Freedom fries

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Freedom Fries*

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Abstract

Do firms choose inputs that minimize their cost of production, ignoring the attitudes of owners and workers? To investigate this question, we examine trade between the US and France, whose relations worsened during the lead up to the Iraq War. From February 2002 to March 2003, France's favorability in US public opinion polls fell by 48 percentage points, and US favorability in France also declined. In the US, very negative attitudes towards France became common at all levels of education and income, so they were likely prevalent even among managers. We find that this episode reduced US imports from France by about 15 percent and US exports to France by about 8 percent, compared to other Eurozone or OECD countries. This decline was due in large part to a fall in France's share of the trade of firms' inputs between the US and the Eurozone. France's share declined even within 4 digit commodity groups, and this decline was driven by changes in quantities, not prices. By contrast, changes in government policies and consumers' response can explain a much smaller part of the aggregate decline in trade. We also find that the decline in trade was accompanied by a drop in bilateral tourism and business trips. These finding suggest that people's attitudes can affect their choices not only as consumers, but also as workers in firms.

Keywords: Trade, Discrimination.

JEL classification: J15, F14.

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1 Introduction

Economists often assume that firms choose inputs to minimize their cost of production. In other words, we typically assume that firms purchase the cheapest suitable inputs regardless of the supplier's nationality, race, or gender. But it is difficult to test whether attitudes towards particular groups matter, since some groups may supply more suitable inputs. To overcome this challenge, existing work tries to level the playing field for some groups of input suppliers.[1] But even in these controlled situations, firms may engage in statistical (rather than taste based) discrimination if group membership is correlated with unobserved characteristics that affect productivity. Moreover, if inputs are almost perfect substitutes, it is difficult to estimate willingness to pay for attitudes.

To address these issues, we consider whether firms change their inputs when attitudes towards a particular group change. Specifically, we consider a change in international relations that affects attitudes, but does not involve a risk of bilateral war, threats of violence, economic sanctions, or even imposition of substantial trade barriers. Neoclassical theory tells us that while consumers and governments may take this change into account, firms should continue to choose the cheapest inputs. If they fail to do so, perfect competition eventually eliminates them (Becker 1957).

And yet there are at least three reasons why firms' choice of inputs may reflect people's attitudes. First, as Becker himself argues, owners of firms that earn rents may be willing to pay for their preferences. Second, if managers are not perfectly monitored, their attitudes may affect input choices or sales efforts. Finally, external incentives due to consumer or government behavior may distort firms' choice of inputs.

In addition to informing us about firms' behavior, this paper also sheds light on the robustness of international trade flows. Historically, changes in attitudes and relations could affect trade policies, such as tariff protection. Thus, the ratio of world trade to gross domestic

[1] A complete survey of the literature is beyond the scope of this paper, but two important recent examples are Goldin and Rouse (2000) and Bertrand and Mullainathan (2004).

product increased before the First World War, declined during the Interwar period, and increased again in recent decades (Irwin 2002). Recent work (Guiso et al. 2005; Disdier and Mayer 2007) suggests that national attitudes are still correlated with patterns of trade, even when formal trade barriers are currently much lower. Our paper provides a way to examine whether (and how) attitudes may still affect trade.

In order to examine whether attitudes affect trade, we require variation in international relations that affects attitudes, but little else. To obtain such variation, we examine the deterioration of relations between the US and France, which took place from 2002-2003. The US government tried to obtain a United Nations (UN) Security Council mandate to use military force against Iraq, and the French government opposed this move; the resulting standoff worsened US public opinion towards France. The fraction of US Gallup Poll respondents who viewed France favorably declined from 83 percent in February 2002 to 35 percent in March 2003, and recovered only to 57 percent in February 2006.[2] Very negative opinions of France became common even among college educated people with high household income, a group which likely includes many managers. By contrast, attitudes towards Germany worsened much less and recovered quite quickly, and attitudes towards the UK, Spain, and Italy changed very little. A parallel (though smaller) change in attitudes took place in France, where the favorability of the US fell from 63 percent in 2002 to 43 percent in 2003 (Pew Global Attitudes Project, 2006).

This shock to international relations provides an unusual opportunity to estimate the effect of attitudes on trade. First, it lets us avoid the problem trade may affect attitudes. For example, potential for trade may improve Western relations and attitudes towards China, while increased trade may worsen attitudes if it raises fears of job losses. But in the example we analyze, the causes and the timing of the change in attitudes are clear and unrelated to trade. Second, the shock to attitudes allows us to net out fixed effects that characterize the suitability of French produced inputs for US firms, and vice versa. This mitigates concerns

[2] We have data on this question since 1991: the fraction who viewed France favorably was around 80 percent until 2002.

about statistical discrimination: if a French (or US) input was suitable in 2001 it should still be suitable in 2003.[3] Third, we can use other countries in the Organization for Economic Cooperation and Development (OECD) or Eurozone as plausible counterfactuals for France.[4] This allows us to control for short run changes that may have taken place in absence of the worsening relations with France. Eurozone countries have an additional advantage as controls for France - they share the same currency, and therefore they have the same dollar exchange rate. Finally, the setting we study avoids the problem that attitudes may be correlated with risk. For example, there is evidence that war decreases trade (Martin, Mayer, and Thoenig 2006) and even lower levels of violence can affect economic outcomes (Abadie and Gardeazabal 2003). But trade between the US and France remained quite safe even during the worst days of the crisis between the US and France.

Comparing France to OECD or Eurozone countries from 1999-2005, we estimate that US imports from France would have been significantly higher at the end of this period if US relations with France had not deteriorated. There is also some evidence that US exports to France would have been higher. We find that this decline in trade cannot be explained by an aggregate drop in French trade with other OECD partners.

The availability of product-level trade data lets us address other concerns about our identification strategy. For example, changes in the composition of US demand and supply or in the tariff structure may have affected France more than other countries. But we find that most of the decline in France's share of US trade with the Eurozone is attributable to a fall in its share of trade within 4-digit product categories.[5] This decline does not reflect pre-existing trends, and it is not driven by outliers. Interestingly, the decline is almost entirely

[3] One could use a similar strategy to study the effect of attitudes on French workers in the US or US workers in France. However, this strategy faces the challenge that wages and employment relations are highly persistent, and negative attiditudes may affect incoming and outgoing migration. Small sample sizes may also make it difficult to study new hiring in most datasets.

[4] We include Greece, whose entry to the Eurozone was delayed until 2001, and exclude Slovania, who joined the Eurozone in 2007.

[5] Tariffs are imposed by product, so changes in countries' shares within product categories are unlikely to be driven by tariff changes. Moreover, average tariffs on French commodities are still very low (Gresser 2005). See below for a discussion of specific policies that reflected deviations from the "Most Favored Nation" status.

due to a decline in quantities traded, rather than prices. Our preferred estimates suggest that the worsening relations reduced US imports from France by about 15 percentage points (or about 5 billion dollars in 2005) US exports to France by about 8 percentage points (or about 2 billion dollars in 2005).[6]

Having found that worsening attitudes decreased trade, we examine which mechanisms may have caused this decrease. Using US input-output tables, we identify 2-digit commodity classes where 75 percent or more of US consumption in 1999 is attributable to each of three groups: government, consumers, or firms. Government consumption dominated only one commodity class, ordnance, and the worsening relations sharply reduced bilateral trade in this category. There is also some evidence that US imports of specific French commodities targeted by specific trade policies (e.g. anti dumping) also declined. These findings are consistent with recent work on the role of political considerations in trade negotiations (Grossman and Helpman 1994; Maggi and Goldberg 1999) and in the provision of foreign aid (Kuziemko and Werker 2006). And yet despite its importance, government intervention can only explain a small part of the overall decline in trade.

Estimates of the effect of relations on trade in consumer goods are less precise, although there is evidence of a decline in US exports of consumer goods to France. When we focus on goods identifiable as distinctly "French" the estimates are still imprecise, though they are larger in magnitude.[7] One possible explanation for this finding is that where French brands are recognizable and visible there are few close substitutes.

More important for aggregate trade flows than consumers' goods are commodities used primarily as firms' inputs. As discussed above, the effect of attitudes on trade in inputs is also more inforative for economic theory. We find that the worsening relations reduced bilateral imports and exports of inputs by approximately 12-15 percentage points. This decline was due to a fall in France's share of the quantity of goods traded between the US

[6] This decline amounts to about 0.2-0.3 percent of US international trade and about 0.4-1.2 percent of France's international trade in 2005.

[7] Chavis and Leslie (2006) find evidence of a short-lived boycott on French wine, but Ashenfelter et al. (2007) dispute these findings.

and the Eurozone within 4-digit commodity classes.

Worsening attitudes did not only reduce trade between the US and France: they also affected bilateral travel. We find suggestive evidence that both business travel and tourist visitations from the US to France declined compared to the flows to Western Europe. A similar result holds for travel from France to the US. While the decline in trade may have reduced the need to travel, our findings may also suggest decreased inclination to travel due to attitudes; such a decline may have affected both sales and purchases.

But even if worsening attitudes created incentives to reduce US trade with France, how large is the effect we estimate? We address this question by estimating the average increase in French commodity price that would have decreased trade by the same amount as the change in attitudes. For a broad range of substitution elasticities between commodities produced in France and those produced elsewhere, we estimate that the implied price decrease was about 1-2 percentage points. This suggests that accomodating attitudes need not be very costly for firms if reasonably close substitutes exist.

Taken together, our results suggest that attitudes can substantially affect trade in firms' inputs. But is this due to owner preferences, external incentives by consumers or governments, or managerial behavior? Since most US firms are widely held (La Porta, Lopez-de-Silanes, and Shleifer 1999) and public attitudes varied greatly, coordinated action on part of owners seems unlikely to explain much of the response we find. The response we find for consumers and governments may have contributed to the aggregate decline in trade, though the results above suggest that their impact on firms was also limited. Our most likely explanation is that the availability of close substitutes allowed managers to accomodate their attitudes when making purchase decisions and sales efforts.

Our findings about firm behavior have one additional implication for understanding trade barriers. These findings suggest that targeted campaigns that affect attitudes may affect foreign trade even if they do not change legislation.

The rest of the paper is structured as follows. Section 2 examines the deterioration of

the bilateral relations between the US and France. Section 3 investigates the impact of this deterioration on aggregate trade flows between these two countries. Section 4 examine the effects of firms, consumers, and government on trade. Finally, Section 5 concludes.

