

**THE SOURCE OF FEMALE PROTECTIONISM:  
THE CONSEQUENCE OF THE KNOWLEDGE GAP IN ECONOMICS?**

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# THE SOURCE OF FEMALE PROTECTIONISM THE CONSEQUENCE OF KNOWLEDGE GAP IN ECONOMICS?

## Introduction

A growing body of scholarly research has examined the determinants of public attitudes toward trade liberalization. The survey-based studies have largely agreed on the findings that protectionist backlash is highest among respondents with the lowest levels of education, and that it also has a strong gender orientation. The positive relationship between education and support for trade liberalization has been interpreted as support for economic trade theory, *i.e.*, the Heckscher-Ohlin Stolper-Samuelson theorem, suggesting that trade preferences are primarily a product of distributional concerns derived from the labour market implications of trade. Here, educational attainment simply serves as a proxy for skill level. Recently however, a group of scholars has argued that the relationship between education and trade attitudes may reflect not so much distributional concerns, which differ with respect to skill level, but rather education effects *per se*; that is, exposure to economic ideas at university makes the primary difference in attitudes toward trade liberalization (Hainmueller and Hiscox 2006, 469-498; Hainmueller and Hiscox 2007, 399-442; Caplan 2006, 367-381; Caplan 2002, 433-458). In a similar vein, recent studies that have addressed the source of the gender gap in protectionist sentiment have argued that differences in university-level education experience are the most plausible explanation for the puzzle of female protectionism and have done so by presenting data where the gender effect interacts with education (Caplan 2006, 367-381; Burgoon and Hiscox 2003; Burgoon and Hiscox 2008). This argument appears to have been well-received by mainstream economists who largely agree that it is economic knowledge rather than ideology that trade is good (Burgoon and Hiscox 2008; Caplan 2007b).

This paper investigates the sources of female protectionism by testing the claim that exposure to economic ideas at university indeed accounts for the gender gap in protectionist sentiment. The gender difference in policy preferences is in fact not a phenomenon that is confined to the case of trade policies. It has been found that gender makes a difference not just when it comes to trade policies, but also other policy areas as well, including government spending, gun control, and some aspects of social welfare policy (Sapiro 2003, 601-634). As I will detail in later sections, even among policy questions formulated as trade issues, gender gaps vary in scope depending on the nature of the question. Indeed, the controversy over trade liberalization has many different facets. The theory of comparative advantage explains how trade can create benefits for both parties, even when one party can produce goods more efficiently than the other. And mainstream economists, who are advocates of the theory, usually evaluate economic based on the efficiency-enhancing effects of the given policy or aggregate total benefits to be accrued by the policy. When it comes to *public* preferences, however, efficiency or growth is hardly likely to be the only criteria to determine their preferences for trade policies. In an attempt to provide a more plausible explanation for female protectionism, I explore the patterns of the gender gap that are found to vary depending on which aspect of trade liberalization is primed in the survey question, whereby I formulate alternative hypotheses. I then use survey experiments to directly test these hypotheses along with Burgoon and Hiscox's claim that the gender gap stems from differences in exposure to economic ideas at university.

This main argument of this chapter is twofold. First, I demonstrate that the gender gap is not simply reducible to differences in university-level education experiences. Contrary to Burgoon and Hiscox's hypothesis, this paper finds that the gender gap remains strong even after exposure to economic ideas is controlled for. Admittedly, education matters: the results of the experiments support that male university students are more likely than female students to study economics or a related field, and that there is a clear difference in protectionist sentiments between those who have completed economics courses and those who have not. The results, however, also show that the gender gap remains strong, even when only those who have completed economics courses are taken into consideration. These findings indicate that even when exposed to the same economic ideas, such as the theory of comparative advantage, female students may not accept the ideas to the extent that male students do, probably for the same reasons that female students prefer studying economics less than male students do, on average.

Second, I further demonstrate that the gender gap may be best explained by gendered responses to those facing hardships. The survey experiments find evidence that women tend to identify as being significantly more "sympathetic" than men; and that when the gender difference in this personality trait is controlled for, the gender effect significantly disappears. In fact, public opinion scholars have long suggested that citizens organize their policy opinions around visible social groupings. They have argued that public opinion is shaped not only by material interests<sup>1</sup> that people see at stake in issues, or symbolic predispositions, such as ideology or party identification, but that it is also guided in powerful ways by the sympathies and resentments that people feel toward the social groups they see as the principal beneficiaries or victims of the policy (Conover 1988, 51; Nelson and Kinder 1996, 1055-1078; Sniderman, Brody, and Tetlock 1991). Drawing on the insights of public opinion scholars, to which surprisingly little scholarly attention has been paid in the analysis of trade preferences, as well as the findings of experimental economists that women are more sensitive to social cues (for review, see (Croson and Gneezy 2009, 448-474)), I test and confirm the hypothesis that it may be gender differences, specifically the degree of sympathy for those social groups implicated in the policy, that generate the gender gap in protectionist sentiment.

This paper proceeds as follows. In the first section, I briefly review the recent literature on female protectionism. Here, I first discuss the Burgoon and Hiscox hypothesis that differences among men and women in exposure to economic ideas and information may be generating the gender gap in attitudes toward trade. By drawing on the finding of both the public opinion studies that policy preferences are often a function of sociotropic judgments, and experimental economics about gender differences in social (other-regarding) preferences, I propose alternative hypotheses. In the second section, the proposed hypotheses along with the Burgoon and Hiscox hypothesis are tested: the experimental design is introduced and the results are presented. In the last section, I conclude.

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<sup>1</sup> In fact, numerous studies on public opinion have found that self-interest often plays surprisingly little or no role in determining policy preferences. For example, self-interest fails to influence mass preferences in policy issues such as bussing, health insurance, unemployment programs, the Vietnam War, and affirmative action (Sears et al. 1980, 670-684; Lau and Sears 1981, 279-302; Kluegel and Smith 1982, 518-532; Kinder 1986, 151-171).

