

Patriotism in Your Portfolio

Adair Morse and Sophie Shive*

July 6, 2004

Abstract

More patriotic countries and more patriotic U.S. regions hold smaller foreign equity positions. As measured by three World Values Survey waves covering 39 countries, patriotism explains an additional 5% of the equity home bias beyond the effects of transaction barriers, diversification, information, and familiarity. The estimate is economically important: the average country invests \$31 billion more abroad with one standard deviation drop in patriotism. This paper is the first to document that loyalty affects investment decisions.

*Doctoral Students, University of Michigan Business School, Department of Finance. Corresponding author: Adair Morse, 701 Tappan Street, Ann Arbor, MI 48109-1234. Tel. 734-973-7791 Fax. 734-647-8133 E-mail adairm@umich.edu. We wish to thank Nicholas Barberis, Geert Bekaert, Anusha Chari, Lauren Cohen, Artyom Durnev, Herman Kamil, Lynnette Purda, Linda Tesar, Nejat Seyhun, Paige Ouimet, Tyler Shumway, Luigi Zingales, and seminar participants at the University of Michigan's Departments of Economics and Finance and the Georgia Tech International International Finance Conference for their valuable comments.

Why do people bet on home sports teams despite unfavorable odds? Why do workers allocate retirement savings to their employer's stock despite having their human capital invested in the firm? And why do investors over-weight their portfolios with domestic stocks? In *The Economics of Discrimination*, Becker (1957) establishes that discrimination bears a cost which the free-market should be unwilling to pay. In this paper we are concerned not, as Becker was, with discrimination against people, but with discrimination toward home entities. In particular, investors discriminate in favor of domestic stocks in their portfolios.

The disproportionately large allocation of a country's aggregate equity investment to domestic assets is known as the equity home bias.¹ Asset pricing models predict that an investor should hold the world market portfolio of all countries in proportion to each country's market capitalization and should even invest away from the home country to hedge returns to human capital (Baxter and Jermann, 1997). Country portfolios with small domestic holdings are, however, simply not observed. It is not surprising that Obstfeld and Rogoff (2000) categorize the home bias as one of "the six major international macroeconomics puzzles".

The literature offers four principal explanations for the home bias: the presence of transactions barriers, lack of attainable diversification benefits, information asymmetries between local and foreign investors, and familiarity biases.² A simple explanation has been omitted. Could it be that investors' patriotic loyalty toward their country explains part of the equity home bias? This paper explores the role of patriotism in explaining the equity home bias after controlling for the effects of existing theories. The hypothesis is that more patriotic investors choose to invest more of their portfolio at home.

Why would patriotism distort portfolio allocations? Consider the bettor choosing

¹French and Poterba (1991), Tesar and Werner (1995), and Pastor (2000). See Lewis (1999) for a survey of the home bias.

²Two other explanations should be added to this list. Dalquist, Pinkowitz, Stulz and Williamson (2003) show that the availability of equities for outside investors, as measured by the amount of closely held shares in the country can explain some of the variation causing the home bias. Guiso, Sapienza and Zingales (2004) offer evidence that trust between a country's citizens encourages investment flows.

her team, and the employee choosing a pension allocation. To some, the thought of betting against a home team or shorting employer stock may seem disloyal. To others, the home team and the company stock are incorrectly perceived as the best bet. The same patriotism-induced loyalty can be considered for international diversification decisions.

We construct patriotism scores from the University of Michigan's World Values Survey. The survey asks individuals in 53 countries whether they are proud to be a national of their country. Using the country average of responses as a measure of patriotism, we show that patriotism is significant in explaining the percentage of foreign equities in a country's total equity holdings. After controlling for the standard explanations for home bias, patriotism explains 5% of the variation in foreign equity holdings. A one standard deviation decrease in patriotism is associated with a \$31 billion rise in foreign equity holdings for the average country in the sample.

We also find strong support for the transactions barrier explanation of the home bias and weaker support for familiarity. We show that the economic impact implied by a change in investment barriers or familiarity is large.

We perform a series of tests to confirm the robustness of our findings. We find that higher patriotism scores are associated with lower foreign holdings in the nine U.S. census regions. We instrument patriotism with measures of duty and nationalism from the World Values Survey and document that instrumented patriotism is significant in explaining foreign holdings. We find no evidence that investors extrapolate past country returns nor that patriotism is induced by recent past economic performance. Omitted gravity variables of size and income are significant, but do not bias our patriotism coefficient. Countries with poorer institutional quality invest a smaller percentage of their equity position abroad even though legal origin does not affect aggregate foreign holdings; these effects are, however, distinct from patriotism's role in the home bias.

The remainder of the paper is organized as follows. The first section presents anecdotal evidence and discusses the mechanism for why and how patriotism might

affect foreign holdings. Section 2 introduces patriotism and its measurement. Section 3 describes the home bias measurement and briefly highlights prior explanations and their measurement. In Section 4, our main results are presented showing patriotism negatively significant in explaining the home bias. Section 5 contains a variety of robustness tests, including tests on simultaneity, measurement error and omitted variable biases. The last section concludes.

1 Why Patriotism?

Patriotic investing is not a new phenomenon. In the United States, the promotion of government bonds using patriotic rhetoric dates back at least to the Civil War, when war bonds served to finance the Union effort. After the September 11th attacks, Series I and EE Treasury Bonds were renamed ‘Patriot Bonds’, and their sales rose to \$6.6 billion, a 43% increase over the previous year (Sulon, 2001). Patriotic investing is not restricted to government securities. Following September 11, 2001, the U.S. markets remained closed for a week, and much speculation ensued as to how far the indices would drop. Individuals and mass media employed patriotic rhetoric to encourage investors to hold on to their stocks, a losing proposition.³

These anecdotes lend confidence to the notion that investors might heed calls to patriotic behavior. If portfolio allocations are affected, the greater implication is that patriotism alters market equilibrium.

