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Aid Motivation and Donor Behavior

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ABSTRACT
This paper develops an analytical framework to explain foreign aid motivation and donor behavior, using an interdependent utility maximization framework, in which donor faces two constraints; its own budget constraint and the recipient's utility function. This paper specifically contributes to the literature on foreign aid by integrating the various objectives underlying aid allocation, namely recipient income and trade performance, international income distribution and donor reaction to fungibility. Between trade interest and international income distribution, the former is found to be a more common consideration in aid allocation. One of the important results is that the fungibility of foreign aid is established as a major problem so as to invite donor's retaliation. However, the retaliatory response appears to co-exist with other motivations.

JEL Classification Codes: *F35*

Key words: *foreign aid; aid determinants; fungibility; donor trade interest; developing countries*

1. INTRODUCTION

An extensive literature exists to explain donor behavior underlying allocation of foreign aid. Researchers have attempted various motivations basically in terms of donor self-interest and recipient need (McKinlay and Little, 1979; Maizels and Nissanke, 1984; Trumbull and Wall, 1994 and Gounder, 1999). It has been argued that, except when aid is allocated on the basis of altruism, even the recipient's need criteria must somehow satisfy donor interest. The latter may be built in trade, investment, and security considerations. Trade policy has been particularly an important basis for aid allocations; more particularly, it has been shown that given consumer preferences, donors would maximize their welfare by allocating aid to countries with lower tariffs (see Lahiri and Raimondos-Moller, 1997). Nevertheless, donor self-interest may have substantial positive externalities for some aid-receiving countries. The trade interest of a donor country, for instance, may lie in promoting growth in developing countries, which are its major trading partners (Maizels and Nissanke, 1984). The presence of recipient growth in the donor objective function has been analyzed by Khilji and Zampelli (1994) and Rodrik (1995). It is interesting to note that for 99 projects evaluated in 1993, an average economic rate of return of 21 per cent was obtained, and there is evidence that the World Bank financing was not available to projects with a low rate of return with 12 per cent as the cut-off (Devarajan et al., 1997). Thus, donors may continue to allocate aid to their trading partners, even though these countries may be implementing projects that

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do not necessarily generate a high rate of return. Moreover, some studies, such as Edelman and Chenery, 1977 and Llavador and Roamer, 2001, have rationalized such behavior of donors by highlighting that aid could also be provided on the basis of improving international income distribution. This means that as countries achieve some threshold level of income, donors would reduce their financial aid to such countries. Mauritius and Botswana are concrete examples of economies which once crossed the threshold of middle-income were subsequently entitled to much lower financial assistance levels. However, it is extremely crucial to note that in early stages of development, donors may be frustrated whenever recipient governments tend to direct aid amounts to untargeted projects. The latter would simply bring about sluggish growth of income and that threshold may not be easily attainable in the long run. Although the issue of the fungibility of foreign aid remains empirically debatable (see, White, 1992 and Feyzioglu et. al, 1998 for a recent review of literature), donors largely tend to believe that foreign funds are spent on non-designated projects by LDC governments. As such, donors may respond to this attitude of recipients by allocating lower amounts of aid to such countries. Moreover, despite donors' tendency to respond to fungibility, there is no empirical evidence as such to this effect. Such donor responses on occasions may be in conflict with donor self-interest in which case it may underplay the recipient fungibility behavior.

In the existing literature on external financial assistance, limited attempt is made to integrate the various objectives underlying aid allocation, namely donor trade interest, recipient growth, international income inequality, and donor reaction to fungibility. In this paper, we model the behavior of donors integrating these conflicting objectives. From the proposed framework, donors choose countries for aid allocation using a portfolio approach, explicitly incorporating their choice over alternative uses of grant amount, recipient performance, and fungibility attempts. Hence, we propose to model the supply-side of foreign aid allocation by taking into account donors' resource capability and motivation and recipient performance.

The remainder of the paper is structured as follows; in section 2, a utility maximization model of aid allocation is developed, postulating interdependence of donor and recipient utility functions, and in section 3 the impacts of recipient economic and fiscal behavior including fungibility attempts on aid allocation are postulated under alternative scenarios The proposed model is tested for a group of aid-receiving countries in section 4 with a view to empirically examine donor response to recipient output performance, international income inequality, and the fungibility of foreign aid. Lastly, section 5 concludes and addresses policy issues.

2. A MODEL OF FOREIGN AID ALLOCATION

Let the utility functions of donor and recipient be specified as follows:

$$U_d = f_1 (Y^d, G^d, GR) \quad (1)$$

$$U_r = f_2 (Y^r, G^r, GR) \quad (2)$$

Where Y, G, and GR stand for per capita national disposable income, per capita government expenditure, and total foreign grants respectively, and superscripts 'd' and 'r' represent donor and recipient respectively. The utility functions represent the aggregative welfare preferences of all agents in both type of countries and would indicate clearly the utility derived from a range of private goods, captured by Y; a range of public goods, tracked by G, and foreign aid indicated by GR. In the context of a donor country, grant giving brings satisfaction to agents as they are in a position to help Less Developed Economies[1]. On the other hand, for a recipient country this financial assistance leads to higher utility and more so for those public goods whose production would not otherwise have been materialized. These functions could be specified in Cobb-Douglas form. In other words, the arguments in the donor and recipient utility functions present a trade-off between alternative uses of resources at hand. It is worth observing that arguments used in the two specifications are just substitutes and not necessarily perfect substitutes. Donors are assumed to maximize their own utility functions subject to two constraints; namely, the recipient's utility function with an ensured level of utility K, derivable by the recipient country, and their own budget constraint.[2] In fact the recipient's utility function enters as a constraint because any change in the recipient's disposable income and government expenditure levels, in the presence of foreign aid, would provide information on welfare performance and macroeconomic achievements in aid-receiving countries. Such information would also help donor countries to assess trade potential, international income disparities, and utilization of foreign funds.

We set the following LaGrange and maximize it subject to two constraints

$$L = aY_d^{\theta 1} G_d^{\theta 2} GR^{\theta 3} + \lambda_1[K - b_1 Y_r^{\theta 4} G_r^{\theta 5} GR^{\theta 6}] + \lambda_2 [Y_d - AE - G_d] \quad (3)$$

The variables are defined in the following table:

Table 1: Description of the Variables

Symbols	Description
$\mathbf{Y_d}$	Donor's Income Level per Capita
$\mathbf{G_d}$	Donor's Government Expenditure Level per Capita
GR	Grants or Foreign Aid in Total
K	Assumed Level of Utility of Recipient (Benchmark Utility Level)
$\mathbf{Y_r}$	Recipient's Income Level per Capita
$\mathbf{G_r}$	Recipient's Government Expenditure Level per Capita
AE	Aggregate Private Expenditure Level per Capita

[1] The utility derived may range from altruistic motives to opportunistic needs (trade gains and bilateral agreements)

[2] The donor's budget constraint is derived from the usual national income identity where $Y_d = AE + G_d$ and AE is net private expenditure.

Setting the partial derivatives equal to zero yields:

$$\frac{\partial L}{\partial Y_d} = a\theta_1 Y_d^{\theta 1-1} G_d^{\theta 2} GR^{\theta 3} + \lambda_2 = 0 \quad (4)$$

$$\frac{\partial L}{\partial G_d} = a\theta_2 Y_d^{\theta 1} G_d^{\theta 2-1} GR^{\theta 3} - \lambda_2 = 0 \quad (5)$$

$$\frac{\partial L}{\partial GR} = a\theta_3 Y_d^{\theta 1} G_d^{\theta 2} GR^{\theta 3-1} - \lambda_1\theta_6 b_1 Y_r^{\theta 4} G_r^{\theta 5} GR^{\theta 6-1} = 0 \quad (6)$$

Using equation (6)

$$\therefore a\theta_3 Y_d^{\theta 1} G_d^{\theta 2} GR^{\theta 3-1} = \lambda_1\theta_6 b_1 Y_r^{\theta 4} G_r^{\theta 5} GR^{\theta 6-1} \quad (7)$$

This equation represents the inter-dependence of two economies (a donor and a recipient). Taking log to both sides of equation (7) we have

$$\log (a\theta_3) + \theta_1 \log Y_d + \theta_2 \log G_d + (\theta_3\text{-}1) \log GR = \log (\lambda_1\theta_6 b_1) + \theta_4 \log Y_r + \theta_5 \log G_r + (\theta_6\text{-}1) \log GR \quad (8)$$

After rearranging terms,

$$(\theta_6\text{-}\theta_3) \log GR = \theta_1 \log Y_d - \log (\lambda_1\theta_6 b_1) + \log (a\theta_3) - \theta_4 \log Y_r - \theta_5 \log G_r + \theta_2 \log G_d \quad (9)$$

$$= \log \frac{a\theta_3}{\lambda_1\theta_6 b_1} + \theta_1 \log Y_d - \theta_4 \log Y_r - \theta_5 \log G_r + \theta_2 \log G_d \quad (10)$$

$$\therefore \log GR = \log \left[\frac{a\theta_3}{\lambda_1\theta_6 b_1}\right]^{\theta_6-\theta_5} + \left(\frac{\theta_1}{\theta_6-\theta_3}\right) \log Y_d - \left(\frac{\theta_4}{\theta_6-\theta_3}\right) \log Y_r - \left(\frac{\theta_5}{\theta_6-\theta_3}\right) \log G_r + \left(\frac{\theta_2}{\theta_6-\theta_3}\right) \log G_d \quad (11)$$

$$\log GR = A_0 + A_1 \log Y_d - A_2 \log Y_r - A_3 \log G_r + A_4 \log G_d \quad (12)$$

where

$A_0 = \log \left(\frac{a\theta_3}{\lambda_1\theta_6 b_1}\right)^{\theta_6-\theta_5}$, $A_1 = \frac{\theta_1}{\theta_6-\theta_3}$, $A_2 = \frac{\theta_4}{\theta_6-\theta_3}$, $A_3 = \frac{\theta_5}{\theta_6-\theta_3}$, $A_4 = \frac{\theta_2}{\theta_6-\theta_3}$.

Equation (12) represents the equation of interest. It postulates that donor's decision to supply aid to developing countries will depend on changes in donor's disposable

income and government expenditure levels, on the one hand, and changes in the recipient disposable income and government expenditure, on the other. From the model, the expected signs on the coefficients are as follows:

$$A_1 = (\partial GR/\partial Y_d) > 0, \qquad A_3 = (\partial GR/\partial G_r) < 0$$
$$A_2 = (\partial GR/\partial Y_r) < 0, \qquad A_4 = (\partial GR/\partial G_d) > 0$$

A positive sign is unambiguously expected on A_1 and A_4 because an increase in donor's disposable income and government expenditure on the provision of public goods would engender higher foreign aid. This postulate assumes that increases in donor income and government expenditure are indicative of enhanced donor resource capacity to give aid. Any deviation from the positive impact would imply some conflict between spending within the country and spending a part of donor income as aid in developing countries. It is possible that enhanced donor capacity may be associated with lower aid disbursements due to some strategic reasons. Similarly, aid allocations may be continued despite a decline in donor capacity. These conflicts would reflect on the changing donor perspectives on aid-giving in the light of developments at home and in the countries of aid destination. Further, a negative sign is expected on A_2 and A_3, because higher output and government expenditure performance of recipient countries may dampen aid prospects. Any deviation would indicate donor self interest and other motivation, such as retaliation to fungibility attempts.

3. MEASURING DONOR RESPONSE AND ALLOCATION OF AID

In order to test certain hypotheses concerning the motives underlying the aid-giving behavior, namely improving international income distribution, self-interest, and reaction to fungibility, we need to interpret the sign of the two coefficients, namely A_2 and A_3 appropriately. These coefficients measure stimulating and dampening impacts of recipient economic and fiscal performance and fungibility attempts on allocation of foreign grants. For this purpose, four situations are developed and quantified; namely, grant stimulation of recipient growth, grant dampening of recipient growth, grant stimulation of recipient government expenditure and grant dampening of recipient government expenditure. The first one refers to a situation when foreign aid is stimulated by recipient growth, which in turn would increase trade with aid recipients. The second channel captures international income distribution effect of recipient growth on grant- giving. This would underpin the objective of redistributing foreign aid to more needy countries. The third situation describes donor response in terms of increasing grant to reward the recipient for good fiscal performance, and the last situation deals with those outcomes involving decrease in grant indicating the retaliatory donor attitude towards fungibility behavior. It is important to identify the precise conditions, which would guide aid allocations. The following conditions are designed to measure aid stimulation and lack of it, which can be attributed to changes in recipient growth and government expenditure. If foreign aid rises by more than the increase in the value of recipient growth and government expenditure, then aid stimulation of recipient output

and government expenditure levels is said to have occurred. Moreover, aid stimulation may also be obtained if aid amounts are adjusted downwards by less than the decline in the value of recipient income and government expenditure.

