

## **Do Christian Beliefs Help the Economy?**

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## **Abstract**

This paper discusses the relationship between Christian ethical principles and economic decision making. The results are based upon a study using the Ultimatum game and a sample of Indiana Wesleyan students to identify whether a strong affiliation with Christian principles leads to a greater sharing of resources. The results showed that the respondents who indicated they believe Christian principles are the most important consideration in decision making shared a greater portion of their resources (in the experimental game) compared with those in the sample who did not hold this view. The implication is that increasing the prevalence of strong Christian principles among the population would lead to a more equitable distribution of wealth in the economy, without significantly reducing economic efficiency.

## **Introduction and Purpose**

“But do not forget to do good and to share, for with such sacrifices God is well pleased” (Hebrews 13: 16 NKJV). Do we share well? We have heard this since early childhood and it is a basic principle of Christianity. If we share well, this moral obligation will also increase the overall well being of society and provide greater economic benefits. The 18<sup>th</sup> century economists Jeremy Bentham and John Stuart Mill showed that the overall utility (benefits) for all of society could be improved if the wealth of society is shared (Mankiw, pg 437). The purpose of this paper is to explore the relationship between economics and the belief in the Christian principle of sharing when making economic decisions. A second objective is to demonstrate the value of experimental economics in the classroom in promoting discussion on the relationship of Christian beliefs and business decision making. To the extent that Christian beliefs help the economy grow or produce greater efficiency or equity, these beliefs should be reinforced within our business curriculum.

## **Review of Relevant Literature**

The inquiry into how Christian beliefs affect the economy is rarely, if ever, mentioned in most economics text books. In general, text books used in most economics courses focus on the concepts of efficiency and equity, with little or no mention of how we shape our beliefs. Economists tend to focus on efficiency, generally defined as the production of the optimal output given the inputs to the production process. We can measure efficiency and use our mathematical tools to make estimates of how well the economy should be functioning, and the loss of efficiency given situations of government intervention or other problems which inhibit the economy from performing at its potential. The question of equity has always been more difficult, and normally text books provide examples of

income and wealth distribution and review the theories of utilitarianism, liberalism and libertarianism, but provide little or nothing about how Christian ethical principles affect business decisions and the distribution of material wealth within society. Mankiw summarizes the tradeoff of efficiency and equity by saying that some government programs (tax policy and welfare programs) which increase equity by redistributing income from the rich to the poor have a negative effect on efficiency since the government “reduces the reward for working hard; as a result, people work less and produce fewer goods and services” (Mankiw, p.5). However, the question of voluntarily sharing wealth because of the Christian principle of stewardship (for example, Genesis 1:28 and Corinthians 4: 1-2) and our obligation to share with others (for example, Luke 6:38 and Acts 4: 34-35) has not been extensively studied. If Christians share voluntarily, then the reduced efficiency is mitigated or eliminated and the economy is improved.

Although there has been little mention in most economics text books of the effects of Christian beliefs on the economy, there have been important studies in business literature which have addressed the relationship between religion and economy. Examples include papers by Hoover (1998) who described the relationship of market structure and scriptural principles and Sturdyk (2002) who provided examples of how Christian principles should be integrated in the teaching of economics. Recently, Barro and McCleary (2003) investigated the relationship between economic growth and religion and concluded “Our conjecture is that higher religious beliefs stimulate growth because they help to sustain individual behavior that enhances productivity” (p.38). Another paper by Guiso, Sapienza and Zingales (2002) concluded that “religious beliefs are associated with good economic attitudes, where good is defined as conducive to higher per capita income” (p.1). A recent book by Stapleford (2002) explores a broad range of Christian beliefs and their effects on the economy.

One of the methods, which has often been used for exploring the effect of demographic or attitudinal differences and economic decision making, is the Ultimatum game. Results have been well documented in the literature and only a cursory sketch will be given here. It appears the Ultimatum game originated with a paper by Guth, Schmittberger, and Schwarze in 1982, and the strategy game has since been used by many researchers in the study of bargaining and the balance between equity and efficiency. Three notable studies which used the Ultimatum game in a similar manner as this study were the testing for differences in sharing and gender (Solnick, 2001) differences in sharing due to cultural differences (Henrich, 2000) and the effect of age and sharing (Thaler, 1988).