Why the home bias? The existing explanations of transaction barriers, risk, information advantages and familiarity have not fully accounted for the magnitude of the home bias. Our hypothesis predicts that patriotism causes investors to over-invest at home. This section addresses the loyalty mechanism through which patriotism im-

³The *Boston Globe* related a story of an individual who “wondered what would happen ‘if every red-blooded American... bought a few shares of their favorite stock on Monday’” (September 18, 2001). A November 2001 article in *Money* criticizes the call for a ‘patriot rally’ to prop up the market on the day it re-opened after September 11, 2001 (Frederick, 2001). In a November, 2001 *Spectrem* survey of affluent investors, 52% of respondents said they would show their patriotism by making investments in U.S. companies.

pacts portfolio selection.⁴ In the closest study to ours, Guiso, Sapienza and Zingales (2004) find that trust matters for bilateral economic exchange. In as much as trust of one's own setting induces loyalty, we study a detailed context of varying trust of oneself. EEEEEH

Sports betting and employees' 401(k) asset allocation are closely related home-focused choice puzzles that can help us understand how patriotism affects the decision to invest. Consider an amateur sports bettor. If she is risk averse and derives non-pecuniary utility from a home victory, expected utility theory predicts that she will hedge by betting on the opposing team. Contrary to this prediction, individuals tend to bet on their home team, even with unfavorable odds (Gray and Gray, 1997). Strumpf (2003) observes that illegal bookmakers must tilt the odds against home team bets in an attempt to balance their books.

The pattern is similar for 401(k) portfolio allocations. People invest disproportionate amounts of their discretionary 401(k) retirement assets in their own company stock. For example, Benartzi (2001) finds that Coca Cola employees allocate 76% of their discretionary contributions to Coca-Cola shares.⁵ Only 16.4% of respondents believed that their company stock was more risky than a diversified portfolio. The observed 401(k) allocations strongly contradict mean-variance theory by failing to diversify away a firm's idiosyncratic risk.⁶ Even worse, employer stock is the asset most correlated with an employees's human capital, and thus a rational agent should short employer stock, not hold large quantities of it.

One intuitive explanation for home team betting and 401(k) phenomena is familiarity (Boyle et al, 2003). Proximity to the home team or firm may enable the investor to understand the distribution of expected returns, thus lessening ambiguity aversion. In these arenas, loyalty and familiarity offer similar predictions. In the only other

⁴To our knowledge, we are the first paper to address loyalty in economic behavior, concurrent with Cohen (2004).

⁵He also finds that past returns influence, but do not fully explain, these decisions: employees extrapolate past returns in their decisions to invest in company stocks. The retirement fund of Coca-Cola as a whole allocated 90% of its value to the firm stock.

⁶See, e.g. Huberman and Sengmiller (2002).

paper to our knowledge which tackles loyal behavior affecting investment decisions, Cohen (2003) shows that employees invest less in their firm if it is a conglomerate and offers evidence that loyalty is a driving force behind employee investment in their own firm.⁷ In the case of patriotic investing, we are able to disentangle loyalty from familiarity. It is clear that citizens are most familiar with their own countries⁸, but this natural location-induced familiarity is not related to the divergence of patriotism across countries. In this paper, we show that loyalty is at least partly responsible for home biased investment behavior.

Patriotic feelings, or loyalty towards a home country, can affect investment choices in both steps of an investment decision-making process: evaluating the performance of a security and making a portfolio allocation decision. We first address the effect of loyalty in the allocation decision. Investors may correctly estimate the mean-variance characteristics of a home stock, team or firm but be driven by loyalty to over-invest in it. As explained in Akerlof (1983), local loyalty may bring tangible benefits, such as jobs, improved infrastructure,⁹ or tax receipts from local corporations, some of which may be returned to the investor. The following anecdote provides an example.

A central bank in an emerging economy hired a new director of the employees pension fund. After studying the portfolio, the new director approached the head of the central bank with an international diversification strategy. The central bank head quickly rejected the plan, explaining that the fund investment was not to go abroad because the country needed capital for growth.

Allocation decisions may be influenced by loyalty even if there is no monetary externality associated with such investment. Investing at home may generate utility in the form of the approval of others and the feeling of contributing to society, and this may reduce regret if the investment has low or negative returns. *Business week* captures the September 11th loyalty investment sentiment in the following quote:

⁷In conglomerates, each dollar of investment is spread among all divisions in the conglomerate, and thus dilutes the investment in the home firm.

⁸Or in the case of Groznik and Bhattacharya (2002), immigration may imply that residents may be more familiar with particular other countries' markets.

⁹Huberman (1997) shows that people invest a large portion of their portfolios in their local phone company.

Patriotism is especially evident when it comes to the financial services sector. Suddenly, buying stocks in a down market is a duty.¹⁰

In essence, loyalty enters the utility function, whether or not the home entity benefits from the investment. Over-allocating to home entities generates non-pecuniary utility created by pride or social acceptance.

The second way in which loyalty can affect investment decisions is by biasing investors' estimates of the risk-reward characteristics of a home investment proposition. According to Kahneman and Lovallo's (1993) 'inside view' bias, loyal insiders may identify strongly with an organization and may find it difficult to hold an independent view on the expected returns to company stock. Investors may have similar trouble evaluating their home market or home team objectively. Selective thinking caused by an inside view could elicit either overestimation of the mean return (optimism) or underestimation of the associated risk (overconfidence).

Kilka and Weber (2000) provide survey evidence that German and American students overestimate their own country's future performance, and Strong and Xu (2003) find home bias among fund managers in countries around the world. Tesar and Werner (1995) estimate that the lack of diversification due to the home bias could be explained by a 620 to 800 basis point over-estimation of domestic returns. Optimism can feed on itself; investors can be convinced that their home market is superior and selectively ignore contradictory evidence.¹¹ Heath and Tversky (1991) find evidence that overconfidence increases with familiarity.¹²

By relating patriotic investing to home betting and 401(k) allocations, this section has outlined the importance of loyalty and the ways in which it can affect investment. The next section discusses how patriotism can be measured.

¹⁰Diane Bradley, *Business Week* November 8, 2001

¹¹For more on belief perseverance and confirmatory bias, see Rabin (1998).

¹²Overconfidence is explored for example in Odean, (1999) and Barber and Odean, (2000). The "illusion of control" (Langer 1975), in which people treat chance events as controllable, may cause investors to perceive lower risk due to their influence on the outcome.

2 Measuring Patriotism

Patriotism measures come from survey data across 53 countries from the World Values Survey, conducted during three waves, 1990-1992, 1995-1997, and 1999-2001.¹³ An average of nearly 1,000 adults over the age of 18 were interviewed face-to-face in each of an unbalanced panel of countries. Our primary measure of patriotism is the mean country score of individuals' responses to the question: "*How proud are you to be [substitute nationality]?*". Table I lists the country patriotism scores by survey wave. During the 1990s, the average patriotism scores increased marginally. The 1990-1992 survey dispersion suggests that New World countries are more patriotic than Old World countries, but the larger 1995-1997 and 1999-2001 survey means are more diverse within income and location groupings.

