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FINANCE

WORKING PAPER SERIES

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Patriotism in Your Portfolio

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November 11, 2003 (Veterans' Day)

ABSTRACT

More patriotic countries and more patriotic regions within the U.S. hold smaller foreign equity positions. Increased patriotism is negatively related to foreign holdings growth. The patriotism effect remains after controlling for endogeneity and is robust to controls for the four standard explanations for the home bias: transaction barriers, information, familiarity, and risk. Patriotism explains an additional 7% of the cross-country variation of foreign holdings. Economic, political, and social correlates do not explain patriotism's effect on the home bias. A 10% decrease in patriotism is associated with a rise in foreign equity holdings of 2-4% of total country holdings, a 29-48% increase.

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Why do people bet on home sports teams despite unfavorable odds? Why do employees 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 will be unwilling to pay. In this paper we are concerned not, as Becker was, with discrimination against people, but 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. French and Poterba (1991), Tesar and Werner (1995), and Pastor (2000) empirically document that investors' domestic holdings are quite high relative to an optimally diversified portfolio.¹ The CAPM predicts that an investor will hold the world market portfolio of all countries in proportion to each country's market capitalization (Lewis, 1999). Taking into account returns to human capital, which generally follows the country's fortunes, investors should invest even less in their home country (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 finance and economics literatures give four principal explanations for the home bias: the presence of transactions barriers, information asymmetries between local and foreign investors, familiarity bias and unaccounted for risk or uncertainty. A simple explanation has been omitted. Could it be that investors' sentiment toward their country explains part of the equity home bias?

Consider again the bettor choosing her team, and the employee choosing a pension allocation. Presumably, a bettor derives utility from a home victory, and an employee enjoys seeing her firm succeed. If the individual is risk averse, portfolio theory would then require that the bettor put money on the opposing team, and the employee short the company stock. This hedging is rarely observed, and this may be due solely to lack of

¹French and Poterba calculate that U.S., Japanese and U.K. investors held 94%, 98% and 82% of their portfolios in domestic assets.

familiarity with the opposing team or other firms, which generates the ambiguity aversion described in the psychology literature. Loyalty, however, seems like a more plausible cause: to some, the thought of betting against a home team or shorting employer stock may seem disloyal, and to others, the home team and the company stock are simply perceived as the best bet. The same patriotism-induced loyalty can be considered for international diversification decisions.

The economic significance of patriotism has not previously been examined, even though anecdotal evidence shows that 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. War bonds are still used today. After the September 11th, 2001 terrorist 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. After September 11, 2001, the U.S. markets remained closed for a week, and much speculation ensued as to how far the indices would drop. Mass media encouraged patriots of the country to hold on to their stocks.² The notion that investors might heed calls to patriotic behavior has a clear implication; it seems that patriotism may affect markets.

This paper explores the role of patriotism in explaining the equity home bias. Our hypothesis is that more patriotic investors choose to invest more of their portfolio at home. Since the effect of patriotism is not in conflict with the existing explanations of the home bias, our aim is to assess whether patriotism can significantly explain variation in foreign equity holdings after controlling for the effects of existing theories.

We use a patriotism score from the University of Michigan’s World Values Survey. The survey asks individuals in 53 countries whether they are proud to be a national

²The *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 *Spectrum* survey of affluent investors, 52% of respondents said they would show their patriotism by making investments in U.S. companies.

of their country. Using the country average of responses to this question as a measure of patriotism, we show that patriotism is significant in explaining the weight of foreign equities in the country's total equity holdings. In further tests, a first difference across survey years shows that greater increases in patriotism are accompanied by lower positive changes in foreign holdings. We find that higher patriotism scores are associated with lower foreign holdings in the nine U.S. census regions as well.

The significance of patriotism remains after inclusion of controls for the other explanations for home bias. We find some support for information and familiarity explanations in our panel, and we find strong support for the transaction barriers explanation. After controlling for the standard explanations for home bias, patriotism explains 7% of the variation in foreign equity holdings. A 10% decrease in patriotism is associated with a rise in foreign equity holdings of 2-4% of total country equity, which in the U.S. represented 260-440 billion dollars in 1996.

We perform several robustness tests. To control for possible endogeneity, we instrument patriotism with a religion score 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 or predict future returns. We explore variables capturing economic, political and social correlations with patriotism. We find that patriots are governmental minimalists, have less income and education, and belong to a social identity. Of the correlates explored, GDP per capita, the percentage of the population with a secondary education, and the average propensity of residents to undertake charitable activities can explain part of the variation in foreign equity holdings. None of these correlates negates the significance of patriotism in explaining foreign holdings. Finally, we present evidence that countries with higher investor protection invest a larger percentage of their equity position abroad. Investor protection variables do not diminish the significance of patriotism.

The remainder of the paper is organized as follows. Section I discusses why investors' patriotism can affect their equity holdings. Section II introduces the data used in the study. In Section III our main results are presented showing patriotism and instrumented

patriotism significant in explaining the home bias. Section IV contains a variety of robustness tests, including tests on the correlates, instrumented patriotism, and investor protection explorations. The last section concludes.

I. Why Patriotism?

Appeals to patriotism appear to influence purchasing decisions in many countries, but to our knowledge no study has documented the impact of patriotism on portfolio selection. The explanations of transaction barriers, risk, and information asymmetry have not fully accounted for the magnitude the home bias. Recently, Grinblatt and Keloharju (2001), Huberman (2001), and Bhattacharya and Groznic (2001) find that familiarity might also play a role in explaining the home bias. Familiarity bias is a special case of ambiguity aversion, in which investors dislike assets when they do not know the distribution of returns.³ Familiarity bias is ambiguity aversion brought on by proximity to certain firms, independently of having information about the firms' prospects. Huberman (2001) finds that investors prefer to invest in local telephone companies. Grinblatt and Keloharju (2001) find that Finnish investors prefer stocks of domestic firms, especially those firms which communicate in Finnish and are operated by Finnish executives. Although the authors hypothesize that local biased investing is due to familiarity bias, the results of their study are also consistent with patriotic investing. Our approach is novel because we provide evidence that a behavior in addition to familiarity is at work in home biased choices. The familiarity hypotheses would predict that knowledge of any stock's expected return distribution, regardless of nationality, would make it attractive to investors. Our hypothesis predicts that loyalty also causes investors to invest at home.

Several closely related puzzles of home-focused choices can help us understand how patriotism affects the decision to invest. The first is in the sports betting market, and

³In his 1961 experiment, Ellsberg finds that people prefer to bet on draws from an urn when they learn that the proportion of winning balls is one half than when they do not know this proportion (and thus the best estimate of it is one-half).

the second is in employees' 401(k) asset allocation. 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, to derive a payoff in the case of a loss. 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 tilt the odds against home team bets in an attempt to balance their books.

A second related puzzle is the pattern of 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.⁴ In Benartzi's survey, 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 in that they fail to diversify away a firm's unsystematic risk.⁵ Even worse, the employer stock is the asset most correlated with the employees's human capital, and thus (ignoring the benefits of signalling to shareholders) a rational agent should short employer stock, not hold large quantities of it.