## **Methodology**

This study explored decision making and the influence of Christian beliefs by using a simple study conducted among students at Indiana Wesleyan University (IWU). As mentioned above, the study used the well known Ultimatum game. The results compared the decisions of those who view themselves as possessing strong Christian beliefs with those within the sample who do not identify with this characteristic. Because the Ultimatum game has been extensively studied, some conclusions were also be drawn by comparing these results with those reported in the literature.

The Ultimatum game is a simple experiment. Subjects are divided into two groups: a group designated “proposers” and a group designated as “responders.” The proposer is

given the situation that they have been given \$100 but they must share a portion of the \$100 with an anonymous responder. The responder has the decision to accept or reject the offer. Both proposers and responders have the same information concerning the decision and payoffs. If the responder accepts the proposal for the division of money, then each receive the division of the \$100 as designated in the proposer's offer. If, however, the responder does not accept, then neither receives anything.

This experiment demonstrates some interesting economic behavior. If the proposers and the responders were solely interested in improving their own wealth, then any non-zero offers should be accepted, since to turn down any positive offer would make them worse off. If proposers believed that even a small offer would be accepted, and they were acting only in their own self interest of increasing their wealth, then logically the proposer would make only a token offer to the responder. The proposer would gain the most benefit, but both would be made better off (monetarily) and the transaction would be completed. However, the literature on the results of this game provides ample evidence that more than efficiency is at work in the decision. In fact, most studies report that proposers offer to share 30-40% of the money (Solnick, 2001). My purpose was to test whether there is a difference between people who state they have strong Christian beliefs and those who do not identify strongly with this characteristic in how much they propose to share with the responder.

Samples were gathered from 92 paired participants in recent classes at IWU. Most were gathered by the author, but some were gathered by colleagues who used the same procedure. After obtaining student approval for participating in the study (required by IWU) the class was randomly divided into "proposers" and "responders." The proposers were given the instructions that they had \$100 available to them, with the stipulation that they must make a proposal of how much they intend to keep for themselves and how much they intend to share with an anonymous responder. If the responder does not agree with the division of the \$100, then neither would receive anything. Thus, the proposer's offer would require a positive response in order for them to (hypothetically) receive their share. A random number identified each student (students were simply asked to take the last three digits off a dollar bill they were carrying and that became their random number). The sheet with the instructions on the decision to divide the \$100 is shown as Exhibit 1.

Then, the proposer's decisions were shuffled and distributed to the responders who decided whether to accept or reject the division of the \$100. They also noted their random number.

The sampling concluded with a demographic/attitudinal survey for all participants (Exhibit 2). Participants were asked to provide answers to the questions and note their random number so that decisions could be matched with the demographic/attitudinal characteristics.

The results reported in this paper use only a portion of the data. These results focus on the proposer side and the significant difference between the proposed sharing of the \$100 and the proposer's answer to the last question, specifically whether there is a significant difference between the mean amount the proposer seeks to keep for themselves and how strongly they think that Christian beliefs should be considered in business decisions. The

results also show other comparisons, which control for other factors which might affect the sharing decision. Simple statistics are used to draw the conclusions; the means (average amount the proposers sought to keep for themselves) were compared between groups which identified strongly with Christian principles and those who did not. Excel was used to compute the t-tests between samples using the assumption of different variances. One important underlying assumption for using t-tests is that the distributions are normal. In this case, sample sizes for both groups were large enough to justify the use of the t-test, since the sampling distribution to obtain the standard error of the mean, is generally normally distributed, even if the overall sample is not drawn from a normal distribution. However, use of a nonparametric test was performed to further investigate the differences between the two samples. The Wilcoxin rank sum test (a nonparametric test for the differences in medians, which does not rely on the assumption of normal distributions) was also used as further support of the results. Also, some simple correlations were used to test for the influence of other demographic characteristics on the results of the experiment.