2 Deterioration of Relations Between US and France

This section examines the deterioration of relations between the US and France from 2002-2003, and its effect on attitudes. The crisis began in 2002, when the US tried to obtain a UN Security Council mandate to use military force against Iraq, against the strong objections of France. Other European governments were divided in their position: some supported the US, while others were closer to France. But France was in a different position from other Western European countries. First, it had the right to veto Security Council resolutions; the other longtime US ally with veto power, UK, supported the US. Second, it was more active in opposing the US efforts (CNN 2003). The resulting standoff affected attitudes not only among politicians, but also in the general public.

Signs of negative attitudes towards France in the US appeared as early as September 2002, as president Bush prepared to address the UN regarding Iraq. Only 33 percent of the ABC poll respondents said that France had done enough to support the U.S. campaign against terrorism, while 56 percent said that it had not.[8] In October 2002, two editorial articles in the Washington Post strongly criticized of France's attempts to prevent a US sponsored security council resolution authorizing the use of force against Iraq (Washington Post 2002). Following the compromise reflected in UN Security Council Resolution 1441 (November 2002), 26 percent of NBC poll respondents in early December said that they "lost respect" for France. Loss of respect increased sharply with income, reaching around 40 percent in the highest income brackets.[9] This suggests that attitudes among managers and other decision makers probably changed before those of the rest of the population, so

[8] By contrast, 75 percent said Great Britain had done enough and 39 percent said Germany had done enough.

[9] See Appendix Figure A1.

they may have responded earlier.[10] But as we shall now discuss, by March 2003 people from different income groups responded similarly.

The evidence discussed so far, although suggestive, does not allow us to systematically track the change in attitudes over time. To address this concern we use responses to a Gallup Poll question that was asked in an almost identical way since the early 1990s. People were asked for their "overall opinion of [country x]: very favorable, mostly favorable, mostly unfavorable, very unfavorable". Figure 1 shows the favorability rating of 5 major European countries (the fraction of respondents who had a "very favorable" or a "mostly favorable" opinion). From January 1991 to February 2002 there was little change in attitudes towards the UK, France and Germany; all three countries had favorability ratings that fluctuated around 75-95 percent. But from February 2002 to March 2003, France's favorability rating plummeted from 83 percent to 35 percent, recovering only to 57 percent in February 2006. By contrast, the decline in attitudes towards Germany was much smaller and shorter lived. At the same time, US attitudes towards the UK were mostly unchanged. Data for Italy and Spain, although available only twice for each country, suggests that attitudes towards those countries were also mostly unaffected, especially compared to the attitudes towards France.

The negative attitudes towards France in the US were both widespread and strong. In February 2002, only 4 percent of US respondents had a "very unfavorable" view of France, and 16 percent had a "somewhat unfavorable view".[11] But in March 2003, about 40 percent had a "very unfavorable" view of France, and about 26 percent had a "somewhat unfavorable" view. Among respondents who had completed college and whose household income was above $75,000, about 33 percent had a "very unfavorable" opinion of France, and about 34 reported a "somewhat unfavorable" opinion.[12]

The evidence that US relations with France worsened is not restricted to public opinion polls. Condoleeza Rice, who was then the National Security Advisor, was quoted in March

[10] See also evidence in Section 4 on self reported purchases of French products by income level.
[11] These figures exclude those with "no opinion". See details in Appendix Table A1.
[12] See Appendix Table A2.

2003 as having told associates that the US should "Punish France, ignore Germany and forgive Russia" (Reuters, March 2003). There were also calls to boycott French goods: journalist Bill O'Reilly wrote that his column continues to "boycott French goods, things made in France, not things made by Americans with French labels." (Fox News 2003). And two members of the US House of Representatives, Robert Ney and Walter Jones, decided to change the name "French Fries" to "Freedom Fries" on the House of Representatives' cafeteria menu (BBC 2006).

The change in relations and attitudes was not restricted to one side of the Atlantic: favorable opinion of the US in France fell from 63 percent in 2002 to 43 percent in 2003, and reached 39 percent in 2006. But at the same time, attitudes towards the US worsened in Great Britain, Germany, and Spain, though not as quickly as in France (Appendix Table A1). Taken together, these figures suggest that the worsening relations between the US and France, compared to US relations with other Western European countries, may be due in larger part to changes in US attitudes than to changes in French attitudes.

But even if the evidence presented here suggests that relations between the US and France detreiorated rapidly, it is not clear that trade between these countries should have been affected. Both countries have signed trade agreements (e.g. the World Trade Organization), and both have shown commitment to reduce global trade barriers over several decades. The question we address in the next section is: did worsening attitudes affect trade flows?

3 Effect of Relations on Trade Between US and France

In order to investigate the effect of worsening relations on trade, we first use Comtrade data to examine the changes in US trade with France and with other countries. Figure 2 shows that growth in the nominal value of US imports from France slowed down around 2002-2003, while the growth of US imports from other Eurozone and OECD countries did not. The figure also shows suggestive evidence that US exports to France may have declined. The changes in

the figure are presented relative to 1999, since the exchange rates between Eurozone countries were fixed on 31 December 1998. We note that after the implementation of the Euro and before the shock to the relations between the US and France, US imports from France seem to have trended very similarly to US imports from other Eurozone countries.

Having examined the trends, we now estimate the following parsimonious specification using a panel of US imports from OECD countries:

$$ln(PQ_{jt}) = \beta France_j(Year_t > 2002) + \delta Year_t + \eta Country_j + \varepsilon_{jt}. \quad (1)$$

The estimates in Panel A of Table 1 use this specification, where the outcome, PQ_{jt} denotes the value of US imports from exporter country j at year t, $France_j$ is an indicator for France, and $Year_t$ and $Country_j$ are vectors of year and country indicators. The data are in nominal US dollars, using C.I.F. (Cost, Insurance and Freight) prices - the price of goods in the US port of arrival.

Our specification treats 1999-2001 as "pre crisis" years, and 2003-2005 as "post crisis" years.[13] The choice of a 3 year window before and after 2002 reflects a tradeoff between different considerations. It allows the change in attitude ample time to affect trade flows, and mitigates measurement error problems that may arise when using year-to-year variation. At the same time, we avoid using a longer period where spurious changes in supply and demand could affect our estimates, and 1999 offers a convenient start date because of the implementation of the Euro..

The baseline result shows that US imports from France declined by about 19 percentage points compared to imports from other OECD countries after relations worsened. Other columns show that this result is robust to using 1999 imports as regression weights and to using only data from 2001 and 2003. We estimate this regression using data on US imports from OECD countries, assuming that in the short run these countries are plausible

[13] We also consider 2002 a "pre-crisis" year, assuming that the effect of relations on trade may have taken time to materialize, but our estimates are almost unchanged if we repeat the analysis excluding the data for 2002.

controls for France. Eurozone countries are attractive controls because of their similarity to France; the drawback of using only Eurozone countries is that the sample becomes smaller. In practice, the results for US imports change little when we use Eurozone countries as controls.

Panel B of Table 1 shows estimates of specification 1 using US exports instead of imports. Export data are in nominal US dollars, using F.O.B. (Free On Board) prices - the price of goods in the exporting country's port of origin.[14] The results suggest that worsening relations reduced trade by about 8 percentage points compared to other OECD countries. The estimate using Eurozone countries, though not precise, is similar in magnitude to the estimates using the OECD countries.[15]

While these estimates are consistent with the hypothesis that worsening attitudes reduced trade, they may also reflect a decline in French trade for reasons that are unrelated to its relations with the US. But Figure 3 suggests that French trade with other OECD partners actually grew more rapidly from 2002.[16] It is possible that France compensated for the loss of a major trade partner by increasing effort to trade elsewhere, since the US accounted for about 11 percent of French trade with the OECD in 2001.[17]

Having found evidence of a decline in trade between the US and France, we now examine more closely the timing of the change in trade and compare it to the timing of the change in attitudes. Since Comtrade only provides annual trade figures, we now use monthly data on imports and exports from the US Census. To overcome the high variance of these monthly

[14] We follow the standard practice of using C.I.F. prices for imports and F.O.B. prices for exports.

[15] Since we are considering the effect on US trade with a single country, France, we may be concerned about the precision of the estimates in Table 1. We re-ran the specification in Column 1 of Table 1, replacing the indicator for France with an indicator for each of the other Eurozone countries. We then averaged the coefficients for each country from the US imports and export regressions. We found that France's average coefficient was the second most negative after that of Luxemburg (the smallest Eurozone country).

[16] As a further check of our previous results, we estimate a "triple difference" regression similar to specification 1, where the dependent variable is log trade with the US or with the rest of the OECD (this avoids zero or near zero trade between smaller trade partners when using logs). The regressor of interest is an indicator for trade between the US and France after 2002, and we include a full set of interactions. The estimates for US imports and exports are -.101 (.042) and -.034 (.026).

[17] By contrast, France accounted for less than 4 percent of US trade with the OECD in the same year. Moreover, the US is a much more closed economy. Therefore, it is likely that any "compensation" effect on behalf of the US towards its other trade partners was likely much smaller.

data, we calculate the average of France's share of US imports from the Eurozone and its share of US exports to the Eurozone for each month from 1999-2005. We then regress this average share on month fixed effects and plot the residuals in Figure 4. The results suggest that France's share began to decline around December 2002, which seems broadly consistent with the Gallup Poll evidence.[18]

Despite the evidence on the timing of the decline in trade, we might still be concerned that the change in trade might not have been only due to attitudes. For example, following the events of 11 September 2001, demand for air travel may have declined. This decline may have reduced demand for airplanes, which were an important export from France to the US. More generally, we would like to control for changes in the composition of US imports due to changes in demand. Similarly, we want to analyze changes in US exports to France net of supply shocks. Finally, we would like to alleviate concerns that the decline in trade was driven by secular changes in US tariff structure.[19]

In order to address these issues, we consider France's share in US trade with the Eurozone within each 4 digit commodity group.[20] Analyzing changes within 4 digit commodity groups also allows us to determine the role of prices and quantities in the relative decline of US trade with France. In order to analyze the changes in total trade, prices, and quantities, we estimate the following regressions:

$$Y_{it} = \beta(Year_t > 2002) + \delta Commodity_i + \varepsilon_{it}, \tag{2}$$

where $Commodity_i$ are fixed effects for France's share of each commodity. We run this regression where the dependent variable, Y_{it}, is France's share in the value of trade with the

[18] Appendix Figure A2. shows similar figures for all 12 Eurozone countries. None of these countries shows a large and rapid drop similar to the one France experienced around December 2002.