It is possible that the pride measure of patriotism is correlated with omitted economic factors or that measurement error might be in some way systematic across countries. Thus, the analysis also presents results with instrumented patriotism. The choice of proper instruments draws from Smith and Jarkko (1998), who examine national pride across 23 countries and five decades using the International Social Survey Program's National Identity Survey. They find that half of respondents felt that their country was better than all others, and a third believed that one must support his or her country even if it is in the wrong. Patriotic love for one's country can manifest itself in Kantian form of duty to the country or in a nationalistic animosity toward other countries. Utilizing these two different incarnations of patriotism, we choose two other world values survey questions as instruments. As a measure of duty patriotism, we utilize country scores to the yes or no question: "*Would you be willing to fight for your country?*". The nationalistic patriotism measure is the country score to the question: "*Do you think employers should give jobs to nationals first over immigrants?*". The correlations between our primary measure of patriotism and the duty

¹³The survey is conducted and held by the Inter-University Consortium for Political and Social Research at the University of Michigan. The survey provides the year for each country's survey within the wave. Thus, we match equity holdings data for the prices year of the survey.

and nationalism measures are 0.30 and 0.28 respectively. A summary of all variables, their sources, and summary statistics is included as Appendix A.

3 Measuring Home Bias and Explanations

Our measure of the home bias is the percentage of foreign equity held in a country's aggregate equity portfolio.¹⁴ A country's aggregate equity portfolio is calculated as the market capitalization plus foreign equities held by residents minus domestic equities held by foreigners.¹⁵ Foreign equity holdings and liabilities are drawn from the IMF-IFS database. Market capitalization data are from the World Bank's World Development Indicators (WDI) database.

While the original survey includes 53 countries, the availability of patriotism scores and foreign holdings restricts our sample to 78 observations, encompassing 39 countries. In order to complement the evidence from this sample, we collect foreign investment data for the nine United States Census regions from the 1997 Survey of Consumer Finances. The World Values Survey provides respondent region data, allowing us to match patriotism with regional foreign investment averages.

There are four standard explanations for the equity home bias – transaction barriers, improperly measured diversification benefits, information advantages and familiarity. This study's goal is to offer evidence that patriotism can explain variation in the home bias beyond that for which the standard explanations account. Hence, we need aggregate measures for each of the standard explanations.

Transaction barriers should negatively affect foreign investment, somewhat like a tax paid on the absolute value of the holdings of foreign stocks (Stulz, 1981). Barriers may be restrictions on capital outflows or frictions in repatriation of capital gains and dividends. The home bias literature generally concludes that transaction barriers are

¹⁴A precise measurement of the home bias itself, and not the foreign holdings position, would require imposing a model of the optimal holdings of foreign equity. We prefer to address the lack of foreign holdings as a gauge of the home bias rather than to impose a noisy optimal structure.

¹⁵Our results remain if we simply normalize foreign equity holdings by market capitalization.

significant in impeding flows but are not economically large in explaining the bias.¹⁶ We measure transactions costs with an indicator of Capital Account Restrictions from the *IMF Exchange Arrangements and Exchange Restrictions Annual Reports*.¹⁷

The second standard home bias explanation is the lack of an effective diversification benefit. An investor may choose to invest abroad to diversify away financial risk, and the benefits to doing so should vary by country (e.g., French and Poterba, 1991). The extent of these diversification benefits is difficult to estimate, however, because correlations between countries tend to increase in bear markets.¹⁸ The risk-reward tradeoff is measured by country Sharpe ratios, constructed using three years of prior monthly returns for market indices from Datastream.¹⁹

The third common explanation for the home bias is informational disadvantage concerning foreign equities or, equivalently, informational advantage for the home market. Empirical evidence building on the differential information models of Merton (1987) and Brennan and Cao (1997) suggests that information affects portfolio holdings. Using Korean data from 1997-1998, Choe, Kho, and Stulz (2000) find that domestic individuals, but not domestic institutions, have a small information advantage over foreign investors. Choe et al's finding is at odds with Froot, O'Connell and Seasholes (2000), who show that daily international flows can forecast future equity returns, suggesting that foreign investors may have superior information. For U.S. data, Coval and Moskowitz (2001) show that mutual funds earn abnormal returns when they invest in nearby firms. Goetzmann, Massa and Simonov (2003) provide evidence that investors in professional city centers have more information about specific stocks; as a result, however, they under-diversify. Our measure of information asks whether superior knowledge about home markets is vindicated with higher per-

¹⁶See Cooper and Kaplanis (1994), Tesar and Werner (1995), Errunza, Hogan and Hung (2000), Glassman and Riddick (2001) and Fourth, Ahearne, Grier and Warnock (2001).

¹⁷One could measure barriers in terms of liberalization of capital markets (Bekaert and Harvey, 2000; Chari and Henry, 2003). However, liberalization studies tend to consider only the opening of a market to flows from abroad, not outflows of investment. Additionally, Bekaert and Harvey's (2000) collection of financial liberalization dates all pre-date our first survey period 1990-1992.

¹⁸See Ang and Bekaert (2002).

¹⁹We also construct a modified Sharpe capturing past returns to currency positions, but this variable only increases the noise in measurement.

formance.²⁰ If part of the home bias is due to investors' privileged information about their own country's returns, the home bias should be positively related to the one year future returns.

The final standard explanation for the home bias is a lack of familiarity with foreign investment opportunities. The home bias could simply reflect the fact that people dislike ambiguous situations and underweight choices with unknown distribution of outcomes (Heath and Tversky, 1991). Grinblatt and Kelogjaru (2001) find that Finnish investors prefer assets governed in the Finnish language. Bhattacharya and Groznic (2002) find that U.S. outward investment into a country increases with the income of the U.S. immigrant population from that country. Interestingly, the authors find that the level of investment in foreign countries is unrelated to language or physical distance, which should affect information acquisition. Following the principles in Groznic and Bhattacharya (2003), our familiarity measure is the percentage of the population that is foreign born, taken from the WDI database.

