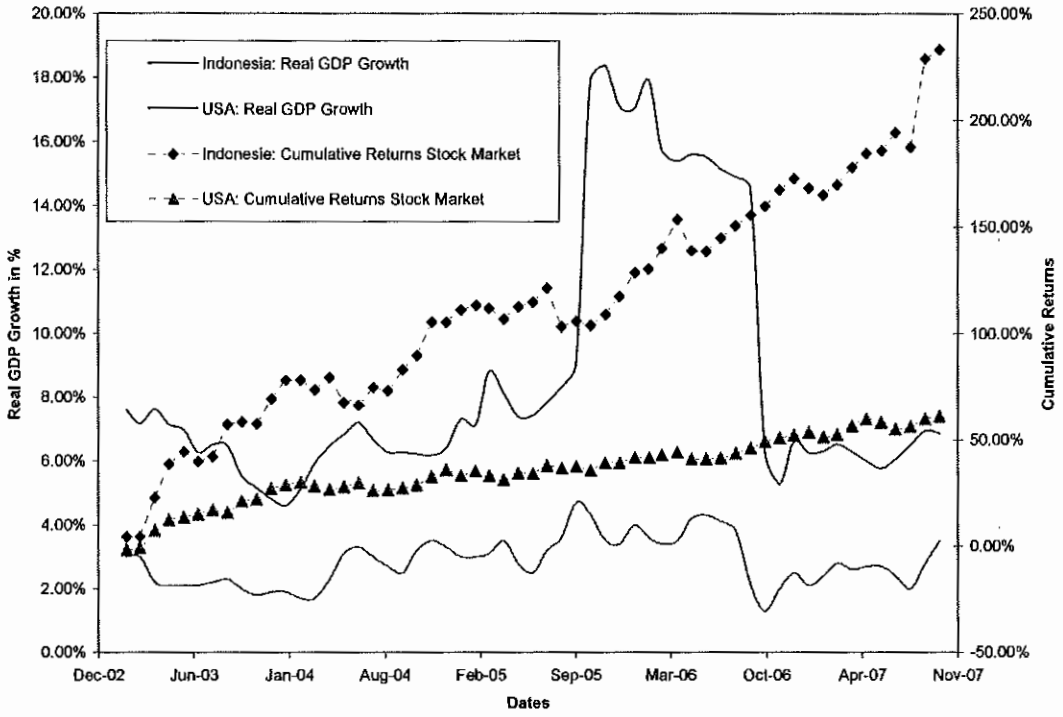
Table 4: Comparative Economic Analysis—Indonesia and USA

	Indonesia			United States		
Type	10 years	5 years	1 year	10 years	5 years	1 year
Cumulated Market Return %	7.77%	40.60%	3.63%	92.79%	24.98%	12.99%
Budget Balance as % of GDP	-0.10	-4.00	-1.10	-1.6	0.5	-3.4
Current Account as % of GDP	3.20	2.00	0.80	-2.1	-4.3	-6.4
Current Account as % of XGS	15.00	4.10	2.50	-16	-30.8	-46.8
Debt Service as % of XGS	23.00	30.00	16.40	27	26	18
Exchange Rate Stability	0.00	12.80	4.30	10.9	-10.8	-8.1
Foreign Debt as % GDP	24.50	93.00	36.60	10.6	8.6	54.3
GDP per Head of Population	1,550.00	692.00	1,561.00	29,300.00	35,966.00	42,619.00
Inflation	18.10	9.50	12.50	2.2	1.7	2.6
International Liquidity	0.00	4.50	4.00	1.8	0.8	0.6
Real GDP Growth	3.80	3.20	5.20	3.6	2.4	3.3

Table 4 gives a comparative economic analysis of Indonesia and the United States. Overall the cumulative market return for the US has been greater than that of Indonesia (over the ten year period). However, in the last five years Indonesia has proven to be more profitable with a 40.60% as compared to 23.98%. The budget balance as a % of GDP illustrates the government's balance. As demonstrated, both countries are in a deficit. The US is more heavily vested in their debt. Indonesia has been steadily cutting their foreign debt over the last five years. For the Current Account as a % of GDP, it proves that Indonesia has been earning slightly more than they are spending. This makes sense since most of their trade is exports. The US however, shows that they are spending more than they are making, importing more than they are exporting. The deficit for the US has led to a substantial increase in debt to foreigners. Indonesia's success of being a prominent exporter is directly correlated with their oil reserves. This is inversely the case for the US, and their need for oil. The Foreign Debt as a % of GDP expresses the reliance on Foreign Debt for the United States, averaging more than 50%, 54.3%.

Another interesting thing to note is the GDP per Head of Population. Ten years ago Indonesia was at a height, then had the disaster of the Asian Financial Crisis and has finally rebuilt their growth to the level they were at ten years ago. In the United States this has not been the case. The GDP per Head of Population has been on a steady increase within the last ten years. Seventy percent of US GDP is comprised of consumer consumption. Obviously, the US consumer is buying goods and putting their earned money back into the economy; which compliments the current account percentage. Finally, the Real GDP Growth has been strong for Indonesia. In the last year they experience 5.2% real growth; stunting the US's 3.3%. This is remarkable because of the high rate of inflation Indonesia suffers from. The real GDP deducts inflation to truly show real growth. With an inflation rate of 12.50%, one would not believe that a country could still experience real growth at a rate of 5.20%.

Figure 3: Real GDP Growth and Market Returns: Indonesia and the USA



*The data only goes back to Jan 03' because that was the latest date that could be received for Indonesia's GDP.

MACRO RISK EFFECTS

In the previous figure, I have determined that over the last 4-5 years, Indonesia would have made for a healthy investment. The Real GDP growth has shown extreme volatility. However, the cumulative market returns prove to be relatively consistent. Granted, this graph does not take into account the horrors faced in the late 90's but it gives justice to their most recent success. The United States, a much more developed nation proves to be much more consistent, and safer. With less volatility and risk, returns will suffer. This can be seen by the 233% returned by Indonesia since January 2003 and the 61% the United States returns, within that same time period.

Much of this increase in risk, are attributed to economic, financial and political risk. Below, Table 5, panel A, illustrates the change in a variety of, economic, financial and political IRCG indices, which rate countries on a scale of 1 to 100 (1, being the most risky and 100, being risk-free) for political risk and on a scale of 1 to 50 for economic and financial risk.

Indonesia, as an emerging market, has improved many of their internal factors; whereas, the US, who does not concern themselves so much with internal maturation has increased their risk with many external variables. Indonesia has improved their inflation risk, stability in GDP and their trade deficit. These three factors are each economic risks that have impacted their overall market returns. Indonesia shifted their focus towards being an exporter which has diminished their dependency on other countries for goods. When looking at a country whose profits from exports one must look at the exchange rate stability. Over the last five years they have also improved on this. Ten years ago the risk was higher for the stability of the Rupiah because of the Asian Financial Crisis and the devaluing of most South East Asian currencies. Politically, they have improved on their internal conflict and democratic accountability. This is important to note because investors who look towards emerging markets as investments, need to be secure with the strength of the government and their order.

The United States, while obviously less risky in most areas, have kept their internal factors consistent over the last ten years. This can be expected from a developed nation. However, the US has increased their trade deficit which in turn increased their risk to foreign debt. This is most likely a minimal risk for the United States because they are such a dominant nation. However, this is interesting to note because these two countries are in different stages of their cycle. Indonesia is focused more towards internal growth and expansion whereas the US is in the slower growth, more stability stage. Finally, most of the political risks of the US; that deal with external conflict have worsened for the US over the last five years. Obviously, the increase in concern with the War on Terror has played a role in these variables. The War on Terror may have increased the risk politically for the US, but it has helped Indonesia's profits on oil, due to the increase in prices per barrel; based off of the increase in tension in the Middle-East.

When analyzing the correlation between the risk ratings of the two countries (Panel B), it is clear that there are some differences in the different risk ratings. The economic risk rating and political risk rating have negligible correlations because their z-test has no real significant level of confidence. With the economic risk ratings, Indonesia is slightly positive in correlation to the US. This can be attributed to the achievements of both countries. By different methods, both countries are moving forward. The political risk again has a negligible significance but it is important to realize that Indonesia is negatively correlated with the US. Indonesia has improved their internal conflicts while the US has escalated their external threats. Finally, the financial risk, which earned greater than a 90% negative correlation, is vital to analyze. Over the last ten years, Indonesia's Rupiah has worked towards appreciation. It began at the bottom and has increased their exchange rate stability. During this time, the US has increased their vulnerability to foreign debtors. With this increase in dependency, the US has experienced devaluation in their currency. The negative relationship is apparent.

Table 5: Risk Ratings

Panel A: ICRG Country Risk Scores

Risk Component	Indonesia		USA	
	10 years	5 years	10 years	5 years
Economic Risk Rating	33.3	36.4	39.6	39
Financial Risk Rating	34.1	36.9	35	32.3
Political Risk Rating	51.3	54.3	83.5	80.3
Risk for GDP per Head	0.6	0.4	4.9	5.0
Risk for GDP Growth	7.5	9.1	8.1	8.2
Risk for Inflation	6.9	7.4	9.5	9.5
Risk for Budget Balance	6.1	6.7	7.2	6.5
Risk for Current Account as % of GDP	12.1	12.7	10.2	9.8
Risk for Foreign Debt	4.3	4.6	8.2	7.1
Risk for Debt Service	6.6	7.0	7.4	7.7
Risk for Current Account as % of XGS	12.4	12.8	9.1	8.1
Risk for Exchange Rate Stability	7.8	9.6	9.1	9.0
Risk for International Liquidity	2.6	2.9	0.5	0.4
Bureaucracy Quality (L)	2.2	2.0	4.0	4.0
Corruption (F)	1.5	1.5	4.2	4.3
Democratic Accountability (K)	3.8	4.7	5.8	5.8
Ethnic Tensions (J)	2.1	2.0	5.0	5.0
External Conflict (E)	10.4	10.8	8.0	7.3
Government Stability (A)	8.3	7.7	9.7	9.0
Internal Conflict (D)	6.8	8.2	10.6	10.2
Internal Conflict (D)2	6.8	8.2	10.6	10.2
Investment Profile (C)	6.1	7.0	11.0	11.7
Law & Order (I)	2.6	2.7	5.5	5.0
Military in Politics (G)	2.1	2.5	5.1	4.3
Religious Tensions (H)	1.7	1.0	5.6	5.3
Religious Tensions (H)2	1.7	1.0	5.6	5.3
Socioeconomic Conditions (B)	3.8	4.2	9.1	8.5
Government Unity	2.9	3.0	3.8	3.8
Legislative Strength	2.4	2.3	3.1	3.1
Poverty	0.9	0.9	3.5	3.5
Popular support	2.5	2.4	2.4	2.1
Contract Viability	2.4	2.6	3.9	4.0
Profits Repatriation	2.2	2.3	3.7	3.7
Payments Delays	2.0	2.1	4.0	4.0
Unemployment	1.1	1.4	2.8	2.7
Consumer Confidence	1.8	1.9	2.3	2.2
Civil War	3.2	3.4	4.0	4.0
Civil Disorder	2.6	2.7	3.8	3.8
Terrorism	2.1	2.1	2.5	2.4
War	4.0	4.0	3.1	3.2
Cross-border Conflict	3.7	3.8	1.7	1.6
Foreign Pressures	3.0	3.0	2.6	2.5

Panel B: Change in ICRG Ratings Correlation

	Indonesia			
	1997-2002	2002-2007	Difference	Z-Stat
Economic Risk				
USA	-0.07	0.05	0.12	0.67
Financial Risk				
USA	0.09	-0.25	-0.34	-1.91
Political Risk				
USA	0.21	0.16	-0.04	-0.23

Z-statistic is computed as "$\Delta r/[1/(n_1-3)+1/(n_2-3)]^{1/2}$", "**" and "*" indicate significance at the 99 and 95 percent level, respectively.

MICRO RISK EFFECTS

In table 6 I analyze the ten economic sectors and their contribution to Indonesia's economy. I will be focusing my attention on any improvements Indonesia's market has experienced over the studied time period. The average returns have increased in the last five years in every sector as compared to the first five years studied, with the exception of the Information Technology sector. Also, risk, as measured by standard deviation, has decreased in all of the sectors during the second five years as compared to the first five years. On an evaluation basis, the Sharpe Ratio[1] will prove to be much higher for each sector in the last five years compared to the first five years. This is a measure that illustrates performance as adjusted for risk. It proves if successful investment decisions are achieved because of intelligence or the willingness to take on excess risk. The higher the Sharpe Ratio the more an investor can contribute to being an 'intelligent' investor.

With the exception of the Technology sector, each sector has increased their market size. This makes sense because it is clear that the Information Technology area is not the desirable investment, due to its lagging returns. This again is the case with market value. Overall, it is evident that the market is expanding in Indonesia. The progress that has been achieved over the last ten years is apparent in this table. The breakdown per sector truly shows the areas of attraction. It seems as though the confidence of investors is slowly being restored and Indonesia is making the right steps to be a solid investment, even when adjusted for risk.

[1] The Sharpe ratio tells us whether a portfolio's returns are due to smart investment decisions or a result of excess risk. This measurement is very useful because although one portfolio or fund can reap higher returns than its peers, it is only a good investment if those higher returns do not come with too much additional risk. The greater a portfolio's Sharpe ratio, the better its risk-adjusted performance has been.

Table 6: Indonesia Equity Market Characteristics by Economic Sector

Sector	Period	Observation Starts On	Average Return (%)	Std Dev.	Market Size (mil.)	Market Value (mil.)	Shares Traded	Days Traded	Ave PE	Ave PB	Average Investable Weight
Cons Disc.	1997-2002	Jan-97	-3.12%	32.01%	17	168.90	104	19	-7.34	9.00	0.7349
	2002-2007	Jan-02	1.49%	12.37%	28	700.74	98	19	19.25	2.36	0.3004
Cons Stap.	1997-2002	Jan-97	-2.71%	29.53%	20	704.31	64	18	38.16	4.72	0.6751
	2002-2007	Jan-02	1.95%	11.51%	34	1159.44	152	18	54.22	4.18	0.1790
Energy	1997-2002	Jan-97	1.84%	15.84%	11	481.66	73	21	25.29	1.56	0.0000
	2002-2007	Jan-02	3.13%	11.16%	123	1337.87	671	20	25.28	5.85	0.2751
Financials	1997-2002	Jan-97	-6.15%	37.49%	6	255.31	138	18	28.15	12.16	0.4340
	2002-2007	Jan-02	1.71%	13.49%	46	1366.77	522	18	56.24	3.02	0.2290
Healthcare	1997-2002	Jan-97	0.09%	39.12%	5	126.58	62	20	53.20	2.50	0.5452
	2002-2007	Jan-02	2.64%	11.65%	21	547.44	195	19	86.77	5.41	0.2470
Industrials	1997-2002	Jan-97	-3.99%	37.55%	3	44.00	49	19	3.67	0.73	0.3848
	2002-2007	Jan-02	2.91%	12.71%	34	382.50	824	18	3335.41	326.45	0.2884
Inf. Tech	1997-2002	Jan-97	-0.47%	33.43%	12	55.00	226	20	-755.45	1.32	0.7875
	2002-2007	Jan-02	-0.60%	18.84%	3	33.49	142	19	48.15	1.30	0.1382
Materials	1997-2002	Jan-97	-4.83%	27.76%	11	290.00	73	18	9.02	42.25	0.6500
	2002-2007	Jan-02	4.25%	14.22%	36	922.00	149	20	28.82	73.17	0.2041
Utilities	1997-2002	Jan-97	-1.83%	19.39%	95	2500.00	213	20	18.50	2.94	0.3856
	2002-2007	Jan-02	5.38%	12.54%	238	4490.00	240	20	56.69	20.53	0.3949

Next, we must analyze the micro premia experienced by stocks traded within developed markets. The stocks that I chose to analyze; all trade on the Indonesian market since at least January 1997. In my analysis I was careful to follow the methodology in Rouwenhorst (1999). That is, at the beginning of each month, stocks with available ranking information are sorted into three portfolios (top 30%, middle 40%, bottom 30%). Once these stocks were sorted, returns were averaged for each tier. I ran these stocks against portfolios constructed of High/Low Betas, Small/Big market-cap portfolios, High/Low Price-to-Book, Winners/Losers, for a momentum affect and finally, Investablility. Averages were taken from each of the differences so the premia are clear in each broken down period, 1997-2002; 2002-2007; in table 7.

When looking at the average premium of HML Beta it demonstrates the success of value companies over growth companies during both studied time periods. This is complimented by the negative HMLPB. Companies with a low price-to-book are value companies. Again, in both studied periods the value firms prevailed to be more successful. Next, larger companies proved to outperform smaller firms during both time frames. Although the theory is, smaller firms could potentially outperform larger companies because of their increased risk. However, in Indonesia the volatility was so great that those companies that have the market cap to survive would be the triumphant ones. During the first time period (1997-2002) the momentum factor proved that historic success did not encourage future success. Again, this can be attributed to the instability of the market. Since 2002, Indonesia has made leaps towards development and real growth. Over the second period (2002-2007) it is proven that companies with historic success; compliment for future success. The market has grown more consistent and the government more to regulate the investing. In the period from 2002 to 2007 it is illustrated through the investability premium. The positive number shows more corporate governance. The influence of the Indonesia government has been an obvious step towards rehabilitation.

Table 7: Sorted Portfolio Returns

	1997-2002	2002-2007
Average of HML Beta	-0.020	-0.002
Standard Error	0.024	0.008
T-stat	-0.818	-0.303
Average SMB	-0.045	-0.025
Standard Error	0.021	0.005
T-stat	-2.174	-4.486
Average HMLPB	-0.066	-0.032
Standard Error	0.019	0.005
T-stat	-3.519	-6.085
Average of WML	-0.011	0.008
Standard Error	0.019	0.006
T-stat	-0.585	1.413
Average of INV	-0.013	0.007
Standard Error	0.009	0.005
T-stat	-1.413	1.272

Z-statistic is computed as "$\Delta r/[1/(n_1-3)+1/(n_2-3)]^{1/2}$", "**" and "*" indicate significance at the 99 and 95 percent level, respectively.

DETERMINING THE COST OF CAPITAL AND FORECASTING INDONESIA STOCK RETURNS

The findings of the 3 previous sections of my study suggest that Indonesia stock returns seem to be increasingly sensitive to similar factors that affect world capital markets. Despite that fact that Indonesia's results show it has several things in common with emerging markets such as lower political stability, higher standard deviations for returns, it also has many things in common with developed markets such as positive global betas, low PEs and PBs and high dividend yields.

In this section, I will forecast the ability of a conditional multifactor model that takes into consideration micro factors as well as macro local and global factors. We use a methodology similar to Griffin (2002), except I use the conditional 5-factor CAPM model. Table 10 displays the top 10 and bottom performers over 1 year forecasted return and the statistics associated to the stocks using regression.
Conditional 5-factor CAPM:

$$R_{i,t} = \alpha_i + \beta_{1i} r_{Indonesia,t} + \beta_{2,i} r_{World,t} + \beta_{3,i} SMB_t + \beta_{4,i} HMLPB_t + \beta_{5,i} WMLt + \beta_{6,i} INV_t + Z_{t-1} (\beta_{1i} r_{Indonesia,t} + \beta_{2,i} r_{World,t} + \beta_{3,i} SMB_t + \beta_{4,i} HMLPB_t + \beta_{5,i} WMLt + \beta_{6,i} INV_t) + e_{i,t}$$

ri,t, rIndonesia, and rWorld,t are risk premia. SMB is the size premium, HMLBP is the value premium, MOM is the momentum premium, and IP is the investable premium. Zt-1 are instruments consisting of local and global variables. Local risk factors (lagged 1 month) are the discount factors for Indonesia's economic, financial, and political risk ratings (% change in risk rating/ [1+% change in risk rating]). Global factors (lagged 1 month) are the discount factors for GDP-weighted world political, economic and financial risk ratings.[2]

[2] These explanations include a liquidity premium for value stocks in emerging markets (Daniel and Titman, 1997), market growth resulting from an increase in number of firms rather than an increase in value (Harvey and Roper, 1999), low leverage of small firms due to capital market imperfections in emerging markets (Bolbol and Omran, 2005; Girard and Omran, 2007), and market segmentation of nascent markets because of market microstructure and regulatory and tax regimes (Classens, Dasgupta and Glen, 1998).

First, the adjusted R-squared is a measure of goodness-of-fit and since almost all the values are around or over 50% the model is relevant. The F-Stat for the R-squared suggests a significant relationship between stock return and the factors used in the model. The Durbin Watson measure indicates the stability of the stock return since all values are around 2.

The forecast return shows that the expected return of Indonesia is lower than the World index. Momentum though is expected to increase significantly while liquidity remains negative. Momentum increasing indicates that the winners will continue to perform better than the losers in the future and these stocks should be included as investments into a portfolio of countries because they appear to be undervalued and have positive alphas.

Table 8:
Regression of Individual Stock Excess Returns-Forecasts

Security	Return	Adjusted R-Squared	F-Stat	STDev
Top 5				
Bumi Resources	81.06%	0.2971	4.0427	36.39%
Kawasan Industri Jababeka	63.22%	0.4084	5.97	41.29%
Bakrie & Brothers	47.64%	0.3396	4.702	35.53%
Bank Danamon Indonesia	46.80%	0.5522	9.879	30.11%
Astra Agro Lestari Tbk PT	31.80%	0.3435	4.767	31.11%
Bottom 5				
Indofood	-6.70%	0.3921	5.643	32.10%
Ramayana Lestari Sentosa	-7.11%	0.505	8.348	30.10%
Kalbe Farma	-7.70%	0.4235	6.29	29.99%
Gudang Garam	-17.66%	0.3582	5.02	16.49%
Tempo Scan	-21.26%	0.4235	6.289	30.10%
Independent Variable				
Value minus Growth	-52.28%			9.77%
Average of INV	2.23%			13.46%
Average of Returns_market	33.65%			17.93%
Small minus Big	-19.86%			11.21%
Winners Minus Losers	-1.28%			11.70%

ANALYSIS ON TOP 2 AND BOTTOM 2 STOCKS

Bumi Resources

Bumi Resources is an Indonesian based oil and coal mining company. They deal specifically with the mining, manufacturing, production, and marketing of coal. Also, they tap into the exploration of oil. Bumi has proven to be the most successful company over the last ten years in Indonesia. On September 30, 2007 Bumi reported an increase in revenues of 22% y/y (1.34B to 1.65B). This increase can be attributed to their increase in business in their coal mining division. Their bottom line has improved dramatically y/y 153M to 800M. With the substantial hike in the prices for commodities over the last year, this success is obvious.

Bumi is also looking to grow by acquisition. On December 12, 2007 they made a bid for the Australian company, Herald Resources Ltd. Bumi offered $396M in cash for the acquisition. The main reason why Herald Resources is attractive to Bumi is because of Herald's control of lead and zinc mines in

Sumatra, Indonesia. Eighty percent of Herald Resource's interest is focused primarily on these mines. Obviously, Bumi feels as though these mines will help bring new revenues to an already successful firm.

Kawasan Industri Jababeka

Kawasan Industri Jababeka (KIJA) deals primarily with property management. They develop and construct industrial complexes. Their business ranges from building up the infrastructure of housing and apartment complexes to assembling sports facilities. Over the past ten years KIJA has been flourishing. The move towards urbanization has been dramatic and KIJA has been the beneficiary. However, in the last year revenues have declined dramatically, down 18% (RP297.49B to RP244.35B). The decreased in revenues are accounted for lower sales of land and houses, developed land and lower rentals in their office spaces and apartments. Although the revenues were down, their net income has improved. Due to the gain on the foreign exchange and a higher rental income, net income has rose from RP34.04B to RP65.25B.

Recently, KIJA is looking to work closer to capacity by purchasing more machinery and expand their output. They just received a bridge loan of $88 million to finance the expansion. The machines they decided to purchase came from a Chinese power plant.

Gudang Garam

Gudang Garam (GGRM) has been one of the worst performing firms on a return basis, over the last ten years. They are involved in tobacco and related activities. Over the last ten years they have experienced a -17.66%. However, over this last year there has been some light for GGRM. Revenues are up 6% to RP21.793T from RP 20.512T. The net income is up an astounding 35% to RP1.217T from RP900.31B. The revenue growth is from the increase sales in cigarettes and paperboard. The net income enjoyed the additional volume but also played beneficiary to the gain on the sale of a fixed asset, the decrease in interest expense and the gain from the foreign exchange. If GGRM stays consistent they could illustrate promise as a potential investment.

Due to limited resources there are no recent significant developments to be reported on.

Tempo Scan

Finally, Tempo Scan (TSPC) has been the worst performing company over the last ten years. Their returns have been down 21.26% during this time period. TSPC is a pharmaceutical company that sells roughly one hundred products domestically and they export forty products. Though the last ten years have not been favorable for TSPC, they look to be taking steps in the right direction. Similar to GGRM, TSPC has experienced some success over the last year. Their revenues have gone up 11% from RP2.038T to RP2.252T and their net income increase 8% from RP240.49B to RP260.77B. The revenues have jumped because of increase in sales across all segments of their business. Net income enjoyed this increase as well. However, it was offset by a decrease in interest income. Nonetheless, TSPC looks to be moving forward.

Due to limited resources there are no recent significant developments to be reported on.

Each of these firms is value and large-cap companies. Although, only two of these four have been successful over the last ten years it is still interesting to note that TSPC and GGRM are still around. In the Indonesian market a number of companies fail to grow and sustain growth. As the premiums indicated before, large, value companies seem to prevail as the successes. I believe that BUMI and KIJA have been triumphant because of their industry. BUMI deals specifically with the gold of the nation. Commodities such as coal, zinc, lead and oil have been the backbone of this emerging market. KIJA is a firm that has helped this country develop the land, to a more domestic environment. With the threats of natural disasters, KIJA could be a recipient of increased business.

SUMMARY AND CONCLUSION

After extensive research I feel as though it is clear that Indonesia has taken the appropriate steps in making it an attractive investment for someone who is looking to create a portfolio of globally diversified assets. With the guidance of the government, Indonesia has reduced their risk dramatically over the last ten years and is working towards improving investor's confidence. The efficient frontier demonstrates the obvious attractiveness of Indonesia over the last five years in a globally diversified portfolio. The allocation to this emerging market will evidently increase your returns, decrease your risk and increase your Sharpe/Treynor Ratios. The multifactor expression indicates what type of micro risks affected Indonesian firms over the last ten years. Value, large-cap companies within appealing industries have proven themselves victorious and resilient.

Indonesia is looking like it is realizing its economic potential and is developing at a rapid pace. When comparing returns over the last ten years to the US, Indonesia earned 233% whereas the US had 61%. This emerging market is working to represent more of a developed market, rather than that of an emerging market. I would not recommend investing in Indonesia as a separate asset class, not quite yet. The liquidity and natural disasters still prose a threat. In time, liquidity can be improved. Natural disasters like the Tsunami in 2004 can really put an economy back because of the cost wrapped up in both time and capital. With that, I do believe Indonesia would make for a great addition to a globally diversified portfolio.

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ECONOMETRICS ANALYSIS OF INCUMBENTS AND THE 2006 UNITED STATES HOUSE OF REPRESENTATIVES ELECTIONS

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INTRODUCTION

In the election of 2006, a significant number of incumbents of The United States House of Representatives lost. What I attempted to do was to find the reason for these losses, and quantify it through the percentage of the win or loss by the Candidates of these races. I attempted to find the answer to this question by examining various variables such as time in office, money spent, turnout of the district, party affiliation, and scandal of the race. What was originally hypothesized, was that the reason why incumbents win or lose by the percentages they do, is due to the amount of money that is spent by these incumbents, also I hypothesized that incumbents and their percentages of victory would be greatly influenced by the amount of time in the Congressional office that they represent, finally I thought that the political party would have slight influence over the percentage of victory for the incumbent.

MODEL

The formula for our equation is:

$$Y=\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6$$

Where β6 was the unexplained, residual variable and the following were the variables for the formula:

	Variable Name	*Variable Description*	*Data Source*	*Anticipated Slope*	*Anticipated Significance*	*Anticipated Importance*
Y	GESpent	**Independent Variable** Percentage of Victory of General Election of Incumbent Formula: *GE%=Incumbent percentage of vote-Challenger percentage of vote*	US Federal Election Commission Data File, Candidate Financial Summary Without PAC Breakdown 2005-2006 "webl06.txt "			

β 1	PerOppCash	Numeric Variable, Percentage Difference of opponent's Cash spent by incumbent. Formula: *PerOppCash=(Incumbent Spent-Challenger Spent) /Total Cash Spent by both Challenger and Incumbent*	US Federal Election Commission Data File, Candidate Financial Summary Without PAC Breakdown 2005-2006 "webl06.txt "	Positive	Very Significant	Extremely important

	Variable Name	***Variable Description***	***Data Source***	***Anticipated Slope***	***Anticipated Significance***	***Anticipated Importance***
β 2	Party	Political Party of Incumbent, Dummy Variable, 0-Republican, 1-Democrat	US Federal Election Commission Data File, Candidate Financial Summary Without PAC Breakdown 2005-2006 "webl06.txt "	Positive towards 1 (Democrat)	Significant	Somewhat important
β 3	Time	Numeric Variable, Time in office of incumbent, by number of years	United States House of Representatives Website, and Wikipedia for former members	Negatively Sloped Quadratic	Not Significant	Not Important
β 4	Scandal	Numeric Variable, Measuring the amount of Scandal in the race, through the number of "Google" search results obtained from searching the phrase "Scandal "Candidate Name"" Formula: *Scandal=Incumbent Search Results-Challenger Search Results*	Google	Negatively Sloped	Significant	Somewhat Important

β 5	Turnout	Turnout of each Congressional District Formula: *Turnout=Total Number of Votes in Congressional District/Total Number of Registered Active Voters in a Congressional District*	Each individual state Board of Elections, Secretary of State office, or other pertinent office	Negatively Sloped	Possibly Significant	Somewhat Important

NOTES ABOUT THE VARIABLES

Cases

All cases are Incumbent United States Members of Congress running for reelection in the November 7th 2006 General Election. All Congressional Districts that had an open seat, or no challenger, were omitted from the research.

Scandal

To be able to quantify the data, it was required to quantify the magnitude of a large scandal in the election. Google was selected to quantify this as opposed to other search engines that may focus on news such as Lexis-Nexis. This is due to the fact of the viral nature of scandals, Google provides the ability to pick up not only coverage of first generation news sources such as newspapers, but also second and third generation news sources such as television, and new media such as "YouTube" and blogs. Thus, Google was selected to find this data. Each individual Incumbent was searched in Google, also with the word scandal in the search field. Then the challenger was searched as well, and number of results was subtracted from the Incumbents search results; this formed the variable of "Scandal." The name of the candidate that was searched was obtained from their individual website, to determine the variation of the name they used. This allowed us to be able to determine the most accurate image of the size of the individual's scandal.

Turnont

As the turnout was able to be found in most of the Congressional Districts, in some cases, the State Agency that handles elections did not have the turnout of each Congressional District, or the number of registered voters in each Congressional District of the State. Thus it was not possible to determine the turnout in these cases. For these cases, the observation of Voter Turnout was not used to determine the pertinent

Bryon McKim, *Econometric Analysis of the 2006 US House of Reps. Elections* regression figures, and functions of the analysis. The rest of the case's variables were used in determining the pertinent figures for other variables.

REGRESSION

As shown from the regression of the five variables, our R squared value for the regression was .580; this shows that we were able to explain 58 percent of the change in the percentage of victory by the five variables in our model.

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson		
					R Square Change	F Change	df1				df2	Sig. F Change
1	.761(a)	.580	.569	11.828	.580	52.129	5	189	.000	2.006		

Predictors: (Constant), Percent Voter Turnout in Race, Party, and Length of Time Incumbent is in Office, Percent Spent, and Scandal

Our regression was able to show significant findings for three of our variables. Political Party, Percent of Campaign Dollars Spent, and the amount of Scandal all showed to be significant. Length of time an incumbent is in office, and Voter turnout were not significant findings. Both the p-values and t-statistics have shown themselves to not be significant to our findings.

