# DIMENSIONS OF CULTURE IN CROSS-BORDER BUSINESS LINKAGES

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## Abstract

*Several macroeconomic measures of linkages across numerous national borders are used to explore the impact of cultural distance on international business linkages. Greater distances between Hofstede's (1980) cultural dimensions are associated with lower total monetary value of several linkages, especially for power distance and individuality. The work here suggests there is cultural bias or constraint in choosing destinations of cross-border linkages. Implications of that bias include costs associated with firms that venture outside established paths.*

## Introduction

Porter (1990) acknowledged the effect of culture on economic performance, and others have shown empirically that such a relationship exists. For example, Franke, Hofstede, and Bond (1991) found that culture drives economic growth within the country. They found individualism and Confucian dynamism to be positively associated with growth and concluded that cultural characteristics were more strongly related to economic growth than level of GNP per capita, refuting the economic convergence model (Baumol, 1986). Shane (1993) found that tolerance for uncertainty, individualism, and lack of distance between hierarchical ranks are all positively associated with higher national rates of innovation.

The conclusion from previous work must be that factors other than simply economic ones drive economic decisions. Firms and nations are not seeking solely other firms in the lowest-cost nations with which to build linkages. Important historical cultural variables such as Protestantism and achievement motivation (Franke, et al, 1991) and Confucian values (Hofstede and Bond, 1988) are impacting those economic decisions as well.

With the exceptions noted above (e.g., Shane, 1993; Tucker, Jain, and Failer, 1992), researchers are only beginning to examine the *mechanisms* through which culture affects measures of macroeconomic performance. The approach in this paper begins with the argument that the aggregate of firms' strategic decisions regarding cross-border linkages is *one* of the mechanisms through which culture impacts economic performance. Cross-border linkages

are important because they translate cultural dimensions into firm activity across borders which, when aggregated, become linkages at the macroeconomic level for the nation involved. This is one of the first studies to demonstrate explicitly the aggregate mechanisms through which culture impacts economic performance. Those mechanisms are important because the accretion of individual firm strategies impacts cross-border economic relationships among nations.

There are several types of linkages among the economies of nations that reflect interorganizational linkages and entry choices. Examples are the overall foreign direct investment from one country to another, the total monetary value of all royalties paid by firms in one country to firms in another country, and the total R&D investment of one country's firms in another country. These total amounts indicate the overall value of the relationships that firms are entering.

It is important to understand the factors involved in the choice of the most effective international business relationships across national (often meaning economic and cultural) boundaries. There are at least three reasons for this. First, international relationships may act as coordination and control mechanisms for firms and, as such, may be mechanisms for the integration of the global economy. Second, ventures abroad, such as foreign manufacturing, entail large investments — even more so than in the past (Egelhoff, 1988). New entrants have no previous experience from which to draw so initial experiences may be influential in organizational learning regarding linkages. Third, the choice of linkages affect the form, structure, and size of the firm (Garland, Farmer, Taylor, 1990). As a result, experiences may become institutionalized for the firm and even for the industry and economic sector of which the firm is a part. For these reasons, international business linkages as reflected in the macroeconomic linkages has theoretical and practical relevance for transnational firms, industries and economies.

Other researchers (Benito and Gripsrud, 1992; Keck, 1992; Kogut and Singh, 1988; Tallman and Shenkar, 1994) argued that the factors related to choice of interorganizational relationship include: 1) the socio-cultural factors in the country of origin and target country; 2) the organizational characteristics of the firms involved; 3) industry characteristics; and 4) the linkage itself. For example, Kogut and Singh (1988) empirically demonstrated that firms in countries considered to have cultures more closely aligned with American culture chose entry methods that were less dependent on partnering. Further, when socio-cultural distance is great, economic factors will be overridden by cultural ones in the decision making process (Benito and Gripsrud, 1992; Keck, 1992).

## Cultural Dimensions and Macro Linkages

Socio-cultural differences in managerial style have received systematic attention recently (e.g., Adler, 1986a, 1986b; Barsoux and Lawrence, 1990;

Benito and Gripsrud, 1992; Calori and Lawrence, 1991; Hofstede, 1993; Kogut and Singh, 1988; Lachman, Nedd, and Hinings, 1994; Randall, 1993; Shenkar and von Glinow, 1994). During the decade of the 1980s, systematic evidence of management's cultural blinders has emerged (e.g., Kim and Nauborngе, 1987; von Glinow and Teagarden, 1988).

Previous studies have typically addressed distance in a general sense rather than in specific dimensions (Anderson and Gatignon, 1986; Kogut and Singh, 1988). For example, Kogut and Singh (1988) investigated cultural distance as a factor in choice of entry mode and found that cultural distance does play a role in entry mode to the US market but did not specify which dimensions of culture were most important in entry choices. In other general statements of the importance of culture, some studies are beginning to include the impact of specific cultures on international operations (Kobrin, 1987; Tung, 1987). For example, in the study of expatriate performance, Kobrin (1987) found anecdotal evidence that expatriate failures abroad are more often due, not to business conditions, but to the inability of managers to adapt to their assigned locations. More specifically, American expatriates fail more often than European or Japanese expatriates because Americans lack the international perspective of Europeans and the cross-cultural training of the Japanese.