[19] In practice, tariffs on commodities traded between the US and France are still very low (Gresser 2005), and the imposition of tariffs was likely to have caused a costly trade war between the US and the European Union. Even a Wall Street op-ed supporting the boycott of French commodities argues that raising tariffs is costly (Fund 2003). For a discussion of specific products targeted by US trade policies, see discussion in the next section.

[20] Here we focus on the Eurozone and not the OECD because there are more than 1,000 four digit commodity groups, so we prefer to use countries that are similar to France.

Eurozone, $(Q_{Fi}P_{Fi})/(Q_iP_i)$, or the logarithm of this expression.[21] For commodities where quantity data are available separately, we also run this regression using the logarithms of France's share in trade value $(Q_{Fi}P_{Fi})/(Q_iP_i)$, it's share in quantities $(Q_{Fi})/(Q_i)$, and the relative average price of French commodities, $(P_{Fi})/(P_i) \equiv ((Q_{Fi}P_{Fi})/(Q_iP_i)) \,/\, ((Q_{Fi})/(Q_i))$. The results in Table 2 show that the decline in US trade with France is due almost entirely to a change in quantities, not prices. This finding suggests that French firms may have been unable (or unwilling) to change their prices in a particular market in response to decreased demand from a particular market, albeit a large one.

Having found a significant decline in France's share of trade with the US, we now evaluate its magnitude. The estimates in Tables 1 and 2 suggest that US imports from France fell by about 13-21 percent, and US exports to France fell by about 6-13 percent. These estimates may be slightly upward biased if Eurozone countries provided substitutes for the French goods. Such a bias is likely small, since a small increase in trade with all other Eurozone countries would have offset the decreased trade with France, and some substitutes may have been provided from the US or non-Eurozone countries. At the same time, the regression estimates may be slightly downward biased if commodities are bundled together for shipment to (or from) Europe, making other Eurozone destinations more costly to trade with when trade with France declines. Taking these considerations into account, our preferred estimate is that US imports from France declined by about 15 percent, or about $5 billion in 2005 prices. Similarly, we estimate that US exports to France declined by about 8 percent, or about $2 billion in 2005 prices.

These estimates of the effect of attitudes on international trade are sizeable. For example, Helpman, Melitz, and Rubinstein (2007) estimate that the effect of WTO membership or sharing a common language on bilateral trade is approximately 10 percent. Our findings therefore suggest that a substantial worsening of attitudes can reduce trade quite considerably.

[21] For convenience we omit the subscript t.

Our findings in this section show that the deteriorating relations and attitudes between the US and France significantly reduced their bilateral trade. But who brought about this decrease in trade, and why? Our next section examines this question in detail, by looking at the mechanisms through which worsening may have reduced trade. In particular, we focus on trade in firms' inputs.

4 Are Firms Responsible for the Decline in Trade?

In order to assess the effects of firms and other economic agents on trade between the US and France, we would have liked to analyze individual transactions. Unfortunately, the data we have do not show such transactions, so we first identify the types of goods that governments, consumers, and firms are likely to use. Using US input-output tables for 1999 from the Bureau of Economic Analysis, we calculate the fraction of total US consumption of each 2-digit commodity group due to government, firms, and consumers. We then identify 2-digit commodity groups where more than 75 percent of consumption is due to each of these three types of agents.[22]

The results in Table 3 show that there is a single 2-digit commodity group - ordnance - where government accounted for more than 75 percent of US consumption in 1999; ordnance itself accounted for less than 1 percent of US imports from France in 1999. There are 7 commodity groups for which personal consumption accounted for more than 75 percent of US consumption; total French imports in these categories accounted for less than 6 percent of US imports from France in 1999. Finally, there are 33 commodity groups for which firms' intermediate inputs accounted for more than 75 percent of US consumption in 1999. Total imports in these categories accounted for more than 46 percent of US imports from France in 1999.

Based on this classification of commodity groups, we re-estimate regression (1) separetly for goods dominated by consumption of government, consumers, and firms. The top panel of

[22] Our results are robust to using other cutoffs.

Table 4 shows that bilateral trade in government-dominated goods - ordnance - fell sharply in both directions. The second panel shows that there was little change in US imports of French commodities consumed mainly by consumers, but there is some evidence of decreased exports of these commodities. Finally, the third panel shows a decline of about 15 percent in both imports and exports of commodities used primarily as firms' intermediate inputs between the US and France. Since firms are the focus of our investigation, we re-estimate the specifications in Table 2 using only commodities used primarily as firm' inputs. The results in Table 5 show that France's share of US imports of inputs from the Eurozone fell by about 14-15 percent, and its share in exports fell by about 12-13 percent. The decline in firms' trade was due almost entirely to reduced quantities, and not to a change in the relative price of French goods.

In order to interpret the effect of governments, consumers and firms on the change in trade, we examine each in turn. Our finding of a strong government response is consistent with the hypothesis that both governments sought to punish each other. Our results are also consistent with existing models, which argue that government interventions in international markets may reflects political considerations as well as cost minimization (e.g. Grossman and Helpman 1994). Finally, our findings are consistent with recent empirical evidence that political considerations can affect trade negotiations (e.g. Goldberg and Maggi 1999) and international aid transfers (Kuziemko and Werker 2006). Yet even if the drop in ordnance was significant, it can only account for a small fraction of the aggregate decline in trade between the US and France. To further explore the role of government, we examine the possible effect of tariff barriers.

Although the World Trade Organization usually prevent governments from imposing tariffs, there are some exceptions. We therefore document specific US trade policies that were likely targeted at France and other European countries.[23] These policy changes affected relatively few commodities and took place at different times from 1999-2005, so not all were

[23] See details in Appendix Table A3. We thank Chad Bown for his help in identifying these policy changes.

related to the crisis we analyze in this paper. For example, US retaliation against France in the cases of the EU Banana Regime and Beef Hormones took place before the crisis we consider. Table 6 suggests that US policies had large effect on the targeted commodities. The estimated effect of attitudes on trade in commodities unaffected by the policy is almost unchanged even when we for the policy. Note also that the US appears to have spent some of its most likely targets before 2001, so it appears to have had few options to further target French goods when relations worsened in 2002-2003.

Having examined the role of governments, we now turn our attention to consumers. Economic theory tells us that consumers' choices may reflect many considerations, so an effect of attitudes on consumer behavior would not be surprising. Poll evidence from April 2003 suggests that at least some consumers responded to the change in attitudes. Interestingly, people in high income households were more likely to report that they regularly purchase French products and that they stopped doing so, at least in the very short run (Figure 5). The differential responses by high income people may reflect a combination of factors. First, it is possible that US imports of consumer goods from France are disproportionately consumed by high income households. Second, high income individuals may be better informed about the origin of the products they consume. Finally and perhaps most interestingly, it is possible that people in high income households purchased French products in their capacity as managers in firms.

While poll evidence suggests that consumers responded, Table 4 shows only a marginally significant drop in US exports of commodities consumed mostly by consumers, and the estimates for US imports of these commodities are imprecise. Other evidence on the effect of attitudes on US purchases of a particular consumer good - French wine - is also inconclusive. Chavis and Leslie (2006) find evidence of a boycott on French wine, which reduced sales of French wine by approximately 13 percent over about 6 months in 2003. But Ashenfelter et al. (2007) argue that this apparent response reflects a seasonal cycle, rather than an actual change in demand.

To examine the possibility of a longer term impact of attitudes on trade in consumer goods, we focus on commodities that US consumers were more likely to have identified as French. To help us identify such goods, we use a list of firms mentioned on "Boycott Watch" as French; we also apply a minimum cutoff of 50 million dollars of US imports from France for each 4 digit category (see Appendix Table A4). We then re-estimate the specifications in the first two columns of the top panel of Table 2 using only these commodities. The estimated coefficients of interest are negative and about 2-3 times larger than the corresponding coefficients in Table 2, though the p-value for the t-tests are only about 0.15-0.3. But as we discuss below, there was a large decline in US tourism to France, and vice versa.

Taken together, these results suggest that the effect of attitudes on consumers' choices may have been restricted by two different forces. In many cases, consumers may not have known that a particular good was produced in France, so their attitudes did not matter; and when they did identify a good as French (e.g. due to a brand name), it may have been costly for them to find a good substitute.[24]

Despite the visibility of trade in consumer goods, trade in commodities used as firm inputs is quantitatively much more important. Analyzing the effect of international relations on firm inputs is also more interesting from a theoretical perspective. In his seminal work on Discrimination, Becker (1957) argues that in a perfectly competitive economy, firms whose input choice is affected by considerations other than cost minimization are driven out of the market. By this line of reasoning, we should expect the change in attitudes to have little impact on trade in inputs.

So why might attitudes still affect firms' choice of inputs? To address this question, we consider three different channels. First, as Becker himself argues, some firm owners may be willing to pay for their preferences. If their firms earn rents, these owners may have indulged their preferences by distorting firm inputs. But while we cannot rule out some response by owners, we argue that this channel is unlikely to explain the large effect of attitudes on trade.

[24] Broda and Weinstein (2006) find that substitution elasticities across commodities from different countries are higher for undifferentiated goods than for differentiated goods.

This is because most large and medium sized firms in the US are widely held (La Porta et al. 1999). Given the wide differences in US public attitudes towards France (Table A1) it seems unlikely that many owners could have agreed to sacrifice profits to accommodate their common preferences.

Second, attitudes of consumers and governments may distort firms' choice of inputs. For example, consumers' choice of products may depend on firms' choice of inputs (e.g. Besley and Ghatak 2006) or governments may provide incentives to choose (or avoid) particular inputs. Yet the analysis above suggests that most consumers knew little about French products; so how could they have known which firms used French inputs? An examination of "Boycott Watch" reporting policies reinforces this conclusion. This website lists firms based in France or firms that sell French items as their core business, but not US firms that use inputs produced in France. And the evidence we found for government intervention, beyond its purchases of ordnance, was very limited. At the same time, we cannot rule out that firms that relied heavily on inputs from France might have feared some response by governments or consumers. It is also possible that external attitudes made it acceptable for decision makers within firms to respond to their own attitudes.

Finally, it is also possible that managers' attitudes affected input choices or sales efforts if managers were not perfectly monitored.[25] For example, managers may have exerted less effort in maintaining good relations with the current suppliers or more effort in identifying alternative suppliers.[26] Or overseas travel may have be required for sales or purchases, and managers' private benefits from business trips may diminish when attitudes worsen.

