

Risk Orientation and Trade Policy Preferences

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Public support for policy creates opportunities and boundaries for policy change so it is common for elites to court public opinion when framing and crafting policy. Understanding how policy opinions are formed, then, is central to determining whether and how such opinions might be malleable. Research on policy typically focuses on how framing of messages affect opinions with less attention given to how traits of individuals interact with such messages. We examine how one key trait— risk orientation – influences opinions about trade policy. We draw from research in political economy on trade opinions and from research in political and cognitive psychology on risk orientation to generate a set of nuanced hypotheses that spell out how risk exposure and risk orientation, combined, influence trade opinions. Using survey data from a national internet survey in 2006, we find that risk aversion reduces support for free trade among those with low job skills, but not for those with high job skills. Likewise, risk acceptance increases support for those with high job skills, but not for those with low job skills. These novel and asymmetric results have implications for the potential success of policy framing as well as provide a clearer picture of the sources of opinions about free trade.

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Foreign policy opinions are consequential because elite strategies to win public support range from simply framing policies to substantively crafting policies with public reactions in mind. However, the degree to which any strategy is likely to be effective hinges on having a well-developed understanding of the foundations of policy opinions. This has become increasingly apparent in the area of trade policy, because political debates about the United States' position in the world economy are prominent in the news media and in elections.¹ Members of Congress are quite sensitive to constituent concerns about trade policy when casting roll call votes (Bailey and Brady 1998, Bardwell 2000, Conely 1999, Wink, Livingston and Garand 1996, Xie 2006) and candidates in the 2008 presidential election race have been acutely aware of constituent dissatisfaction with NAFTA and other trade liberalization policies, especially in key battleground states. (Bacon 2008, Eilperin and Shear 2008).

An emergent body of research argues that the distribution of economic risks and rewards across different groups in society drives public opinions about trade policy (see Aldrich 2006:483-485 for a succinct review). In a developed economy like the United States, the distributive consequences of trade policy tend to follow traditional class lines. Well-off high-skilled workers and owners of capital benefit from increased trade while poorer, lower-skilled workers are hurt by increased trade. Not surprisingly, individual opinions tend to follow class lines as well, with high-skill workers feeling more favorable towards free trade than low-skill workers (Scheve and Slaughter 2001).

However, there is also unexplored variation in opinions within these class-based skill groups. Not all low-skilled workers fear trade and not all high-skilled workers embrace it. Existing theory

¹ Although there has been some debate about whether public opinions influence foreign policy-making, a number of studies find that public opinion is influential through broad aggregate shifts in general foreign policy opinions and through specific opinions about particular policies or crises (Aldrich, et. al. 2006, Baum 2004, Canes-Wrone 2006, Sobel 2001).

posits two mechanisms through which the distribution of risks and rewards influences opinions: first, trade lowers the expected income of low-skilled workers while raising the expected income of high-skilled workers and the returns to capital; and, second, trade increases the risk of job loss and the volatility of earnings for low-skilled workers but not necessarily high skilled workers. In other words, not only does trade policy distribute income unequally across individuals in society, *it also distributes risk and uncertainty unequally.*

The first mechanism has been thoroughly explored both theoretically and empirically, but the second mechanism has been both under-theorized and rarely tested empirically, even though this second mechanism may be at least equally relevant to the formation of individual-level trade opinions. We know that individuals vary in their willingness to accept risks and this should have bearing on how they view policies that expose them to risk. Propensity to take risks has been tied to both personality characteristics (Carducci and Wong 1998, Filbeck, Hatfield, Hovarth 2005, Kowert and Hermann 1997, Meertens and Lion 2008) and to the contextual factors (Tversky & Kanneman 1979, 1981, Weber, Blais and Betz 2002, Zaleskiewicz 2001). In political science, risk propensity helps to explain outcomes such as votes for candidates (Berinsky and Lewis 2007, Morgenstern, Scott and Elizabeth Zechmeister. 2001) votes on referenda (Nardeau, Martain and Blais 1999), and political participation (Berinsky 2000, Pererson and Lawson 1989). However, very little research has explored whether individuals' orientations towards risk shape their policy opinions in general (but see Peterson and Lawson 1989) or in trade policy specifically. We argue that models of opinion formation that are predicated on an understanding of how individuals respond to risk are better suited to explaining trade opinion than models that focus solely on the class-based income effects of trade.

This paper advances the political economy of trade literature by introducing such a model and it contributes new insights to the literatures on risk propensity, political psychology, and public

opinion. We offer a more thorough theoretical account of the relationship between trade policy opinions and risk that marries the literature on trade with theories from political psychology. Using data from a national U.S. survey in 2006, we directly test the hypotheses derived from this account and find both novel and important subtleties in how individuals respond to economic risks and rewards associated with free trade.² Our results have implications for how policy is crafted and framed, a point we return to in our conclusions.

Distributional Effects of Trade and the Role of Risk

The Stolper-Samuelson theorem, a leading economic theory detailing the distributional effects of trade, predicts that one's factor endowment will determine whether one is helped or hurt by expanded trade.³ Stolper-Samuelson assumes that factors, or the basic inputs into production like labor and capital, are mobile across industries so that individuals can change jobs or change their investments without cost. As a result, trade policy preferences are determined by the factors an individual holds (i.e. their class) rather than the industry in which they work. Those holding relatively abundant factors should support free trade since increased trade will increase exports of products produced intensively with the abundant factor while those holding scarce factors should support protection as free trade will increase imports of products produced intensively with the scarce factor.

In developed economies like the United States or Western Europe, capital and skilled labor are abundant while unskilled labor is scarce. Thus, free trade will increase exports of products made

² The survey data were collected as part of the 2006 Cooperative Congressional Elections Survey through the FSU team module and include 1000 respondents. The sample was selected based on a proprietary matching technique used by Polimetrix to mirror the national voting age population in the United States. Details of the study and the study methodology can be found at: <http://web.mit.edu/polisci/portl/cces/index.html>. Univariate and bivariate statistics are weighted to reflect response biases in age, sex, and race while multivariate models include age race and sex as covariates.