We concentrate on the coefficients of Y_r and G_r in equation (12). The former captures the link between grant and recipient output level and the latter shows the link between grants and fungibility attempts, revealed by the changes in recipient government expenditure. For instance, $A_2 < 1$ would indicate that donors are interested in reducing international income inequality, and therefore, they increase grants less than proportionally for countries whose output levels tend to grow sluggishly and reduce grants when recipient's income tends to increase faster (grant dampening of recipient growth). Any deviation from this postulated behavior would be explained in terms of either donor self-interest or fungibility behavior on the part of the recipient. For instance, $A_2 > 1$ would indicate donor's self-interest, because grants continue to rise despite the good performance on the part of the recipient in terms of output performance (grant stimulation of income level). Recipient good economic performance may entail an increase in donor exports. Thus, increase in the recipient's disposable income is expected to increase their imports, which will foster the donor's trade interest.

Table 2: Donor's Reaction to Recipient's Performance

Motivation	Testable hypothesis	Expected sign on coefficient
Equitable allocation of grants	Grant dampening of recipient growth	$A_2 < 1$
Donor trade interest	Grant stimulating of recipient growth	$A_2 > 1$
Donor's reaction to good fiscal performance	Grant stimulating of recipient expenditure	$A_3 > 1$
Donor's reaction to fungibility	Grant dampening of recipient expenditure	$A_3 < 1$

Source: Authors' Postulates

Measuring donor's response to fungibility is a stupendous task. Fungibility takes place when aid is allocated to projects that donors do not intend to support. In other words, the fungibility of development funds refers to a recipient's ability to transform some portion of categorical aid into pure revenue- or income- augmenting resources that could be spent effectively in any way the recipient chooses (McGuire, 1978 and Feyzouglu et. al, 1998). Thus, it can be diverted to other projects or used to extend tax relief to citizens. Attempts to divert these funds to other projects are taken to mean that local resource-raising efforts are hampered (see Nath and Sobhee, 2002, for a discussion on the interaction between local and external resources in the presence of fungibility of foreign aid). In the proposed framework, this information has to be extracted from the behavior of recipient government expenditure. In this exercise, a reaction to the fungibility of foreign aid would be captured by the lesser extent of grant increase (less than proportionate) in response to expanding recipient government expenditure (grant dampening of recipient government expenditure level : $A_3 < 1$). Moreover, the reaction to fungibility can also be measured by the greater extent of grant decrease (more than proportionate decrease) in response to a decline of recipient expenditure. In the light of the above, $A_3 > 1$ would imply donor rewarding the recipient for good fiscal performance, which may indicate lack of fungibility of foreign aid (grant

stimulation of recipient expenditure). In other words, donor provides financial assistance to those public projects, which are stimulated by the recipient government itself. Public expenditure growth and decline would indicate the extent of recipient government commitment to domestic resource mobilization in response to foreign aid. These working rules for aid allocation are summarized in Table 2.

4. MODEL ESTIMATION AND RESULTS

The model was estimated using a sample of 15 developing countries over the period 1973 -1996. Data relating to the definitions provided in Table 1 were obtained from two major sources; namely, IMF Government Finance Statistics Yearbook (various issues) and International Financial Statistics (various issues). Donor disposable income and government expenditure are constructed as average of donors' income and government expenditure respectively. Foreign aid is measured as total aid available to recipient country from various donors. In this way, we explain the behavior of an average donor considering aid allocations to different recipient countries over a period of time.

Before estimating the model, it was deemed necessary to ascertain whether foreign aid in Equation (12) is exogenous. If this is not the case, estimated coefficients from this model would have no meaningful interpretation as they suffer from simultaneity bias. But theoretically speaking, these relationships could be bi-directional. Put differently, while output and government expenditure levels determine aid amounts flowing to the recipient country, the possibility of grants having an impact on income and expenditure in the recipient country might not be discarded. In fact, there is growing evidence of growth promoting impact of foreign transfers in the presence of resource gaps in highly indebted countries (see Bacha (1990) for a discussion). On the other hand, the significance of recipient growth in the portfolio of aid allocation has also been discussed (see Khilji and Zampelli, 1994; and Rodrik, 1995). In a recent paper, Hansen and Tarp (2001), have reviewed the literature on growth regressions and the problem of simultaneity bias due to endogeneity of aid, and have shown that aid, in all likelihood, increases growth rate. Similarly, the directions of the relationship between aid and recipient government expenditure have been addressed in the literature. Fungibility of foreign aid has also focused on the links between recipient government expenditure and foreign aid (see for instance, White, 1992; Nath and Sobhee, 2002 and Feyzioglu et al., 1998). Foreign aid may generate dampening impact on recipient government expenditure. In other words, increases in recipient government expenditure would depend on foreign aid. On the same line, there are research attempts in terms of sub-national government expenditure responses to changes in grants from higher levels of governments as well (see Gramlich, 1977, 1987; Logan, 1986 and Nath and Purohit, 1992). On the other hand, foreign aid is influenced by recipient government expenditure growth; grants that require matching contributions from the recipient would depend extensively on the scale of self-financed government expenditure. In fact, conditionality is designed with a view to eliciting higher resource mobilization in the recipient countries (Gunning, 2001). These researches do substantiate the possibility of two-way causal linkages between recipient government expenditure and foreign aid.

In light of the above discussion, tests of exogeneity based on Wu (1973) and Hausman (1978) were performed with each country data set to determine the endogeneity of foreign aid variable. Other right-hand side variables were used as instruments in applying these tests. The results did indeed reveal endogeneity of the recipient's government expenditure variable and grants in some countries such as Nepal and Sri Lanka (see Appendix A for the Wu-Hausman Exogeneity results). After using the relevant instruments in the regression for Nepal and Sri Lanka to control for simultaneity bias, OLS was then suitably applied to estimate equation (12) for the entire sample of countries. To determine any time trend in the variables, which could reduce the reliability of our estimates, unit roots tests for stationarity were conducted for all the series in level form using Dickey and Fuller (1979, 1981) specifications (see Appendix B). Except for India and Sri Lanka, the data were found to be non-stationary. To avoid spurious problems as indicated in Table 3 below an iterative method was used.

Table 3: Regression Estimates

Country	K	G^R	Y^R	G^D	Y^D	F	$\bar{R}^2$	DW
****Mauritius**	-26.06 (-1.6)	7.41 (1.51)	-7.28 (-1.69)	0.98 (1.64)	16.14 (1.7)	5.3	0.50	1.5
****Ghana**	86.7 (2.3)	-6.6 (-2.14)	29.8 (1.8)	6.54 (0.81)	18.5 (2.3)	3.3	0.40	1.95
Kenya	-69.0 (-2.7)	1.41 (0.8)	1.8 (0.71)	0.86 (0.56)	3.18 (2.81)	5.4	0.52	1.4
****Zambia**	86.6 (0.7)	5.0 (0.63)	-6.3 (-0.5)	-2.8 (-0.6)	-0.52 (-0.2)	0.45	0.14	1.5
****Nepal**	-3.7 (-0.4)	1.54 (13.13)	1.06 (1.6)	-0.97 -(2.6)	0.6 (1.0)	6.35	0.60	1.6
Botswana	64.6 (2.2)	0.27 (0.54)	-2.1 (-1.5)	-1.1 (-1.25)	(-2.53) (-2.4)	3	0.30	2.1
Malawi	-55.7 (-2.2)	2.3 (4.6)	1.26 (1.5)	1.52 (1.5)	0.57 (0.8)	9	0.7	1.2
Egypt	-81 (-1.16)	-2.2 (-0.61)	0.3 (0.09)	4.64 (2.7)	4.5 (1.06)	3	0.35	2.7
****Sri Lanka**	1.6 (2.12)	-2.5 (-5.5)	3.1 (9.8)	-0.25 (-0.65)	-1.39 (-4.3)	37	0.9	2.0
Cameroon	6.9 (1.26)	0.84 (5.32)	1.1 (2.11)	-0.57 (-1.92)	-0.48 (-1.3)	47.16	0.92	2.02
Tunisia	-47 (-1.0)	-31.9 (-1.2)	3.07 (2.4)	0.53 (0.26)	4.1 (1.98)	4.35	0.5	1.72
Malaysia	82.7 (1.82)	-9.7 (-0.4)	(-1.27) (-0.4)	-1.65 (-0.73)	(-3.27) (-1.5)	2.45	0.3	1.7
****Brazil**	24.9 (2.08)	1.02 (22.7)	0.07 (1.22)	-0.93 (-2.51)	-1.63 (-2.3)	152.2	0.97	2.8
India	-5.3 (-2.43)	0.21 (0.46)	1.78 (1.64)	-0.49 (-1.66)	0.417 (1.87)	6.1	0.6	2.2
****Pakistan**	-9.6 (-2.3)	0.026 (0.15)	9.95 (0.63)	0.37 (0.68)	0.919 (2.96)	3	0.3	2.4

Source: Estimated ** Adjusted for auto-correlation

Given that each country data set is limited; we considered it unreliable to estimate the regressions in differenced form. Indeed, as reported in Appendix B, some equations were estimated using stationary data, but they prove to be unreliable due to small data set. Hence, the regression results used for interpretation were those in level form albeit ensuring that errors were not serially correlated.

Table 4: Assessment of Objectives: Test Results (Stop/Give Aid)

Country	Addressing international income inequality	Self-interest (Trade motive)	Reaction to fungibility
Mauritius	stop		Give
Ghana		give	Stop
Kenya		give	Give
Zambia	stop		Give
Nepal		give	Give
Botswana	stop		Stop
Malawi		give	Give
Egypt	stop		Stop
Sri Lanka		give	Stop
Cameroon		give	Stop
Tunisia		give	Stop
Malaysia	stop		Stop
Brazil	stop		Give
India		give	Stop
Pakistan		give	Stop

Source: Derived from Table 2

The results are rather varied across the sample of countries. When we compare these coefficients in terms of expected signs, these are quite mixed. Some of the coefficients are statistically insignificant. Nevertheless, the tests for equitable distribution of aid, donor self-interest, and tracking of fungibility on the part of recipients have been performed in terms of the signs of the coefficients. These results are found in Table 4. The coefficients on donor disposable income and government expenditure variables are positive as well as negative. Whereas the positive coefficients are as expected, the negative coefficients indicate conflicts in the foreign aid policy. Although some of the coefficients are not statistically significant, the obtained signs are quite instructive. Presumably, these conflicts could be better explained by analyzing the underlying motivations and recipients' behavior, which are summarized above. When the more definite results are analyzed, it is found that Mauritius, Zambia[3], Botswana, Egypt, Brazil, and Malaysia are clear-cut cases where donors would tend to gradually withdraw

[3] The case of Zambia appears to be a complex one that would require further investigation because this country is still plagued with several economic problems and acute income inequality. Further analyses would be warranted for a clearer picture.

aid assistance as these countries have witnessed, by and large, faster increases in their per capita income. In this group, excepting Mauritius, Brazil, and Zambia, there is some evidence of fungibility attempts, which seems to have exerted a negative impact on foreign aid programs. As regards self-interest, it is found to be one of the major objectives underlying aid-giving behavior. It is important to note that in 9 out of our sample of 15 countries, self-interest seemed to be dominant. With the exception of Nepal, Kenya, and Malawi, these countries have also witnessed some dampening impact on grants in the light of their fungibility attempts. In fact, in 9 out of 15 countries studied here, the fungibility of foreign aid does appear to be a major problem so as to invite donor's retaliatory response.

It should, however, be noted that our results are tentative in that some of the regression coefficients are statistically insignificant. Moreover, the explanatory power of the models pertaining to many countries is low, excepting for Nepal, Malawi, Sri Lanka, Cameroon, Brazil, and India. Nonetheless, our estimation of the model and analysis of donor's reactions to recipient growth and fungibility outcomes do lend support to alternative motives underlying the aid-giving behavior. One of the interesting observations is that donor retaliation to fungibility appears to co-exist with other motivations, namely reducing international income inequality and self-interest dominated by trade considerations. Between trade interest and international income distribution, trade interest is found to be more common in aid allocation.

5. CONCLUSION

This paper attempts to model the motivation and behavior of donors in providing foreign assistance to developing economies. We use the utility maximizing framework with interdependent utility functions, in which a donor faces two constraints, its own budget constraint and recipient's utility function. The analysis is principally carried out in terms of factors, which contribute to more aid and lack of it. Whereas trade interest will generally foster aid, fungibility will dampen it.