Recognition of general cultural differences and international sophistication is important. But, it may be the cultural **distance on specific dimensions** rather than cross-cultural sensitivity, generally, that is more important in influencing location choices. This distance concept embodies not only the frequently recognized differences such as Asian versus Western and planned versus market economy but also more subtle features such as organizational structure and control as well.

Though other models of culture exist, the Hofstede (1980) model provides the conceptual and empirical basis for judging cultural distances based on four dimensions: power distance, uncertainty avoidance, emphasis on individualism, and value placed on styles defined as masculine. Hofstede's dimensions are widely used to explicitly recognize one-to-one differences between cultures. Therefore, the model proposed here is based upon Hofstede's (1980) measures of culture. For example, American firms may be more willing to invest in Great Britain than in India, Chile, or Taiwan because the difference between the cultural measures is lower between the U.S. and Great Britain than between the U.S. and India, Chile, or Taiwan. Of course, the fact that most foreign direct investment into the US is from Great Britain and the Netherlands supports this idea (e.g., US Department of Commerce, Bureau of Economic Analysis, 1995).

International business linkages of all kinds combine different organizational goals, strategy, structure, and personnel. Some conceptual work (e.g., Keck, 1992; Tallman and Shenkar, 1994) has recognized that some combinations are likely to be more effective, hence, repeated more often than others, but very little empirical work has documented this to-date. Specific differences

between originating and target cultures may play a major role in influencing which combinations end in successful long-term results that are imitated by firms from one country to another. Investigation of differences is important because cultural considerations (embodying language, type of economic system, historical background of the country, and socio-cultural characteristics) may swamp the effects of economic and industrial characteristics when cultural differences are great.

National culture is not a monolith. That is, not every member or firm in a culture can be characterized by the attributes of that culture in that there are subcultures and individual differences. There are many similarities or central tendencies, however, that may be observed in individuals and firms. Hofstede's (1980) cultural dimensions as defined by national culture are a literature-based means for assessing culture. Though there may be some weaknesses in Hofstede's (1980) measures, they provide many advantages.

Because Hofstede's (1980) work-related dimensions of culture are the basis of this theory, the relevance of each dimension is briefly described here along with its hypothesized relationship to international business linkages. The four cultural dimensions included are: power distance, uncertainty avoidance, emphasis on individualism, and value of masculinity.

Power distance refers to the issue of inequality of individuals in the society. In organizations power distance refers to the degree of centralization of authority or the degree of autocratic control (Hofstede, 1980). This dimension raises such questions in international linkages as: who maintains control of the linkage; how is control established and maintained; at what level of the organization are decisions made; how is performance evaluated — by output or by behavioral measures; and many others. As the distance between these issues increase, the less likely it is that the decision maker will choose the more distant location. Therefore, fewer individual firms choose linkages in the more distant culture, and cumulatively the overall value of linkages is lower for the two countries involved. The hypothesis is:

> Hypothesis 1a: *Greater differences in power distance between the target and originating nations are associated with lower total monetary value of each type of linkage between those nations.*

Uncertainty avoidance refers to the degree to which a society's members are socialized to live with uncertainty brought about by the fact that the future is unknown. Some societies socialize their members to accept uncertainty and not be upset by it. Other societies socialize their members to attempt to "beat the future" which creates a higher level of anxiety, emotionality, and aggressiveness (Hofstede, 1980). These characteristics suggest that individuals and firms that enter into linkages across national boundaries or cultures have issues to resolve, for example: what types of routine and nonroutine activities

are they likely to be engaged in; how much formal planning must be performed; how progress from one step to the next is evaluated; and how decisions to proceed are made. Again, as uncertainty-avoidance distance between the two cultures tends to dissuade individual decision makers from choosing the more distant culture, the overall monetary value of each type of linkage goes down for the two nations. The hypothesis is:

> Hypothesis 1b: *Greater differences in uncertainty avoidance between the target and originating nations are associated with lower total monetary value of each type of linkage between those nations.*

Individualism versus collectivism is the third dimension. This is the degree to which the individual is responsible for just looking out for one's self and immediate family. Individualism provides a great deal of freedom in the society. In other societies, individuals are taught to look after the interests of one's own ingroup and have limited personal interests (Hofstede, 1980). When organizations link across such backgrounds there may be concerns such as: the basis upon which to measure value of the endeavor — the individual's personal gain versus the firm's or the nation's; the importance of tradeoffs made between individual gain and society's gain; the degree of integration required of the individuals involved in the linkage; and others. As managers and decision makers differ more widely on these approaches, individual linkages are less likely to occur and the overall monetary value of such linkages will be lower for the two countries. The hypothesis is:

> Hypothesis 1c: *Greater differences in the value of individualism between the target and originating nations are associated with lower total monetary value of each type of linkage between those nations.*