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant) Party	3.726 11.594	4.934		.755	.451	-6.008	13.459
	Length of Time Incumbent is in Office	-.049	1.784 .118	.312 -.020	6.500 - .414	.000 .679	8.075 - .282	15.112 .184
	Percent Spent	.350	.027	.629	12.996	.000	.297	.403
	Scandal	3.21E-005	.000	.113	2.327	.021	.000	.000
	Percent Voter Turnout in Race	-.089	.088	-.049	-1.011	.313	-.263	.085

a Dependent Variable: GE % Diff

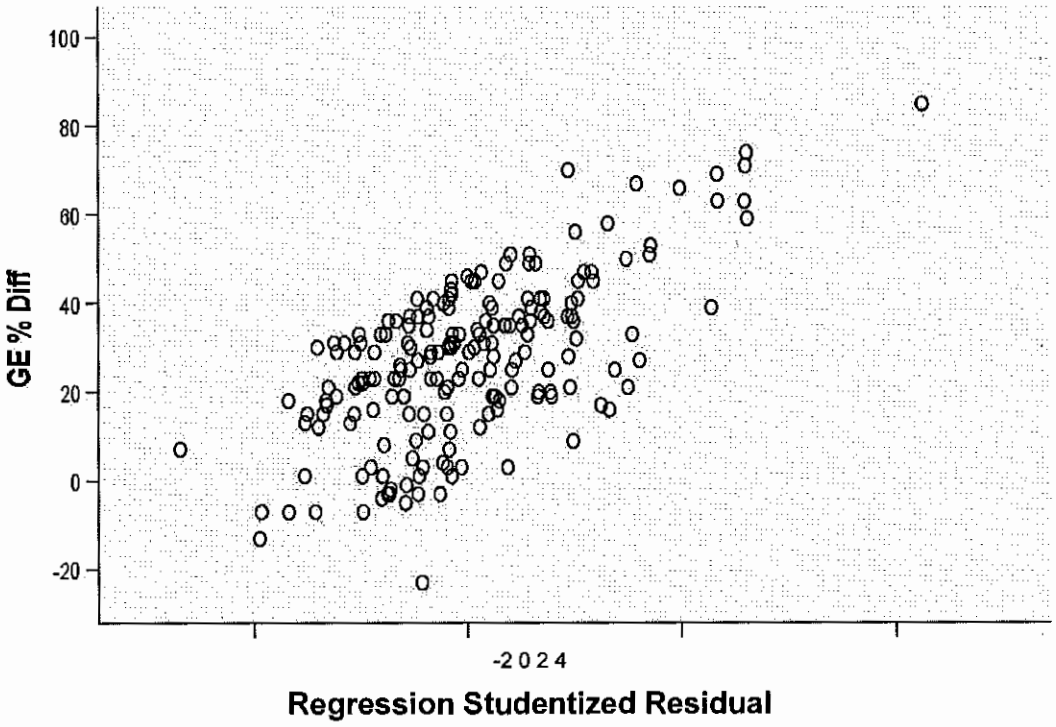
As shown above, the t-stats for our 3 significant variables are all above 2 and thus we can follow the 2-t rule of thumb and discard the null hypothesis.

The Beta figures for our significant values provide an interesting look at these variables. As shown, the variable of political party has shown a Beta value of 11.594. Due to the fact that this is a dummy variable, we are able to conclude in the 2006 Election, being an incumbent democrat produces an 11.594 percentage of victory change in the election. The percentage spent in an election showed that a 1 percent increase in spending over a challenger would create a .350 percent change in the percentage of victory in the race. Finally, for every 100,000 websites that are obtained from searching scandal and the candidate's name on Google, the incumbent's percentage of victory will increase by 3.21 percent.

The following graph is the graph that shows our regression studentized residual values plotted. This shows the linear relationship of our regression.

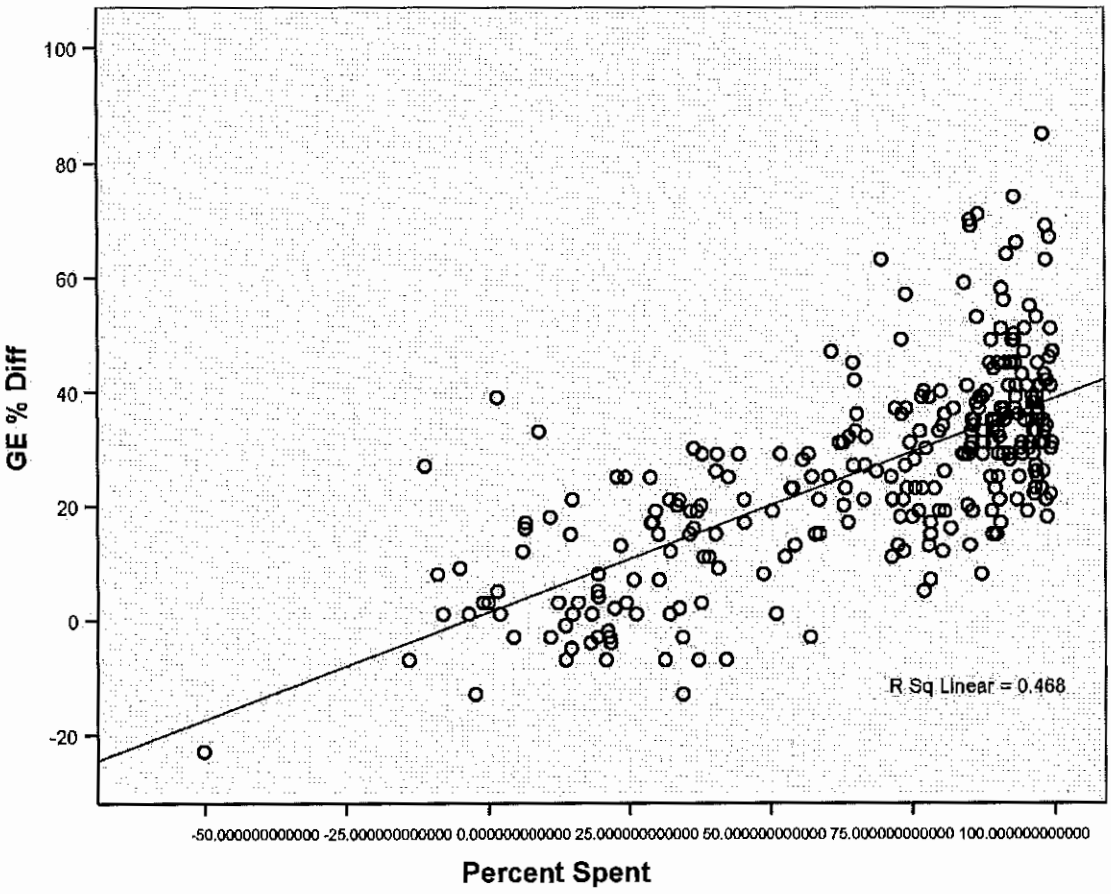
SCATTERPLOT

Dependent Variable: GE % Diff



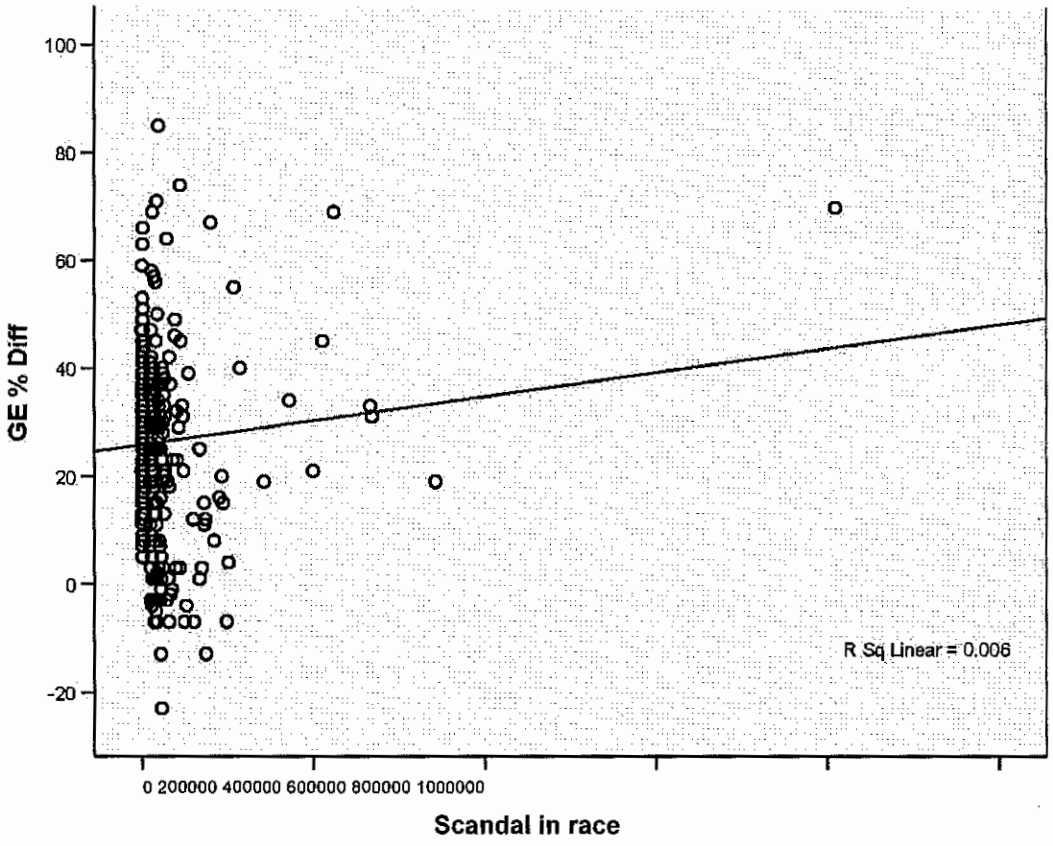
GRAPHS

The following is the Scatterplot chart for the Percent of Money Spent vs. the Percentage of victory of the incumbent in the Congressional Race:



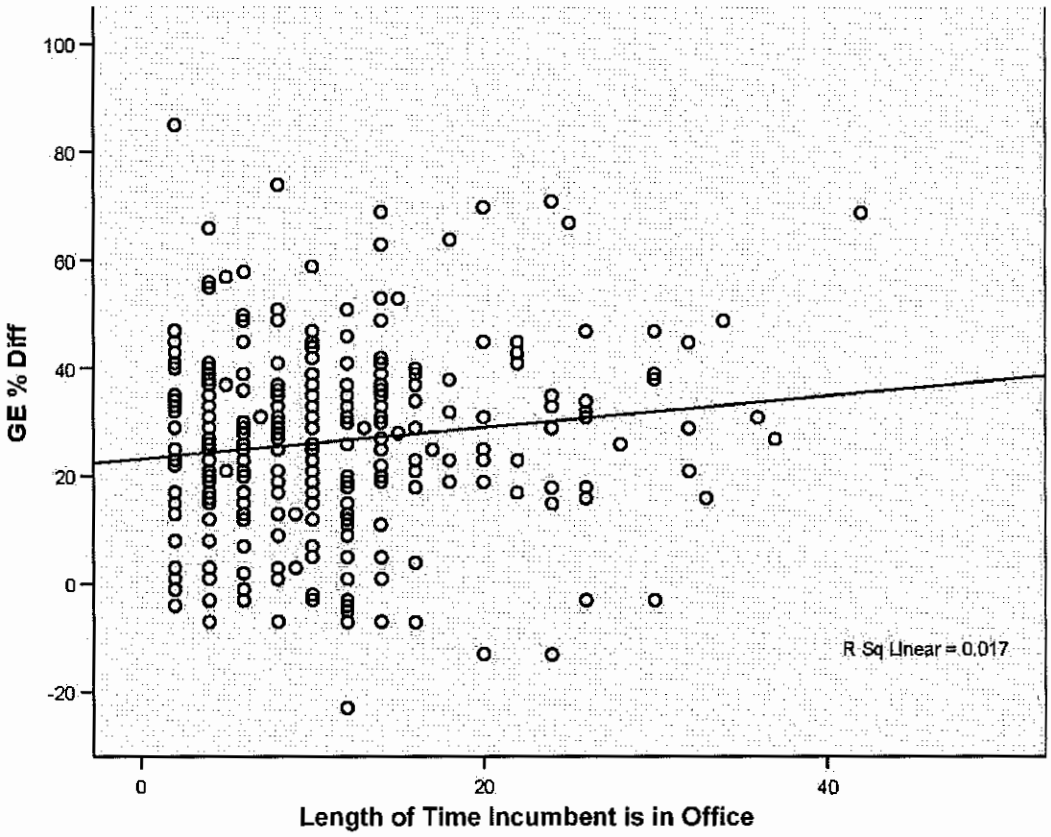
The best fit curve for this curve was a linear curve. As shown, the percentage of campaign funds spent is a positive correlation related to the percentage of victory of an incumbent. The R squared value for this relationship is .468.

The following is the Scatterplot chart for the Political Scandal vs. the Percentage of victory of the incumbent in the Congressional Race:



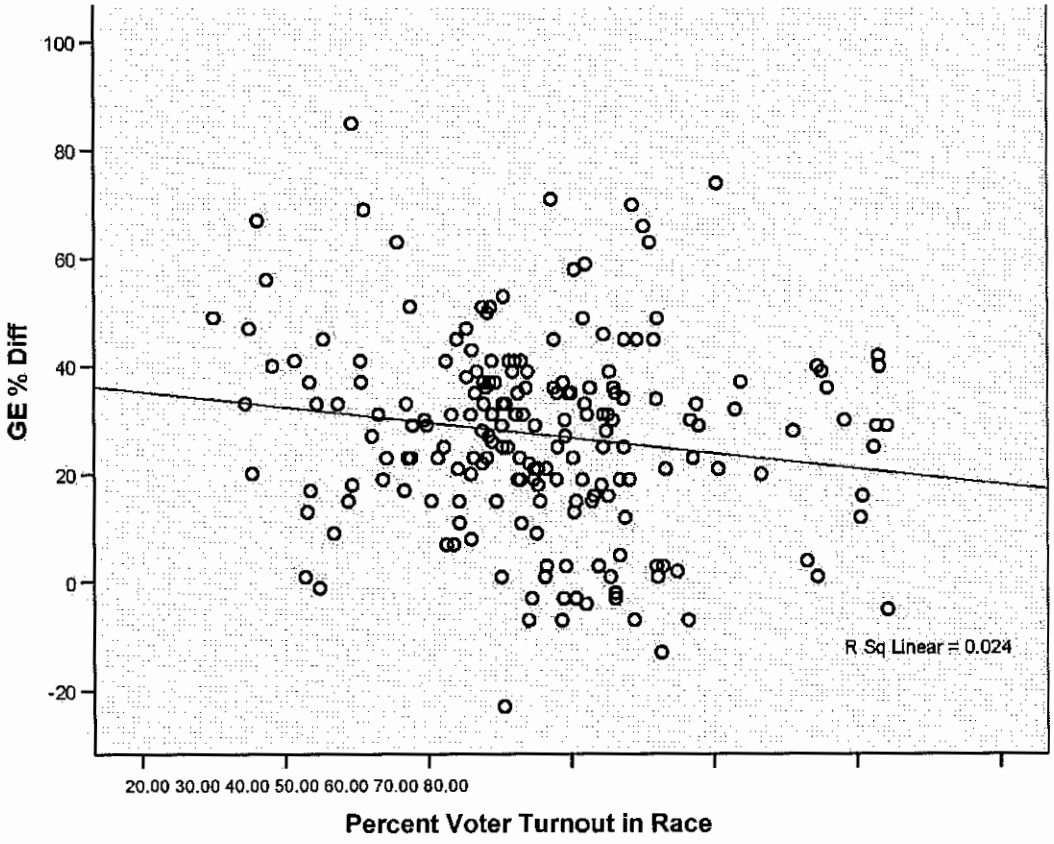
The best fit curve for this curve was a linear curve. As shown, the amount of scandal in a race is a positive correlation related to the percentage of victory of an incumbent. The R squared value for this relationship is .006.

The following is the Scatterplot chart for the Length of time an incumbent is in office vs. the Percentage of victory of the incumbent in the Congressional Race:



The best fit curve for this curve was a linear curve. As shown, the length of time in office is a positive correlation related to the percentage of victory of an incumbent. The R squared value for this relationship is .017. Due to the fact that the data is the whole number of years a candidate is in office, the data is not continuous.

The following is the Scatterplot chart for the Length of time an incumbent is in office vs. the Percentage of victory of the incumbent in the Congressional Race:



The best fit curve for this curve was a linear curve. As shown, amount of voter turnout is a negative correlation related to the percentage of victory of an incumbent. The R squared value for this relationship is .024.

ANALYSIS

Overall, we were able to explain 58 percent of the change in the percentage of victory by incumbents in the 2006 Congressional Elections. This is a significant number that is greatly due to the amount of money spent by Members of Congress.

As we hypothesized, the amount of cash that an incumbent spent did significantly affect the percentage of the vote that they were able to obtain in the 2006 United States Bryon McKim, *Econometric Analysis of the 2006 US House of Reps. Elections* House of Representatives Elections. This is not surprising, as the power of money in any kind of political race allows the candidates the ability to reach out to the voters on scales that are unmatched by any other grassroots efforts. This Variable showed a t-stat of 12.996, which allows us to discard the null hypothesis due to the 2-t rule of thumb. Additionally, the value is very significant due to the p-value of the variable being .000, which states that the variable is significant up to at least 99.99 percent.

One of the variables that turned out to be surprising, not due to its significance, but the importance, and size of its Beta value, was Political Party. The Political Party of the incumbent turned out to be a very significant value, and very important value. The Beta value of the Political Party was 11.594 which showed that in the 2006 Congressional elections, being an incumbent Democrat increased the margin of victory by 11.594 percentage points. This variable also turned out to be significant with its p value of .000, and its t-stat of 6.500, which allows it to be significant under the same assumptions and rules as above. The R squared value of this correlation is .224 which means 22.4 percent of the change in the percentage of victory in the 2006 US House Elections can be explained by the political party of the incumbent United States Member of Congress. These findings of such a high value of democratic support in this election was possibly due to the political climate that was opposed to the President, and the Republican 109^{th} Congress, that was ridden with corruption, scandal, and blemishes to other Republican Candidates and the party as a whole.

The variable of Political Scandal turned out to not only be a significant variable, but most surprisingly, a positively sloped correlation. Although the Beta value was small at 3.21×10^{-5}, it still showed a positive correlation. This shows that the scandal in a political Bryon McKim, *Econometric Analysis of the 2006 US House of Reps. Elections* race was not the deciding factor, but the press was, and any kind of increased press most likely raised name recognition amongst the incumbent. This proves the old adage that "there is no such thing as bad press" especially in political campaigns. The t-stat on this value was 2.327 which under the 2-t rule of thumb allows us to discard the null hypothesis. Also the p-value of the Scandal variable is .021 which means that the findings are significant up to 97.9 percent. Although this is the case, the R squared value of this value was only .006 which means we can explain less than 1 percent of the change in the percentage of victory with the amount of political scandal in a race.

The fact that the length of time that an incumbent is in office, and the amount of voter turnout, turned out as not significant was quite surprising. Both values are often toted by political strategists, and candidates as some of the most important aspects to the win or loss of the race. As our results turned out, in the 2006 Congressional Elections, they turned out as not significant. Both variables had high p-values, and low t-statistics.

TESTS FOR VIOLATION OF ASSUMPTIONS

Multicollinearity

There was very little Multicollinearity in my analysis. Not only do we have a fairly high R squared value, we also have high t-values with that. Also, As shown in the following table, the Tolerance of collinearity was in excess, of .1 thus making our findings non multicollinear.

Bryon McKim, *Econometric Analysis of the 2006 US House of Reps. Elections*

Model		Collinearity Statistics	
		Tolerance	VIF
1 (Constant) Party Length of Time Incumbent is in Office Percent Spent Scandal Percent Voter Turnout in Race		.968 .945 .949 .944 .943	1.033 1.058 1.054 1.059 1.061

Also, while examining our Collinearity Diagnostics, and looking at our Condition Index, we found that we may have a slight problem on Dimension 6, but found that this is not a problem when we examine the Variance Proportions of our Variables, as no two variances among the variables exceed .50

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	Party	Length of Time Incumbent is in Office	Percent Spent	Scandal	Percent Voter Turnout in Race
1	1	4.164	1.000	.00	.02	.01	.01	.01	.00
	2	.879	2.176	.00	.00	.00	.00	.94	.00
	3	.554	2.743	.00	.96	.03	.00	.00	.00
	4	.244	4.130	.00	.02	.86	.15	.04	.00
	5	.141	5.438	.02	.00	.09	.68	.00	.08
	6	.017	15.440	.97	.00	.00	.15	.01	.91

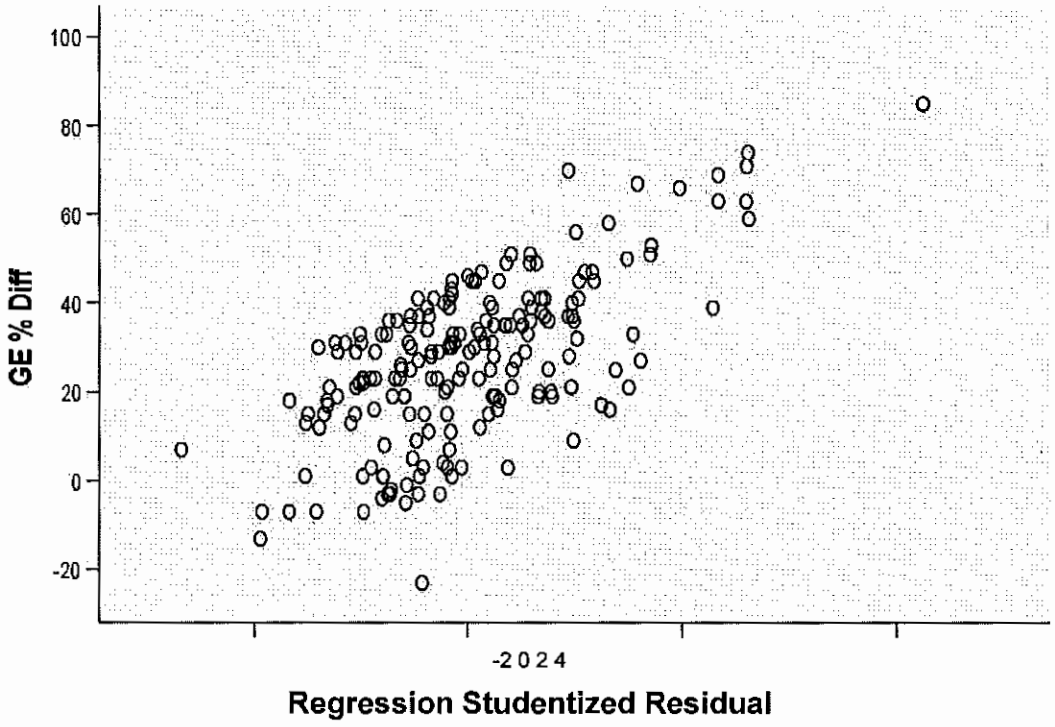
Heteroscedasticity

As we examine the graphs of our findings of the residuals of our regression it does not appear that we have high or any Heteroscedasticity:

Bryon McKim, *Econometric Analysis of the 2006 US House of Reps. Elections*

Scatterplot

Dependent Variable: GE % Diff



Autocorrelation

Due to the fact that our data was cross-sectional data of the 2006 United States House of Representatives Elections, there is no Autocorrelation in our data. This is shown by a Durbin-Watson Statistic of 2006.

CONCLUSION

Overall, the Elections of the United States House of Representatives of 2006 and the Bryon McKim, *Econometric Analysis of the 2006 US House of Reps. Elections* vast turnover of power that occurred for a penumbra of reasons. Much of the cause of this change was due to the party of the incumbent, and the political climate of the country, and the amount of money spent by incumbent Members of Congress. We found through our analysis that surprisingly a small reason for the percentage of victory of incumbent Members of Congress was due to the political scandal that may have surrounded them. Surprisingly this Scandal did not lead to the demise or hurt the candidate negatively; In fact, incumbent Congressmen were helped by the scandal slightly. This proved the old adage that "There is no such thing as bad press. Overall, we were able to explain 58 percent of the reason why incumbents of Congress had the margin of victory that they did in the 2006 US Congressional Elections. By examining these figures on a national level, we are able to learn and discover reality of Political Science and the Electoral Process that we as Americans experience, and quantify the reason why these candidates win or lose with the data that we sought.

APPENDIX

Data Set:

Name	State	District	Time	Party	GEDiff	PercentSpent	Scandal	Turnout
YOUNG, DONALD E	AK	1	33	0	16	81.70	50	51.63
BONNER, JO	AL	1	4	0	37	97.03	605	#NULL!
EVERETT, TERRY	AL	2	14	0	39	96.85	-232	#NULL!
ROGERS, MICHAEL	AL	3	4	0	21	98.54	13,285	#NULL!
BERRY, MARION	AR	1	10	1	39	86.83	712	46.98
SNYDER, VICTOR FREDERICK	AR	2	10	1	21	73.37	-871	47.45
BOOZMAN, JOHN NICHOLS	AR	3	6	0	25	28.68	1,919	52.27
RENZI, RICHARD G.	AZ	1	4	0	8	19.46	83,983	#NULL!
FRANKS, TRENT	AZ	2	4	0	19	85.45	15,719	#NULL!
SHADEGG, JOHN B.	AZ	3	12	0	20	84.66	92,681	#NULL!
HAYWORTH, JD	AZ	5	12	0	-4	21.63	40,800	#NULL!
GRIJALVA, RAUL M	AZ	7	4	1	25	57.25	790	#NULL!
MR. THOMPSON, MIKE	CA	1	8	1	37	91.13	-2,000	61.90
HERGER, WALLY	CA	2	18	0	32	63.78	12,318	61.48
LUNGREN, DANIEL E	CA	3	8	0	21	33.79	-1,414	60.31

DOOLITTLE, JOHN	CA	4	16	0	4	19.49	89,800	66.53
WOOLSEY, LYNN C	CA	6	14	1	42	98.33	31,993	71.49
PELOSI, NANCY	CA	8	20	1	70	85.09	808,468	54.32
LEE, BARBARA	CA	9	8	1	74	92.91	44,782	60.23
TAUSCHER, ELLEN								
O	CA	10	10	1	33	98.24	26,226	58.81
POMBO, RICHARD	CA	11	14	0	-7	31.29	27,100	58.23
STARK, PETE	CA	13	34	1	49	92.81	38,524	56.09
HONDA, MIKE	CA	15	6	1	45	88.57	16,310	55.82
CARDOZA, DENNIS	CA	18	4	1	31	74.56	498	41.64
RADANOVICH, GEORGE	CA	19	10	0	21	14.95	1,196	56.66
NUNES, DEVIN GERALD	CA	21	6	0	36	73.07	1,554	52.99
CAPPS, LOIS G	CA	23	8	1	29	84.13	661	58.95
GALLEGLY, ELTON	CA	24	20	0	23	75.50	736	58.57
MCKEON, HOWARD P	CA	25	14	0	25	71.21	-33,200	49.08
DREIER, DAVID	CA	26	26	0	18	98.66	31,482	52.15
SHERMAN, BRAD MR	CA	27	10	1	37	90.53	9,209	49.48
BERMAN, HOWARD L	CA	28	24	1	71	86.56	17,227	48.64
SCHIFF, ADAM	CA	29	6	1	58	90.59	11,381	50.28
WAXMAN, HENRY A.	CA	30	32	1	45	92.41	169,800	54.65
HARMAN, JANE	CA	36	20	1	31	98.22	47,076	52.60
NAPOLITANO, GRACE	CA	38	8	1	51	94.67	1,554	44.40
SANCHEZ, LINDA	CA	39	4	1	31	94.20	14,729	46.15
ROYCE, ED MR	CA	40	14	0	36	80.74	428	46.84
BACA, JOE	CA	43	7	1	31	95.64	12,421	36.56
CALVERT, KEN NETH S MR.	CA	44	14	0	22	99.27	10,801	47.07
BONO, MARY	CA	45	8	0	19	35.78	-1,100	50.81
ROHRABACHER, DANA	CA	46	18	0	23	63.16	40,386	50.17
SANCHEZ, LORET TA	CA	47	10	1	23	53.93	22,953	38.62
ISSA, DARRELL EDWARD	CA	49	6	0	30	85.09	24,060	52.93
FILNER, BOB	CA	51	14	1	36	93.55	10,785	44.05
HUNTER, DUNCAN								
CONGRESSMAN	CA	52	26	0	34	85.68	171,581	56.00
DAVIS, SUSAN A	CA	53	6	1	36	65.21	15,227	48.81

UDALL, MARK	CO	2	8	1	36	96.89	12,036	51.34
SALAZAR, JOHN TONY	CO	3	2	1	25	42.56	8,720	53.72
MUSGRAVE, MARI LYN N	CO	4	4	0	3	24.42	26,600	56.48
TANCREDO, THOMAS GERARD	CO	6	8	0	19	37.01	141,111	54.10
SIMMONS, ROB	CT	2	6	0	-1	13.73	9,300	32.44
SHAYS, CHRISTO PHER	CT	4	9	0	3	12.46	32,400	56.03
JOHNSON, NANCY L.	CT	5	24	0	-13	34.42	-700	56.34
MILLER, JEFFER SON B.	FL	1	5	0	37	73.93	18,990	44.71
CRENSHAW, AN DER M HON	FL	4	6	0	39	93.14	1,284	45.93
BROWN-WAITE, VIRGINIA	FL	5	4	0	19	79.69	-34,239	49.02
STREARNS, CLIF FORD B	FL	6	18	0	19	50.33	733	47.40
MICA, JOHN L MR.	FL	7	14	0	27	96.67	644	49.64
KELLER, RICHARD A	FL	8	6	0	7	25.77	8,726	41.79
YOUNG, C. W. BILL	FL	10	36	0	31	85.45	21,112	46.67
PUTNAM, ADAM H	FL	12	6	0	50	92.81	17,941	44.16
MACK, CONNIE	FL	14	2	0	29	91.85	20,289	47.50
WELDON, DAVID JOSEPH	FL	15	12	0	13	77.84	-272	50.24
ROS-LEHTINEN, ILEANA	FL	18	17	0	25	90.01	18,298	41.14

DIAZ-BALART, LINCOLN FL 21 14 0 19 95.15 8,892 36.87 SHAW, E CLAY JR FL 22 26 0 -3 11.05 14,700 49.51 FEENEY, TOM FL 24 4 0 15 89.76 56,600 47.85 DIAZ-BALART, MARIO FL 25 4 0 17 90.41 289 31.79
KINGSTON, JOHN
HEDDENS GA 1 14 0 37 82.22 21,140 44.33 BISHOP, SANFORD D JR. GA 2 14 1 37 92.97 1,699 43.86
WESTMORELAND,
LYNN A GA 3 2 0 35 88.89 9,759 46.29 PRICE, THOMAS EDMUNDS GA 6 2 0 45 91.22 789 48.83
LINDER, JOHN GA 7 14 0 41 84.62 9,513 46.08 MARSHALL, JAMES C GA 8 4 1 1 -3.47 17,582 48.18
DEAL, NATHAN GA 9 14 0 53 96.77 177 45.29 NORWOOD, CHARLES WHITLOW GA 10 12 0 35 94.65 9,538 49.84 GINGREY, PHILLIP
J. GA 11 4 0 41 99.35 813 44.47
BARROW, JOHN J GA 12 2 1 1 2.08 14,119 45.15
SCOTT, DAVID ALBERT GA 13 4 1 39 1.67 24,258 43.42
ABERCROMBIE,
NEIL HI 1 16 1 39 96.06 446 52.70
LEACH, JIM IA 2 30 0 -3 4.44 20,627 50.37

BOSWELL,
LEONARD L. 1A 3 10 1 5 1.62 11,335 53.42
LATHAM, THOMAS
P IA 4 12 0 15 40.30 1,449 51.48
KING, STEVEN A IA 5 4 0 23 78.87 1,789 46.42
SIMPSON,
MICHAEL KEITH ID 2 8 0 28 55.70 -137 65.57
EMANUEL, RAHM IL 5 4 1 55 95.60 106,327 #NULL!
BEAN, MELISSA
LUBURICH IL 8 2 1 8 -8.90 14,490 #NULL!
KIRK, MARK
STEVEN IL 10 6 0 7 30.21 20,945 #NULL!
WELLER, GERALD
C JERRY IL 11 12 0 11 52.54 9,039 #NULL!
BIGGERT, JUDY IL 13 8 0 17 63.59 508 #NULL!
HASTERT, DENNIS

J. IL 14 20 0 19 88.89 341,046 #NULL!
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MANZULLO, DONALD A. IL 16 14 0 33 85.34 637 #NULL!
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CHOCOLA, J CHRISTOPHER IN 2 4 0 -7 37.26 7,400 47.05 SOUDER, MARK E IN 3 12 0 9 -4.88 10,460 47.59
BUYER, STEVE CONGRESSMAN IN 4 14 0 25 60.24 406 45.24 BURTON, DANNY L IN 5 24 0 33 96.74 46,856 45.44 PENCE, MIKE IN 6 6 0 21 93.34 47,310 48.28 CARSON, JULIA IN 7 10 1 7 78.13 -1,632 41.30
HOSTETTLER, JOHN NATHAN IN 8 12 0 -23 -50.04 9,800 45.36 SODREL, MICHAEL E. IN 9 2 0 -4 18.11 -800 51.08 MORAN, JERRY KS 1 10 0 59 84.14 106 51.04 RYUN, JIM R KS 2 10 0 -3 19.34 16,990 53.14 MOORE, DENNIS KS 3 8 1 31 62.07 10,858 51.15 TIAHRT, TODD W. KS 4 12 0 30 95.39 602 49.59 WHITFIELD, ED KY 1 12 0 19 80.71 2,020 46.30 LEWIS, RON KY 2 12 0 11 38.18 16,690 46.51 NORTHUP, ANNE M KY 3 10 0 -2 21.20 16,400 53.11 DAVIS, GEOFFREY C KY 4 2 0 8 48.66 10,700 42.97 ROGERS, HAROLD D KY 5 26 0 47 99.62 753 42.70 MELANCON, CHARLIE JR LA 3 2 1 15 14.56 374 34.44 ALEXANDER, RODNEY MR. LA 5 4 0 40 77.00 23,641 29.13 BOUSTANY, JR, CHARLES W. LA 7 2 0 41 93.21 1,361 41.24 OLVER, JOHN W. MA 1 15 1 53 86.31 628 #NULL! TIERNEY, JOHN MA 6 10 1 39 76.67 53,988 #NULL! LYNCH, STEPHEN F MA 9 5 1 57 73.84 13,562 #NULL! DELAHUNT, WILLIAM D MA 10 10 1 35 85.84 458 #NULL! GILCHREST, WAYNE T MD 1 16 0 37 71.99 9,873 31.73 RUPPERSBERGER, C A DUTCH MD 2 4 1 41 97.18 1,148 30.69 HOYER, STENY HAMILTON MD 5 25 1 67 99.12 79,704 28.07 BARTLETT, ROSCOE G. JR. MD 6 14 0 20 33.44 497 27.70 VAN HOLLEN, CHRIS MD 8 4 1 56 91.01 -5,100 28.70 ALLEN, THOMAS H ME 1 10 1 29 56.63 20,604 #NULL! MICHAUD, MICHAEL H ME 2 4 1 41 95.10 649 #NULL! STUPAK, BART MI 1 14 1 42 98.72 10,707 #NULL! HOEKSTRA, PETER MI 2 14 0 35 97.20 25,534 #NULL!

