

Geopolitical Alignment and Simulated Foreign Stock Investment Decisions Among Massachusetts High School Students

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ABSTRACT

As United States citizens have continued to increase their foreign investment activities in recent years, it is increasingly important to understand the primary determinants impacting investment decisions. Existing research suggests that investment flows are heavily impacted by country relations, perceived geopolitical risk, and reciprocity; however, limited studies have investigated how these factors influence adolescent investors. This study examined the extent to which geopolitical alignment, quantified by United Nations (UN) voting similarity, influenced hypothetical foreign stock investments of Massachusetts high school students. A mixed-methods vignette design was employed, where participants were placed in a hypothetical situation to allocate \$10,000 to ten different companies, varying in UN voting similarity, growth rates, and sector characteristics. Quantitative data were analyzed using Pearson's Product-Moment Correlation and the Herfindahl-Hirschman Index, while qualitative responses were also taken into consideration. Results did not support a significant correlation between UN voting similarity and investment decisions ($r \approx .1$, $p > .05$); however, the data did support a positive relationship between company growth rates and investment allocations ($r \approx .5$, $p < .05$). Qualitative responses substantiated the overall finding that participants prioritized financial returns rather than geopolitical alignment in their decision-making process. Additional results revealed differences in investment preferences across demographic groups and widespread sector biases. Research proposes that adolescents may not be as concerned with geopolitical relationships when choosing investments, opting instead to base their decisions on company performance, supporting the idea that U.S. retail investors will increase investment flows to emerging economies and BRICS nations in future years.

Keywords: Foreign Investment; Geopolitical Alignment; Retail Investment; Adolescent Investment; Behavioral Finance; Vignette Study; Global Stock Investment; United Nations

INTRODUCTION

United States foreign investment has increased tenfold since 1982, and as more countries begin to industrialize,

more new markets open (1). Individual U.S. citizens have thus increased investment in foreign companies, as many experts recommend foreign stocks as a strategy for portfolio diversification. These foreign stocks have recently been outpacing the U.S. market. Since the start of the current bull market in October 2022, European stocks tracked by the European Economic and Monetary Union (MSCI EMU) Index (market index of large to mid-cap stocks in developed European economies) have outperformed the S&P 500 Index (market index

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of the top 500 leading companies listed on U.S. stock exchanges) by 26.7 percentage points measured in U.S. dollar return (93.6 vs 66.9) (2). However, European stocks aren't alone in seeing rising investments. BRICS (Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Iran, Saudi Arabia, the United Arab Emirates, and Indonesia) markets, markets containing emerging economies that have typically had weak geopolitical relations with the U.S., have seen unprecedented growth this past year. The MSCI BIC ETF, a fund that focuses on BRICS economies, is up 23.4% this past year, compared to the 16.6% return for the global markets index (3). With the rise in foreign investment, especially in countries with poor geopolitical relations with the U.S., further research is needed to understand the most influential factors shaping investment decisions. A focus on country relationships is especially critical because any correlation found could significantly impact diplomatic efforts and potentially instigate political change to align with future investment partners. Various studies have researched the motivations behind foreign direct investment (FDI, an investor in one country invests heavily, more than 10%, in a business in another country), often utilizing correlation tests to analyze documented commercial investment flows. However, most research fails to examine perceptions behind retail investment, especially among younger, high school-age populations. Despite having limited current involvement in stock markets, they will be instrumental in leading market trends in the future. Analyzing current and prospective factors in order to provide a unique, holistic perspective on foreign investment behavior led to the curation of the research question: To what extent does United Nations (UN) voting similarity with the U.S. influence the attitudes of Massachusetts high school students, aged 16-18, regarding hypothetical stock investment decisions in foreign countries?

LITERATURE REVIEW

Country Relations and Social Trust

Country relations and social trust, a general belief that members of a foreign society will behave honestly and in line with established norms, are significant drivers of foreign investment decisions and perceptions. Many often attribute foreign investment decisions to foreign bias: a broad preference for a nation based on non-economic factors, including cultural and linguistic perceptions. However, research indicates that country relations and social trust are more substantial indicators

of investment flows. A team of Appalachian State researchers studied the factors driving public opinion on U.S. investment in foreign countries using a vignette survey, a method that presents hypothetical scenarios to people so that data can be quantified regarding beliefs or attitudes. The researchers focused on China and Mexico, two countries with historically unstable relationships with the U.S. They found that there is little support for the existence of foreign bias in foreign investment, while individuals' economic self-interest, as well as social conditions, including security threats, are the largest influencers on attitudes towards FDI outflow (4). The vignette method was successful in capturing public opinions; however, Kim and Lee's study did not examine any documented investment flows. Fortunately, a team of German researchers also examined the factors impacting investment and took data from a global equity holdings database to study portfolio allocation. They used data weighting and correlation methods to derive results, and, similar to Kim and Lee's research, they concluded that foreign bias plays a limited role in portfolio allocation (5). Furthermore, social trust was an accurate indicator of investment, and researchers discovered that social trust can reduce foreign bias (5). There is also the existence of geopolitical alignment influencing investment decisions, seen specifically in global greenfield flows, or building new operations from the ground up in other foreign nations. Using a gravity model and UN voting records to quantify geopolitical alignment, researchers concluded that geopolitical distance was crucial for greenfield flows, as when distance increased from the 25th to the 75th percentile, FDI declined by 15% (6). The overall contention from research efforts claims that increased geopolitical alignment and social trust result in a positive perception of foreign investment flows and an expansion of actual FDI flows.