³ See Rogowski (1989) for the first major application of the Stolper-Samuelson Theorem in political science.

with skilled labor and capital and increase imports of products made with unskilled labor. As a result, skilled workers gain work and enjoy upward pressure on wages while unskilled workers lose work and face downward pressure on wages. Thus, the Stolper-Samuelson Theorem predicts that holders of capital and skilled labor, usually the well-off in society, will benefit from trade while holders of unskilled labor, usually the poorer sectors of society, will be hurt by trade.⁴

One implication of the Stolper-Samuelson theorem – the income effect – has been well-explored in public opinion studies. These studies tend to assume that the underlying process driving opinion is the distribution of income likely to result from liberalizing trade.⁵ Scheve and Slaughter (2001), for example, finds that skill ownership is one of the primary predictors of trade policy preferences in the United States while Mayda and Rodrik (2005) and O’Rourke and Sinnott (2002) find that this result is generalizable to all developed countries.

However, the other implication of the Stolper-Samuelson theorem—the differential impact of trade on risk exposure—has been less explored. Yet, we contend that this dimension is at least equally as relevant to individual opinion formation. Rodrik (1997) provides the most prominent explicit discussion of the effects of trade on individual-level risk. He argues that increased

⁴ The major alternative theory of distributional consequences, the Ricardo-Viner theorem, assumes that factors are specific, i.e. they cannot change industries. In this model, industry determines who wins and loses from trade. Workers and owners in exporting industries will benefit; workers and owners in import-competing industries will be hurt; and workers and owners in non-tradable industries will not be affected. See Hiscox (2002) for a discussion of the two theorems and an argument that factors are partly-mobile and partly-specific. We focus on mobile factors for two reasons: first, the second channel that explains the distributional consequences of trade, i.e. risk, also focuses on skilled vs. unskilled labor and, second, there is limited availability of data on industry of employment.

⁵ The implications of the class based “income effect” of trade have been widely studied in both economics and political science in a variety of ways. For instance, numerous studies have examined campaign contributions from interest groups (Baldwin 1980, Beaulieu and Magee 2004) and congressional voting patterns (Bailey and Brady 1999) and have typically found that class is a strong predictor of outcomes in both arenas, as expected. A large literature in economics has also examined the effect of trade on the “skill premium,” the gap in wages between skilled workers and unskilled workers (but see Rodrik 1997 pp. 13-17, for a critical assessment of this literature).

globalization makes unskilled workers' wages more volatile (and, thus, that the expected level of their wages will be riskier) because globalization, including free trade, provides more opportunities to substitute foreign for domestic workers, and vice versa. Technically, this means that the demand for unskilled labor will be more elastic than the demand for skilled labor, meaning the price of unskilled labor (their wage) will be more responsive to the quantity of that labor demanded. This leads to larger swings in wages as demand changes. More specifically, in a world with free trade, an exogenous shock that lowers demand for domestic workers will lead to a larger decrease in wages for the remaining workers because of the availability of foreign substitutes. On the other hand, anything that raises demand for unskilled workers will lead to even higher wages in a globalized economy because domestic workers can serve as substitutes for foreign workers. Therefore, independent of whether free trade leads to lower average incomes for unskilled workers, it will lead to greater variations around that average income. In other words, there is a greater degree of uncertainty and risk for unskilled workers: they may make a lot more in a globalized world, but they may also make a lot less. Furthermore, theoretical economic models assume all low-skilled workers lose income but in reality only some workers will lose their jobs or have wages cut. Trade, therefore, does not lead to a certain decrease in income; it merely increases the risk for each worker that their income will drop. Current trade opinion research, by modeling trade opinions as a function of skill level, implicitly assumes that all low-skill workers respond only to the expectation of lower income. But since individuals vary in how they assess their chances of loss when risks are uncertain, this may be an inaccurate characterization of the process.

Shifting the theoretical focus to how individuals respond to risk exposure is an important step toward understanding the mechanisms that influence public support for trade policy. In fact, the literature on the embedded liberalism thesis already approaches the trade dilemma in just this way, although often implicitly. The embedded liberalism thesis argues that policymakers increase

support for free trade by creating policies that compensate workers if they lose their job due to increased imports.⁶ These policies typically include unemployment insurance, job retraining programs, and general welfare policies. The implicit argument is that workers may oppose trade because it increases their risk of job loss. Therefore, when insurance or compensation is provided to offset this risk, workers should be less opposed to free trade. Hays, Ehrlich, and Peinhardt (2005) provide evidence that these compensatory policies are, in fact, effective in increasing support for free trade among workers likely to face increased risk because of trade.

Risk, Trade, and Orientation Toward Risk

The effects of risk exposure on trade policy preferences have been documented, even if usually only implicitly. However, the question of whether individual-level risk orientation shapes trade preferences or, indeed, any political attitudes or behavior has been largely neglected but for a handful of studies (see Berinsky and Lewis 2007, Kowert and Herman 1997, Naduea, Martin and Blais 1999, Peterson and Lawson 1989, Morgenstern and Zechmeister 2001).

In the area of trade opinions, only one cross-national study explores this topic. Mayda, O'Rourke, and Sinnott (2006) found that risk-averse individuals are less supportive of free trade. Their study is a valuable contribution, but it is hampered by two problems. First, it uses a blunt and truncated proxy to capture risk orientation. Respondents were classified as "risk averse" if they believed that governments should take responsibility for providing jobs or social services to all individuals. Although it is true that risk aversion may encourage a respondent to support government provision of social insurance, there are numerous other reasons why a respondent might support a government safety net.

⁶ See Ruggie (1982) for the classic statement of the thesis and Ruggie (2008) for a recent updating with various extensions and empirical tests.

Setting aside concerns over measurement error, their measure also suffers from a different problem. The dichotomous variable only taps one side of the risk orientation continuum because it collapses risk neutral and risk acceptant individuals into the “not risk averse” category.

Conceptually, risk orientation ranges from risk averse to risk acceptant. Their results may understate the importance of risk orientation because they do not make comparisons between individuals from both ends of this continuum.

The second limitation of their study, we contend, is theoretical in nature. Mayda, O’Rourke, and Sinnott (2006) assume that risk aversion should have an identical effect on trade policy opinions for all individuals. But risk aversion is not likely to have uniform effects if individual risk exposure differs, particularly since individuals face different prospects for gains and losses from trade policy. We suggest, instead, that risk orientation and risk exposure interact to produce quite different effects on opinions based on one’s economic circumstances.

Risk Orientation

Risk orientation is generally conceived of as an individual-level intrinsic propensity to take risks that is consistent across time and context (Shoemaker 1993, Kowitz and Herman 1997). In this sense, it is a personality trait or disposition that is distinct from risk perception, the variation in one’s views of the level of risk involved in an activity or choice (Weber Blais and Betz 2002) and from risk-taking, the behavioral choice to engage in risky activities or decisions (Zuckerman and Kuhlman 2000).