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S. MI 10 4 0 35 96.02 483 #NULL!
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CONYERS, JOHN
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RAMSTAD, JIM MN 3 16 0 29 90.90 15,442 72.08
MCCOLLUM, BETTY MN 4 6 1 39 78.00 735 67.56
PETERSON,
COLLIN C MN 7 16 1 40 87.95 113,427 71.56
OBERSTAR,
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CLAY, WILLIAM
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HULSHOF, KENNY
CHARLES MO 9 10 0 26 68.66 1,262 #NULL!
WICKER, ROGER

F. MS 1 12 0 31 95.70 1,783 #NULL!
THOMPSON, BENNIE G. MS 2 13 1 29 83.81 13,816 #NULL!

REHBERG, DENNIS R MT 1 6 0 20 37.70 -670 63.33 ETHERIDGE, BOB NC 2 10 1 33 87.41 1,288 33.71 JONES, WALTER B. NC 3 12 0 37 86.62 32,953 35.36 PRICE, DAVID E NC 4 10 1 29 87.30 43,095 38.93 FOXX, VIRGINIA NC 5 2 0 15 78.16 301 40.24 COBLE, JOHN
HOWARD NC 6 22 0 41 95.05 8,985 35.28 MCINTYRE, MIKE NC 7 10 1 45 92.13 78 32.69 HAYES, ROBERT C (ROBIN) NC 8 8 0 1 50.97 12,400 31.45

MYRICK, SUE NC 9 12 0 33 98.16 -120 32.23
MCHENRY,
PATRICK TIMOTHY NC 10 2 0 23 96.66 11,005 37.12

TAYLOR, CHARLES
H NC 11 16 0 -7 42.07 71,500 49.38
WATT, MELVIN L NC 12 14 1 33 9.05 789 27.22
MILLER, BRAD NC 13 4 1 27 -11.09 18,044 36.11
POMEROY, EARL

RALPH ND 1 14 1 31 89.08 26,994 44.50
FORTENBERRY,
JEFF NE 1 2 0 17 6.59 1,080 38.35
TERRY, LEE NE 2 8 0 9 40.78 712 33.45

BRADLEY, JOSEPH
E MR III NH 1 4 0 -3 56.91 830 #NULL!
BASS, CHARLES F. NH 2 12 0 -7 -13.96 2,200 #NULL!
LOBIONDO, FRANK
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JR NJ 6 18 1 38 96.56 10,950 #NULL!
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FRELINGHUYSEN,
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WILSON, HEATHER

A. NM 1 8 0 1 18.33 48,900 56.10 PEARCE, STEVE NM 2 4 0 19 76.10 674 46.49 UDALL, TOM NM 3 8 1 49 88.79 665 50.87 BERKLEY, SHELLEY NV 1 8 1 33 89.10 11,966 50.99 PORTER, JON C SR NV 3 #### 0 2 33.82 16,559 57.45 BISHOP, TIMOTHY NY 1 4 1 23 53.65 1,407 38.82 KING, PETER NY 3 14 0 11 39.13 72,789 42.21 MCCARTHY, CAROLYN NY 4 10 1 29 84.86 10,994 39.94 FOSSELLA, VITO MR. NY 13 9 0 13 85.05 15,062 31.58 MALONEY, CAROLYN B NY 14 14 1 69 85.19 12,268 35.55 ENGEL, ELIOT NY 17 8 1 51 99.29 693 38.77 LOWEY, NITA M NY 18 8 1 41 91.88 159 45.68 KELLY, SUE W NY 19 12 0 -3 21.43 -26,900 47.29 SWEENEY, JOHN
E. NY 20 8 0 -7 13.79 35,200 54.42

MCHUGH, JOHN M NY 23 14 0 27 64.58 193 44.27
WALSH, JAMES T NY 25 8 0 1 32.13 15,693 52.77

REYNOLDS,
THOMAS M NY 26 8 0 3 37.71 47,700 49.67
SLAUGHTER,
LOUISE M NY 28 20 1 45 93.01 43,840 42.02
KUHL, JOHN NY 29 2 0 3 -0.89 -900 51.96
CHABOT, STEVE OH 1 12 0 5 19.35 21,920 #NULL!
TURNER, MIKE OH 3 4 0 17 45.40 670 #NULL!
GILLMOR, PAUL E OH 5 8 0 13 72.43 2,891 #NULL!
HOBSON, DAVID
LEE OH 7 16 0 21 98.43 1,272 #NULL!
KUCINICH, DENNIS
J OH 10 10 1 33 79.70 265,851 #NULL!
TIBERI, PATRICK J OH 12 6 0 17 29.12 1,064 #NULL!
LATOURETTE,
STEVEN C OH 14 12 0 18 72.84 2,263 #NULL!
PRYCE, DEBORAH

D. OH 15 14 0 1 26.16 18,700 #NULL!
SULLIVAN, JOHN OK 1 4 0 33 90.04 20,062 45.22
LUCAS, FRANK D OK 3 12 0 35 90.06 636 49.05
COLE, TOM OK 4 4 0 29 94.30 15,519 45.18
WU, DAVID MR. OR 1 8 1 30 77.34 10,068 69.12
WALDEN, GREGORY PAUL OR 2 8 0 36 91.09 724 67.93
DEFAZIO, PETER A OR 4 20 1 25 22.82 12,047 71.15
HOOLEY, DARLENE OR 5 10 1 12 6.06 400 70.25
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HART, MELISSA A. PA 4 6 0 -3 34.39 15,197 #NULL!
GERLACH, JIM PA 6 4 0 1 -7.97 4,300 #NULL!
WELDON, CURTIS

W. PA 7 20 0 -13 -2.25 48,000 #NULL!
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MICHAEL G PA 8 2 0 -1 13.68 -8,600 #NULL!

SHUSTER,
WILLIAM F PA 9 5 0 21 90.23 1,331 #NULL!
SHERWOOD, DON
ALD L. PA 10 8 0 -7 20.82 16,100 #NULL!
KANJORSKI, PAUL
E PA 11 22 1 45 97.02 2,032 #NULL!
MURTHA, JOHN P
MR. PA 12 32 1 21 58.47 199,314 #NULL!

SCHWARTZ,
ALLYSON PA 13 2 1 33 64.93 1,130 #NULL!
DENT, CHARLES W PA 15 2 0 8 87.05 1,019 #NULL!
PITTS, JOSEPH R PA 16 10 0 17 28.82 445 #NULL!
HOLDEN, T. TIMOTHY PA 17 #### 1 29 96.23 513 #NULL!
MURPHY, TIM PA 18 4 0 15 89.60 14,224 #NULL!
PLATTS, TODD R PA 19 6 0 30 36.43 1,281 #NULL!
KENNEDY, RI 1 12 1 46 99.12 37,665 52.28

PATRICK J LANGEVIN, JAMES R RI 2 6 1 45 64.57 631 53.74
BROWN, HENRY E
JR. JR. SC 1 6 0 23 76.75 581 44.14 BARRETT, JAMES GRESHAM SC 3 4 0 25 93.70 1,479 45.59
INGLIS, BOB SC 4 2 0 33 76.31 -369 43.91 SPRATT, JOHN M JR SC 5 24 1 15 30.11 12,361 42.19
CLYBURN, JAMES E SC 6 14 1 30 99.36 16,940 39.78
HERSETH, STEPHANIE M SD 1 2 1 40 80.01 12,040 67.26 WAMP, ZACH TN 3 12 0 31 97.32 10,733 52.28
COOPER, JAMES
H.S. TN 5 4 1 66 93.25 619 55.15
BLACKBURN, MARSHA MRS. TN 7 4 0 35 85.43 9,673 53.13 POE, TED TX 2 2 0 33 96.25 760 38.50
JOHNSON,
SAMUEL ROBERT TX 3 15 0 28 92.02 23,852 43.80 HALL, RALPH MOODY TX 4 26 0 31 87.30 557 43.00
HENSARLING, JEB MR. TX 5 4 0 26 96.56 691 44.50 BARTON, JOE LINUS TX 6 22 0 23 97.73 4,200 43.20 CULBERSON, JOHN TX 7 6 0 21 71.48 -31,080 47.70 MCCAUL, MICHAEL TX 10 2 0 15 89.01 111 44.80 GRANGER, KAY TX 12 10 0 35 97.99 -88,891 43.30 THORNBERRY, MAC TX 13 12 0 51 90.54 984 43.80 PAUL, RONALD E. TX 14 10 0 21 45.33 25,236 42.10 HINOJOSA, RUBEN E TX 15 10 1 47 94.59 -48 27.50 EDWARDS, CHET TX 17 16 1 18 11.01 13,352 47.70
NEUGEBAUER,
RANDY TX 19 4 0 38 86.26 1,176 42.70 MARCHANT, KENNY EWELL TX 24 2 0 22 96.41 923 43.80
DOGGETT, LLOYD
A MR. TX 25 12 1 41 97.55 892 46.50 BURGESS, MICHAEL C DR TX 26 4 0 23 96.54 275 40.70
ORTIZ, SOLOMON P TX 27 24 1 18 74.95 1,175 34.70 CUELLAR, HENRY R TX 28 2 1 47 60.75 10,436 27.50
GREEN, RAYMOND
E. 'GENE' TX 29 14 1 49 92.50 538 25.00

JOHNSON, EDDIE BERNICE	TX	30	14	1	63	69.56	632	37.90
CARTER, JOHN RICE	TX	31	4	0	20	62.85	25,904	43.00
SESSIONS, PETE	TX	32	10	0	15	58.59	17,697	50.40
BISHOP, ROBERT WILLIAM	UT	1	4	0	31	62.76	661	#NULL!
MATHESON, JAMES DAVID	UT	2	6	1	21	32.11	11,536	#NULL!
CANNON, CHRISTOPHER B	UT	3	10	0	25	88.65	21,668	#NULL!
DAVIS, JO ANN S.	VA	1	6	0	28	75.33	310	52.48
DRAKE, THELMA D	VA	2	2	0	3	15.93	9,933	48.30
GOODE, VIRGIL H. JR.	VA	5	10	0	19	29.62	28,720	53.44
GOODLATTE, ROBERT W.	VA	6	14	0	63	98.43	889	55.53
CANTOR, ERIC	VA	7	6	0	30	94.01	20,153	58.39
MORAN, JAMES P JR.	VA	8	16	1	34	80.31	18,969	53.70

BOUCHER, FREDRICK C	VA	9	24	1	35	89.40	12,058	50.04
WOLF, FRANK R	VA	10	26	0	16	6.54	21,116	52.61
DAVIS, THOMAS M III	VA	11	12	0	12	80.31	59,179	53.81
INSLEE, JAY R	WA	1	8	1	35	91.15	13,866	#NULL!
LARSEN, RICK R	WA	2	6	1	29	37.90	281	#NULL!
BAIRD, BRIAN N	WA	3	8	1	27	66.63	660	#NULL!
HASTINGS, DOC	WA	4	12	0	19	35.79	-13,800	#NULL!
MCMORRIS, CATHY ANN	WA	5	2	0	13	23.43	-432	#NULL!
MCDERMOTT, JAMES A	WA	7	18	1	64	91.50	29,473	#NULL!
REICHERT, DAVE	WA	8	2	0	3	0.05	9,200	#NULL!
SMITH, ADAM	WA	9	10	1	31	87.44	267,979	#NULL!
RYAN, PAUL D	WI	1	8	0	25	96.92	66,680	#NULL!
BALDWIN, TAMMY	WI	2	8	1	25	24.25	15,283	#NULL!
KIND, RON	WI	3	10	1	29	51.78	344	#NULL!
MOORE, GWEN DOLYNNE	WI	4	2	1	43	94.27	715	#NULL!
SENSENBRENNER, F JAMES JR	WI	5	28	0	26	40.39	9,998	#NULL!
OBEY, DAVID R	WI	7	37	1	27	73.75	452	#NULL!
MOLLOHAN, ALAN B.	WV	1	24	1	29	40.63	19,557	#NULL!
CAPITO, SHELLEY MOORE	WV	2	6	0	15	57.88	-425	#NULL!
RAHALL, NICK J II	WV	3	30	1	39	87.24	9,631	#NULL!
CUBIN, BARBARA L	WY	1	12	0	1	14.92	11,731	67.26

ELECTRONIC ARTS

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EXECUTIVE SUMMARY

As the 2003 fiscal year came to an end, your company was the world's leading independent developer, publisher, and marketer of video games. It is very important that your company continue with the great success it has acquired by making minor changes to your current business strategy. Since you have a wide variety of products that are targeted to many different users, we recommend that you instill a broad differentiation strategy. This will prove to be very effective because there are many things in which you can do that will keep your variety of products and customers while also gaining more market share and a competitive edge over the competition. However, in order for any organization to become and remain successful they need to constantly excel iu the areas of marketing, research and development, and technology; these areas will be used extensively to overcome the issues that we feel your company is facing.

Although you currently have a large customer base, there is always room for growth and improvement. We know that approximately 72% of console players are males; however 54% of the people purchasing these consoles are females. We feel that expanding your company's target market to include a female demographic will be extremely beneficial. In a male dominated market, the females that also enjoy gaming will finally feel that they have a place within the industry. We also strongly recommend that you appeal to a more mature audience to gain more customers. Even though we know that you take great pride in not showing violence and sex in your games, to become the best entertainment company in the world we feel that this change is inevitable. We have devised a way in which Electronic Arts (EA) will still retain its valuable reputation.

Social responsibility is always important to a company and it is always commendable when a company does something that will benefit their customers other than just providing them with an outstanding product. We feel that your company can help decrease the level of obesity and begin to keep kids healthy by designing a product that will keep gamers active. We suggest making a console called bEActive, our strategy for this product will be further explained in the following pages of this report. We do not want your company's name to be associated with the type of social dilemma such as obesity, especially since video games currently involve little to no movement by the game player.

As the industry grows larger the numbers of products that are produced and released increase as well, so it is of most importance that your company keeps up with the competition. Product innovation is necessary and essential for EA to become the biggest and best entertainment company in the world. Since you are currently dependent on the success of the games that you produce and sell, we suggest building upon your product breadth by creating products other than video games. A few things that will be discussed in regard to this issue are the possibility of making your own gaming console as well as introducing gaming centers. This is a way of increasing the amount of customers you have in addition to the revenue that you bring in.

All of these issues combined will make it more difficult for your company to reach it's goal of becoming the best entertainment company in the world in the long run; however if you choose to implement one or if not all of the suggestions that we have provided you with, you will definitely see a large improvement in the success of EA as a company and the road to becoming the best entertainment company in the world will become a reality.

INTRODUCTION

We recommend that your company continue to focus on the male demographic that constitutes the majority of the market you are in; however, we feel that increasing the amount of customers by targeting females and a more mature audience is necessary. The strategy we recommend is broad differentiation; this is a minor change to the strategy you currently are using since you are simply modifying your current strategy to become more effective in gaining more customers as well as keeping all customers healthy and satisfied. In the following pages the strategies and implementations to address these concerns will be discussed more specifically. The recommendation to target more customers will be centered on improving your research and marketing capabilities to ensure that you advertise the correct way. Battling societal issues such as obesity will be focused on providing a product that will keep the consumer active both physically and mentally while having fun. Product innovation will be focused on a more technological level of the company, constantly improving and updating games and consoles to beat out the competition. This paper concludes with an implementation schedule and a predicted effect on profitability for the next five years.

STRATEGIC ISSUES

In order for any company to be successful it is necessary to excel in certain areas such as marketing, research and development, technological advances, and product innovation. Knowing that your company is the industry leader in developing and marketing video games it is important to be able to keep your reputation as such by improving the aforementioned business activities. To fully understand your target, extensive research teams should be established so that you know exactly what your customer's wants and needs are. It is also important to update and create new technology so that you can keep your customers interest as well as beat out the competition by offering something different. Also keeping changes and issues in society in mind might help you develop something that could change the way your consumer thinks and lives, providing them with a better gaming experience as well as a healthier lifestyle.

Issue 1: Targeting More Customers

In the electronic gaming industry 72% of the console players are males with 54% of females purchasing the games for these consoles (exhibit 1). A recent study by Pew Internet and America Life Project found that 100% of college students surveyed have played video games[1]. These figures indicated many different things. One being that your industry does very little to attract females to play your games. If your company was able to develop and successfully market games towards females it would enable you to gain more market share. Another thing that this might indicate is that women are buying these games as gifts for their husbands, boyfriends, or children. Many of your competition develop games that are intended for more than one market- younger generations as well as a more mature generation. Currently, you only are producing games that are family friendly. Socially this makes your company look more appealing but in an industry where there is very little brand loyalty your company is missing out on a large segment of the market.

Issue 2: Societal Changes

EA's name is associated with the out of shape couch potato which is now a detriment to our culture. In America today, 20 % of young children between the ages of six and eleven are obese and even more are developing this problem.[2] This obesity dilemma is not only geared towards young children, but adults as well. Since the gaming industry is expanding with older generations, continuing to play video games puts their health at risk. Since your company has such a large name, addressing this concern will help all who have been affected and also prevent future obesity issues.

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[1] http://www.pewinternet.org/pdfs/PIP_College_Gaming_Reporta.pdf
[2] http://www.cdc.gov/HealthyYouth/overweight/index.htm

Having consumers sit on the couch and not really being motivated to get up and move around, their mind is being affected. Research shows that parents are the ones to buy the video games for their children; therefore your company could sell more if learning capabilities were included in your games. Just think EA could broaden their name even more if they helped consumers to exercise their body and mind with the games they offer.

Product Innovation

To remain consistent with a broad differentiation strategy, it is important for your company to enlarge its product offerings. Currently you are a leading competitor in the video game industry; however, to achieve the vision of becoming one of the leading companies in the entire entertainment industry, we feel it is necessary for you to expand your product diversity. As a company, you have established yourself as one of the largest and most celebrated video game producers. However, other than video games you are currently not offering other products within the entertainment industry. It is important to branch out and make the EA brand name known through other markets.

Your company is primarily dependant on one aspect of the industry. When you develop a new video game, the introduction of it into the market is under the control of the console providers that the game is designed for. This kind of dependency on other companies is a threat to EA; you are presently not generating profits from any source other than the video games you produce.

Alternatives Considered for Issue 1: Targeting More Customers

In order for EA to become the largest entertainment company in the world it needs to branch out and become more appealing to all sexes and generations. To increase sales for females the company will need to do market research to determine what kind of games attract females. Every little girl growing up loves to play house, EA could capitalize on this classic game by developing a product that allows them to play house virtually. Young females would be able to develop their nurturing side which is why they love house. This game could be a sequel to the Sims but targeting the younger generation.

Currently, your company does an excellent job at developing realistic sporting games but all the players are men. Growing up young girls idolize female sports players like, soccer star Mia Hamm and professional skier Picaboo Street; however, there are no games that are developed specifically with female players. If you were to develop a game of this nature it would encourage more female gamers while encouraging them to play the sport simultaneously.

In order to capture women in their teens and of an older demographic, EA could benefit from the huge success that internet shopping has seen in the past few years. With all the consoles having internet access, your company could develop software that would allow for a woman (or anyone) to create a realistic model of themselves that would be used to try on clothing or even new hair styles. By producing games and software that are targeted directly towards women, it will allow for EA to grow in the direction of becoming the largest entertainment company in the world.

For your company to achieve the goal of becoming the largest entertainment company in the world it needs to branch out and target a more mature audience. It is our understanding that your company is concerned that marketing games with violence will decrease your market share. The company can develop games of a mature nature and sell them successfully under a name that is not associated with EA. This name could simply be "Electronic Arts: Mature." Very few know that EA stands for Electronic Arts, so marketing their product as "Electronic Arts: Mature" would still protect the current reputation the company has developed while allowing for that company to grow into other areas of the market.

Alternatives Considered for Issue 2: Societal Changes

If children were able to play the video games they love with a little more movement, the concern over obesity may become less apparent as time progresses. We have a few suggestions which you can consider. The first is to create a game or maybe even a console that involves movement. The game could involve controllers of some sort that are held by the participants of the game. When these controllers are moved they respond to the console and move the players on the screen. Games that can be created could be tennis, karate, fishing, bowling, baseball/softball, and a plethora of other games which movement is involved. This technique gets gamers out of the lying down position and off the couch completely.

Another suggestion to involve movement into the everyday lives of gamers could be to have virtual reality games. One way of accomplishing this is to have a headset, which players can put on to see the game as if they were in it. They would be able to move their game character around by moving themselves. This could be dangerous if not monitored, so there would have to be some sort of boundaries set which the game could possibly hold within its memory.

The other virtual reality recommendation is to create a monitor controller of some sort, which can be attached to the body on the wrists or ankles. These controllers can be linked to the main console when turned on. With these controllers the players in the game can actually play a real sport or game by moving around a field. Their character in the game on the screen will be doing the exact movements which the real player is doing. This can either be done as a real sports game with other gamers throughout the world or it could be a one player game and all other players are computerized.

To help with exercising the minds of your consumers, it would be great to have a learning game that is also extremely fun to play. Your company could create a handheld game or just create games for already made handheld devices which help kids and even adults to learn. These games could be set up just like their favorite movie or sport or even have a mystery game, which asks questions along the way to make them think just a little bit. Parents would be more apt to purchase these games for their children with the new learning experience since they want continuing education for them. There could also be learning games to keep adults on their toes as well. It's trickier to get adults to not think they are learning, but it can be done.

Alternatives Considered for Issue 3: Product Innovation

Differentiating your company, not only as a leader in the video game industry, but as a leader in the entertainment industry, will require extending in different directions. Being a company that solely supplies video games is not enough to gain such a significant market share within a very broad industry. We believe it would be very beneficial to your company to take on other projects that would attract customers outside of the video game industry.

One way that we would recommend expanding your profits within the video game industry is by creating your own video game console. Currently the development and release of the games you create is highly dependent on the actions of console producers. With the new technology that they manufacture in their products, it is critical to you to develop your own technologies that are consistent with theirs. The release of games is also reliant upon the release of these consoles, by developing your own console you would be able to create and time the release of your games at your discretion. Customers that are already loyal to your company would want to purchase this console so that they could potentially purchase new games as soon as they are released. With a well designed product you would also be able to attract new customers to your company.

Another direction we think that your company should consider is the development of virtual reality gaming centers. Many of your already popular games would be available in an arcade-like atmosphere. A gaming center, especially in a large city, would attract a wide variety of customers, many of whom may not be familiar with the EA name or its products. These centers would allow you to attract customers outside of the video game industry that you may not have attracted with your existing products. People will be drawn to the familiar video games that have already gained popularity in the at home market as well as thrilling virtual reality rides. They will have the opportunity to experience games on larger and more interactive screens. These game centers may also serve as retail centers, with EA products available to purchase and to win as prizes. Customers who have played a game at the center may want to purchase it for use later on. They may also see a game that they have not tried but would like to purchase to use on their console they have at home.

Implementation for Issue 1: Targeting More Customers

Developing games and electronic software for females will be your key to great success in the future. The company should immediately begin research on what things will attract women to the electronic gaming industry. Focus groups would be a great way to start research because you can gather a group of women and enable them to talk about their liking for games and what they would like to see in the future.

The games that are produced for females will also have to be marketed differently than those produced for men. The advertisements should be placed in female orientated magazines like Family Circle, People, and Sports Illustrated. TV advertisements during popular female shows such as soap operas and talk shows would also be beneficial. It would be advantageous to have famous female endorsers, such as women who are featured in the game, to promote the product. It would be necessary to allocate at least $1 million dollars in television advertising. It costs about $400,000 to produce a commercial and at least $63 per TV spot[3]. The advertisements should be run on channels such as HGTV, MTV, and your basic cable networks like NBC and ABC. EA should budget about a half of a million dollars to print ads. This is reflected in the projected income statement for the next five years (Exhibit 3). The average magazines add will cost between $1,200 and $5,000 depending on the popularity of the magazine[4]. The company will have to encourage retail stores to give shelf space to the already limited space so the first electronic games launched need a lot of publicity surrounding them.

While beginning the research on the female market, EA can begin the development phase for mature games. These types of games will allow for your company to enter another area of the market. Since the games will be sold under an alternative name, the company can also safeguard against children playing the game by adding a large label on the front of the product which will state that it is intended for a mature audience only. This will reassure the mothers about what they are buying for their children. The cost of producing the games will cost roughly the same as producing a sport game, the only thing that will change is the content and graphics within the game. The advertisements will need to be developed to attract adults. Television commercials should be run on popular channels such as MTV and Spike TV. Using your current marketing budget a quantity of the funds should be allocated towards these types of games.

Implementation for Issue 2: Societal Changes

We feel that the best way for the EA brand name to part with the association with society's obesity issue, would be to create the console/game with hand held controllers. This will definitely allow gaming participants to become more active. The product name we suggest is bEActive; be active holds the EA brand name inside of it while touching on the fact that your consumers are going to be active while using this product. This venture will not necessarily be cheap, but the long run results will be beneficial to the company.

To produce the console part of the product you will need a variety of elements. These elements consist of a graphics processor ($30), a microprocessor from IBM ($13), optical disk drive from Matsushita ($31), memory ($8), and the power supply ($12). To have all of these parts put together by a manufacturer, such as Foxconn Electronics, would cost approximately $20.00. The total manufacturing cost of the whole product- the console and controllers- would be approximately $160[5]. If there is enough prior advertising in the right areas this gaming system could be one of the next best things to emerge in the market. We figure that this console could sell for approximately $250, giving your company an estimated profit of $90 for each console.

Using the same advertising techniques as in the previous implementation (page 6-7) for a new consumer base will help get the word out about this new product. We feel that within a week or so of having the product out on the market your company will be able to sell roughly 600,000 consoles. This will make an outstanding profit of around $53.4 million (Exhibit 2).

Implementation for Issue 3: Product Innovation

The development of your own console for all of the EA games you produce is a recommendation we feel that you should not implement immediately. With the creation of the console for the bEAactive line, we feel that the development of another gaming console might not be beneficial. The video games that you release for other consoles are successful enough in the industry that the development of your own system for existing games is not essential to your success.

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[3] http://www.gaebler.com/National-TV-Spot-Ad-Costs.htm

[4] http://www.iesbdc.org/resources/Major%20Media%20Types.doc

[5] http://www.xbitlabs.com/news/multimedia/display/20061215092033.html

The development of EA gaming centers is one of the first steps you can make to expand into other aspects of the entertainment industry. The interactive atmosphere will allow more customers to experience EA games than ever before. The first step in the development of these centers is to find potential locations. The most advantageous places would be large cities and heavily populated areas. These areas will display the EA name to large amounts of people and attract the most consumers. Since playing a video game is mainly a leisure time activity, you want the placement of the gaming centers to be readily available to people who are out to have fun. You also want the gaming centers to attract people that are walking by and not necessarily planning on going in. We recommend researching locations that already attract people to other leisure time activities. For example, Downtown Disney in Orlando; Florida attracts millions of vacationers every year, all of them looking for a fun and exciting way to spend their time. This would be a prime location for a gaming center. Although the cost of renting an operating space in this area is high, ranging from $9-15 per square foot, these gaming centers will create profits that will increase overall income for the company. Another suggestion would be a center in Las Vegas, with all of the attractions for adults an EA game center is the ideal place for a younger individual to go. These places, along with others like downtown Manhattan, Disneyland, and Atlantic City, are high-energy locations that will bring in a wide variety of customers. An endeavor of this nature may cost $10-15 million dollars to research and implement a single game center. We would suggest opening a center in an area like Downtown Disney and basing whether or not you choose to open other centers on its success.

The selection of the video games you will offer in the gaming centers can be done through analysis of your company's sales history. Looking at which games, both past a present, have been widely successful in the market, you will be able to determine which games would make these centers a success. Some of the games will need to be formatted so that they can be played on large screens or with groups of people at the same time.

Within these gaming centers you should also sell EA video games. When customers enter and leave the store they will see the EA products that are available for sale. If they had played a game at the center that they enjoyed, they would be able to purchase it and bring it home with them. People may also be encouraged to play more at the gaming centers if they had the chance to win a video game by earning a certain number of points. Registers and product offerings should be available in the front of the center so that as soon as customers walk in, they will see which products are obtainable.