Masculinity versus femininity, the fourth and final dimension, refers to value placed on certain styles and to the division of **social** roles between genders in society. Because social role divisions are more or less arbitrary, Hofstede refers to those soci-eties with a high degree of division as masculine and societies with a low degree of division as feminine. Related to this division is the value placed on the characteristics of each. That is, showing off, performing, making money, achieving something visible, etc are all valued highly in masculine societies while putting people before money, not showing off, etc are all valued in feminine societies. For organizations, this means that rewards for individuals go to those who match the dominant values. Further, decision making systems will exhibit dominant values. In international linkages similar concerns arise: what will the strategic positioning be — first-mover versus follower, etc; what will be the primary concerns — individual

development versus profitability; and others. Again, the distance between preferred styles will affect individual decisions and cumulatively result in lower overall monetary value of all linkages. The hypothesis is:

> Hypothesis 1d: *Greater differences in the value of masculinity versus femininity between the target and originating nations are associated with lower total monetary value of each type of linkage between those nations.*

**Specialized strengths to enter linkages**

Some cultures are less likely to succeed in linkages across cultural boundaries in general. For example, Kobrin (1987) argued that Americans fail in expatriate assignments more to difficulty in cross-cultural adjustment than to business conditions. If this is the case, American managers may be expected to have fewer and lower value cross-border linkages than managers from other countries. Hofstede (1980) suggests that firms from cultures that have lower uncertainty avoidance will acquire more cross-cultural sensitivity, **ceteris paribus**. Therefore, firms from cultures that have lower uncertainty avoidance will enter into linkages of all kinds and even vague, unstructured tasks such as Research and Development more frequently than firms from cultures that seek to avoid uncertainty. Because the US has a relatively low uncertainty avoidance score compared to other nations, one would expect the American managers to have higher cross-cultural sensitivity, and higher-valued linkages, not lower. This extension from Hofstede places Hofstede's and Kobrin's assessments in conflict. Hofstede's suggestion is explicitly hypothesized here in the context of cross-border linkages. The hypothesis is:

> Hypothesis 2: *Lower uncertainty avoidance of individual nations will be associated with greater values of all linkages, especially less-structured ones.*

## Methods

**Sample**

Data available in Foreign Direct Investment in the United States and U.S. Direct Investment Abroad used in the study are reported only at the level of national economies and only for those with linkages to the US. This may create a bias in the results in that only linkages to and from the US are included. However, there are also advantages in that the data used are consistent and comparable because they come from one data source.

The economic data were combined with the work-related cultural values developed by Hofstede (1980). Data for which economic linkages and Hofstede's measures were both available resulted in a maximum sample of 22 countries. Countries included in the final sample include 13 West European

countries, and Australia, New Zealand, Japan, Taiwan, Canada, Brazil, Venezuela, Israel, and the US. Linkages between countries in either direction are included.

**Measures-Dependent variables**

Though several types of linkages could be included, the following were available from the data sources: foreign direct investment, income, and return from the investment; capital inflows; royalty payments and receipts from licensing and from services other than those included in licensing; and R&D expenditures. Descriptions of the dependent variables are summarized from the two sources from which the data were taken: 1) Foreign Direct Investment in the United States, 1990; and 2) U.S. Direct Investment Abroad, 1985. These sources report values for 1987 and 1982, respectively. All values for these variables are reported in millions of dollars per capita to standardize the results by size of the economy. In keeping with commonly used methods, natural logs were taken of the standardized values and were used as the final form of the dependent variables.

**US foreign direct investment abroad** was collected from the U.S. Direct Investment Abroad (1990). Investment abroad is US parents' equity in, and net outstanding loans to, their foreign affiliates. This is viewed as the US parents' contribution to total assets of the foreign affiliate. **US foreign direct investment income** is that which can be directly attributable to the US parent's contribution. **US return on foreign direct investment** is a Return on Investment (ROI) — income divided by investment.

**Foreign investment in the US, Foreign direct investment income**, and **Foreign return on investment in US** are analogous to US foreign direct values. For these variables, investment abroad is investment by foreign affiliates in the US.

**Expenditures for R&D in the US by foreign affiliates** were taken from Foreign Direct Investment in the United States (1885). The value used here is for R&D expenditures in all industries from each country included in the sample.

**R&D by US firms abroad** and **foreign R&D in US** are a measure of research activity, whether it was done for themselves or for others. Both measures of R&D expenditures represent the extent to which vague or indefinite tasks have been entered into by firms from each country represented.

**Royalty payments** and **royalty receipts** are direct investment royalties and licensing fees. **Payments** are **to** US firms and **receipts** are **from** foreign affiliates (U. S. Direct Investment Abroad, 1990). **Service payments** and **service receipts** are for miscellaneous arrangements other than direct investment royalties and licensing fees. **Royalty and service payments** are **to** US firms and **royalty and service receipts** are **from** foreign affiliates (U. S. Direct Investment Abroad, 1985). These measures represent more specific, definite, and contract-oriented arrangements, and as such, contrast to the vague, more indefinite arrangements of the R&D expenditure measures.