Although there has been some debate about whether people possess a general disposition toward risk (see Shoemaker 1993, Weber, Blais and Betz 2002), recent research demonstrates that risk orientation and risk-taking behavior are both linked to a number of stable and well-studied personality traits including extroversion, openness, agreeableness, sensation seeking, conscientiousness, achievement orientation and “Type A” personalities (Carducci & Wong 1998,

Kowart and Hermann 1997, Nicholson et. al. 2005, Filbeck, Hatfield and Hovarth 2005, Zuckerman and Kuhlman 2000).⁷ In addition, it can be measured through fairly straightforward survey questions designed to tap personality traits (Meertens and Lion 2008, Morgenstern and Zechmeister 2001, Nadeau, Martins and Blais 1999). That risk-taking and risk attitudes are linked to personality traits supports the idea that risk propensity is a general disposition or personality trait that is not wholly dependent upon context.

Personality traits are central to explaining a range of political opinions and traits often interact with contextual features of the political environment to produce heterogeneous individual-level responses to political stimuli (Mondak 2007, Mondak and Halperin 2008). In experimental research, personality characteristics linked to risk orientation interact with how risks are framed to exacerbate or reduce individual reactions to risk (Kowert and Hermann 1997). Logically, a similar process should occur in the formation of trade opinions, a point we develop more fully in the next section.

Conceptualizing risk orientation as a general disposition is also consistent with the common economic approach of defining risk orientation by the shape of one's utility function. The utility approach measures the degree to which one prefers (and is willing to pay for) a certain outcome compared to a probabilistic outcome. Those who would pay a premium for a certain outcome are considered risk averse, while those who would pay to gamble on an uncertain outcome are considered risk acceptant.

⁷ An alternative branch of research, prospect theory, suggests that response to risk is situational because it is tied to one's reference point, or status quo position, relative to some choice. People are risk acceptant toward losses and risk averse towards gains. However, the concept of situational risk response and dispositional risk orientation do not necessarily conflict since personality-based risk orientation may interact with the situational context (Kowert and Hermann 1997). For fuller discussion of prospect theory see Tversky and Kahneman (1979, 1981).

Although most theories of behavior in political science and economics assume individuals are risk averse, survey questions and lab experiments that ask respondents to choose between risky and certain outcomes suggest that many do not conform to this expectation (Grable 2000, Fellner and Maciejovsky 2007). Likewise, psychological studies of risk and risk taking find that some individuals are risk avoiders while others are risk seekers (Peterson and Lawson, 1989, Kowert and Hermann 1997, Meertens and Lion 2008, Zaleskiwicz 2001). Accordingly, it is useful to consider not only whether risk averse individuals *oppose* free trade, but also whether risk acceptant individuals *support* free trade.

Risk orientation and risk exposure.

Having defined risk orientation and established that it varies, we turn now to specifying how risk orientation should influence opinions about free trade. Here, as discussed above, the literature relating risk orientation to trade preferences remains underdeveloped. For instance, studies of trade and risk often conflate risk exposure and risk orientation or study only one of them in isolation. We argue that it is more appropriate to view risk exposure and risk orientation interactively: only those exposed to more risk and who are also averse should oppose trade. But we also consider the other side of the argument – only those who expect gains from trade and who are risk acceptant should support trade.

We argue that risk orientation plays a central role in translating risk exposure into policy preferences because it selectively directs one's attention to certain types of information about complex policies. Most policies offer combinations of risks and rewards so most can be framed in terms of either losses or gains. Indeed, it is not unusual for elites and media to offer competing frames, arguments, or messages about the same topic (Cobb and Kuklinski 1997, Chong and Druckman 2007, Zaller 1992). In trade policy, liberalizing trade has been framed as an opportunity for growth as well as a risk to America's economic health. The former emphasizes how trade is

beneficial to consumers, workers, and producers by allowing the free flow of products across borders, lowering prices on goods for consumers, providing new markets for domestic producers, and increasing job opportunities. The latter emphasizes that free trade could result in losses of American jobs and industries through competition with countries that enjoy cheap labor and fewer regulatory standards.⁸

These competing policy arguments about trade differ in relevance for individuals along two dimensions: personal economic circumstances and risk orientation. Recall, the Stolper-Samuelson theory indicates that in developed economies high skill workers and capital owners will gain from trade while low-skill workers face the prospects of job loss and wage volatility. In addition, high skill workers are likely to consume more, in an absolute sense, than low skill workers; therefore, they might also reap greater real income gains from cheap foreign goods in the marketplace. Thus, positive messages offer information about potential benefits of trade to the abundantly skilled, while negative messages provide information about the potential risks to the low-skilled. Therefore, we would generally expect low-skill individuals to be less favorably disposed towards free trade than high skilled, and previous research has found this to be the case (Scheve and Slaughter 2001, Mayda and Rodrik 2005).

However, risk-orientation should also determine how influential these messages will be for each individual. Political messages and frames shape opinions through several different paths, including making certain considerations more accessible in memory, increasing the weights placed on some considerations compared to others, and providing new considerations to incorporate with old (Chong and Druckman 2007, Slothuus 2008, Zaller 1992). But the effects of framing and political messages are also moderated by predispositions because predispositions serve as information filters. Individuals take from a complex information environment the information that

⁸ See Cobb and Kuklinski (1997) for examples of pro and con framing of NAFTA.

is most consistent with their underlying predispositions and resist information that is inconsistent (Zaller 1992). Predispositions such as political awareness, partisanship or political ideology are commonly found to moderate the influence of framing (Chong and Druckman 2007, Haider-Markel and Joslyn 2001, Zaller 1992).

Personality traits can work the same way, by signaling to the individual which information in a complex environment is most relevant (Lavine, Lodge and LaFrientas 2005). Moreover, the degree to which personality traits or predispositions moderate the information – opinion relationship should be greatest when the situation under consideration matches closely a predisposition or trait (Lavine, Lodge and LaFrientas 2005). Since trade policy has direct bearing on the prospects of future financial gains and losses, we expect personality traits or predispositions that are most closely tied to managing economic and financial risks to serve as strong moderators of opinion. Risk averse individuals should be especially sensitive to information about risks and losses while risk acceptant people should be sensitive to information about gains. If risk orientation causes selective attention to risks and rewards, risk orientation could lead to very different responses to the same policy proposal simply by causing one to selectively accept information that is congruent with one's risk orientation.