CONCLUSION

We feel that all of these recommendations and implementations will benefit your company by increasing the number of customers, keeping a well known reputation and increasing profitability. The issues discussed in this paper will prove to damage your company in the long run if you do not choose to address them now. Expanding your customer target base to include females and a more mature audience is important to become the best entertainment company in the world; sticking to just the success of your video games will not allow you to achieve this goal, so other products such as the console will give you this opportunity. By developing the b**EA**ctive gaming console you are not only providing your customer with a new product but also aiding them in leading an active, healthy lifestyle. Since the gaming industry and your name, EA, is associated with the lethargic attitudes of kids it is necessary to try and distance yourself from that association and improve the reputation of your company even more. Gaming centers in high populated areas will prove very successful for your company because you will be gaining more customers who will become better users and will also have the choice to purchase products during their visit, which will increase the profitability of your company immensely. We estimate that all of the recommendations will cost on average $2 billion annually starting in 2005. This estimation is off of a 20% increase in revenues, as well as expenses each year (Exhibit 3). This may seem like a large number, but the success of your company is large enough that you will not be financially affected. Implementing our recommended strategies will do nothing more than benefit your company in the future, but it is important to act now before it becomes too late, if you want to be known as the biggest and best entertainment company in the entire world.

APPENDIX

Exhibit 1

	Console Players	Console Game Buyers
Male	72%	46%
Female	28%	54%

Exhibit 2

Consoles Sold	600,000
Price to consumers	$249
Total	$149,400,000
Consoles Sold	600,000
Manufacturing Cost	$160
Total	$96,000,000
Profit	$53,400,000

Exhibit 3

Projected Income Statement (in Thousands)

Statement of operations data	2003	Percentage of Sales	2004	2005	2006	2007	2008
net revenues	$2,482,244	100.00%	$3,572,578	$4,287,093	$5,144,512	$6,173,414	$7,408,097
cost of good sold	1,072,802	43.22%	1,544,034	1,852,840	2,223,409	2,668,090	3,201,708
gross profit	1,409,442	56.78%	2,028,544	2,434,253	2,921,103	3,505,324	4,206,389
marketing & sales	332,453	13.39%	478,484	574,181	689,017	826,820	992,185
general & admin	130,859	5.27%	188,339	226,007	271,208	325,450	390,540
R&D	400,990	16.15%	577,126	692,551	831,062	997,274	1,196,729
amortization	7,482	0.30%	10,768	12,922	15,507	18,608	22,330
total operating expenses	953,215	38.40%	1,254,718	1,505,661	1,806,794	2,168,153	2,601,783
operating income	456,227	18.38%	656,626	787,951	945,542	1,134,650	1,361,580
interest	5,222	0.21%	7,516	9,019	10,823	12,987	15,585
income before interest and taxes	461,449	18.59%	664,142	796,970	956,364	1,147,637	1,377,165
taxes	143,049	5.76%	205,884	247,061	296,473	355,768	426,921
net income	$317,097	12.77%	$458,258	$549,910	$659,891	$791,870	$950,244

DEAL OR NO DEAL: AN ANALYSIS OF DECISION MAKING AND RISK

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INTRODUCTION

Deal or No Deal has become a popular game show on network television. Stir crazy contestants go on the show for a chance to beat the bank and walk away with a lot of money. But how many contestants are really making the best deals possible? As soon as they get onto the show, contestants let emotion get in the way of the real task at hand: to make the most money possible. Instead of making rational decisions with a cool head, contestants get too wrapped up in the theatricalities of the game itself when they should be really thinking about how they are going to effectively walk away a little heavier in the pockets.

Through our research and analysis we believe that we may effectively provide guidelines in which contestants can follow to make better decisions. Through an understanding of the game and the risk associated with it, we may develop potential ways in which a contestant may become more attune to the game at hand. Therefore, walking in there a little more confident and perhaps walking out a little bit richer. One of the main focuses of our analysis in regards to Deal or No Deal involves EMV or expected monetary value (which shall be explained later on). Using EMV for decision making, we are able to dissect each round of the game and walk one through it piece by piece, showing the potential decisions needed to be made at a certain point in time.

Our group has looked at secondary sources as a means to establish the foundation to our own research. In understanding what other scholars have done in regards to game shows or Deal or No Deal in particular, we may build off of their work and truly make it our own. Analyzing secondary sources will provide us with a better understanding of the technical aspects of the game, such as statistics, along with a general feel towards how game shows really play out.

One article, *Deal or No Deal? Decision making under risk in a large-payoff game show* raises several other dimensions to the game that had not been considered by our group prior. The authors of this article collected their data by observing 151 contestants from three different countries; 51 from Netherlands, 47 from Germany, and 53 from United States. They used these three countries because it is a very similar game format. With their observation data, they used the Expected Utility Theory and Prospect Theory to analyze the choices the contestants made. They also performed three experiments in which college students played the game.

In their observation of the 151 contestant, they found that depending on what cases are opened in the first round, it affects their attitude for the rest of the game. If a person chooses high-valued briefcases, their expectations are shattered which causes a decreases in their risk aversion. If a person chooses low-valued briefcases, their expectations are suppressed which also decreases risk aversion. The contestant will perform differently depending on their stress levels. If they are stressed, they will tend to be more risk averse. If they are not stressed, they will tend to be risk lovers. In the later rounds, they considered the analysis more difficult due to the family and friends that are there talking to them. Instead of it being an observation of an individual, it was a couple or group that they had to observe.

There are several conclusions that may be drawn from this article. Most people are moderate levels of risk aversion. Offers the contestants accept depend on the type of person. Contestants change their view due to a change in their expectation (opening of prior cases).

This article does not give our group sufficient data about the Expected Monetary Value, which is the basis of our presentation. However, it does add another dimension that the group has to take into account: risk aversion. Even with the computed EMV, it does not give a clear cut answer on how much a contestant is getting. It is simply just an estimate. This is why it depends on the person who is making the decision, whether or not the EMV is in front of him/her. The EMV serves as a guideline while the person themselves add another dimension to the game.

Another article that brings out other dimensions of risk and decision making is *Decision Making under Uncertainty When the Stakes Are High: Evidence from a Lottery Game Show*. The authors first explain the methodology of attaining their contestants, while then stating the rules. Despite the game being different from *Deal or No Deal, Instant Riches* has the same basic concept, to walk away with the best amount possible. The authors formed their data by using Expected Utility Theory to compare the choices contestants are given.

The authors found that depending on what type of contestant they are dealing with, the wagers given may be accepted or not. Some conclusions that the article draws are: all contestants have a tough decision to whether be risk averse or risk lover. Since they get their contestants from their "scratch and win" lottery tickets, they may not be generalizing their information for the public at large. This may provide knowledge to the lottery playing segment of the population.

Granted, Deal or No Deal is a game like any other type of show like it on television. We recognize this and feel that it is important to acknowledge. There are certain dimensions to the game that make every contestant and every situation unique, for example: contestant personality. Therefore, our research applies more to generalities and may be used to make individuals more knowledgeable by providing them with potential tools to be successful on these types of shows, Deal or No Deal in particular. By no means is our research fool proof in that it is the end all be all. We only dare to explore possibilities to make better decisions so people may be more successful on a show that many know and love.

DESCRIPTION OF THE GAME SHOW

Deal or No Deal is a television game show that is shown in several variations throughout the world. A Dutch production company, Endemol, produced the first show that was launched in 2001. Although a Dutch company produced it, the first Deal or No Deal show aired in Australia.

The show is currently televised in sixty countries. Several of the countries include: The United Kingdom, The United States, France, Mexico, Spain, Italy, Germany, Brazil, Chile, Argentina, Poland, Russia, Portugal, The Netherlands, India, South Africa, Lebanon, Morocco, The Philippines, and Australia. Each country conducts the show in their own unique way, so there are several variations to the game throughout the world.

Therefore, in our research, we will focus on The United States version of Deal or No Deal, as we and are audiences are most familiar with it.

Being one of the last countries to produce the show, Deal or No Deal premiered in the United States on December 19, 2005. The show, hosted by actor & comedian Howie Mandel, can be viewed on NBC live on Monday nights at 9 pm and Thursday nights at 8 pm.

The United States version is very similar to the international format and is based on a contestant selecting one briefcase out of 26, each containing a cash value from $0.01 to $1,000,000. Over the course of the game, the contestant eliminates the other cases in the game, periodically being presented with a "deal" from "The Banker" for a cash amount to bow out of the game. Should the contestant refuse every deal, they win the value of the case selected by him or her at the start.

The show has been a success for NBC, typically averaging from 10 to 16 million viewers each episode. It has lead to the creation of online, card, and video games for American families. Its huge success

has captured the attention of all America, so our research is quite relatable to something that many are so very aware.

RULES AND GAME PLAY

One contestant stands in front of a stage with 26 models holding 26 suitcases. Each suitcase holds within it a designated cash dollar value. Each suitcase has unique dollar values. No suitcase holds the same dollar value. The suitcases have been randomly assigned cash values by a neutral third party prior to the game so there is no question in regards to randomness of the suitcase allocations.

A board is displayed within the studio displaying these cash values for the contestant, the audience, and everyone at home. As each cash value is eliminated from the game (details explained later on) the board will display these results and the possible values that are still "in play" or in which the contestant may potentially win. The following dollar values designate the possible cash values within each suitcase.

$0.01	$1,000.00
$1.00	$5,000.00
$5.00	$10,000.00
$10.00	$25,000.00
$25.00	$50,000.00
$50.00	$75,000.00
$75.00	$100,000.00
$100.00	$200,000.00
$200.00	$300,000.00
$300.00	$400,000.00
$400.00	$500,000.00
$500.00	$750,000.00
$750.00	$1,000,000.00

The object of the game is for the contestant to win the most money by making the best possible deal made to them by "The Banker" or playing out the game to the very end.

There are nine rounds in each complete game. A contestant does not necessarily have to complete all nine rounds as he or she may opt to quit before the game is fully complete, depending on when he or she makes a deal. A contestant chooses one briefcase out of the 26 in which he or she believes contains the million dollars. This briefcase remains next to the contestant, unopened, throughout the course of the game. In each round the contestant chooses a certain number of briefcases, the number depend on what round he or she is in. The briefcases are opened and the dollar values revealed to everyone. Those dollar values are taken out of play and are stricken from the board of possible cash values remaining. After each round the host relays an offer to the contestant via the "Banker" who watches the game from the control room. The identity of the "Banker" is undisclosed. The contestant listens to the proposed offer. Then the contestant has the choice of either accepting the deal made by the banker or rejecting the deal and continuing to play another round. If the contestant rejects the offer made by the banker, he or she will not receive another offer until opening the required number of suitcase for that next round.

Each round plays out as follows:

ROUND 1: 6 cases are opened. The Bank makes an offer based on the remaining 20 closed cases. The Finalist decides whether to accept or reject the offer - Deal or No Deal.

ROUND 2: 5 cases are opened. The Bank makes an offer based on the remaining 15 closed cases. The Finalist decides Deal or No Deal.

ROUND 3: 4 cases are opened. The Bank makes an offer based on the remaining 11 closed cases. The Finalist decides Deal or No Deal.

ROUND 4: 3 cases are opened. The Bank makes an offer based on the remaining 8 closed cases. The Finalist decides Deal or No Deal.

ROUND 5: 2 cases are opened. The Bank makes an offer based on the remaining 6 closed cases. The Finalist decides Deal or No Deal.

The subsequent rounds play out where a case is opened one at a time and an offer is made to the contestant after each opened case. When the contestant reaches the final two briefcases, one on stage and the one next to him or her, he or she has the choice of keeping the briefcase besides them or trading it out for the one on stage. The briefcase besides him or her, the original or new one, is then opened to reveal what the contestant won. Note: this is only if the contestant chooses to reject all of the banker's offers and play the game out until the last two briefcases. If the contestant decides to take a deal made by the banker earlier on in the game, the game plays out in terms of showing what the contestant could have one if he or she decided to have continued to play the game. Other dimensions to the game that need to be considered are: after a certain number of rounds, the contestant's family is introduced to the audience. The contestant then has the ability to consult with his or her family in regards to whether or not the offer made by the banker should have been accepted of rejected. Each contestant has a certain amount of time to decide whether or not to take a deal made by the banker. This time allotment is at the discretion of the producers.

DESCRIPTION OF DATA

As the show currently airs on television, live and in the form of re-runs, we are able to actually obtain our own first hand data by watching the show. Initially, we have viewed three contestants completely play out the game; we have collected the data for each contestant for each round along with the overall outcome, and even have one complete game recorded onto DVD, which we intend to have a record for every contestant we analyze. We have at 10 episodes with a contestant playing out the game fully to their deal, the rest of the show time permitting. This would generate 10 results for our group to analyze and compare. We predict that our initial ten contestants serve as good indicators of what trends will come to follow by other contestants, but more contestant data is necessary to validate these initial assumptions. Right now, these ten contestants can be fully analyzed and their outcomes compared to our further data collection. Attached within Table 1 is the result for the 10 contestants in terms of: the deals the contestants were offered each round and how far each contestant actually progressed in the game until finally making a deal. From this initial data collection we are confident in the direction our research has headed so far.

METHODOLOGY

The game Deal or No Deal is not simply about getting lucky and choosing the million dollar case, but also using your statistics and the Expected Monetary Value (EMV) which provides a rational means for selecting the best course of action. In this situation the EMV can influence a player's decision of whether to take the bankers offer or continue playing the game based on the cases that are in play. The EMV is a statistical concept that figures out the weighted average using the probabilities as weights. In other words it is the sum of all possible values for a random variable, and each variable is multiplied by its probability of occurrence. In each round of Deal or No Deal the EMV is found by taking the sum of all the cases that are left in play after multiplying the specific amount of each case by the probability of the case's occurrence. In each round of the game the banker makes an offer to the player based on the cases that are in play in hopes to get them to accept the deal and leave with as little amount of money as possible. In the situation of having to choose between the bankers offer or continuing to play, the EMV is used to give the player an idea of what the future possibilities are and decide whether to take the bankers offer or risk it and continue the game.

In one of the many situations from Deal or No Deal a player was in his 5th round of the game with six more cases left in play and a bank offer of $107,000. The six cases left in play include the amounts of

$10, $300, $500, $1,000, $100,000, $1,000,000 with a probability for each case to occur being 1 out of 6. Therefore, to help make a decision, a player can determine EMV and compare it to the banker's offer to make a more reasonable decision.

EMV= SUM of (Amount in each case left in play X Probability that each case can occur)

10 x (1/6) =1.7
300 x (1/6) = 50
500 x (1/6) =83
1000 x (1/6) =167
100000 x (1/6) =16667
1000000 x (1/6) =166667
EMV 183,635
Bankers Offer $107,000

In this case the difference between the bankers offer and the possible future EMV is $76,635 and the player ended up taking the bankers offer of $107,000 instead of taking the risk and continuing with the game. In the first few rounds of the game it is easier for the player to turn down the banker's offer especially when the cases with high amounts are still in play. However, as the game winds down and there are fewer cases left in play, the EMV will help the player make the best decision under each round with its unique situations.

Attached in Table 2 is the spreadsheet for the first contestant in regards to the calculated expected monetary value for each round, the order of the cases picked, a comparison of the EMV compared to the banker offer for each round, and how much more money a contestant could have potentially won if they had made decisions based on EMV and progressed farther into the game. This table serves as a represented table for the other nine contestants in terms of content and format.

RESULTS

The process of our preliminary analysis, based on the ten contestants' recorded data, has proved very interesting. By taking a simple concept that we have learned from Operations Managements, such as EMV, our group was able to apply it to a real life situation. Not only has it reinforced the concept, but it has fueled our desire to learn and interact with the outside environment.

Preliminary analysis has allowed us to look at each individual contestant and see where they made their deal in relation to where EMV showed that they should have made the deal. Both Contestants 1 and 2 could have gone further along in the game if they understood this simple concept of EMV. Table 3 shows the decisions that the first contestant should have made for each round on the basis of EMV and where was his optimal stop compared to where he stopped. For each round, all contestants must decide whether or not to take the deal made by the banker or reject it and continue on to the next round. Based on EMV, within each round, if the offer made to the contestant by the banker was smaller than the EMV of the remaining cases, that person should have rejected the offer and continued on playing the game. When the banker's offer is greater than the EMV, only then, should the contestant accept the banker's offer.

EMV analysis shows that Contestant 1 should have only accepted the deal in round 8. Instead he made a deal in round 5. Therefore, he missed out on the chance of winning an additional $239,000! Contestant 2 made a deal in round 8, but if she understood EMV, she should have waited until round 9 to accept the deal. She could have won an additional $70,000! Contestant 3 was an interesting scenario. He made a deal in round 8 for $36,000. Based on EMV this would have been the right time to make the deal also. Most likely, this contestant did not understand EMV. The correlation between his decision and a decision based on EMV should be attributed to mere coincidence or dumb luck. Based on contestant 3, it is determined that other dimensions to the game also need to be taken in to consideration in regards to decision making. The rest of the data, for the other contestants, falls into suit.

First and foremost, this is a game so luck definitely plays a significant role in managing decisions from round to round. A person may just be picking the briefcases with the highest values. Therefore, this is a small amount of money that he or she could still potentially win. This will affect not only what the banker offers to the contestant, but also how high or low is the EMV. On the other side of things, the contestant may never eliminate the million dollar briefcase from the podium. Therefore, there is a good chance that this contestant could win this amount as he or she gets closer and closer to the final rounds of the game. The existence of the million dollar case still in play also drastically changes the course of the game and greatly effects EMV calculations. If the contestant truly thinks that he or she has the million dollar case sitting right next to him or her, then she will most likely disregard EMV completely and play it out to the very end, no matter how tempting the offer made by the banker, so that the million dollar case is revealed. This actually was the scenario for Contestant 1. He had the million dollar case sitting beside him the entire game, so he should have played it out to the very end if he was confident enough. However, his lack of confidence made him accept a deal that did not even compare to the million dollars. This introduces another dimension that needs to be further examined later on at some point in time: risk. If a person is a risk lover, he or she will tend to disregard reason and play things out to the very end as if the million dollar case was right there beside him or her. On the other hand, if the person was risk adverse, he or she would probably make a deal as soon as a hefty sum was offered.

CONCLUSIONS

Deal or No Deal is one of the most popular game shows currently on television. It looks so easy yet every time one watches it; the contestants fail to come out as the big winner. Why cannot these contestants win big if the game appears to be so simple? Much of it has to do with the individual and the way they irrationally act to the game. There are those people jumping up and down like maniacs, joking around with the camera, when in fact they need to be thinking logically about the game at hand. Through our research and primary analysis about real time episodes, we have begun to better understand and appreciate the show. By applying concepts that we have learned in our Operations Management class, our group is able to apply this to a real life application in Deal or No Deal. Primarily, through the use of EMV for decision making, and some understanding of an individual's association with risk, we are able to better educate readers so not only can they see how logical the thought processes are when it comes to these sorts of game shows, but perhaps even on the slight chance, they may use this to if they ever actually get on Deal or No Deal. So if you are ever thinking about going on to one of these shows, just remember to relax, clear your head, and make good decisions. And if you ever win big, do not be afraid to throw some of those winnings our way.

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Hersch, Philip L., McDougall, Gerald S. *Decision Making under Uncertainty When the Stakes Are High: Evidence from a Lottery Game Show* (July, 1997). Southern Economic Journal, Vol 64, No. 1, pg 75-84. *JSTOR.* Siena College Lib., Loudonville. February 27, 2008 <www.jstor.com>.

Table 1

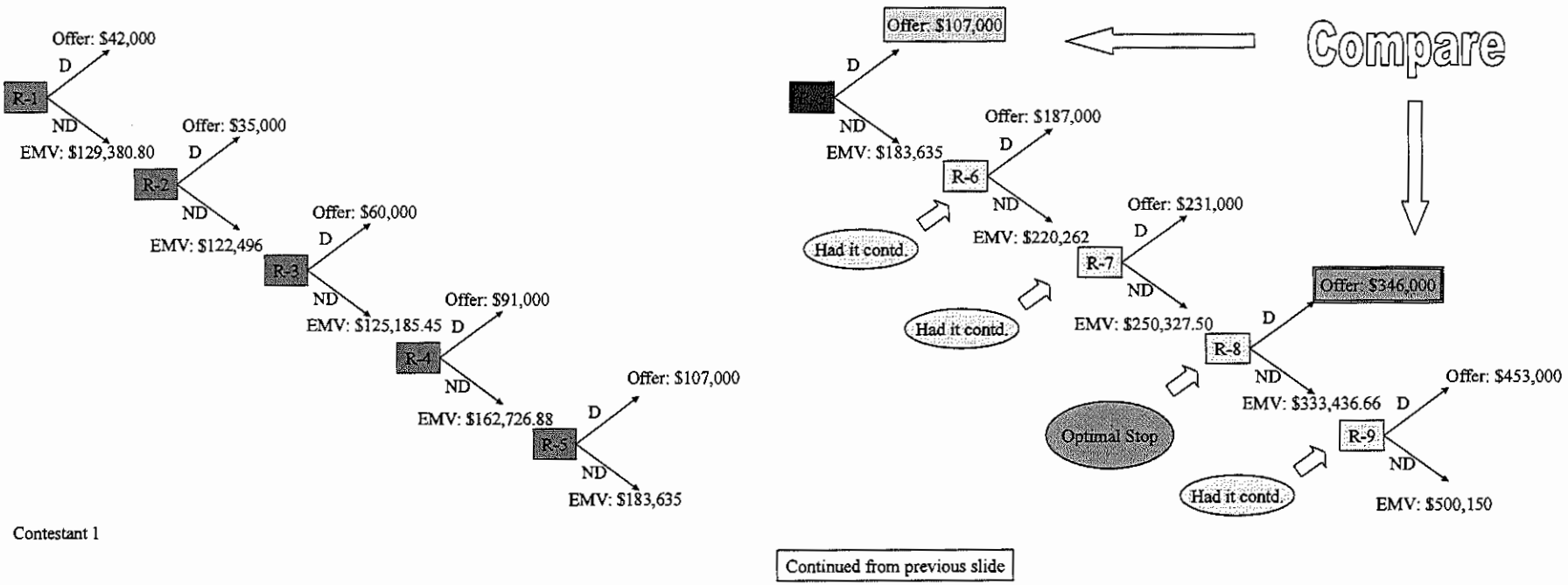
Contestant	Round 1		Round 2		Round 3		Round 4		Round 5	
Number	bank offer	EMV	bank offer	EMV	bank offer	EMV	bank offer	EMV	bank offer	EMV
1	$42,000.00	$129,380.80	$35,000.00	$122,496.00	$60,000.00	$125,185.45	$91,000.00	$162,726.88	$107,000.00	$183,635.00
2	$58,000.00	$150,165.55	$49,000.00	$130,140.07	$102,000.00	$168,291.00	$178,000.00	$231,387.50	$61,000.00	$100,183.33
3	$38,000.00	$131,400.80	$47,000.00	$125,130.40	$33,000.00	$106,859.64	$17,000.00	$21,922.63	$26,000.00	$29,221.67
4	$62,000.00	$137,119.55	$74,000.00	$159,472.00	$133,000.00	$215,175.00	$139,000.00	$202,053.13	$175,000.00	$251,070.83
5	$30,000.00	$134,657.05	$44,000.00	$127,509.33	$29,000.00	$82,955.91	$22,000.00	$101,620.00	$41,000.00	$51,951.67
6	$51,000.00	$147,133.30	$125,000.00	$187,780.40	$146,000.00	$227,791.36	$86,000.00	$156,962.50	$133,000.00	$200,945.83
7	$79,000.00	$158,150.25	$97,000.00	$175,832.00	$108,000.00	$164,770.45	$170,000.00	$226,500.00	$203,000.00	$251,833.33
8	$59,000.00	$144,661.75	$110,000.00	$175,879.00	$81,000.00	$170,585.00	$53,000.00	$87,679.38	$39,000.00	$50,155.83
9	$31,000.00	$105,883.30	$45,000.00	$107,724.07	$71,000.00	$136,432.82	$84,000.00	$150,043.88	$99,000.00	$166,691.84
10	$55,000.00	$145,595.80	$42,000.00	$110,100.73	$77,000.00	$145,514.64	$156,000.00	$190,670.13	$141,000.00	$200,060.17

Round 6		Round 7		Round 8		Round 9	
bank offer	EMV	bank offer	EMV	bank offer	EMV	bank offer	EMV
$187,000.00	$220,262.00	$231,000.00	$250,327.50	$346,000.00	$333,436.66	$453,000.00	$500,150.00
$85,000.00	$120,210.00	$119,000.00	$125,262.50	$93,000.00	$100,350.00	$163,000.00	$150,375.00
$20,000.00	$25,066.00	$27,000.00	$25,082.50	$36,000.00	$33,435.00	$49,000.00	$50,002.50
$199,000.00	$301,205.00	$263,000.00	$376,256.25	$404,000.00	$500,008.33	$341,000.00	$500,012.50
$53,000.00	$62,282.00	$76,000.00	$77,752.50	$113,000.00	$103,666.67	$163,000.00	$150,500.00
$241,000.00	$241,035.00	$331,000.00	$301,275.00	$442,000.00	$401,666.66	NA	NA
$267,000.00	$302,050.00	$216,000.00	$252,562.50	NA	NA	NA	NA
$150,000.00	$187.00	NA	NA	NA	NA	NA	NA
$165,000.00	$200,020.20	NA	NA	NA	NA	NA	NA
$173,000.00	$200,072.20	$236,000.00	$250,090.00	NA	NA	NA	NA

Table 2

Deal or No Deal							IF			
Contestant 1		Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8	Round 9
boxes	► p	0.05	0.066666667	0.090909091	0.125	0.166666667	0.2	0.25	0.33333333	0.5
$0.01	8	$0.00	Round 2							
$1.00	10	$0.05	Round 2							
$5.00	20	$0.25	$0.33	$0.45	$0.63	Round 5				
$10.00	24	$0.50	$0.67	$0.91	$1.25	$1.67	$2.00	$2.50	$3.33	Round 9
$25.00	18	$1.25	$1.67	$2.27	Round 4					
$50.00	2	Round1								
$75.00	11	$3.75	Round 2							
$100.00	7	$5.00	Round 2							
$200.00	17	$10.00	$13.33	$18.18	Round 4					
$300.00		$15.00	$20.00	$27.27	$37.50	$50.00	$60.00	$75.00	$100.00	$150.00
$400.00	13	$20.00	$26.67	Round 3						
$500.00	21	$25.00	$33.33	$45.45	$62.50	$83.33	Round 6			
$750.00	4	Round1								
$1,000.00	23	$50.00	$66.67	$90.91	$125.00	$166.67	$200.00	$250.00	Round 8	
$5,000.00	3	Round1								
$10,000.00	12	$500.00	$666.67	Round 3						
$25,000.00	6	Round1								
$50,000.00	15	$2,500.00	$3,333.33	Round 3						
$75,000.00	16	$3,750.00	$5,000.00	$6,818.18	Round 4					
$100,000.00	22	$5,000.00	$6,666.67	$9,090.91	$12,500.00	$16,666.67	$20,000.00	Round 7		
$200,000.00	19	$10,000.00	$13,333.33	$18,181.82	$25,000.00	Round 5				
$300,000.00	1	Round1								
$400,000.00	14	$20,000.00	$26,666.67	Round 3						
$500,000.00	5	Round1								
$750,000.00	9	$37,500.00	Round 2							
$1,000,000.00		$50,000.00	$66,666.67	$90,909.09	$125,000.00	$166,666.67	$200,000.00	$250,000.00	$333,333.33	$500,000.00
EMV		**$129,380.80**	**$122,496.00**	**$125,185.45**	**$162,726.88**	**$183,635.00**	**$220,262.00**	**$250,327.50**	**$333,436.66**	**$500,150.00**
Bank Offer to Deal		**$42,000.00**	**$35,000.00**	**$60,000.00**	**$91,000.00**	**$107,000.00**	**$187,000.00**	**$231,000.00**	**$346,000.00**	**$453,000.00**
When Game Stopped? Player should' ve played till										
Extra potential gain:		→								$239,000

Table 3



Contestant 1

Continued from previous slide

AN ANALYSIS OF COMMUTE TIMES

Jenna Bruun, Siena College

INTRODUCTION

In *The Long Emergency*, James Kunstler states "Many of the suburban subdivisions will become the slums of the future" and "The American way of life- which is now virtually synonymous with suburbia- can run only on reliable supplies of dependably cheap oil and gas" (18, 3). This paper is going to attempt to show the validity of these statements. The hypothesis is that people move closer to work when oil becomes more expensive, and therefore leave the suburbs which are usually a significant distance from work. The focus is on whether the price of oil has an impact on commute times to work. The conclusion of this regression is the variable of POIL was significant, but since it was not highly significant and there are problems with multicollinearity, James Kunstler's words cannot be proved or disproved without more testing.

INTRODUCTION TO REGRESSION

In this regression, I was attempting to show the validity of Kunstler's statement of "The American way of life- which is now virtually synonymous with suburbia- can run only on reliable supplies of dependably cheap oil and gas" (3). My hypothesis was that with the peak oil hypothesis, the price of oil will rise sharply in the future as supplies are depleted, and people will move closer to where they work due to these rising costs. The suburbs are set up in a way in which there is single use zoning. This means that there is separate zoning for housing, commercial, and government run places. Therefore, housing complexes are built and the people who reside there cannot get to work without a private vehicle, and usually a considerably long commute. Kunstler states that "many of the suburban subdivisions will become the slums of the future" because he feels that people will move to where they can live without heavy usage of a private automobile as gas prices become higher, and therefore they will move out of the suburbs (18). This statement also goes as far to imply that as the middle and upper classes move closer to the city where they work, the poor will become displaced as the price of housing rises, and they will be the ones living in the suburbs, which will essentially become the slums. In my regression, I attempted to show the validity of these statements the best I could.

THE REGRESSION FACTS

Regression Formula:

$$Y=\beta 1+\beta 2Xi+\beta 3Xi+\beta 4Xi+\beta 6Xi+\beta 7Xi$$

Variables	Definition
Y	Average commute times to work, defined as the average number of minutes residents in a city require for a one-way trip to work
β2: POIL	The average 'pump' price of gasoline in a city, including all taxes
β3: POP	The population density in a city, defined as the number of residents per square mile of area
β4: INCOME	Median income of all households in a city
β5: HOUSE	The percentage of total housing units in a city that are rented by the occupant
β6: TRANSP	The percentage of the population in a city that commutes using mass transit, using bus, light rail, subway, and ferry

β7:	CLIV	The cost of living in cities. This is the cost of living categories weighted subjectively as follows: housing-30%, food-15%, transportation-10%, utilities-6%, healthcare-7%, and misc. such as clothing, services, entertainment-32%.

Sources:

β2 data from:

www.gasbuddy.com_GB_Price_List.aspx
Data Accessed and used from April 20, 2007

Y and all other Beta's data from:

www.bestplaces.net (Sperling's Best Places)
For all data, look up individual city and then data sets

- Y is under Transportation
- β3 is under People
- β4 is under Economy
- β5 is under Housing
- β6 is under Transportation
- β7 is under Cost of Living

HYPOTHESES

β2 will be positive and significant

β3 will be positive and significant

A higher population means more roads and traffic congestion, which can raise commute times

β4 will be positive and slightly significant

The middle class tends to live in the suburbs, while the poor live in the inner cities. The middle class should have higher commute times compared to the rich and the poor.

β5 will be negative and significant

People who rent tend to have the ability to move more, and therefore would live closer to where they work

β6 will be positive and significant

Public transportation may take less time than driving a private vehicle

β7 will be positive and slightly significant

If the cost of living is high in the city, the middle class will have to be further away from work to afford the housing they want

IMPORTANT DATA FROM REGRESSION 1

MEAN	Coefficients	t-stat	p-value	
Y	25.0390			
POIL	2.8724	.202	2.157	.034
POP	4313.4060	.172	1.169	.245
INCOME	41111.80	.113	1.097	.275
HOUSE 44.2848	-.153	-1.599	.113	
TRANSP	6.8383	.574	4.074	.000
CLIV	105.1470	.054	.400	.690

R		.776
R^2		.602
Adj. R^2	.576	
F		23.413

GRAPHS

Chart A shows the price of oil vs. commute times. There is a positive correlation with an R2 value of .162.