Although the evidence on the aid-giving behavior is mixed one, the results emanating from our model do establish that donors seem to take into account the recipient' attitude towards the utilization of foreign aid along with achieving the objectives of growth, trade interest, and improving international income distribution. One of the interesting results is that donor retaliation to fungibility appears to co-exist with other motivations. Between trade interest and international income distribution, trade interest is found to be more common in aid allocation. Nevertheless, various factors motivating grant giving are founded in utility maximization. Donors seem to compare the utility increments from aid giving to those emanating from spending within the donor country. However, we also have some empirical evidence that would tend to confirm conflicts of objectives in foreign aid policy.

It should be indicated that the results of this work should be treated as being illustrative in that they are derived from a small sample of countries. We have noted that there are two sets of donor's worry that characterize the aid giving process, namely the resource allocation at home and aid management in the destination countries. Modeling

such complex issues may necessitate more extensive analysis with broader data sets. Nevertheless, these results bear significant implications for foreign aid policy and further research.

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APPENDIX

(A) Wu-Hausman Exogeneity Test

Country Regression	Tests of Residuals			
	G_r	Y_r	G_D	Y_D
Mauritius	0.9	1.02	0.3	0.2
Ghana	0.67	0.91	0.45	0.77
Kenya	0.22	0.90	0.51	0.42
Zambia	0.27	0.29	0.41	0.59
Botswana	0.45	0.76	0.56	0.91
Malawi	1.1	0.91	0.68	0.71
Egypt	0.96	0.9	0.76	0.91
Cameroon	0.74	0.88	0.88	0.76
Tunisia	0.77	0.45	0.23	0.38
Malaysia	0.81	0.62	0.39	0.44
Brazil	0.2	0.53	0.67	0.51
India	0.65	0.44	0.18	0.24
Pakistan	0.84	0.28	0.36	0.16

Source: Computed (All t ratios are insignificant implying that all the right hand side variables are exogenous).

(B) Regressions in the differenced form using stationary data

Country	K	GR	YR	GD	YD	$\bar{R}^2$	F
Mauritius	0.42	0.04	-0.24	0.06	-0.41	-0.4	1.1
Ghana	0.31	0.03	-0.21	-0.01	-0.03	-0.21	1.4
India	0.10	0.16	0.25	-0.01	0.06	0.02	1.36
Malawi	0.09	1.4	0.9	0.21	-0.03	-0.03	1.17
Brazil	-0.15	-0.01	0.03	0.04	-0.03	-0.020	1.3

Source: Computed (t ratios are not mentioned here, they were all very insignificant and all variables have been inverted to $I_{0.}$ Some variables became stationary after second and third differences. Given that unit root tests are valid asymptotically, we believe that the sample size for each country is too small and the hypothesis of non-stationarity was accepted too often for the variable of interest).

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EXPERT POLITICAL RISK OPINIONS AND BANKING SYSTEM RETURNS: A REVISED BANKING MARKET MODEL

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ABSTRACT

Human behavior in banking and financial systems is in part made up of a complex mix of political, social and cultural factors. These factors are reflected in expert opinion based political risk scores. Market inefficiency is largely a result of anomalies in human behavior causing information asymmetries. A basic systemic market model is re-specified into a model for international banking systems, which controls for pure political risk. Samples of developed and developing banking systems are examined. Political risk factors and world banking returns are exogenous in models of country-banking system returns. New political information assists in explaining banking system stock returns. The findings should be of interest to investors in banking stocks. Banking regulators may be assisted in decisions on appropriate levels of regulatory capital as a benchmark for banking systems. The model could help to anticipate financial crises.

JEL Classification: *F36*

Key words: *Political risk, international banking market model, exogeneity, risk scores*

INTRODUCTION

Financial economists often focus solely on historical economic and financial data and ignore the human element. This behavioral element is difficult to measure. Risk ratings agencies,[1] canvassing the opinions of credit risk experts, have attempted to quantify political risk by scoring various countries according to degrees of such risks as corruption, quality of bureaucracy and history of law and order. In this paper these subjective factors are deemed to be pure political risk factors. At the outset it needs to be made clear that political risk is not a proxy for democracy. The degree of a country's democratization is only one component of political risk.

Political risk in a banking context is deemed to be the risk that cash flows accruing to a country's banks and bank investors will be adversely affected by changes in government policy that are independent of monetary policy considerations. Political risk is country specific and subjectively assessed. The most appropriate investigative tools for this investigation derive from portfolio and capital market theories adapted to control for pure political risk.

Markowitz (1959) developed a basic portfolio model for securities based on a series of broad assumptions relating to investor behavior[2]. He demonstrated that the variance of the returns was a meaningful measure of portfolio risk. Under his assumptions, a single asset or a group of assets in a portfolio is efficient if no other

[1] For example, ICRG (2005) published by the Political Risk Services Group.

[2] For example, investors maximize one-period expected utility and their utility curves demonstrate diminishing marginal utility of wealth, and for a given risk level investors prefer higher to low returns and for a given level of return lower for higher risk.

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asset or group of assets provides a higher expected rate of return for the same or lower risk or lower risk with the same or higher rate of return. Capital market theory has built on the Markowitz portfolio model and requires similar investor behavioral assumptions with additional assumptions that include consideration of the risk free rate of return[3].

The capital asset pricing model (CAPM) developed by Sharpe (1964) and arbitrage pricing theory (APT) developed by Ross (1976) differ in that the latter includes several risk factors. This permits a more comprehensive definition of systematic investment risk than that in the CAPM's single market portfolio. Fama and French (1992) found a weak association between the returns of an asset and its beta. They found statistically significant relationships between returns, firm size and the ratio of book to market values. Roll (1977) suggested that the market proxy for CAPM may not be mean-variance efficient.

A criticism of the APT is that the risk factors in the model are not defined in terms of their quantity, but significantly, the APT asserts that a security's return has an expected and an unexpected component. By implication it has a measurable or quantifiable or systematic component based on fact and a difficult to measure or unsystematic component that is based largely on opinion.

More recently, multifactor models have attempted to turn theory into practice and use a variety of macro and micro economic factors to explain risk and return. Many of these multifactor models may not be firmly founded in capital market or economic theory and there are many different specifications (Reilly & Brown, 2003).

In the following paper it is not the intention to juxtapose the CAPM and the APT or to compare these frameworks with the specified model. However, if political, social and cultural factors are to be taken into account in a parsimonious model of country banking system returns, it is necessary to incorporate them into a basic market model. This avoids the myriad of problems encountered in more advanced versions of the CAPM or the APT or the multifactor models. Reilly and Brown (2003) imply that it is feasible to apply a basic market model to a financial system using systemic stock price index data provided the constituents of the indices used are representative of the industry in the country concerned.

In a basic market model, the unsystematic factors are largely human behavioral in nature and include country specific political, cultural and social influences. Economic (market) factors based on fact are captured in the regression intercept and beta as systematic risk. Country specific factors are captured within the error term along with unmeasurable factors such as unanticipated terrorist attacks and natural disasters. A key question in this paper relates to the proportion of unsystematic risk that is described by pure political risk.

SOVEREIGN AND PURE POLITICAL RISK RATINGS COMPARED

Sovereign credit rating history is published by world credit risk rating agencies such as Standard and Poor's, Moody's and Fitch-IBCA. The ratings scales and assessments are comparable and the scales extend from extremely strong ability to repay through to default. The agencies also report credit watches (short-term potential direction) and ratings outlooks (long-term potential directions).

[3] Other principal assumptions are that capital markets are in equilibrium with all investments priced accurately in line with their risk levels and that there is no inflation or change in interest rates or inflation is fully anticipated. Also that there are no taxes or transaction costs in buying or selling assets.

According to various authors[4], country risk is the inability or unwillingness of a country to service external debt. This implies that total country risk has an economic and a financial component (that is, a systematic component that is based on historical balance of payment data) as well as a human component (or an unsystematic or country specific component that is based on opinions on political outcomes that are also influenced by social and cultural factors). The economic and financial component is objectively assessed as it is based on fact. It is not avoidable as it is the same for all.

The unsystematic component of risk is largely subjectively assessed (that is, it is political, social and cultural in nature) and thus is difficult to measure. However unsystematic risk is avoidable through diversification. Political risk is the slowing down in the meeting of external commitments due to political factors such as riots, strikes and civil unrest and this is related to other factors such as the degree of corruption in government, the history of law and order, the quality of the bureaucracy etc. These factors have much to do with the social customs and cultural history of most countries.

Simpson (2002) undertook a cross sectional study of 1995 country and international banking risk ratings and economic and financial data, and from this study several comments may be made about the leading country/sovereign risk ratings agencies. Firstly, the risk ratings from these agencies are highly positively correlated. Secondly, country risk ratings may be largely replicated using primarily trade performance and debt serviceability data. Thirdly, country risk ratings are also highly positively correlated with international banking risk ratings, thus reflecting the importance of banks as key economic agents. Fourthly, pure political risk factors have a very small role in the ratings replication process. Finally, from a cross sectional analysis of risk ratings alone it is not possible to tell whether or not the ratings lead or lag either financial or economic crises.

In light of the problems associated with the analysis of cross sectional country/sovereign risk score data, it is proposed in this study that pure political risk data be incorporated into returns data and isolated as a separate variable for investigation in both unlagged regression and lagged bivariate time series analysis. Pure political risk scores are available in time series through the International Country Risk Guide (ICRG). The basis of this risk scoring system is described in the section on pure political risk and in Appendix 1.

The issues in the study are as follows:

1. How important are pure political risk factors in explaining unsystematic risk in banking system returns?
2. Are these risk factors therefore significant in explaining banking system returns?
3. Do the risk score changes and world banking returns lead or lag stock market returns in banking systems?
4. If world banking returns and pure political risk factors are exogenous, is a new re-specified international banking market model feasible?
5. Can such a model be of use to banking regulators and to international investors? That is, will new information be added and incorporated in banking system returns?

[4] Referred to in Simpson (2002).

LITERATURE ON STOCK MARKET RETURNS & COUNTRY/SOVEREIGN RISK

Most authors have not properly differentiated between country/sovereign and pure political risks. That is, they have analyzed country or sovereign risk ratings (which have strong economic and financial components) and have ignored pure political risk. Studies such as Holthausen and Leftwich (1986), Hand et al (1992), Maltosky and Lianto (1995) argued that sovereign risk rating downgrades were informative to equity markets, but upgrades did not supply markets with new information. Cantor and Packer (1996) examined a sample of developed and emerging markets over the period 1987 to 1994 and found that sovereign risk ratings had a significant impact on bond yield spreads.

Erb et al (1996) discussed the importance of an understanding of country risk for investors. They found that country risk measures are correlated with future equity returns but financial risk measures reflect greater information. They also found that country risk measures are also highly correlated with country equity valuation measures and that country equity value oriented strategies generated higher returns. Diamonte, Liew and Stevens (1996) used analyst's estimates of country risk to show that country risk represents a more important determinant of stock returns in emerging rather than in developed markets. They also found that over the past 10 years country risk had decreased in emerging markets and increased in developed markets. They speculated that if that trend continued the differential impacts of country risks in each of those markets would narrow.

Larrain, Reisen and von Maltzan (1997) incorporated country risk data up to the Mexican crisis of 1994 to 1995 and found that the overall impact of ratings changes on bond prices was insignificant. Hill (1998) found that in times of crisis many investors may be determined to minimize exposure to securities affected by country risk until they have more information, but after a period of calm the spreads being offered appear to be too high relative to the risks. After more investors return to the market the spreads get less and when there is another crisis the cycle recommences. Specifically in regard to the Asian currency crisis, Radelet and Sachs (1998) suggested that country/sovereign risk ratings agencies were too slow to react and when they did react it was suggested that their ratings intensified and prolonged the crisis.

Ferri et al (1999) argued that the ratings agencies behaved in a procyclical manner by upgrading country/sovereign risk ratings during boom times and downgrading them during crises. Reisen and von Maltzan (1999) argued that ratings agencies exacerbated boom-bust cycles in financial markets and put emerging markets at greater risk. Hooper and Heaney (2001) studied regionalism, political risk and capital market segmentation in international asset pricing. They concluded that multi index models should be tested that incorporate a regional index, an economic development attribute, commodity factors and a political risk variable in order to more effectively price securities.

Brooks et al (2004) argued that equity market responses to country/sovereign risk ratings changes revealed significant responses following downgrades. Hooper et al (2004) found that ratings agencies provided stock markets and foreign exchange markets in the United States with new tradable information. Ratings upgrades increased stock markets returns and decreased volatility significantly. They also discovered significant asymmetric effects of ratings announcements where the market responses were greater in the case of ratings downgrades.

Few authors have examined pure political risk factors. However, Busse and Hefeker (2005) explored the connection between pure political risk, institutions and foreign direct investment flows (some of which is channeled into stock markets). They found that government stability, the absence of internal conflicts and ethnic tensions, basic democratic rights and the ensuring of law and order are highly significant determinants of foreign investment flows.