It is difficult to test this last channel, since when attitudes worsen a decline in business travel may be the effect (as well as the cause) of decreased trade. Yet evidence of such a decline may suggest that managers were less inclined to travel for business to Paris or New

[25] In a related field experiment, Bandiera et al. (2007) find that managers tend to favor their compatriots until pecuniary incentives were introduced. Our results are consistent with theirs: increased non pecuniary incentives shift firm behavior away from cost minimization.

[26] It is possible that some of the effect of attitudes on trade is due to a response by shipping companies or their employees. But such a response is in many ways similar to a response by input importing firms.

York. To examine this possibility, we use data from the US Office of Travel and Tourism Industries for 1995-2005 to construct an estimate of the number of US resident travelers visitations to France and Western Europe.[27] These estimates are noisy, since they report total outgoing travel and the percent of the total who traveled to each destination (e.g. 7% of US business travelers in 2005 went to France). Despite the imprecision, Figure 6 shows that US travel to France and western Europe followed similar trends before relations worsened, although there was an overall decline in travel to Western Europe after 2001, probably because of the events of September 11. But the differential decline in travel to France (compared to Western Europe) from the 1999-2001 average to the 2003-2005 average was about 18 percentage points for business and convention travel and about 17 percentage points for other types of travel.[28]

Figure 7 shows that there was also a large decline in travel to the US from France and other Western European countries after 2001. The differential decline in travel to France (compared to Western Europe) from the 1999-2001 average to the 2003-2005 average was only 2 percent for Business travelers and about 12 percent for tourist travel. But even business travel to France showed a marked decline in 2003, when US attitudes towards France were at their worst, and a recovery (relative to Western Europe) was only attained in 2005.

This evidence on a decline in business travel, suggests that attitudes did indeed affect firms' input choices. But can we translate the decreased willingness to use inputs into an equivalent price increase? This question is related to the analysis of the willingness of consumers, firms, and employees to pay for their preferences (Becker 1957). It is a difficult question to answer, since existing experimental or quasi experimental studies (e.g. Bertrand and Mullainathan 2004, Goldin and Rouse 2000, Black and Strahan 2001) typically try to "level the playing field" for certain groups, such as minorities or women, making their inputs

[27] Travelers can report multiple destinations, so the figures for Western Europe include only people who did not visit France.

[28] Travel to France from countries other than the US shows no major change around 2003 (World Tourism Organization 2005 and 2006). It is therefore unlikely that the US decline was due to an exogenous shock to France's attractiveness as a tourist destination.

almost perfect substitutes to those supplied by the comparison group.

But in the example we analyze, inputs from different countries are likely imperfect substitutes (Broda and Weinstein 2006). We use this imperfect substitutability to calculate the increase in French prices that would have generated the same decline in their use as did the change in attitudes. We assume an aggregate Constant Elasticity of Substitution (CES) production function that uses French inputs and other inputs:

$$Y = \left[\theta_F F^{(\sigma-1)/\sigma} + \theta_N N^{(\sigma-1)/\sigma}\right]^{\sigma/(\sigma-1)}, \tag{3}$$

where Y is output, F is the quantity of French inputs, N is the quantity of non-French inputs, and θ_F and θ_N reflect the differential productivity of French inputs and non-French inputs. Assume that before the change in attitudes Firms chose inputs to minimize production costs, so the ratio of prices (French price divided by Non-French price) is:

$$\frac{p_F}{p_N} = \frac{\theta_F}{\theta_N}\left(\frac{F}{N}\right)^{-1/\sigma}. \tag{4}$$

Now assume that after the change in attitudes French inputs fell from F to $(1-\beta)F$, while the use of other inputs remained unchanged, so:[29]

$$\frac{(1+d)\,p_F}{p_N} = \frac{\theta_F}{\theta_N}\left(\frac{(1-\beta)\,F}{N}\right)^{-1/\sigma}, \tag{5}$$

where d is the price increase that would have generated the same decline in French input use as the change in attitudes. Combining the last two equations we get:

$$d = (1-\beta)^{-1/\sigma} - 1. \tag{6}$$

If we take as our preferred estimate $\beta = 0.14$ and assume $\sigma = 10$, we get an implied price

[29] French inputs were a small fraction of total inputs, so even if use of other inputs changed, the proportional change would likely have been small, so for simplicity we assume that it is equal to zero.

increase of $d = 0.015$. Broda and Weinstein find different estimates of σ, depending on the type of input and on the level of aggregation. If we assume instead $\sigma = 20$ we get $d = 0.008$, while if $\sigma = 5$ we get $d = 0.031$. These calculations suggest that firms the worsening attitudes need not have changed firms' willingness to pay by very much in order to generate a large change in French inputs. Similar calculations using the decrease in US exports to France give very similar results. We should, however, caution that these estimates reflect an average across commodities and decision makers. In addition, this figure may reflect, at least in part, sellers' decreased marketing efforts as well as buyers decreased willingness to purchase.

To further document the result that shifting away from a single country's inputs might not be very costly to firms, we note that France's share (or the US's share) of trade within 4 digit commodities rarely accounts for more than a quarter of trade in that commodity within the OECD. This suggests that if export prices are relatively inelastic, either in the short run or because of limited capacity for price discrimination across markets, then changes in attitudes can have a large impact on bilateral trade flows.

5 Conclusions

We examine the deterioration of relations between the US and France from 2002-2003, which worsened Americans' attitudes towards France (and vice versa). This change in attitudes was common even among well-educated people with a high level of income, so it likely affected many managers. At the same time, the worsening relations were not associated with an increase in personal risk or substantial tariff barriers. This change provides an interesting opportunity to examine the effect of attitudes on firms' choice of inputs.

We find that US imports from France fell by about 15 percent and US exports to France fell by about 8 percent, compared to other Eurozone or OECD countries. This decline was due in large part to a fall in France's share in the quantity of inputs traded with the US; the decline was large and significant even within 4-digit product categories. We also find a

similarly large decline in both US business trips and tourist visitations to France, suggesting that worsening relations did indeed affect transactions between firms.

One interesting aspect of the experiment we analyze is that it is difficult to rationalize the decline in trade of inputs using standard arguments of cost minimization. The attributes of inputs produced in the France (the US) and by competing input producers, and the characteristics of firms' production processes in the US (France) are not likely to have changed in the short run. This suggests that tastes, and not only simple cost-minimizing calculations, may affect firms' choice of inputs.

Our results also suggest that international trade flows may be sensitive to large changes in relations and attitudes. We conclude that the effect of attitudes may be particularly strong where there are strong incentives to punish a foreign country, as in the case of commodities used by governments, or where the availability of close substitutes lowers the cost of changing a firm's input suppliers. This result may be especially important for understanding the robustness of trade flows between Western countries and other important trade partners.

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Table 1. Effect of Worsening Attitudes between US and France on Bilateral Trade

	Baseline	As Baseline, Except:		
		Weighted	Only 2001 and 2003	Eurozone Only
		A. Dependent Variable: Log US Imports		
France*(Year>2002)	-0.190	-0.181	-0.188	-0.173
	(0.060)	(0.053)	(0.076)	(0.047)
Observations	203	203	58	84
		B. Dependent Variable: Log US Exports		
France*(Year>2002)	-0.087	-0.083	-0.109	-0.064
	(0.031)	(0.030)	(0.060)	(0.047)
Observations	203	203	58	84

NOTES. The regression coefficients reported in this table use data for a panel of OECD (or Eurozone) countries, excluding the US, from 1999-2005 (unless otherwise specified). The table reports estimates of regressions of log value of trade on an indicator for France interacted with an indicator for the period after 2002, when French relations with US deteriorated deteriorated. All the regressions control for exporting (importing) country fixed effects and year effects. The baseline specification uses CIF (FOB) prices in nominal US dollars for import (export) regressions for OECD trading partners from 1999-2005. The weighted specification uses 1999 exports (imports) as weights. Robust standard errors are in parentheses; standard errors are clustered by exporting (importing) country in all regressions except those that only use 2001 and 2003 data.

Table 2. The Effect of Relations on France's Share of US Trade with Eurozone (Within 4-Digit Commodities)

US Imports

	(1)	(2)	(3)	(4)	(5)	(6)
	All Years (1999-2005)		All Years, But Only Commodities with Price Data			Only 2001 and 2003
Dependent Variable	ln((QfPf)/(QP))	(QfPf)/(QP)	ln((QfPf)/(QP))	ln(Qf/Q)	ln(Pf/P)	ln((QfPf)/(QP))
Year>2002	-0.131	-0.0152	-0.138	-0.130	-0.008	-0.114
	(0.026)	(0.0037)	(0.029)	(0.042)	(0.026)	(0.030)
Observations	7,527	8,246	6,316	6,316	6,316	2,155

US Exports

	(1)	(2)	(3)	(4)	(5)	(6)
	All Years (1999-2005)		All Years, But Only Commodities with Price Data			Only 2001 and 2003
Dependent Variable	ln((QfPf)/(QP))	(QfPf)/(QP)	ln((QfPf)/(QP))	ln(Qf/Q)	ln(Pf/P)	ln((QfPf)/(QP))
Year>2002	-0.128	-0.0142	-0.117	-0.146	0.030	-0.119
	(0.029)	(0.0038)	(0.034)	(0.042)	(0.025)	(0.035)
Observations	7,717	8,519	6,309	6,309	6,309	2,194

NOTES. The regression coefficients reported in this table come from a panel of 4 digit Harmonized System commodity categories. The dependent variables are measures of France's share of US trade with Eurozone within each product category. The dependent variable in column (1), (3), and (6) is the logarithm of France's share of the value of US trade with the Eurozone; the dependent variable in column (2) is France's share of the value of US trade with the Eurozone; the dependent variable in column (4) is the logarithm of France's share of the quantity of US trade with the Eurozone; and the dependent variable in column (5) is the logarithm of the average price of French commodities divided by the average price of Eurozone commodities. All regressions include commodity group fixed effects and an indicator for post 2002. The data use CIF (FOB) prices for US imports (exports). Robust standard errors are in parentheses; standard errors are clustered by 4-digit commodities in specifications (1)-(5).