**Foreign capital inflow** (to the US) consists of equity capital inflows, reinvested earnings, and intercompany debt inflows. Equity capital inflows are net increases in foreign parents' equity in their US affiliates, whether incorporated or unincorporated. Reinvested earnings of US affiliates are earnings less distributed earnings after capital gains and after US income taxes. Intercompany debt inflows consist of the increase in US affiliates' net intercompany debt payables to their foreign parent during the year. This measure reflects change from one year to the next.

**US capital inflow** (to other countries) is defined comparably to foreign capital inflow except that each component flows in the opposite direction from foreign capital inflow.

**Measures-Independent variables**

Whereas Kogut and Singh (1988) used a composite measure of cultural distance, the measures here are individual dimensions. This allows for comparison of the effects of the distance between each cultural dimension. While, uncertainty avoidance is often pointed to as the most important dimension (e.g., Anderson and Gatignon, 1986; Kogut and Singh, 1988), this study tests whether this is the case.

Measures of the four work-related cultural dimensions were taken directly from Hofstede (1980). These four dimensions (power distance, uncertainty avoidance, individualism, and masculinity) were discussed in the theory section and will not be individually described here. Rather, a summary description of the values used will be described.

The values for all the dimensions range from zero to 100 with higher values representing stronger, more apparent occurrences of the cultural trait. That is, higher scores represent more power distance among people, more uncertainty avoidance, more emphasis on the individual rather than the group, and more value on showing off or performing, etc. (or masculinity, to use Hofstede's term). One set of analyses uses these actual-value scores (Table 1).

The **distance measure** on each dimension is simply the absolute value of the difference between the score for the US and the nation of the affiliate - whether that nation entered the US or the US entered that nation. One set of analyses uses these distances.

**Analyses**

Analyses of the data included simple correlations and ordinary least squares for each of the dependent variables. Both actual values of Hofstede's measures and the distance values described in the Measures section were used as independent variables in separate regressions. Variance inflation factors were used to verify that there was no significant multicollinearity among the cultural values in any of the models.

**Table 1**
**Countries and Culture Values That Are in Study**

| Country | Power Distance | | Uncertainty Avoidance | | Individualism | | Masculinity vs. Femininty | |
|---|---|---|---|---|---|---|---|---|
| | Index | Rank | Index | Rank | Index | Rank | Index | Rank |
| Australia | 36 | 13 | 51 | 17 | 90 | 49 | 61 | 35 |
| Austria | 11 | 1 | 70 | 26-27 | 55 | 33 | 79 | 49 |
| Belgium | 65 | 33 | 94 | 45-46 | 75 | 43 | 54 | 29 |
| Brazil | 69 | 39 | 76 | 28-30 | 38 | 25 | 49 | 25 |
| Canada | 39 | 15 | 48 | 12-13 | 80 | 46-47 | 52 | 28 |
| Denmark | 18 | 10-12 | 23 | 3 | 74 | 42 | 16 | 4 |
| Finland | 33 | 8 | 59 | 20-21 | 63 | 34 | 26 | 7 |
| France | 68 | 37-38 | 86 | 36-41 | 71 | 40-41 | 43 | 17-18 |
| Germany | 35 | 10-12 | 65 | 23 | 67 | 36 | 66 | 41-42 |
| Great Britain | 35 | 10-12 | 35 | 6-7 | 89 | 48 | 66 | 41-42 |
| Ireland | 28 | 5 | 35 | 6-7 | 70 | 39 | 68 | 43-44 |
| Israel | 13 | 2 | 81 | 32 | 54 | 32 | 47 | 23 |
| Italy | 50 | 20 | 75 | 28 | 76 | 44 | 70 | 46-47 |
| Japan | 54 | 21 | 92 | 44 | 46 | 28-29 | 95 | 50 |
| Netherlands | 38 | 14 | 53 | 18 | 80 | 46-47 | 14 | 3 |
| Norway | 31 | 6-7 | 50 | 16 | 69 | 38 | 8 | 2 |
| New Zealand | 22 | 4 | 49 | 14-15 | 79 | 45 | 58 | 34 |
| Philippines | 94 | 47 | 44 | 10 | 32 | 21 | 64 | 39-40 |
| Spain | 57 | 23 | 86 | 36-41 | 51 | 31 | 42 | 15-16 |
| Sweden | 31 | 6-7 | 29 | 4-5 | 71 | 40-41 | 5 | 1 |
| Switzerland | 34 | 9 | 58 | 19 | 68 | 37 | 70 | 46-47 |
| Taiwan | 58 | 24-25 | 69 | 25 | 17 | 10 | 45 | 20-21 |
| United States | 40 | 16 | 46 | 11 | 91 | 50 | 62 | 36 |
| Venezuela | 81 | 45-56 | 76 | 28-30 | 12 | 4 | 73 | 48 |

Source: Hofstede, G. "National Cultures in Four Dimensions." International Studies of Management and Organization 13(1-2) (1983):52

## Results

Table 2 presents the descriptive statistics and correlations for the independent and dependent variables. Table 2 shows that the measures of both actual and distance measures of cultures are frequently correlated with the dependent measures of linkages; distance is significantly correlated slightly more often. Although not all the correlations between distance and the linkage variables are significant, many of them are, and all in the predicted direction except for return on investment. Return on investment may not be negatively correlated with distance values because returns can be negative. Partially supporting the hypotheses, differences in power distance and individualism are negatively correlated overall with the value of the linkages.