## The gender gap in protectionist sentiments and sociotropic hypotheses

Numerous empirical studies have shown that women are more likely than men to be protectionist, and that this gender gap remains even after individuals' socio-economic characteristics are controlled for. Shapiro and Mehajan (1986), in their paper examining gender differences in policy choices in the United States, found that gender differences in opinion toward regulation-protection policies were pronounced and had become more salient over past two decades from the 1960s to 1980s. Gidengil (1995) also found a sizable gender gap in Canadians' support for the United States-Canada Free Trade Agreement in the 1988 Canadian federal election. She pointed out that less than half (44%) of Canadian women supported the proposed trade agreement by the end of the election campaign, whereas 60% of Canadian men did. More recently, the literature examining mass support for trade liberalization has also found a statistically significant gender gap, namely, that males are more likely than females to support trade liberalization by approximately eight to ten percentage points (Caplan 2006, 367-381; Caplan 2002, 433-458; O'Rourke et al. 2001, 157-206; Baker 2003, 423-455; Baker 2005, 924; Beaulieu 2002, 99-131; Mayda and Rodrik 2005, 1393-1430; Beaulieu, Benarroch, and Gaisford 2004, 113-136).

Among the studies that have directly addressed this puzzle, Burgoon and Hiscox's recent work merits attention (Burgoon and Hiscox 2003). Burgoon and Hiscox argue that differences in education experience – *i.e.*, exposure to economic ideas at university – are the most plausible explanation for the gender gap by presenting data where the gender effect interacts with education. To support their argument, they highlight two main findings: (1) the gender gap is most pronounced between university-educated men and women (Burgoon and Hiscox 2003); and (2) the gender gap increases with age, which they argue reflects the fact that decades ago, female university students were much less likely to study economics than they are now. In their subsequent paper, Burgoon and Hiscox test the most plausible explanations for the gender gap – the distributional effects of trade suggested by trade theories, the sensitivity to income risks associated with maternity (compassion for the less fortunate), other political values such as party affiliations, and economic ideas and information – and confirm that it is economic literacy that generates the strong gender orientation in attitudes toward trade (Burgoon and Hiscox 2008). Caplan (2007) also tests Burgoon and Hiscox's hypothesis by employing a new dataset that includes a survey of economists as well as the general public (Caplan 2007b). He shows that the interaction effect between gender and education (university attendance) is robust – *i.e.*, that the gender gap is driven by disagreement mostly between university-educated men and women, and that the least educated men and women, on average, agree. Although Caplan finds no evidence of the age effect – *i.e.*, the decline in the gender-education effect over time – which suggests that men and women probably have different levels of interest in economics in the first place, he concludes that his findings are basically supportive of Burgoon and Hiscox: that women are more protectionist than men because women know less about economics than men.

This paper tests this claim by challenging the idea that female protectionism simply reflects women's ignorance of economic knowledge, or their irrationality – “irrational” in the sense that they are more likely to vote for protectionism even though they prefer the effects of trade liberalization (footnote, Caplan). There is in fact a widespread consensus among economists that trade liberalization is good for national economic welfare. There is little doubt that trade liberalization, at least in theory, is an important engine of growth for

countries at different stages of development by contributing to a more efficient allocation of resources within and across countries. Accordingly, the prevailing protectionism among the public has often been considered a mere reflection of the public's ignorance or irrationality (Irwin 2005; Caplan 2007a). There are, however, at least two good reasons to believe that the argument that the gender gap is a product of differences in exposure to economic ideas is flawed. First of all, the hypothesis fails to explain why the gender gap in protectionist sentiment is not usually found in less developed countries (LDCs), while it is robust in most developed countries. Trade theory has been universally dominated by the theory of comparative advantage – i.e., the win-win theory of trade – and there is no reason to believe that the gender difference in education is less pronounced in LDCs. If differences in exposure to economic ideas and information account for the gender gap, we should see a consistent gap in support of trade liberalization across all countries. Empirically however, this is not the case. Although most of the scholarly work on the gender gap has thus far focused on developed countries, Beaulieu and Napier (2008) in their analysis employing National Identity surveys from 1995 to 2003, include LDCs, where they find no gender differences. They show that the level of support for trade liberalization among both men and women in LDCs is as low as it is for their counterparts in developed countries, which Burgoon and Hiscox's hypothesis does not account for (Beaulieu and Napier 2008).

Second, while Burgoon and Hiscox refer to their explanation as an “ideational” account, and thus distinguish it from the Heckscher-Ohlin based explanations, both accounts clearly share one core idea: that people give material interests far more credit than they do any other values in life, though one is more about private material interests and the other about Gross Domestic Product (GDP). Economists evaluate economic policies or their outcomes by asking whether they make people better-off. They also assume one's well-being depends on her or his material well-being – i.e., that one can improve well-being by increasing his or her own income;- and that public policy aimed at increasing the income of the nation as a whole leads to greater well-being of all. I argue, however, that it is too naïve to assume that individuals place so much emphasis on GDP as economists do once they as well are exposed to economic ideas<sup>2</sup>. What seems missing from this line of thought is that trade liberalization is not “socially” costless, and that it is by nature a “political issue” – i.e., an issue about allocation of resources. Increased trade liberalization has redistributive consequences that generate new economic winners and losers. Given that individuals have the ability to externalize the social costs, the distributive effects of trade liberalization may influence individuals' perception of free trade – not only their perceptions of those directly affected but, also their perceptions of those relatively unaffected (neutrally affected) by free trade. That is, it could be that people are not inclined to support free trade because they are not “social morons,” as which Sens regards those propelled entirely by their material self-interest (Sens 1990: 336).

In fact, the public opinion literature has suggested that it may not be exceptional that individuals who will either benefit from free trade or be neutrally affected might take a strong protectionist position. Although it is widely assumed that individuals basically adopt policy preferences that further their private interests, numerous studies on public opinion have provided strong evidence that immediate and tangible material self-interest has only a minimal influence over policy preferences (Sears et al. 1980, 670-684; Wolpert and Gimpel