The home team betting and 401(k) phenomena can be explained by familiarity alone: proximity to the home team and to the firm allows the investor to understand the distribution of expected returns, thus lessening ambiguity aversion. In fact, Boyle et al (2003) do just that. Thus far, there has been no way to distinguish between the familiarity theory and the alternate theory of investor loyalty towards the home entity. The only other 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 suggests that loyalty is a driving force behind employee investment in their own firm. In conglomerates, each dollar of investment is spread among all divisions in the conglomerate, and thus dilutes the investment in the home firm. In the case of patriotic

⁴He 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.

⁵See, e.g. Huberman and Sengmiller (2002).

investing, we are able to begin to disentangle loyalty from familiarity. But familiarity alone cannot explain why more patriotic nations invest less abroad. Why is this so? A country's residents may be more familiar with their own markets⁶; however, familiarity with a market should be independent with the strength of patriotism. 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 (a stock or a team) and making a portfolio allocation decision. The effect of loyalty in the allocation decision is addressed first. Investors may correctly estimate the mean-variance characteristics of a home stock, team or firm but are driven by loyalty to over-invest in it. As explained in Akerlof (1983), local loyalty may bring tangible benefits, such as jobs, improved infrastructure,⁷ and 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 market brought in a new director of the pension fund department. 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:

Patriotism is especially evident when it comes to the financial services sector. Suddenly, buying stocks in a down market is a duty.⁸

⁶Or in the case of Groznik and Bhattacharya (2002), immigration may imply that residents may be more familiar with particular other countries' markets.

⁷Huberman (1997) shows that people invest a large portion of their portfolios in their local phone company.

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

In essence, loyalty enters the utility function, whether or not the home entity benefits from the investment. Home betting or own firm 401(k) investing may generate a pride utility in supporting the home entity.

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).⁹ Optimism can feed on itself; investors can be convinced that their home market is superior and selectively ignore contradictory evidence.¹⁰ Similarly, Heath and Tversky (1991) find evidence that overconfidence increases with familiarity.¹¹ We have outlined the importance of loyalty and the ways in which it can affect investment. In the next section we will test whether this effect exists.

II. Data

The Appendix provides sources for all the variables used in the study. Patriotism data come from the World Values Survey (WVS) conducted during two periods, 1990-1992 and 1995-1997.¹² Adults over the age of 18 were interviewed face-to-face in 53 countries. We focus on individuals' responses to the question: "*How proud are you to be [substitute nationality]?*". Our measure of patriotism is the mean country score. Table

⁹Kilka and Weber (2000) provide survey evidence that German and American students overestimate their own country's future performance, and Strong and Xu (2003) find this 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.

¹⁰For more on belief perseverance and confirmatory bias, see Rabin (1998).

¹¹Overconfidence 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.

¹²The survey is conducted and held by the Inter-University Consortium for Political and Social Research at the University of Michigan.

1 lists the patriotism scores for the two surveys. From the first to the second survey, the mean score increased marginally from 3.28 to 3.34.¹³ The 1990-1992 survey suggests that New World countries are more patriotic than Old World countries, but the larger 1995-1997 survey results are more diverse within income and location groupings.

Our measure of foreign equity holdings is the percentage of foreign equity in a country's aggregate equity portfolio. We calculate a weight of foreign holdings relative to total holdings (FEH) as follows:¹⁴

$$FEH = \frac{\textit{Foreign equity holdings}}{\textit{Market capitalization} + \textit{Foreign equity holdings} - \textit{Foreign equity liabilities}} \quad (1)$$

Foreign equity holdings and foreign equity liabilities are from the IFS database. Market capitalization data are from the World Bank's World Development Indicators (WDI) database. While the survey includes 53 countries, the availability of foreign holdings restricts our sample to 40 observations, encompassing 33 countries. Seven countries have data for both 1991 and 1996.¹⁵ In order to supplement this sample, we collect similar data on foreign investment for the nine United States Census regions from the 1997 Survey of Consumer Finances.

There are four standard explanations for the equity home bias. The first is that the presence of transactions costs limits investing abroad. We measure transactions costs with an indicator of Capital Account Restrictions from the *IMF Exchange Arrangements and Exchange Restrictions Annual Reports*. An alternative measure of transactions costs is tariff and non-tariff barriers to trade from the Economist Intelligence Unit (EIU) Database. The index ranges from 1 (few barriers) to 5 (many barriers).

The second common explanation for the home bias is the lack of information about foreign equities. Our measure of information is airline departures per capita from the WDI database. We also consider other information variables such as mobile phones and newspapers per capita from WDI as well as distance and gravity measures from Great

¹³For the countries participating in both surveys, the average score increased from 3.29 to 3.39.

¹⁴Our results remain if we simply normalize foreign equity holdings by market capitalization.

¹⁵A Heckman selection test fails to reject that country selection is independent of GDP and market capitalization with respective p-values of 0.79 and 0.42.

Circle. The third explanation for the home bias is a lack of familiarity with foreign investment opportunities. Following the principles in Groznik and Bhattacharya (2003), our familiarity measure is the percentage of the population that is foreign born, taken from the WDI database.

The fourth standard home bias explanation is the lack of an effective diversification benefit. The risk-reward tradeoff variable is constructed as the country Sharpe ratio minus the rest of the world Sharpe ratio. We use five years of prior monthly returns for market indices from Datastream. We also calculate simple correlations for each of these indices with the rest of the world.

We test whether economic, political, and social correlates of patriotism could be driving our findings. Economic variables which are correlated with patriotism score are GDP per capita from WDI and tax revenue collections per GDP from the University of Michigan's World Tax Database. Political correlates are two measures of political awareness from the WVS. The political measure Discuss Politics follows from the question "*When you get together with your friends, would you say that you discuss political matters frequently (3), occasionally (2), or never (1)?*". Trust Government is derived from "*Could you tell me how much confidence you have in the government in [insert capital city]: a great deal (4), quite a lot (3), not very much (2), or none (1)?*". Social correlates of patriotism include percentage of rural population, ethnolinguistic fractionalization, and charity. Rural population percentage is the percentage of population that lives in rural areas, from the WDI database. Ethnolinguistic fractionalization is a measure of linguistic and ethnic group dispersion ranging from 0 (not very diverse) to 100 (very diverse) from Easterly and Kraay (1999). Charity is from the WVS question which asks whether the respondent is *an active member (3), inactive member (2), or not a member (1) of a recognized charitable organization.*

III. Empirical Results

The central finding of the paper is depicted in Figure 1, plots of patriotism against foreign equity holdings for the two survey periods. These figures suggest a decreasing linear relation between patriotism and foreign equity holdings. As reported in column 1 of Table II, a simple regression including a dummy for the 1995-1997 survey period shows that patriotism is significant in explaining foreign investment, with an R-square of 0.21.¹⁶ A one-unit increase in the patriotism score is associated with a 11 percentage point decrease in the proportion of foreign holdings in an average country's portfolio of equities.