The evidence is mixed but most evidence points to country/sovereign risk having a significant relationship with stock market returns. Some arguments imply that financial crises reflected in reduced stock market returns are the drivers of sovereign risk ratings. If this is the case, risk ratings agencies cannot contribute new information to financial and banking markets for investors and nor could they be useful to banking regulators.

The Basel Committee is becoming more reliant on country/sovereign risk ratings agencies for its regulatory regimes. However, they may be ignoring pure political risk. It is put that the policy implications are only relevant and new information will only be added to markets if it can be proven that pure political risk rating changes, whether upgrades or downgrades, lead changes in banking stock market returns. This cannot be discovered in single period regression analysis. Nevertheless, regression analysis of unlagged data will at least identify a statistically significant relationship between variables. Analysis of lagged data in vector autoregressive (VAR) models will verify whether or not a new single period systemic international banking market model can include the specification of a subjectively based behavioural variable (such as pure political risk ratings).

WHAT IS PURE POLITICAL RISK?

Economic and financial risk has nothing overtly to do with pure political risk, although it is arguable that under the surface, the unwillingness to service external debt may be influenced by acute shortages of foreign exchange (Bourke & Shanmugam, 1990). Pure political risk relates to political stability. Expert opinions are collected, collated and categorized by scoring systems (such as ICRG (2005) published by the Political Risk Services (PRS) Group).

The PRS group are reputable political risk rating experts. Their ICRG scores are selected for analysis because they are reported monthly. In addition, the areas rated for composite political risk are not purely related to the degree of democracy in a country. The ratings include government stability, socio economic conditions, investment profile, internal conflict, external conflict (where the ratings ascribed are out of 12), corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability (where the ICRG ratings are out of 6), and the quality of bureaucracy (where the IRCG rating is out of 4). Composite raw scores are out of 100.

According to ICRG (2005) the higher the score or rating in each category, the lower the risk. The ratings by ICRG also reflect differences in part between alternating democracies[5], ranging through denominated democracies, *de facto* one party state, *de jure* one party state, to autarky[6]. In these ratings the lowest risk

[5] Characterized by free and fair elections for the legislature and executive, constitutions, more than one political party, checks and balances in executive, legislative and judicial functions, an independent judiciary, and constitutional protection of human liberties.

[6] Where leadership of the state is by a group or an individual without being subject to any franchise, either through military might or inherited right.

applies to alternating democracies and the highest risk applies to autarkies. For definitions and descriptions of pure political risk components see Appendix 1.

THE MODEL

The first step is the specification of a basic systemic international banking market model of unlagged returns variables. The errors of the regressions of country banking stock market price index returns[7] against a world banking stock market price index return are captured so that differentiation may be made between systematic and unsystematic risk.

According to this model systematic risk components are assumed captured in the regression intercept and coefficient and idiosyncratic (unsystematic) risk components are assumed captured in the error term.

$$R_{i_t} = \alpha_{i_t} + \beta_{i_t}(R_{w_t}) + e_{i_t} \quad (1)$$

where

R_{i_t} is the return on a banking system's price index i at time t;

α_{i_t} and β_{i_t} are the regression coefficients representing the proportion of systematic or market risk in banking system i at time t;

R_{w_t} is the return on a world banking price index w at time t; and

e_{i_t} is the error term of the regression indicating the unsystematic risk in banking system i at time t.

For the purposes of this study an in accordance with capital market theory, the regression errors are then adopted as a measure of unsystematic risk in those banking markets such that $e_{i_t} = U_{i_t}$ where U_{i_t} is the unsystematic risk in banking system i at time t.

The regression intercepts and coefficient in Equation 1 are assumed to capture all market risk factors such as changes in interest rates, exchange rates and the economic and financial components of country/sovereign risk reflected in balance of payments data. It is assumed that pure political risk (due entirely to political, social and cultural factors) is subjectively quantifiable, country specific and may be considered as part of unsystematic risk.

Therefore, when unsystematic risk, as defined above, is regressed on political risk ratings associated with banking system returns, the regression coefficients indicate the contribution of political risk to unsystematic risk in each banking market. The residual of this regression indicates the remaining proportion of unsystematic risk that is probably unmeasurable, but attributable to such factors as natural disasters. Such factors are impossible to predict and are part of the residual in an unlagged unsystematic risk regression.

$$U_{i_t} = \delta_{i_t} + \phi_{i_t}(P_{i_t}) + r_{i_t} \quad (2)$$

where

U_{i_t} is the unsystematic risk in banking system i at time t;

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[7] Returns = $R_t = \dfrac{(P_t - P_{t-1})}{P_{t-1}}$.

P_{i_t} is pure political risk associated with banking system returns for banking system i at time t;
δ_{i_t} and ϕ_{i_t} are the regression intercept and coefficient (representing the proportion of unsystematic risk explained by political risk (P_{i_t}) associated with the returns in banking system i at time t); and
r_{i_t} is the regression error term representing the proportion of unsystematic risk explained by factors other than subjectively quantifiable pure political factors in banking system i at time t.

The next step is to specify a new basic single system international banking market model treating world banking returns and political risk variables as exogenous.

$$R_{i_t} = \alpha_{i_t} + \beta_{1i_t} R_{w_t} + \beta_{2_{i_t}} P_{i_t} + u_{i_t} \quad (3)$$

where
R_{i_t} is the return on a country banking system i price index value at time t;
R_{w_t} is the return on the world banking price index at time t;
P_{i_t} is pure political risk associated with banking system returns in banking system i at time t;
α is the regression intercept and β_1 and β_2 are the regression coefficients; and
u_{i_t} represents the error term that reflects substantially reduced unsystematic risk factors[8] that are not measurable or that are difficult to measure.

Based on Granger (1988) findings that financial and economic time series may contain unit roots and in the development of the theory of non-stationary time series analysis, the unlagged regression model (Equation 3) is re-specified into a lagged vector autoregressive (VAR) model to implement VAR based tests of cointegration and causality to test for long-term cointegrating relationships and exogeneity.

$$R_{i_t} = a(R_{i_{t-1}}) + ...a_n(R_{i_{t-n}}) + b(R_{w_t}) + c(P_{i_t}) + e_{1i_t} \quad (4)$$

THE DATA

Daily banking stock market price index data from 31st December 1999 to 17th September 2004 are extracted from the Datastream database and converted to returns data for developed countries (represented by a sample of developed economies in the USA, UK, and Australia) and a sample of developing economies or emerging markets (represented by Thailand, The Philippines and Malaysia) are compared to returns on the world-banking price index.

The developed countries by definition have developed banking systems that have achieved an advanced stage of micro-economic reform in their banking sectors. These reforms would include standardization of financial reporting and a stricter compliance with Basel Accord guidelines in terms of and capital adequacy and

[8] Pure political risk factors now being included in the intercept and coefficients of the regression.

prudential supervision. Such compliance is to be expected in developed countries that have also achieved advanced macro-economic reform over a longer period of industrialization and economic development as defined by the criteria required for inclusion in the Organization for Economic Cooperation and Development.

The data are extracted from Datastream for the period January 2000 to September 2004. This enables the monthly political risk data to be compared with daily banking stock returns data where daily returns in each month are adjusted by the monthly risk score. The data are analyzed using the EViews (2001) statistical package.

Political risk ratings have been described above by ICRG in Appendix 1. The monthly composite political risk scores (combining all of the risk components and subcomponents) are ascribed by ICRG to be out of 100 for each country. According to ICRG, the numerically higher the ascribed score, the lower the political risk. For the purposes of this paper and for ease of demonstrating the risk/return tradeoff, the scores are deducted from 100 and the resultant number is multiplied by 0.01 to arrive at a probability of default due to pure political risk. In this way a low probability of default reflects low political risk and a high probability of default represents high political risk.

This is consistent with finance theory where low risk is associated with low returns and high risk is associated with high returns. The resultant probabilities are then multiplied by daily banking stock market index returns to arrive a daily country political risk value associated with that country's banking returns. This is then referred to as a country banking political risk variable. That is, the country banking political risk variable in Equations 3 and 4 is represented in the following expression. $P_{i_t} = (100 - ICRGScore)(0.01)(R_{i_t})$. It is also consistent with finance theory in the risk/return trade off, that a low value of the country banking political risk variable P_{i_t} means that a low level of pure political risk for a country is associated with a given level of that country banking system's returns, R_{i_t}.

A weakness of the overall study is that daily returns data are combined with monthly political risk data and that full years of data have not been included due to the starting and ending dates of the sample period. The study is limited by the data availability and the period was selected for convenience. However, this enabled the political risk data (which are discrete and not collected daily) to be combined with banking returns data (which are continuous and daily reported). The data are combined in a unique way to arrive at new continuous variables that help to describe the effect of political risk ratings each month on the daily returns data during that month over the full period of the study. When this variable is applied consistently across all countries the results show that new information is added to banking returns that are political risk adjusted.

PRELIMINARY ANALYSIS

The first part of the preliminary analysis tests level series and regression errors for stationarity, serial correlation and heteroskedasticity. Initial regression (OLS), unit root Augmented Dickey Fuller (ADF) tests [9] and serial correlation Durbin Watson (DW) tests [10] of unlagged data show that level series are converted from non-

[9] Dickey and Fuller (1981)
[10] Durbin and Watson (1971)

stationary to stationary processes on first differencing, as are the errors of the associated regressions. The DW tests show that the errors in Equations 1 and 2 are not serially correlated. However, heteroskedasticity (as shown through White tests[11]) remains persistent in the errors (except in the case of the errors for the Thailand banking system) and weighted least squared regressions are specified for the application of Equations 1 and 2.

On the bases that the series are integrated non stationary processes, the unlagged Equation 3 model is re-specified into a VAR in order to run VAR based tests of cointegration and causality of lagged variables. Cointegration tests (Johansen, 1988) demonstrate whether or not a single VAR system representing the interaction of each country's banking returns, political risk variables and world banking returns specified on an optimal lag have similar stochastic trends and achieve equilibrium together in the long-term. Causality tests (Granger, 1988) show the short-term dynamics of the models and provide verification of exogeneity as specified in Equation 3.

FINDINGS

Equation 1 is a basic international banking market [12] model, where banking price index returns are deemed a function of a world banking price index returns in unlagged data. The model is tested using banking system stock market returns data from three developed banking markets in the USA, the UK and Australia and three developing banking markets in Thailand, the Philippines and Malaysia. The sizes of the adjusted R square values, the t statistics and the coefficients show the strength of the relationship between country-banking price index returns and the world banking price index returns.

These regression parameters also show the degree of systematic risk in each country banking system. The error of this regression is deemed to represent the unsystematic (idiosyncratic risk) in the market model. Lower levels of unsystematic risk (reflected in lower standard errors) are expected to be associated with developed banking systems, which are expected to have lower political risk.

Table 1 shows the results of the regression analysis of Equation 1.

Table 1

Regression results of the basic international banking market model

Country Banking System	Adjusted R-square	Coefficient	t-statistic	Unsystematic Risk (Standard errors)
USA	0.6332	1.2979	46.0952	0.0282
UK	0.4717	1.1467	33.1446	0.0346
Australia	0.0353	0.1749	6.8048	0.0257
Thailand	0.0266	0.3635	5.8011	0.0627
The Philippines*	0.0019	0.0660	1.8247	0.0362
Malaysia	0.0047	0.0884	2.5048	0.0353

Note: * significant at the 10% level. All other results are significant at the 1% level.

The results demonstrate that, in an overall comparison of the selected country banking systems, the developed country system regressions (particularly those for

[11] See White tests for heteroskedasticity with and without cross terms, in EViews4 (2001)

[12] This model is preferred over an ordinary least squares (OLS) model when dealing with the presence of heteroskedasticity of an unknown form in the errors of the regressions.

the USA and the UK) have higher adjusted R square values, higher regression coefficients, higher t statistics and lower standard errors than the developing country systems. It may be concluded that, in unlagged data, the developed banking systems have higher levels of systematic risk and lower levels of unsystematic risk than the developing country systems when interacting with the world banking system in returns.

These results need to be considered in the light of statistically significant (significance is at the 1% level) structural breaks[13] in the data in the case of the USA, UK, Australian and Malaysian banking systems according to Chow forecast and breakpoint tests. In the cases of the Thailand banking system and the Philippines systems the two Chow tests yield conflicting results. It is possible that other structural breaks could be imposed on the data but this is to be the subject of future research on a larger data base.