Table 3. Commodities Used Mainly by US Government, Consumers or Firms

Product category name	Imports from France ($1,000,000s)	Total Consumption ($1,000,000s)	Government or Consumers or Intermediates Share of Total Consumption
Government share of total consumption ≥ 0.75			
Ordnance and accessories	6	10,287	0.80
Consumers' share of total consumption ≥ 0.75			
Cleaning and toilet preparations	793	48,225	0.78
Apparel	240	121,089	0.86
Footwear, leather, and leather products	238	25,120	0.82
Other transportation equipment	94	28,423	0.76
Household appliances	79	22,417	0.80
Motor vehicles (passenger cars and trucks)	64	167,651	0.99
Tobacco products	1	45,465	0.94
Firm inputs' share of total consumption ≥ 0.75			
Engines and turbines	2,823	19,113	0.97
Industrial and other chemicals	1,926	131,943	0.91
Truck and bus bodies, trailers, and motor vehicles parts	1,075	143,519	0.93
Primary iron and steel manufacturing	686	107,567	0.99
Electronic components and accessories	638	149,520	0.99
Special industry machinery and equipment	627	6,410	0.95
Farm, construction, and mining machinery	617	8,184	0.92
Electrical industrial equipment and apparatus	562	33,538	0.96
General industrial machinery and equipment	448	24,740	0.99
Rubber and miscellaneous plastics products	402	178,831	0.86
Glass and glass products	342	25,095	0.89
Other fabricated metal products	269	84,884	0.91
Plastics and synthetic materials	258	62,136	1.00
Primary nonferrous metals manufacturing	200	96,128	1.00
Heating, plumbing, and fabricated structural metal products	191	74,369	0.98
Stone and clay products	190	79,506	0.95
Paper and allied products, except containers	186	122,553	0.81
Metalworking machinery and equipment	155	15,338	0.89
Lumber and wood products	135	128,172	0.97
Broad and narrow fabrics, yarn and thread mills	123	43,845	0.94
Electric lighting and wiring equipment	108	30,101	0.88
Materials handling machinery and equipment	81	5,799	1.00
Screw machine products and stampings	54	56,142	0.96
Agricultural fertilizers and chemicals	48	20,615	0.84
Metal containers	34	12,886	1.00
Service industry machinery	27	25,894	0.92
Livestock and livestock products	26	101,763	0.96
Forestry and fishery products	23	22,259	0.82
Paints and allied products	16	18,223	0.89
Miscellaneous machinery, except electrical	12	37,781	0.97
Paperboard containers and boxes	12	41,590	0.98
Non-metallic minerals mining	6	16,608	1.00
Metallic ores mining	1	7,183	1.04

Note: This table lists 2-digit Harmonized System commodity groups where share of government, consumers, or firms' intermediate inputs exceeds 75 percent of total US consumption according to the US National Annual Product Account Tables for 1999.

Table 4. Effect of Worsening Attitudes between US and France on Trade, by Commodity Type

	US Imports				US Exports			
		As Baseline, Except:				As Baseline, Except:		
	Baseline	Weighted	Only 2001 and 2003	Eurozone Only	Baseline	Weighted	Only 2001 and 2003	Eurozone Only
	A. Commodity groups where government share of total US consumption in 1999 was at least 0.75							
France*(Year>2002)	-0.429	-0.454	-1.003	-0.348	-1.002	-0.968	-1.494	-0.647
	(0.117)	(0.107)	(0.170)	(0.183)	(0.133)	(0.122)	(0.184)	(0.114)
Observations	185	180	53	77	203	203	58	84
	B. Commodity groups where consumers' share of total US consumption in 1999 was at least 0.75							
France*(Year>2002)	0.008	0.026	0.053	0.173	-0.194	-0.191	-0.128	-0.152
	(0.135)	(0.120)	(0.165)	(0.155)	(0.098)	(0.093)	(0.128)	(0.214)
Observations	203	203	58	84	203	203	58	84
	C. Commodity groups where firm inputs' share of total US consumption in 1999 was at least 0.75							
France*(Year>2002)	-0.147	-0.143	-0.113	-0.168	-0.162	-0.151	-0.162	-0.083
	(0.038)	(0.037)	(0.033)	(0.040)	(0.045)	(0.042)	(0.066)	(0.068)
Observations	203	203	58	84	203	203	58	84

NOTES. The regression coefficients reported in this table use data for a panel of OECD (or Eurozone) countries, excluding the US, from 1999-2005 (unless otherwise specified). The dependent variable is log value of trade in commodity groups where governments, firms, or consumers dominated US consumption in 1999 (see Table 3). The regressor of interest is an interaction of an indicator for France with an indicator for the period after 2002, when French relations with US deteriorated deteriorated. All the regressions control for exporting (importing) country fixed effects and year effects. The baseline specification uses CIF (FOB) prices in nominal US dollars for import (export) regressions for OECD trading partners from 1999-2005. The weighted specification uses 1999 exports (imports) as weights. Robust standard errors are in parentheses; standard errors are clustered by exporting (importing) country in all regressions except those that only use 2001 and 2003 data.

Table 5. The Effect of Attitudes on France's Share of US Input Trade with Eurozone (Within 4-Digit Commodities)

US Imports of Commodities Used Mostly as Firms' Inputs

	(1)	(2)	(3)	(4)	(5)	(6)
	All Years (1999-2005)		All Years, But Only Commodities with Price Data			Only 2001 and 2003
Dependent Variable	ln((QfPf)/(QP))	(QfPf)/(QP)	ln((QfPf)/(QP))	ln(Qf/Q)	ln(Pf/P)	ln((QfPf)/(QP))
Year>2002	-0.143	-0.0141	-0.150	-0.144	-0.006	-0.109
	(0.036)	(0.0043)	(0.039)	(0.058)	(0.036)	(0.041)
Observations	4,206	4,606	3,686	3,686	3,686	1,200

US Exports of Commodities Used Mostly as Firms' Inputs

	(1)	(2)	(3)	(4)	(5)	(6)
	All Years (1999-2005)		All Years, But Only Commodities with Price Data			Only 2001 and 2003
Dependent Variable	ln((QfPf)/(QP))	(QfPf)/(QP)	ln((QfPf)/(QP))	ln(Qf/Q)	ln(Pf/P)	ln((QfPf)/(QP))
Year>2002	-0.122	-0.0104	-0.126	-0.127	0.001	-0.120
	(0.039)	(0.0051)	(0.044)	(0.056)	(0.034)	(0.046)
Observations	4,367	4,725	3,691	3,691	3,691	1,245

NOTES. The regression coefficients reported in this table come from a panel of 4 digit Harmonized System commodity categories. The data are only for commodities where at least 75% of US consumption in 1999 was due to firms. The dependent variables are measures of France's share of US trade with Eurozone within each product category. The dependent variable in column (1), (3), and (6) is the logarithm of France's share of the value of US trade with the Eurozone; the dependent variable in column (2) is France's share of the value of US trade with the Eurozone; the dependent variable in column (4) is the logarithm of France's share of the quantity of US trade with the Eurozone; and the dependent variable in column (5) is the logarithm of the average price of French commodities divided by the average price of Eurozone commodities. All regressions include commodity group fixed effects and an indicator for post 2002. The data use CIF (FOB) prices for US imports (exports). Robust standard errors are in parentheses; standard errors are clustered by 4-digit commodities in specifications (1)-(5).

Table 6. The Effect of US Policies on France's Share of US Input Trade with Eurozone (Within 4-Digit Commodities)

	US Imports							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Entire Sample (1999-2005)				Only 2001 and 2003			
	All Commodities		Commodities Used Mostly as Firms' Inputs		All Commodities		Commodities Used Mostly as Firms' Inputs	
Year>2002	-0.131	-0.124	-0.143	-0.132	-0.114	-0.112	-0.109	-0.100
	(0.026)	(0.026)	(0.036)	(0.036)	(0.030)	(0.030)	(0.041)	(0.042)
(Policy Change) * (Year>2002)		-0.185		-0.372		-0.062		-0.308
		(0.111)		(0.184)		(0.123)		(0.245)
Observations	7,527	7,527	4,206	4,206	2,155	2,155	1,200	1,200

	US Exports							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Entire Sample (1999-2005)				Only 2001 and 2003			
	All Commodities		Commodities Used Mostly as Firms' Inputs		All Commodities		Commodities Used Mostly as Firms' Inputs	
Year>2002	-0.128	-0.132	-0.122	-0.122	-0.119	-0.110	-0.120	-0.102
	(0.029)	(0.029)	(0.039)	(0.039)	(0.035)	(0.036)	(0.046)	(0.046)
(Policy Change) * (Year>2002)		0.088		0.017		-0.216		-0.628
		(0.145)		(0.234)		(0.227)		(0.343)
Observations	7,717	7,717	4,367	4,367	2,194	2,194	1,245	1,245

NOTES. The regression coefficients reported in this table come from a panel of 4 digit Harmonized System commodity categories from 1999-2005 (unless otherwise stated). The dependent variable is the logarithm France's share of the value of US trade with Eurozone within each product category. All regressions include commodity group fixed effects and an indicator for post 2002. Specifications (2), (4), (6), and (8) also include interactions for post 2002 with an indicator for 4 digit commodity groups that were affected by changes in US trade policies with France from 1999-2005 (see Appendix Table A3). "Commodities Used Mostly as Firms' Inputs" are only for commodities where at least 75% of US consumption in 1999 was due to firms. The data use CIF (FOB) prices for US imports (exports). Robust standard errors are in parentheses; standard errors are clustered by 4-digit commodities in specifications (1)-(4).

Appendix Table A1. Bilateral Attitudes: US and Western European Countries [Not Necessarily for Publication]

A. Opinion of Major Western European Countries in US Gallup Polls

	France					Great Britain					Germany				
Date	Very favorable	Mostly favorable	Mostly unfavorable	Very unfavorable	No Opinion	Very favorable	Mostly favorable	Mostly unfavorable	Very unfavorable	No Opinion	Very favorable	Mostly favorable	Mostly unfavorable	Very unfavorable	No Opinion
Feb 2006	12	42	28	12	7	46	42	5	3	4	17	62	11	4	6
Feb 2005	12	39	30	13	6	48	43	3	1	5	17	56	18	4	5
Feb 2004	10	37	31	18	4	40	47	7	3	3	13	56	19	7	5
Mar 2003	6	28	25	39	2	43	43	6	3	5	8	41	30	14	7
Feb 2003	13	46	23	10	8	45	44	4	2	5	12	59	16	5	8
Feb 2002	23	56	13	3	5	48	42	5	2	3	22	61	8	3	6
Feb 2001	22	55	12	5	6	41	44	6	3	6	20	55	9	7	9
Feb 1999	17	54	14	4	11	34	50	4	3	9	18	61	11	5	7
Mar 1996	15	55	16	4	11	30	51	8	2	9	17	58	13	3	9
Mar 1991	18	61	9	3	9	49	40	4	1	8	16	62	11	3	9
Jan 1991	17	57	11	4	11	45	45	3	1	6	15	60	13	3	9

B. Percent Viewing US Favorably in Major Western European Countries (Pew Global Attitudes Project)

Year	France	Great Britain	Germany
2002	63	75	61
2003	43	70	45
2004	37	58	38
2005	43	55	41
2006	39	56	37

NOTES: Panel A. reports US opinion of Western European counties from several Gallup polls held from 1991-2006. Panel B. reports opinion of the US in Western European countries in various polls held from 2002-2006 (Pew Global Attitudes Project).