To further investigate the role of patriotism on foreign equity holdings, we study the seven countries that are present for both surveys in our sample. Our hypothesis is that when patriotism rises, foreign holdings decreases more (or increases less) than in instances when patriotism falls. Since data constraints inhibit more formal tests, we plot changes in foreign equity holdings against changes in patriotism. Figure 2 shows that while there are only seven countries in the sample that have data from both surveys, foreign investment increases less when residents become more patriotic.¹⁷

A. Additional U.S. Investor Evidence

We have presented initial cross sectional and time series results showing the negative association between patriotism and foreign holdings. Would patriotism explain portfolio variation within countries? To control for cross country variation, 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 3. The more patriotic regions

¹⁶The 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.

¹⁷The figure also suggests that both increasing globalism and increasing patriotism characterizes the period between the 1990-1992 survey and the 1995-1997 survey. Germany is the exceptional in its large decrease in patriotism, possibly because of the economic strains from unification during the period.

of the United States -- West South Central, Mountain and West North Central -- invest the least in foreign equities. Evidence again supports the hypothesis that more patriotic investors are more home biased in their investments.

B. Standard Explanations for the Home Bias

The four standard explanations proposed for the equity home bias are transactions barriers, information, familiarity and risk measurement.¹⁸ We briefly discuss these standard explanations and include measures for them in the estimation model.

B.1. Transactions Barriers

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 significant in impeding flows but are not economically large in explaining the bias.¹⁹

Our principal measure of transaction barriers is the IMF's capital account liberalization indicator variable.²⁰ Column 3 of Table II reports that transactions barriers are negative and statistically significant in explaining foreign holdings, indicating that transaction barriers impede outflow of funds into foreign equities.²¹ When we include patriotism in column 4, both variables remain significant; the results suggest that patriotism explains a portion of the home bias separate from that explained by transactions barriers.

¹⁸A fifth argument from recent work by Rowland and Tesar (2000) is that individuals diversify by investing in multinationals.

¹⁹See Cooper and Kaplanis (1994), Tesar and Werner (1995), Errunza, Hogan and Hung (2000), Glassman and Riddick (2001) and Fourth, Ahearne, Grier and Warnock (2001).

²⁰One 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. We seek a measure of differential liberalization, not liberalization per se.

²¹A measure of tariff and non-tariff barriers from the EIU database yields similar but weaker results.

B.2. Information

Brennan and Cao (1997) develop a model of international equity portfolio investment flows and show that differential information among investors can affect their investment decisions. A number of empirical studies confirm this. There is conflicting evidence, however, on whether information affects foreign holdings. Using Korean data from 1997-1998, Choe, Kho, and Stulz (2000) find that domestic individual, but not institutional, investors have a small information advantage over foreign investors. In U.S. data, Coval and Moskowitz (2001) show that mutual funds earn abnormal returns when they invest in nearby firms. Froot, O'Connell and Seasholes (2000) show that daily international flows can forecast future equity returns, suggesting that foreign investors may have superior information.

In a first test, we investigate whether home biased investors have superior information about their home market. This is unlikely because all countries in our study are extremely home biased, and all markets cannot be above average. Indeed, we find that the more home biased countries do not have subsequently higher five-year monthly index returns.

It is possible that investors only have an information advantage over individual stocks. If this is true, then investors who have more information about foreign stocks are more likely to buy them. Airplane departures per capita is a natural measure of information about investment opportunities in other countries. Airline departures captures commerce being transacted, as business travellers are usually a large fraction of airline clientele. Additionally, in as much as airplane departures are international, departures captures potential occasions for learning about foreign investment opportunities.²² Table II, columns 5 and 6 shows that sum of market capitalizations is significantly and positively related to foreign equity holdings. The larger the number and economic sig-

²²Mobile phones and newspapers per capita yield the similar results to the results using airplane departures. In fact, correlation is larger than 0.65 among newspapers, mobile phones and airplane departures. Gravity and distance measures such as the average distance between a country and all other countries, the number of contiguous countries, and the physical size of a country are not significant in explaining foreign holdings. Using the sum of market capitalizations of contiguous countries yields similar results as airplane departures.

nificance of nearby countries, the more willing residents are to hold foreign equities. When we add patriotism to the model, both variables remain significant, suggesting that both information and patriotism are important in explaining the home bias. The results from column 9, however, indicate that inclusion of the transactions barriers along with the information variable and patriotism negate the significance of the information variable.²³ Our data are not sufficiently rich to identify the role of information separate from that of transactions barriers.

B.3. Familiarity

The home bias could simply reflect the fact that people dislike ambiguous situations, and prefer to invest in the familiar even without superior information.²⁴ Heath and Tversky (1991) find that people underweight choices of which they have difficulty understanding the distribution of outcomes. Bhattacharya and Groznik (2002) find that U.S. investment in a country increases with the income of the U.S. immigrant population from that country and conclude that immigrants prefer to invest their countries of origin. Interestingly, the authors find that the level of investment in foreign countries is unrelated to language or physical distance, which should affect information acquisition. Bhattacharya and Groznik's results, like Grinblatt and Keloharju's (2001) findings with Finnish investors, are also consistent with the possibility that immigrants invest close to home out of patriotism.

Our measure of familiarity is the foreign percentage of foreign-born residents of a country. Table II, columns 6 and 7 show that it is very significant in explaining foreign holdings, which confirms Bhattacharya and Groznik's results. The patriotism variable, however, remains significant in regressions including foreign population. This suggests that above and beyond familiarity, people invest at home out of patriotism.

²³Even without the inclusion of SharpeWorld, our risk measure, Airplane Departures loses its significance in the presence of Barriers.

²⁴Literature on familiarity is summarized by Barberis and Thaler (2002).

B.4. Risk

An investor may choose to invest abroad to mitigate financial risk, and the benefits to doing so may vary by country. The extent of these diversification benefits is difficult to estimate, however, because correlations between countries tend to increase in bear markets.²⁵ Our risk variable is the difference between a country's Sharpe ratio and the rest of world Sharpe ratio, constructed using 5 prior years of monthly returns.²⁶ SharpeWorld captures the difference in Sharpe ratio between investing at home and investing in the world portfolio. A larger SharpeWorld would be indicative of less motivation to invest abroad. Results from this model are presented in columns 7 and 8 of Table II.²⁷ Our risk variable is not significant in explaining foreign holdings.

B.5. Economic Significance of Patriotism

Is patriotism economically significant? Column 9 of Table II brings together our measures of transactions barriers, information, familiarity and risk. Clearly the variables are collinear, and the number of observations is small, but we present this model to highlight the persistent significance of patriotism in explaining the home bias. The regression coefficients of patriotism on foreign holdings in Table II ranges from -0.080 to -0.132. Hence, for example, a ten percent decrease in the observed 1996 U.S. patriotism score of 3.73 is associated with a rise in foreign holdings from 11% to 14-16% of total equity holdings, (a 27-45% increase). Given the U.S. total holdings in 1996 of \$9 trillion, this implies U.S. investors would have allocated \$260 to \$440 billion more in equities to foreign positions. For the mean country in our sample, similar calculations yield an average rise in foreign equity holdings from 9% to 11.6-13.3% of total equity (a 30-60% increase) for a ten percent decrease in patriotism. The estimated effect of patriotism is economically significant.

²⁵See Ang and Bekaert (2002)

²⁶We also construct a modified version capturing past returns to currency positions, but this variable only increases the noise in measurement.