Chart A

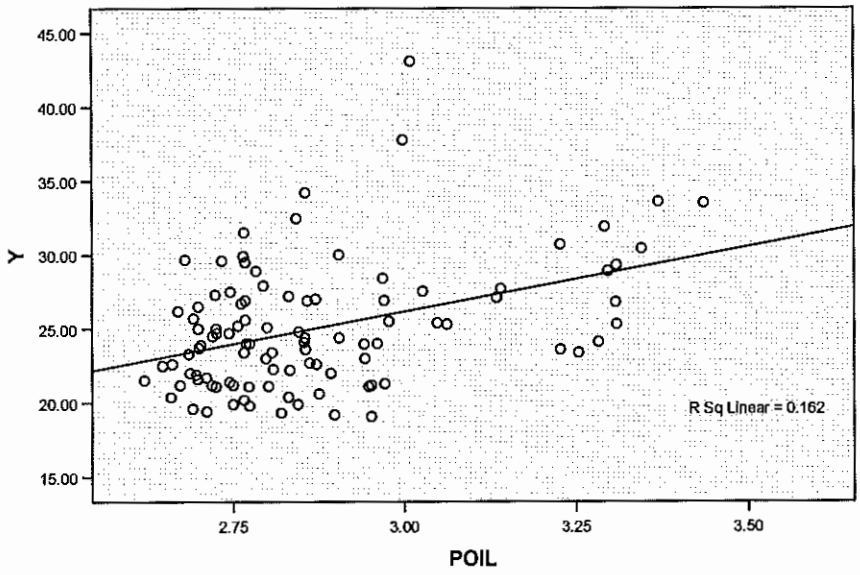


Chart B shows the population density vs. commute times. There is a positive correlation with an R2 value of .456.

Chart B

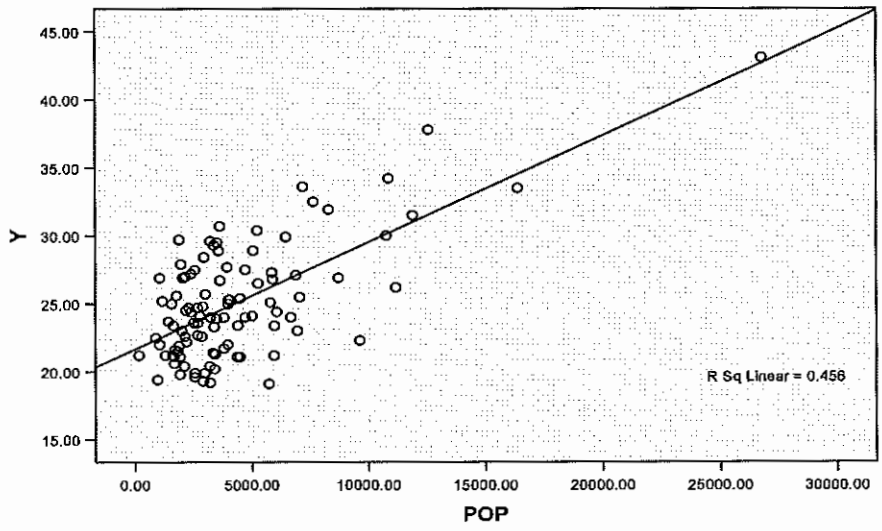


Chart C shows median income vs. commute times. There is a positive relationship, with an R2 value of .046.

Chart C

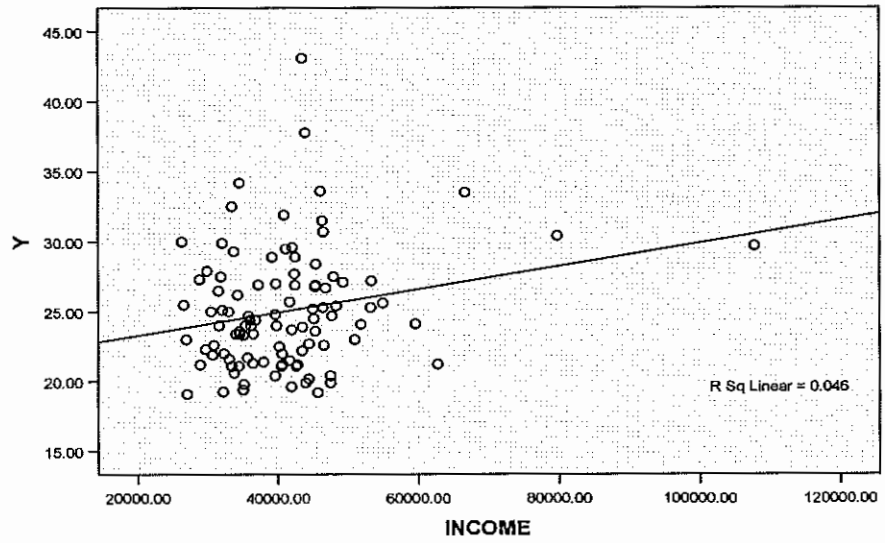


Chart D shows the relationship between HOUSE (the percentage who rent) and commute times. There is a positive relationship with an R2 of .105.

Chart D

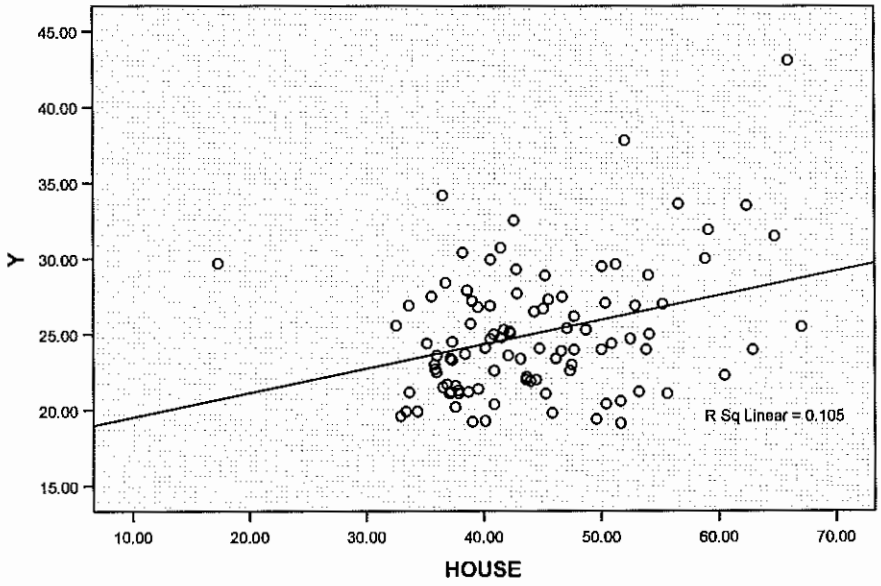


Chart E shows the relationship between TRANSP (the % who use public transportation) and commute times. There is a positive linear relationship with an R2 of .484.

Chart E

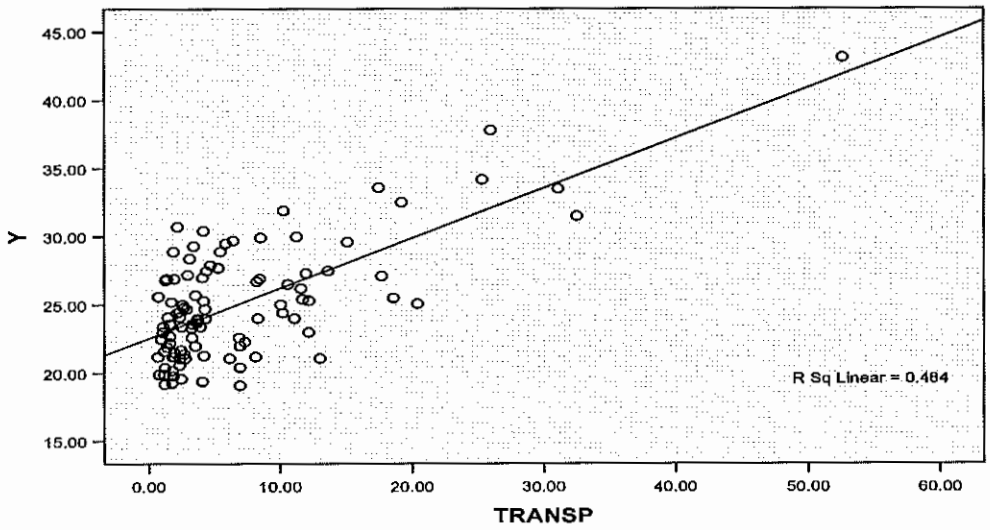


Chart F shows the relationship between the cost of living and commute times. There is a positive relationship with an R2 of .31.

Chart F

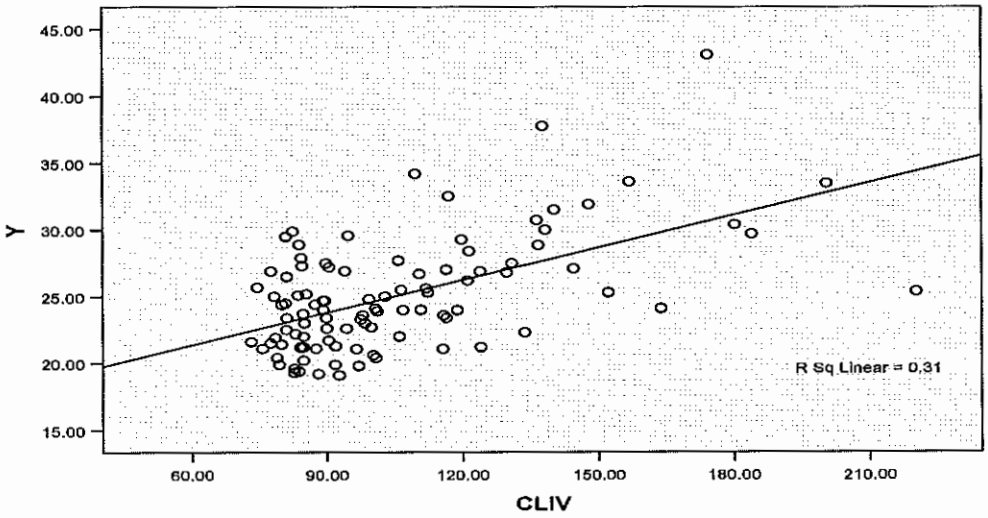
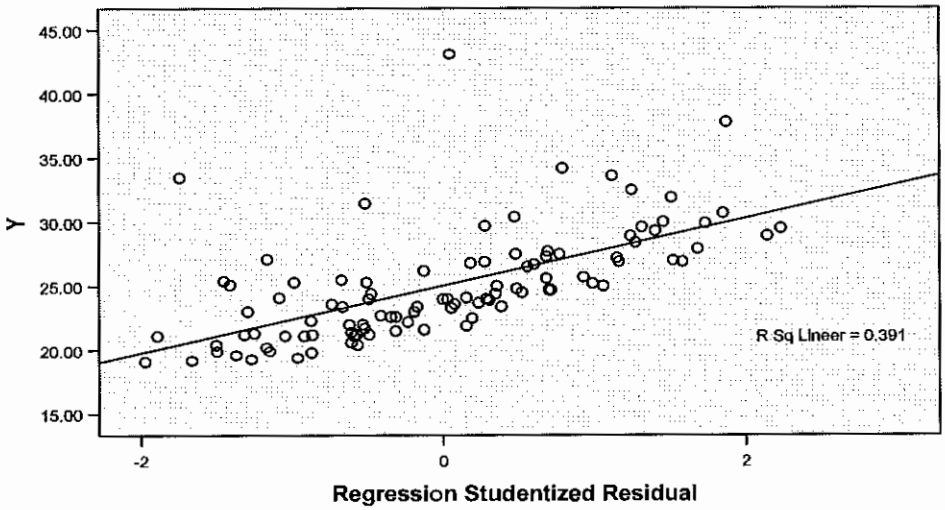


Chart G shows the studentized residual values plotted. It shows the linear relationship of the regression.

Chart G

Scatterplot

Dependent Variable: Y



ANALYSIS OF RESULTS FROM REGRESSION 1

In this regression, I used commute times as my dependent variable. This shows how far people live from where they work. For my Beta's, I used the pump price of gas to show the cost of oil for consumers. In this regression, my Beta for POIL was .202, which shows that a one percent change in the price of oil will lead to a .202% change in commute times. Population density was also used because the hypothesis was that if there is a higher density, there will be more traffic congestion and roads, which will lead to a higher commute time. I used income because a poorer city will be affected more by a change in oil than a richer neighborhood that has a higher disposable income. I used the percentage of people who rent as a variable because people who rent usually move more and do not have a long term mortgage, so they would move closer to where they work and have a lower commute time. I used the percentage of people who use public transportation, because this shows the amount of people who live close enough to where they work to utilize this, and it should lead to a lower commute time. Lastly, I used the cost of living because the hypothesis was that if it costs a large amount to live near a city, people will have a higher commute time because the middle class will have to live further away to afford the housing they desire.

From my t-stats, only the variables of POIL (price of oil) and TRANSP (% who utilize public transportation) were significant. For POIL, my p-value was .034, meaning that .034 is the lowest significance level where the null hypothesis can be rejected. Here, the probability of committing a Type I error is 3.4%. Therefore, I am 96.6% confident that for POIL, my slope is not zero, and therefore I am 96.6% confident that POIL has an impact on commute times. This is significant only because my Alpha is set at .05, and 3.4% is less than the 5% standard. For TRANSP, the same analysis applies, but my t-stat was higher, at 4.074, and my p-value was .000. This means that I am nearly 100% sure that I did not commit a Type I error (rejecting a hypothesis that we should have failed to reject) and that TRANSP has an impact on commute times.

POP, INCOME, HOUSE, and CLIV were all insignificant. I feel POP was insignificant because cities differ in many ways, and one of them is the way in which they are set up. People may not have much traffic in their area even if the density is high, and other cities may have a low density and not have much traffic, or they tend to live closer to where they work. This insignificance was probably due to the ways cities and their roads are organized. INCOME I feel could have been insignificant because the data is from city to city. It does not take into consideration the differences in people among these cities, but is only a median number for all. In most cities, there are poor, middle class, and rich people. Therefore, this data that placed the classes together probably came up with nothing because all cities are like this, and there was a median number in all of the cities that was most likely around the middle class income, being skewed only by a large amount of rich or poor. Therefore, there should not be a significant difference because the data is only a median and should have shown the difference between groups in a single city, not among medians from different cities. HOUSE could have been insignificant because of many factors. It could be for the same reason as POP, in that cities are built and organized in different ways. Some cities have a large amount of rental housing, while others have many single family homes. These differences and the locations of rental housing could make the percentage who rent insignificant. CLIV was insignificant and had the worst t and p-values. The CLIV was probably insignificant because of how people perceive costs. If the cost of living is high, a person could change their perception of the costs associated with living in a city or in the suburbs because that is the way it is in that city. Also, if the CLIV is high, it is possible that incomes are high, and people can afford to live where they want, so it has no relation to their commute times to work. There are many variables to consider when accounting for how far people commute to work, and the fact that these numbers are an average for an entire city may have an impact on the results since it does not take into consideration differences within the city.

My adjusted R^2 value was .576. This means that, taking into consideration the degrees of freedom, 57.6% of the variation in Y (commute times) was accounted for in all of my explanatory variables. Over half of the variation in commute times can be explained by these variables.

MULTICOLLINEARITY

There is multicollinearity in this original regression. It is hard to tell from looking at the R^2 value and the t-scores. I do have few significant t-scores, but my R^2 (.602) is not extremely large, but it seems like it is larger than it should be considering I have only two significant t-scores that help explain the variation in Y. My zero-order correlations also show a problem with multicollinearity. My zero-order correlations are as follows:

	Zero-order correlations
POIL	.402
POP	.675
INCOME	.215
HOUSE .324	
TRANSP	.696
CLIV	.557

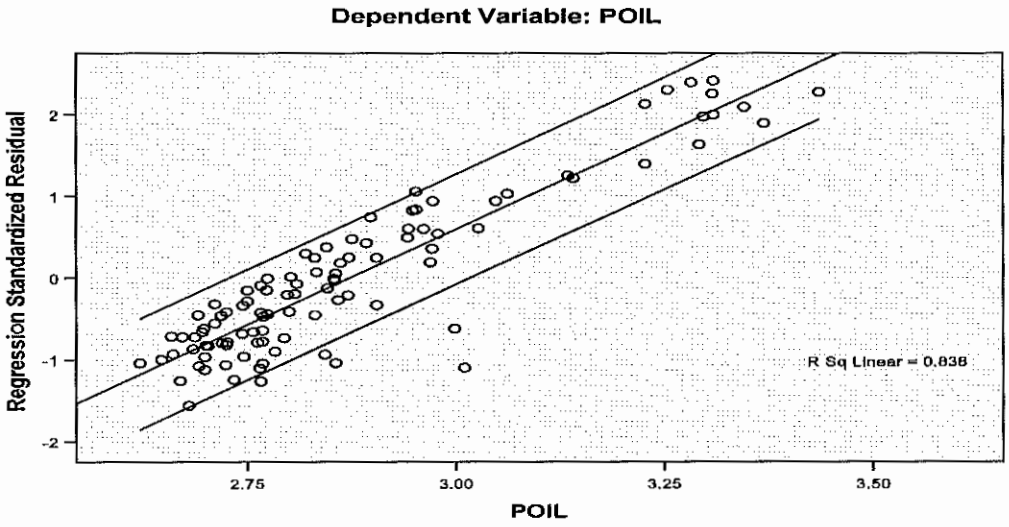
This shows that POP, TRANSP, and CLIV all have major problems with multicollinearity and POIL possibly has a problem with multicollinearity. Using Eigenvalues, we get a k of 6149, which means there is extremely severe multicollinearity. Using the conditional index, our CI equals 78.42, which also suggests extremely severe multicollinearity.

HETEROSCEDASTICITY

There does not seem to be a problem with heteroscedasticity in this regression. Therefore, the error terms are homoscedastic. This can be seen in the graphs and with the Spearman's Rank Correlation Test. The results for the Spearman's Rank Correlation Test are as follows:

	r_s		t-score
POIL	.1127		1.1228
POP	.1372		1.3708
INCOME	.0145		.14400
HOUSE .1489		1.4906	
TRANSP	.1456		1.457
CLIV	.0446		.4415

These results show that the t-scores are all insignificant by utilizing the 2-t rule of thumb, and therefore all of these variables are homoscedastic. These results are further proven in the graphs on the following pages:


Dependent Variable: POIL
Regression Standardized Residual
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1
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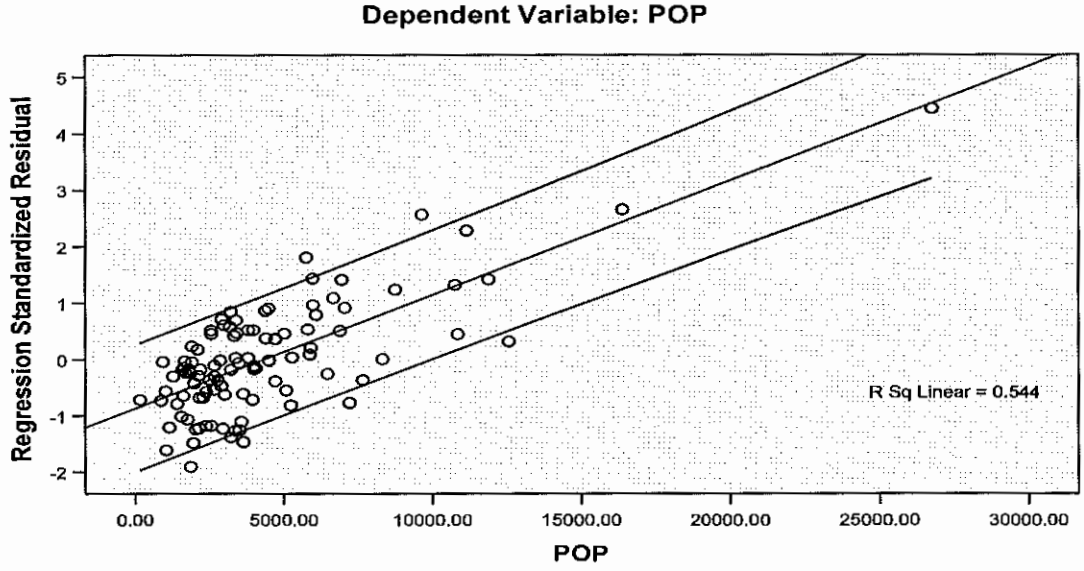
-2
2.75
3.00
3.25
3.50
POIL
R Sq Linear = 0.838


Dependent Variable: POP
Regression Standardized Residual
5
4
3
2
1
0
-1
-2
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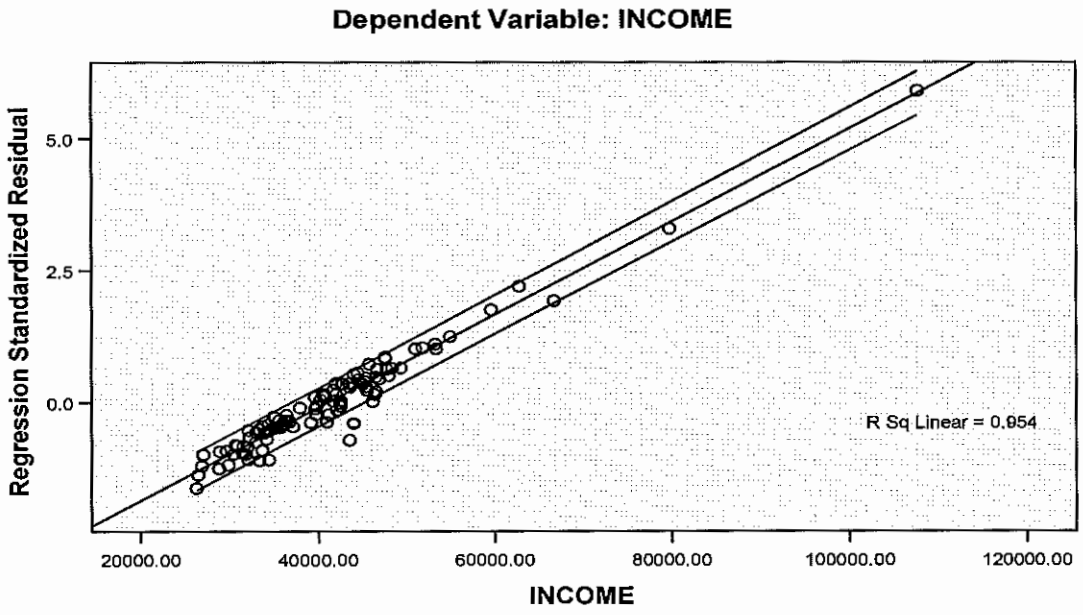
5000.00
10000.00
15000.00
20000.00
25000.00
30000.00
POP
R Sq Linear = 0.544


Dependent Variable: INCOME
Regression Standardized Residual
5.0
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0.0
R Sq Linear = 0.954
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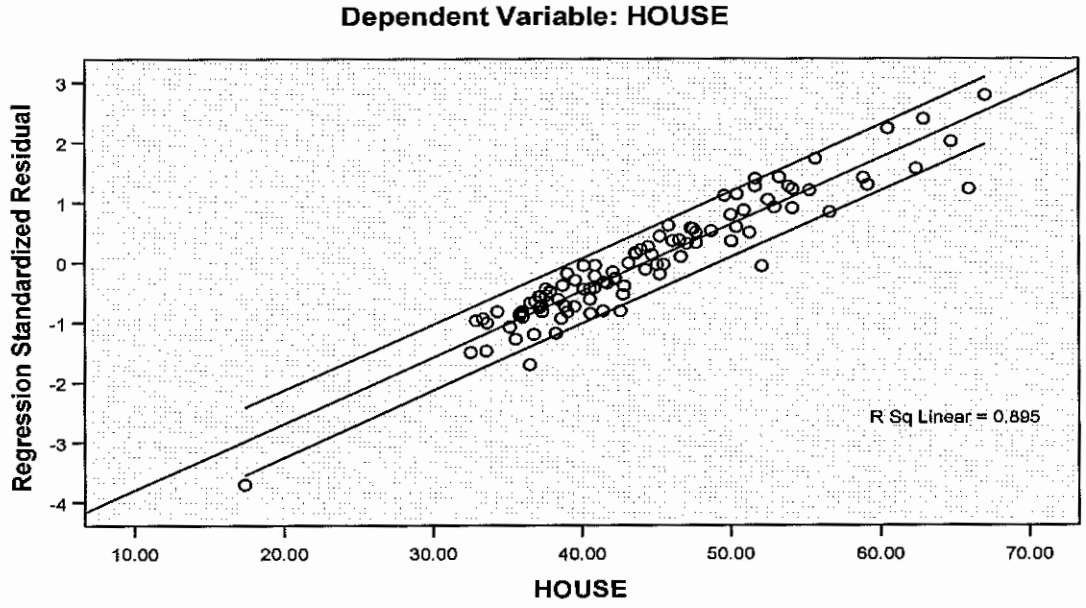
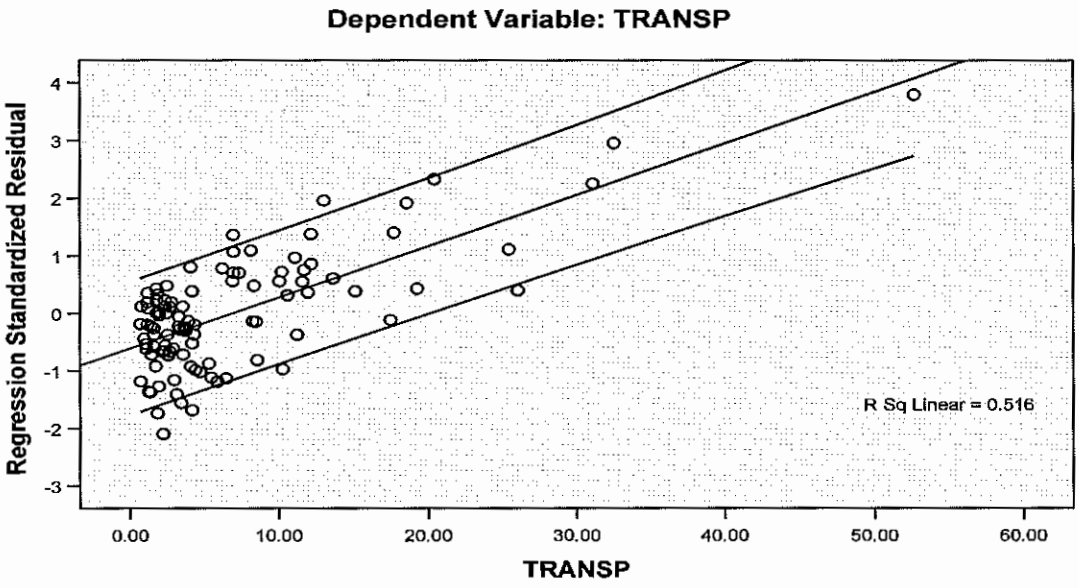
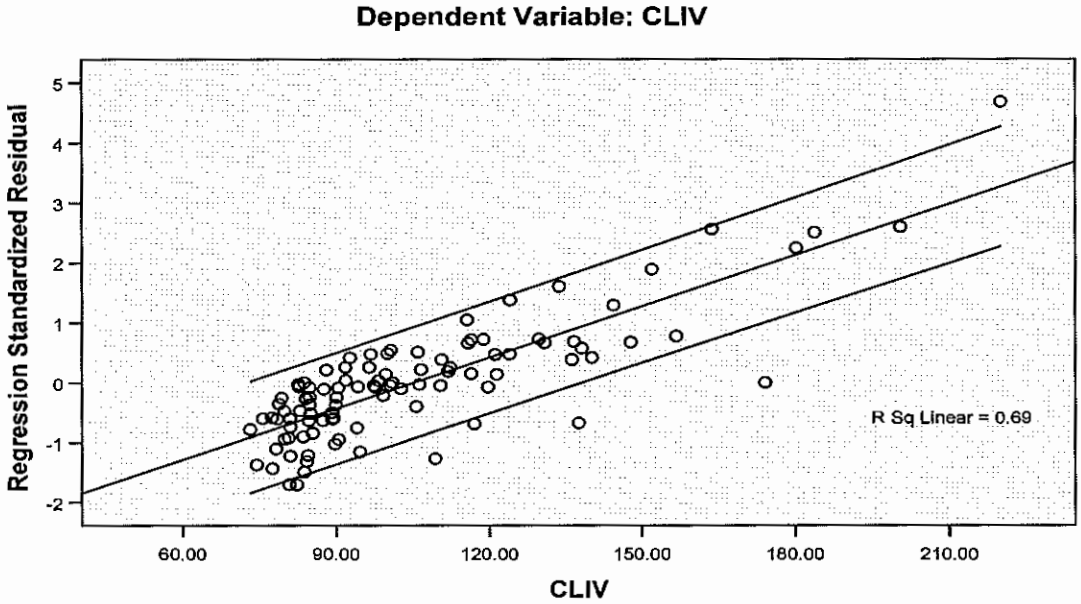
40000.00
60000.00
80000.00
100000.00
120000.00
INCOME


Dependent Variable: HOUSE
Regression Standardized Residual
3
2
1
0
-1
-2
-3
-4
R Sq Linear = 0.895
10.00
20.00
30.00
40.00
50.00
60.00
70.00
HOUSE

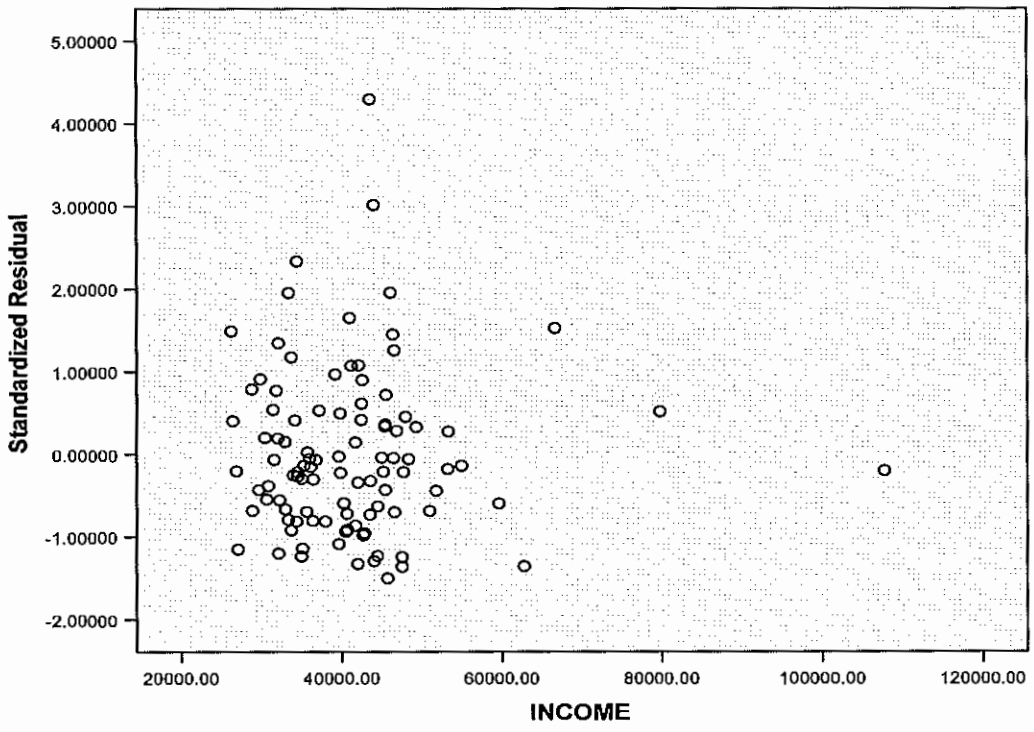

Dependent Variable: TRANSP
Regression Standardized Residual
4
3
2
1
0
-1
-2
-3
0.00
10.00
20.00
30.00
40.00
50.00
60.00
TRANSP
R Sq Linear = 0.516

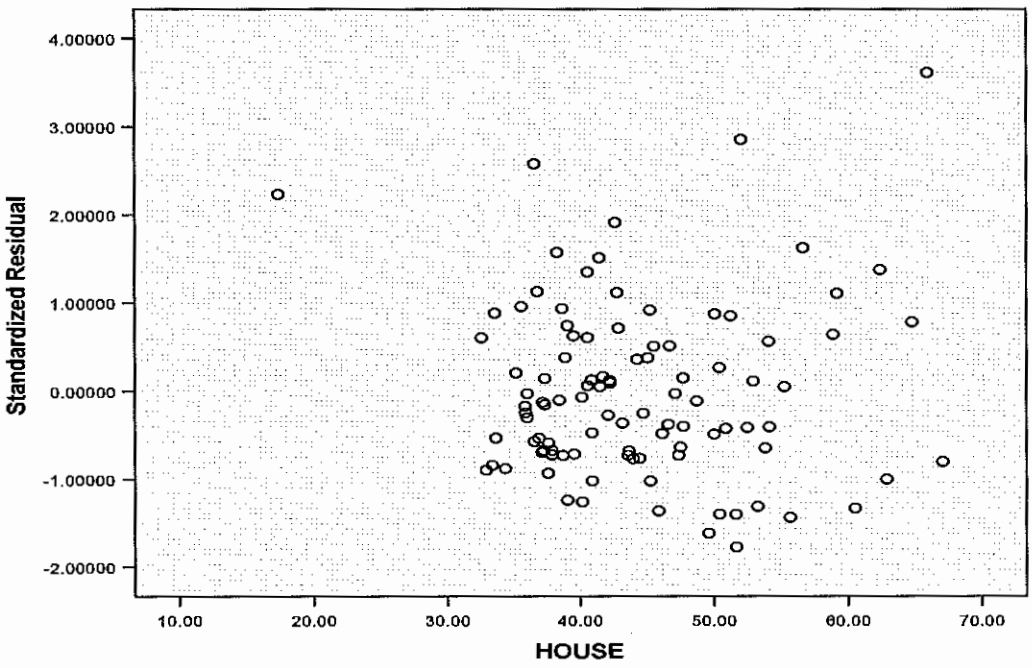

Dependent Variable: CLIV
Regression Standardized Residual
5
4
3
2
1
0
-1
-2
60.00
90.00
120.00
150.00
180.00
210.00
CLIV
R Sq Linear = 0.69

This series of graphs shows how there is no problem with heteroscedasticity in that there is equal spread around the regression line, neglecting outliers. The parallel lines to the regression line convey how the spread remains even throughout the regression, therefore displaying homoscedasticity.