Our argument thus far suggests unique influences on opinion for each of four conditions outlined in Table 1: 1) risk averse facing probable loss, 2) risk averse facing probable gain, 3) risk acceptant facing probable loss and 4) risk acceptant facing probable gain. We should not see a symmetric effect of risk orientation across skill classes because the potential for loss and gain is not symmetric across classes. We expect those exposed to risk of loss (low skill workers) to be receptive to information about potential losses and, therefore, weight that information heavily in forming policy opinions. We expect risk acceptant individuals who face probable losses to filter negative messages about trade and therefore, discount potential losses when forming trade opinions.

Conversely, those facing potential gains from trade – high skill workers – should exhibit the opposite pattern. Risk averse, high skilled workers should filter information about potential gains because it is inconsistent with their predispositions, while those who are risk acceptant should be receptive to information about potential gains. These expectations lead to the following set of hypotheses:

- **Hypothesis 1** Among low skilled individuals, greater risk aversion will reduce support for free trade.
- **Hypothesis 2:** Among low skilled individuals, greater risk acceptance will make no difference in the level of support for free trade policy.
- **Hypothesis 3:** Among high skilled individuals, greater risk aversion will make no difference in the level of support for free trade policy.
- **Hypothesis 4:** Among high-skilled individuals, greater risk acceptance will increase the level of support for free trade policy

The preceding also suggests the following ancillary hypotheses:

- **Hypothesis 5:** The effect of risk aversion on opinion among low skilled individuals will be greater than the effect of risk aversion among high skilled individuals
- **Hypothesis 6:** The effect of risk acceptance on opinion among low skilled individuals will be less than the effect of risk acceptance among high skilled individuals

Finally, we consider whether the *magnitude of effect* of risk aversion and risk acceptance on opinions might differ. Even if we assume that the size of losses faced by low-skilled workers is identical to the size of gains expected by high skilled workers, we should still expect that risk aversion will exert a more powerful influence on political opinions than risk acceptance. Mercer (2005), in his review of prospect theory and political science notes “For political scientists, the most

powerful aspect of prospect theory is its observation that people hate to lose even more than they love to win and that this will systematically bias their attitudes towards risk.” Psychology research suggests that negative arguments are more persuasive than positive arguments because people tend to overweight negative information (Fiske 1980) Cobb and Kuklinki (1997) draw from this insight in forming expectations about how individuals will respond to pro and con political arguments about healthcare and trade policies and find that “con” arguments are more persuasive than “pro” arguments. However, they assume that everyone is risk averse and do not investigate whether the impact of con arguments vary based on this personality trait. We take a slightly more nuanced view by arguing that risk aversion alters how both positive and negative information is filtered. Thus, we do not expect everyone to respond to loss arguments in trade, nor do we expect everyone to respond to gain arguments. However, if risk orientation causes selective acceptance of negative and positive information, and if losses loom larger than gains, then the moderating effects of risk aversion on opinion should exceed the moderating effects of risk acceptance.

***Hypothesis 7:** Risk aversion should exert a larger absolute effect on trade opinions than risk acceptance, all else held constant.*

The implications of a bias towards negativity are significant for aggregate trade policy opinions and, as Cobb and Kuklinki (1997) point out, aggregate opinions in general, because most policy proposals involve some sort of loss for at least some people. As a result, it is easy for elite to offer persuasive arguments in favor of keeping the status quo. Our argument, if correct, suggests that the aggregate effect on opinions about policy, while influenced by the distribution of gains and losses for different groups, is also influenced by the proportion of gainers and losers who are risk averse.

Data and Methods

To test the hypotheses outlined earlier, we use public opinion data from the 2006 Cooperative Congressional Election Survey (CCES). The analyses are performed on a sample of 1000 respondents in the United States prior to the midterm Congressional elections in 2006. The dependent variable, *Trade Support*, measures how supportive or opposed a respondent is to limiting trade. The question wording and distribution of responses is shown in Table 2. Higher scores indicate more opposition to protectionism and, thus, more support for trade.

Following the approach of psychometric studies, we measure risk orientation through a trait-based survey question. Psychology research demonstrates that survey questions can elicit valid and reliable indicators of personality traits (Connelley et. al. 2007, McCrae and Costa 1987) and key personality traits can be captured with as little as a single survey question (Gosling, Rentfrow and Swann 2003). Nadeau, Martin and Blais (1999) argue that risk propensity can be tapped by a direct self-rating question, noting that such self ratings often are the highest loading item in factor analyses used to create risk propensity scales. We adopt this approach rather than the standard behavioral economic method of measuring risk aversion through observing subjects' choices among gambles because recent research suggests that giving respondents choices among gambles is not always a good predictor of orientation towards the more general types of risks encountered in daily life (Meertens and Lion 2008, Lion and Meertens 2001). Gambling choices tend disproportionately tap a single dimension of risk taking that is associated with sensation or thrill seeking behavior, such as extreme sports, gambling for fun, or other types of stimulating activities. A different aspect of risk-taking, and indeed the type we are most interested in examining, is instrumental rather than stimulating, such as risks associated with career, finance, and health decisions (Zaleskiewicz 2001).

To measure general risk orientation, we asked respondents the following question: "In general, people often have to take risks when making financial, career or other life decisions. Overall, how would you place yourself on the following scale?" The seven-point response scale was

anchored at one end by “extremely comfortable taking risks” and at the other by “extremely uncomfortable taking risks.” The phrase “neither comfortable or uncomfortable taking risks” anchored the middle category. Nearly 39% placed themselves in the risk acceptant range of the scale while 32% placed themselves on the risk averse side of the scale. The remaining respondents located themselves in the “risk neutral” category. Like other studies of risk propensity, we find wide variation in individual level orientation towards risk.

The measure of risk orientation correlates well with other measures that are known to be related to the propensity to take risks. For example, 24% of individuals who claim to be risk acceptant are invested in stocks compared to only 14% of those who claim to be risk averse (this difference in proportions is significant at $p < .01$). This is reassuring since a vast literature in finance and economics consistently relates investment behavior to risk orientation (see, for example, Carducci & Wong 1998, Fellner 2007, Grable 2000, Keller and Siegrist 2006). Likewise, previous studies have found that gender, age, income, marital status and education shape attitudes towards risk (Slovic 1964, Dahlback 1990, Grable, 2000, Nadeau, Martin and Blais 1999). An ordered probit model of our seven point measure of risk orientation finds statistically significant results for all but one of these well established relationships.⁹ Only marital status failed to significantly influence risk orientation. Taken together, these results reassure us that our measure does, indeed, capture individual level risk orientation.