Appendix Table A2. Opinion of France in US Gallup Polls, By Education and Household Income, March 2003 [Not Necessarily for Publication]

	High School or Less	Some College	College Graduate	All
Household Income less than $10k				
Very Favorable or Mostly Favorable	0.31	0.66	0.00	0.37
Somewhat Unfavorable	0.20	0.00	1.00	0.18
Very Unfavorable	0.49	0.34	0.00	0.45
	(15)	(4)	(1)	(20)
$10k≤Household Income<$15k				
Very Favorable or Mostly Favorable	0.30	0.49	0.00	0.34
Somewhat Unfavorable	0.36	0.42	0.00	0.36
Very Unfavorable	0.34	0.09	1.00	0.30
	(24)	(7)	(1)	(31)
$15k≤Household Income<$20k				
Very Favorable or Mostly Favorable	0.41	0.60	1.00	0.51
Somewhat Unfavorable	0.35	0.26	0.00	0.30
Very Unfavorable	0.24	0.14	0.00	0.19
	(18)	(12)	(1)	(32)
$20k≤Household Income<$30k				
Very Favorable or Mostly Favorable	0.42	0.14	0.52	0.34
Somewhat Unfavorable	0.15	0.23	0.24	0.20
Very Unfavorable	0.43	0.63	0.24	0.47
	(24)	(20)	(10)	(54)
$30k≤Household Income<$50k				
Very Favorable or Mostly Favorable	0.23	0.37	0.44	0.33
Somewhat Unfavorable	0.29	0.21	0.20	0.24
Very Unfavorable	0.48	0.42	0.35	0.43
	(34)	(35)	(17)	(86)
$50k≤Household Income<$75k				
Very Favorable or Mostly Favorable	0.41	0.29	0.45	0.38
Somewhat Unfavorable	0.07	0.17	0.26	0.18
Very Unfavorable	0.52	0.55	0.29	0.44
	(20)	(39)	(39)	(99)
Household Income at least $75k				
Very Favorable or Mostly Favorable	0.35	0.20	0.32	0.30
Somewhat Unfavorable	0.17	0.29	0.34	0.30
Very Unfavorable	0.47	0.51	0.33	0.40
	(24)	(25)	(72)	(121)
Refused to Tell or Didn't Know Household Income				
Very Favorable or Mostly Favorable	0.26	0.51	0.30	0.32
Somewhat Unfavorable	0.50	0.27	0.17	0.39
Very Unfavorable	0.24	0.22	0.53	0.29
	(14)	(5)	(4)	(22)
All Levels of Household Income				
Very Favorable or Mostly Favorable	0.33	0.32	0.39	0.35
Somewhat Unfavorable	0.25	0.23	0.29	0.26
Very Unfavorable	0.41	0.45	0.32	0.40
	(172)	(148)	(145)	(466)

NOTES: This table reports results from a gallup poll held on 14-15 March 2003. US respondents were asked: "Next, I'd like your overall opinion of some foreign countries. First, is your overall opinion of [Country] very favorable, mostly favorable, mostly unfavorable, or very unfavorable? How about -- [Country]?" Countries were rotated. The opinion of France is reported, weighted by sampling weights. Non-responses are excluded from this table. Numbers in parentheses denote (weighted) number of respondents in each category.

Appendix Table A3. Changes in US Trade Policies Towards France [Not Necessarily for Publication]

Policy Description	Years Enacted or Changed	4 Digit Harmonized System Commodity Groups That Include Affected Commodities	Source
US retaliation (with WTO authorization) following the EU Banana Regime. The US targeted France and other EU countries by imposing 100 percent ad valorem duties.	1999	H0-3307, H0-4202, H0-4805, H0-4819, H0-4911, H0-6302, H0-8507, H0-8516	USTR (1999a)
US retaliation (with WTO authorization) following the EU Beef Hormones dispute. The US targeted France and other EU countries by imposing 100 percent ad valorem duties.	1999	H0-0201, H0-0202, H0-0203, H0-0206, H0-0406, H0-0703, H0-0709, H0-0712, H0-1602, H0-1905, H0-2009, H0-2101, H0-2103, H0-2002, H0-0504, H0-2104, H0-5510, H0-1505, H0-1806, H0-2007, H0-0210, H0-3506	USTR (1999b)
US used new antidumping and countervailing duty policies on steel products.	1999 - 2005	H0-7209, H0-7210, H0-7211, H0-7212, H0-7213, H0-7214, H0-7215, H0-7219, H0-7220, H0-7221, H0-7222, H0-7227, H0-7228, H0-7301	Bown (2007)
Free Trade Agreement between US and Chile and Australia may have had an indirect impact on US imports of wine from France	2004, 2005	H0-2204	WITS Database

NOTES: Some of the policies described in this table targeted only small subgroups of the listed 4 digit commodity groups.

Appendix Table A4. Commodities Identifiable as Originating in France [Not Necessarily for Publication]

Commodity Code	Commodity Description	Value of US Imports from France in 1999
H0-0406	Cheese and curd	78,183,168
H0-2204	Grape wines (including fortified), alcoholic grape must	1,086,000,000
H0-2208	Liqueur, spirits and undenatured ethyl alcohol <80%	581,600,000
H0-3303	Perfumes and toilet waters	528,000,000
H0-3304	Beauty, make-up and skin care preparations	151,000,000
H0-4011	New pneumatic tyres, of rubber	146,300,000
H0-4202	Trunks, suit-cases, camera cases, handbags, etc.	136,300,000
H0-6204	Women's, girl's suits, jacket, dress, skirt, etc.	88,680,159
H0-6403	Footwear with uppers of leather	56,578,197
H0-7013	Glassware for table, kitchen, toilet, decoration	170,200,000
H0-7113	Jewellery and parts, containing precious metal	63,337,494
H0-7615	Aluminium ware for table, kitchen, sanitary use	62,205,445
H0-8704	Motor vehicles for the transport of goods	53,754,587
H0-9403	Other furniture and parts thereof	89,086,955
H0-9701	Paintings, drawings, pastels, collages etc., hand made	1,458,000,000
H0-9703	Original sculptures and statuary, in any material	57,057,828
H0-9706	Antiques older than one hundred years	289,600,000

NOTES. This table report 4-digit H0 commodity groups for which, we assume, US consumers would be relatively more likely to identify a commodity as French. These commodity groups were chosen such that the US imported at least $50 million dollars of goods from France in 1999 in each of them.

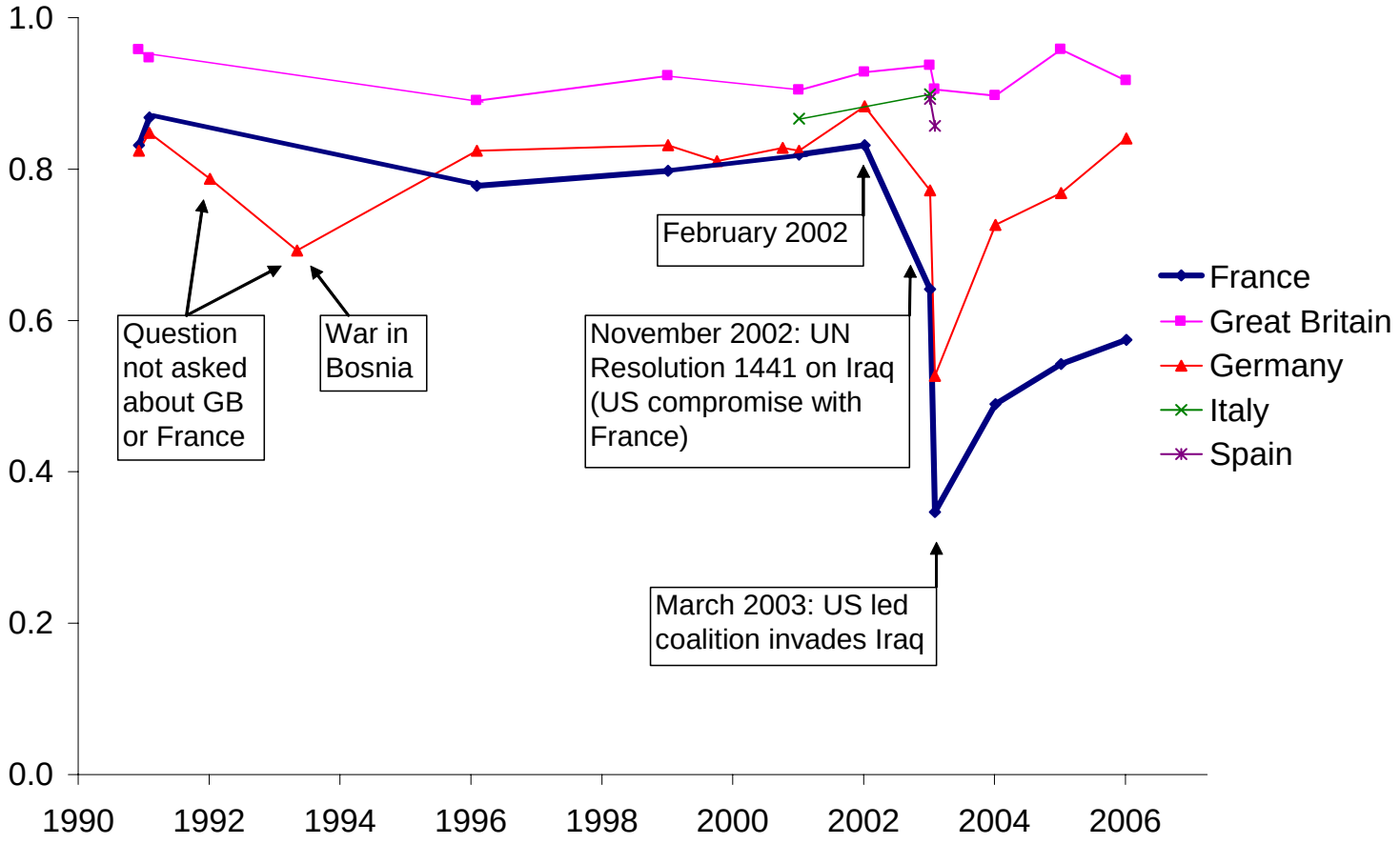


Figure 1. Fraction of US Respondents With a Favorable View of France and other European Countries (Gallup Polls for Various Dates; "Don't Know" Responses Excluded)

Notes: The question asked in all polls was very similar to the following: "(Next, I'd like your overall opinion of some foreign countries.) Is your overall opinion of...(Country name) - very favorable, mostly favorable, mostly unfavorable, or very unfavorable?" The figure reports the fraction of respondents with a "very favorable" or "mostly favorable" opinion.