Equation 2 posited that unsystematic risk is represented by the errors of the market model specified in Equation 1. Unsystematic risk is deemed a function of the country banking political risk variable (that is, political risk for each country associated with that country's daily banking returns). According to White tests, heteroskedasticity of an unknown form exists in the errors of the unsystematic risk regressions and weighted least squares regression analysis is undertaken in lieu of OLS. The DW tests reveal that there is no serial correlation in the errors of the unsystematic risk regressions.

The errors of Equation 2 represent the portion of unsystematic risk that is unexplained by political risk factors. The size of the standard error should be greater for developed banking systems because less of their unsystematic risk is expected to be explained by political risk. Developed banking systems are expected to be less politically risky and more informationally efficient than developing country banking systems. In addition the developed banking systems (particularly those of the USA and the UK) are expected to have greater global integration and interaction.

The results in Table 2 show, in general, the interaction between the unsystematic risk variable and the political risk variable is greater in the developing country systems. The adjusted R square values and t statistics for the developing country systems are higher than those for the developed countries (particularly the USA and UK systems). The standard errors in the developed country regressions are generally higher. However, the developing system in Thailand has a slightly higher standard error than the UK system. According to DW test statistics for each country unsystematic risk regression there is no evidence of serial correlation in the errors.

Table 2

Regression results of an unsystematic risk model

Country Banking System	Adjusted R-square	Coefficient	t-statistic	Standard errors
USA	0.2761	1.9658	21.6718	0.0907
UK	0.5282	0.5282	37.1100	0.0142
Australia	0.9552	8.3815	162.0903	0.0517
Thailand	0.9718	3.4442	205.8439	0.0167
The Philippines	0.9831	2.7712	267.4335	0.0104
Malaysia	0.9884	3.2861	324.1919	0.0102

Note: Statistical significance levels are at 1%.

[13] A logical structural break occurs at the time of the "9/11" attacks on the World Trade Center in the USA. These attacks were themselves a manifestation of political risk.

The lagged VAR model in Equation 4 is based on the unlagged country banking returns model in Equation 3. This bivariate model includes the country political risk variable and the world banking returns variable treated exogenously and VAR based cointegration and causality tests are applied. These tests provide an indication of the long-run relationships, short-term dynamics and exogeneity in each of the developed and developing country banking returns models as they each interact with the world banking return and country-political risk variables.

Exogeneity would be expected to run from the world banking system to both developed and developing banking systems, with stronger relationships between the world system and the developed systems because the developed systems are more informationally efficient and possess greater global integration. The purpose of the study is to ascertain if exogeneity lies with the country-political risk variable in each VAR system either by itself or together with the world returns variable within the country banking returns models.

The VAR stability condition checks in each case showed that no roots lay outside the unit circles and that each of the VARs satisfied the stability condition. Lag order selection and cointegrating rank determination was undertaken by examination of the maximum value of Schwartz information criteria [14] and by Johansen cointegration tests. After lag order was selected, the Johansen test was applied to examine trace statistics and maximum eigenvalues at both the 5% and 1% levels of significance. In the cases of each country banking system there is evidence of cointegration (that is, three cointegrating equations in each case) on a 1 day lag order. The VAR pairwise Granger causality/block exogeneity Wald tests were then undertaken to ascertain whether or not each endogenous variable could be treated exogenously at significance levels of 5% for the sizes of the respective Chi Square values (See Appendix 2).

With regard to the USA banking returns model, the USA political risk variable and the world returns variable considered together may be treated as exogenous variables. When considered separately, only the USA political risk variable may be treated as an exogenous variable. In the latter case dual Granger causality exists, but is stronger (with a higher significant Chi Square value) running from the US political risk variable to USA banking returns. In addition it is noted that USA returns are exogenous to world returns and that USA political risk in returns variable is exogenous to world returns. This demonstrates the unique strength and influence of the USA economy and banking system.

With regard to the UK returns system, the UK political risk variable and the world returns variable (considered together and separately) may be treated as exogenous variables. Dual causality exists between UK returns and the UK political risk variable, but stronger causality runs from the UK political risk variable to UK banking returns. It is also noted that significant causality runs from the world returns variable to the UK political risk variable.

When considered together, the Australian political risk variable and the world returns variable may be treated as exogenous to the Australian banking returns variable. When treated separately the Australian political risk variable is not statistically significant. Dual Granger causality exists between world banking returns

[14] Patterson (2000) suggests that Swartz information criteria may be used in preference to other criteria such as Akaike to simultaneously estimate lag order and cointegrating rank. Alternatively an information criterion such as Akaike or Swartz can be used to determine the lag order and then the Johansen procedure can be used to estimate the cointegrating rank. This paper uses both the Swartz criterion and the Johansen test to estimate lag order and cointegrating rank.

system and Australian banking returns, but stronger Granger causality runs from the world system to the Australian system. It is noted that significant Granger causality runs from the world returns variable to the Australian political risk variable.

Granger causality showed that when considered together the Thailand political risk variable and the world return variable may be treated exogenously, but when treated separately, Granger causality runs significantly from world banking returns to Thailand returns only.

The Philippine political risk variable and the world return variable exhibit significant exogeneity when considered together and separately, running to the Philippines bank returns variable. Significant dual causality exists in the political risk variable and the Philippines banking returns system (but the Chi Square value is slightly higher running to the political risk variable). There is evidence that the political risk variable and the world returns variable considered together may be treated exogenously in the Philippine banking returns system.

In the case of Malaysian system significant dual Granger causality runs between the Malaysian returns variable and the Malaysian political risk and the world returns variables whether the latter two variables are considered together or separately. The Chi Square value shows that the stronger causality runs from the Malaysian political risk variable and the world returns variables to the Malaysian banking returns system, thus providing evidence that the former two variables may be treated as exogenous in the Malaysian banking returns system.

CONCLUSION

Evidence is provided consistent with theory that developed country systems have higher levels of systematic risk and lower levels unsystematic risk than developing countries in the sample of countries studied. In the developed banking systems, market risk is expected to be greater due to economic factors that are the same for all country banking systems, but have a greater effect in developed banking systems because of greater informational efficiency of their banking markets. Unsystematic risk, which includes country specific political, social and cultural factors, is greater in developing country banking systems studied.

These country banking systems exhibit less informational efficiency and more informational asymmetry due to higher political risks in areas such as government stability, corruption and quality of bureaucracy. The sample of country banking systems was selected to represent strong, globally integrated developed economies in the USA and the UK as well as a group of developing South East Asian economies in Thailand, Malaysia and the Philippines. The developing countries have sound trading ties with the USA and have also demonstrated that they are susceptible to currency and interest rate shocks (For example, during the South East Asian currency crisis of the late 1990s).

The study also endeavored to ascertain the proportion of unsystematic risk that may be associated with political risks associated with banking returns in the various systems. The results generally provide evidence that the political risk variable has a stronger association with unsystematic risk in the developing banking systems than in the developed banking systems studied. Out of the developed countries the same interactions are greater than in the USA and the UK. The Australian banking system is smaller in terms of market capitalization and possesses less global interaction and integration than the banking markets of the USA and the UK.

In each country banking systems the variables are found to be cointegrated. Thus, in each country-banking system, over the period of the study, the variables exhibit similar stochastic trends and move to stability together in the long-term. Evidence is therefore provided that country political risk and world banking system returns are both important variables to include together in basic international banking market models.

The key issue addressed in this study was one of exogeneity and whether or not a basic international banking market model (either single period or lagged) can be expanded by controlling for a political risk variable to add new information to the market. Granger causality is demonstrated to run, in each country banking system, from the world banking system except in the case of the USA banking system. That the USA banking system is exogenous to the world system evidences the strength in power and influence of the USA political, economic and banking systems, and the degree of financial integration that the USA banking system has with the global system.

For all other banking systems, when the country political risk variable is considered together with the world-banking returns variable there is evidence that both may be treated as exogenous variables. In the cases of the USA, the UK, the Philippines and Malaysian banking systems, their political risks associated with their banking system returns considered separately in those systems, may be treated as an exogenous variable. It is evident a new market model can be specified in both unlagged and lagged data to help explain returns in country banking systems. New information is added to country-banking markets by pure political risk factors which are effectively captured in political risk ratings.

Previous studies have demonstrated that country/sovereign risk ratings from leading ratings agencies may be replicated using non-political data and largely reflect economic and financial information. The scoring of pure political risk (such as changes of government, corruption, the role of the military, the quality of bureaucracy and other factors that are either the cause or the effect of social and cultural factors) by reputable political risk rating agencies is therefore valuable. This should be of assistance to investors in international banking stocks and to banking regulators who need to be aware that pure political risk ratings, when so combined with daily returns data, are a leading rather than a lagging indicator no matter what the level of informational efficiency in the country banking market.

Banking stock investors have more information to enable them to make decisions in relation to portfolio diversification. Similarly, banking regulators, rather than relying partly on country/sovereign risk ratings in their assessments of value at risk will be able to gain new information about the riskiness of country banks and banking systems to assist them in formulating fairer levels of regulatory capital for banks within those systems.

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Appendix 1
Definitions and explanations of pure political risk components (ICRG, 2005)

Government stability ratings are an assessment of a government's ability to remain in office by carrying out declared policy plans. The subcomponents of this factor are government unity, legislative strength and popular support. According to the ICRG ratings, socio economic conditions relate to pressures that conspire to constrain government action or to fuel social dissatisfaction. The subcomponents in this category are the level of unemployment, the degree of consumer confidence and the level of poverty.

The investment profile factor affects the risk to investment not covered by other political, economic and financial components and is made up of contract viability and expropriation, profit repatriation, and payment delays.

Internal conflict is an assessment of political violence in a country and its impact on governance. The highest rating means that there is no armed or civil opposition to the government and the government does not engage in arbitrary violence (either direct or indirect) against its own people. Under this rationale the lowest scores would apply to those countries where there is ongoing civil war. The subcomponents of this risk factor are thus, civil war or coups threat, terrorism or political violence, and civil disorder.

External conflict measures are an assessment of the risk to the incumbent government from foreign action, which includes non-violent external pressure (for example, diplomatic pressure, withholding of aid, trade restrictions, territorial disputes, and sanctions) to violent external pressure (such as, cross-border disputes and all-out war). The subcomponents of this category of pure political risk are cross-border conflict, and foreign pressures.

Corruption is an internal assessment of the political system. Corruption distorts the economic and financial environment and reduces the efficiency of government and business in the way the foreign direct investment is handled. Corrupt practices enable people to assume positions of power through patronage rather than ability. By so doing, an inherent instability is introduced into the political process. Examples of corruption include special financial payments and bribes, which ultimately may force the withdrawal of or withholding of a foreign investment. However, excessive patronage, nepotism, job reservations, "favor for favors", secret party funding, and suspiciously close ties between government and business have a lot to do with corruption. A black market can be encouraged with these forms of corruption. The potential downside is that popular backlash may lead to the rendering of the country ungovernable.

Military in politics is a problem because the military are not democratically elected. Their involvement in politics is thus a diminution of accountability. Other substantial ramifications are that the military becomes involved in government because of an actual or created internal or external threat. Government policy is then distorted (for example, defense budgets are increased at the expense of other pressing budgetary needs). Inappropriate policy changes may be a result of military blackmail. A full-scale military regime poses the greatest risk. Business risks may be reduced in the short-term but in the longer-term the risk will rise because the system of governance is susceptible to corruption and because armed opposition in the future is likely. In some cases, military participation will represent a symptom rather than a cause of higher political risk.

Religious tensions emanate from the domination of society and or governance by a single religious group that seeks to replace civil law and order by religious law. Other religions are excluded from the political and social process. The risk involved in such scenarios involves inexperienced people dictating inappropriate policies through civil dissent to outright civil war.

The law and order components are assessments of the strength and impartiality of the legal system and popular observance of the law respectively.

Ethnic tensions relate to racial, nationality or language divisions where opposing groups are intolerant and unwilling to compromise.

The democratic accountability component is a measure of how responsive government is to its people. The less responsive it is the greater the chance that the government will fall. This fall will be peaceful in a democratic country but possible violent in a non-democratic country. The institutional strength and the quality of the bureaucracy is a measure that reflects the revisions of policy when governments change. Low risk in this area applies to countries where the bureaucracy has the strength and expertise to govern without major changes in policy or interruptions in government services. That is, bureaucracies have a degree of autonomy from political pressure with an established independent mechanism for recruitment and training.