Geopolitical Risk

Perceived geopolitical risks (i.e., political or economic issues due to international relations, war, disputes, or anything that destabilizes markets) also impact foreign investment decisions due to volatility created in foreign markets. Geopolitical risk, often measured by the global Geopolitical Risk (GPR) Index, has well-researched impacts on stock prices. A study using estimation regression methods with data from public records discovered that a higher geopolitical risk often resulted in reduced stock prices (7). This effect was much more pronounced in countries with historically weak international reputations, such as many BRICS countries

(7). Due to reduced stock prices with increased political volatility, especially in emerging markets, investors are forced to carefully observe trends. A study by researchers Sangyup Choi and Jiri Havel, which evaluated data using a push/pull quantitative analysis method, measured whether a high geopolitical risk perceived by foreign investors reduces the amount of purchases of a given country's financial securities. The study concluded that a statistically significant decrease only occurs in purchases of emerging market securities with perceived geopolitical risk, but the relationship was not observed in advanced economies (8). These results are consistent with those found in the study on geopolitical risk and stock prices because if prices decrease with geopolitical volatility, then so will purchases of foreign securities in order to avoid a loss for investors.

Reciprocity

Reciprocity (where both countries provide equal market access to each other, allowing for bilateral foreign investment) holds a heavy influence in foreign investment, and two closely aligned countries often participate in friendshoring to increase FDI flows between each other. Using a vignette study and a regression analysis method, researchers investigated reciprocity on individuals' opposition to foreign direct investment flows. After data examination, researchers concluded that reciprocity does impact public opinions on FDI flows, and a limited perceived reciprocity potential, meaning unequal market access or non-existent investment flows between countries, resulted in pronounced negative opinions towards foreign investment (9). However, this study focused heavily on FDI outflows, investment out of the home country, while research conducted by Japanese researchers concentrated on perceptions of inward foreign investment, investment from another country into the host country. Similarly, these Japanese researchers used a vignette study and a gravity model to examine public perceptions and found comparable results. Japanese individuals shared a positive perception of inward FDI flows when the investments came from countries with high potential reciprocity (10). Reciprocity plays a role in foreign investment perceptions in both individuals who are viewing outward and inward FDI flows. When two countries experience high reciprocity, thus increasing FDI flows, a practice called friendshoring is created. Researchers investigated friendshoring practices and examined whether geopolitical alignment influences friendshoring. Using an econometric model and UN voting records to quantify geopolitical

alignment, researchers recorded data from various types of investment sectors, including greenfield, Mergers and Acquisitions (M&A), and affiliate stocks. The paper concluded that friendshoring is most commonly seen among Western firms, and increased geopolitical relationships boosted friendshoring practices due to a higher perceived reciprocity potential (11). Overall, reciprocity is critical to foreign investment processes, and individuals much prefer FDI flows between countries that have high potential for bilateral investment.

METHODS AND MATERIALS

Study Design

A vignette study approach was employed in this paper, where students were placed in a hypothetical investment simulator, allowing for the extrapolation of generalizations based on their decisions. The vignette survey featured a mixed-methods explanatory sequential design, where quantitative data were first collected. Participants were then asked to answer qualitative questions regarding the attitudes that influenced their decisions. The explanatory sequential design was highly beneficial because it allowed for the collection of quantitative and qualitative data, which were needed for triangulation efforts. If both agree, then the findings are much more credible. Similar studies also use a mixed-methods design to triangulate findings on geopolitical volatility and investments (12). Because quantitative data were collected, UN voting similarity records were utilized for quantifying geopolitical alignment. A team of researchers from the International Monetary Fund (IMF), in their paper, "Investing in Friends: The Role of Geopolitical Alignment in FDI Flows", employed a similar method for quantifying geopolitical distance by utilizing an ideal point distance metric with UN voting records (6). In the current study, voting coincidence figures were taken from the 2024 United Nations General Assembly, using records for the 95 total contested votes provided by the Department of State's report to Congress (13). The Department of State assigned point values to each decision type and calculated the voting coincidence metric, which represents how similarly the country voted with the U.S. on the contested votes.

Subjects

As previously stated, this study researched teenagers, aged 16-18, in a Massachusetts high school setting. Sixteen was chosen as the minimum age for participants because younger groups were inconsistent

in fully understanding investment principles, and strong math skills were required for successful completion of the survey. All genders were included in the study to add another demographic and because almost no field research excluded participants based on gender identification. A voluntary response sampling method was applied, in which surveys were sent to high school teachers to be sent out to their classes in order to gather participants. A snowball sampling method was also employed, where participants were encouraged to share the study with their peers upon completion. While these methods inherently include some sampling biases, they are beneficial for maximizing participation in the study, which is critical for accurate correlation testing. A total of 38 students participated in the study, which enhances the credibility of the results drawn from the total population.