1998, 241-262; Sears and Funk 1990, 247-271). The empirical evidence has supported the so-called “sociotropic hypothesis” that individuals do not pay so much attention to their own problems and achievements in the formation of their attitudes about political issues, but rather to the problems and achievements of a larger social “group” (Kinder and Kiewiet 1981, 129-161; Mutz 1998; Mansfield and Mutz 2009, 425-457). One might argue that Burgoon and Hiscox’s ideational account corresponds to the sociotropic hypothesis in the sense that they also predict that people’s perceptions of collective conditions – *i.e.*, the effect of trade on the “national” economy, which the comparative advantage theory tells us is always positive – reliably influence their trade attitudes. It should be noted, however, that the sociotropic hypothesis does not postulate the effect of simple national (or in-group) interests. While the ideational account is mostly related to people’s own interests or national (in-group) interests as a whole, psychological evidence tells us that sympathy for *others* (the out-group) should also influence individuals’ policy evaluations. According to the sociotropic hypothesis, a “group” is defined as “any set of people who can constitute a psychological entity for any individual” (Adorno et al. 1950, 123-196; Kinder 1998). As Kinder indicates, groups under this definition do not require formal membership or interpersonal contact among members. Distinction between in-groups and out-groups will thus differ in accordance with the issue being considered (or how that issue is framed). For example, when considering international issues, nationality should be the criterion to distinguish between in- and out-groups, and for affirmative action, race should be the criterion. In this regard, groups are not fixed identities, and they do not dictate preferences. What “groups” do in the sociotropic hypothesis is change the utility functions of individuals by widening the scope of self-interest to that of their in-group, or by including their feelings toward the out-groups whom they see as the principal beneficiaries or victims of the policy.

In fact, as Mutz reviews in her book, *Impersonal Influence*, the literature on American public opinion studies is replete with evidence that people’s attitudes toward politics are influenced by their perceptions of others<sup>3</sup> experiences (Mutz 1998; Mutz 1992, 89-122). Jacobs and Shapiro, for example, find that there is an interesting disjuncture between the public’s overall contentment concerning their personal healthcare and the public’s dissatisfaction with the quality of healthcare available to *others*: while a stable 84-89% of Americans report being personally satisfied with the quality of the healthcare they receive from doctors, only half as many agree that other patients enjoy high-quality treatment (Mutz 1998; Jacobs and Shapiro 1995, 411). This suggests that citizens may simplify policy issues that are often complex and multifaceted by turning them into judgments and feelings about visible social grouping, and public opinion may be a simple reflection of citizens’ political thinking about the groups involved in a given policy. The process of public opinion formation around economic issues, such as trade liberalization, does not seem to be an exception to such sociotropic influences. By drawing on Schelling’s discussion (1984) that political process tends to be more favourable toward those groups whose characteristics are known over those groups or people in general whose characteristics are less known, Ann Kruger (1989), for example, argues that such “identity bias” is likely to strengthen protectionist sentiments. That is, the knowledge of the losers’ (*i.e.*, losers from free trade) identities evokes sympathetic attitudes toward their plight, which likely leads people to favour more protection.

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<sup>3</sup> According to Mutz, “others” in this case refers to anonymous mass collectives beyond their personal contacts (Mutz 1998).

In this paper, I argue that female protectionism is in large part explained by the gender difference in social preferences – *e.g.*, sympathy for the groups implicated in the policy issue in particular. In fact, the idea that women and men have different social values and concerns is not new: scholars have argued that gender differences in political attitudes are captured in the notions of “social woman” and “economic man” (Gilligan 1982; Welch and Hibbing 1992, 197-213; Gilens 1988, 19-49; Gidengil 1995, 384). Gidengil for example finds that corresponding to the image of “social woman,” women are much more sceptical of the virtues of competition and substantially more egalitarian than men, which consequently shapes opinion on the Canada-United States Free Trade Agreement (Gidengil 1995, 384). She also suggests that women and men may differ in the concerns they bring to bear in evaluating policies. Experimental economists and psychologists have also studied social preferences of the genders. A number of studies find evidence that women’s social preferences – *e.g.*, other-regarding behaviour in the form of altruism and inequality-aversion – are different from men (Bolton and Ockenfels 2000, 166-193; Fehr and Schmidt 1999, 817-868; Becker 1971; Andreoni 1990, 464-477). But it appears that the findings of these studies are varied: for example, some ultimatum and dictator game studies find that women are more trusting than men, but others find that the reverse is the case (references). After reviewing the findings on gender differences provided by experimental economists and psychologists, Croson and Gneezy conclude that women are not more socially oriented, but that their preferences are more situationally specific and malleable than those of men (Croson and Gneezy 2009, 448-474). This suggests that gender differences may be interpreted as women simply being more responsive to the conditions of experiments. In short, it is not yet clear whether gender differences lie in their differential fundamental values or sensitivities to social cues, which is also tested in the following sections. By drawing upon these findings from the public opinion studies and experimental economics noted above, specific hypotheses are presented and tested in the following sections.

### **Explaining the gender gap in protectionist sentiment:**

#### *Preview and hypotheses*

Before I begin a detailed analysis of female protectionism through lab experiments, I first briefly examine the survey data of Americans conducted by Chicago Council on Foreign Relations (CCFR) in 2004. The CCFR is an ideal dataset for getting an approximate idea of which facet of trade liberalization may generate the gender gap because it contains a number of diverse survey questions about trade liberalization, including questions about the North American Free Trade Agreement, agricultural subsidies, and outsourcing. Table 1 lists the CCFR’s seven main questions related to trade liberalization.

[Table 1]

As shown in Table 1, the gender gap varies depending on the question. When it comes to questions about globalization in the abstract – *e.g.*, increasing economic connections – and even those asking opinions about “new” free trade agreements encompassing all of the Americas, no significant gender difference is found. Women are no less positive than men in their assessment of the effects of international trade on the national economy, companies, consumers, job creation in the U.S., the environment, job security for

American workers, and standard of living. On the other hand, when it comes to questions about specific trade policies – especially those that contain information about specific social groups implicated in the policy debates – the gender gap is more pronounced. Women are less favourable toward outsourcing, something that hints at possibly taking jobs from American workers, and are more supportive of agricultural subsidies than men. Moreover, the differences are statistically significant. The most interesting finding is that women tend to evaluate the effects of NAFTA on the Mexican side more negatively than men: women appear to be more sceptical of NAFTA being good for the Mexican economy and Mexican jobs. Yet there is no gender difference found in assessing NAFTA in terms of its effect on American economy, American companies, consumers, American jobs, or respondents' standard of living.