Appendix 2

VAR Pairwise Granger Causality/Block Exogeneity Wald Tests
Sample: 12/31/1999 9/17/2004
Included observations: 1229

Dependent variable: USAR			
Exclude	Chi-sq	D.f	Prob.
PRUSA	**15.59349**	**2**	**0.0004**
WORLDR	2.145084	2	0.3421
All	**17.50673**	**4**	**0.0015**
Dependent variable: PRUSA			
Exclude	Chi-sq	D.f	Prob.
USAR	**12.60971**	**2**	**0.0018**
WORLDR	1.766334	2	0.4135
All	**15.67876**	**4**	**0.0035**
Dependent variable: WORLDR			
Exclude	Chi-sq	D.f	Prob.
USAR	**7.995331**	**2**	**0.0184**
PRUSA	**6.594247**	**2**	**0.0370**
All	**40.13473**	**4**	**0.0000**
Dependent variable: UKR			
Exclude	Chi-sq	D.f	Prob.
PRUK	**9.403628**	**2**	**0.0091**
WORLDR	**57.40651**	**2**	**0.0000**
All	**65.14455**	**4**	**0.0000**
Dependent variable: PRUK			
Exclude	Chi-sq	D.f	Prob.
UKR	**7.899056**	**2**	**0.0193**
WORLDR	**56.87937**	**2**	**0.0000**
All	**65.46717**	**4**	**0.0000**
Dependent variable: WORLDR			
Exclude	Chi-sq	D.f	Prob.
UKR	5.560417	2	0.0620
PRUK	**6.530350**	**2**	**0.0382**
All	**12.23297**	**4**	**0.0157**
Dependent variable: AUSTR			
Exclude	Chi-sq	D.f	Prob.
PRAUST	0.906645	2	0.6355
WORLDR	**87.71548**	**2**	**0.0000**
All	**90.03391**	**4**	**0.0000**

Dependent variable: PRAUST			
Exclude	Chi-sq	D.f	Prob.
AUSTR	0.984462	2	0.6113
WORLDR	**85.76870**	**2**	**0.0000**
All	**88.53752**	**4**	**0.0000**
Dependent variable: WORLDR			
Exclude	Chi-sq	D.f	Prob.
AUSTR	3.306344	2	0.1914
PRAUST	3.567837	2	0.1680
Dependent variable: THAIR			
Exclude	Chi-sq	D.f	Prob.
PRTHAI	0.005072	2	0.9975
WORLDR	**29.45978**	**2**	**0.0000**
All	**29.52701**	**4**	**0.0000**
Dependent variable: PRTHAI			
Exclude	Chi-sq	D.f	Prob.
THAIR	0.001737	2	0.9991
WORLDR	**29.55655**	**2**	**0.0000**
All	**29.63359**	**4**	**0.0000**
Dependent variable: WORLDR			
Exclude	Chi-sq	D.f	Prob.
THAIR	3.138372	2	0.2082
PRTHAI	2.853639	2	0.2401
All	8.155069	4	0.0861
Dependent variable: PHILR			
Exclude	Chi-sq	D.f	Prob.
PRPHIL	**6.494398**	**2**	**0.0389**
WORLDR	**32.97830**	**2**	**0.0000**
All	**39.60041**	**4**	**0.0000**
Dependent variable: PRPHIL			
Exclude	Chi-sq	D.f	Prob.
PHILR	**7.343642**	**2**	**0.0254**
WORLDR	**29.50528**	**2**	**0.0000**
All	**37.36727**	**4**	**0.0000**
Dependent variable: WORLDR			
Exclude	Chi-sq	D.f	Prob.
PHILR	1.071679	2	0.5852
PRPHIL	1.184726	2	0.5530
All	2.329420	4	0.6754

Dependent variable: MALR			
Exclude	Chi-sq	df	Prob.
PRMAL	**6.000462**	**2**	**0.0498**
WORLDR	**42.73634**	**2**	**0.0000**
All	**46.79060**	**4**	**0.0000**
Dependent variable: PRMAL			
Exclude	Chi-sq	df	Prob.
MALR	4.977093	2	0.0830
WORLDR	**41.02988**	**2**	**0.0000**
All	44.27789	4	0.0000
Dependent variable: WORLDR			
Exclude	Chi-sq	df	Prob.
MALR	1.079617	2	0.5829
PRMAL	1.384139	2	0.5005
All	11.10527	4	0.0254

Note: USAR, UKR, AUSTR, THAIR, PHILR, MALR and WORLDR denote USA, UK, Australia, Thailand, the Philippines, Malaysia and World banking system returns respectively. PRUSA, PRUK, PRAUST, PRTHAI, PRPHIL and PRMAL are the political risk ratings associated with returns for each country banking system for the USA, UK, Australia, Thailand, the Philippines and Malaysia respectively. Relevant statistically significant results for this paper are typed in bold.

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Christian Ethics, Formal Institutions, and Economic Growth

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ABSTRACT
Christians have a moral obligation to help the poor and destitute, and many Christians argue that we must exercise our moral obligation by, for example, redistributing income or by enacting price controls and minimum wages. Christians must proceed with caution when prescribing such policies: the resulting changes in incentives embodied in changed formal institutions may in fact work to the detriment of "the least of these" among us.

JEL Classification: A13, B25, D63, O1, Z12

Keywords: Christianity, development, institutions, growth, ethics, redistribution

I. THEORIES OF ECONOMIC GROWTH

The world has undergone a revolution of stupendous magnitude in the last two and a half centuries. Sustained growth of the variety seen in the Western world is historically unique; indeed, Solow and Temin (1978) note that the very phenomenon of economic growth is what separates the last few centuries from the rest of human history. The West's record in the last two and a half centuries is unmatched by anything produced by the great empires of history (Jones 1988 [2003], McCloskey 1995). The West has attained—and continues to attain—levels of wealth that previous generations would have found incomprehensible, and what it means to be "poor" in the modern industrialized world is very different from what it has meant to be "poor" throughout human history.

In an evaluation of the British experience during early industrialization, McCloskey (1995:242) writes that "the heart of the matter is twelve," specifically, the twelve-fold increase in British per-capita income that has happened since the beginning of industrialization. Other European countries and European offshoots have experienced similar changes. And yet these massive accumulations of wealth tend to be confined largely to Western Europe and its overseas offshoots. Why?[18]

Incidentally, the advent of the "age of economists" coincides with the advent of the radical changes in standards of living that constitute the aforementioned revolution. Adam Smith first published his *Inquiry into the Nature and Causes of the Wealth of Nations* in 1776, right as nations (actually people) were producing heretofore unprecedented economic advances that have since manifested themselves in exponential increases in per capita wealth. Most scholars date the beginning of the Industrial Revolution around this time or a few decades earlier.[19]

[18] The "Asian Tigers"—Taiwan, Hong Kong, South Korea, Singapore, and Japan—are a notable exception, though Hong Kong can still be considered, in many ways, an overseas extension of Great Britain.

[19] See Whatley (1997) for an account of the Scottish experience. He notes that the beginning of the Scottish Industrial Revolution has been "variously dated" at 1740, 1760, and 1780.

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It is notable that the early classical economists, many of them writing in precisely the countries where the most revolutionary changes were taking place, missed these changes (McCloskey, 1995). Over two centuries of inquiry has produced an unspectacular track record. Many of the theories we have devised over the years have failed to explain "the factor of twelve" (McCloskey, 1995).

Trebilcock (1982) devotes a chapter to the traditional growth theories of Rostow and Gerschenkron, and Romer (2001) discusses the theoretical underpinnings of conventional macroeconomics as well as the "new growth" economics. A distinguishing feature of these theories is that they explain growth largely in terms of macroeconomic policy prescriptions and technological factors: in short, they maintain that good macroeconomic policy and incentives for technological development will yield economic growth. While these theories provide us with a number of important insights regarding the wealth of nations, they have failed to account for economic performance—or the lack thereof—through time.

In this light, Douglass C. North has proposed—and a steadily growing body of empirical literature has confirmed—that institutions, more than any other factor, determine economic performance.[20] For most of the twentieth century, economic theory has focused on the mechanics of theoretical economic systems, and institutions were often peripheral to the analysis. The failure of more conventional models to account for economic performance through time coupled with the spectacular failure of the former Soviet Union has induced many economists to look to more non-traditional explanations of economic performance. In other words, physical capital accumulation, human capital accumulation, and technological change *as such* only account for a fraction of economic growth through time.[21] Something more elusive must be responsible for the economic growth of the last two and a half centuries. Standing on the shoulders of North, Coase, Williamson, and others, many economists have re-oriented their focus away from the material forces of production and toward the "rules of the economic game" as embodied in institutions.

The agenda of the "New Institutional Economics" (NIE) focuses explicit attention on a society's institutions, which North (2005:48) defines as a society's "formal rules, informal norms, and their enforcement characteristics." Institutions determine the structure of private property rights and, therefore, the cost of transacting. Research in the NIE examines the role of institutions and transaction costs within markets and organizations, and scholars working in the NIE have also made important contributions to our understanding of the evolution of human societies. We consider here an important element of North's 2005 study: the role of beliefs. Specifically, we consider how different interpretations of Christian doctrine lead us to different prescriptions for formal institutions. These differing formal institutions have implications for the Wealth of Nations: societies which have incentives that discourage production will tend to be poorer

[20] See North (1981, 1990, 1991, and 2005) as well as Davis and North (1971) and North and Thomas (1973).

[21] McCloskey (1995) discusses in detail the failure of conventional theories to explain "the factor of twelve."

in the long run while societies which have incentives that encourage production will tend to be richer in the long run.[22]

Religion—Christianity in particular—has received attention in recent studies of economic development; however, attempting to draw a causal link between "Christianity" writ large and economic outcomes is to paint with too broad a brush and to confound the issue.[23] The Weberian doctrine of the "protestant work ethic," for example, has been offered as a reason for economic development. There are different interpretations of Biblical ethics, and these different interpretations will yield fundamentally different formal institutions (with correspondingly different economic results). I restrict my focus to a debate within Christian sects and denominations about whether or not the state should forcibly redistribute wealth. The fundamental propositions of Christian ethics—love thy neighbor, care for the poor, et cetera—are uncontroversial. Controversy arises when we ask whether or not the state should intervene to promote certain social goals.

The next section defines precisely what we mean by "institutions" and sketches the mechanism by which institutions affect economic performance. Section III surveys some of the literature on the theory of the state, and section IV argues that "interventionist" and "libertarian" readings of Christian scripture will yield different formal institutions and assess the consequences of these institutions for economic performance. Conclusions and directions for future research are offered in section V.

II. BELIEFS, IDEOLOGIES, AND INSTITUTIONS

Institutions are "formal rules, informal norms, and their enforcement characteristics" which are the "rules of the game" and which determine the incentives to which people respond (North 2005:48). Institutions that give people an incentive to compete by production and exchange will be successful in that they will increase long-run standards of living. Institutions that provide incentives to expropriate and redistribute existing goods and resources will manifest themselves in decline and stagnation.[24] The correlation between economic freedom and development across countries has been explored recently by Adkins, Moomaw, and Savvides (2002) and Klein and Luu (2003), among others. Societies prosper when people have incentives to enrich themselves by

[22] See Furubotn & Richter (1998), Klein (2000), and Williamson (2000) for comprehensive surveys of the New Institutional Economics. Brock (2002) evaluates the NIE from a Christian perspective. See Acemoglu, Johnson, & Robinson (2005), Acemoglu & Johnson (2005), Adkins, Moomaw, & Savvides (2002), Klein & Luu (2003), and Rodrik, Subramanian, & Trebbi (2004) for recent empirical examples. See Miller (1992) for a discussion of institutions within the firm. North and Nye (2002) argued forcefully for a reorientation of research in economic history away from conventional cliometric methods and toward the analysis of institutions. DeLong and Summers (1992:1) state that "much of the variation in productivity growth rates cannot be traced to macroeconomic policies and must be attributed to structural and external factors." Finally, see McQuade (2000:18-88) for an excellent historical survey of the literature on institutions and economic performance.

[23] Barro and McCleary (2003) evaluate the impact of religion on economic growth.

[24] See North (1981, 1990, 2005) for extended discussions of the characteristics of desirable incentives.

producing better products and lower prices. Societies stagnate when people have incentives to enrich themselves by expropriating private property. Trade creates wealth by increasing the utility of both parties to the transaction, while transfer is, at best, a redistribution of resources from one party (who is demonstrably harmed) to another (Rothbard 1956 (1997]). Further, the political process by which expropriation and redistribution occur is itself costly (North 1990, 2005).

North focuses on institutions precisely because they are the incentive structures to which people respond and because they ultimately determine whether or not an economy succeeds or fails.[25] It is these incentive structures that determine whether or not an economy will stagnate or succeed, and it is changes in these incentive structures that determine whether or not stagnation or success will persist over time. The phenomenon that Professor McCloskey called "the factor of twelve" is a direct result of changes in the constellation of institutions that allowed entrepreneurs to flourish.[26] A country's institutional constellation has its foundation in the beliefs and ideologies of the polity, and North devotes a substantial portion of his 2005 study to the matter of how beliefs and preferences shape the performance of economies through time.