In robustness tests, we check whether our significant relationship between foreign equity holdings and patriotism suffers from endogeneity concerns. In that our patriotism coefficient may be capturing the insular nature of some countries relative to others, a gravity model is implemented, utilizing income and size variables from the WDI database and a measure of respondent town size from the WVS. Patriotism may also be capturing variation in foreign holdings attributed to institutional quality differences. Thus, we utilize expropriation risk from the EIU and legal origin data from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) to capture institutional differences. Additionally, to measure interest group influence, we utilize a WVS question: *"Does the government act for the benefit for a few interest groups or the public at large?"*.

²⁰All countries in our study are extremely home biased, and all markets cannot be above average in performance. Yet, we can still ask whether home biased investors have superior information about their market.

4 Empirical Results

The central finding of the paper is depicted in Figure 1, a partial plot of foreign equity holdings, after removing the effects of barriers, diversification, information and familiarity, against patriotism. The plot is pooled for the three survey waves, with a survey wave effect removed. Figure 1 suggests a decreasing linear relation between patriotism and foreign equity holdings.

Table II reports the regression results corresponding to Figure 1. In column 1 of Table II, we regress foreign equity holdings on the four standard explanations for the home bias, controlling for year fixed effects and ignoring patriotism. Using panel-corrected robust standard error, we find support for the transaction barriers and familiarity explanations of the home bias. As barriers increase, foreign equity investment falls. Conversely, as the percentage of population that is foreign born increases, foreign investment declines. Although diversification benefits and information are not significant in our regressions, it may be that our measures are noisy or that our aggregate data are not sufficiently rich to identify the effects. Neither the Sharpe ratio nor future returns is, however, significant in unreported univariate estimations.

In column 2, a univariate regression, with survey fixed effects, indicates that patriotism by itself is negatively linearly associated with foreign holdings.²¹ More importantly, our central result appears in column 3 of Table II, where we report that patriotism remains significant in explaining the home-biased variation in foreign holdings, even when controlling for the four standard explanations.²² The association between familiarity and the home bias is negated once patriotism is included, highlighting the closeness of familiarity and loyalty biases. The partial R-Square explained by patriotism in column 3 is 5%.

²¹Note that our observations drop from the prior column, and we cannot include year effects as the patriotism survey data is prohibitive. Throughout the remainder of the paper, we always include survey wave effects to remove panel inconsistencies created by time effects.

²²The significance of patriotism holds irrespective of the inclusion of potential outliers. No variable has a DFBeta larger than 0.50. Cook's distances and DFFits measures are within reasonable limits.

Figure 3 aids in understanding the economic significance of our findings. We use the estimates for transaction barriers and foreign population from column 1, along with the standard deviations reported in the Appendix to consider the impact on foreign holdings. For the average country in the study, 7% of the population is foreign born, with a standard deviation of approximately 7% as well. According to the estimates, if the foreign born percentage for the average country fell to zero, foreign holdings would increase by \$27 billion, from \$105 billion to \$132 billion. The effect is even larger for transaction barriers. A decrease in the average country's barriers, which coincidentally also takes the barriers to zero, increased foreign holdings for the average country by \$58 billion. Using the coefficient on patriotism from column 3, and the patriotism score standard deviation of 0.32, the model suggests that a standard deviation decline in patriotism, approximately a 10% change from its mean, increases foreign holdings for the average country by \$31 billion.

Three conclusions arise from this section. First, patriotism is significant in explaining the home bias, controlling for measures capturing the standard explanations. Second, the results present strong evidence for the role of transaction barriers, some evidence for the role of familiarity, and no evidence for risk or superior information in explaining the home bias. Third, patriotism has an economically significant effect on foreign equity holdings.

5 Robustness

The remainder of the paper addresses possible concerns of consistency of our estimates. In particular, we are concerned that patriotism might be systematically measured with error, correlated with an omitted economic variable associated with the home bias, or explained by an outside covariate that also explains the home bias. In none of the subsequent tests do we find the significance of patriotism eroded.

5.1 Measurement Error: IV and Heckman Tests

If the World Values Survey, patriotism scores are imprecise measures of country loyalty, our results should be subject only to attenuation bias and thus conservative in testing our hypothesis that loyalty influences portfolio selection. There is little reason to believe the error would be correlated with other explanatory variables; however, we can ensure that our claims are valid by instrumenting patriotism. As mentioned in the patriotism measurement section, we draw from political science theory in using WVS measures of country duty (willingness to fight) and nationalism (job priority given to nationals) as instruments.

In the first stage of our 2SLS procedure, both of our instruments significantly covary with patriotism yielding an R-Square of 0.32. We present the estimation result of the second stage as column 4 of Table II. Instrumented patriotism remains negative and significant in explaining the home bias, although at a lower significance level. Familiarity again regains significance, suggesting that both loyalty and familiarity may impact portfolio decisions.

A possible concern with the measurement of patriotism results from identifying who invests in equities. During the bull market in the United States, only 24% of wage earners under \$30,000 held stock, while 84% of Americans with income over \$75,000 maintained equity portfolios (Langer, 2001). Clearly, the divergence grows even larger for poorer countries in which disposable income for the poorer half of the population is limited. Since the more affluent account for the majority of stock holdings, it may be that our patriotism score does not capture the sentiment of upper income respondents. We re-run our analysis restricting the WVS responses to reflect only the upper half of income earners in each country. Our results are not materially different except that the magnitude of the patriotism coefficient is consistently larger.

In a related concern, it may be that our foreign equity holdings measurement is systematically biased.²³ A Heckman selection test fails to reject that country

²³We know that the measures of equity holdings often are residual calculations in national accounts and may be interpolated to the best ability afforded by central bankers' data.

selection is independent of GDP and market capitalization with respective p-values of 0.62 and 0.21. However, the Heckman test only addresses the choice of countries being biased and not inherent errors in the measurement. Presenting evidence with alternative sources of data would reinforce the claim that poor measurement of foreign equity holdings is biasing estimates against us. An even stronger test would be if we could present evidence that varying patriotism within a country would impact foreign holdings propensities. We obtain patriotism data from the 1995-97 WVS for nine regions in the United States and compare them to foreign equity holdings reported in the 1997 Survey of Consumer Finances. We use household income as a proxy for net worth and normalize foreign holdings by this figure. Foreign holdings are plotted against patriotism in Figure 2.²⁴ The more patriotic regions of the United States – West South Central, Mountain and West North Central – invest the least in foreign equities.