## Table 2
## Correlations with Descriptive Statistics

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US income abroad[a] (1) | | | | | | | | | | | | | | | | | | | | | |
| US investment abroad[a] (2) | +.97*** | | | | | | | | | | | | | | | | | | | | |
| Foreign income in US[a] (3) | +.78*** | +.80*** | | | | | | | | | | | | | | | | | | | |
| Foreign investment in US[a] (4) | +.73*** | +.76*** | +.97*** | | | | | | | | | | | | | | | | | | |
| US R&D expenditure abroad[a] (5) | +.66*** | +.72*** | +.92*** | +.90*** | | | | | | | | | | | | | | | | | |
| Foreign expenditure in US[a] (6) | +.84*** | +.85*** | +.79*** | +.76*** | +.76*** | | | | | | | | | | | | | | | | |
| Royalty payments to affiliates[a] (7) | +.76*** | +.71*** | +.80*** | +.76*** | +.75*** | +.78*** | | | | | | | | | | | | | | | |
| Royalty receipts from affiliates[a] (8) | +.63* | +.60* | +.56 | +.53* | +.53* | +.42 | +.47 | | | | | | | | | | | | | | |
| Service payments to affiliates[a] (9) | +.86*** | +.90*** | +.84*** | +.77*** | +.77*** | +.82*** | +.72*** | +.83*** | | | | | | | | | | | | | |
| Service receipts from affiliates[a] (10) | +.52* | +.61** | +.77*** | +.72*** | +.75*** | +.74*** | +.52* | +.84*** | +.56* | | | | | | | | | | | | |
| US capital inflow[a] (11) | +.81*** | +.79*** | +.68** | +.52* | +.42 | +.53* | +.46* | +.44 | +.69** | +.40 | | | | | | | | | | | |
| Foreign capital inflow[a] (12) | +.65** | +.67*** | +.93*** | +.94*** | +.82*** | +.65** | +.66** | +.51 | +.68** | +.62** | +.45 | | | | | | | | | | |
| Annual US returns abroad[a] (13) | -.02 | -.25 | -.23 | -.24 | -.32 | -.18 | +.11 | -.19 | -.29 | -.45* | -.15 | -.17 | | | | | | | | | |
| Annual foreign returns in US[a] (14) | -.08 | -.11 | -.13 | -.38 | -.31 | -.15 | -.36 | +.00 | -.22 | -.18 | +.26 | -.35 | +.14 | | | | | | | | |
| Power distance[b] (15) | -.72*** | -.68*** | -.71** | -.71*** | -.66*** | -.66*** | -.71*** | -.33 | -.61** | -.38 | -.44 | -.68*** | -.04 | +.46 | | | | | | | |
| Uncertainty avoidance[b] (16) | -.35* | -.34 | -.27 | -.20 | -.25 | -.10 | -.22 | -.49 | -.45* | +.17 | -.28 | -.17 | -.00 | -.02 | +.32 | | | | | | |
| Individualism[b] (17) | -.70*** | -.69*** | -.77*** | -.62** | -.67*** | -.76*** | -.87*** | -.19 | -.72*** | -.44 | -.49* | -.48* | +.06 | +.12 | +.67*** | +.32 | | | | | |
| Masculinity[b] (18) | -.02 | -.10 | +.22 | +.20 | +.14 | -.03 | +.17 | -.19 | -.02 | -.13 | -.30 | +.22 | +.36 | -.20 | -.23 | +.00 | -.07 | | | | |
| Power distance[b] (19) | -.45* | -.38 | -.66** | -.44* | -.50* | -.44* | -.59** | -.44 | -.47* | -.17 | -.31 | -.47 | -.23 | +.18 | +.56** | +.29 | +.56** | -.26 | | | |
| Uncertainty avoidance[b] (20) | -.29 | -.27 | -.35 | -.25 | -.26 | -.13 | -.30 | -.45 | -.45 | +.14 | -.21 | -.14 | -.05 | -.09 | +.27 | +.79*** | +.39 | -.23 | +.41 | | |
| Individualism (21) | -.50*** | .49*** | .37*** | -.40** | -.19 | -.22 | +.55*** | -.56** | .32 | -.52** | -.24 | -.27 | -.15 | +.28 | +.65*** | -.47** | +.72*** | .08 | -.67*** | -.31 | |
| Masculinity (22) | -.11 | -.03 | -.10 | -.09 | -.09 | -.07 | -.17 | -.06 | -.18 | +.13 | +.18 | -.01 | -.33 | -.15 | +.21 | +.22 | +.22 | -.76*** | +.22 | +.38 | -.22 |