In asking "why are some people rich while other people are poor," economists necessarily concern themselves with when, where, why, and how societies "get it wrong" by experiencing starvation and stagnation or "get it right" by experiencing sustained intensive growth (North, 2005).[27] The animating question in economic history appears to be not only "why do economies grow?" but also "what prevents economies from growing?" For example, Jones' study (1988 [2003], p. xxi)

> (i)nverts the usual question, "What brought growth into being?" Instead, it proposes that a world of acute poverty there would always have been an incentive to raise the material standard of living. There would have been a propensity among some people in any society to improve their lot. The likelihood is that when circumstances favored them, or more pertinently ceased to hold them back, their efforts would reinforce one another (doubtless unintentionally) and spill over into improving the lot of their fellows. *Growth would occur unless something was checking it* (italics mine).

Jones directly addresses a question that is a central focus of North's study: how and under what conditions do we create conditions that yield institutions conducive to intensive economic growth; conversely, how and under what conditions do we create institutions antagonistic to intensive economic growth?

The necessary conditions have yet to be identified, but we know at least some sufficient conditions for economic development: secure property rights,

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[25] See the empirical literature cited above. In particular, Rodrik, Subramanian, and Trebbi (2004) are not shy in announcing that "institutions rule," and Adkins, Moomaw, & Savvides (2002) and Klein & Luu (2003) show that economic freedom is positively associated with technical efficiency.

[26] Holcombe (1998) discusses the entrepreneurial foundations of economic growth.

[27] Jones (1988 [2003]) defines intensive growth as increases in per-capita output.

certainty, and low transaction costs.[28] We don't know how these conditions obtain. Greif (2006) argues that societies that have evolved institutions amenable to impersonal exchange—in other words, institutions amenable to market economies—tend to respond well to truly novel situations and prosper accordingly, while societies that have not evolved institutions amenable to impersonal exchange—i.e., "primitive household economies"—tend to respond poorly to truly novel situations and suffer accordingly. And impersonal exchange is one of the most important "novel situations" in economic history (North, 2005).

Curiously, thousands of years of human society show us that we tend to "get it wrong" far more often than we "get it right," to use North's terminology. The story of human history has been one of a struggle against starvation, the elements, and the uncertainties of the natural world. Our historical inability to generate sustained economic growth should give us pause, and if our interest is in generating sustained economic growth, we should share North's (2005) "direct pragmatic interest" in the structure of beliefs and in the mental models that people construct to explain the world around them.

The relationship between beliefs, institutions, and (ultimately) economic outcomes constitutes an important research frontier. People form beliefs about what is good and bad, about what is just and unjust, and, importantly, about the appropriate responses to good and bad outcomes. These may lead to the development of institutions which are in fact antithetical to development because while, on the surface, they appear to satisfy appealing normative criteria, they in fact alter incentives in such a way as to encourage people to enrich themselves through political means and thereby reduce economic growth. Religions create elaborate ethical systems. These ethical systems, in turn, contain normative prescriptions about the quality of the world and the role of the state. Interpreters of Christian scripture, doctrine, and ethics have developed extensive theories about the proper relationship between God, man, and country. These have implications for how societies will be organized and, therefore, whether people will thrive or not.[29]

III. SOCIETY AND THE STATE

George Washington once compared government to fire, arguing that it is "a useful servant" and "a fearful master." North (1977, 1981) and Barzel (2002), among others, offer positive theories of the state; in particular, North (1981:21) defines the state as "an organization with a comparative advantage in violence, extending over a geographic area whose boundaries are determined by its power to tax constituents."[30] The literature on the role of the state, the character of a just society, and the nature of a person's obligation to his fellow man is

[28] As it regards sufficient conditions for growth, Mises (1949), Rothbard (1962[2001]), and Reisman (1996) argue forcefully for the optimality of the unhampered market. O'Driscoll, Holmes, and Kirkpatrick (2001), Adkins, Moomaw, & Savvides (2002) and Klein & Luu (2003) offer empirical evidence to support this hypothesis.

[29] It is certainly possible that causality runs in the opposite direction, as ideology often influences interpretation.

[30] See Nye (1997) for a discussion of the relationship between transaction costs and coercion.

ponderous.[31] One tradition holds that justice transcends the state, that the agents of the state are bound by divine law, and that the state, if it is to exist at all, is not to play an active role in economic life beyond being "a terror…to the evil (works)."[32] In short, the first position holds that Christian social theory and libertarian philosophy are virtually identical and may be called libertarian Christianity.

The second position was popularized by the Christian socialist movement of the early twentieth century and roughly embodied in the "liberation theology" and "prosperity theology" movements, holds that the state must take an active role in promoting a just society. This position is diametrically opposed to the first position and holds that Christian social theory and socialist philosophy are virtually identical and may be called socialist Christianity.[33]

To the extent that ideology helps determine an economy's institutional framework, libertarian and socialist Christianity will necessarily generate different formal institutions.[34] Not surprisingly, a world in which socialist Christians are in a position to make policy will be characterized by redistributive intervention by the state on behalf of the poor, interference with market prices, and in extreme cases the possible abolition of private property.[35] A world in which libertarian Christians are in a position to make policy will be characterized by minimal state activity (if a state exists at all).

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[31] For recent summaries and extensions of this literature, see Schansberg (2002), Soo Meng (2002), Michel (1999), de Soto (1999), and Gorga (1999). 153(1) of the *Journal of Institutional and Theoretical Economics* contains a symposium on religion and economics. See in particular Herms (1997) and the comment by Kubon-Gilke. 5(1) of the *Journal of Markets and Morality* contains the proceedings of a conference on the social thought of Abraham Kuyper & Leo XIII. De Jasay (1998) discusses positive and normative aspects of coercive intervention. Brewster (2002) and Bastiat (1848 [1996]) offer entertaining treatments of the problems and contradictions of the state, and Bastiat (1850 [1996]) discusses the relationship between religion and governance. Frey (2001) asks whether or not we can have "government" without coercion. Van Creveld (1999) offers an historical treatment of the historical evolution of the state. Ehrenreich (2001) argues for state intervention based on Christian principles, and Hamill (2002, 2003) argues for redistributive tax reform in Alabama on the basis of Judeo-Christian ethics. See Ekelund and Hebert (1997:9-89) and Rothbard (1995) for surveys of these debates as they occurred in medieval and pre-modern circles.

[32] Romans 13:3 (KJV).

[33] The phrases "libertarian Christianity" and "socialist Christianity" are used to highlight extremes. There is a continuum of interpretations between these opposite ends. The theory that "Jesus was a socialist" can be found in the writings of Francis Bellamy and other Christian socialist theologians of the late 19th-early 20th century. Mises (1922 [2000]) devotes an entire chapter to addressing the doctrines of Christian socialism in the late 19th and early 20th centuries. A Google search for the phrase "Jesus was a socialist" offers a crude measure of the popularity, force, and persistence of the idea: a search on August 31, 2006 produced 560 hits.

[34] I acknowledge that reducing the spectrum of Christian political ideology to "libertarian" and "socialist" is an oversimplification. However, for purposes of this essay, the oversimplification does not damage the central thesis: that intervention may increase uncertainty and decrease economic growth.

[35] The utopian communal settlements that dotted the American landscape in the 19th century are good examples of the role of ideological conformity in maintaining cohesive social order. Deutsch (1944) writes about ideological conformity and social cohesion in the medieval world, and both Warner (1993) and Maurer (1925) discuss the role of religion in the development of the US, and Durey (1992) offers an historical discussion of "utopian socialist" tracts. Block (1999) critiques Bethell's (1998) comments from the perspective of libertarian legal theory.

Many religious scholars and progressive commentators focus their attention not on activities that enlarge the pie, but on activities that change the way the pie is cut, with relatively little attention paid to how pie-cutting activities will alter pie-producing incentives.[36] The *imprimatur* of ideological and spiritual leaders may facilitate and encourage wasteful rent-seeking in stable societies. As Mancur Olson (1982, 1983) notes, incentives to establish rent-seeking special interest groups—who often stand to gain substantially from changes in incentives—will likely slow economic growth. It is worth quoting Olson (1983:918) at length here:

> …no society will achieve that comprehensive organization of all common interest groups that would make it possible for the leaders of all groups to baragin with one another until an efficient, core allocation of resources for the society is obtained. As time goes on in stable societies, however, more of those groups that have the potential to organize will have enjoyed the favorable circumstances and good leadership needed to get organized. Since organizations that succeed in obtaining the selective incentives needed to survive rarely disband or collapse, stable societies (which do not destroy organizations through violence or repression) will accumulate more organization for lobbying and cartelization as time goes on.

Olson continues in his next paragraph:

> Most organizations for lobbying or cartelization have no incentive to strive to make the society in which they exist more efficient or prosperous; the members of the organization will normally get only a minute fraction of the society's gains from greater efficiency, but will bear the whole cost of any effort to increase social efficiency. Normally these organizations can best serve their memberships by seeking a larger share of the social output for their members by distributional struggle—*they will be coalitions concerned about distribution rather than production* (italics mine).

In other words, rent-seeking coalitions will develop and persist in stable societies, and the actions of entrenched interests will then slow economic growth. Direct rent-seeking can be enabled by ideology: Caplan (2007) argues out that democracies choose inefficient polities not necessarily because of rent-seeking *as such*, but because of voters' "systematically biased beliefs" about economic issues. These "rationally irrational" beliefs by otherwise disinterested members of the polity imply that democratic institutions may not effectively check on rent-seeking special interests, though this is open to further testing.[37]

Religious institutions are an important source of ideological influence on economic policy. DiIulio (2004) summarizes and emphasizes what *The Catechism of the Catholic Church* calls "*preferential love*" for the poor and our

[36] I am grateful to Zagros Madjd-Sadjadi for this insight and characterization.

[37] Lindert (2004a, 2004b) argues that the relative efficiency of democratic governance induces high-transfer welfare states to adopt tax policies that are less distortionary than those in low-transfer countries.

obligation to remedy "*sinful inequalities*," noting that the *Catechism* also teaches that "(t)he decisive point of the social question is that goods created by God for everyone should in fact reach everyone in accordance with justice and with the help of charity."[38] Of course, "goods created by God" are not simply rained down like manna from Heaven. They require human intermediation, and before we ask about "the decisive point of the social question" regarding distribution, we must first solve the problem of how these goods and services are to be produced. DiIulio (2004:669) again quotes the *Catechism*: "The equal dignity of human persons requires the effort to reduce excessive social and economic inequalities. It gives urgency to the elimination of sinful inequalities" (Konstant 1994:472). Leaving aside such questions as "how much inequality is 'excessive,'" we are forced to struggle with whether intervention to remedy this inequality will be effective or necessary.[39]

Arbogast (2005) and Keckeissen (2005) argue that a misunderstanding of economic principles has been a key feature of recent Catholic social teachings. Arbogast, an energy company executive and practicing Catholic, draws our attention to US Catholic Bishops' 1986 "Pastoral Letter on Catholic Social Teaching and the U.S. Economy" entitled *Economic Justice for All*. The letter was motivated by the fact that "(e)conomic decisions have human consequences and moral content," and the Bishops who wrote the Letter are careful to point out that they "speak as moral teachers, not economic technicians" who are moved by their observation of "too much hunger and injustice, too much suffering and despair, both in our country and around the world" (US Catholic Bishops, 1986). It promoted a view of markets that Arbogast "found unnerving, even surreal;" in his words, the letter revealed "serious conceptual gaps in economics" within the body of teachings comprising Catholic Social Doctrine (Arbogast, 2005:41,42).[40]

Arbogast offers to Catholic leaders a recommendation reminiscent of James Buchanan's charge to economists.[41] Where Buchanan advised economists to consider "exchange" rather than "optimization" as the subject of their inquiries, Rather than attempt to redistribute income or interfere with market prices, Arbogast suggests that Catholic leaders focus their attention on promoting institutions and "rules of the game" that reward entrepreneurship and allow firms and individuals to fully participate in the market. Keckeissen (2005:161) concurs, pointing out that the "zero-sum" view of economic activity implicit in recent teachings—along with the view that poverty in poor countries is caused by prosperity in rich countries and the obligation to redistribute wealth—are likely to be growth-reducing.

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[38] DiIulio (2004:667-668), quoting pp. 470, 587, 588, and 590 of Konstant (1994). Emphasis is original to the *Catechism*.

[39] On whether conventional measures of inequality are appropriate or not, see Nye (2002a, 2002b).

[40] Discussion of *Economic Justice for All* relies on Arbogast (2005), who offers a full discussion and critique of the Letter. I summarize here some of his main criticisms.

[41] For statement and discussion of Buchanan's recommendations, see McQuade (2000), Heyne (2000), and Block et al. (2006).