²⁷Interestingly, using simple correlations of the country index with a rest of world index yields a significant and positive coefficient. This counters portfolio theory but supports the idea that markets may be segmented. Inclusion of the transaction barrier variable negates this significance.

Table III also shows the estimated change in foreign holdings for a one standard deviation change each of the variables of the full model of column 8, Table II. A one-standard deviation positive change independently in patriotism or transaction barriers results in a change in the foreign holdings percent by -3% of total equity holdings. The final column of Table III presents the change in R-Square that occurs when adding each variable to the otherwise full model. Our results show that compared to a regression of barriers, information and risk on foreign holdings, the regression of patriotism, barriers, information, familiarity, and risk explains 7% more of the foreign holdings variation.

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 information and familiarity, and no evidence risk in explaining the home bias. Third, patriotism has an economically significant effect on foreign equity holdings.

C. Endogeneity and Instrumental Variables

We explore whether the significance of patriotism is due to endogeneity. Could it be that a country's residents grow differentially patriotic because of varying economic prosperity created by markets or economics? 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.

To control for the potential that an omitted economic variable is simultaneously driving foreign holdings and patriotism, we instrument patriotism with a WVS question asking respondents how important religion is. Religion is an appealing instrument for patriotism for a number of reasons. Attachment to the nation may be stronger for societies in which religion plays a strong role.²⁸ Religion is not an economic vari-

²⁸Country loyalty is encouraged by some religions. For example, the New Testament quotes Jesus as saying, "Render to Caesar the things that are Caesar's" (Mark 12:17). In Judaism the obligation of

able. Its importance to respondents should not be correlated with any omitted variable that is endogenous to patriotism and foreign holdings. The correlation between religion and patriotism is 0.57. As a first test of the appropriateness of our instrument, the correlation between religion and the residuals of the full estimation model of foreign holdings patriotism, barriers, information, and risk on foreign holdings is -0.01 and not significantly different from zero. In the first stage of a 2SLS procedure, our instrument significantly covaries with patriotism with an R-Square of 0.44. The coefficient of instrumented patriotism on FEH is -0.108 with a t-statistics of 2.61. A Hausman test of the equivalence of the instrumented and the OLS patriotism coefficients strongly fails to reject the equivalence.

IV. Robustness Tests

Three key arguments arise that might threaten the robustness of our results. First, a covariate of patriotism might be causing its significance in explaining the home bias. The second robustness concern is that equity investment is typically undertaken only by the upper income earners. Finally, the nature of investor protection of a country might be correlated with both country pride and investment choices (Dahlquist, Pinkowitz, Stulz and Williamson, 2003). We test these possibilities and find that they do not negate the effect of patriotism on the home bias.

A. Correlates of Patriotism

Perhaps factors associated with a country's patriotism score drive the patriotism-foreign equity holdings relationship displayed in Figure 1. In this section, we consider whether economic, political or social correlates of patriotism drive the home bias result. We find that patriotism is correlated negatively with country income, education and

loyalty towards one's land (e.g., Jeremiah 29:7) is written by the prophets. One of the core teachings of K'ung Fu Tzu (Confucius) was Chung or loyalty to the state.

the burden of the government. Patriotism is positively correlated with faith in the government and social identities.

If country-wide wealth and education are reflective of societies being more pleased with the performance of their governments, wealth and education should be positively related to patriotism. Conversely, if more wealth, educated people know more about the rest of the world, wealth and education should be negatively related to patriotism. Partial correlations among the correlates variables and patriotism are reported in Table IV. Controlling for the survey year, patriotism is strongly negatively correlated with GDP per capita and with the percentage of the population with secondary education. Regression results of foreign holdings on patriotism and either GDP or education are reported in Table V. Both GDP and education can explain part of foreign holdings beyond the effect of patriotism, but neither negates the significance of patriotism.

The burden of government is measured economically as tax revenue collected normalized by GDP and politically as the WVS response score to the question: ‘How often do you discuss politics at home?’. Larger tax and discussion burdens may cause resentment, especially if tax burdens are not accompanied with reciprocally large provision of services. On the other hand, high taxes and more discussions could imply a larger role for government in residents’ daily life, and thus may be positively correlated with patriotism. Table IV shows that higher tax burdens are observed with less patriotism. In Table V, however, neither tax burden nor discuss politics is significant in explaining the home bias in the presence of patriotism.

We proxy for the other political dimension of patriotism, faith in the government, with the WVS responses to ‘How much do you trust your national government?’. Trust of government is positively related to patriotism, but the partial correlation is not significant. Thus, we do not present the insignificant results of foreign holdings on trust of government.

Finally, we consider social identity correlates with patriotism. Individuals who have important tribal, ethnic, linguistic, township, or other local organization affiliations may have stronger identification of themselves as members of a group. A resident’s ability

to identify with a group enhances the identification with citizenship, thus strengthening patriotism. Under the social identity hypothesis, ethnolinguistic diversity as well as the percentage of population that is rural, and charital tendencies should all be positively correlated with patriotism.²⁹ The social identity correlates are significantly correlated with patriotism, supporting the social group hypothesis.³⁰ We are interested in knowing whether any of the social identity correlates is driving the significant explanatory power of patriotism on foreign holdings. Columns 5-7 of Table V present the regression results of foreign holdings on patriotism, and social group correlates. Consistent with all of our findings, none of the social identity correlates negates the significance of patriotism in explaining the home bias. Only the charity is significant by itself or with patriotism in explaining foreign holdings.

We conclude from the correlate analysis that patriotism seems to capture a number of fundamental characteristics of a country's residents. The residents of more patriotic countries are governmental minimalistic, poorer, less educated, and affiliated with social identity. None of these characteristics are, however, the driving factor in why patriotism explains the equity home bias.

B. Upper Income Earners

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

²⁹Our social identity hypothesis builds on thoughts of social capital from Coleman (1990) and Guiso, Sapienza and Zingales (2000).

³⁰It is admittedly surprising that ethnolinguistic diversity is positively correlated with patriotism.

the magnitude of the patriotism coefficient is consistently larger. The significance levels are very similar to the results presented. We infer that we may be underestimating the economic significance of the patriotism effect.

C. Investor Protection

As a final set of robustness checks, we consider the corporate governance environment of the investing country. Motivation for this section stems from Dahlquist, Pinkowitz, Stulz and Williamson (2003) (DPSW). DPSW consider the environment of the receiving country of U.S. outward investment. In particular, they focus on the amount of closely held shares in a country and the investor protection ratings. The amount of closely held shares captures the role of the large shareholders in the country in controlling the market portfolio. Their hypothesis is that the closely held percentage measures provides an indication of the amount the market that is available for outside investment. DPSW find that indeed the closely held measure is consistently positively significant in explaining the U.S. outward investment to that country. Additionally expropriation risk explains a portion of the variation in investment positions.

We focus on the cross-section of investors' countries rather than the cross-section of host countries for investment. In DPSW, the governance affects the amount of inflows of investment. In our study, the overall outflows may be affected by the governance at home. We construct an average measure of closely held shares for each country by using the average closely held percentage for a country for all firms in Worldscope. Then we take the difference between the closely held measure for a country and the rest of the world average. Table VII presents the result that the closely held percentage neither increases nor decreases the foreign holdings. Closely held may have two offsetting effects. On the one hand, the relative percentage of closely held shares may reflect poorer governance, thus encouraging more foreign investment. Conversely, the closely held measure is a reflection of the investor group for a country. Thus, a higher closely held percentage may reflect more inward-focused investment if the largest shareholders are extracting private benefits of control. LaPorta, Lopez-de-Silanes, Shleifer and Vishny (1998) (LLSV)

show that the concentration of ownership of shares is negatively correlated to investor protection.