What, then, precisely explains the gender gap? Which facets of trade might trigger gendered responses? In this paper, I test the following hypotheses:

*H1: (Burgoon and Hiscox's hypothesis) The differences between men and women in economic knowledge may create the gender divide over trade related issues.*

*H2: A female preference for greater protection may be a function of females' greater sympathy for those facing hardships.*

*H3: A female preference for greater protection may be a function of females' greater degree of inequality-aversion.*

*H4: A male preference for freer trade may be a function of males' higher propensity for pro-competition and pro-efficiency.*

*H5: The gender gap may stem not so much from deep-rooted value differences as females' being malleable/susceptible to issue frames.*

#### *The survey experiment*

This paper uses a survey experiment to directly test the hypotheses above. While a number of studies have been conducted to interpret differences in the political preferences of women and men, most of these studies have used data from available public opinion surveys (Burgoon and Hiscox 2003; Burgoon and Hiscox 2008; Welch and Hibbing 1992, 197-213; Gilens 1988, 19-49; Conover 1988, 985-1010; Cook and Wilcox 1991, 1111-1122). The method of the survey experiments suits better for testing the given hypotheses than the public opinion survey methods for the following two reasons. First, the conclusions of the survey-based empirical studies were drawn mostly from inference rather than direct evidence. The method of the survey experiments has merit in this regard, as it enables us to directly test the hypotheses. Second, it is often argued that the experimental method helps internal validity at the considerable expense of external validity – i.e., the extent to which the results of a study is generalized to a general population. Given the findings that the gender difference in protectionist sentiment largely stems from differences in university-level education experience, however, the undergraduate sample can enhance internal validity with little loss of external validity.



The experiment was conducted in December 2010 at the Public Opinion Laboratory at the University of British Columbia. A total of 190 undergraduate students from the political science subject pool participated in the study. The experiments conducted in the lab are computer-based tests designed to study effects of different treatments on responses. For this experiment, subjects were randomly allocated to five groups, with each group receiving different introductions to the survey question about agricultural subsidies. We used the question about agricultural subsidies to measure protectionist sentiments as it is one of the CCFR survey questions where the gender gap is most pronounced. Among the four groups, one group received no introduction to the survey question about agricultural subsidies (control group), while the other groups received different introductions that describe the pros and cons of the subsidies – *i.e.*, one emphasizing the economic inefficiency of the subsidies and the other emphasizing the subsidies’ income protection effect for farmers. The exact wordings are shown below:

Group 1: No frame

Group 2: Hardship frame

Some argue that government should provide subsidies to farmers because otherwise their earnings fluctuate drastically. They say that subsidies even out farm income and prevent hardship.

Group 3: Efficiency frame

Some argue that government should eliminate subsidies for farmers because workers displaced from agriculture will get new jobs in other industries. They say that subsidies waste resources by allowing uncompetitive farms to remain in business.

Group 4: Both frames (the order of the two frames was rotated)

Some [Others] argue that government should provide subsidies to farmers because otherwise their earnings fluctuate drastically. They say that subsidies even out farm income and prevent hardship. Some [Others] argue that government should eliminate subsidies for farmers because workers displaced from agriculture will get new jobs in other industries. They say that subsidies waste resources by allowing uncompetitive farms to remain in business.

After the frames were given, all subjects were asked the same core question about their attitudes toward agricultural subsidies:

Do you feel that the Canadian government should provide subsidies to farmers?

Yes

No

Don’t know

Refused

The specific claims in the frames that were provided to the different groups were designed to prime either subsidies’ efficiency-reducing effect or their risk-reducing effects

for farmers, or both. If the notion of “economic men” and “social women” does account for the gender gap in protectionist sentiment, the different frames will produce a gendered response: men will be more responsive to the Economic efficiency frame, whereas women will be more responsive to the Hardship frame. If the notion above is confirmed, then we will find that the gender difference will be most pronounced in Group 4, which received both frames, because the combined frames likely lead men and women in different directions, thereby polarizing them even further.

In addition, I included questions to measure subjects’ economic literacy to test Burgoon and Hiscox’s hypothesis (H1). All of the subjects were asked to answer these questions at the end of the experiment regardless of which group they were in. First, I asked subjects if they had taken any economic courses. Then, I used a simple quiz to gauge whether subjects knew about the theory of comparative advantage and did indeed understand the theory. The exact wordings for these questions are below:

Have you completed a university course in economics?

Yes

No

Don’t know

Refused

The central concept in economic theory about international trade is:

Double effect

Comparative advantage

Scarcity

Rational expectations

Don’t know

Refuse

According to economic theory, which countries benefit from international trade?

All countries

Small countries

Poor countries

Wealthy countries

Don’t know

Refuse

If Burgoon and Hiscox’s hypothesis is correct, we will observe clear gender differences in answers to these questions, but no differences when only those who are economically literate are counted. The results of the experiment are presented in the following section.

*Results: Economic literacy and the gender gap*

Table 2 reports the simple frequencies of each answer to the subsidy question by gender. As expected, a clear gender difference is found in opinions about agricultural subsidies. While a total of 77% of the female subjects supported agricultural subsidies, only 60% of the male subjects did.

[Table 2]

To see if the difference in exposure to economic ideas or economic literacy does account for the gender gap, I used mosaic plots by Michael Friendly's vcd package in R (Friendly 2000). The mosaic plots visualize multivariate categorical data with the size of tiles, representing the frequency counts in a contingency table. I first ran three-way tables with the three variables – (1) gender and (2) economic literacy as independent variables and (3) subsidies as a dependent variable – and displayed them in mosaic plots. Table 3 displays the three-way tables, and the tables are visualized in Figure 1.

[Table 3]

[Figure 1]

The first mosaic plot provides evidence of the strong impact of education experience on attitudes toward subsidies: subjects who have completed a university course in economics in general tend to be less supportive of subsidies than those who have not. The height of the bars in the plot denotes the relative proportions of the independent variables – *i.e.*, economic education and gender – and the width of the bars denotes the distribution of the dependent variable – *i.e.*, subsidies within each independent variable. Basically, the first mosaic plot in Figure 1 visualizes each cell displayed in the first 3 way table in Table 3. For example, the first bar on top left hand side shows the frequency (4 people) of those who are against subsidies among females that have not taken any course in economics. Only 17.7% of those answered that they had not completed a university course in economics were against subsidies, whereas about twice as many subjects (35.2%) who answered they had completed a course supported subsidies. The gender orientation, however, remained large even after education experiences were controlled for: even when only those who have completed an economics course were taken into account, it was found that about 15% more females are supportive of subsidies than males (72.3% versus 56.7%). The third mosaic plot displays similar outcomes. In general, those who answered that “all countries” benefit from international trade were less likely to support subsidies than were those who chose “wealthy countries” or the other options in the question. 35.6% of those who got the answer right were against subsidies, whereas only 21.4% of those who got the answer wrong were against subsidies. The gender gap, however, did not become any narrower even when only those who got the answer right were considered: about 15% more females were supportive of subsidies than males in both groups (both the right answer group and the wrong answer group).