AUTOCORRELATION

There is no autocorrelation in this regression because the data is cross-sectional, and therefore my residuals are not correlated. To check this, I used the Durbin-Watson test. My Durbin-Watson statistic was 1.747. This falls between 1.550 and 1.803 which is in the indecisive zone for a k' of 6 and n of 100 and significance level of .05. I would rule out that there is autocorrelation though, because the data is cross sectional in nature, and it is logically difficult to have the residuals be correlated since these random errors should not be correlated. For this regression, a runs test does not make sense because the data is set up by city, and not by increasing Y amounts, such as would be the case of the data was time-series. The graphs on the following pages convey that there is no correlation between the residuals since none of them display a pattern, and are not set up in a way in which there would be a pattern, such as is the case with time series data.




Standardized Residual
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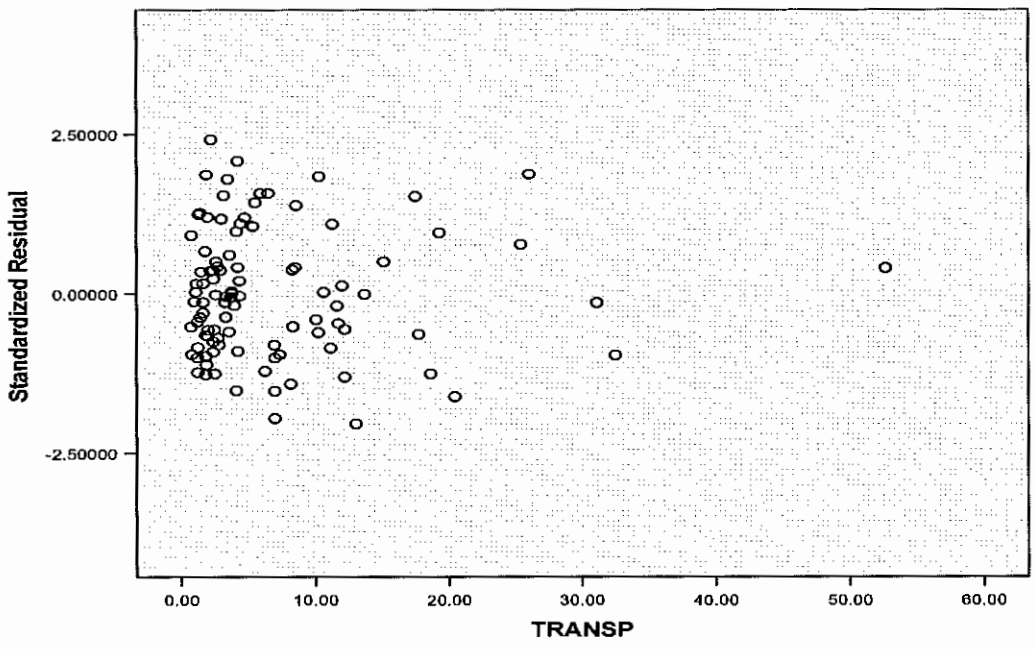
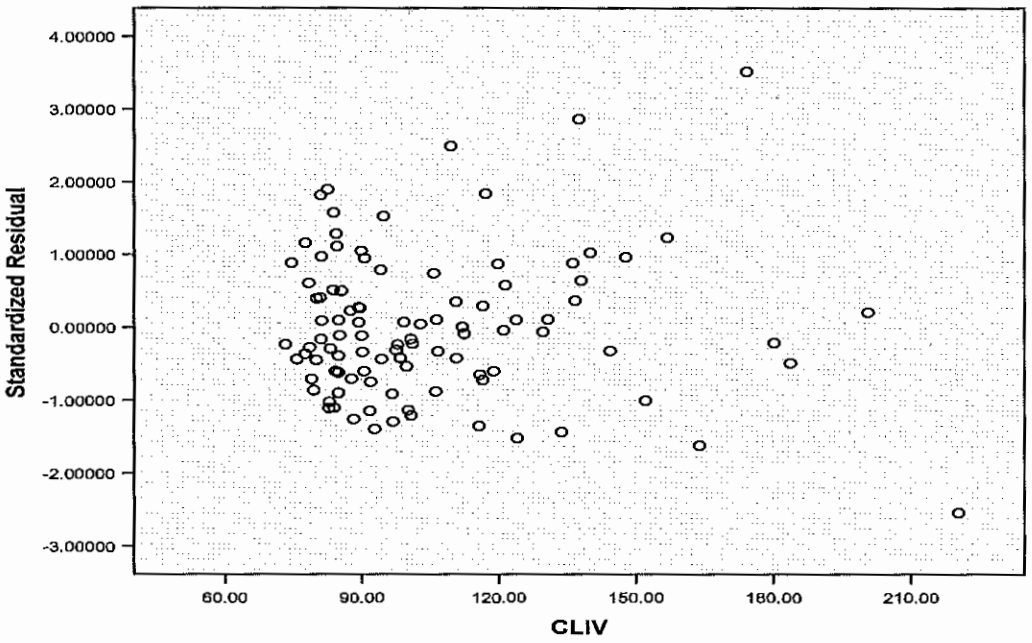
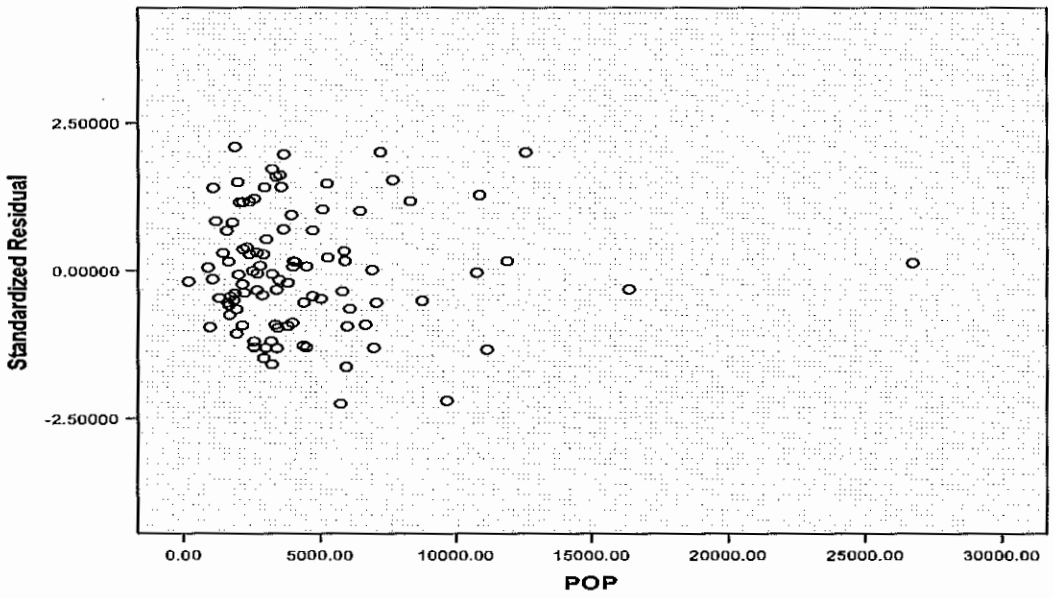
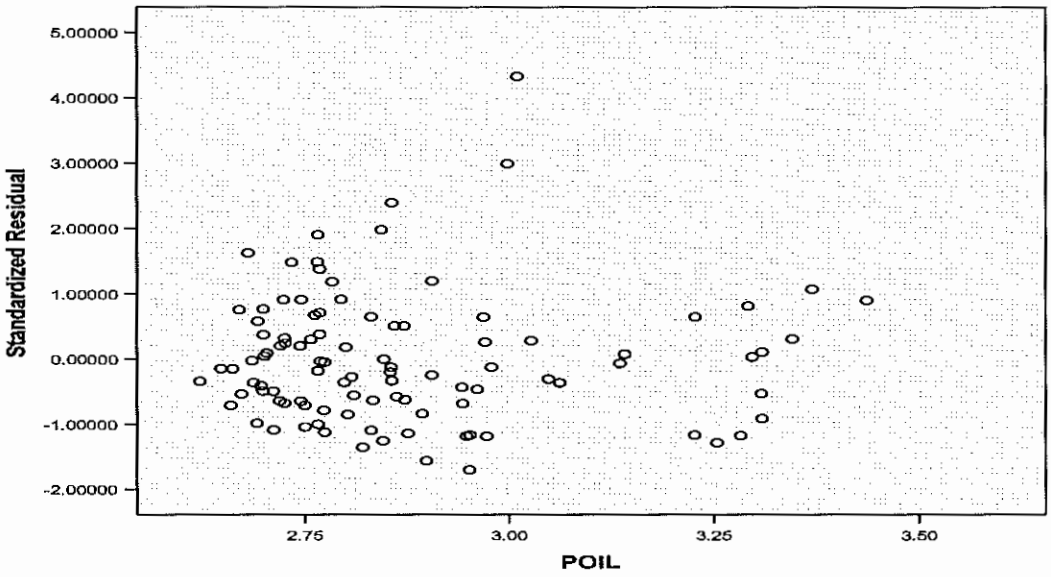
2.00000
1.00000
0.00000
-1.00000
-2.00000
10.00
20.00
30.00
40.00
50.00
60.00
70.00
HOUSE


Standardized Residual
2.50000
0.00000
-2.50000
0.00
10.00
20.00
30.00
40.00
50.00
60.00
TRANSP


Standardized Residual
4.00000
3.00000
2.00000
1.00000
0.00000
-1.00000
-2.00000
-3.00000
60.00
90.00
120.00
150.00
180.00
210.00
CLIV


Standardized Residual
2.50000
0.00000
-2.50000
0.00
5000.00
10000.00
15000.00
20000.00
25000.00
30000.00
POP



REMEDIATION EFFORTS

This regression needs remediation for multicollinearity. There are problems with multicollinearity in this regression for several reasons. First of all, population density can be correlated with many things. One of these is the amount of people who use public transportation. For one, if there are more people, there will be more funding for public transportation. Also, if there are more people, there may be more congested roads and more people may utilize public transportation. The cost of living can also have multicollinearity. One of these reasons is that income and the cost of living will impact each other in cities, since if the cost of living is high, incomes should be on average high also. Some other problems with multicollinearity which may or may not be present are the ideas that the amount of people who rent can be impacted by the population density, and the cost of living and population density can impact each other also, since there are may variables which affect the cost of living and also where people live where they do.

To remediate for these problems, I removed POP and CLIV as variables in the regression. I did this for statistical reasons, which go along with the idea that the population density and cost of living are impacted by each other, as well as other variables, such as TRANSP. POP and CLIV are both insignificant in this regression, and both have high zero-order correlations. Data on this new regression are as follows:

	MEAN	Coefficients	t-stat	p-value
Y	25.0390			
POIL	2.8724	.258	3.545	.001
INCOME	41111.80	.132	1.745	.084
HOUSE 44.2848	-.135	-1.449	.151	
TRANSP	6.8383	.725	8.727	.000

R		.770
R^2		.594
Adj. R^2	.577	
F		34.696

These remediations did not completely deal with the problem of multicollinearity, but they did not hinder my statistical results, or the hypothesis. Although my R^2 decreased, my adjusted R^2 increased,

meaning that these variables were weak to begin with. Also, my POIL t-score increased from 2.157 to 3.545, and the significance went from .034 to .001. The beta also went up from .202 to .258, which shows that a one percent change in the price of oil will cause a .258% change in commute times. This variable goes along with my hypothesis, and removing these variables makes it stronger. Other interesting results are that the variable of INCOME's significance level went from .275 to .084. Although this variable is still insignificant, my probability of committing a Type I error is much less. Also, my t-score for TRANSP more than doubled. Some weaknesses in this remediation are that my zero-order correlations are still all the same, and my TRANSP still shows signs of having multicollinearity. I decided not to remove or change this variable from the regression though, since it has the highest t-score, and lowest significance level. Also, if I take out TRANSP, my adjusted R^2 drops to .245. Also, my POIL variable has a zero-order correlation of .402, which means this variable may have multicollinearity, but I could not remove this variable since it would change my entire hypothesis. The reason this may have multicollinearity is because people have an incentive to use public transportation if the price of oil is high, and also the supply may be lessened when the price of oil is high. Therefore, these variables could be correlated. This is interesting to note, because this could be the reason POIL has an impact on commute times, in contrast to the theory that people move because of the price of oil. This regression with the remediations makes POIL more significant also, which further goes along with my hypothesis that the price of oil impacts commute times. By utilizing eigenvalues, I get a k of 2215. This is much less than the 6149 in the original regression, but still shows severe multicollinearity. These remediation efforts have helped my R^2 and significance of POIL, and I feel that although there is still multicollinearity, it is at a much better level now.

In this changed regression, there was not an addition of a new variable, so there will still be no problems with autocorrelation or heteroscedasticity.

CONCLUSIONS

This regression has both positives and negatives. The R^2 value is relatively high, showing an explanation for over half of the variation in Y. Also, the variable of POIL was statistically significant, and even more so in the remediation regression. This shows how the price of oil does have an impact on commute times. The problem with this is that its impact is not much and it may be due to the multicollinearity between POIL and TRANSP in that people may use public transportation when the price of oil is high, and they do not move because of it. If this is the case, the hypothesis that people move out of the suburbs and closer to where they work because of oil would not be shown in this regression. Also, the most significant variable was TRANSP. This variable simply says that the use of public transportation has an impact on commute times, which is obvious to anyone who has ever commuted anywhere using public transportation, and as stated previously, it has multicollinearity. Some reasons the POIL was not highly significant was that this regression was cross sectional. The hypothesis has a focus on the future, and is more in the long run than a look at prices right now. Also, through all of these cities, the price of gas did not vary all that much, and commute times are obviously impacted by other things besides the price of gasoline, since people do not move or change their transportation patterns by a few cent increase or decrease in the price of gasoline. In fact, we as Americans probably don't even notice the differences because we usually do not care about losing a few cents. The hypothesis being tested deals with a scenario that has not happened yet: significantly higher prices of gasoline to the point that people will have to change the way they budget for transportation costs, or change their transportation behaviors. In conclusion, this regression uses proxies available to predict what may happen in the future by utilizing the data available today. There are still problems with multicollinearity, but since POIL was significant, this hypothesis should be tested further in order to draw conclusions about James Kunstler's words and make sure that people are actually moving because of it and not just switching to public transportation when it is available. This regression therefore cannot prove or disprove Kunstler's words with certainty.

APPENDIX

Interesting Runs/Data

Some interesting runs are included in the appendix that are worth noting. One is the regression with the addition of the variable POP/TRANS. An interesting note on this is that it was not significant itself, but it made POP and HOUSE significant when they were previously insignificant in the original regression. Another is the simple regression with POIL and Y. This R2 value was .162, which shows how the price of oil explains 16.2% of the variation in commute times. Lastly, there is the regression with only POIL, INCOME, and HOUSE. These variables only explain 24.5% of the variation in Y, which conveys the importance of TRANSP in these regressions.

EXPLORING COLLEGE STUDENTS' ATTITUDES TOWARD COUNTERFEITING: A BEGINNING

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Cheryl L. Buff, Siena College
Katherine Walts, Siena College

ABSTRACT

The attitudes towards counterfeiting of 253 college students are evaluated for differences based on gender, past purchase behavior, and academic area of study. Results suggest a number of significant differences based on past purchase behavior with minimal differences found based on gender or area of study. Results are evaluated and recommendations for future research are presented.

INTRODUCTION

Counterfeit products are imitations of name-brand products. In 2004 alone, estimates put the counterfeiting industry at nearly $512 billion (Eisend and Schuchert-Guler, 2006) and it continues to grow. This study makes a contribution to the literature by evaluating the attitudes that college students hold with regard to counterfeits, focusing on gender, past purchase behavior, and major field of study. It involves an extension of previous research conducted by Tom, Garibaldi, Zeng, and Pilcher (1998). The current research applies their counterfeiting attitude questions to a much younger demographic, the college student, and extends beyond simply looking at the attitudes of those who have and those who have not knowingly purchased counterfeits. The objective of this study is to contribute to a better understanding of college students' beliefs about counterfeiting and the purchase of counterfeit products, and if or how ones major field of study or gender influences their attitudes and behavior. Practically, companies must understand the attitudes that consumers hold for the purchase of counterfeits as it may influence the development of marketing strategy. Further, as more schools place emphasis on teaching ethical business practices, academic majors may want to consider discussions of the economic and ethical implications of counterfeiting and the purchase of counterfeit goods.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In 1985, *Business Week* called counterfeiting "perhaps the world's fastest growing and most profitable business" (Grossman and Shapiro, 1988). Growth during the decade of the 1990's is said to have quadrupled, with significant cost to U.S. businesses (Tom et al., 1998). By 2004, Eisend and Schuchert-Guler (2006) report that the industry had grown to $512 billion. It has further been reported that 69% of Americans believe that there is nothing wrong with buying counterfeits (Boumphrey, 2007).

Studying the demographics of consumers who are more likely to purchase counterfeit items has resulted in conflicting results. (See Eisend and Schuchert-Guler (2006) for an extensive summary of previous research dealing with counterfeit purchases.) Some studies have found that age doesn't appear to have an effect on the propensity to purchase counterfeit items, while others suggest that younger individuals are more likely to purchase counterfeit goods (Eisend and Schuchert-Guler, 2006; Kwong, Yau, Lee, and Tse, 2003; Tom et al., 1998; Wee and Tan, 1995). Tom et al. (1998), using a sample with a mean age in the 30's, found significant differences in attitudes towards counterfeiting based on ones counterfeit purchase history. Further they note that the mean age of those that had admitted to knowingly purchasing a counterfeit product was younger than those that had not. Of additional interest are the findings that individuals of high-school or college age are more likely to accept questionable ethical practices and they find counterfeiting less wrong than non-students do (Vitell and Muncy, 2005). The current research extends the research of Tom et al., (1998) to a younger demographic with the intent of assessing college students' attitudes towards counterfeiting, focusing specifically on the attitude differences between college-students that have knowingly purchased counterfeits and those that have not.

H1: Generally, attitudes of individuals who have previously purchased counterfeits will be more favorable towards counterfeiting than the attitudes of individuals who have not purchased counterfeits. (See Table 1 for details of individual hypotheses.)

With regard to gender, Moores and Chang (2006) report that gender does not factor into counterfeiting attitudes. Tom et al. (1998) found no difference in the proportion of men and women that had purchased counterfeit goods. However, Ang, Cheng, Lin and Tambyah (2001), Cheung and Prendergast (2006), and Kwong et al. (2003) all agree that males have a more favorable attitude towards buying counterfeits and will do so more often than females. From this it is hypothesized that males will have a more favorable attitude towards counterfeits. More specifically it is hypothesized that:

H2: Generally, attitudes of males will be more favorable towards counterfeiting than the attitudes of females. (See Table 1 for details of individual hypotheses.)

H3: The percent of males who buy counterfeits will be higher than the percent of females who buy counterfeits.

The final demographic characteristic to be considered is education. Previous research has evaluated the level or amount of education held, with Eisend and Schuchert-Guler (2006) reporting conflicting results with regard to the impact that level of education has on counterfeit purchase behavior. Cho and Yoo (2005) conclude that people of higher education are more likely to purchase counterfeit software because they have a better understanding of how software works. This however contradicts the findings of Tom et al. (1998). Research looking at specific major or area of study is however lacking. Do business majors, as a result of their understanding of the economy, sales, branding, and perhaps counterfeit goods, hold different attitudes toward counterfeiting? Do students participating in educational programs with strong ethics components hold attitudes that vary with those whose major programs do not have an ethics component? Evaluating counterfeiting as an ethical and moral issue allows for the introduction of research that specifically looks at ethical decision making and ones education or academic major (Beltramini, 1984; Cocanougher (1972); Ford and Richardson, (1984); Mansfield, 2000; O'Fallon and Butterfield, 2005). These studies highlight contradictory findings with regard to academic major or area of study. With the lack of previous research addressing counterfeiting and academic major, the null hypothesis is assumed.

H4: Generally, there is no difference in the counterfeit buying attitudes of students pursuing different types of education. (See Table 1 for details of individual hypotheses.)

H5: There is no difference in the counterfeit buying frequency of students pursuing different types of education.

RESEARCH METHODOLOGY

A paper and pencil survey was administered during classes and in intercept fashion in various academic buildings on campus. The survey was voluntary and there were no incentives provided for participation. The survey is an extension of research conducted by Tom, Garibaldi, Zeng and Pilcher (1998). In addition to a number of questions that assessed student attitudes towards counterfeits, information was gathered regarding past purchase behavior and demographic characteristics. In total, 268 responses were collected. For the purposes of the current study, only 253 were used. The sample included 89 males and 164 females; 140 subjects were business majors, 24 were science majors, and 83 were humanities majors. Fifteen were eliminated based on age. Also, when looking at academic major, there were 6 surveys left blank; those records were eliminated for the analysis of academic major and attitudes. Data was input and analyzed using SPSS. Past purchase behavior was evaluated using chi-square tests, while attitudes were evaluated using t-tests and ANOVA, with significance determined at the $p<.05$ or $p<.01$ level.

RESULTS

Attitude differences between those who have knowingly purchased counterfeits and those who have never knowingly purchased counterfeits

When looking at the attitudes of those who have purchased counterfeits and those who have not, it is clear that there are significant differences. Refer to Table 1 for a summary of results. All hypotheses have been supported with the exception of H1a and H1b. This suggests that those that have purchased counterfeits and those who have not hold similar attitudes with regard to the impact that counterfeit products have on the U.S. economy and that counterfeit products hurt the companies that manufacture the legitimate products. For all other attitude statements, significant differences are noted.

Attitude differences between males and females

The results suggest little difference between men and women with regard to attitudes held. Only two hypotheses demonstrated significant results (H2k and H2l). Men disagree more strongly with the statement that counterfeit products are just as good as designer products. They also demonstrate a higher level of disagreement with the statement that "I would buy counterfeit products even if I could easily afford to buy non-counterfeit products." The results fail to support H2a-H2j. Results of chi-square analysis show no difference between men and women in their counterfeit purchase behavior, thus H3 is rejected (chi square=1.021, df=1, p=.312). In the current sample, approximately 79% of the women and 73% of the men have purchased a counterfeit product in the past.

Attitude differences between academic majors

When comparing attitude measures by academic major, there was one significant difference found. Thus all hypotheses are supported with the exception of H4k, "counterfeit products are just as good as designer products". Results support H5, as there is no significant difference in counterfeit purchase behavior based on academic area of study (chi-square = 3.253, df = 2, p=.197). Of those with a business major, 81% had purchased a counterfeit in the past, while 79% of science majors and 71% of liberal arts majors reported this behavior.

DISCUSSION

Attitude differences between those who have knowingly purchased counterfeits and those who have never knowingly purchased counterfeits

In general there were strong attitude differences between those who have previously purchased counterfeits and those that have never knowingly purchased counterfeits. Both groups did agree however that counterfeits hurt the U.S. economy and the companies that manufacture the legitimate product. Those who have never purchased counterfeits indicated that people who buy and sell counterfeits are criminals. Individuals who had in fact purchased counterfeits believed that the prices of designers were unfair and that the quality of the counterfeit was equal to that of the legitimate product. This finding is consistent with Boumphrey (2007) who reported that 76% of Americans say that a counterfeit good has the same quality as any legitimate manufactured good. Buying counterfeits is their way of supporting the "little guys" who show their creativity by satisfying demand in the market. Those that have purchased counterfeits believe that counterfeits are a way to get back at "big business" who they believe have unfair prices for an equal product. Further, they don't believe that people who buy or sell counterfeits are criminals. The current findings are similar to those reported by Tom et al. (1998).

From a managerial standpoint, it is important to understand how one's products are perceived in the marketplace. It is necessary to identify competing products, substitute products, and counterfeits or knock-offs designed around your products. Strategic decisions must be made with this information considered.

Attitude differences between males and females

Previous research demonstrates inconsistent findings with regard to gender. Of the research reviewed, some of the more recent research demonstrated males expressed more favorable attitudes towards counterfeiting. Based on those findings, the current hypotheses were formed. The results suggest little difference in attitudes held by males and females. There were significant differences in attitudes towards the quality of

counterfeit products and the willingness to pay for non-counterfeit products. Compared to men, women would be more likely to consider the purchase of a counterfeit. It was surprising to find that when asked if counterfeits were just as good as designer products, males disagreed more (mean 2.13) than females, who were closer to neutral (mean 2.54). Also males were much less likely (mean 1.83) to buy counterfeits even if they could afford the non-counterfeit product (mean 2.26). While the response of males and females are both on the disagree side of the neutral point, it is women who are more likely to purchase a counterfeit product even if they have the money to buy the non-counterfeit good. The current findings contradict the earlier findings of Ang et al. (2001), Cheung and Prendergast (2006), and Kwong et al. (2003), who suggested that males are more likely to buy counterfeits than females. Our results are more consistent with the findings of Moores and Chang (2006) and Tom et al. (1998).

The number and percent of the sample that have purchased a counterfeit or knockoff in the past is much greater than expected. The current results indicate that more females (79%) have bought counterfeits than males (73%). This statistic does not support H3, which offered that males would have a higher counterfeit purchase percent. A look at the different attitude statements and responses helps shed light on these findings. Recall women are more likely to believe that the quality of counterfeits is closer to that of the manufacturer brand. While there wasn't any significant difference, the attitude statement about designer prices being unfair did result in fairly different means. Females agreed that designer prices were unfair (mean 3.21) more than males did (mean 2.92). Note that these mean results show that women are on the agree side of the neutral point, while men are on the disagree side. It makes sense that females would buy the counterfeit version even if they could afford the non-counterfeit product more than males if they believe that counterfeits are close in quality to the manufactured version and that designers have unfair prices.

Attitude differences between academic majors

After evaluating results comparing the means of the attitudes of different academic majors it is clear that there was very little significant difference between them. Interpreting the value and direction of the mean scores, some interesting findings are noted. Science and liberal arts majors show differences in the strength of the opinion held with regard to buying counterfeits was a way to get back at "big business", where science majors tended to disagree more (mean 2.00) than liberal arts majors (2.49). Also there was a difference in opinion on if they liked buying counterfeits because it was a way to play a joke on the manufacturer, science majors disagreed with this more (1.63) than liberal arts majors (2.04) again. Both of these questions are related to buying counterfeits to hurt "big business" and to play a joke on them and science majors disagree with acting in this way. It also appears that liberal arts majors believe that counterfeits are just as good as the designer product (mean 2.65) more than business majors (mean 2.28). It may be that a business background helps them understand that counterfeits are often created at a much lower standard of quality and out of much cheaper material.

CONCLUSION

There were three main areas of focus in this first phase of our research: attitudes toward counterfeiting based on gender, past purchase behavior and major field of study. The current findings contribute to the counterfeiting literature and to the gender studies literature. They also highlight additional areas of study for consideration. The counterfeit purchase behavior of the sample appears higher than the US counterfeit purchase behavior as a whole, likely due to the young age of the sample. While the sample was appropriate for the purposes of the current research, it does present some limitations. By design, college students were selected from only one campus. The sample contained 65% females and 35% males. This is skewed towards females, with the academic institution demonstrating a 59% female and 41% male ratio. It is also not representative of the college-age population in general. Results for a more balanced gender sample may be different. The same may be true for academic major. With a wider sample, one would expect differing results. Further, it is possible that the size, location, and type of college (Catholic) may also impact the results. Phase 2 of this research will involve the use a sample selected from a much wider range of academic institutions.

Additional recommendations for future research, beyond expanding the sample to a wider number of college-age individuals, is to assess attitudes based on cultural background, age (an older sample), income level, and geodemographic characteristics (zip codes of home and college, for example). Does living in a big city influence attitudes towards counterfeiting and counterfeit products? Further, why do some individuals prefer to buy counterfeit even when they have the financial resources to pay for the manufacturer's brand? How do ones level of moral

development and ethics impact attitudes towards counterfeiting? Finally, research into specific products and their attributes is also important. A number of these questions will be studied in subsequent phases of this counterfeiting research.