We follow DPSW and include first investor protection and then expropriation protection from EIU. We also include a measure of corruption of public officials from the University of Goettingen and Transparency International. Table VII shows that a country with better investor and expropriation protections and less corruption invest more abroad. This is inconsistent with the concept that investors flee their own poor governance countries and is consistent with the hypothesis that a country's overall investment position is affected by private benefits of control. 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.

To further explore the role of investor protection on portfolio decisions, we explore the legal origin of investing countries. LLSV (1998) show that common law countries have stronger protection for investor rights over civil law countries. Thus, if countries with weaker protection hold less foreign holdings, possibly due to the taking of private benefits, civil law should be negatively related to foreign holdings. Table VII shows that an indicator denoting civil legal tradition is negative but not significant in explaining foreign holdings.³¹ One inference is that legal origin may be a noisier measure of the taking of private benefits than investor protector indices.³²

V. 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, and changes in patriotic behavior are negatively related to changes in foreign equity

³¹In an unreported regression, we find no significant fixed effect among common law, French civil law, and other civil law.

³²We also consider the influence on investment decisions of a country being bank-based. We find no significant effect.

holdings. This result is robust to controls for transactions barriers, risk information, and familiarity, which our study is able to distinguish from loyalty. Economic, political and social correlates of patriotism do not negate the significance of patriotism. We find strong support for the transaction barriers explanation for the home bias in addition to patriotism. Inclusion of patriotism accounts for 16.5% in variation of foreign holdings, and a 10% decrease in patriotism is associated with a rise in foreign equity holdings of 2-4% of total country holdings, a 29-48% increase.

Our results are robust to tests of endogeneity. Neither instrumenting patriotism with the importance of religion nor including past (or future) country index returns negates the statistical or economic significance of our patriotism result. We also test for the robustness of the patriotism variable against other measures of transactions barriers, risk, and information. We find evidence that domestic investors in poor governance countries choose to invest at home, possibly to take advantage of private benefits of control. None of the robustness tests of endogeneity, alternative measures and corporate governance negates the effect of patriotism on the home bias.

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. They can take short (long) positions in a country if domestic home bias dominates (is subsumed by) the bias of foreign investors choosing not to invest in that country.

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.³³ 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.

³³This is controversial: Uppal's (1993) theoretical model suggests that it is unlikely.

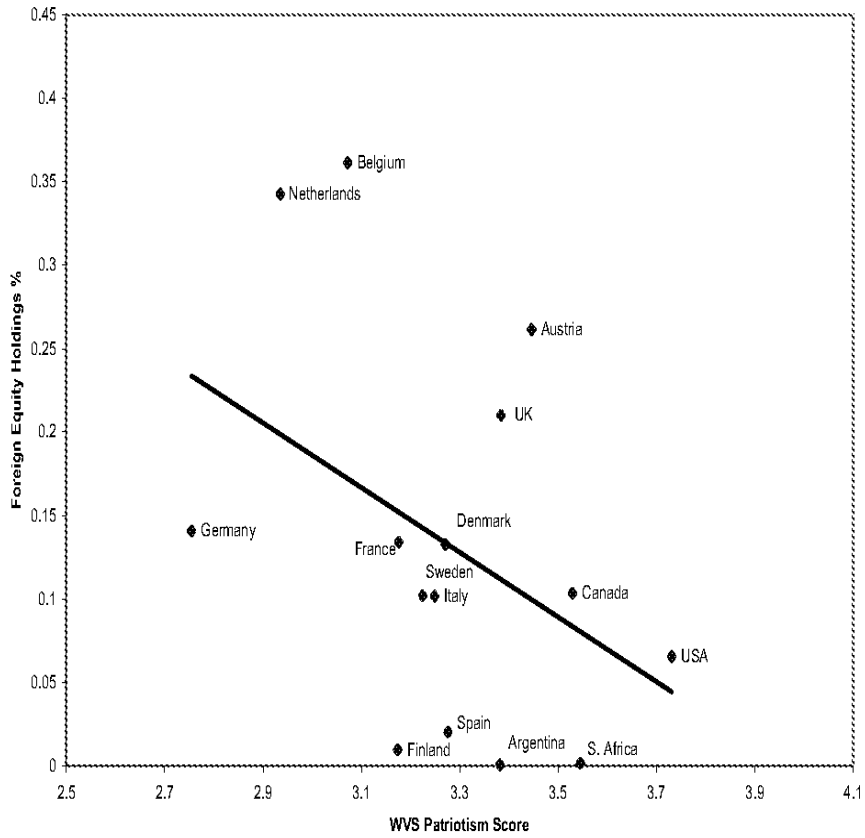


Figure 1a. Negative Relation Between Foreign Equity Holdings and Patriotism, 1990-1992 World Values Survey. The line is the fitted regression line.

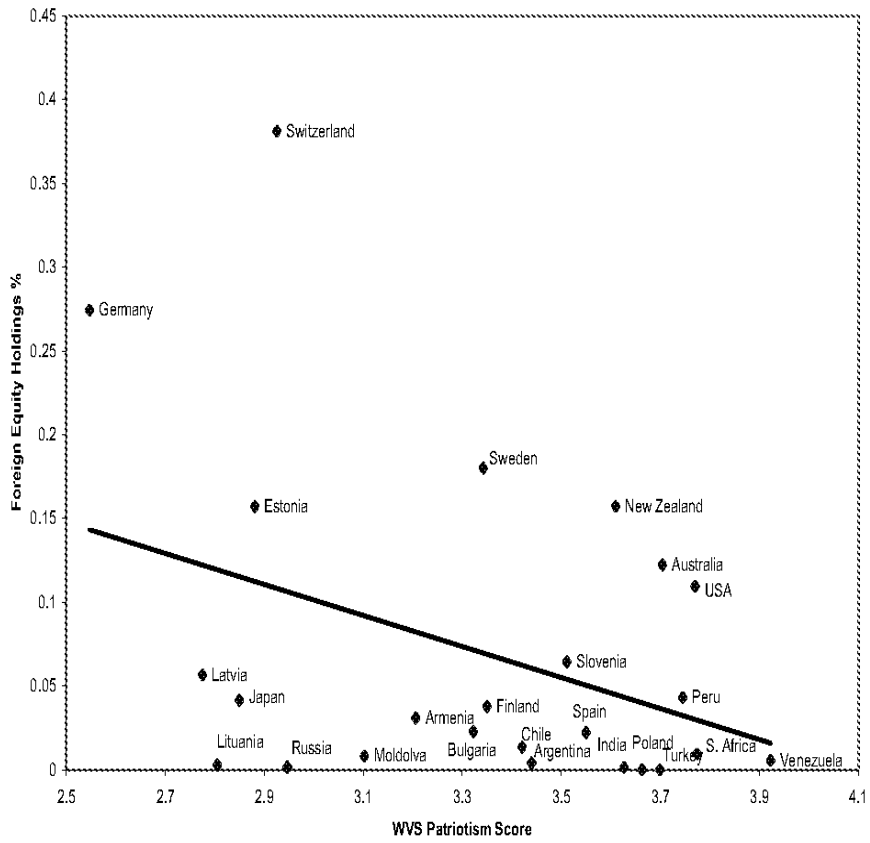


Figure 1b Negative Relation Between Foreign Equity Holdings and Patriotism, 1995-1997 World Values Survey. The line is the fitted regression line.