Ethical Considerations

This study was reviewed and approved by Hingham High School's internal review board, and project oversight was conducted by a certified AP Capstone teacher. Due to the need for mathematics and hypothetical financial management, an informed consent form (Appendix A) was provided before the survey, outlining the possible risks and benefits of the study. Prior to the survey, parental or guardian consent and participant assent were obtained for all subjects under 18. Respondents aged 18 provided their own informed consent by signing the form before the survey, acknowledging that they understood all potential risks and terms outlined. Confidentiality was maintained for all participants, and the study was conducted on a voluntary basis. Participants could withdraw at any time if they felt unable to continue. Potentially invasive demographic questions were also made optional if a student did not feel comfortable answering. All procedures involving human participants were conducted in compliance with the principles of the Declaration of Helsinki and Hingham High School's internal review board.

Instrument

The study was conducted utilizing Google Forms software for ease of use and familiarity. Due to limitations regarding students' sparse relative knowledge of investment principles, and their propensity for a brief attention span, a vignette study was chosen as a way to gamify the teenagers' participation to maintain their engagement. The survey method also allowed for real-time behavior collection. Additionally, similar studies

in the foreign investment field employed a vignette study to observe FDI preferences and achieved credible conclusions (4). One main limitation of vignette surveys as opposed to analyzing documented investments is that a gap exists between hypothetical scenarios and real-world conduct, so while the vignette conclusions may be able to accurately capture market sentiment, they may fail to predict genuine actions. Regardless, the focus of this current paper's research is aimed at teenagers, who have almost no public investment records; therefore, leaving out the possibility of evaluating documented investments in data collection.

Procedure

The survey first asked students to read the informed consent form and then asked preliminary demographic questions. Afterwards, students were placed in a hypothetical investment simulation with \$10,000 to invest in ten different fabricated companies. Participants had the freedom to allocate their budget in five percentage intervals wherever they pleased until the percentages totaled 100 across all investments. The ten fabricated foreign companies were strategically chosen based on the UN voting similarity percentages, with a diverse range of figures to study the impact on investment decisions. Business sectors were also provided for each company to provide further information for students and to study whether sectors had any potential correlations with UN voting similarity records on investment perceptions. Sectors have proven to provide varying results across papers, and those investigating defense companies also often note inverse results due to financial success with increased geopolitical uncertainty (14). Additionally, company growth percentages were provided; however, numbers were kept low to try to limit the metrics from completely overtaking decision-making. Although one company (#5), with the lowest voting similarity rating, was given an unusually high growth percentage compared to the other companies to act as an anchor question and to provide insight into how much growth could potentially cause other variable blindness when making hypothetical investments. Depicted below are pasted directions from the quantitative section of the survey, and in Table 1 are the ten fabricated companies that participants could invest in with their unique characteristics.

Hypothetical Investment Decisions

You have been given \$10,000 to invest in different companies! Choose how much of your budget you plan to allocate to each stock. You can choose not to invest in

Table 1. Summary table of all of the fabricated companies that students could allocate their funds towards. Each company has a unique name, foreign-country location, business sector, previous-year growth figure, and the United Nations Voting Similarity figure corresponding to the origin country's voting similarity to the United States, as provided by the State Department's 2024 United Nations report (13).

Company Name	Location	Sector	Growth in the past year	United Nations Voting Similarity (How similar the home country voted with the United States on key issues)
Koala Health Group	Australia	Healthcare	+1.5%	72.3%
Gobi Electricity	Mongolia	Energy	+0.8%	36.6%
Cape Town Tech	South Africa	Technology	+0.8%	37%
Pretzel Vehicles	Germany	Manufacturing	-0.3%	72%
Persian defense	Iran	Defense	+12.3%	26%
Toronto Oil Corp	Canada	Energy	+0.4%	74%
Taco Realty	Mexico	Real Estate	-0.2%	42%
Southern X-Ray Co.	Turkmenistan	Healthcare	+3%	31%
Arctic Space Group	Norway	Defense	+0.2%	67%
Dubai Future INC.	United Arab Emirates	Artificial Intelligence	+1.2%	35%

some companies. All % should add up to 100 at the end.

After the surveys were conducted, information was collected regarding each individual's investment decisions, and also the total investment percentages of individual portfolios allocated to each company, e.g., in company A, # individuals allocated 0%, # individuals allocated 5%, # individuals allocated 10%, and so on. Each individual's decisions were also accumulated to generate claims regarding demographics. In the survey, participants were asked to provide their gender, grade, experience in the stock market, and travel experience (Appendix B). Demographics were recorded because any correlations found could significantly impact brokerage recruiting and also potentially provide insight into investor perceptions for specific groups. Travel experience was asked at the end of the study as a blinding method, so participants would not be privy to the fact that UN voting similarity was the focus of the research, which may have enabled them to act differently. Qualitative questions were asked at the end so subjects could share their investment strategy used and the biggest factors they took into consideration with these decisions (Appendix C). After the study design was completed, a pilot survey was sent out to participants in order to test for any confusion or ambiguity. Once all issues were resolved and the wording on the instructions was clarified, the surveys were sent out with no reported issues during data collection.