5.2 Simultaneity and Omitted Variables

Could it be that a country's residents grow differentially patriotic because of varying economic prosperity created by markets or economies? If so, patriotism and foreign holdings may be determined simultaneously. Using LIBOR as the risk-free rate, we construct the one, three and five-year lagged excess market returns for each country in our sample. In an unreported regression, we find that lagged returns do not explain the proportion of foreign equity holdings, either by themselves or as an offset to patriotism. These returns also do not explain the patriotism score.

The final robustness concern is that the prior instrumental analysis does not control for all possibilities of endogeneity; the instruments may still be correlated with an omitted variable whose variation is being captured by patriotism. We introduce two sets of additional variables, gravity variables and institutional variables. The gravity model draws from the following logic. Even though foreign holdings variable is measured in percentage terms, larger countries may offer more opportunities for

²⁴Unfortunately, the nine observations only offer graphic suggestive analysis.

investment, creating more insular investing. Patriotism may be correlated with largeness as country pride may grow with achievements only possible in large countries or with the insulating effect of size.

We use two measures to capture these insular effects – country size in kilometers squared and the size of the town for the average survey respondent. We also include a measure of per capita income in this estimation to control for investment opportunities and for the ability of citizens to have excess disposable income for investment. The results in column 1 of Table III show that income and size are very important for foreign holdings. More income associates with greater foreign holdings. Size is inversely related to foreign holdings. The magnitude of the patriotism coefficient does not change, and in fact, it grows more statistically significant.

Is patriotism simply capturing a correlation of country pride and good institutions? Dahlquist, Pinkowitz, Stulz and Williamson (2003) find that expropriation risk affects the choice of destination country for U.S. outward investment. We test whether poor domestic investor protection causes a fleeing of investment abroad or a resistance to foreign opportunities, possibly due to high private benefits of control available domestically. More directly, our concern is that institutional effects might be the association with foreign holdings that patriotism has been capturing. Following Dahlquist et al (2003) and LaPorta, Lopez-de-Silanes, Shleifer and Vishny (1998), we use legal origins and expropriation risk to capture the relevant institutional quality.²⁵ We also employ a WVS question of whether the government acts to serve a few select interest groups rather than the public at larger.

Columns 3 and 4 of Table III show that our central patriotism results are not simply capturing the omitted institutional quality effect. The legal origin variable does not explain foreign equity holdings. However, both expropriation risk and interest groups variables are negatively associated with foreign holdings. Both variables are constructed to increase in expropriation, implying that countries with weaker in-

²⁵We cluster legal origin into Common Law countries, French law countries and other due to degrees of freedom issues concerns.

stitutions have more severe home biases. Patriotism, however, remains significant. We conclude that governance may indeed be influencing the portfolio allocations of investors across countries, but this interesting finding does not erode any of the significance of patriotism.

6 Conclusion

In the first (to our knowledge) study of the effect of country loyalty on investment, we find that investors in more patriotic countries hold smaller foreign equity positions. Supporting this finding, investors in more patriotic U.S. regions hold less foreign equity. This result is robust to controls for transactions barriers, risk, information, and familiarity, which our study is able to distinguish from loyalty. We find strong support for transaction barriers and weak support for familiarity in explaining the home bias. Inclusion of patriotism accounts for 5% in additional variation of foreign holdings explained. A 10% decrease in patriotism is associated with a rise in foreign equity holdings of \$31 billion for the average country in the sample.

Our results are robust to tests of endogeneity. Neither instrumenting patriotism with the WVS measures of country duty and nationalism nor including past country index returns negates the significance of our patriotism result. We find evidence that domestic investors in poor governance countries choose to invest at home, possibly to take advantage of private benefits of control.

Two implications can be drawn from our study. The first is that ‘patriotic’ behavior appears to have a large part in explaining the phenomenon that manifests itself in the home team bias, the 401(k) investment allocations, and the equity home bias. The second implication of this study is that policies aimed at reducing the home bias may be less successful in countries where investors prefer not to invest abroad because they are patriotic.

Patriotism results in a winner’s curse in the sense that the person valuing a stock most highly will ultimately be the highest bidder in any auction. The citizens of a

country will likely be the highest bidders for their own country's assets, thus possibly driving up the price (and capitalization) of their own market. In a more general equilibrium setting, people invest disproportionately at home, but a portion of this over-investment is offset by the home biased choices of other countries. This may push prices upward in more patriotic countries, and downward in less patriotic countries. As in Barberis and Thaler (2002), however, price distortion does not necessarily point to a "free lunch". Holding domestic equities may enter directly into the utility function. Thus, if one were to hold the mean-variance efficient portfolio in lieu of the home bias portfolio, one's utility may be lower. Prices may be unaffected if there exists a group of deep pocketed arbitrageurs who are not affected by patriotism and understand the market capitalization biases caused by countries' home biases.

The effect of patriotism may also explain the home bias in consumer products. Lewis (1999) finds that the equity home bias and the home bias in consumption are linked. Concurrently, Bennett and Young's (1999) theoretical model suggests that optimal portfolios should be biased towards equities in commodities that attract a large share in its consumption expenditure.²⁶ An interesting future stream of research will explore whether the effect of patriotism on the equity home bias comes via consumption choices, and whether patriotism has the potential to affect prices.