N= 23
*** $p \leq .001$
** $p \leq .01$
* $p \leq .05$

**Table 2**
**Correlations with Descriptive Statistics (continued)**

| | Mean | Standard Deviation | Number |
|---|---|---|---|
| US income abroad[a] (1) | +3.95 | 1.20 | 23 |
| US investment abroad[a] (2) | +5.76 | 1.24 | 23 |
| Foreign income in US[a] (3) | +2.40 | 2.14 | 16 |
| Foreign investment in US[a] (4) | +5.14 | 1.98 | 23 |
| US R&D expenditure abroad[a] (5) | +0.36 | 2.65 | 23 |
| Foreign expenditure in US[a] (6) | +0.93 | 1.48 | 23 |
| Royalty payments to affiliates[a] (7) | +1.01 | 1.80 | 23 |
| Royalty receipts from affiliates[a] (8) | -2.86 | 1.36 | 15 |
| Service payments to affiliates[a] (9) | +0.85 | 1.64 | 21 |
| Service receipts from affiliates[a] (10) | -0.16 | 2.02 | 20 |
| US capital inflow[a] (11) | +3.21 | 1.46 | 19 |
| Foreign capital inflow[a] (12) | +3.58 | 2.13 | 21 |
| Annual US returns abroad[a] (13) | -1.81 | 0.29 | 23 |
| Annual foreign returns in US[a] (14) | -2.92 | 0.59 | 16 |
| Power distance[b] (15) | +17.04 | 13.34 | 23 |
| Uncertainty avoidance[b] (16) | +20.61 | 14.56 | 23 |
| Individualism[b] (17) | +28.96 | 21.09 | 23 |
| Masculinity[b] (18) | +19.17 | 17.52 | 23 |
| Power_distance (19) | +43.48 | 21.66 | 23 |
| Uncertainty avoidance (20) | +61.04 | 20.48 | 23 |
| Individualism (21) | +62.04 | 21.09 | 23 |
| Masculinity (22) | +50.91 | 23.72 | 23 |

a: log of per capita values
b: absolute value of distance

### Actual-value models

Eight of the sixteen regression models using the actual values of cultural dimensions were significant (Table 3). The coefficient for Hofstede's uncertainty dimension was not significant in any of the actual-value models. Hypothesis 2 is not supported when looking at international linkages at the level of the national economy. This conflicts with previous conclusions of significance such as in Kogut and Singh (1988).

In the actual-value models, only individualism is typically significant with positive standardized coefficients. These results suggest that higher levels of individualism are associated with more investment abroad, more R&D expenditure abroad, and more royalty and service payments. The individualism dimension is the only consistently significant actual-value measure. This suggests that cultures more oriented toward personal gain are involved in greater values of all kinds of linkages.

### Distance models

Though not all distance models are significant, the results of the regression analyses provide partial support for the hypotheses (Table 3). First, the

## Table 3
## Regression Results+
## (Standardized Coefficients)

| | US Income Abroad | US Invest-ment Abroad | Foreign Income in US | Foreign Invest-ment in US | Foreign R&D in US | US R&D Abroad | Royalty Payments to Affil | Royalty Receipts from Affil | Service Payments to Affil | Service Receipts from Affil | Foreign Capital Inflow | US Capital Inflow | Annual US Return Abroad | Annual Foreign Return in US |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Distance Models | | | | | | | | | | | | | | |
| Power Distance | -0.48** | -0.46** | -0.30 | -0.52** | -0.36* | -0.38* | -0.23 | 0.13 | -0.16 | -0.29 | -0.62** | -0.30 | -0.02 | 0.80** |
| Uncertainty Avoidance | -0.08 | -0.07 | -0.03 | 0.05 | 0.29** | 0.01 | -0.10 | -0.60 | -0.21 | 0.39 | 0.03 | -0.06 | -0.03 | -0.09 |
| Individualism | -0.36* | -0.37* | -0.54* | -0.28 | -0.62*** | 0.42*** | -0.75*** | 0.01 | -0.52*** | -0.36 | -0.07 | -0.28 | 0.11 | -0.44 |
| Masculinity | -0.15 | -0.22 | 0.04 | 0.06 | -0.18 | 0.03 | 0.06 | -0.18 | -0.08 | -0.21 | 0.10 | -0.31 | 0.36 | 0.02 |
| N | 22 | 22 | 15 | 22 | 22 | 22 | 22 | 14 | 20 | 19 | 20 | 18 | 22 | 15 |
| F | 7.594*** | 7.267** | 5.044** | 5.415*** | 10.684*** | 5.198*** | 18.579*** | 0.977 | 5.344*** | 2.107 | 3.631** | 2.164 | 0.708 | 1.266 |
| Actual-Value Models | | | | | | | | | | | | | | |
| Power Distance | -0.09 | -0.00 | -0.29 | -0.15 | -0.08 | -0.19 | -0.16 | -0.04 | -0.06 | 0.07 | -0.35 | -0.09 | -0.36 | 0.22 |
| Uncertainty Avoidance | -0.02 | -0.05 | -0.07 | 0.01 | 0.19 | 0.02 | 0.08 | -0.56 | -0.21 | 0.31 | 0.13 | -0.07 | 0.13 | -0.13 |
| Individualism | 0.65*** | 0.70*** | 0.59* | 0.55** | 0.80*** | 0.59** | 0.81*** | -0.06 | 0.62*** | 0.64** | 0.32 | 0.44 | -0.29 | 0.07 |
| Masculinity | 0.06 | 0.14 | 0.16 | 0.06 | 0.05 | 0.07 | 0.01 | 0.22 | 0.05 | 0.17 | 0.07 | 0.24 | -0.37 | -0.20 |
| N | 22 | 22 | 15 | 22 | 22 | 22 | 22 | 14 | 20 | 19 | 20 | 18 | 22 | 15 |
| F | 4.419** | 4 .337** | 5.275** | 2.954** | 7.249*** | 4.155** | 15.961*** | 0.809 | 5.128*** | 1.852 | 1.726 | 1.522 | 1.213 | 0.272 |