Data Analysis

Quantitative analysis was conducted using Pearson's Product-Moment Correlation equation in order to derive general and demographic patterns related to UN voting similarity, growth percentage, and sector influence on hypothetical investments. This method was utilized because it measures the relationship between two continuous interval-level variables. It employs the equation:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

(ranging from -1: perfect negative linear relationship, 0: no linear relationship, +1: perfect positive linear relationship) and is a popular method used in foundational papers regarding the factors influencing FDI flows due to its ability to model complex relationships (15). Unfortunately, Pearson's Product-Moment Correlation equation has been recorded to have reduced accuracy with smaller sample sizes, so demographic correlations found may have limited credibility. Qualitative data from the concluding questions were analyzed to identify broad trends and for triangulation methods to confirm or deny patterns derived from the quantitative questions. Portfolio diversification tendencies were measured using the HHI (Herfindahl-Hirschman Index) method, which

measures market concentration by summing the squares of individual market shares in each company by each participant in this scenario. For the current study, an HHI of .1 indicates perfect diversification (10% in each company) while an HHI of 1 indicates the lowest diversification possible (100% in one company). A two-sample equal-variance t-test was then conducted using the mean HHI and standard deviation for each demographic to assess statistical significance. A p-value was produced for the Pearson's Product-Moment Correlation tests to determine if the results were meaningful or due to random chance. A p-value ≤ 0.05 indicates a statistically significant result. Observing the foreign finance research field, researchers commonly employ a gravity model due to its ability to predict bilateral flows based on several variables such as GDP and geopolitical distance (16). However, a gravity model was not applied in this current study because it is ineffective at capturing market sentiment and has not proven to accurately make credible generalizations with data obtained from a hypothetical situation.

RESULTS

After completing surveys, the results were transferred to Google Sheets for graphing and calculating purposes. Results were found for the total population for correlations with UN voting similarity and growth percentages. These same correlations were also calculated for each demographic group: gender (was only able to find results for male and female due to sample size limitations), market experience (yes and no), and travel experience (well-traveled = 3+ countries visited, med-traveled = 1-2, no-traveled = 0). Additionally, diversification results were found for the total population and each demographic group. Company sectors also played a role in investment allocation, so results were also found to determine sector bias within the total population.

Total Population Results

The results for the total population and the subdemographic groups for the Pearson's correlation analyses are depicted below in Table 2, portraying

Table 2. Summary table of Pearson correlation analyses between simulated investment allocations and UN voting similarity and previous year company growth percentage for the total sample and all demographic subgroups. Correlation statistics: r-value (strength of correlation), n (sample size), t-test (meaningfulness of results), degrees of freedom, and p-value (statistical significance) are reported for each group.

Group and Category	r-value	n- Sample Size	t-test	DF	P-value
Total Population UN	0.12	37	0.71	35	0.4828
Total Population Growth	0.49	37	3.36	35	0.0019
Female UN	0.42	8	1.15	6	0.2956
Female Growth	0.12	8	0.29	6	0.7801
Male UN	-0.06	27	-0.28	25	0.7801
Group and Category	r-value	n- Sample Size	t-test	DF	P-value
Male Growth	0.57	27	3.51	25	0.0017
No Market EXP UN	0.23	22	1.06	20	0.3037
No Market EXP Growth	0.18	22	0.81	20	0.4287
Market EXP UN	0.00	16	-0.02	14	0.9849
Market EXP Growth	0.68	16	3.49	14	0.0036
Well-traveled UN	0.03	14	0.09	12	0.9260
Well-traveled Growth	0.47	14	1.83	12	0.0922
Med-traveled UN	0.41	18	1.82	16	0.0874
Med-traveled Growth	0.14	18	0.57	16	0.5764
No travel UN	-0.33	6	-0.69	4	0.5293
No travel Growth	0.81	6	2.71	4	0.0533

statistics for UN voting similarity and company growth.

For the overall sample, a very weak r -value ($\approx .1$) and an insignificant p -value ($>.05$) demonstrate that the data do not support any significant correlation between UN voting similarity and investment allocations. These results align with the qualitative results, as students rarely mentioned UN voting similarity as a factor in portfolio allocation decisions. Conversely, a strong r -value ($\approx .5$) and a significant p -value ($<.05$) demonstrate that the data does support a significant positive correlation between total growth and investments, as seen in the line graph. These results align with qualitative results, as a majority of students noted that growth percentage was the most important factor that they took into consideration with their investments. Quotes taken from two students when asked about their investment strategies: “Look at the companies’ growth in the last year”, “Allocate my funds into companies with higher growth rates”. Depicted below in Figure 1 are the two correlation analyses graphed on line charts for easy comparison. The first

chart (A), displaying total investment allocations and UN voting similarity, does not have any clear trend, whereas the second chart (B), demonstrating allocations and company growth, has an eventual positive correlation between the two values.