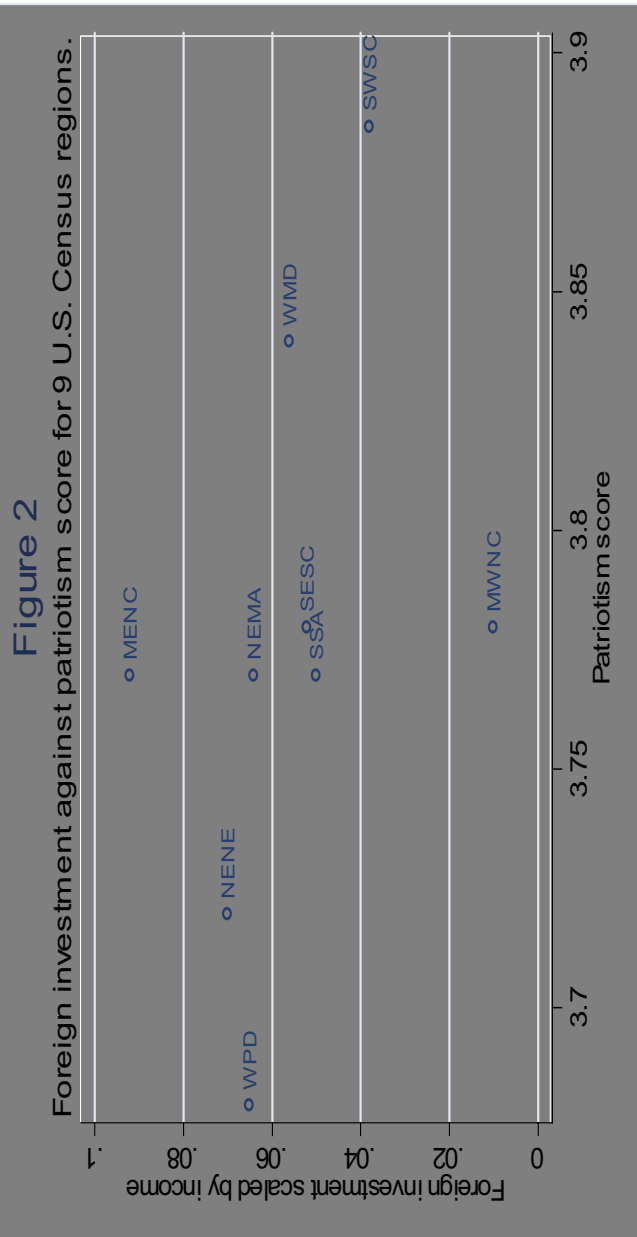
²⁶This is controversial: Uppal's (1993) theoretical model suggests that it is unlikely.

References

- Ahearne, Allan, William Grier, and Francis Warnock, 2001, Information costs and home bias: An analysis of U.S. holdings of foreign equities, *Federal Reserve Board, International Finance Division, Working Paper 691, Washington, D.C.*
- Akerlof, George, 1983, Loyalty filters, *American Economic Review* 73, 54–63.
- Ang, A., and G. Bekaert, 2002, International asset allocation with regime shifts, *Review of Financial Studies* 15, 1137–1187.
- Barberis, Nicholas, and Richard Thaler, 2003, *A survey of behavioral finance: Forthcoming, Handbook of Economics of Finance*. (North Holland) Edited by George Constantinides, Milton Harris and René Stulz.
- Baxter, Marianne, and Urban Jermann, 1997, The international diversification puzzle is worse than you think, *American Economic Review* 87, 170–180.
- Becker, Gary, 1957, *The Economics of Discrimination, Second Edition*. (University of Chicago Press, Chicago, Illinois).
- Bekaert, Gert, and Campbell Harvey, 2000, Foreign speculators and emerging equity markets, *Journal of Finance* 45, 565–613.
- Benartzi, Shlomo, 2001, Excessive extrapolation and the allocation of 401(k) accounts to company stock, *Journal of Finance* 56, 1747–1764.
- Bennett, James, and Leslie Young, 1999, International stock market equilibrium with heterogeneous tastes, *The American Economic Review* 89, 639–648.
- Bhattacharya, Utpal, and Peter Groznik, 2002, Melting pot or salad bowl: Some evidence from U.S. investments abroad, *University of Indiana Working Paper*.
- Brennan, Michael, and Henry Cao, 1997, International portfolio investment flows, *Journal of Finance* 52, 1851–1880.
- Chari, Anusha, and Peter Blair Henry, 2003, Stock market liberalization and the repricing of systematic risk, *Forthcoming, Journal of Finance*.
- Choe, Hyuk, Bong-Chan Kho, and René Stulz, January 2001, Do domestic investors have more valuable information about individual stocks than foreign investors?, *National Bureau of Economic Research Working Paper*.
- Cohen, Lauren, 2003, Loyalty-based portfolio choice, *University of Chicago Working Paper*.
- Cooper, Ian, and Evi Kaplanis, 1994, Home bias in equity portfolios, inflation hedging and international capital market equilibrium, *Review of Financial Studies* 7, 45–60.
- Coval, Josh, and Tobias Moskowitz, 1999, Home bias at home: Local equity preference in domestic portfolios, *Journal of Finance* 54, 2045–2074.

- Coval, Josh, and Tobias Moskowitz, 2001, The geography of investment: Informed trading and asset prices, *Journal of Political Economy* 109, 811–841.
- Dahlquist, Magnus, Lee Pinkowitz, René Stulz, and Rohan Williamson, 2003, Corporate governance and the home bias, *Journal of Financial and Quantitative Analysis*, forthcoming.
- DeBondt, Werner, 2000, A portrait of the individual investor, *European Economic Review* 42, 831–844.
- Demirguc-Kunt, Asli, and Ross Levine, 2001, *Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development* MIT Press, Cambridge, Massachusetts chap. Bank Based and Market Based financial systems: Cross country comparisons.
- Errunza, Vihang, Ked Hogan, and Mao-Wei Hung, 2000, Can the gains from international diversification be achieved without trading abroad?, *Journal of Finance* 54, 2075–2107.
- Frederick, Jim, 2001, National securities, *Money* 30, 31.
- French, Kenneth, and James Poterba, 1991, Investor diversification and international equity markets, *American Economic Review* 81, 222–226.
- Froot, Kenneth, Paul O’Connell, and Mark Seasholes, 2001, The portfolio flows of international investors, *Journal of Financial Economics* 59, 151–193.
- Grinblatt, Mark, and Matti Keloharju, 2001, Distance, language, and culture bias: The role of investor sophistication, *Journal of Finance* 56, 1053–1073.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2003, People’s opium? religion and economic attitudes, forthcoming in the *Journal of Monetary Economics*.
- Harvey, Cambell, 1995, The risk exposure of emerging equity markets, *World Bank Economic Review* pp. 19–50.
- Heath, Chip, and Amos Tversky, 1991, Preference and belief: Ambiguity and competence in choice under uncertainty, *Journal of Risk and Uncertainty* 4.
- Huberman, Gur, 2001, Familiarity breeds investment, *Review of Financial Studies* 14, 659–680.
- Huberman, Gur, and Paul Segmüller, 2002, Company Stock in 401(k) plans, *Columbia Business School Working Paper*.
- Kahneman, Daniel, and Dan Lovallo, 1993, Timid choices and bold forecasts: A cognitive perspective on risk taking, *Management Science* 39, 17–31.
- Karolyi, Andrew, and René Stulz, 2003, *Are financial assets priced locally or globally? Forthcoming, Handbook of Economics of Finance*. (North Holland) Edited by George Constantinides, Milton Harris and René Stulz.