The second mosaic plot displays somewhat different outcomes. While the gender effect is clear here as well, it appears that the level of economic literacy, measured by the question of whether he or she knows of the concept “comparative advantage,” had no influence on subjects' preferences for subsidies. This outcome is interesting, given that the question asking subjects what “the central concept in economic theory about international trade” is enables us to obtain probably the most objective indicator to measure economic literacy among all three questions here. For example, it is hard to conclude that the difference in preferences for subsidies between those who have completed an economics course and those who have not (the first literacy question) is reducible simply to the economic literacy, especially considering that students who are interested in taking an

economics course likely differ in the first place from those who have little interest. Those who are interested in taking courses in economics might well be more pro-market, pro-competition, and pro-trade than those who are not, even before they become exposed to economic ideas and information. Likewise, the third question asking subjects to answer which countries benefit from international trade (according to economic theory) appears not to free itself from its ideological components. As the question did not specify the term “economic theory,” it might well have served as an ideology question measuring whether she or he buys the theory of comparative advantage or not, as well as an indicator to measure the level of economic literacy.

Despite the slight differences, the implication of the results above is clear: taken as a whole, the results suggest that the strong gender orientation is not likely to be reducible to gender differences in exposure to economic ideas at university. The results are in line with Hainmueller and Hiscox (2006) in the sense that both suggest that the effects of education on individual trade preferences may be not so much a product of distributional concerns linked to job skills, as it is the effects of exposure to economic ideas and information. The results, however, do not confirm Burgoon and Hiscox (2003): the differences in educational experience do not appear to be generating the gender gap in protectionist sentiments. While it appears to be true that women are less likely than men to complete a course in economics at university, the gender gap still remains large even after education experiences are controlled for. This suggests that the differences in education experience do not fully account for the gender gap in attitudes toward subsidies.

If not education experiences, then why might women view subsidies less favourably than men? The alternative hypotheses ( $H2$ ,  $H3$ , and  $H4$ ) were also tested. To measure the personality trait “sympathy,” I used a self-report of “sympathy” from our personality battery. The original variable has a scale from 1 to 10, where 1 means “most sympathetic” and 10 means “least sympathetic”; and I rescaled the variable to have a scale from 1 to 4, where 1 means “least sympathetic” and 4 means “most sympathetic.” To measure inequality-averse attitudes, I used answers to a question asking how much respondents think should be done to reduce the gap between the rich and the poor in Canada on a scale from 1 to 5, where 1 means “much less” to 5 “much more”. To measure respondents’ market orientation, I used answers to the question asking how much respondents agree with the statement that “the government should leave it entirely to the private economy to create jobs” with a scale from 1 to 5, where 1 means “strongly disagree” and 5 “strongly agree”.

[Table 4]

Up to this point, I have just been examining response frequencies for different categories of individuals. To gauge the impact of the variables above on the gender gap in a more precise manner, I estimated individual preferences for subsidies using respondents’ answers to the question about whether they favoured or opposed giving subsidies to farmers as the dependent variable, and included the variables suggested above in the models. Table 4 reports the results from logit estimations of a series of models that include a number of explanatory variables suggested above. Consistent with the findings above, the estimated gender effect is to increase support for subsidies by 17% (s.e. 7%); and education experience (whether she or he has completed a course in economics or not) reduced support for subsidies by approximately 18% (s.e. 9%). Left-right ideology, market-orientation, and

inequality-aversion had no impact on responses. But the variable “sympathy” had a significant impact on responses; moreover, when sympathy was included, we observed that the gender effect became insignificant. I find evidence that women tend to identify as being significantly more “sympathetic” than men – the mean difference in sympathy between men and women on a scale from 1 (most sympathetic) to 10 (least sympathetic) is 0.59, and the difference is statistically significant ( $p=0.019$ ), and that the gender effect is largely explained by the personality trait, “sympathy.”

#### *Results: Economic man and social woman?*

The first table of Table 5 (and the first plot of Figure 1) reports the simple frequencies of each type of response in each of the four experimental groups. No frames other than Hardship were found to have significant effects on subsidy responses. The effect of the Hardship frame, however, was the opposite of what I hypothesized: those who received an introduction about “hardship” (Group 2) turned out to be significantly more likely to be *against* subsidies than those in any other group. While only 28% of respondents answered that they opposed subsidies in Group 1 (Control group with no frame), 44% of those who received the Hardship frame answered that they did. More interestingly, as shown in the second table of Table 5 (and the second figure of Figure 2), this unexpected effect of the Hardship frame is observed only among men (not among women). In fact, among the women who received the Hardship frame, slightly more answered that they favoured subsidies than was the case with women who received no frame (71% versus 79%); but the reverse was true for men. The Hardship frame reduced men’s support for subsidies drastically: while 74% of men who received no frame answered that they favoured subsidies, only 32% of men who received the Hardship frame answered that they did.

Unfortunately, it is not entirely clear precisely what in the Hardship frame turned men (but not women) away from subsidies. One thing that is clear is that males (but not females) responded sensitively (though adversely) to the Hardship frame, and did not like the idea that “subsidies even out farm income and prevent hardship” (of farmers). In this regard, the results partly confirm the notion of “social woman” (in a comparative sense), although the results were basically driven not by females but by males. It is noteworthy that the gender gap in preferences for subsidies was driven by the strong adverse effect of the Hardship frame on *male* responses. As briefly discussed in the previous section, experimental economists often conclude that the gender gap in social preferences stems from females being more susceptible to issue frames (*H5*). But the results here suggest that may not be the case – it was males who displayed a strong sensitivity to the frames (at least to the Hardship frame) in the experiments. It seems unsubstantiated that the gender gap in protectionist sentiment is explained by a stronger sensitivity of females (than males) to the social conditions in the experiment, and that it may be true that women are more socially oriented than men, thereby leading women (men) to be more protectionist (less protectionist).