Gender Results

A moderate r -value ($\approx .42$) and an insignificant p -value ($>.05$) demonstrate that there may be a positive correlation between UN voting similarity and female investments; however, due to a small sample size, this relationship cannot be statistically claimed. Qualitative responses do not support a relationship, as UN voting similarity was only referenced once across all replies. Comparatively, a low r -value ($\approx -.06$) and an insignificant p -value ($>.05$), combined with trend confirmations from qualitative responses, indicate the data do not support a significant relationship between male investments and UN voting similarity. Additionally, the quantitative data do not support a significant relationship between company growth percentage and female investments, a very weak r -value ($\approx .1$), and an insignificant p -value ($>.05$); however, 62.5% of females mentioned growth in their qualitative responses. Furthermore, a strong r -value ($\approx .55$) and a significant p -value ($<.05$) demonstrate that the data does support a significant relationship between male investments and company growth percentage. Overall, no major deviations were observed in both female and male responses in comparison to results found in the total population.

Market Experience Results

The data do not support any correlation between subjects’ portfolio allocations and UN voting similarity, regardless of market experience. Findings were confirmed when observing the qualitative data, as in either group, the number of individuals who mentioned UN voting similarity as an investment factor was less than 32%. Individuals with market experience demonstrated a very strong correlation between their investments and company growth, supporting a very strong r -value ($\approx .7$) and a significant p -value ($<.05$), combined with consistent mention of company growth across qualitative responses. Conversely, the data for inexperienced individuals showed a relatively weak r -value ($\approx .18$) and an insignificant p -value ($>.05$) that did not support a significant relationship between their investments and company growth; however, around 60% of these individuals mentioned growth as an investment factor in their qualitative responses. Overall,

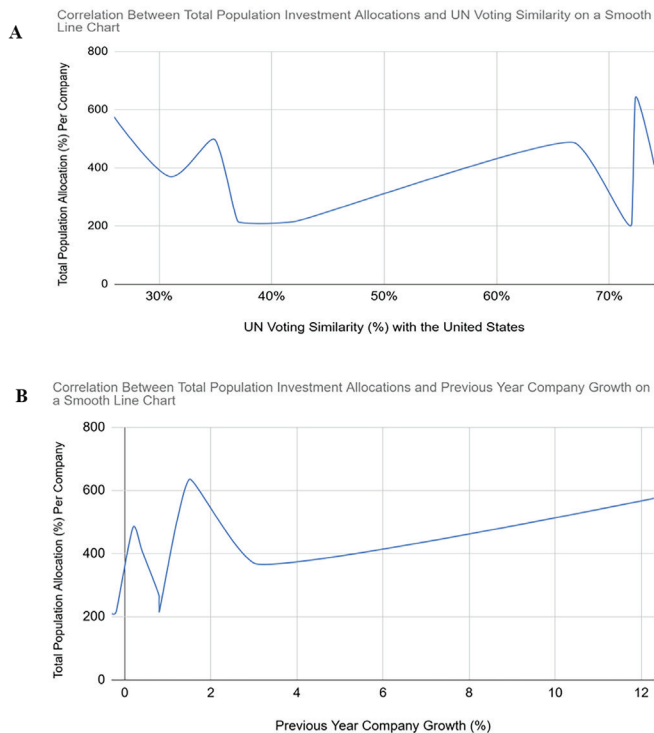


Figure 1. Line charts depicting the Pearson correlation analyses for total population investment allocations and UN voting similarity (A) and for previous year company growth (B). Both y-axes represent the total percentages of the investment allocations across all participants for each company, and the x-axes display UN voting similarity (A) and previous year company growth (B).

responses for subjects split between market experience and inexperience did not deviate from those observed in the total population, except that experienced individuals demonstrated a much stronger correlation with company growth than inexperienced individuals.

Travel Experience Results

Across travel experiences, no correlation was able to be found between any group's investment allocations and UN voting similarity. Participants in the "medium traveled" group demonstrated a moderate r-value ($\approx .4$) and an approaching significant p-value of ($\approx .09$) between their investments and UN voting similarity; however, only around 22% of these individuals mentioned UN voting similarity as an investment factor in their qualitative responses, so no relationship was able to be claimed. In terms of correlation with company growth figures, those without travel experience demonstrated the strongest correlation of any subgroup in the study, with a very strong r-value ($\approx .8$), a closely approaching p-value ($\approx .05$), and consistent mention of company growth in their qualitative responses. Those in the "well-traveled" group demonstrated a weaker, but likely positive correlation with a moderate r-value ($\approx .45$), an approaching significant p-value ($\approx .09$), and 71% of participants mentioned company growth as an investment factor in the qualitative section. Interestingly, no relationship was able to be claimed between the investments of participants in the "medium traveled" group and company growth percentage, as these subjects demonstrated a relatively weak r-value ($\approx .14$) and an insignificant p-value ($>.05$). However, 61% of these individuals mentioned company growth as an investment factor later in the study, signifying that a majority of participants revealed considerations of financial growth, but were inconsistent in terms of investments. Overall, the main significant finding in the travel experience demographic was that individuals without travel experience relied much more heavily on company growth when making their investment decisions than participants with more travel experience did.