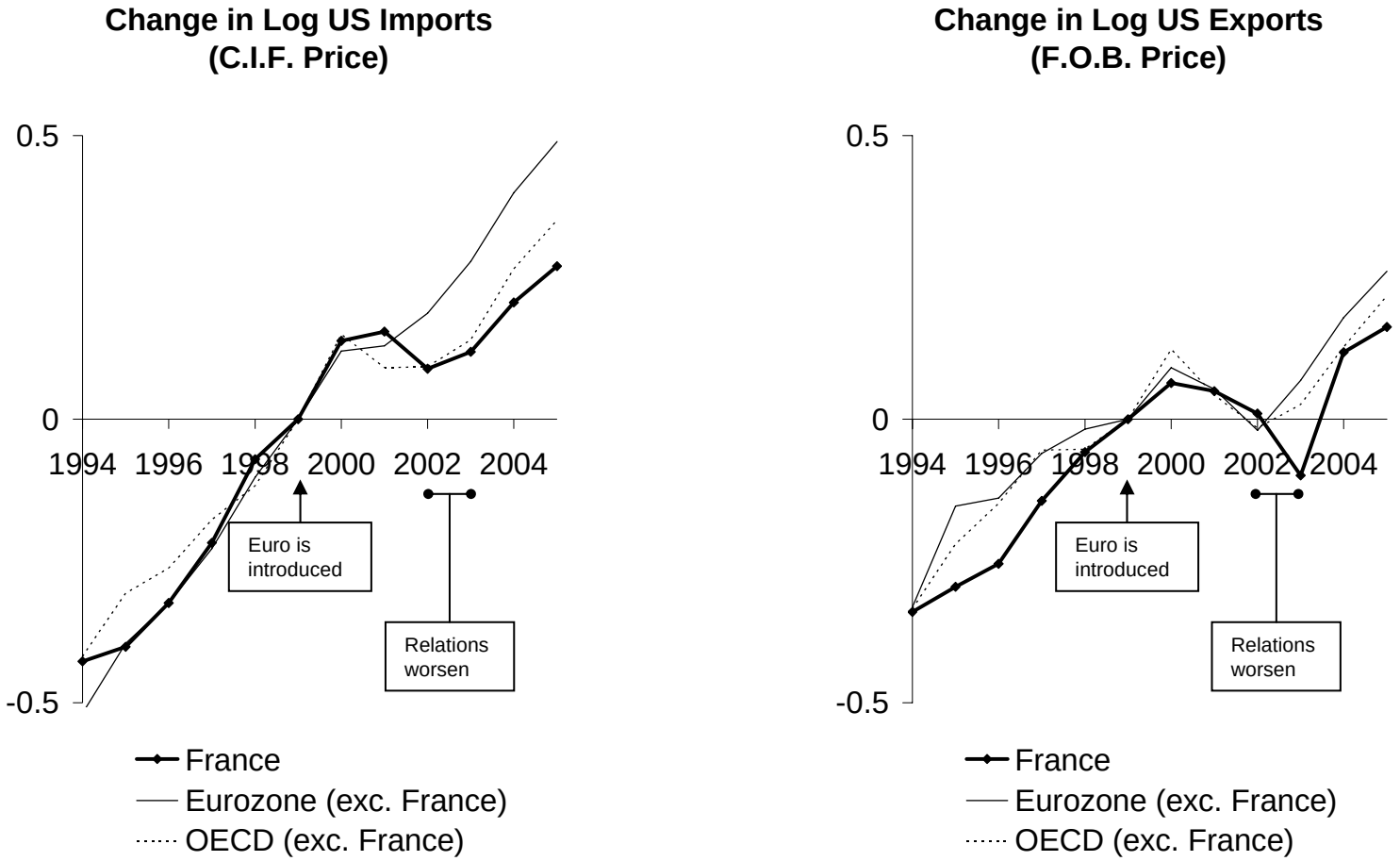


Figure 2. Change in Log Value of US Trade with France, Eurozone and OECD (Nominal US$, Changes Relative to 1999)

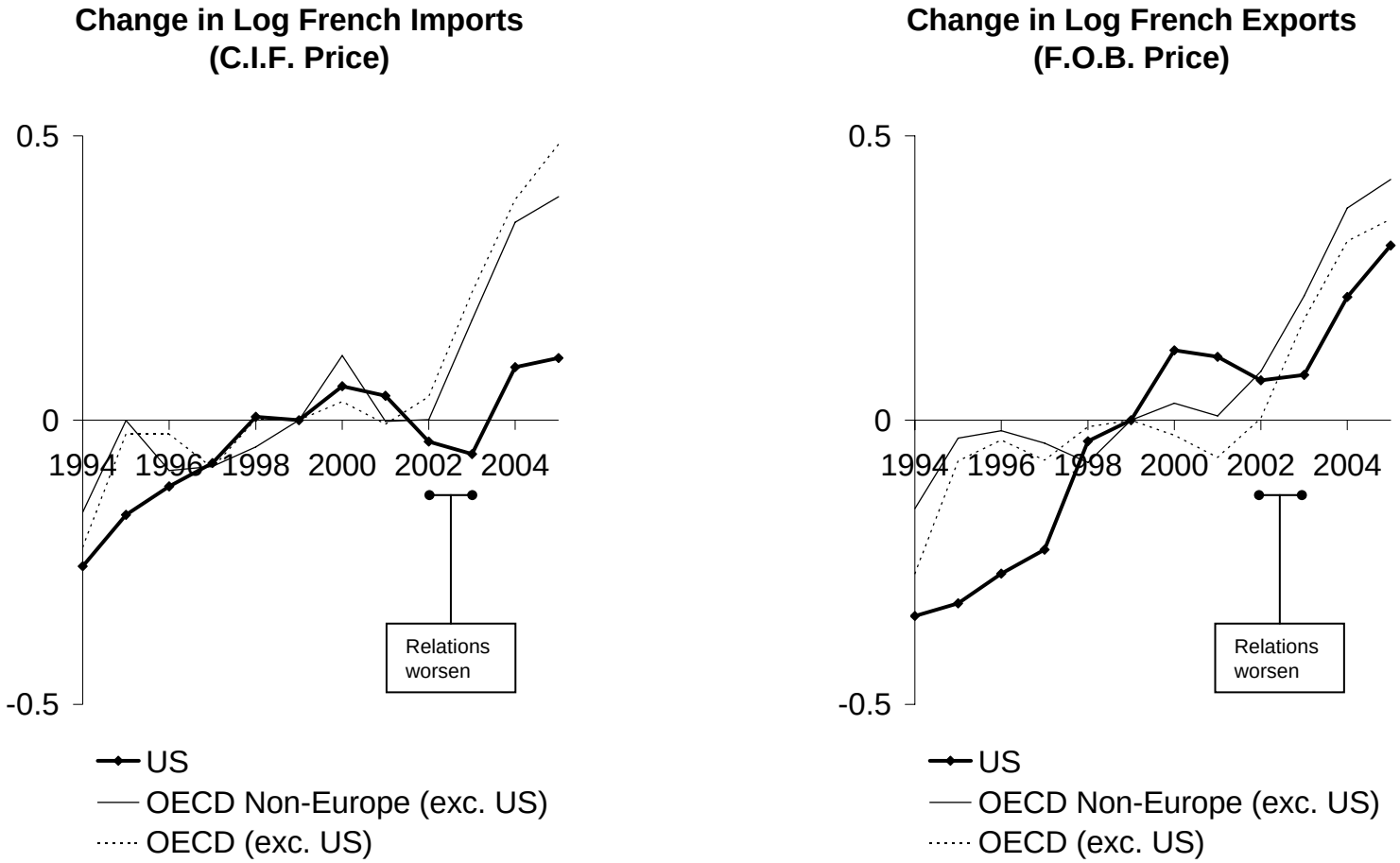


Figure 3. Change in Log Value of French Trade with US and OECD (Nominal US$, Changes Relative to 1999)