Figure 1 shows the distribution of individuals across the seven point scale of the risk orientation measure. Because risk aversion and risk acceptance should not have symmetric effects on opinions, we split our risk scale into three separate categories: a risk aversion scale, a risk

⁹ The coefficients for the ordered probit model of the 7 point risk orientation scales (risk aversion = 7) are as follows: female .404 (.007) *, age (years) .005(.002)*, married .036 (.074), income -.026(.010)*, ordinal education scale -.079 (.025)*. Coefficients that are starred are significant at $p|z| < .05$.

acceptance scale, and a risk neutrality indicator which serves as the reference point. The risk aversion scale ranges from the low of 0, not risk averse, to a high of 3, extremely uncomfortable taking risks. Everyone who marked 4 or lower on the seven-point risk orientation scale (i.e. those who identified as risk acceptant or risk neutral), were classified as “not risk averse.” Those who marked 5 were given a score of 1 on the risk aversion scale, those who marked 6 were given a score of 2 and those who marked 7 were given a score of 3. We followed a similar process to create the risk acceptance scale, where everyone who chose risk neutral or higher (4, 5, 6 and 7) was scored as “not risk acceptant” and coded as 0. We coded 3, the category just below neutral as 1 on the acceptance scale, the category 2 as 2 and the category 1 as 3. Like risk aversion, this yields a 4 point scale that ranges from 0, not risk acceptant, to 3, extremely comfortable taking risks. The excluded category that serves as a baseline in our model is the risk neutral category because the respondent is, by definition, risk neutral when the risk aversion and risk acceptant scales are both equal to zero.

The second step in testing our hypotheses is to construct a series of variables that interact skill level and risk propensity. Skill is difficult to measure directly and there has been significant debate about the best ways to measure it indirectly. The most common measure is to use education, with college graduates typically assumed to be high skilled and those without college degrees assumed to be low skilled.¹⁰ We follow the same convention by separating respondents into high skill and low skill categories based upon whether they hold a college degree.¹¹

¹⁰ This is the technique, for instance, of Scheve and Slaughter (2001), Mayda and Rodrik (2005) and many other public opinion studies of trade policy preferences. Studies of legislative voting on trade, such as Bailey and Brady (1998) and Ehrlich (2007), also frequently use level of education in a legislator’s district as a measure of the skill composition of that district. However, this measure is not without controversy. Hiscox and Hainmueller (2006), for instance, argue that education measures exposure to pro-trade arguments and not skill.

¹¹ We include individuals who graduated from 2 year colleges as well as those with four year degrees in our measure of “high-skill.” Because two year colleges are traditionally focused on providing skill-oriented degrees, many of which are service oriented such as health care, police work, construction,

The six possible conditions defined by the combination of risk exposure (as measured by skill) and risk orientation are shown in Table 3, along with the number of respondents in each condition. The interaction terms included in the model produce estimates for five of the six conditions: high-skilled, risk averse (HRAV), high skilled, risk acceptant (HRAC), low-skilled, risk averse (LRAV), low-skilled, risk acceptant (LRAC), and high skill, risk neutral (HRN). The reference category in the model is low skilled, risk neutral (LRN). The risk acceptant and risk averse categories of variables range from 0 to 3 as outlined above, while the risk neutral, high skill is a dichotomous variable that takes on the value 1 for those who have a degree and are risk neutral.

Table 4 summarizes the specific empirical implications of our argument as they relate to the hypotheses outlined in the previous section. The expectations for hypotheses 1 – 6 are straightforward but expectation for hypothesis 7 warrants additional explanation and a caveat. We have argued that the moderating effect of risk aversion should be greater than the moderating effect of risk acceptance, all else held constant. This means that the difference in the probability of support for free trade between a risk averse and a risk neutral person should be *larger in absolute terms* than the difference in the probability of support between a risk acceptant person and a risk neutral person. The difficulty in testing this hypothesis with the current data is that we cannot be certain that “all else held constant” applies. It is not clear whether the anticipated gains from trade to high-skilled workers exactly equal the anticipated losses from trade to low-skilled workers and, even if the anticipated gains and losses were equal, it is possible that perceptions of expected gains and losses differ. If either is the case, then we cannot clearly determine whether a difference in the magnitude of effect stems from asymmetric gains and losses, different perceptions of gains and losses, or different reactions to symmetric gains and losses. Therefore, we encourage caution in drawing

and hospitality management, we believe this to be an indicator of skills that are not easily substituted under terms of free trade.

strong conclusions about the mechanism. On the other hand, finding no difference in the size of effect would, at the least, call into question some of our expectations about the causal mechanism.

[Table 3 here]

In addition to our substantive variables of interest, we include a number of control variables drawn from previous public opinion studies of trade policy preferences such as Scheve and Slaughter (2001), Mayda and Rodrik (2005), and Hays, Ehrlich, and Peinhardt (2005). Because policy preferences are typically tied to partisanship and other political predispositions, we include variables for *Republican* and *Democratic* affiliation.¹² Both are dichotomous variables, and those who identify as independents or third party members serve as the reference category. *Unemployment* is a dummy variable measuring whether the respondent is currently unemployed (out of a job and seeking work) or not. Unemployed respondents are expected to support protections (oppose trade) because they may believe that limiting trade will increase domestic jobs. *Union* is equal to 1 if the respondent is a current union member and 0 if not. Union members are expected to oppose trade because of concerns that it will eliminate domestic jobs, especially in the unionized manufacturing sectors. *Age* measures the age of the respondent in years. Older respondents have been found to be less supportive of trade, although the theoretical reasons for this are not clear. Since it is possible that the negative effects of trade decline over time due to retirement or other factors, we also include the squared value of age to capture non-linear effects. *Married* equals 1 if the respondent is currently married and 0 otherwise. Married respondents are expected to be less supportive of trade because they will be more sensitive to the costs associated with job loss. Finally, *Gender* equals 1 if the respondent is female and 0 if the respondent is male, while *Black* and *White* equal 1 if the respondent is of the stated race and 0 otherwise, with all other races the excluded reference category.

¹² We also re-ran the analysis using ideology instead of partisanship with no major changes to the results. Ideology has more missing cases than partisanship, so we present the analysis using partisanship as a control instead.