Diversification

Participants were also tested for diversification across their hypothetical stock portfolios to compare how different demographic groups and the total population utilized risk management tactics as shown in Table 3.

For the total population, an HHI of 28% (corresponding to an effective portfolio size of 3.6 companies) indicates that participants relatively under-

Table 3. Total population and all subgroup diversification statistics: Herfindahl-Hirschman Index (HHI) average (measure of diversification), Standard Deviation (consistency of data), and T-Test (meaningfulness of results).

Category	HHI Average	Standard dev	T-Test
Total Population	28	0.23906	4.6415
Female	33	0.28669	2.26912
Male	28	0.22849	4.09335
Market Experience	24	0.22098	2.53418
No Market Experience	31	0.25301	3.893
No Travel Experience	23	0.12803	2.2959
Med Travel Experience	30	0.272591	3.11282
High Travel Experience	28	0.2398	2.80863

diversified their investments, and the t-test (≈ 4.64) reveals that the data were statistically significant. These results align with the qualitative data, as only around 24% of individuals mentioned diversification in their responses. Overall, most participants showed selective diversification.

Males created slightly more diversified portfolios than females (Male: 28%-3.57 companies, Female: 33%-3.03 companies), and a greater share of males mentioned diversification in their qualitative responses than females (30% - Male vs 12.5% - Female).

Those with market experience were significantly more diversified than those without market experience (With: 24%, 4.17 companies, Without: 31%, 3.23 companies); however, the qualitative responses were fairly evenly distributed among these two groups.

The only major difference in diversification with the travel experience demographic was that those without travel experience diversified heavily (23% - 4.35 companies), with 33% of these individuals mentioning diversification in their qualitative responses.

Sector Results

Qualitative responses revealed that business sector played a role in investment allocations, so total portfolio allocations for each specific sector are displayed in Figure 2 using a pie chart to visualize hypothetical market capitalization across the study for each sector.

Students were most likely to invest their money into defense and healthcare stocks, while they were semi-likely to invest in technology and energy stocks.

Total Portfolio Allocation % in each Sector
(scaled to 1 company)

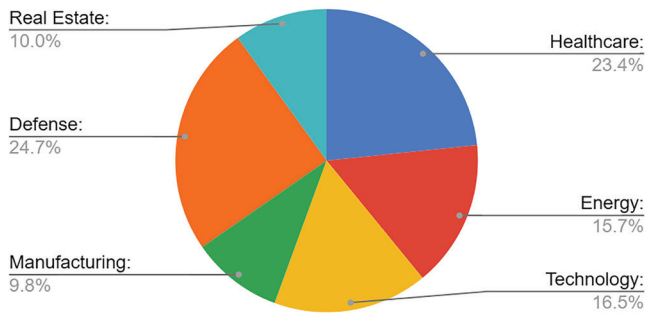


Figure 2. Total Population Portfolio Allocation % for the total population in each sector, scaled to one company per sector for comparison purposes.

Additionally, participants were unlikely to invest in manufacturing and real estate stocks. About a third of students mentioned sectors in their qualitative responses. Quotes taken: “I chose to invest in sectors that I believe have high upside”, “...invest heavily in preferred sectors”. Overall, students did favor specific sectors over others in investment.

DISCUSSION

The results found in the current paper are rarely prevalent in foreign investment literature, as researchers from the IMF discovered that when controlling for all other factors, investment funds allocated smaller shares of their portfolios to geopolitically distant countries (17). Furthermore, students’ heavy reliance on the hypothetical companies’ financial figures rather than focusing on country-of-origin indicates that they were unlikely to factor in country relations, geopolitical risk, or reciprocity in their decision-making, contrary to findings previously discussed in the literature review section. One possible explanation for the current study’s results may be that teenagers, unlike adult subjects commonly used in field research or institutional investors such as those utilized in the abovementioned IMF paper, are more likely to take on risk with their investments due to their age. Late adolescents are often more probable to seek rewards and have a low sensitivity to danger due to an underdeveloped prefrontal cortex, which is responsible for impulse control (18). Participants could have ignored voting similarity metrics in favor of growth because they were not concerned with the risks associated with foreign