## **Conclusions**

The findings of the study are summarized as follows. First, Burgoon and Hiscox’s hypothesis is unsubstantiated. The survey experiment demonstrated that even after

controlling for education experience and economic literacy, the gender gap remained large. While it turned out to be true that female students were less likely to take a course in economics than male students, the gender gap in preferences for subsidies was not any less pronounced, even when only those who had completed a course in economics, the so-called “economic literate,” were taken into consideration. These results suggest that the gender differences in protectionist sentiment may not stem from differences in exposure to economic ideas and information; rather, it seems more plausible to argue that the reasons that make women less interested in studying economics in the first place also likely account for the gender gap in preferences for subsidies. Putting all these findings together, I conclude that the gender gap may have more to do with women’s pricing growth (the theory of comparative advantage), than it does with the gender differences in education experiences at university.

Second, I found that women were significantly more likely than men to identify as being sympathetic, and that the difference in the degree of self-identified sympathy in large part explained the gender gap. The gender differences in symbolic predispositions – *i.e.*, ideology and inequality-aversion – however, did not account for the gender gap in preferences for subsidies. Lastly, I found that the gender gap was driven largely by the strong adverse effect of the Hardship frame on *males*. The results partly confirmed the notion of “economic men and social women” in the sense that we found a clear gender difference in responses to the frame that “subsidies even out farm income and prevent hardship” (of farmers): females exposed to the frame leaned slightly more toward a pro-subsidy position, whereas males turned heavily against subsidies. Also, it is noteworthy that unlike the well-known claims that women are more sensitive to issue frames than men, and that this differential sensitivity of men and women to the social conditions in the experiments results in differences in social preferences, it was males that responded sensitively (though adversely) to the frame.

Mainstream economists in general evaluate economic policies by assessing how a given policy is expected to affect the “individual economic welfare” of citizens or the economic growth of the nation. Public opinion studies (and psychologists), however, have long suggested that an individual’s state of well-being is affected by changes in other people’s income, and thus, the distributional consequences of the policy should also be highlighted along with its effect on the economic growth of the nation. By drawing the insights from these studies, this paper hypothesized and demonstrated that the level of sympathy that individuals harbour toward the social groups that they see as the principal beneficiaries (victims) of the policy likely affects their policy preferences. It also demonstrated that the gender differences in this personality trait, sympathy, likely accounted for the gender gap in preferences for subsidies. The findings of this paper also suggest that both the differences in sympathy for those facing hardship, as well as the differences in concern females bring to bear in evaluating policy issues, may result in the differences in policy preferences. Admittedly, further study is needed to find the roots of the gender gap in trade policies, but what is clear for now is that female protectionism is not accounted for simply by women being less knowledgeable of economics than men. More scholarly attention needs to be paid to how the gender differences in fundamental values and personality traits translate into differences in trade policy attitudes.



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Table 1: Survey questions related to trade in CCFR 2004 and gender differences

Variable	Question	Protectionism
Globalization in general	Do you believe that globalization, especially the increasing connections of our economy with others around the world, is mostly good or mostly bad for the United States?  - Mostly good - Mostly bad	M = F
Outsourcing	Currently there is a debate about outsourcing US jobs; that is, moving jobs to countries where wages are lower. Which position is closer to yours?  - Outsourcing is mostly a good thing because it results in lower prices in the US which helps stimulate the economy and create new jobs - Outsourcing is mostly a bad thing because American workers lose their jobs to people in other countries	M < F
Trade liberalization with assistant programs	Which of the following three positions comes closest to your point of view about lowering trade barriers such as tariffs?  - I favour agreements to lower trade barriers provided the government has programs to help workers who lose their jobs - I favour agreements to Lower trade barriers, but I oppose government Programs to help workers who lose their jobs - I oppose agreements to lower trade barriers	M = F
Free Trade Agreement of the Americas	The U.S. and most countries in North, Central and South America have been discussing the possibility of having a Free Trade Agreement of the Americas similar to what the U.S. now has with Mexico and Canada in NAFTA, do you favour or oppose this idea?  - Favour - Oppose	M = F
International trade in general	Overall, do you think international trade is good or bad for  - The U.S. (United States) economy - American companies - Consumers like you - Creating jobs in the U.S. (United States) - The environment - Job security for American workers - Your own standard of living	M = F
NAFTA	Overall, do you think the North American Free Trade Agreement, also known as NAFTA, is good or bad for  - the U.S. (United States) economy - American companies	M < F (The Mexican Economy and

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<ul style="list-style-type: none"> <li>- Consumers like you</li> <li>- The Mexican Economy</li> <li>- Creating jobs in the U.S. (United States)</li> <li>- The environment</li> <li>- Job security for American workers</li> <li>- Your own standard of living</li> <li>- Creating jobs in Mexico</li> </ul>	<p>Creating jobs in Mexico)</p> <p>M = F (The rest)</p>
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<p>Agricultural subsidies</p>	<p>Do you favour or oppose the US government giving subsidies to small farmers, who work farms less than 500 acres?</p>	<p>M &lt; F</p>
	<ul style="list-style-type: none"> <li>- Favour</li> <li>- Oppose</li> </ul>	

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*Source:* Global Views 2004: American Public Opinion and Foreign Policy, Chicago Council of Foreign Relations.

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Table 2: Gender and attitudes toward agricultural subsidies

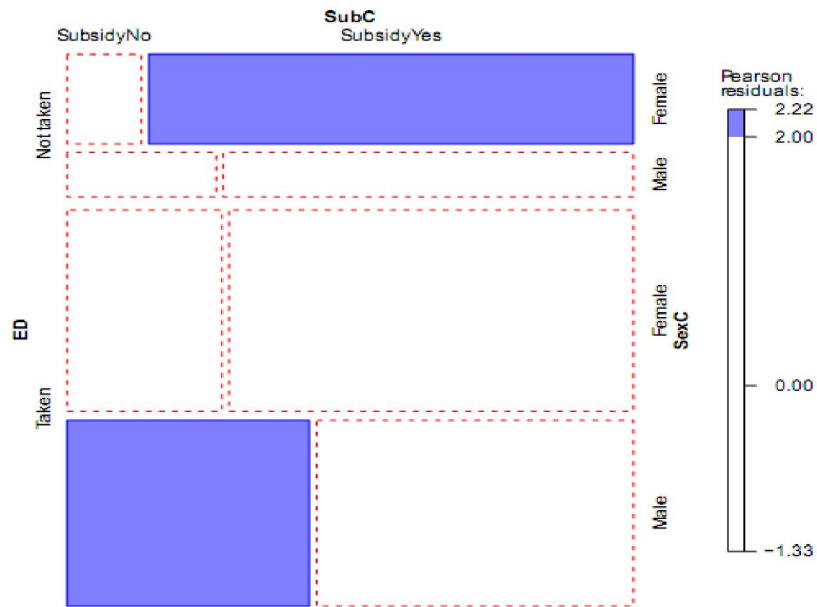
Question: Do you feel that the Canadian government should provide subsidies to farmers?				
	Female		Male	Difference
No	23.2%		40.0%	
	N=22		N=30	16.8%
Yes	76.8%		60.0%	(M < F)
	N=73		N=45	

*Notes:* The sample size is 170, after excluding those who answered “Don’t know” or refused to answer.