The one control that variable was consciously omitted is income. Income is sometimes used as an alternative measure of skill. Not surprisingly, income and education are highly correlated, although conceptually, education has a closer link to job skills. The larger problem, however, is that income has a high number of missing cases. That, combined with its strong correlation to education, leads to significant difficulty estimating the independent and interactive effects of skill on opinions. Moreover, given our argument, income should not enter the model as a direct control. Rather, it should also interact with risk orientation. Including interactions between risk orientation and both education and income results in a model with substantial collinearity and few substantively interpretable results.¹³ We choose, therefore, to present our results using just education as a measure of skill level.¹⁴

Results

Table 5 presents the coefficients for an ordered probit model where the dependent variable is coded from 1 to 5, with 5 indicating the greatest support for free trade and 1 indicating the least support. The ordered probit coefficients show the effect of each independent variable on an unobservable underlying dimension, y^* . Although y^* does not have a direct substantive meaning, examining the marginal effect of risk orientation and skill level on y^* does test support for our general hypotheses, as outlined in Table 4. However, to see the substantive impact on opinions, we also examine predicted probabilities that are generated by the model.

[Table 5 here]

The results in Table 5 support our empirical expectations. The coefficients for the risk aversion scale (LRAV) and the risk acceptance scale (LRAC) indicate the marginal effect on y^* for

¹³ When we enter income in as an additive control variable, some of effects of the interactions are attenuated, but the direction of effects and the differences between coefficients remain statistically significant.

¹⁴ We can reproduce the same pattern of substantive results discussed in the next section by dropping the education variable and interacting a “high income” variable with risk orientation.

those with low skills (when college degree=0). Here, the coefficient for risk aversion is significant and negative while the coefficient for risk acceptance is not, as predicted by hypotheses 1 and 2. The next set of coefficients, (college degree X risk aversion) and (college degree X risk acceptance) represent HRAV and HRAC, respectively. They indicate the marginal effect of risk aversion and risk acceptance on y^* , conditioned on having a college degree. As expected in hypotheses 3 and 4, the risk aversion coefficient is not significant while the risk acceptance coefficient is positive and significant. The coefficient for college degree indicates the marginal effect of high skills for risk neutral individuals and is also statistically significant. Of course, the total marginal effect of skill and risk aversion on y^* is the sum of the “college” coefficient and the HRAC coefficient because college is also equal to 1 when HRAC and HRAV is greater than 0.

Together, the set of estimated coefficients reveal that risk aversion and risk acceptance have quite different marginal effects on trade opinions and these effects depend upon on the skill level of respondents. *Risk aversion* influences the opinions of low-skilled individuals while *risk acceptance* influences the opinions of high skilled individuals. Risk aversion has no effect for high skilled individuals, as predicted by hypothesis 3 and risk acceptance has no effect for low skilled individuals as expected by hypothesis 2. Overall, the results are consistent with our argument that risk orientation shapes the selective attention given to the risks and benefits associated with trade policy.

Hypotheses 5 and 6 can be examined using chi-square tests of the difference of coefficients. As expected, the marginal effect of risk aversion is significantly higher for the low-skilled than for the high skilled ($p < .05$). Indeed, the marginal effect of risk aversion on y^* for low skilled workers is nearly 13 times larger than for high skilled workers. The opposite pattern occurs for the risk acceptance coefficients. Risk acceptance is only statistically significant for high skilled workers and the risk acceptance coefficient for low-skilled workers is opposite signed. Because the estimates are not very precise, the difference of coefficients test is significant at $p = .089$.

The preceding discussion of coefficients tells us nothing about the substantive quantity of interest, the probability of supporting or opposing free trade. Predicted probabilities from this model are generated from a non-linear transformation of y^* so the real effects of risk orientation and skill levels interact with the control variables in the model. Thus, we turn to examining the effects of risk orientation and risk exposure on the predicted probabilities based on the results in Table 5 using Clarify (King, Tomz, and Wittenberg 2000, Tomz, Wittenberg, King 2003). All variables except the risk-orientation and risk exposure conditions are set to their mean or mode.

Table 6 presents the predicted probabilities of each category for our six exposure-orientation conditions along with the standard error. For each exposure-orientation condition, the response category for the dependent variable with the highest predicted probability is highlighted in bold. For most conditions, the modal predicted opinion is neutrality toward the protectionist statement. Only the strongest conditions deviate from this. Moreover, the predicted probability of supporting free trade is much lower for low-skill risk-averse individuals than for high-skill risk-averse individuals. The probability of disagreeing or strongly disagreeing with the protectionist statement (i.e. supporting free trade) was .14 (.12 + .02) for those classed as LRAV but .42 for those classed as HRAV. This supports empirical expectation 5, outlined in Table 4. Likewise, the predicted probability of disagreeing with the protectionist statement was much higher among the HRAC at .56 compared to the LRAC group at .31. Indeed, the HRAC group is the only one that is unequivocally predicted to fall into the category of opposing protectionism (i.e. supporting free trade). Likewise, the LRAV group is the only one unequivocally predicted to fall into the category of supporting protectionism (i.e. opposing free trade).

[Table 6 Here]

Table 6 also shows patterns of predicted probabilities that we would expect given the skill level for each category of opinion. For example, the predicted probability of strongly disagreeing

with the protectionist statement ranges from essentially 0 for low skilled risk averse people to a high of .21 for high skilled risk acceptant people. The opposite pattern occurs when looking at the probability of strongly agreeing, where the probability for highly skilled risk acceptant people is only .02 but jumps to .25 for low skilled risk acceptant people. This suggests that it is the combination of risk orientation and risk exposure that polarizes opinions in trade policy.

Another implication of our theory is that risk aversion should exert greater influence on opinions than risk acceptance because loss aversion has been found to be a more powerful force than gain seeking. Table 7 demonstrates this effect using first differences in predicated probabilities for the response category disagree [D] (opposes protectionism) for a change from the risk neutral value, 0 to the maximum risk orientation value of 3. Again, we see the pattern of aversion operating for those with high exposure to potential risks (low skill), and acceptance operating for those with low risk exposure but high reward exposure (high skills). But what is interesting and quite obvious in this table is the difference in the absolute value of the effect of risk orientation depending upon one's condition. Risk aversion, for those anticipating a loss, exerts a much large effect on opinions than risk acceptance for those anticipating gains.

[Table 7 here]

Taken together, these results strongly suggest that risk orientation and exposure are important determinants of trade policy preferences, but they must be considered jointly because risk orientation moderates the effects of risk exposure. Risk aversion matters only to those who are exposed to risks of loss and risk acceptance matters only to those who are exposed to the possibility of gain.