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Table 1: Mean scores and t-Test/ F-Test of Attitude toward Counterfeiting by Student Past Purchase of Counterfeit or Legitimate Products, Gender, and Academic Area of Study

Attitude Statement	Overall Mean	Past purchase behavior (Have vs. have not purchased)	Gender (Male vs. Female)	Academic Area of Study (Business vs. Science vs. Humanities)
		t-statistic	t-statistic	F-statistic
a. Counterfeit products do not hurt the U.S. economy (H1,2,4a)	2.39	-.353	-1.399	.632
b. Counterfeit products hurt the companies that manufacture the legitimate product. (H1,2,4b)	3.94	-1.581	-.646	.543
c. I like counterfeit goods because they demonstrate initiative and ingenuity on the part of the counterfeiters. (H1,2,4c)	2.19	2.805**	-.820	1.153
d. I buy counterfeit products because counterfeiters are the "little guys" who fight big business. (H1,2,4d)	2.01	4.517**	.879	.388
e. Buying counterfeit products is a way to get back at uncaring and unfair "big business." (H1,2,4e)	2.39	3.739**	-.699	2.187
f. People who buy counterfeit products are committing a crime. (H1,2,4f)	2.80	-3.008**	-.846	.524
g. People who sell counterfeit products are committing a crime. (H1,2,4g)	3.52	-2.462*	-.209	.120
h. Buying counterfeit products demonstrates that I am a wise shopper. (H1,2,4h)	2.32	2.543*	.419	1.522
i. I like buying counterfeit products because it's like playing a practical joke on the manufacturer of the non-counterfeit products. (H1,2,4i)	1.93	2.764**	.260	2.245
j. I buy counterfeit products because the prices of designer products are unfair and gouge. (H1,2,4j)	3.11	5.797**	1.880	1.707
k. Counterfeit products are just as good as designer products. (H1,2,4k)	2.40	2.638*	2.969**	3.541*
l. I would buy counterfeit products even if I could easily afford to buy non-counterfeit products. (H1,2,4l)	2.11	3.806**	3.233**	.484

Scale: 1=strongly disagree, 2= disagree, 3=neutral, 4=agree, 5=strongly agree

* Significant at $p < .05$
** Significant at $p < .01$

CREDIT CARDS AND SIENA COLLEGE STUDENTS: IS IT A PROBLEM? A RESEARCH PROPOSAL

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INTRODUCTION

In the United States there are approximately 640 million credit cards that are in circulation with about $750 and $800 billion in credit card balances (Card Industry Director). Part of this balance belongs to college students and most of these students have trouble paying off their balance on time. Some students even open up new cards to pay off existing debt. The increasing number of outstanding balances of college students is alarming and there appears to be a number of reasons for this. Preliminary findings of our research indicate that students tend to carry an inordinate amount of credit cards debts as they progress through college. Some experts estimate the average card debt of a college student to range between $2000 and $2500 at the undergraduate level, and almost twice as much for graduate students (nelliemae.com)

Undergraduate college students are carrying credit cards in record numbers. 83% of all undergraduates in 2001 had at least one credit card, with the average student carrying four credit cards at any one time (affil.org). More importantly, it has been noted that three out of five students with credit cards maxed them out during their freshman year (affil.org). We feel our research can support the notion that there needs to be a required seminar for all entering Siena College students if there is indeed a problem. Our research can point out where the problems are arising as well as help students make better judgments on when to use credit cards.

RESEARCH OBJECTIVES

- What is the current status of card debts by age?
- Are the debts of Siena students in tune with the rest of the population?
- What are some of the causes of high card debts carried by students?
- What are the implications of such debts upon the card holder?
- Does personality reflect current credit card situation?

TYPE OF STUDY

Our study mainly consists of descriptive research. We look to profile our target population in regards to credit card usage. To do this, we must understand who is using credit cards, what they are buying, and what their payment behavior is like. This includes personality profiles, consumption profiles, and overall buying patterns. For example, we are looking to identify whether or not age or class status of college students relates to credit card usage and debt. Exploratory research will be utilized to understand attitude and personality of college students in relation to credit card usage and debt. This shall help us better understand the problem, if one exists, and ways to alleviate and educate students on campus.

TARGET POPULATION AND SAMPLE

Our sample size will consist of 200 Siena students (50 per class). We will be surveying 25 men and 25 women per class. We plan on going up to students in public Siena locations such as the dining hall and the library.

SPECIFIC INSTRUMENTS

Our plan of action is to compile a set of questions that will be sent out to a sample. Upon collecting our data, we have full intentions of analyzing both the qualitative and quantitative aspects of what we encounter. From there our goal is to compile an organized report specifying aspects of the problem that need to be recognized.

TIMELINE

We plan to have our topic approved before spring break. Upon returning, we want to conduct the survey within 2 weeks. All of our secondary data will have been collected before April 1st 2008 and we plan on analyzing our data from the surveys the week of April 7th, 2008.

POTENTIAL BENEFITS

This research can have a significant impact on college students as well as on credit companies to reevaluate their standards. In doing so, students will be able to see that core of the problems and be more aware of the tactics being used on them to become cardholders. Furthermore, our research can assist policy makers and school officials on assisting Siena students with this issue. We also believe the research would shock most students and give them a better perspective on how serious the issue is. The students would also be able to relate to the data more because they know that fellow students took the time to analyze the situation. We feel it is imperative that Siena students realize the severity of poor credit card management now so they can avoid hardships in the future.

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EDWARD JONES INVESTING

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INTRODUCTION

Since the forming of Edward Jones, the financial advisement business has endured a radical transformation. Your company has evolved the ways in which financial planning is currently done. It is now considered industry standards to not only offer financial services, but also provide clients with personal relationships and custom tailored investment planning for the future. Although your company has established a norm, you remain a firm that has yet to establish itself as a financial leader in the industry. The competition has recognized this change in product delivery, and as you attempt to grow yourself financially, giants in the industry such as Meryl Lynch and Charles Schwab look to emulate your personal style. As you glance into the future, it is important that you not only remain a trend setter, but a dominant financial presence as well. In an effort to achieve this status, we have compiled what we view as being the important issues that are hindering your progress. The general strategy that you possess is the one that is required for success in the industry; however, we are suggesting some minor changes to help promote greater financial success. As a financial advising firm, it is essential that you provide a wide range of products, but also that you reach out to a wide range of clients as well.

EXECUTIVE SUMMARY

Edward Jones has established itself as a pioneer in the financial advisement industry. You have developed the model as to how personal financial advisement should be carried out; however, you are still lacking the financial performance to compete with the giants of the industry. It is important that you begin to move forward, and attempt to further succeed off of the success that you have already built. As a successful firm, it is important that you maintain your current strategy, but adhere to new techniques that will help assist you in creating financial equity amongst you and the leaders of the industry.

The first issue we addressed was the need for expanding demographically. This is meant in terms of both the demographics of clients as well as FA's. The minority market, consisting of African American, Hispanics, and Asians, is rapidly growing and you have unsuccessfully taken advantage of it. We generated alternatives such as getting involved in urban areas that are inhabited by many minority investors, by sponsoring little league or professional events, and also gaining assistance from surrounding FA's to recruit new ones. They would recruit FA's from the areas they are targeting to market in and try to gain those of a different race to facilitate a more trusting relationship. With these two alternatives implemented together we believe that you company will begin to take advantage of the growing minority market.

Your firm has relied on the old fashioned approach of attracting customers ever since Edward Jones was established. However, we strongly believe that you need to develop new ways to attract different kinds of customers whether you are expanding geographically or demographically. Because of the new emerging big competing firms, Edward Jones has to fight over the customers and make sure that they make the right decision of picking your firm to handle their assets. First we developed an alternative of increasing your breadth of product line because it was very limited compared to other competitors. We are aware that your firm highly discourages giving your clients the option of choosing short-term investments. However, we strongly feel that if Edward Jones doesn't expand the choices for the clients, your firm will fall short and be unable to compete with the other big brokerage companies. We suggest having your financial advisors be highly talented and skilled and give the pros and cons to each client when giving them the option of choosing to go forward with the short-term investments. Also we strongly recommend your company to launch a national advertising campaign through the means of billboards, sponsoring national league sports teams and overall trying to spend close to what other competitors spend on promotion. Edward Jones has been around for a long time and it has established a somewhat good brand name however we

believe that your firm can reach higher achievements if it increases the ways of which it attracts and retains your clients.

The third major issue Edward Jones is currently facing is their strong centralization of offices throughout the country. Edward Jones must be continually growing as a company if it has hopes of remaining a prominent competitor in the industry. There are several different approaches the company can take to tackle this prominent issue. With this being said the investment company must continuously grow and enter more urban markets throughout the country at a steady and strong rate in order to reach their final goals.

Heavy centralization, expanding customer demographics and the attraction and retention of customers are important issues that need to be resolved. As the industry continues to grow, and the competition intensifies, your firm needs to implement certain recommendations in order to survive and excel in the industry. As a financial firm that possesses a great deal of potential, if you are to implement these recommendations your efforts will equate to success for the future.

ISSUE 1: EXPAND DEMOGRAPHICS

As discussed in the issue of centralization, much of your branches are located in limited types of areas. This leaves many diverse investors to be untapped or left for your rivals like Merrill Lynch or Charles Schwab. A great contributor to this issue is the fact that the Edward Jones workforce is less diverse and does not have the capabilities to make a common connection with many minority investors. Out of there 30,000 employees only .6% are African American FA's, .6% Hispanic FA's, and .3% are Asian FA's. For a company who's existence relies on the relationships that their FA's form with their clients, it will be difficult to do so if there are no commonalities that clients can share with the FA's in order to develop a certain level of trust. Someone who knows the area, what the certain people are interested in, and what they value will have a much easier time forming those relationships and will be more likely to attain those more diverse clients.

African-Americans, Hispanic-Americans, and Asian Americans comprise the minority segment in which is growing very quickly making it an attractive segment to market to. There is a significant number of minorities right in the area of your headquarters. Fifty percent of the population in St. Louis is African American, leaving them with plenty of room for growth right in their home town (Exhibit 1). Finding a way to create relationships with this segment is very important, especially for an FA who is not a minority. Any way that FA's can relate to these investors would help in forming relationships whether it be by race, interests, or knowledge of the surrounding areas that are important to many of the people.

ISSUE 2: ATTRACTION AND RETENTION OF CUSTOMERS

Edward Jones has an old fashioned approach to attracting customers to the firm through the means of door-to-door, seminars and recommendations from current clients. However that is not enough compared to the big brokerage firms that your company has to compete with. Edward Jones can't rely on just client recommendations anymore due to the changing times of today such as the emergence of the internet and new capabilities you can achieve by using it for business purposes. With the fact that Edward Jones is having difficulty with attracting customers to your company, it is also having trouble retaining those customers from moving their asset accounts to the other big firms. Compared to the brokerage firms such as Charles Schwabb, your company has to compete with the low prices, the convenience of the internet, the wide range of products that the firms offer and the advertisement campaigns that run national on TV. In order to solve those issues and give your company a chance to compete with those major firms, we have developed two alternatives; increase your product line to attract and keep high-income clients satisfied and to launch national advertisements to reach out to the areas where Edward Jones isn't able to physically reach. We believe that this will help your firm dramatically and give Edward Jones the opportunity to become the biggest brokerage company in the United States and still maintain the Edward Jones' beliefs that make your firm so successful.

ISSUE 3: HEAVY CENTRALIZATION

One major issue your company must address in the future is their strong geographical centralization of Edward Jones' offices in the United States. We believe that Edward Jones must increase their number of offices throughout the country, reaching all regions effectively. In the past you had focused on rural locations over major metropolitan areas, but in recent years you have transformed your strategy. Currently 72% of Edward Jones' offices are located in urban areas while there are approximately 28% in more rural locations totaling 8,581 offices by 2005. Although these percentages may seem substantial, in these urban areas only 19% of Edward Jones' financial advisors were located there serving less than half of Edward Jones' clients. These urban areas also create endless opportunities for Edward Jones. Currently one in every three United States residents is a minority (Exhibit 6). With an increased presence in urban areas spanning the country, Edward Jones surely would see a substantial increase of clients in the future. It is clear that you must take a proactive approach and increase the amount of Edward Jones offices throughout the country.

You have made it evident that by 2017 Edward Jones would like to employ 20,000 advisors, thus having a total of 20,000 domestically. At your current rate this objective is not feasible. In the past six years you have been constantly opening new offices in America, but not at a high enough rate to reach your ultimate goal (See Exhibit 6 part 1). In your company's case a strong alliance of financial advisors is crucial and you must continue to expand as a company in order to keep up with your rivals. We strongly believe that with more offices spread throughout the country and into urban areas, your company will continue to grow as it has so successfully in the past.

RECOMMENDATIONS FOR ISSUE ONE: ACTIVE PARTICIPATION

Alternative 1: Get involved in targeted areas

The first alternative considered is becoming more involved with the diverse areas. An effective way to do so would be to sponsor events or sports teams. A local little league most likely consists of the children of many potential investors. The Edward Jones names on their jerseys and baseball caps (Exhibit 2) may bring a sense of familiarity to potential investors and brings about the initial step in creating a relationship with these investors. Since an investor's child may be playing in that league or on that team it may bring a more personal aspect to the situation bringing them close to your name.

For areas like the Bronx, Queens, Boston, or big cities that may have professional teams with a strong local fan base may a good place to create a bond with other minority investors. Major League baseball teams or NBA basketball teams could be sponsored in some way by your company in which fans will be able to familiarize your name with those of their favorite team.

Alternative 2: Help from nearby FA's

For areas that you already have offices near by that are heavily populated by minorities (like St. Louis), nearby FA's will be needed to help network with clients and to recruit new FA's for that area. Recruiting an FA from the areas in which they are targeting is important for the relationships with minority investors. These FA's will have a distinct advantage when it comes to forming relationships with investors in areas with minority investors because of the connection that they have. Recruiting minority FA's from those area would be even more effective because of the commonalities that they will have with their clients before they even meet each other. They have a strong understanding of the area in which they are prospecting customers and they also can help built trust faster because they are the same race.

These new FA's will also need help from the nearby FA's in terms of getting used to the job, answering questions, or generating clients. It will be much easier for you company to reach minority investors through a group effort rather than leaving it to one FA in a certain area. They can work together, making the Edward Jones name very familiar and network relationships with new customers based on a higher level of trust.

The development of FA's in areas nearby existing Edward Jones locations to target minority investors is a good place to start. However, you should later begin to develop FA's in other areas with large amounts of minorities to expand the amount of diverse areas the market to. You should continue to develop FA's that are from the areas

you are targeting and focus on diversifying the workforce so that cities like St. Louis who's population is half African American can be effectively marketed to.

Implementation: All suggested alternatives

We recommend that you implement each alternative that we have considered for the issue of a need for expanding demographics. A more diverse workforce is needed along with a more diverse client base in order to take advantage of the growing market or minority investors. It is a good idea to get involved in the areas that you are looking to grow in so that investors who live and work in those areas have a connection with the FA's facilitating a an atmosphere more conducive to creating relationships. This should be done in more urban areas and cities that contain a high amount of minority investors to take advantage of that growing segment. In order to grow in that segment you need to expand your number of FA's, which your primary method of expansion is. This where the need for the second alternative of gaining help from FA's to recruit and network in minority areas is significant. The people that are most familiar with the values of minority investors are minorities themselves or those who live in the same area as those investors. They have a clear sense of what the local clients are interested in and how to create an effective relationship. Nearby FA's are the ones who will network in those areas to try to recruit FA's and then work with them in order to prospect investors in those areas. With the combination of those two alternatives we expect a substantial increase in growth due to the growth occurring in the minority market. Diversity is important in today's society as African-Americans, Hispanics, and Asians are becoming highly involved in investment activities.

RECOMMENDATIONS FOR ISSUE TWO: STRONG MARKETING

Alternative 1: Increase breadth of product line

Currently your company only offers a limited amount of products to your customers to choose from. That not only puts a restriction for current customers but also might defer potential customers from deciding Edward Jones to a major firm like Merrill Lynch. At this time, your firm offers mutual funds, credit cards, mortgage, business stocks, and life insurance. Other big firms give their clients not only those choices of products, but also hedge funds, options, derivatives and penny stocks. However, Edward Jones felt that selling those types of financial instruments to clients is unethical because it's very difficult to buy and sell stocks in a short amount of time and also of the huge risks the clients would be taking. As an alternative to address this issue of having to increase your breadth of product line we recommend having Edward Jones offer the short-term investments to compete with the other big firms. This will involve training the financial advisors to ensure that they are knowledgeable of this area of investments so that they will be able to give clients advice on the pros and cons of choosing to invest their assets into the short-term financial vehicles.

Alternative 2: Create a National Advertising Campaign

Historically your firm spent $22 million on a campaign for network television campaign that only aired during the evening news and claimed naming rights to the St. Louis football stadium that will cost Edward Jones $70 million over 23 years. However, we believe that the amount of money your company spends on advertising falls short of other competitors. Compared to the other major firms in the brokerage industry, you spend only 1.6% of your net revenue on advertising and promotion while Merrill Lynch, Morgan Stanley and Charles Schwab spend on average 3.5% of their net revenue. This is slightly skewed because those firms create over almost nine times the revenue than Edward Jones. Therefore, those companies are able to spend more money on promoting their brand name nationally and being able to reach those areas of the country that Edward Jones is not able to. This gives those major firms a huge advantage of reaching target markets and attracting new customers. Because of these reasons, we feel that your firm should increase their spending on advertising through venues like billboards in major cities and possibly sponsoring major league baseball or basketball games so that the brand name of Edward Jones being the best brokerage firm will reach to other geographic locations that your branches and FA's aren't able to.

Implementation: All suggested alternatives

Concerning both alternatives, we highly recommend implementing both alternatives because that would be the only way that your company has the chance to compete with the other major firms in attracting new customers and being able to retain those new clients. The approach that your firm should take upon increasing your breadth of

the product line that it offers to clients is a broad one to be parallel with your new strategy of broad differentiation. We suggest Edward Jones to offer short-term investments to your clients such as hedge funds and penny stocks. It will give your customers more options concerning what they should do with their money. Widening your breadth of product line could be viewed as somewhat a gamble for your clients because short-term investments are a lot more risky than the investment tools that Edward Jones currently offers. It gives customers a new thing to try out. We suggest your firm to offer these new options only to your high-income clients because they have the money to spend on trying out the risky short-term investments.

However, training your financial advisors is definitely required if your firm chooses to follow through with our strategy proposal. Training your advisors to do something that your firm views as "unethical" will be a difficult task to accomplish yet we highly believe that Edward Jones has no choice other than to offer more financial products in order to keep up with the other major firms in the industry. If your firm offers more products for your clients, it will be less unlikely that they will invest some of their assets using other brokerage firms. In 2005, the top ten brokerage firms accounted for 68% of the $321.8 billion securities industry revenue which shows that Edward Jones has a lot to compete against. It is clearly an underdog of the industry because of how small the company is. However we strongly feel that your firm can overcome that obstacle and achieve even more than the major companies currently do. Increasing the breadth of your product line will generate more revenue for your firm and will attract customers to your firm because of the broader range of investment instruments Edward Jones will offer to clients. Instead of going to several firms to invest their assets in, customers will be able to go to solely Edward Jones for all of their investment needs and wants. The one issue that came up when we were developing this alternative was that we were very concerned that our firm would not be receptive to this proposal because Edward Jones has been adamant about selling short-term investments to clients. Aggressive trading for short-term returns was actively discouraged throughout your firm and went against your firm's belief of trying to benefit clients the best to the financial advisor's ability. However, we believe that your company can approach short-term investments in a different way than most brokerage firms. Edward Jones could talk to their clients extensively and make sure that the customers know exactly what they are getting themselves into and what the pros and cons are involving short-term investments. The FA's will give the clients the same amount of advice that they give concerning long-term investments and tell each client the risks associated with trading for short-term returns. Each FA will continue Edward Jones's ethics of being customer-oriented.

Along with increasing Edward Jones' breadth of product line, we highly recommend your company to implement the second alternative of developing a national advertising campaign. Edward Jones doesn't as much money as the other major firms in the industry. Morgan Stanley roughly spends about $1,151 million on advertising/promotion (4.3% of $26,778 million) which is $1,100 million more than what your firm is spending - $50 million (1.6% of $3,135 million). Given the fact that Morgan Stanley generates much more revenue than Edward Jones, Morgan Stanley still spends a greater percentage of their net revenue on marketing to target customers. Therefore, we strongly believe that your firm needs to run a national advertising campaign that will reach many geographic locations that Edward Jones can't physically reach with your separate branches. We recommend you launch a national advertisement that displays how the close interaction between the financial advisor and the client is. A possible slogan could be "Edward Jones is different. We actually know our clients' names and who they are." Another way of implementing our second alternative to attract and retain your clients is to sponsor a national league baseball or basketball team such as the Yankees or LA Lakers since currently Edward Jones doesn't have locations in the Northeast or the West coast. (See Exhibit 3) These implementations might be a little ambitious but with the new revenue that the increased product line will bring in, will create more current assets for your firm to use towards the advertisements. If your company chooses to use Famar Advertising, the billboards will cost roughly $45,000 per month and will be placed on Lexington Ave in NYC, which is very feasible for Edward Jones (See Exhibit 5). If Edward Jones decides to place a billboard near the New York Stadium, Lamar offers a discount package of $17,000/month. (See Exhibit 5)

With these two alternatives that we developed for your firm to implement in our strategy proposal, we strongly feel that Edward Jones will be able to attract a lot more customers and be able to retain the current clients that your firm has now. With the increase of breadth of your product line, your clients will have more options to choose from to invest their assets into. With the strong and knowledgeable advice that the financial advisors will give to each client, they will be able to make very well-informed decisions. The national advertising campaign that we recommend your firm to launch will bring in clients from regions of the country that you are currently unable to

reach with your Edward Jones branches. The advertisements will build strong brand name awareness as well as brand loyalty among the target markets.

RECOMMENDATIONS FOR ISSUE 3: DECENTRALIZATION

After establishing your company's current situation regarding strong geographical centralization and slow growth, we have agreed on three alternatives you can potentially follow in order to improve your future strategies. For each alternative we will give our recommendations on what Edward Jones should do.

Alternative 1: Remain idle

The first alternative Edward Jones could take is to continue to operate the way they have been operating. In the past you have been successful and are still successful to this day. Since 2000 Edward Jones has been opening more and more offices each year along with more financial advisors. This approach would not incur any new costs or expenses that you are not already going to face. Although this approach seems to be sensible in the short run, it may prove to be detrimental in the company's future. Edward Jones relies on constant growth within its company and taking this approach would ultimately harm the company. With the presence of outside forces including multiple major rivals, you must constantly increase the size of the company. This is done by opening more offices and hiring more financial advisors at a faster rate.

Alternative 2: Test market

Another alternative you may consider is testing out new areas by opening a few offices in different prominent urban regions. This could include entering suburban markets you are not yet located in or cities you are not yet located in. With this alternative Edward Jones would not be making major changes in its strategy. It would be increasing the amount of Edward Jones' offices throughout the country but not at such a rate where it would immediately hurt the company financially. We would suggest rejecting this particular strategy. This approach would only serve to test out potential new markets and not actually commit to them. This would go against your strategy and would most likely prove ineffective.

Alternative 3: Increase number of offices

Another alternative that could prove successful is increasing the growth of Edward Jones and its offices throughout the country. By drastically increasing the number of offices in differing regions domestically, Edward Jones would not only serve more clients, but it would also enhance relations amongst Edward Jones' financial advisors. Advisors would undoubtedly be able to better serve their clients with a stronger network of other advisors closer to them. This would also enable the company to constantly grow which is vital to Edward Jones and its future.

Implementation: Increase number of offices

We would strongly suggest that you disregard both recommendations one and two and focus on implementing alternative three. As stated before, you have set out with a goal of growing to 20,000 financial advisors by 2017. With this approach this goal ultimately will be achieved. As seen in Figure 1 Part 1, Edward Jones has been opening new offices domestically at a rate of 5.3%. At this current pace you would fall short of your goal by 2017. Although this may seem acceptable at this time, it will be very negative for the company. Without a constant and aggressive growth strategy Edward Jones could be nonexistent by 2017. With this being said we have calculated that you should open approximately 630 new offices in 2006 and increase your number of offices year to year at a 7.3% rate (See Figure 6 Part 2). Although this may hurt profits in the short term, they will certainly benefit the company in the long term. By opening an additional 630 offices in 2006, this will increase the company's costs by approximately $100.8 million ($160,000 per office). This increase in expenses will eventually appear smaller when the new offices' revenues increase. With all of this being said we hope you strongly consider our suggestions. We firmly believe by doing this you will reach your goal by 2017 and remain a prominent name in the industry.

CONCLUSION

Heavy centralization, expanding its demographics and attraction and retention of customers are important issues that need to be looked at and resolved. As the industry has been growing and competition has been intensifying, Edward Jones needs to implement our recommendations in order to be at the top of the industry. In order for Edward Jones to continue to grow and compete with their competitors, they need to expand throughout the United States, especially the northeast, Florida and the west. By increasing the number of offices throughout the country, Edward Jones would see an increase in the number of clients. To reach your goal of 20,000 offices by 2017, you need to open 630 new offices in 2006 and after that increase the number of offices by 7.3% every year. This could be a very expense project which won't help your profits, but it will increase your clientele and your profits in the long run.

Reaching a more diverse clientele will also increase your number of customers. There are many diverse investors out there whom have not been contacted by your FA's. A reason for this issue is because your workforce contains only 14% of Hispanic, African American or Asian FA's. African-Americans, Hispanic-Americans, and Asian Americans are a minority segment that is quickly growing. In order for the FA's to build a strong relationship with them, you first need to find a way to relate to these minorities. The best way to relate to such diverse investors is by hiring a number of diverse FA's. Hiring minorities would be the best way to connect to potential minority investors because minorities know the values of minorities the best. Attracting and retaining customers is a key component in order to be successful. At this time your company offers only a limited amount of products, but this would need to change in order to attract and retain more customers. You would need to start offering short-term investments such as hedge funds, options, derivatives and penny stocks. This would make you more marketable in the industry. Along with this issue, advertising more by having billboards in major cities and sponsoring your company at sporting events is a great way to get your brand name out there.

These implementations will be very profitable for the company. By increasing the number of offices throughout the country, hiring a more diverse workforce, training the FA's and advertising more, it would increase your expenses. However, in the long run this will benefit the company by bringing more business to the company, which leads to higher profits. The proposed strategy is a winner because it will help the company grow and place it at the top of its industry. This strategy fits the company's situation because it's bringing a more diverse workforce in order to reach out to those minority investors. Edward Jones wants to build a close relationship with its minority investors by hiring a more diverse workforce in order to better relate to these investors. By hiring a more diverse workforce, expanding throughout the country and now offering a greater selection of investments, Edward Jones is achieving a more sustainable competitive advantage. With these implementations the company would result in a better company performance. Their profits would increase, as well as being more financially stable. Through the increase in advertising, a more diverse workforce, a greater selection of investments to choose from and its expansion, Edward Jones becomes a more marketable company and increases their competitive strengths.

With these implementations, your company will be very successful and you will be on the top of your industry. The first implementation to be put into action is the advertising campaign. Before, expanding through different areas of the United States, it's important that you advertise in that area first, so you can get your brand name out there. Then you should begin to offer short term investments and at the same time expand demographically. After building new offices in different areas of the U.S., you would want to hire a diverse workforce in order to reach out to minority investors; especially those areas where there is a high percentage of minorities. Exhibit A shows all our implementations and when they will be implemented. Exhibit B shows the predictions in revenue and operating expense from 2006 to 2012 if you implement our implementations and if you don't implement our implementations. If you do implement our implementations, you can see that the growth rates are different because of the different timing of each implementation. However, on average it's about a 20.5% growth rate in revenue and an 18% growth rate in operating expenses. However, when you finish expanding your company throughout the United States in 2017, your revenue growth rate will increase a little more while your operating expense growth rate will remain steady. As you can see from Exhibit C, Implementing our implementations will lose you some money from 2005 to 2008. However, from 2008 to 2012 you will be making more money then if you did not implement our recommendations. In 2012, you would make an extra $1 billion if you implement our recommendation. In conclusion, Edward Jones has a lot of potential to grow and if you do implement our implementations, you will slowly be able to compete with the big time firms in your industry, such as Merrill Lynch and Charles Schwab.