## **Initial Hypothesis and Revised Hypothesis**

After the data were collected, some preliminary analysis was done. The mean for the entire sample of monetary proposals was \$57 to be retained by the proposer and \$43 offered to the responder. The median and mode for the total sample were a \$50/\$50 split. These statistics are consistent with Solnick's (2001) and Harwood's (2000) literature review.

Going into the study, my initial hypothesis was that individuals who responded to the last question on the demographic/attitude survey (that Christian principles were the "most important" or "very important" in business decision making) would propose a more even distribution of the \$100 as compared with those who responded to the last question in the survey that Christian principles were "somewhat important" or "not relevant." This initial hypothesis could not be statistically supported. The means for the two groups were almost identical and the hypothesis that they were drawn from different populations was not justified (although the sample size for those who did not believe that Christian beliefs were important was somewhat small, and this may need further investigation).

<b>Response for “proposers”</b>	<b>Mean Proposed Sharing of the \$100</b>	<b>Sample Size</b>
Respondents who said they believe Christian Principles are the “most important” or “very important” for making business decisions.	\$56 for the proposer \$44 for the responder	N=65
Respondents who said that Christian principles were “somewhat important” or “not relevant” for making business decisions	\$58 for the proposer \$42 for the responder	N=27

In further examination of the data, it appeared that the real difference was in the means for only those who strongly identified with Christian beliefs in decision making (those respondents who answered the last survey question that Christian principles were the “most important” consideration in business decision making) and all others in the sample. In looking at the means for the proposers when the sample was split this way, the following results were obtained.

<b>Response for “proposers”</b>	<b>Mean proposed sharing of the \$100</b>	<b>Sample Size</b>
Respondents who said Christian principles were the “most important” factor in decision making	\$53 for the proposer \$47 for the responder	N=30
Respondents who said that Christian principles were “very important,” “somewhat important,” or “not relevant”	\$59 for the proposer \$41 for the responder	N=62

When the data were analyzed with this split, the difference between the means of the two samples was statistically significant ( $t=3.02$ , which exceeded the critical value of 1.96 at the 5 per cent confidence level). Although the modes for the distributions were the same (\$50/\$50 split) the medians were also statistically different. The median for the proposers who responded to the demographic survey that Christian principles were the “most important consideration in business decision making” was a proposal of a \$50/\$50 split. The median for the group who answered Christian principles were “very important,” “somewhat important” or “not relevant” was a proposal of \$54 for the proposer and \$46 for the responder. The Wilcoxin non parametric test for the difference between medians using a rank sum test showed that the populations were statistically different (critical value of Z was 2.2 which exceeded 1.96 to be statistically significant at the 5 per cent confidence level).

Thus, for this sample, people who strongly identified with the statement that Christian principles were the most important factor in business decision making, chose a significantly more even distribution of the money compared with all others in the sample.

The larger implication is that if this were true for the general economy, then strongly held Christian beliefs would likely lead to a more even distribution of wealth in the economy, and since this decision is voluntary; there would likely be little or no reduction in efficiency to gain the greater equity.

## **Limitations of the Study Results**

The data gathered for this paper were from business students in the College Adult and Professional Studies at IWU. Whether the results apply to a wider segment of age or demographic groups cannot be inferred from this study. Thus the study results provide guidance but are not definitive. Also, as shown above, sample sizes were large enough for showing statistical significance, but still small for making broad inferences for the general population. Hopefully, others may be motivated to gather additional data.

Also, this paper does not delve into the differences among Christians and their ethical beliefs. The methodology had participants identify only how important Christian principles are in their business decisions without constraining respondents to a particular set of ethical principles. In seeking some clarification on the principles which study participants had in mind when they responded to this question, follow-up discussions generally focused on the following principles: we are stewards of property and it is a gift from God and we should be good stewards in its use; accumulation of wealth for its own sake is a sin; Christians have an obligation to share wealth with others; and we should respect the rights of others (thou shalt not steal.) Although the study was done at a Wesleyan University, those attending Wesleyan churches in the adult programs are a minority and our students tend to be a cross section of many Protestant denominations as well as Catholic and other religious affiliations. According to our entrance surveys for the adult programs, the largest percentages of church affiliation were: Nondenominational-21%, Baptist-19%, Roman Catholic-18%, and United Methodist-9%. Only about 2% of the adult students identified themselves as Wesleyans. Overall, 90% of the students said they were Christians (IWU Entrance Survey.)