IV. CHRISTIAN ETHICS AND INTERVENTION[42]

The Common Faith of Christianity includes a common ethical core: in addition to "One Lord, one faith, one baptism, One God and Father of all, who is above all, and through all, and in you all,"[43] Christians share a body of common ethical propositions that govern human behavior and are embodied in the Ten Commandments, the Beatitudes, and the Golden Rule.[44] It is uncontroversial to assert that we are to help those who cannot help themselves, that we are to love our neighbors as ourselves, and that we are to refrain from theft, murder, adultery, covetousness, and false witness.

The bone of contention appears not when we ask whether or not we are to love our neighbor as ourselves or whether or not we are to care for the poor, but when we ask how these virtues are to be manifested in the social environment and political arena. First, the capitalist revolution that gave rise to the Christian socialist movement of the late 19th and early twentieth century in fact worked a great benefit to the poor; however, many popular caricatures of this period suggest that it was characterized by rapacious greed and oppression, which necessitated state intervention. Second, well-intentioned formal institutions designed to redistribute wealth or control prices may in fact work to the detriment of the poor.

We know that formal rules have a pronounced impact on economic performance. They consist of the set of "thou shalts" and "thou shalt nots" decreed by the state, and different interpretations of scripture will yield different assessments of what the content of these rules should be. In the libertarian ideal, a state would be an organization that merely protects property rights in exchange for revenue—akin to the insurance company proposed by Hoppe (2001) and enforcing the commandments that "thou shalt not steal" and "thou shalt not kill." In the socialist ideal, a state acts to ensure that everyone has adequate material provision.

Christian socialists' aversion to capitalism stemmed from what they observed in the industrial economies of the United States and Western Europe. The Christian socialists of the late 19th and 20th century felt that the unequal distribution of wealth between the workers of the world and capitalist plutocrats was unacceptable. The plight of the poor cried out for social intervention.

While money incomes were certainly unequal, it does not follow from this fact that the unfettered market wrought unambiguous social injustice. Lindert (1995) and Lindert and Williamson (1983) show that the industrialization of Great Britain resulted in net welfare increases for workers, including women and children. In a collection of lectures delivered at the University of Buenos Aires in 1959 and published posthumously in 1979, Ludwig von Mises noted that the rise of

[42] A version of this section appeared in an earlier article and is used here by permission of M.M. Scrivener Press.

[43] Ephesians 4:4-6 (KJV).

[44] I stress that this common ethical core represent, as Paul mentioned in his epistle to the churches in Galatia, effects of faith rather than causes of faith.

capitalism in the 19th century provided greater opportunities for everyone. As Mises puts it,

> The famous old story, repeated hundreds of times, that the factories employed women and children and that these women and children, before they were working in the factories, had lived under satisfactory conditions, is one of the greatest falsehoods of history. The mothers who worked in the factories had nothing to cook with; they did not leave their homes and their kitchens to go into the factories, they went into factories because they had no kitchens, and if they had a kitchen they had no food to cook in those kitchens.[45]

He notes that the situation for the children was equally grim:

> (T)he children did not come from comfortable nurseries. They were starving and dying.[46]

Harold B. Jones (2005:168) describes the capitalist revolution this way:

> The poverty and economic stagnation of pre-industrial society gave way to rapid progress, child labor began to disappear long before there were any laws against it, and the common man came to enjoy a standard of living unknown even to kings a few centuries before.

The capitalist revolution of the 19th century was a great boon to the daily life of the common worker, with some of the strongest evidence coming in the form of revealed preference. As Mises notes, the move from farm to factory was voluntary. While conditions in the factory may have been repulsive by modern standards and while the choice to work in the factory may have been a Hobson's choice for many, it represented the best alternative in the eyes of the workers. Even if this boon is insufficient by some ethical criteria, it does not follow that state intervention will succeed in improving the well-being of the less fortunate.

Intervention and redistribution may be intuitively appealing: what better way to help the poor or advance equality than to take from those who have and give to those who have not? Why wouldn't Christians who believe that we should love our neighbor and care for the poor support these policies? After all, the capitalists of the 19th century and the "robber barons" of the early 20th century certainly possessed the means to provide for those less fortunate.[47]

The fundamental lesson of economics is that people respond to incentives, and a change in formal institutions (such as redistributive intervention or price control) necessarily changes the structure of incentives in the long run and may, in fact, work to frustrate the entrepreneurial mechanisms that produced

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[45] Mises (1979 [2002]), p. 7

[46] ibid.

[47] I ignore for now the obvious ethical difficulties associated with coercion. For a full discussion, see Rothbard (1982).

phenomena like "the factor of twelve." One effect of redistributive coercion may be to increase uncertainty about the structure of property rights. This will decrease the present value of potential investments and, at the margin, lead to lower levels of investment and capital accumulation. Lower investment entails a reduction in economic growth and a potential reduction in future consumption possibilities for everyone.

Second, higher tax rates may reduce economic growth. High marginal tax rates on labor will reduce one's incentive to supply labor services. This may be particularly damaging if we are taxing high-wage occupations, which tend to be occupations in which people are either augmenting a country's technological foundations (research and development, for example) or making entrepreneurial and managerial decisions regarding the investment and allocation of factors of production (executives). Reducing the return to this kind of labor may reduce productivity and efficiency.

High taxes on capital will produce similar effects. Changing the prospective return to capital will affect investment decisions. Lower investment entails a smaller capital stock, which in turn entails lower future output and growth. The effect may manifest itself largely in the form of lower wages: economic theory teaches us that in a sufficiently competitive market workers are paid their marginal value product, and their marginal value product will be an increasing function of available capital. Less capital implies a lower marginal value product, which in turn results in lower wages. We can increase current consumption in the short run, but at the expense of higher future consumption over the long run.[48]

What of the incentives for the recipients of state *largesse*? While welfare reforms of the last decade have attempted to address this issue, transfer payments reduce one's incentive to produce by diminishing his/her wage at the margin, particularly if benefits are strictly means-tested.[49] To illustrate, consider a highly simplified in which someone wakes up on Monday morning and considers whether or not to work for the week. He can earn $240 by working a 40-hour week at a fast-food job, or he can earn $250 on welfare. If he decides to work, the opportunity cost of a week of labor is $250 in welfare payments, $10 more than what he would earn by working. Even if he can earn $280 by working (and enjoy a positive marginal income of $30), the incentive to join the labor force is drastically reduced by the possibility of welfare payments.[50]

These simple models of redistribution carry an important caveat in that they assume that all else remains equal. If one considers two otherwise-identical

[48] Lindert (2004a, 2004b) notes that taxation of capital is one area in which low-social transfer countries like the United States perform poorly relative to higher-social transfer countries.

[49] Lindert (2004a, 2004b) again takes the low-social transfer countries to task, for providing weak work incentives among the poor through strict means testing.

[50] The obvious objection to this example concerns the supposed existence of involuntary unemployment. Mises (1949) and Rothbard (1962 [2001]) question the validity of this objection and note that, in the absence of state intervention restricting employment, all unemployment must necessarily be voluntary. Hutt (1954 [1995]) discusses the importance of price flexibility. The government's role in providing public goods has not been addressed here; on this, the reader is referred to Hoppe (1989a, 1999) and the essays in Cowen (1988).

economies, a country that taxes production to subsidize consumption will grow more slowly. In a bracing empirical reassessment of the relationship between social spending and economic development, Lindert (2004a, 2004b) points out that these "blackboard models" of government social spending have never appeared in the real world. *Ceteris* is rarely *paribus*, especially in a "second best" world, and Lindert uncovers an intriguing relationship between high social spending and a relatively efficient (distortion-minimizing) fiscal infrastructure. As Lindert (2006a) notes in his exchange with one of his critics, social transfers may be the least distortionary way in which governments intervene in markets.[51]

Lindert points out that the "free lunch" properties of the welfare state stem from the manner in which it is financed and administered. In contrasting the low-transfer US with high-transfer Europe, Lindert points out that American public finance is relatively clumsy in that it introduces more distortions than do European tax systems. In Lindert's (2004a:31) words:

> The European high-budget countries do not have higher average rates of taxation on capital income. They have been cautious about the double taxation of dividends. Rather, they rely more heavily on labor income taxes and on flat consumption (or value added) taxes. They also tax addiction goods (e.g., alcohol and tobacco) more heavily, thus taxing complements to health-compromising leisure. Granted, the rates of overall taxation are still higher in the high-budget countries, yet their attention to the side-effects on economic growth seems to have led them to choose types of taxes that minimize or eliminate any damage to growth, relative to the types of taxes levied in the lower-spending countries.

This does not necessarily mean that we can always redistribute our cake and eat it, too, particularly if we extrapolate into a broader international context, but it is a compelling finding that cries out for further investigation.[52] Redistribution appears to be a "free lunch" for the rich democratic countries of the OECD, but the failure of attempts to improve the lot of the world's poor by redistributing resources from rich countries to poor countries is indeed conspicuous, as William Easterly has pointed out in numerous places. If anything, the global benevolence efforts of International Financial Institutions have not only been not only inadequate. They have been counterproductive.[53]

Another form of intervention often supported on ethical grounds is price regulation, particularly maximum prices set for rental housing or goods for which demand might increase radically after a natural disaster, as well as minimum prices for labor in the form of higher minimum wages. Again, economic theory and evidence suggest that these interventions may not produce the effects

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[51] See Bergh (2006a, 2006b) and Lindert (2006a, 2006b) for a debate about Lindert's findings with respect to Sweden. Margo (2004a, 2004b) discusses Bergh (2006c) argues that trade openness and greater economic freedom have financed the welfare state in recent years.

[52] Lindert (2004a, 2004b) discusses the implications of his findings for Asian countries and Latin America.

[53] See on this Easterly (2002, 2003, 2005a, 2005b). Easterly (2006) argues that there is evidence of a causal relationship between economic freedom and economic growth. For an alternative perspective, see Sachs (2005).

desired by their advocates; in the case of maximum prices, these distort the information-transmitting function of prices and lead to shortages. Minimum wages also distort the transmission of information, and evidence suggests that minimum wages actually reduce employment.[54] Well-intentioned interventions again here harm precisely the people they are intended to help.

V. CONCLUSIONS

The relationship between beliefs, institutions, and economic growth constitutes fertile ground for future research. To the extent that ideologies and beliefs influence the structure of formal institutions, interventions espoused by some Christians may run counter to our moral obligation to the poor. Taxes on production—particularly taxes on capital—and subsidies to consumption may reduce prosperity. Moreover, interference with prices and with market adjustments, presumably in the name of justice, can lead to further distortions.

This analysis has been mute on the institutional and structural differences between the Abrahamic faiths, but comparative institutional analyses of benevolent institutions public and private in the Muslim world and the OECD would shed light on the limits of intervention. Kuran (1996, 2003) argues that the ethical and charitable requirements in Islamic law bind potentially productive resources into unproductive social-service organizations, and while Lindert (2004) argues that religion helps explain social transfers, it remains to be seen how benevolent institutions affect growth in the Muslim world. Moreover, continued Muslim immigration into Europe will likely change social and institutional dynamics; it will be interesting to see how these changes affect European social infrastructure.[55]

In summary, social reformers must look carefully at the unintended consequences of well-intentioned interventions.[56] Phenomena like "the factor of twelve" are anything but automatic; the phenomenal growth that characterizes the experience of the modern world was the result of a constellation of specific institutional factors, and ill-advised interventions are likely to harm "the least of these"[57] in the long run. Moreover, the widespread incidence of starvation and stagnation over the history of human civilization—including the 2000 years of the

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[54] See Neumark (2006) and Neumark and Wascher (2007) for comprehensive summaries of the research on the empirical effects of the minimum wage. Aaronson and French (2007) find that increases in the minimum wage lead to disemployment. In a policy study prepared for Missouri's Show-Me Institute, Neumark (2006:1) summarizes empirical evidence on the impact of minimum wages:

> The evidence from a large body of existing research suggests that minimum wage increases do more harm than good. Minimum wages reduce employment of young and less-skilled workers. Minimum wages deliver no net benefits to poor or low-income families, and if anything make them worse off, increasing poverty. Finally, there is some evidence that minimum wages have longer-run adverse effects, lowering the acquisition of skills and therefore lowering wages and earnings even beyond the age when individuals are most directly affected by a higher minimum.

[55] See Ahmad (2005) for a discussion of globalization and Islamic receptiveness to market institutions.
[56] This paragraph is adapted from an earlier essay and is used by permission of M.M. Scrivener Press.
[57] Matthew 25:40 (KJV)

Christian era—certainly suggests that we tend to "get it wrong" far more often than we "get it right," to use North's (2005) terminology. "Getting it right" in terms of establishing economic institutions conducive to economic development requires more than good intentions. It requires that we understand the downstream consequences of policy choices.

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