investment in countries with poor geopolitical relations with the U.S. This theory supports the finding that most participants only showed selective diversification, suggesting that students were looking for higher returns and were not as concerned about mitigating risk. Responses could also be attributable to a socioeconomic bias; a study done by Byoung-Hyoun Hwang in 2011 focusing on country sentiment and security prices, which concluded that country popularity is positively associated with firms’ investment decisions, used the responses of adults in a nationwide Gallup poll as opposed to surveying participants from a single state (19). The current study was conducted only in Massachusetts, which had the highest median household income among U.S. states from 2020 to 2024, at \$109,870 (20). German researchers discovered in one of their experiments that higher-paid individuals were more likely to make risky financial decisions, which may explain why the subjects, being from a wealthy state, did not portray behaviors consistent with a major concern for perceived geopolitical risk (21). Additionally, as opposed to field research, the current study included a narrow sample size of 38, while most studies on public perceptions of investments survey at least 500 participants. For comparison, Kim and Lee’s vignette study, which was discussed previously, included 830 respondents (4). A smaller sample size may explain why the results found in the current study differ from those often found in the field. Furthermore, it is possible that participants practiced differential weighing, or what is commonly known as salience theory: consumers overweight easily understandable or straightforward information when making decisions. Researchers from the Netherlands investigated salience theory on the stock market, and they concluded that investors consistently overweighed salient information when making investment decisions (22). In the current study, participants may have overweighed the sector or previous year’s growth figure because they are easily understandable metrics as opposed to United Nations voting similarity, which would cause participants to have to consider much more complex factors in their investment decisions, such as potential geopolitical risk and reciprocity limitations.

Gender

Due to a limited sample size, significant statistical correlations were difficult to calculate with female investment behaviors. However, there were no major observed gender differences in terms of prioritizing geopolitical alignment or company growth in their

investment decisions. These results are akin to those found by financial researchers Lei Feng and Mark Seasholes in 2008, as they researched Chinese individuals' foreign investment practices and discovered that males and females demonstrated very similar investment patterns in terms of home bias and portfolio performance (23). Interestingly, in the current study, females showed much less diversification than men. A recent study by researchers from the University of Sydney, where researchers analyzed a dataset of retail investor trades, similarly found that females consistently had less diversified portfolios than men (24). Consistency of this trend in both hypothetical and real-world situations potentially warrants future research into the psychological mechanisms driving these behaviors.

Market Experience

One notable difference found in this subgroup was that individuals with market experience heavily weighed company growth compared to those without experience. Additionally, experienced participants showed much more diversification than inexperienced individuals. These behaviors may both be a part of a larger pattern recognized in 2008 by American professors researching the causes behind foreign investment from individual investors. They discovered that wealthier, more experienced investors were more likely to invest in foreign stocks and received superior portfolio returns, whereas less experienced investors would sometimes base their foreign security purchases on speculative reasoning (25). This behavior coincides with the salience theory mentioned earlier, where inexperienced individuals may have been more likely to take either speculative or easily comprehensible information, such as sector type, into account for their investments, rather than focusing on financial figures or risk mitigation.

Travel Experience

The main takeaway of participant behavior across travel experience was that individuals who had never traveled outside the country displayed both the strongest correlation value with company growth and the largest diversification value, not only when compared to other travel experience groups, but with all demographic subgroups observed in the study. Interestingly, a recent study published by university researchers across the world observed that when considering retail investment, increased tourism led to higher foreign equity investment and reduced home bias (26). While a direct comparison is difficult to achieve, these results

are complementary to those found in the current paper, as untraveled individuals' reliance on company growth and diversification possibly indicates that this group did not factor in country-of-origin, instead opting for a more mathematical approach, trying to maximize performance by focusing solely on finances and volatility. Individuals who had traveled outside of the country may have practiced behaviors consonant with the abovementioned paper, where they may have invested more in companies located in geographic areas that they had visited.

Limitations

These results should be interpreted with caution as several limitations and delimitations exist in the research. One being that there are often several different biases at play with foreign investments. For example, research demonstrates that investor nationality often plays a role in foreign investment preferences (27). Participant nationality was omitted from the current study due to ethical concerns; however, it may have played a role in participants' investment decisions. Additionally, foreign investment is a very volatile topic. A major geopolitical conflict can completely change an individual's foreign outlook and investment practices. Due to the extended time period needed for collecting responses, the GPR Index was not measured during survey responses. Consequently, participants' responses may have changed if they had taken the survey at a separate time. This limitation is significant; however, due to the volatility of foreign investment behavior research, the results are only generalizable to a short period of time, regardless. Another limitation was the presence of hypothetical bias: subjects may have acted a certain way in the vignette scenario rather than in real life because their risk preferences could have changed without real consequences at stake. While the limitation could have shifted participant responses, the study mainly focuses on relative preferences, so small potential statistical differences would likely not have altered the overall patterns observed.

Fulfillment of Gaps in the Research

This study addresses several pre-existing gaps in foreign investment research. One being that the 16-18-year-old population is significantly underrepresented in investment literature. Oftentimes, large firms are the subjects of papers studying the intersection between investment patterns and geopolitical ties, due to larger commercial flows allowing for more effective statistical analysis (28). Similarly, limited information exists on

behavior patterns related to individual stock investment as opposed to greenfield or M&A investment, especially regarding public perceptions. Overall, this paper concluded findings mostly representative of the retail investor in order to achieve a more holistic perspective on the investment behaviors of the targeted age group and selected demographic groups.