Conclusions

These results provide a much richer account of the influences on trade policy preferences, and the findings from the analyses augment the accounts of Scheve and Slaughter (2001), Mayda and

Rodrik (2005) and others in an important way by demonstrating that a key personality trait – risk orientation – moderates the “income-effect” of trade policy on public opinion about free trade. The finding is important because it provides strong evidence for the micro-foundations of the Embedded Liberalism literature. This literature argues that policymakers can increase support for trade by providing insurance against loss and compensating those who do lose from trade. Implicit in this argument is that individuals oppose trade because it increases the risk of loss and that they will be more likely to support it if the risks are offset. This paper demonstrates that risk aversion is a key determinant of trade policy and that, while not all opponents to trade are averse to risk, a sizeable portion of them are. Future research will be needed to determine if insurance and compensation policies can mitigate the concerns of the risk averse low skilled workers; however, the results of this paper and the results of Hays, Ehrlich, and Peinhardt (2005), which found that compensation can increase support for trade among all low skilled workers, suggests that this future research would be fruitful.

At the same time, our research offers an alternative perspective on the ability of politicians to use risk and loss based arguments to retain the status quo. Public support for policy change is actively cultivated by elected officials because aggregate public opinion sets boundaries for the direction and magnitude of policy change (Page and Shapiro 1992) Individual level opinions, however, depend on expectations of gains and losses from proposed policies. When individual traits, such as risk orientation, bias how those expectations influence opinions, those biases become writ large in the aggregate. On the one hand, our analysis suggests that expectations of loss exert a stronger influence than prospects of gain, which is troubling because it suggests that policy frames that emphasize potential losses could resonate more at the individual and the aggregate level. But at the same time we note that risk aversion, as a personality trait, is far from ubiquitous. Nearly 39% of our sample indicated that they were at least somewhat risk acceptant, with another 29%

professing risk neutrality. Only 32% of our sample characterized themselves as risk averse, and among those, only half fell into the group of people considered “at risk” of job loss from free trade. Thus, while a small group of individuals were very sensitive to anticipated losses, they were a distinct minority in our sample. Risk acceptant individuals who tend to discount potential losses made up more than half of those in the low-skill category.

More broadly, this suggests that while loss-oriented political arguments may exert great power over the opinions over some individuals, the effectiveness of this type of argument may be limited to the subset of people who are selectively attentive to such information – the risk-averse. Politicians can manipulate the sense of risk that the public feels about a policy, but they cannot force everyone to care about that risk. Likewise, they can manipulate perceptions of gains, but not everyone will be persuaded.

Of course, it remains to be seen whether these results generalize to other policy areas beyond trade, but we believe it likely, particularly for other economic policy areas that hit the pocketbooks of citizens. Risk orientation has been under-appreciated as an explanatory variable for policy opinions, perhaps because the most common assumption in political science models is that individuals are risk averse. However, given the large number of risk acceptant individuals, we need to develop theories of preferences that account for both ends of the risk orientation spectrum.

Finally, we note that the current analysis leaves open some important questions. We posit a mechanism that we do not directly test. We assume that risk orientation serves as a filter on information about the risks and rewards of free trade, but we have no knowledge of the specific information that our respondents might have been exposed to about trade. Instead, we can only note that risk exposure and risk orientation seem to work in tandem as we would expect if we are correct about the underlying mechanism. Our next step in this research agenda is to explore the information-filtering mechanism in a lab setting where we can randomly assign individuals with

different risk exposure and different risk orientation to various frames and messages. Evidence from both lab settings and broader cross-sectional surveys would make a stronger case for the process that we have described in this paper.

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Table 1: Expected Effect of Orientation – Exposure Combinations on Policy Considerations

| | Risk Exposure from trade policy | |
|-----------------------|---|--|
| | Probable income loss (low skill class) | Probable income gain (high skill class) |
| Risk Averse | Receptive to and heavily weights information about losses | Filters and/or places little weight on information about gains |
| Risk Acceptant | Filters and/or places little weight on information about losses | Receptive to and heavily weights information about gains |

Table 2: Distribution of Support for Trade.

| <i>The United States should limit the imports of foreign products in order to protect the U.S. national economy.</i> | |
|--|---------|
| | Percent |
| 1 - Strongly agree | 13.88 |
| 2 - Agree | 29.15 |
| 3 - Neither agree nor disagree | 30.58 |
| 4 - Disagree | 18.38 |
| 5 - Strongly disagree | 8.01 |
| N=989 | |

Data source: 2006 CCES FSU Team Content, weighted

Table 3: Percent (number) of respondents in each condition

| | Risk Acceptant Scale > 0 | Risk Neutral | Risk Averse Scale > 0 |
|---|-----------------------------|----------------|--------------------------|
| Risk exposure: | | | |
| Probable Loss (Low skill = no degree) | 18.71 (185) | 14.16 (140) | 15.77 (156) |
| Probable Gain (high skill, college degree) | 24.27 (240) | 11.93 (118) | 15.17 (150) |

Data source: 2006 CCES FSU Team Content

Table 4: Empirical Expectations based on Theoretical Hypotheses

| Differential Effects of Orientation by Skills | | | |
|--|--|--------|--|
| E1 | Coefficient LRAV | < | 0 |
| E2 | Coefficient LRAC | = | 0 |
| E3 | Coefficient HRAV | = | 0 |
| E4 | Coefficient HRAC | > | 0 |
| E5 | Coefficient LRAV $\Pr(D)_{LRAV}$ | > > | Coefficient HRAV $\Pr(D)_{HRAV}$ |
| E6 | Coefficient LRAC $\Pr(D)_{LRAC}$ | < < | Coefficient HRAC $\Pr(D)_{HRAC}$ |
| Magnitude of Effects Hypothesis by Risk Orientation | | | |
| E7 | Absolute value of a change in $p(D)$ from changing from LRAC to LRAV | > | Absolute value of a change in $p(D)$ from changing from HRAC to HRAV |

a. $\Pr(D)$ is an indication of support for free trade since it represents disagreement with a protectionist orientated statement.