- Kilka, M., and M. Weber, 2000, Home-Bias in International Stock Return Expectations, *Journal of Psychology and Financial Markets* 1, 176–193.
- Langer, Ellen, 1975, The illusion of control, *Journal of Personality and Social Psychology* pp. 311–328.
- Langer, Gary, July 17 2001, Market gyrations brings jitters, *ABCnews.com*.
- Lewis, Karen, 1999, Trying to explain home bias in equities and consumption, *Journal of Economic Literature* 37, 571–608.
- Obstfeld, Maurice, and Kenneth Rogoff, 2000, The six major puzzles in international macroeconomics: Is there a common cause?, *NBER Macroeconomics Annual* 15.
- Pastor, Lubos, 2000, Portfolio selection and asset pricing models, *Journal of Finance* 55, 179–219.
- Rabin, Matthew, 1998, Psychology and economics, *Journal of Economic Literature* 36, 11–46.
- Rafael LaPorta, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113–1155.
- Rowland, Patrick, and Linda Tesar, 2000, Multinationals and the gains from international diversification, *University of Michigan Department of Economics Working paper*.
- Strong, Norman, and Xinzhong Xu, 2003, Understanding the equity home bias: evidence from survey data, *Review of Economics and Statistics* 85, 307312.
- Strumpf, Koleman, 2003, Illegal sports bookmakers, *University of North Carolina Chapel Hill Working Paper*.
- Stulz, René, 1981, A model of international asset pricing, *Journal of Financial Economics* 9, 383–406.
- Sulon, Bill, 2001, Savings bonds appeal to patriotic pennsylvania investors, *The Patriot-News* November 20.
- Tesar, Linda, and Ingrid Werner, 1995, Home bias and the globalization of securities markets, *Journal of International Money and Finance* 14, 467–492.
- Uppal, Raman, 1993, A general equilibrium model Of international portfolio choice, *Journal of Finance* 48, 529–553.
- Warnock, Francis, 2001, Home bias and high turnover reconsidered, *Federal Reserve Working Paper Number 702*.



The nine U.S. Census regions are:

1. NENE: New England Division (CT, ME, MA, NH, RI, VT)
2. NEMA: Middle Atlantic Division (NY, NJ, PA)
3. SSA: South Atlantic Division (DE, DC, FL, GA, MD, NC, SC, VA, WV)
4. SESC: East South Central Division: (AL, KY, MS, TN)
5. SWSC: West South Central Division: (AR, LA, OK TX)
6. MENC: Midwest: East North Central Division (IL, IN, MI OH WI)
7. MWNC: West North Central Division (IA, KS, MN, MO, NE, ND, SD)
8. WMD: Mountain Division (AZ, CO, ID, MT, NV, UT, WY, NM)
9. WPCD: Pacific Division (AK, CA, HI, OR, WA)

**Figure 3: Economic Significance:
Increase in Foreign Equity Holdings Associated with 1 Standard
Deviation Changes in Home Bias Explanatory Variables**

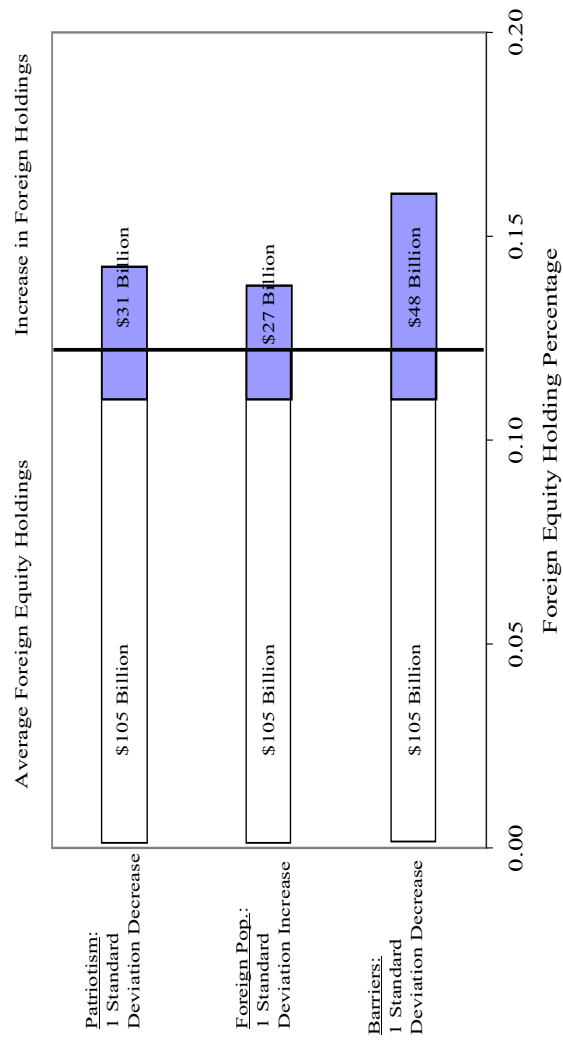


Table I
Patriotism Scores Across Countries

Patriotism Score is from the World Values Survey and refers to the average response of residents of a country to the question: "Are you proud to be [insert nationality]?", ranging from not proud (1) to very proud (4). The average number of respondents per country is 1264.