APPENDIX

Exhibit 1

Census 2000 Demographic Profile Highlights
St. Louis city, Missouri
2006 American Community Survey
Data Profile Highlights:

ACS Demographic Estimates - show more >>	Estimate	Percent	U.S.	Margin of Error
Total population	347,181			*****
Male	165,620	47.7	49.2%	+/-731
Female	181,561	52.3	50.8%	+/-731
Median age (years)	35.6	(X)	36.4	+/-0.2
Under 5 years	26,411	7.6	6.8%	+/-617
18 years and over	256,439	73.9	75.4%	+/-136
65 years and over	41,116	11.8	12.4%	+/-310
One race	341,490	98.4	98.0%	+/-1,393
White	157,518	45.4	73.9%	+/-1,096
Black or African American	174,296	50.2	12.4%	+/-1,299
American Indian and Alaska Native	752	0.2	0.8%	+/-381
Asian	7,556	2.2	4.4%	+/-201
Native Hawaiian and Other Pacific Islander	60	0.0	0.1%	+/-98
Some other race	1,308	0.4	6.3%	+/-639
Two or more races	5,691	1.6	2.0%	+/-1,393
Hispanic or Latino (of any race)	8,953	2.6	14.8%	

Exhibit 2

Exhibit 3

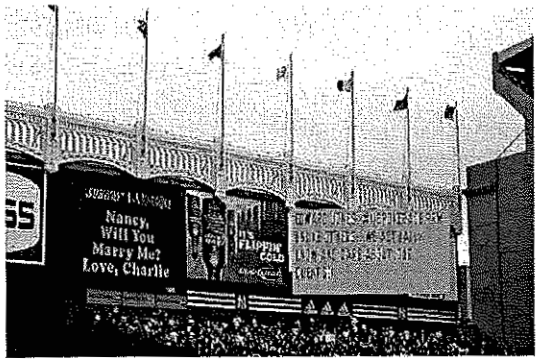

Exhibit 4

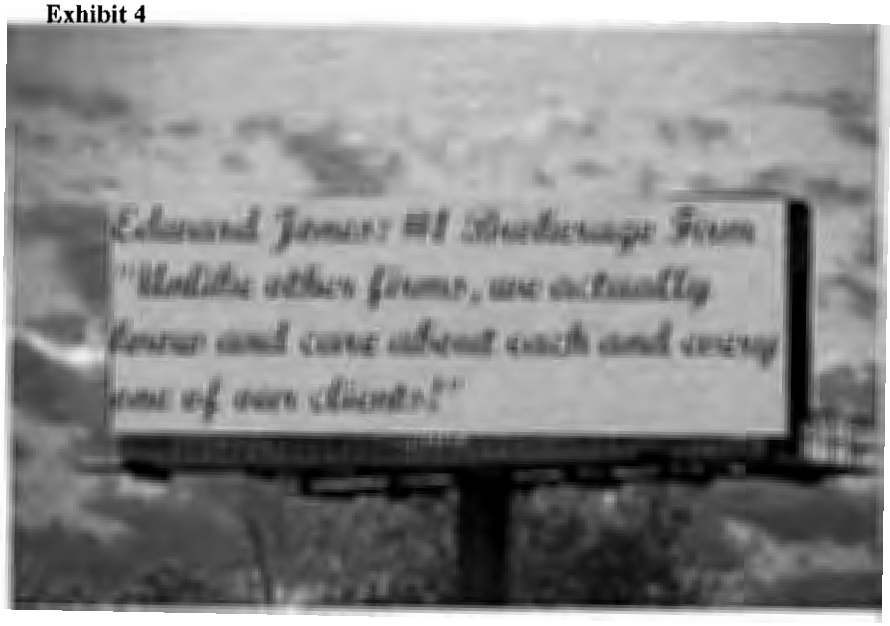

Exhibit 5

New York City (Lamar Advertising of New York City 408)

Media	Size	18+ Pop	GRP	# Panels	Total Monthly Net Rate	Flight
Permanent Bulletin	14' X 48'	6,031,603	--	1	$23,000	1 month
Permanent Bulletin	20' X 60'	6,031,603	--	1	$45,000	1 month
Permanent Bulletin	36' X 24'	6,031,603	--	1	$40,000	1 month

Exhibit:B

With Implementations	2005	2006	2007	2008	2009	2010	2011	2012
Net revenues	$ 3,134,959,000	$3,589,528,055	$4,235,643,105	$5,095,478,655	$6,198,649,784	$ 7,597,065,175	$ 9,344,390,166	$ 11,493,599,904
Operating expenses	$ 2,804,974,000	$3,253,769,840	$3,802,030,058	$4,507,306,634	$5,372,709,507	$ 6,417,701,507	$ 7,692,257,026	$ 9,230,708,431
Net Income	$ 329,985,000	$ 335,758,215	$ 433,613,047	$ 588,172,021	$ 825,940,277	$ 1,179,363,669	$ 1,652,133,140	$ 2,262,891,473
Assumption Growth Rates:								
Net Revenues		14.50%	18.00%	20.30%	21.65%	22.56%	23.00%	23.00%
Operating Expense		16.00%	16.85%	18.55%	19.20%	19.45%	19.86%	20.00%

Without Implementations	2005	2006	2007	2008	2009	2010	2011	2012
Net revenues	$ 3,134,959,000	$3,520,558,957	$3,953,587,709	$4,439,878,997	$4,985,984,113	$ 5,599,260,159	$ 6,287,969,159	$ 7,061,389,366
Operating expenses	$ 2,804,974,000	$3,114,923,627	$3,459,122,688	$3,841,355,745	$4,265,825,555	$ 4,737,199,278	$ 5,260,659,799	$ 5,841,962,706
Net Income	$ 329,985,000	$ 405,635,330	$ 494,465,021	$ 598,523,252	$ 720,158,559	$ 862,060,881	$ 1,027,309,360	$ 1,219,426,659
Growth Rates:								
Net Revenues	12.30%	each year						
Operating Expense	11.05%	each year						

Exhibit:C

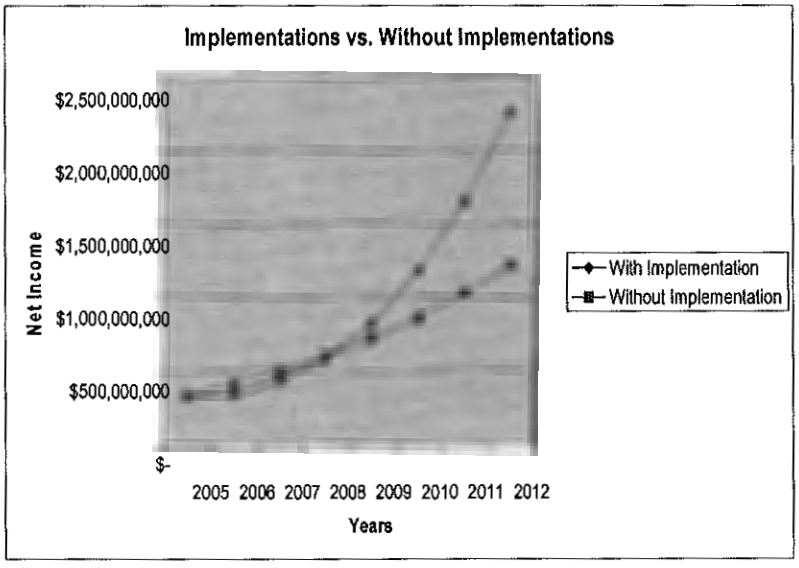

Exhibit 6:

Part 1

At Current Growth Rate of 5.3%

5.3% Rate

Year	Domestic Offices
2000	6,623
2001	7,582
2002	8,133
2003	8,397
2004	8,499
2005	8,581
2006	*9,036*
2007	*9,515*
2008	*10,019*
2009	*10,550*
2010	*11,109*
2011	*11,698*
2012	*12,318*
2013	*12,971*
2014	*13,658*
2015	*14,382*
2016	*15,144*
2017	*15,947*

Part 2

To reach goal of 20,000 offices by 2017

7.31% Rate

Year	Domestic Offices
2000	6,623
2001	7,582
2002	8,133
2003	8,397
2004	8,499
2005	8,581
2006	*9,208*
2007	*9,881*
2008	*10,603*
2009	*11,377*
2010	*12,208*
2011	*13,100*
2012	*14,057*
2013	*15,084*
2014	*16,187*
2015	*17,369*
2016	*18,638*
2017	*20,000*

2006 on forecasted

The David E. Bjorklund Fund Newsletter

Bringing Wall Street to Loudonville

Fall 2007

Volume 2, Issue 2

Prepared by the fund managers:
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Siena College School of Business - 515 Loudon Rd - Loudonville, New York 12211

In the fall of 2005, Mr. Bjorklund, a former Siena student and prominent local business owner, kindly donated $51,000 to the Siena College School of Business to establish a student-managed investment fund. Almost a full year later, Bjorklund donated another $50,000, bringing the total capital invested to approximately $101,000. To express its gratitude, the Siena College School of Business, along with the Finance Department, renamed the student-fund after Mr. Bjorklund's late brother, David. As a result of Mr. Bjorklund's generosity, the David E. Bjorklund Fund presents students with the opportunity to acquire and develop professional skills in portfolio management and economics, a rarity at an undergraduate institution. On behalf of the Siena College School of Business, the Finance Department and all of its students, thank you Mr. Bjorklund for helping bring Wall Street to Loudonville, New York!

BJORKLUND FUND POLICY STATEMENT

The David E. Bjorklund Fund focuses on long-term capital appreciation through investments in primarily U.S. equity securities and cash. The fund is managed solely by the students of the FINC490 class. This class is a seminar in portfolio management in which students learn portfolio management theory and are able to apply that knowledge directly to the Bjorklund Fund. Each semester Dr. Eric Girard, the class professor, selects three students from the class to act as fund officers while the other students serve as analysts. One officer is designated CIO (Chief Investment Officer), while the other two are assigned to allocation and stock selection. Fund analysts are assigned to one of the ten sectors of the S&P500. They are to analyze the sector and its current fund holdings, as well as scan the sector for other possible investments. Analyst findings and recommendations are formally reported to the officers on a weekly basis; however, less formal, more frequent communication is expected on a daily basis.

As aforementioned, the fund focuses on long-term capital appreciation. This is achieved by taking an active three-step, top-down approach to portfolio management. First, the overall economy is analyzed to get an overall feel for market opportunities and weaknesses and to get a general idea as to where the economy is headed. Second, the fund allocates among the ten sectors of the S&P500. Sectors include Healthcare, Energy, Telecommunications, Technology, Consumer Discretionary, Consumer Staples, Utilities, Materials, Financials and Industrials. For each sector, a Sector Line is created. Sector Lines serve as a "one-stop shop," providing both the quantitative and qualitative information needed to value and forecast sector performance.

Allocation is then determined using these forecasted sector returns through efficient frontier analysis. Reward-to-risk levels are then optimized using the Crystal Ball ® platform. Resulting are the recommended sector allocations that will provide the predetermined reward-to-risk levels. Managers may adjust these recommended weights to reflect any sentiment that the optimization platform in unable to capture, this includes diluting the portfolio with cash to limit downside exposure in a bearish market.

The last step in the top-down approach is individual stock selection. Each sector is screened for stocks that have lower relative fundamental pricing models than their respective sector. Historically, companies with lower fundamental ratios tend to be undervalued. Stocks are screened according to P/E ratio, Cash Flow/Share, and Price-to-Cash Flow/Share. Then, a target price is determined for each stock. The target price is more or less a weighted average target price resulting from various pricing techniques that include: P/E Model, Dividend Discount Model, Free Cash Flow Model, Enterprise Ratio, and Price/Book Model. Finally, a 99% target price is determined which takes into consideration the standard deviation among these estimates as well as the standard deviation among professional analyst estimates. A stock that is currently valued lower than its 99% target price is a highly attractive investment. All of this information is gathered and a Siena Line is created for each stock. Similarly to Sector Lines, Siena Lines provide all the information needed for valuation, including SWOT analysis.

Managers look to perform a systematic reallocation at least once a semester, however, the buying and selling of individual securities may take place at any time at the managers' discretion. Securities are sold for various reasons including but not limited to 1) reaching the estimated target price 2) if the company appears to no longer be able to meet estimates 3) a change in allocation results in the selling of a stock.

The fund operates under very few constraints. In the past, it was required that the fund holds investments in all ten sectors. These investments had to be long, equity positions. This semester, however, managers decided to lift these constraints and the fund may now be allocated among any number of sectors, hold short positions, and even invest in derivatives as well as use Stop/Loss and Limit/Buy orders as a means of limiting downside risk. There are no constraints on income, liquidity, or market capitalization. Market capitalization, however, is considered in determining a target level of risk. As a result of these decisions, the only true constraint is that equity positions be U.S. equities or ADRs.

For performance purposes, the fund is benchmarked to an equally weighted portfolio, allocatiug ten percent to each of the ten sectors of the S&P500. Therefore, the benchmark return is a weighted average return across all sectors. This benchmark is justified as the Bjorklund Fund follows a sector rotation allocation strategy, where sector selection is a key determinant of performance.

ECONOMIC OVERVIEW

Over the quarter the US equity markets have experienced extreme volatility. The bull camps were focused more towards expectations, whereas the bears held their ground with the skewed fundamentals. With the cancer of the credit crisis, the write-downs iu the Financial Sector and the depressing housing market, the Fed was forced to ease interest rates a total of three times. The hopes were to loosen liquidity to ease tensiou in the credit markets. With this move, the dollar plunged against all major curreucies and commodities enjoyed a smooth ride to unspeakable highs.

The rate cut in September encouraged strong buying. It was a strong bull market in most markets. Then, when the Fed shocked the Street with an aggressive 50 basis point cut, the buying became even more intense. The fundamentals were out the window and equities were moving off of Bernanke's actions. Late September, the markets began to take some profits right in to October.

Once October hit, there were fears that the September cut did not jump start the economy the way the Fed intended to. The real estate market was still suffering and the consumer was not spending as much as was hoped. The Street began to think ahead, realizing the Fed was left with no choice but another rate cut. Once again, the equity markets started to move on expectations. Although the economy experienced some strong preliminary GDP estimates they also received high inflationary data. However, the most prevalent issues were the credit woes and the housing market. The Fed needed to cut again, and cut they did.

Then the road got bumpy. This delusional stomp, up to new levels, came to a halt. The bears stuck to the fundamentals and the bulls did not have another Fed meeting for over a month. November was nasty and most investors' who were long went down with the ship. In almost each week of November, a new CEO was fired at one of the 'prestigious' banks. Write-downs were becoming a vernacular on CNBC and the doom began to settle in. For the majority of the month, the retail numbers looked pathetic and proposed the worst holiday season in years. Finally, Fed Governor, Donald Kohn spoke to the public, hinting towards another rate cut on the December 11th meeting. Expectations were back and the equity markets rallied off its lows.

Overall, this quarter proved to be a time period where fundamentals were not the driving force of the market. Fed decisions and the value of the dollar were the clear forces, steering most markets. Oil hit nearly $100 a barrel whereas Gold hit highs of over $830 an ounce. The dollar hit lows against the Euro and the Canadian Dollar, and recent lows against the Yen.

Looking forward there are fears of recession. The housing market has not yet reached a bottom and the credit crisis is still beiug worked

through. The affects of this crisis should eventually be felt globally. Once this disaster hits other nations, the dollar will regain some value, which will decrease domestic growth and could affect the overall equity market in the US, negatively.

ALLOCATION

As previously mentioned, allocation is based upon an optimization process. The main input for this process is target sector returns formulated by the analysts of each sector. This past semester our targeted allocation based on these figures was as follows:

Sectors	Target Weight
Energy	40.00%
Materials	36.68%
Industrials	-5.00%
Consumer Discretionary	-5.00%
Consumer Staples	-5.00%
Healthcare	-5.00%
Financials	-5.00%
Technology	15.47%
Telecommunication	-5.00%
Utilities	37.85%

This was that target allocation throughout the semester. At this time, the constraints for our optimal allocation called for a -5% weight to any sector that may be a good opportunity for a short. Also, we decided that we could not be more than 40% long in any sector. During the duration of the semester we felt as though shorting may be beyond the risk we were willing to take because of the extreme volatility and ignorance towards fundamentals. Instead, we decided to hold a large cash position and protect ourselves with a number of stop-loss orders, on our long positions. As the markets strengthened in September, we decided to strategically sell into the highs, making sure we were realizing profits.

This target weight calls for an overweight in Energy, Materials, Tech and Utilities. Within those sectors we made our best judgment for the most attractive companies. For the sectors that called for a short, we evaluated the threats and saw if there were any opportunities within the industry. One such instance was the financial sector. It was clear this sector was beat up but what were the reasons? The write-downs, the sub-prime mortgages, and the other embarrassing investments made along the way. However, we did find long opportunities in the exchange stocks, such as CME (Chicago Mercantile Exchange). It was clear the market had extreme swings, we realized that the exchanges would benefit from this, plus it would not be as exposed to the mortgage mess as a broker-dealer.

While preparing for the holiday season, we conducted yet another optimal allocation. However, this time we used the GARCH volatility model, to build a 'moving-average-like' standard deviation. With this method we were truly able to capture the fluctuations felt during this past quarter. We implemented tight stop losses on the positions we felt were worthy of being held into the break.

PERFORMANCE

Below is a graph illustrating the Bjorklund Fund's performance, against the S&P 500. As clearly illustrated, the allocation to cash definitely softened the landing in November 2007. Most of this quarter's return can be attributed to the strong month of September. During this month the Bjorklund fund returned 5.53% (the best in the history of the fund) whereas the S&P returned 3.58%. In addition, the most recent quarter saw better returns than that of our benchmark, an equally weighted portfolio across all ten sectors.

Since the inception of the fund the average return per month is 1.10%, whereas our benchmark, an equally weighted equity index (10% allocation among all ten sectors) returned a mere .68% monthly.

Since January 2006	Bjorklund Fund	Benchmark
Mean Return per month	1.10%	0.68%
Monthly Standard Deviation	2.84%	2.27%
Beta	0.72	1
Sharpe Ratio	0.25	0.13
Treynor Ratio	0.010	0.003
Selectivity		
Average Alpha per month	0.50%	
Cost of Diversification	0.15%	
Net Selectivity	0.35%	
Style Exposure		
SMB (size)	0.499	
HML (value)	-0.019	
WML (Momentum)	0.089	
Net Alpha	0.59%	
Market Timing		
Curvature	5.72	
Net Alpha	0.20%	

Our standard deviation per month is 2.84% and the benchmark is 2.27%. Although our risk is slightly higher (2.84% vs. 2.27%) our risk adjusted returns are significantly higher, as measured by the Sharpe and Treynor ratio. For the Sharpe Ratio, our benchmark earned .13; ours is .25. For the Treynor ratio we accomplished .01, while the benchmark's .003. This indicates that we earned a higher return per unit of market risk. These ratios are impressive as compared to the benchmark, however due to our sector rotation strategy we incur a cost to the lack of diversification.

Our cost of diversification is .15% and the net selectivity of the fund was .35%. Alpha, is the ability to generate return in excess to the expected systematic return. The Bjorklund Fund earned an average alpha of .50% per month. Our alpha can be explained by our ability to pick stocks. The cost of diversification is the expense we incur from not being fully invested.

Also, the Bjorklund Fund ran a performance analysis to measure our style exposure. The style exposure demonstrates our selection of either small or big market cap, value or growth firms and the historic success and momentum of the companies. The positive SMB coefficient, .499, indicates our high-level of exposure to small cap stocks. The small negative HML, -.019, signifies our minimal exposure to growth companies. Our return is also dependent on our likelihood to pick past "winners" as shown by our positive WML (.089) coefficient. Our net alpha, .59%, displays our ability to pick stocks after controlling for style effects.

Finally, we look at the Bjorklund Fund's ability to time the market. This is measured in our curvature factor. A positive number points to allocation to cash during bearish periods and allocation to risky assets during bullish periods. In short, a positive number indicates that stocks are bought at troughs and sold at peaks. When our net alpha is controlled for market timing effects, we earned .20%.

A CLOSER LOOK

	Since Inception	1-year
Excess Return (loss)	3.16%	12.02%
Attribution to cash holding	-0.48%	0.02%
Attribution to sector selection	4.26%	3.60%
Attribution to stock selection	-0.52%	8.14%

The above chart illustrates the long term performance of the fund. One interesting thing to note is our ability to pick stocks over this past year. This can be directly attributed to the fact that the analysts and officers' of the Fund gained access to their account, making the process of trading much easier and timely. Since inception, the Bjorklund Fund has been very successful with their sector selection. As a top-bottom approach, the Bjorklund Fund's dynamic has proven to be profitable.

	Since Inception	3-month
Excess Return (loss)	3.16%	6.18%
Attribution to cash holding	-0.48%	0.20%
Attribution to sector selection	4.26%	1.81%
Attribution to stock selection	-0.52%	4.12%

Over the last three months the Fund has experienced significant success in stock selection. The analysts have worked endlessly to find 'the best of the best' companies within each sector.

The fundamental and technical analysis is critical to the selection process. A company must portray stellar fundamentals, then technical analysis is implemented for entry points. Although, the excess return from sector selection has gone down, from the year, it is still impressive to consider the success correlated with the top-bottom methodology.

The excess return in stock selection over the last three months can be attributed to the addition a new line, the 'Siena Stock Pick' line. This line gives a detailed write up on the performance on specific stocks. Analysts listen to conference calls and research any necessary information on the company, insuring the best possible decision for the Fund.

SECTOR EVALUATIONS

TELECOMMUNICATIONS: The Telecommunications Services sector consists of companies engaged in fixed-line and wireless telecommunication networks for voice, data and high-density data. The buyers of these services are not only individuals using phone and internet services from home but businesses as well. In fact, businesses are generally the bigger revenue generator as they normally require large, sometimes customized, services and network technology. The once heavily regulated telecom sector has, in recent years, been experiencing much deregulation and innovation and many companies are failing to compete. In a sector where technology is cutting edge and equipment can become obsolete virtually over night, companies must produce sufficient cash flows to absorb the heavy costs associated with such changes and expansions. As the sector has becomes more competitive, it is becoming evident that size matters. Basic telephone and internet services are continuously being treated more and more like commodities and only the bigger companies are able to sustain the price cuts necessary to survive. With such cut-throat competition, companies will often seek to acquire those smaller companies having trouble competing and buyouts are not uncommon- the industry is becoming more and more consolidated.

The leaders in the industry are well-known companies including AT&T Inc. (T), Verizon Communications Inc. (VZ), and Sprint Nextel Corp (S) but there are also other low-cost wireless providers including Leap Wireless (LEAP) and MetroPCS Communications Inc (PCS) that may not be as well known. Moreover, going forward into 2008, the Federal Communications Commission will be auctioning off a highly desirable part of the nations airwaves and Google has entered the auction to compete against established telecom giants AT&T and Verizon and Frontline Wireless, a start-up company. Being auctioned: portions of the 700-megahertz band that will be turned over by broadcasters when they switch to digital transmission in February of 2009. Google plans to use the spectrum to create a wireless network that works much like the conventional internet with which people could access from any device or software they choose.

Although Google may seek to enter the industry, such new players are not common and going forward into the new year, most telecom giants should sustain their growth in both customer expansion and new technology despite any economic downturn as the services are becoming staples in the lives of consumers.

FINANCIALS: The financials were the worst performing sector in 2007. Year to date the sector is down 15% and the decline reached 20% in late November. The problems started early in the year when Goldman Sachs and Bear Stearns announced they would have to shut down a couple hedge funds that were heavily invested in mortgage backed securities. The problems turned worse as the credit markets went through a virtual cease and sub-prime mortgage defaults reached a record high. A lot of huge players in the sector such as Merrill Lynch and Citigroup had major exposure to "sub-prime slime" and both CEO's were fired after reporting record losses. Mortgage lenders such as Countrywide Financial nearly went bankrupt as a lot of their debtors were unable to pay their loans. Some companies had to slash there dividend or sell complex convertible securities to make up for the gigantic losses. One of the major problems was no one really knew how to value the mortgage backed securities, so the company write-downs was a long, drawn out process that slowly killed the sector.

Bernanke expects the credit crisis to be over early next year, as the Fed has brought some relief by lowering the target rate by 75 basis points since September. I fully expect another rate cut on December 11th to further assist the credit markets and the slowing economy. Mortgage lenders are a lot more finicky about who they provide loans to.

Talking with a mortgage lender last night, he indicated that business was good in his coverage area of upstate NY and Vermont. I expect more rate cuts in 2008 causing further relief to the credit market and in turn the financials sector as a whole. Valuations of some stocks within the sector are starting to become eye-catching and technical analysis is suggesting that these securities might be oversold. The dividend yield (albeit might get cut) is standing at a lofty 2.65%. Recent large investments by foreign investors in Citigroup and Bear Stearns are suggesting that the bottom might be in. Going forward, I would start to build a long position *slowly* in the financials. With help from the Fed, value investors buying and the shorts covering, I expect the financials to perform a lot better in 2008.

ENERGY: The energy sector includes companies iuvolved in the prospecting, drilling, refining and transportation of varying types of energy including petroleum, coal and hydro-electric. The largest market share in the sector is held by companies whose operations involve petroleum products. Over the past three months, crude has pushed from the $70's range to nearly $100 because of several key factors including increased global consumption, a weakening dollar and periodic political risk factors. Since prices have not quickly reverted, you can expect prices to stabilize between $85 and $95 in the coming months. The sector on the whole had peaked during October and November and is now back below values we were seeing in early September. This is a signal that we should keep our weight in the sector below normal.

As of right now we have sold out of all our energy positions at a gain and continue to hold Exxon through year end. This decision is made to maintain exposure to the sector. Exxon is a large, stable integrated which I feel is our best bet for a low volatility stock to carry us through the winter.

Stock selection is still a powerful tool right now. There are sub-industries that remain strong including coal mining and processing. Patriot Coal remains on our watch list for this reason. Another route we are monitoring is international companies. Brazil is undergoing a period of strong economic growth; which is resulting in a growing demand for Brazilian Petroleum Corporation, PBR and Vale Overseas Limited, RIO. While PBR seems expensive right now, RIO is not only involved in mining and electric power generation, but it is also involved in producing materials used in construction including iron ore and aluminum.

Going forward, we will need to be vigilant with holding conventional energy companies as the market factors previously listed continue to weaken the sector. A slowing economy will not only hurt consumption, but it will also lower the amount they are able to charge net of costs, thereby reducing margins and minimizing growth.

MATERIALS: The Federal reserve, European Central Bank and three other central banks moved together to alleviate a credit squeeze threatening global growth. The Fed said in a statement it would make up to $24 billion available to the ECB and Swiss National Bank to increase the supply of dollars in Europe. The Fed also plans four auctions, including two this month that will add as much as $40 billion, to increase cash in the US. Central bankers took the action after interest rate reductions in the US, UK, and Canada failed to allay concerns and slowing growth abroad.

Materials rose after the U.S. and European central banks joined to add cash to the banking system- boosting the appeal of the precious metals as a hedge against inflation. Materials have gained 3.60% as record high energy costs and a slumping dollar sent consumer prices higher.

Gold reached $848 an ounce on Nov. 7, the highest in 27 years, as the dollar headed to a record low of $1.4967 against the Euro on Nov. 23. "Each dollar that's created devalues each dollar that's already in existence, and that's the definition of inflation" said Michael Pento –Senior Market Strategist for Delta Global Advisors Inc. "This is excellent for gold. Gold is real money. Gold's purchasing power remains constant."

I predict the materials sector will continue to do well as long as the dollar continues to depreciate. In the short term, the dollar will continue to depreciate as the Fed continues to add cash into the banking system. The next Fed meeting (January 30th, 2008) will determine the long term performance of the materials sector. If there is another rate cut, the materials sector will continue to do well. If there is not a rate cut, the materials sector will perform poorly. The direction of commodities is completely dependent on the strength of the dollar.

CONSUMER STAPLES: Consumer Staples are generally a safe investment because of the inelasticity of the goods in this sector. Often these

companies are blue chip firms with brand recognition and a solid financial history. In general these companies do not rely on seasonal or cyclical sales which make them less risky, especially in turbulent times.

Although these companies are relatively safe, returns in general are consistently low compared to other industries because of the low volatility with iu. Quick gains are not common and in the event of a recessiou or economic downturn prices of consumer staples securities will likely fall, just not as much as they do in other sectors.

Economic and financial streugth in emerging markets offers great opportunity for staples companies such as Proctor & Gamble and Diageo. Many people in emerging markets see commou western products as luxuries and this is offers great potential as other countries gain more disposable income. As our economy becomes more unstable, consumers turn to blue chip brand uames for safety, many of which fall under the consumer staples category.

The threat of a correction, or less likely a recession, looming in the near future could mean a cut back in spending, even in the staples sector. With oil hovering over $90 dollars a barrel, sky rocketing energy costs may also tighten American's budgets. Bear Sterns and UBS raised their recommendation of the staples sector to ``neutral'' from ``underweight'' for the up coming year, re-enforcing that although returns will not be extraordinary they will be a safer investment as the future remains uncertaiu and the market remains relatively volatile as of late.

TECHNOLOGY: Historically, technology has maintained high growth rates in relation to other sectors, so I believe that as long as earnings are the primary focus of investors' decisions, growth companies will outperform value companies. Estimates have been falling and investors will have to wait until 2008 to see the kind of earnings growth that Tech is supposed to deliver. Year to date through Dec. 7, the S&P Information Technology sector was up 15.7%, ahead of the 7.2% gain for the S&P 500. I believe the tech sector is poised for even better performance in light of improved economic visibility, which should help reduce investor risk aversion, something that has hurt the performance of this highly economically sensitive sector. And as always valuation is a concern, XLK is trading at more than 19x estimates. Although the sector's high valuations may prevent out-performance, the 22% 2007 EPS growth forecast by S&P equity analysts, up from 1% projected growth in 2006, should allow the sector to keep pace with the S&P 500.

With the recent release of Microsoft Vista, demand for memory, PCs, and software applications may also increase. I believe that the many component makers for these products, and many of the products themselves, could be an area of interest going forward. I think that capital spending on technology will remain strong as many companies continue to update their infrastructure. With that said, I think the technology sector continues to be attractive.

INDUSTRIALS: The Industrial sector includes companies involved in aerospace/defense, farm and construction machinery, industrial electrical equipment, lumber/wood production, manufactured housing, pollutiou and treatment controls, and waste management. Foreign sales are relatively high for this sector, which has allowed for it to benefit from a weak U.S. dollar. Approximately 30% of all farm and construction equipment made in the U.S. is for export. Companies have also benefited from high commodity prices. The price of corn has recently been driven higher because it's a main component in ethanol. This sector has been hit hard from the housing slump. Many companies are directly related to the housing market including construction equipmeut, manufactured housing and lumber/wood production. These companies have had weak sales with new housing starts down significantly from last year. Also, it is a hard time to sell as homeowners have not been willing to come down on their selling prices from a year ago, which has created an abundant supply of existing homes for sale.

Looking to the future, I think that we will continue to see high commodity prices. In essence, this is putting more money in the hands of farmers allowing them to purchase newer, more efficient equipment. Analysts expect the demand for food worldwide to remain high as we enter 2008, which will keep prices high as well. There has been a slowdown in ethanol, with profit margins dropping considerably on ethanol. Last year profit margins were around $2.30/gallon of ethanol and currently profit margins are around $0.25/gallon. However, Congress may pass a bill which would increase the mandate that oil refiners must use. The bill proposes increasing the mandate to 36 billion

gallons by year 2022. I believe the housing slump will continue well into 2008 as people continue to default on sub-prime mortgages. After this "slump" passes, there will be many opportunities as companies' shares have been hit hard and will be considerably undervalued.

CONSUMER DISCRETIONARY: One of the sectors that suffered the most during the second half of this year was the consumer discretionary sector. The success of this sector is highly dependent upon the spending of consumers which accounts for two-thirds of the economy. This sector is positively correlated with the economy. If the economy suffers, so does the consumer discretionary sector; but if it is healthy, this sector generally does quite well. Over the past sixth months consumers have had to deal with extremely high energy prices, a very weak dollar, tough credit terms due to the sub prime fiasco, and a housing market collapse that has yet to begin to show signs of life of recovery. In response to these troubles, consumers were altering their spending habits and conserving their money. That is one example why the retail industry was hurting so much; consumers were saving their disposable income to pay for the higher premiums that were placed on gasoline and heating oil, and the extra funds needed to pay a mortgage or credit payment. With less disposable income at their finger tips, the likelihood of consumers purchasing goods is not very high. Most types of retailers experienced slow sales and were forced to cut their 3rd and 4th quarter expectations for this year. Even though the holiday season is upon us, it is tough to gauge the direction of the sector. Due to the weak sales figures announced by most retailers in the 3rd quarter, this holiday season is expected to be the worst since 2002. Some investors and analysts believed that the record sales figures from both Black Friday and Cyber Monday indicated that the holiday season may not be as bad as first believed. However, do not count out the fact that consumers' pockets were taking a beating and the record sales were most likely due to the deep discounts that were placed on most items each of those shopping days. Because consumers have had less disposable income to spend this year, taking advantage of the discounts seemed to be the most logical explanation for the increase in sales for those two days. The outlook for this sector still remains fragile. Most retailers are still going to experience fewer sales than they have in past 4th quarters, but if the Fed decides to cut rates again during their last meeting of the year, it could spell some temporary relief for the consumers and the discretionary sector because they will have a little more income on hand that they could spend. Right now there are quite a few bargains as far as stocks go for this sector. Looking forward, the discretionary sector will remain weak through the first few months of the coming year, followed by a period of rebounding. Once the economy gets back on track and is not so volatile, the discretionary sector will stabilize due to higher confidence of consumers.

HEALTHCARE: The healthcare sector is an important area to consider when investing. This is mainly due to the fact that as the economy goes through cycles the healthcare sector tends to remain consistent with its returns. The healthcare sector has many strong points to consider. First and foremost as the baby boomers geueration gets older and life expectancies are at a historical high the need for healthcare is greater then ever. In fact over the past ten years healthcare spending is growing at a faster rate then our population and the GDP of the United States. Also, because of the importance of healthcare to our nation, healthcare companies receive funding from the government to develop new technology. In addition to our nations need for healthcare, healthcare firms tend to use less debt when compared to firms in other sectors. This minimizes the risk associated with investing in healthcare firms.

In addition to these strengths the healthcare sector has many opportunities in this age of rapid technology. Due to the continuous demand for the treatment of terminal illnesses there will always be new areas of study the healthcare sector must tackle. As the technology becomes more advanced healthcare companies will be able to develop drugs and medical procedures that will revolutionize the way that we live. The continuous need for new medical procedures ensures the future success of the healthcare sector.

Although the healthcare firms are important to consider when developing a portfolio there are weaknesses and threats that you must be aware of. One of the main concerns of investing in healthcare companies is the strict regulation the Food and Drug Administration has over pharmaceutical firms. This regulation can hurt firm's abilities to produce the blockbuster drugs the market looks out for. In addition to this strict regulation the

competition between pharmaceutical companies can be fierce. Patens on new drugs last for only a few years which increases competition between firms and allows for generic competition. In addition to these concerns the P/E ratios of healthcare firms tend to be higher which indicates they may be overvalued. Some threats the healthcare sector faces is cuts in healthcare spending by the government and the FDA's constant regulation. Overall when examining the healthcare sector it is clear that its strengths outweigh its weaknesses. It is important to invest in healthcare companies to protect a portfolios value during recessionary times.

UTILITIES: Going forward I forecast the utilities sector to show growth at a steady but constant rate. . More recently the Dow Jones utilities index broke thought its historical highs, this has occurred twice within the past three trading weeks. This signals strength in the utilities sector and symbolizes that many investors are diving into utilities companies which means more growth. Some companies I have been following that have been performing better than expected are Consolidation Edison and Duke Euergy Corporation, which are highly recommended in this sector due to its stability and it dividends. Regardless of the moderate movements that has been displayed throughout this sector in the past, this sector has and will keep moving in the positive side especially at time when the economy is showing a slow down and a recession is possible this is the sector any investor wants to be in for the coming year.

GOING FORWARD

Since inception, the Bjorklund Fund has earned impressive capital appreciation. We will continue to look for the best possible companies, in the most attractive sectors. We will apply shorting next semester and look to capitalize on any bearish market trends. The class has grown dramatically and we will have more analysts/officers researching for value. The goal and expectation for the Fund will remain to continue excellence in research and performance.