+ The author uses the term foreign because US government documents use this term to refer to all non-US sources. $r^2$ is not reported because it is not appropriate for the panel data used here.

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

models for investment and income abroad, US R&D expenditures abroad, R&D expenditures in the US, and royalty and service payments to affiliates are all significant. Between 34 and 58 percent of the variance in these models is explained by cultural distance.

Using the distance measures, two types of linkages do not have statistically significant models. First, **return** on foreign investments is not significant though the amounts of the foreign investment and income from foreign investments are significant. This may be because the measure used, ROI, is a short-term measure of return and may not be representative of relationships that take many years to become profitable. A long-term measure of return may be needed to assess the value of these linkages between countries.

A second type of model that was not significant were the royalty and service payments **from affiliates** (while royalty and service payments **to affiliates** were significant). This may reflect a bias in the data in using only US data. That is, some other selection bias may be operating in those countries that seek to license and purchase services in the US. Wider data collection may help resolve this possible bias in the data.

With two exceptions, the significant distance coefficients are all in the predicted direction. Standardized coefficients are reported for each model so that the relative importance of each cultural dimension may be assessed. Each distance variable will be discussed separately.

Virtually the same linkage models are significant in the distance set as the ones in the actual-values set. However, the significant coefficients in the two sets of analyses are different. Whereas only individualism is significant in the actual-values models, both power distance and individualism are significant in the distance models.

The difference in power distance is significant in seven of the fourteen linkages. Overall, the greater the differences in power distance between the two cultures, the lower is the dollar value of the linkage. Indicating one of the two strongest effects of all the cultural dimensions, the differences in power distance are often the largest standardized coefficients in each model.

The difference in individualism is consistently significant (in the models that are significant overall). The coefficient for distance in individualism is significant for US investment and income abroad, foreign income in the US, R&D in the US and abroad, and for royalty and service payments. The hypothesis for this cultural dimension is supported overall. It was hypothesized that the greater the distance in individualism between host and home country, the less the value of the linkages. The results for distance between individualism suggest that this cultural dimension may be very important in future investigation.

Uncertainty avoidance was significant in only one distance model and not in the predicted direction. The lack of significance of this variable is intriguing given that uncertainty avoidance receives so much attention from cultural literature (Anderson and Gatignon, 1986; Kedia and Bhagat, 1989; Kogut and Singh, 1988) as well as from the decision-making literature.

The hypothesis for the distance between orientation toward masculine versus feminine characteristics was not supported in any of the models. The lack of results here may result from the potential confounds of gender role and value of traits labeled as masculine.

## Discussion

The purpose of the study was to investigate the role of culture in choices of international business linkages. It was predicted that greater distances between cultures would lead to lower overall linkages across those cultures. That the distance between cultural measures are significant more often than the actual-value measures of culture partially supports the overall arguments made here. That is, cultural distance influences linkages more than either cultural sensitivity in general or the specific attributes of the culture from which the firm is operating.

The results here also provide an opportunity to assess which dimensions may be more influential than others in linkage choices. The study here shows that *differences* in the power and the individualism dimensions are most significant and deserve the most attention in future studies. Previously, authors have emphasized uncertainty avoidance but have only studied the absolute values rather than distance between cultures or have converged all the dimensions without evidence that they operate in similar patterns (e.g., Kogut and Singh, 1988).

A possible future extension of the results is to investigate **which** type of linkage is chosen by specific firms from each of these national cultures. One possible question might be the extent to which cultural distance affects the type of linkage chosen or which is chosen more frequently than another.

The difference in power distance had a strong, consistently negative relationship with the value of the studied linkages. Given that the difference in power distance was so consistently strong and significant in this study, there may be many valuable routes to pursue in studying the types of control mechanisms firms from each national culture employs. At least for linkage decisions among nations, the way managers perceive the hierarchy, power, and control mechanisms may be a significant aspect of choosing partners and markets, or the mechanisms through which managers deal with those partners.

The results for distance in power distance suggest that there are many ramifications for firms seeking to establish linkages across borders. Firms that follow preexisting routes may have a history that will greet them. First, the ways in which linkages are structured may need careful analysis in that the needs of both partners must be designed and balanced with those of the other. Choice of which party will maintain control of the relationship could lead to expectations of partner requests such that firms may be seen as originating from nations requiring controlling interest, equal partnership interest, and/or minority interest. If firms from more distant cultures perceive too much or too

little hierarchy and/or control, negative experience may result. Bad publicity, avoidance of future linkages, institutionalization of suspicion toward firms from the outside country could result for the outside firm and/or nation. Such cultural barriers could lead to legal or practical limitations on relationships available to other firms searching for advantageous locations.