Country	Patriotism Score	Country	Patriotism Score	Country	Patriotism Score	Country	Patriotism Score		
1990-1992 Survey									
Argentina	3.38	S. Africa	3.55	Latvia	2.78	Belarus	2.90		
Austria	3.45	S. Korea	3.24	Lithuania	2.81	Belgium	2.91		
Belarus	3.11	Slovakia	3.03	Macedonia	3.58	Bosnia	2.98		
Belgium	3.07	Slovenia	3.46	Mexico	3.67	Bulgaria	3.02		
Brazil	3.44	Spain	3.28	Moldova	3.10	Canada	3.55		
Bulgaria	2.99	Sweden	3.22	Nigeria	3.47	Chile	3.61		
Canada	3.53	Turkey	3.57	Norway	3.18	China	3.04		
Chile	3.38	United Kingdom	3.38	Pakistan	3.82	Croatia	3.23		
China	3.23	USA	3.73	Peru	3.06	Poland	3.68		
Czech	2.79	1995-1998 Survey							
Denmark	3.27	Argentina	3.44	Philippines	3.66	Denmark	3.40		
Estonia	3.11	Armenia	3.21	Poland	3.66	Egypt	3.81		
Finland	3.17	Australia	3.70	Russia	2.95	El Salvador	3.79		
France	3.18	Azerbaijan	3.57	S. Africa	3.77	Estonia	2.81		
Germany	2.75	Bangladesh	3.75	Slovenia	3.51	Finland	3.48		
Hungary	3.33	Belarus	3.05	Spain	3.55	France	3.26		
Iceland	3.48	Brazil	3.46	Sweden	3.34	Germany	2.77		
India	3.67	Bulgaria	3.32	Switzerland	2.93	Greece	3.40		
Ireland	3.74	Chile	3.42	Taiwan	2.82	Hungary	3.38		
Italy	3.25	China	3.27	Tambov	3.05	Iceland	3.64		
Japan	2.92	Colombia	3.81	Turkey	3.70	India	3.62		
Latvia	3.39	Croatia	3.24	Ukraine	2.80	Indonesia	3.70		
Lithuania	3.27	Dominican Rep	3.67	Uruguay	3.68	Iran	3.86		
Mexico	3.44	Estonia	2.88	USA	3.77	Ireland	3.72		
Netherlands	2.93	Finland	3.35	Valencia	3.53	Israel	3.35		
Nigeria	3.52	Georgia	3.48	Venezuela	3.92	Italy	3.26		
Norway	3.26	Germany	2.55	1999-2001 Survey				USA	2.78
Portugal	3.31	Ghana	3.91	Albania	3.66	Jordan	3.67		
Romania	3.33	India	3.63	Argentina	3.45	Latvia	3.18		
Russia	2.78	India	3.63	Austria	3.44	Lithuania	2.69		
		Japan	2.85	Bangladesh	3.70	Luxembourg	3.36		
						Zimbabwe	3.65		
						Macedonia	3.34		
						Valencia	3.55		
						Venezuela	3.85		
						Vietnam	3.76		
						Zimbabwe	3.65		

Table II

OLS estimates for regressions foreign equity holdings on patriotism and measures of standard explanations for the home bias. Foreign holdings is a percent of total equity holdings and is calculated from IFS data. *Patriotism* is an increasing index from the World Values Survey (WVS) as defined in Table 1. T-statistics reported in parentheses using robust standard errors. *Barriers* is an indicator of Capital Account Restrictions from the IMF Exchange Arrangements and Exchange Restrictions Annual Reports. The risk-reward tradeoff is measured by country *Sharpe* ratios, constructed using three years of prior monthly returns for market indices from Datastream. A measure of information about investors have about their home market, *Future Returns* is the market index return during the year after the survey date, collected from Datastream. *Foreign Pop* is a measure of the familiarity that a country's investors have with foreign stocks, and is the percentage of the population that is foreign born, taken from the WDI database. Significance at the 10%, 5% and 1% levels is indicated by *, **, and *** respectively.

	1	2	3	IV
<i>Patriotism</i>		-0.085 ** (0.041)	-0.099 ** (0.049)	-0.166 * (0.083)
<i>Barriers</i>	-0.101 *** (0.018)		-0.090 *** (0.030)	-0.059 * (0.032)
<i>Sharpe</i>	0.0003 (0.001)		-0.015 (0.013)	-0.051 (0.042)
<i>Future Returns</i>	-0.018 (0.023)		-0.020 (0.028)	-0.026 (0.245)
<i>Foreign Pop</i>	0.004 *** (0.001)		0.002 (0.002)	0.005 * (0.003)
<i>Dummy</i>	Year	Survey	Survey	Survey
<i>R Square</i>	0.26	0.09	0.28	0.28
<i>1st Stage R Square</i>	-	-	-	0.32
<i>Observations</i>	181	78	68	51

Table III**Correlates of foreign holdings**

GNI/Pop is a Gross national income divided by the country population. *Size* is the country size in square kilometers. *Town Size* is average town size of World Values Survey respondents. *CommonLaw* and *FrenchLaw* are dummy variables indicating whether the country follows a common law or french law system. *Dummy* indicates the inclusion of a survey dummy variable. Significance at the 10%, 5% and 1% levels is indicated by *, ** and *** respectively.

	1	2	3
Patriotism	-0.094 *** (0.033)	-0.090 * (0.052)	-0.100 ** (0.043)
GNI/Pop	11.1 *** (1.49)		
Size (KM ²)	-7.86 *** (2.21)		
Town Size	0.010 (0.010)		
CommonLaw		0.0101 (0.043)	-0.008 (0.040)
FrenchLaw		-0.0059 (0.047)	-0.041 (0.035)
Interest Groups			-0.253 ** (0.107)
Expropriation Risk			-0.037 ** (0.015)
Dummy	Survey	Survey	Survey
R-Square	0.54	0.09	0.44
Observations	65	78	32

Appendix: Variables and their definitions.

Variable	Notation	Definition and Source
Barriers to Investment	BARRIERS	IMF Capital Account Restrictions from the Exchange Arrangements and Exchange Restrictions Annual Reports.
Common Law Legal Origin	COMMONLAW	LaPorta et al (1999). Indicator for common law countries.
Expropriation Risk	EXPROPRIATE	Economic Intelligence Unit (EIU) Country Indicators Database
Foreign Equity Holdings	FEH	IFS Database. Foreign equity holdings divided by total equity held by country residents, defined as country market capitalization plus residents' foreign equity holdings minus domestic equity holdings of foreigners.
Foreign Equity Holdings - U.S.	FEH-US	Survey of Consumer Finance (1997). Foreign equity holdings for 9 U.S. Census regions divided by average region income.
Foreign Pop	FORPOP	Percentage of foreign-born population of a country.
Future Returns	FUTURE	Future one-year broad market index returns from Datastream.
GNI per Capita	GNI/POP	Income per capita from the World Development Indicators.
Interest Groups	INTEREST	World Values Survey. The answer to the question: "Does the government act for the benefit for a few interest groups or the public at large?"
Sharpe Ratio	SHARPE	Sharpe ratio of market index calculated from monthly Datastream data over the last three years.
Size (KM ²)	SIZE	Size of the country in square kilometers.
Town Size	TOWNSIZE	World Values Survey. Average town size of the survey respondents.