CONCLUSION

This study set out to explore geopolitical relationships and their role in the foreign investment behavior of adolescents aged 16-18. In comparison to existing foreign investment research, the findings are surprising because in the current study no significant relationship was found between UN voting similarity and investment allocations. Rather, participants were much more likely to factor in company growth figures in their decisions. Several relationships were identified across demographic groups, suggesting that investment behavior is influenced by personal characteristics.

It is imperative to first understand that the current study has a very small scope with narrowly generalizable findings, only providing preliminary evidence that needs to be repeated in future research to curate confident claims; however, some results do have several potential real-world implications. While assumptions must be carefully crafted, evidence from the current study supports the theory that Fidelity had previously built upon: United States individual investors will increase investment flows to BRICS nations in the years to come (29). Findings suggest that BRICS-Themed ETFs tailored to retail investors could see an inflow of capital, especially as younger generations begin investing in the market. Additionally, findings from this study strengthen the idea that, recently, individuals are more attracted to defense companies, likely due to heightened perceptions of geopolitical risk and increases in government defense spending (30). If this trend continues, military modernization efforts will increase, and the surge in retail demand could allow for increased venture capital profits due to improved IPO valuations and M&A opportunities. Results also suggest that this effect could be seen in healthcare, and potentially reverse patterns in real estate and manufacturing sectors, but more research is necessary to support these claims, as implications extend beyond the scope of the findings in the paper.

As for implications for brokerage recruiting, findings provide preliminary evidence that untraveled individuals

and those with market experience rely the most heavily on growth figures to make their investment decisions, and individuals without market experience are the least likely to factor in growth statistics. Among the individuals observed in the study, females, individuals without market experience, and those with medium or heavy travel experience were the groups who were least likely to diversify, whereas males, individuals with market experience, and those without travel experience were more likely to diversify. If these patterns can be established by presenting consistently across future foreign investment research, firms differing in risk tolerance may want to recruit accordingly, and growth equity firms may want to target untraveled individuals with market experience.

While findings from the current study could potentially provide insight into teenage foreign investment behavior patterns, it is important not to overstate the significance of this study. To further understand geopolitical relations and their impacts on teenage investment, studies should be conducted over a wider region with a larger sample size. A vignette cohort study could significantly contribute to the foreign investment field, as participants would be followed and tested often, where the GPR index and major world events could be tracked to see if there are any significant relationships or deviations between global geopolitical risk and individual stock investor sentiment. This study could also track hypothetical investment behaviors of the subdemographic groups observed in the current study to see if results are replicable in similar research conditions.

CONFLICT OF INTEREST

The author declares no conflicts of interest related to this work.

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APPENDIX

Appendix A: Informed Consent Form

- I. Form provided at the beginning of the survey for participants to sign regarding participation and confidentiality

Informed Consent Form

You have been invited to participate in a research study on the factors that impact foreign stock investment decisions.

Participation

This is a completely voluntary study. You can choose whether or not you would like to participate and answer any of the questions in this survey. If at any time you feel uncomfortable or would not like to continue, you can quit the survey. You are also not required to answer any questions and can leave as many responses blank as you wish. I only ask that you try to be as honest as possible.

Benefits

While there are no direct physical benefits to your participation in this study, I will be very thankful if you assist me in my research. Your participation will improve research on what factors drive foreign investment decisions. Additionally, I will be leaving my contact information below. If you would like to follow up on my concluded research I will be happy to provide you with the results.

Risks

There may be potential emotional stress related to the discussion of foreign nations and mathematics involved. However, if you feel uncomfortable or emotionally stressed on any single question, you can quit the survey.

Confidentiality

This entire survey is anonymous. I will not be asking for your names or anything private that can reveal your identity. All of your responses will be collected in a completely private and password-protected Google Drive that only , my research mentor, and I will have access to. Furthermore, the data collected will be deleted after my research is completed in May of 2026.

Appendix B: Consent form agreement + demographic questions

- I. Preliminary demographic questions prior to entrance to the vignette section of the survey

Participants signature*

By signing below you are indicating that you have read and understood this consent form and agree for your child to participate in this research study.

I voluntarily consent to participate in this study.

Participant initials:

Your answer

What Grade are you currently in?*

- ☐ 9
- ☐ 10
- ☐ 11
- ☐ 12

What is your gender identity?*

- ☐ Male
- ☐ Female
- ☐ Other/Prefer not to say

Have you ever invested or held stock before? (Including crypto or any type of company investment)*

- ☐ Yes
- ☐ No

Appendix C: Qualitative questions

- I. Qualitative questions after the quantitative vignette section of the survey, and the final demographic question regarding travel experience

What was your investment strategy?*

Your answer

What were the biggest factors you took into consideration with your investments?*

Your answer

How many foreign countries have you visited? (Has to be 3+ days spent in country)*

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5+