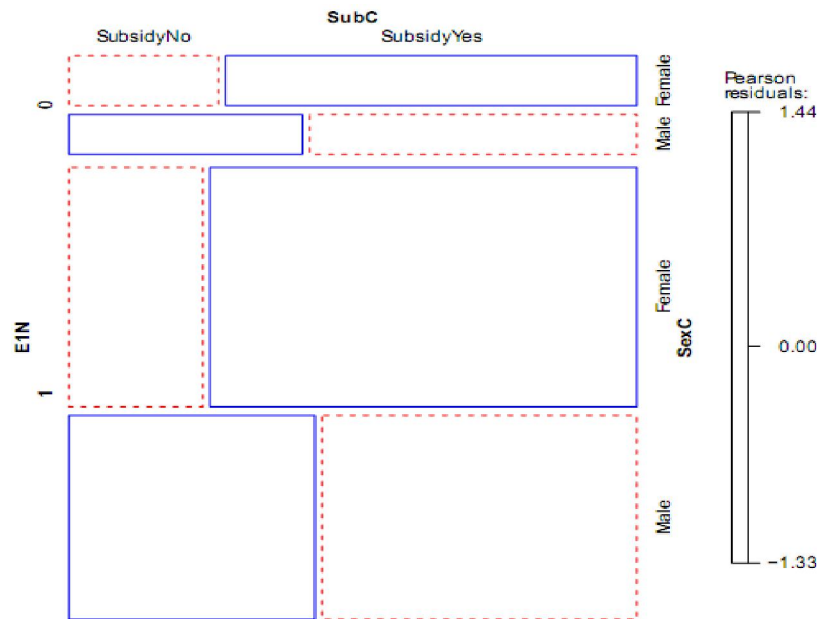
Table 3: The effect of economic literacy on the gender gap

		Question 1: Do you feel that the Canadian government should provide subsidies to farmers?			
		No to subsidies		Yes to subsidies	
Economic literacy: Have you completed a university course in economics?	Gender				
Not completed	Female	4 (13.3%)	8	26 (87.7%)	37
	Male	4 (26.7%)	(17.7%)	11 (73.3%)	(82.3%)
Completed	Female	18 (27.7%)	44	47 (72.3%)	81
	Male	26 (43.3%)	(35.2%)	34 (56.7%)	(64.8%)
		Question 2: Do you feel that the Canadian government should provide subsidies to farmers?			
		No to subsidies		Yes to subsidies	
Economic literacy: The central concept in economic theory about international trade is <u>Comparative advantage</u> .	Gender				
Incorrect answer	Female	4 (26.7%)	9	11 (72.3%)	18
	Male	5 (41.7%)	(33.3%)	7 (58.3%)	(66.6%)
Correct answer	Female	16 (23.9%)	41	51 (76.1%)	83
	Male	25 (43.9%)	(33.1%)	32 (56.1%)	(66.9%)
		Question 3: Do you feel that the Canadian government should provide subsidies to farmers?			
		No to subsidies		Yes to subsidies	
Economic literacy: According to economic theory, which countries benefit from international trade? <u>All countries</u>	Gender				
Incorrect answer	Female	6 (16.2%)	12	31 (83.8%)	44
	Male	6 (31.6%)	(21.4%)	13 (68.4%)	(78.6%)
Correct answer	Female	15 (28.3%)	37	38 (71.7%)	67
	Male	22 (43.1%)	(35.6%)	29 (56.9%)	(64.4%)
<i>Notes:</i> The numbers displayed are frequency counts. The percentages displayed in brackets are row percentages.					

Figure 1: The mosaic display of Table 1

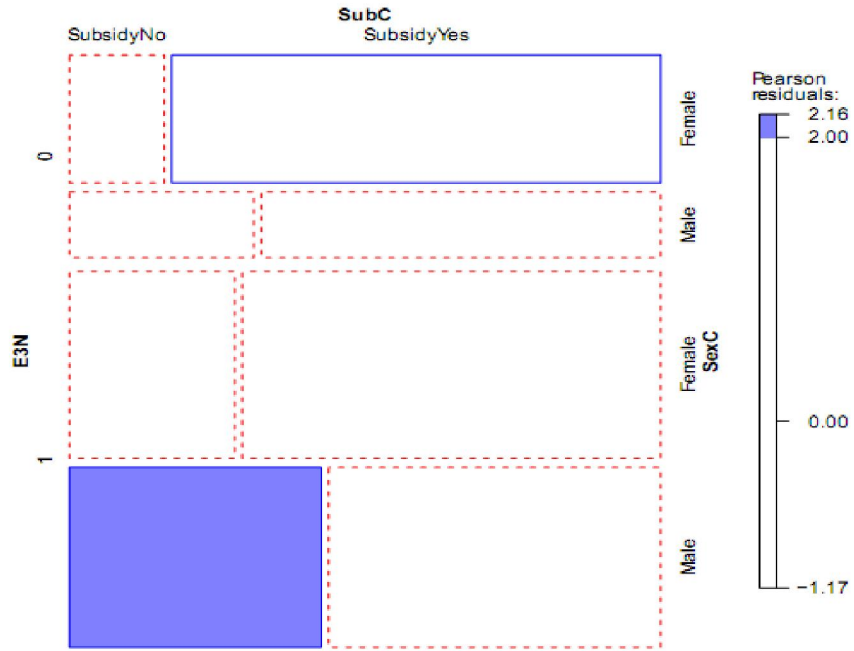


Notes: ED indicates Question 1 in Table 3. “Taken” refers to those who answered they had completed a course in economics and “Not taken” refers to those who answered that they had not. The high (low) Pearson residuals indicate that people in that category are much more (less) frequent in the population than the Equi-probability model would predict.