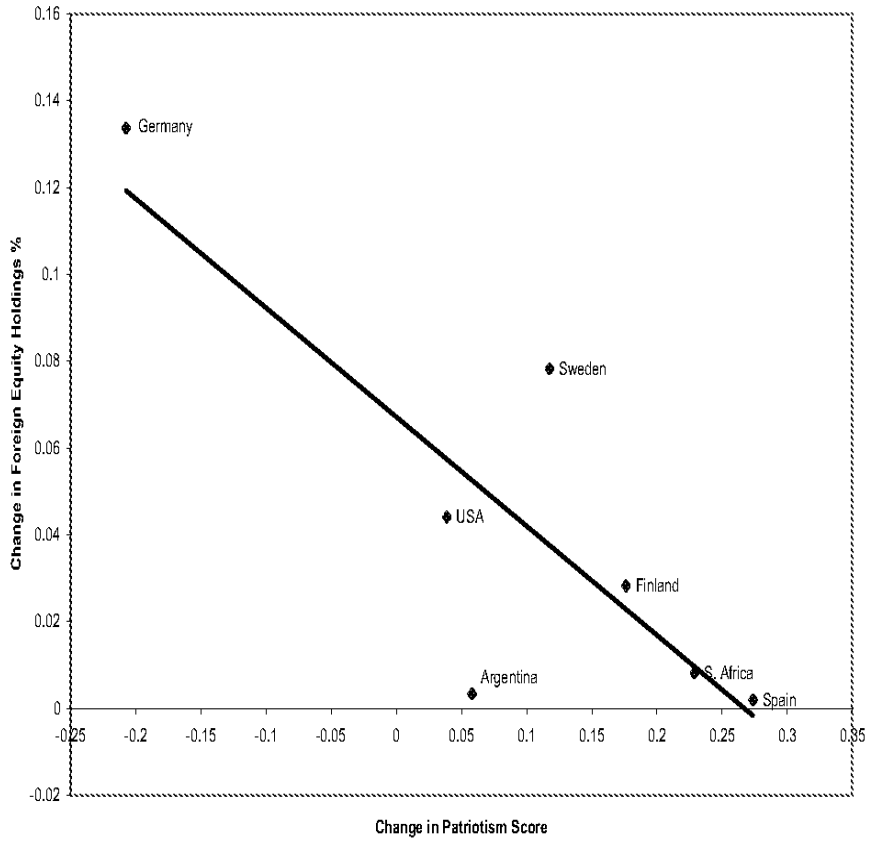


Figure 2. Negative Relation Between the Change in Foreign Equity Holdings and the Change in Patriotism. The changes are measured from the 1990-1992 survey to the 1995-1997 survey.

U.S. Regional Foreign Holdings and Regional Patriotism

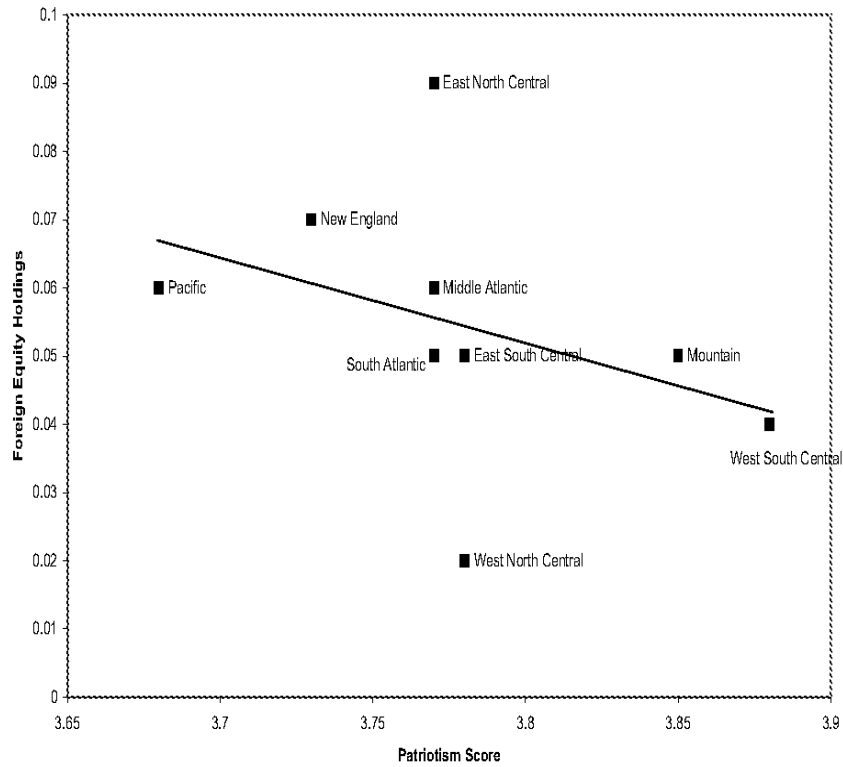


Figure 3. Negative Relation Between U.S. Regional Foreign Equity Holdings and Regional Patriotism Score The 9-level Census division codes are as follows:

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

Table I
Patriotism Scores Across Countries

The Patriotism Score is from the World Values Survey and refers to the average answer for high income residents of a country to the question: "Are you proud to be [insert nationality]?" It ranges from 1 (not proud) to 4 (very proud).

| First Survey: 1990-1992 | |
|---------------------------------|-------------------------|
| Country | Patriotism Score |
| USA | 3.73 |
| South Africa | 3.55 |
| Canada | 3.53 |
| Austria | 3.45 |
| United Kingdom | 3.38 |
| Argentina | 3.38 |
| Spain | 3.28 |
| Denmark | 3.27 |
| Italy | 3.25 |
| Sweden | 3.22 |
| France | 3.18 |
| Finland | 3.17 |
| Belgium | 3.07 |
| Netherlands | 2.93 |
| Germany | 2.75 |
| Average Patriotism Score | 3.28 |
| Average Number of Observations | 1837 |
| Second Survey: 1995-1997 | |
| Country | Patriotism Score |
| Venezuela | 3.92 |
| South Africa | 3.77 |
| USA | 3.73 |
| Peru | 3.75 |
| Australia | 3.70 |
| Turkey | 3.70 |
| Poland | 3.63 |
| India | 3.63 |
| New Zealand | 3.61 |
| Spain | 3.55 |
| Slovenia | 3.51 |
| Argentina | 3.44 |
| Chile | 3.42 |
| Finland | 3.35 |
| Sweden | 3.34 |
| Bulgaria | 3.32 |
| Armenia | 3.21 |
| Moldova | 3.10 |
| Russia | 2.95 |
| Switzerland | 2.92 |
| Estonia | 2.88 |
| Japan | 2.85 |
| Lithuania | 2.81 |
| Latvia | 2.78 |
| Germany | 2.55 |
| Average Patriotism Score | 3.34 |
| Average Number of Observations | 1353 |