## **Other Variables**

Although the results presented above show a significant difference, it is necessary to ask further questions; specifically, whether other factors may impact on this conclusion. The first test goes back to question of whether there is a difference between men and women in their sharing decision. As previously mentioned, Solnick investigated this using the Ultimatum game, but concentrated on the responder decisions, specifically, whether women tended to accept lower offers than men. In testing the difference in the sharing between men and women on the proposer side, there was a difference between the means, but this difference was not statistically significant for this sample. The mean sharing for females was \$56/\$44 (i.e. keep \$56 dollars and offer \$44 to the responder) and the mean sharing for males was \$58/\$42 and the t-value was not statistically significant. Another possible source of variation was age. A simple correlation was run between the proposer's age and the amount they proposed to keep for themselves in the division of the \$100. The results showed no correlation between age and the amount proposers sought to keep for themselves (R squared of .02.) Finally, the difference in the proposed sharing between ethnic groups was tested. Sample sizes were large enough to test for a

difference between those who identified themselves as Caucasian and all other ethnic groups. The t-test between the means of the ethnic groups was not significant. Another possible factor which might have an impact on the decision was income and wealth. No income or wealth information was gathered for this study. Since a number of samples were gathered from small classes and many of these classes were taught by the author, it was thought to be inappropriate to gather income information under these circumstances. Thus, this is still an open question. However, it seems unlikely that those who expressed strong affiliation with Christian ethics would have significantly different levels of income and wealth compared with the remainder of the sample, although this could not be addressed in the analysis.

## Conclusions

This study concluded that Christian principles do affect decisions on sharing and stewardship. Although the caveats stated above should be considered, those individuals, who consider Christian principles to be the most important consideration in business decision making, state that they would share a greater proportion of their resources than those who do not hold these beliefs. One of the interesting aspects of this finding was that it was only true for respondents who stated they believe Christian beliefs are the highest priority in decision making. A lesser degree of belief in the importance of Christian principles had little affect on the decision making and this group had about the same results as the literature has reported for the general population. The overall implication is that Christian principles, when placed in highest regard for business decisions, will improve the economy by making a more equitable distribution of society's resources without the downside effect of reducing efficiency since it is a voluntary act based upon Christian principles. A secondary conclusion is that experimental economics, such as the Ultimatum game, provide an ideal stimulus to discuss the effect of Christian beliefs within economics courses. A number of students commented after the game that it made them consider what principles they should consider in the use of their resources and how Christian principles should fit into this decision.

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**Exhibit 1**

**The Ultimatum Game**

**Instructions:** The class will be divided into two groups, the “proposers” and the “responders.” A sum of \$100 is available, but must be divided between the proposer and the responder. The proposer makes an offer on the division of the \$100. If the offer is accepted by an anonymous responder, then the transaction is complete and the money is divided according to the offer (this is hypothetical-your facilitator cannot afford to play the game with real money-but please answer as though this was a real situation.) If, however, the responder does not accept the offer, then neither party earns anything.

Proposer:

Money for the proposer \_\_\_\_\_

Money for the responder \_\_\_\_\_

Equals \$100

(Please enter a dollar amount on each line and the sum will be \$100)

Proposer’s random number \_\_\_\_\_

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Responder: I accept this offer \_\_\_\_\_

I do not accept this offer \_\_\_\_\_

(Please mark an X with your decision)

Responder’s random number \_\_\_\_\_

## **Exhibit 2**

### **The Ultimatum Game**

**1. Age** \_\_\_\_\_

**2. Gender**

Female

Male

**3. Ethnic**

Caucasian

African American

Hispanic

Other ethnic group

**4... How often do you attend church?**

Once per week

A couple times a month

Once a month

A couple times a year

Rarely or never

**5. When making business decisions, do you consider Christian principles to be**

The most important consideration

Very important

Somewhat important

Not relevant

**Your Random Number** \_\_\_\_\_