Table 5: Ordered Probit Models of Free Trade Policy Preferences

| | | B | SE |
|---------------------------------------|------|-----------|-------|
| Risk Averse Scale | LRAV | -0.213 * | 0.055 |
| Risk Acceptant Scale | LRAC | -0.024 | 0.060 |
| College Degree | HRN | 0.196 * | 0.109 |
| College Degree X Risk Averse Scale | HRAV | 0.016 | 0.073 |
| College Degree X Risk Acceptant Scale | HRAC | 0.133 * | 0.064 |
| Unemployed | | -0.537 * | 0.198 |
| Union member | | -0.023 | 0.078 |
| Democrat | | 0.082 | 0.088 |
| Republican | | 0.131 | 0.087 |
| Age | | -0.024 * | 0.015 |
| Age squared | | 0.000 | 0.000 |
| Female | | -0.370 * | 0.075 |
| Married | | 0.021 | 0.079 |
| Black | | -0.076 | 0.212 |
| White | | 0.053 | 0.102 |
| Mu1 | | -1.923 | 0.343 |
| Mu2 | | -0.938 | 0.340 |
| Mu3 | | -0.122 | 0.339 |
| Mu4 | | 0.865 | 0.341 |
| N | | 896 | |
| Log Likelihood | | -1295.950 | |
| LR chi2 | | 100.750 * | |

* $p | z | < .05$

The dependent variable ranges from 1 (strongly agree) to 5 (strongly disagree) with the statement “*The United States should limit the imports of foreign products in order to protect the U.S. national economy.*”

Table 6: Predicted Probabilities by Orientation – Exposure Combinations

| | Agreement with “ <i>The United States should limit the imports of foreign products in order to protect the U.S. national economy</i> ” | | | | |
|---------------------------|--|-----------------------------|-----------------------------|-----------------------------|--|
| | SA (1) (least support for free Trade) | A (2) | N (3) | D (4) | SD (5) (most support for free trade) |
| Low Skill, Risk Averse | .25 (.054) | .36 (.024) | .25 (.03) | .12 (.031) | .02 (.009) |
| Low Skill Risk Neutral | .08 (.019) | .26 (.026) | .31 (.016) | .25 (.028) | .08 (.019) |
| Low Skill Risk Acceptant | .09 (.030) | .28 (.036) | .31 (.017) | .24 (.038) | .07 (.022) |
| High Skill Risk Averse | .06 (.024) | .21 (.045) | .30 (.021) | .30 (.042) | .12 (.043) |
| High Skill Risk Neutral | .06 (.015) | .22 (.029) | .31 (.017) | .30 (.029) | .11 (.025) |
| High Skill Risk Acceptant | .02 (.01) | .14 (.032) | .27 (.027) | .35 (.027) | .21 (.049) |

Estimates of predicted probabilities and standard errors produced using Clarify. Remaining variables in the model set at their mean or mode. Risk aversion and risk acceptance scales are set at their maximum possible value of 3 for the appropriate conditions. College is set at 1 for predicting probabilities for high skills and 0 for predicting probabilities for low skills.

Table 7: Change in Predicted Probabilities from changing Risk Scale from Min to Max.

| | | Change | SE | 95% CI | |
|----------------|--|--------|-------|--------|--------|
| Δ pr(D) | Low Skill | | | | |
| | Neutral \rightarrow Max Risk Averse | -0.130 | 0.033 | -0.196 | -0.067 |
| | Neutral \rightarrow Max Risk Acceptant | -0.014 | 0.039 | -0.092 | 0.062 |
| Δ pr(D) | High Skill | | | | |
| | Neutral \rightarrow Risk Averse | 0.007 | 0.043 | -0.087 | 0.086 |
| | Neutral \rightarrow Risk Acceptant | 0.061 | 0.029 | 0.002 | 0.116 |

Estimates of First Differences, SE and CI produced using Clarify (X.0)

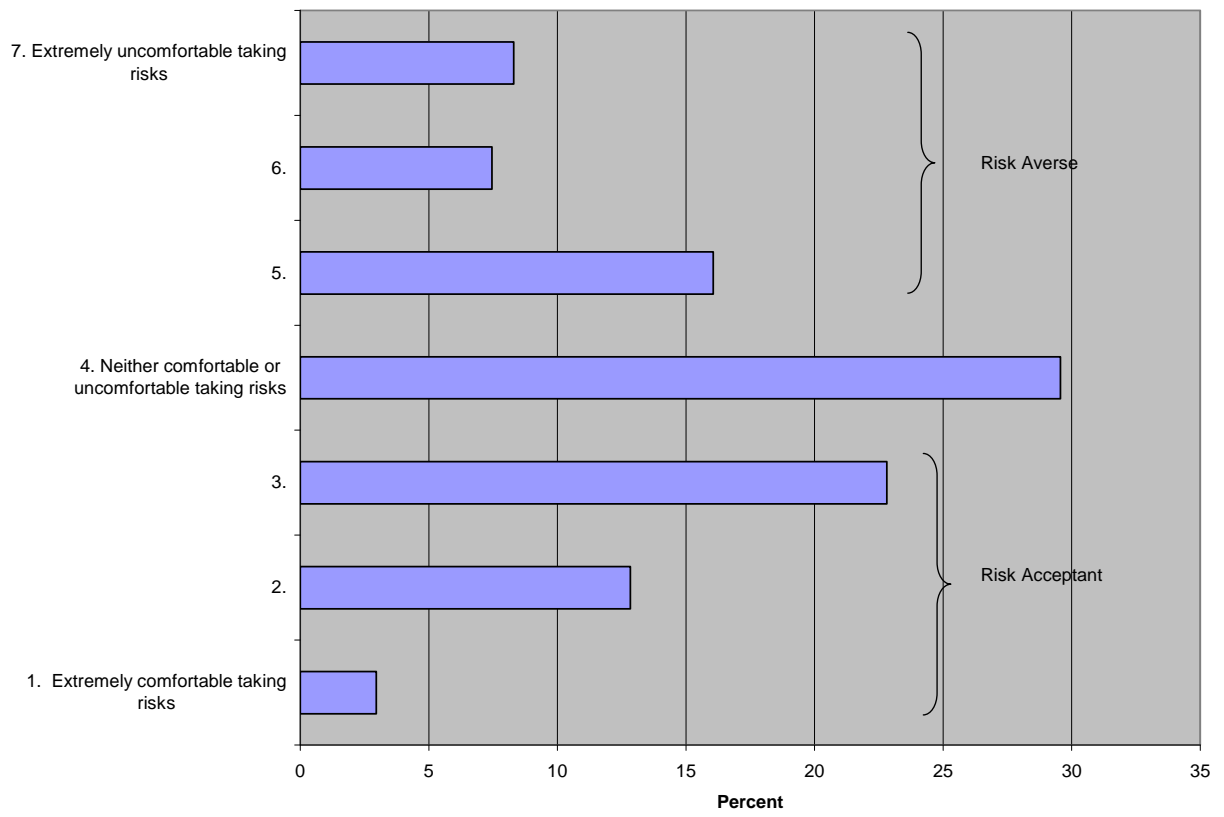


Figure 1: Distribution of Risk Orientation