Table II
Estimations Showing Patriotism's Significance in Explaining the Home Bias

OLS estimates for regressions of foreign equity holdings on patriotism score 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 from the World Values Survey (WVS) and is an increasing index from 1 to 4. Barriers is an IMF indicator variable of Capital Account Restrictions. AirDepart/Pop is the number of airplane departures per GDP from the WDI database. ForeignPop is the percentage of a population that is foreign born. SharpeWorld is the difference in the Sharpe ratio at home versus the rest of world Sharpe ratio. Significance at the 10%, 5% and 1% levels are indicated by *, ** and *** respectively. T-statistics are in parentheses.

| | Dependent Variable: Foreign Equity Holdings | | | | | | | | | |
|----------------------|---|----------------------|----------------------|------------------|----------------------|---------------------|--------------------|------------------|---------------------|--------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Patriotism | -0.112 ** (2.40) | | -0.080 * (1.90) | | -0.132 *** (3.02) | | -0.081 * (1.73) | | -0.108 ** (2.52) | -0.094 * (1.97) |
| Barriers | | -0.109 *** (3.87) | -0.097 *** (3.48) | | | | | | | -0.062 * (1.74) |
| AirDepart/Pop | | | | 0.004 ** 2.09 | 0.004 ** 2.63 | | | | | 0.002 1.07 |
| ForeignPop | | | | | | 0.006 *** (2.71) | 0.005 ** (2.10) | | | 0.002 0.83 |
| SharpeWorld | | | | | | | | -0.036 (0.77) | -0.052 (1.18) | -0.039 (0.75) |
| Survey Dummy | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Obs | 40 | 40 | 40 | 38 | 38 | 40 | 40 | 37 | 37 | 37 |
| R² | 0.21 | 0.35 | 0.41 | 0.19 | 0.36 | 0.23 | 0.29 | 0.14 | 0.29 | 0.47 |

Table III
Patriotism is Economically Significant

Several measures of economic significance of patriotism and other explanations of the equity home bias. The full model refers to the regression of foreign equity holdings on the survey year dummy, patriotism, transaction barriers, the sum of neighboring countries' market capitalizations, and modified sharpe ratio. The first column contains the coefficient of the variable in the full model. The second column is the standard deviation of that variable. The third column reports the change in the percentage of equity holdings that are foreign for a one standard deviation change in the row variable. The final column shows the change in R-Squared that occurs when the row variable is added to the full model.

| Variable | Estimated Coefficient when Regressed on Foreign Equity Holdings | Standard Deviation of the Variable | Change in Foreign Equity Holdings for 1 Standard Deviation Change in Variable | Change in R² when Variable is Added to the Full Model |
|----------------------|--|---|--|---|
| Patriotism | -0.094 | 0.310 | -0.03 | 0.07 |
| Barriers | -0.062 | 0.479 | -0.03 | 0.05 |
| AirDepart/Pop | 0.002 | 0.449 | 0.00 | 0.02 |
| ForeignPop | 0.002 | 8.221 | 0.02 | 0.01 |
| SharpeWorld | -0.039 | 0.449 | -0.02 | 0.02 |

Table IV

Partial Correlations, Controlling for Survey Year, of Patriotism and Economic, Political and Social Variables

Partial correlations, controlling for survey year, are presented for economic, political, and social correlates of patriotism. Economic correlates are GDP/Cap, income inequality, and Taxes/GDP. GDP/Cap is from the World Development Indicators. Taxes are scaled by GDP. Political correlates are crime, trust of government and propensity to discuss politics. Crime is the number of violent crimes per 100,000 inhabitants in 1993. TrustGov and Discuss refer to the World Values Survey questions of whether the respondent trusts the government and whether he or she discusses politics. Social correlates are ethnolinguistic dispersion, rural population, charity and religion. Ethnolinguistic dispersion is an index from Easterly and Kraay (1999). Rural is the percentage of rural population. Charity is the response to the World Values Survey question of charitable activity. Significance in the partial correlations is denoted by *, **, and *** for the 10%, 5% and 1% levels respectively.

| | Patriotism | GDP/Cap | Education | Taxes/GDP | TrustGov | Discuss | Ethnoling | Rural |
|-------------------|-------------------|------------------|------------------|------------------|-----------------|----------------|------------------|--------------|
| Patriotism | 1 | | | | | | | |
| GDP/Cap | -0.22 * | 1 | | | | | | |
| Education | -0.40 *** | 0.76 | 1 | | | | | |
| Taxes/GDP | -0.62 *** | 0.31 * | 0.54 *** | 1 | | | | |
| TrustGov | 0.15 | 0.11 | 0.12 | -0.08 | 1 | | | |
| Discuss | -0.32 *** | -0.01 | 0.22 * | 0.15 | -0.17 | 1 | | |
| Ethnoling | 0.35 ** | -0.35 ** | -0.40 *** | -0.11 | 0.23 | 0.03 | 1 | |
| Rural | 0.28 ** | -0.40 *** | -0.03 | -0.25 | 0.38 *** | -0.07 | 0.62 *** | 1 |
| Charity | 0.25 ** | 0.31 ** | 0.09 | 0.18 | -0.12 | -0.02 | 0.10 | -0.18 |

Table V
Regressions Showing the Patriotism Result is Not Driven Solely by Correlates

OLS estimates for regressions of foreign equity holdings on patriotism score and significant patriotism correlates. Foreign holdings is the percentage of a country's total equity holdings abroad, from IFS data. Patriotism is from the World Values Survey. GDP/Cap is GDP (in millions) per capita from World Development Indicators. Education is the percentage of the population with a secondary education from the WDI database. Rural is the percentage of rural population. Discuss refers to the World Values Survey question of how often an individual discusses politics. Enthnoling is the ethnolinguistic dispersion from Easterly and Kraay (1999). Charity is a World Values Survey question asking whether the individual participates in charitable activities. Significance at the 10%, 5% and 1% levels are indicated by *, ** and *** respectively. T-statistics are in parentheses.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|----------------------|
| Patriotism | -0.086 ** (2.36) | -0.085 * (1.81) | -0.132 * (1.82) | -0.100 ** (2.28) | -0.088 ** (2.06) | -0.168 ** (2.51) | -0.121 *** (2.74) |
| GDP/Cap | 6.371 *** (3.43) | | | | | | |
| Education | | 0.002 ** (2.66) | | | | | |
| Taxes/GDP | | | 0.445 (1.56) | | | | |
| Discuss | | | | 0.010 (0.10) | | | |
| Rural | | | | | -0.056 (0.43) | | |
| Enthnoling | | | | | | 0.000 (0.25) | |
| Charity | | | | | | | 0.157 ** (2.09) |
| Survey Dum | Y | Y | Y | Y | Y | Y | Y |
| Obs | 38 | 36 | 23 | 35 | 38 | 28 | 33 |
| R² | 0.42 | 0.35 | 0.44 | 0.26 | 0.23 | 0.33 | 0.35 |