Notes: E1N indicates Question 2 in Table 3. 1 means those who got the answer right, and 0 means those who got it wrong.





Notes: E3N indicates Question 3 in Table 3. 1 means those who got the answer right, and 0 means those who got it wrong.

Table 4: Individual support for agricultural subsidies – ideology, inequality-aversion, sympathy, and the gender gap (Full sample)

Dependent variable = 1 if respondent favours agricultural subsidies to farmers (= 0 if opposes).						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Female	0.168* (0.071)	0.153* (0.072)	0.146* (0.073)	0.145* (0.073)	0.151* (0.075)	0.125 (0.077)
Economic education		-0.177. (0.093)	-0.168. (0.093)	-0.164. (0.095)	-0.135 (0.096)	-0.175. (0.100)
Ideology			-0.027 (0.019)	-0.026 (0.023)	-0.025 (0.020)	-0.023 (0.021)
Inequality-aversion				0.010 (0.044)	0.007 (0.047)	-0.017 (0.050)
Market-orientation					-0.029 (0.049)	-0.018 (0.052)
Sympathy						0.115*** (0.034)
Log likelihood	-101.89	-99.90	-98.84	-98.81	-96.81	-91.12
Observations	170	170	170	170	167	167

*Notes:* The numbers shown in the table are marginal effects with standard errors in parenthesis.  
Significant codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘.’ 1

Table 5: Gender and the framing effect

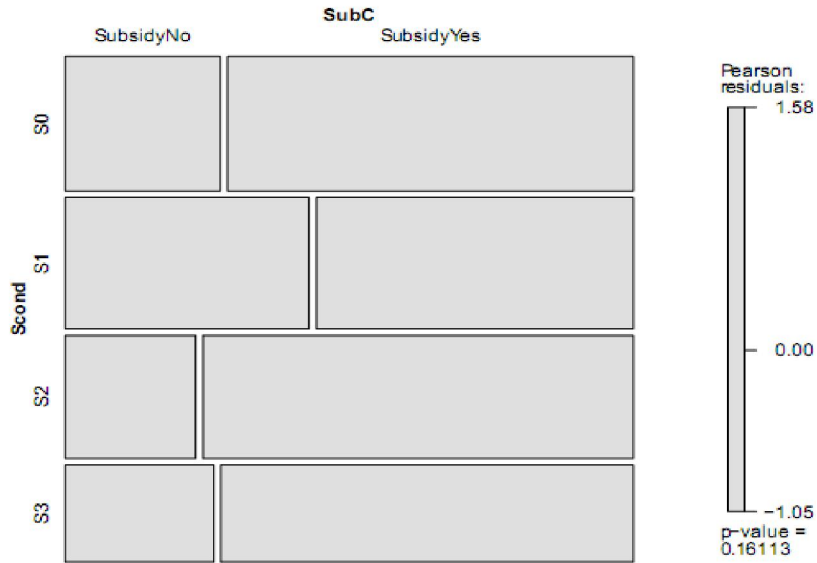
		Question: Do you feel that the Canadian government should provide subsidies to farmers?	
Frame	Subsidy	Subsidy	
No frame	No	13 (28%)	
	Yes	34 (72%)	
Hardship frame	No	20 (44%)	
	Yes	26 (56%)	
Efficiency frame	No	10 (23%)	
	Yes	33 (77%)	
Both frames	No	9 (27%)	
	Yes	25 (73%)	

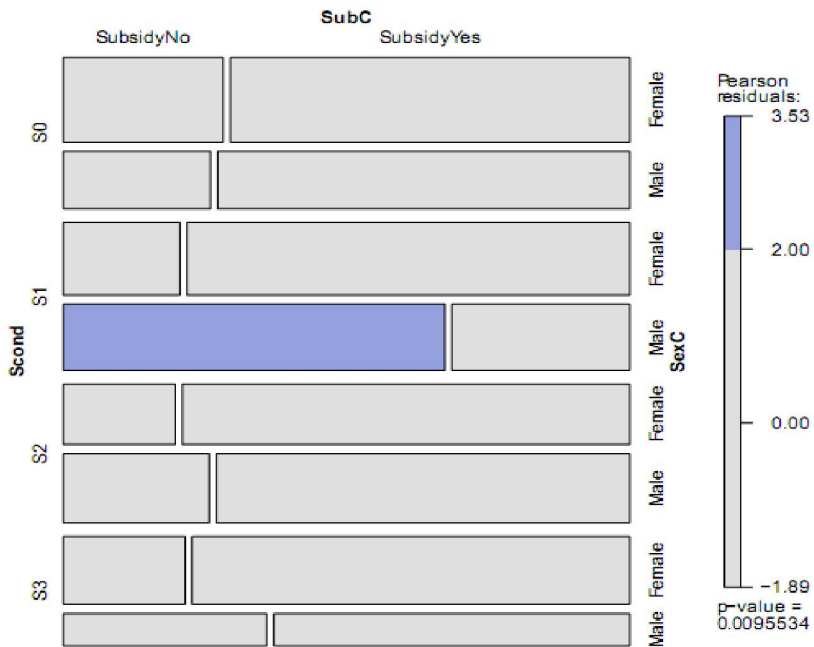
		Question: Do you feel that the Canadian government should provide subsidies to farmers?	
Frame	Subsidy	Female	Male
No frame	No	8 (29%)	5 (26%)
	Yes	20 (71%)	14 (74%)
Hardship frame	No	5 (21%)	15 (68%)
	Yes	19 (79%)	7 (32%)
Efficiency frame	No	4 (20%)	6 (26%)
	Yes	16 (80%)	17 (74%)
Both frames	No	5 (22%)	4 (36%)
	Yes	18 (78%)	7 (64%)

*Notes:* The numbers displayed are frequency counts. The percentages displayed in brackets are column percentages.

Figure 2: Mosaic display of Table 5



Notes: S0 = No frame, S1 = Hardship frame, S3 = Efficiency frame, and S4 = Both frames



Notes: S0 = No frame, S1 = Hardship frame, S3 = Efficiency frame, and S4 = Both frames  
 Not taken = those who have not completed a course in economics, Taken = completed a course