Firms can develop a reputation for linkages with other firms, and may be sought out or avoided. For example, Unilever and Corning are known for their successful linkages (Bartlett and Ghoshal, 1989). When this happens across borders, not only is the firm's reputation developed, but that of the nation as well. An example of a cross-border effect on reputation might be the Indonesian automobile industry's hesitance in entering collaborative arrangements with American auto makers while preferring European auto makers.

The second ramification of the results relates to decisions about the level at which decision making and control reside. As those expectations vary across borders, practical limitations on relationships may again emerge.

The results for the distance between individualism in the US and other nations was also very significant. The differences in orientation toward personal versus group gains in linkages could have many ramifications for managing linkages with and entries into other countries. The results suggest that potential differences in the assessment of which parties will gain in the linkage and how the gain will be distributed seem to have pervasive effects on the total monetary value of linkages across nations. Given that differences in individualism has such a strong effect, it may be that the structure of decisions (how uncertainty is avoided) is less important than the differences in how gains are expected to be distributed. That is, expectations may be as important as actual economic arrangements. Because, cultural characteristics may sometimes overwhelm economic ones, conditions under which the result here is obtained must be examined.

The lack of significance of the difference in uncertainty avoidance was surprising. It was expected that this dimension would be particularly important in linkages because uncertainty avoidance impacts the type and amount of planning, the types of activities that individuals perform well, etc. This cultural dimension was only significant for foreign R&D in the US, and it is associated with larger values of payments. Given that uncertainty reduction has played such a significant role in previous work (e.g., Kogut and Singh, 1988), future research could address the reasons why uncertainty is not significant at the aggregate level. The results here suggest that, holding all other cultural dimensions constant, uncertainty reduction is relatively unimportant in the economic decisions studied. This is surprising given that uncertainty is closely aligned with economic variables such as rational expectation, etc.

The results for masculinity are most difficult to interpret. First, there seem to be two separate factors being measured by this dimension: 1) the distance between gender roles in the culture; and 2) the value placed on masculine-labeled characteristics. The lack of results may occur because the US seems

to be in the middle of the range of scores for this dimension (masculinity = 62), and, as a result, positive and negative distance scores wash out any results. On the other hand, the lack of any significant results may indicate that linkages built in cultures with "feminine" styles are successfully executed because the "feminine" partners are using cooperative behaviors that neutralize the distances that would otherwise be a problem. The lack of results requires further examination to suggest possible theoretical explanations.

## Conclusion

This paper addressed aggregate cross-border linkages of firms between the US and several other countries and investigates the impact of cultural distance between country of origin and target country. The paper differs from previous studies for three reasons. First, the national aggregate of strategic organizational activity across borders was the unit of analysis rather than the firm-to-firm relationships used in studies such as Benito and Gripsrud (1992) and Kogut and Singh (1988). Second, cross-border linkages are considered the mechanisms that drive the impact of culture on economic activity performance. Third, the study assessed specific dimensions of culture rather than an index.

This study has several implications for managers and decision makers. First, cultural bias or constraint in establishing and investing in linkages was demonstrated — firms from all studied countries tended to choose linkages to countries with the closest cultural dimensions. This aggregate result implies that firms may be likely to choose linkages along established paths because other firms have done so. Future analysis could assess whether firms that choose to go outside the established paths experience benefits or disadvantages. For example, firms may incur higher costs and higher strategic penalties. On the other hand, they may discover culturally-based factors of strategic advantage overlooked by economic analyses. Further, researchers may address whether firms who do not use established paths seize the benefits for themselves or whether followers of their strategies benefit more.

Although this study has begun to combine cultural bases of economic behavior with linkages across national boundaries, there are several limitations that provide further opportunity for future extensions of this research. First, no economic nor organizational factors were entered as theoretical or control variables. Second, none of the variables have been measured at the level of the firm. Third, more nations and other types of linkages must be included. Fourth, only one model of culture has been used. While some consider Hofstede's (1980) model controversial, it is also the most widely accepted. Therefore, while the chosen model of culture may have weaknesses, it also has many advantages of measurability, acceptability, and availability.

The limitations provide opportunities for future study. One avenue for addressing the impact of culture on organizational level linkage decisions would include both organizational culture as well as national culture in determinants

of linkages. Although not directly related to this study, a second organizational stream is suggested. A valuable research agenda would also include the development of dimensions of organizational culture that could be applied to nations in the same way individual responses were used to construct Hofstede's cultural characteristics. This would address concerns of some researchers who believe there is a mismatch between Hofstede's cultural dimensions and aggregate firm behavior.

Finally, effective strategic management requires more than economic analysis. Recognition of culture is needed in what has traditionally been considered economic decisions. Cultural knowledge can become a tool of strategic choice when cultural factors are explicitly recognized for their impact on choices among cross-border linkages. The study here has shown that, similar to economic analyses, cultural analyses can be "serious business" even when they are implicit.

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