Table VI**Patriotism and the Role of Corporate Governance for Foreign Holdings**

OLS estimates for regressions of foreign equity holdings on the patriotism score and corporate governance measures. Foreign holdings is as a percentage of a country's total equity holdings, calculated from IFS data. Patriotism is from the World Values Survey and is an increasing index from 1 to 4. Closely is the average percentage of closely held shares for all Worldscope country firms minus the average closely held percentage from the rest of the world. Investor protection and expropriation risk are from EIU; both of these measures are increasing in better protection. Expropriate is from the EIU database. Corruption is the Transparency International Index increasing in corruption from 1 to 10. CivilLaw is from LaPorta et al (1999). Significance at the 10%, 5% and 1% levels are indicated by *, ** and *** respectively. T-statistics are in parentheses.

| Dependent Variable: Foreign Equity Holdings | | | | | |
|--|----------------------|----------------------|----------------------|----------------------|---------------------|
| | 3 | 4 | 5 | 6 | 7 |
| Patriotism | -0.200 *** (3.09) | -0.143 *** (2.77) | -0.156 *** (2.97) | -0.120 *** (2.82) | -0.140 ** (2.58) |
| Closely | 0.013 (0.08) | | | | |
| InvestProt | | 0.037 ** (2.48) | | | |
| ExpropriateProt | | | 0.074 ** (2.05) | | |
| Corruption | | | | -0.023 *** (3.55) | |
| CivilLaw | | | | | -0.044 (1.01) |
| Survey Dum | Y | Y | Y | Y | Y |
| Obs | 28 | 32 | 32 | 37 | 40 |
| R² | 0.34 | 0.42 | 0.38 | 0.45 | 0.23 |

Appendix: Data sources

| Variable | Notation | Definition and Source | Mean | StD | Min | Max |
|-----------------------------------|--------------|---|-------|-------|-------|-------|
| Bank vs. Market | BANK | Demirguc-Kunt and Levine (1999). Rankings are an average of economic ratios and a high score represents a more bank-based country (we inverted the original scale for ease of interpretation). | -0.39 | 0.78 | -2.03 | 0.66 |
| Barriers | BARRIERS | IMF Capital Account Restrictions from the Exchange Arrangements and Exchange Restrictions Annual Reports. | 0.45 | 0.51 | 0.00 | 1.00 |
| Charity | CHARITY | WVS: "Now I am going to read off a list of voluntary organizations; for each one, could you tell me whether you are an active member, an inactive member or not a member of that type of organization? [...] Charitable organization." 3: Active member, 2: Inactive member, 1: Not a member. | 1.20 | 0.17 | 1.03 | 1.81 |
| Corruption | CORRUPT | University of Goettingen and Transparency International. A composite index measuring the corruption of public officials. Range from 1 (not corrupt) to 10 (very corrupt). | 3.12 | 2.15 | 0.92 | 7.50 |
| Discuss Politics | DISCUSS | WVS: "When you get together with your friends, would you say you discuss political matters frequently, occasionally or never?" 3: Frequently, 2: Occasionally, 1: Never. | 1.97 | 0.15 | 1.60 | 2.30 |
| Diversification Benefits | DIV_BEN | Datastream. Calculated as variance of country index minus covariance of the country index with the world market index. | 0.09 | 0.33 | -1.05 | 0.77 |
| Ethnolinguistic Fractionalization | ETHNOLING | Easterly and Kraay (1999). Measure of linguistic and ethnic group dispersion ranging from 0 (not very diverse) to 100 (very diverse). | 31.4 | 26.2 | 1.0 | 88.0 |
| Expropriation Risk | EXPROPRIATE | Economic Intelligence Unit (EIU) Country Indicators Database | | | | |
| Financial Risk | FINRISK | Harvey: http://www.duke.edu/~charvey/ Index of financial sector risk ranging from 0 (low risk) to 100 (high risk). For 1995 only. | 58.5 | 6.7 | 51.4 | 77.3 |
| 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. | 0.09 | 0.11 | 0.00 | 0.38 |
| 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. | 0.05 | 0.02 | 0.02 | 0.09 |
| GDP per Capita | GDP/CAP | World Development Indicators. | 16219 | 11657 | 392 | 41841 |
| Imports | IMPORTS | U.N. Comtrade Database. Imports divided by GDP. | 223.2 | 117.3 | 75.9 | 597.1 |
| Inequality | INEQUALITY | Theil Index from the University of Texas at Austin. | 35.5 | 5.2 | 27.0 | 48.6 |
| Legal Origin | LEGAL ORIGIN | LaPorta et al (1999). Indicator for civil law countries. | 0.19 | 0.39 | 0.0 | 1.0 |
| Natural Distance | NDISTANCE | Great Circle. Average distance from a country to 141 other countries. | 12.52 | 1.90 | 6.81 | 14.03 |
| Newspaper Circulation | NEWSPAPER | World Bank World Development Indicators Database. Circulation of daily newspapers per 1000 people. | 231.8 | 157.2 | 0.1 | 578.0 |
| Patriotism | PATRIOTISM | How proud are you to be [insert nationality]? 4: Very proud, 3: Quite proud, 2: Not very proud, 1: Not at all proud. The raw scores are originally 1 for high and 4 for low patriotism, but we subtract them from 5. Other survey variables are subtracted from 5 as well when this eases interpretation. | 3.18 | 0.52 | 1.37 | 3.92 |

| | | | | | | |
|--------------------------------|-----------|--|-------|------|------|-------|
| Religion | RELIGION | Please say, for each of the following, how important it is in your life. [...]Would you say Religion is... 4: Very important, 3: Rather important, 2: Not very important 1: Not important at all. | 3.62 | 0.50 | 2.91 | 4.65 |
| Percentage of Rural Residents | RURAL | World Development Indicators. Percentage of population that live in rural areas. | 25.8 | 12.5 | 3.5 | 53.9 |
| Sum of Market Capitalizations | SumMktCap | Sum of dollar market capitalizations of adjacent countries (x 10 ⁻¹²) | 0.46 | 0.64 | 0.00 | 3.06 |
| Taxes/GDP | TAXES | Gross tax receipts divided by GDP. From World Tax Database, University of Michigan Office of Tax Policy Research | 0.09 | 0.08 | 0.00 | 0.40 |
| Trust of Government | TRUSTGOV | WVS: "When you get together with your friends, would you say that you discuss political matters frequently (3), occasionally (2), or never (1)?" and "Could you tell me how much confidence you have in the government in [insert capital city]: a great deal (4), quite a lot (3), not very much (2), or none (1)?" | 2.26 | 0.25 | 1.84 | 2.83 |
| Tariff and Non-Tariff Barriers | T_NTB | EIU Database. Barrier index ranging from 1 (few barriers) to 5 (many barriers). | 2.28 | 0.75 | 1.00 | 4.00 |
| Televisions per capita | TV | EIU Database. Televisions per capita. | 0.39 | 0.16 | 0.10 | 0.74 |
| Violent Crime | CRIME | World Competitiveness Yearbook (1995). Murders, violent crimes and robberies per 100,000 people in 1993. | 105.0 | 75.0 | 2.7 | 272.5 |

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