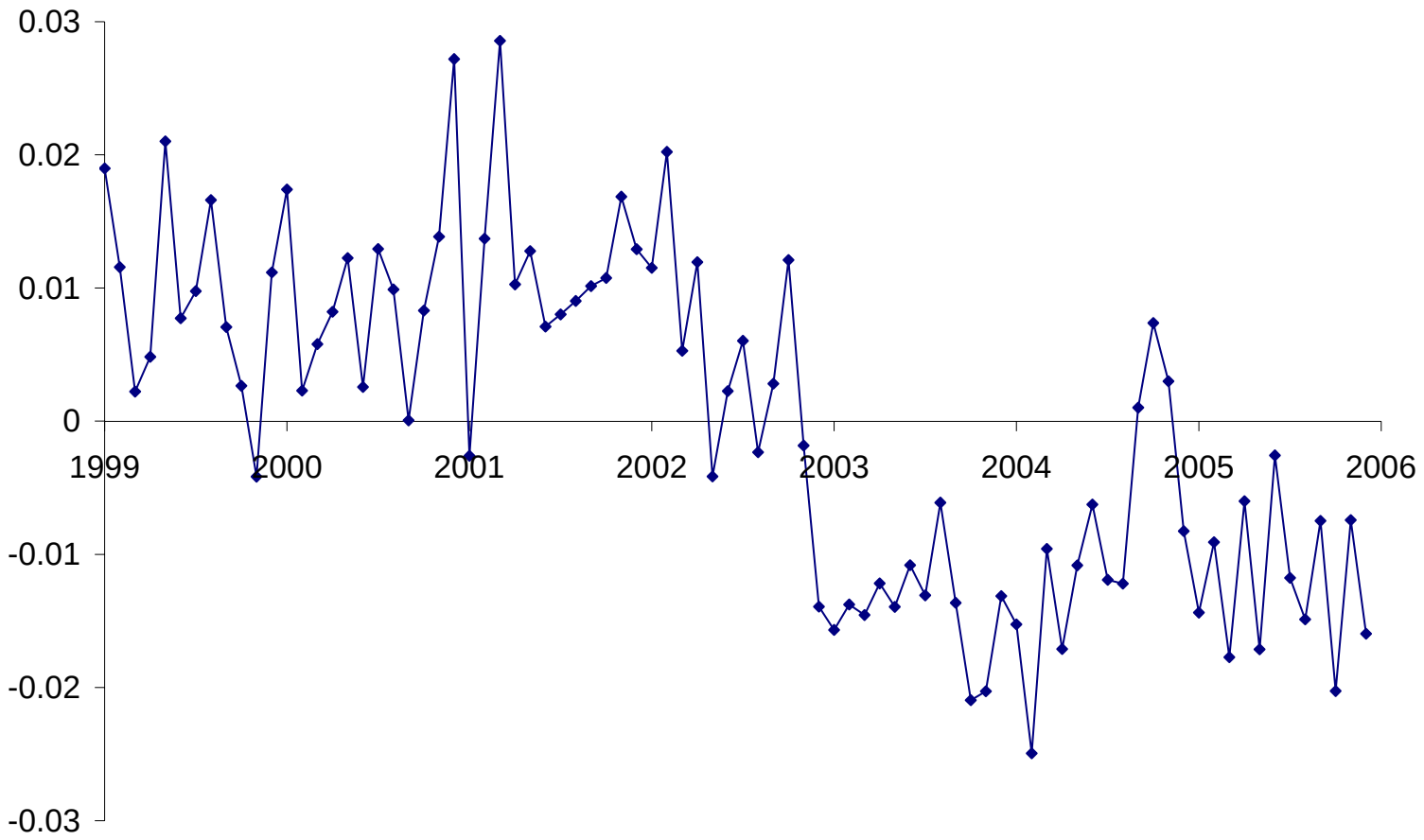


Figure 4. Average of France's Shares of US Imports from Eurozone and Exports to Eurozone (Residual After Netting Out of Month Fixed Effects)

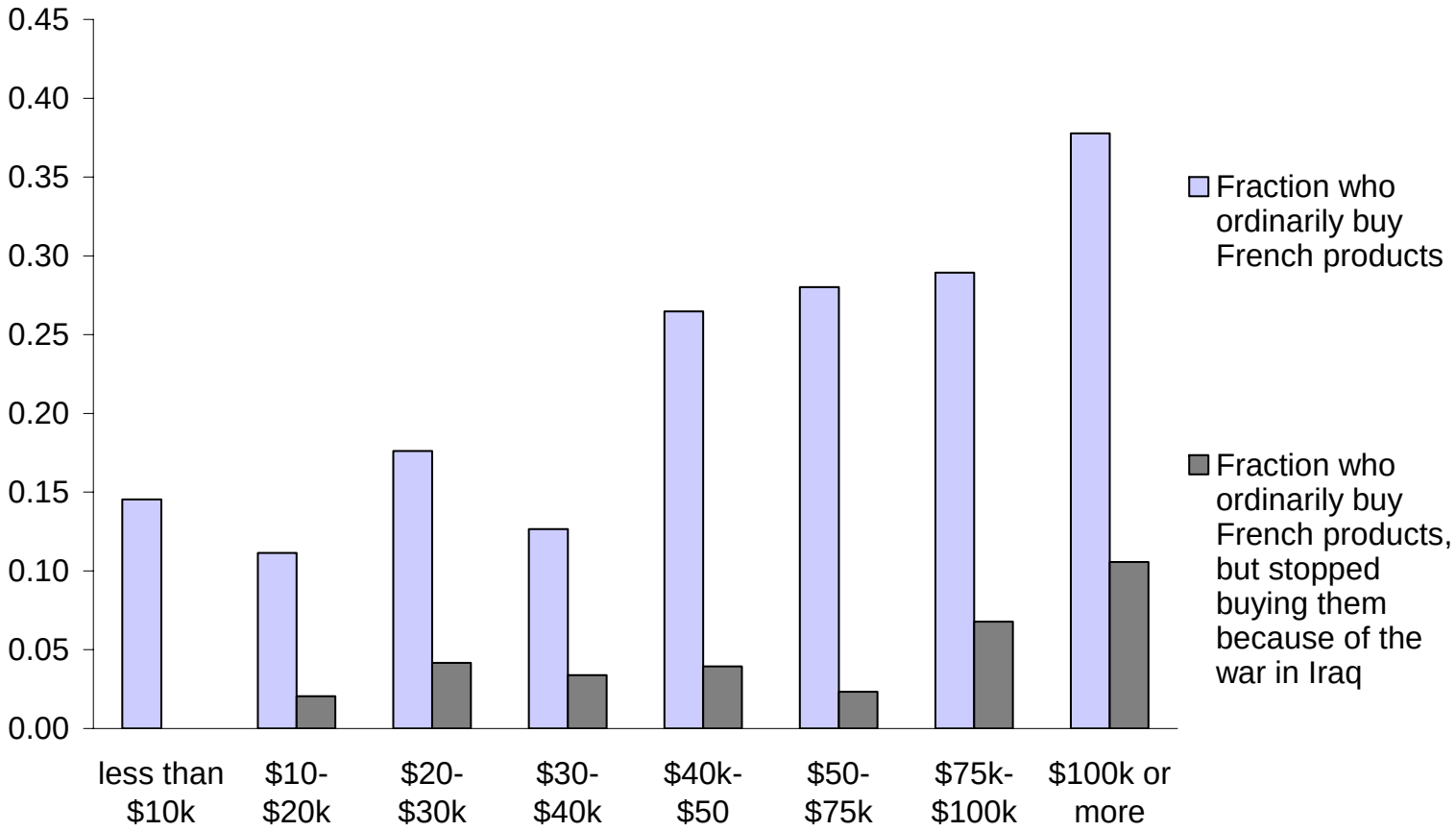


Figure 5. Reported Purchase of French Products, by Annual Household Income (Gallup Poll, 22-23 April 2003)

Note: People were asked: “Thinking now about your buying habits, do you ordinarily buy any products made in France, or not?” Those who responded “Yes” were asked: Have you stopped buying these products as a result of France’s opposition to the war with Iraq, or not?”

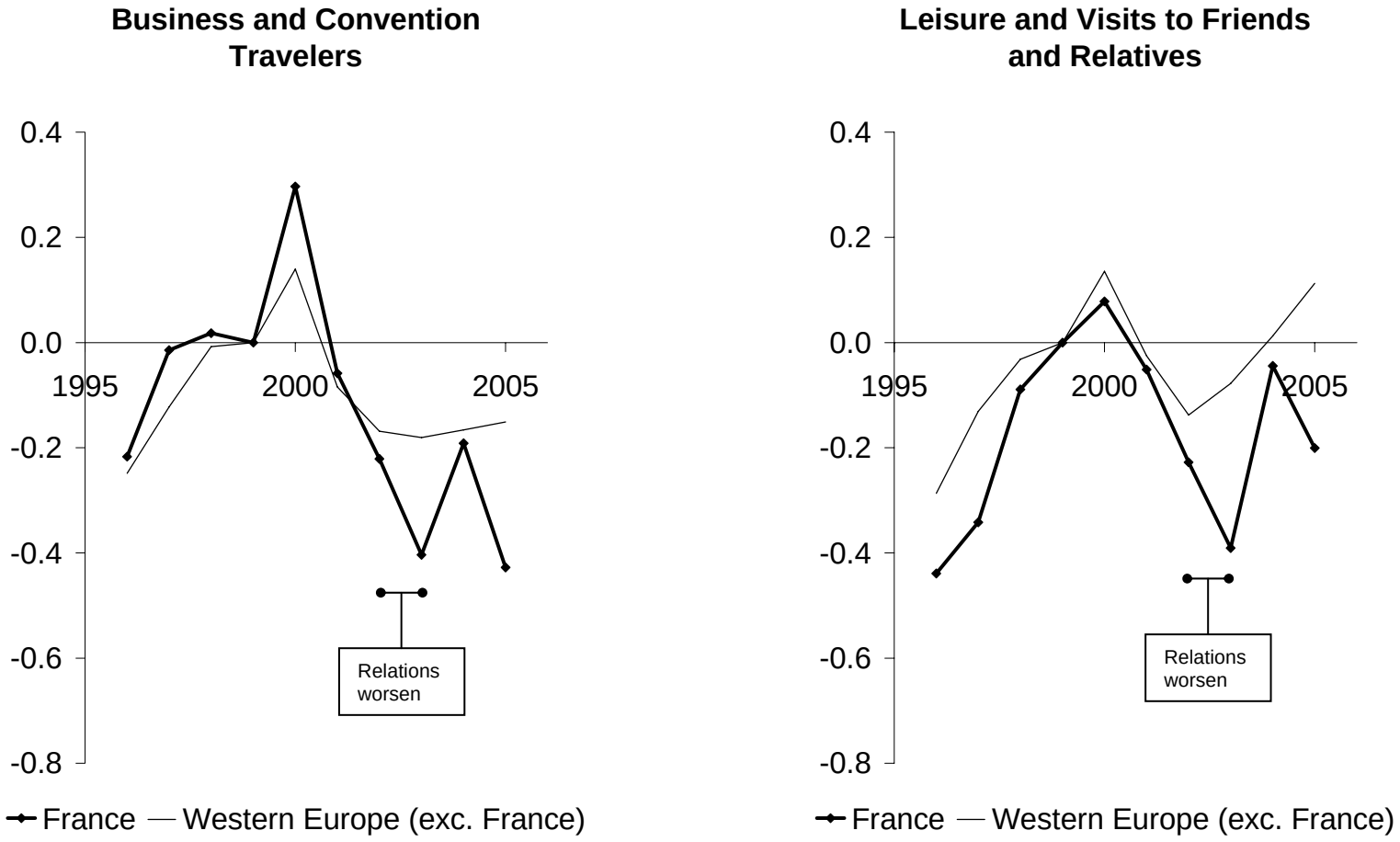


Figure 6. Changes in Log US Resident Travelers to France and Western Europe (Source: Office of Travel and Tourism Industries)

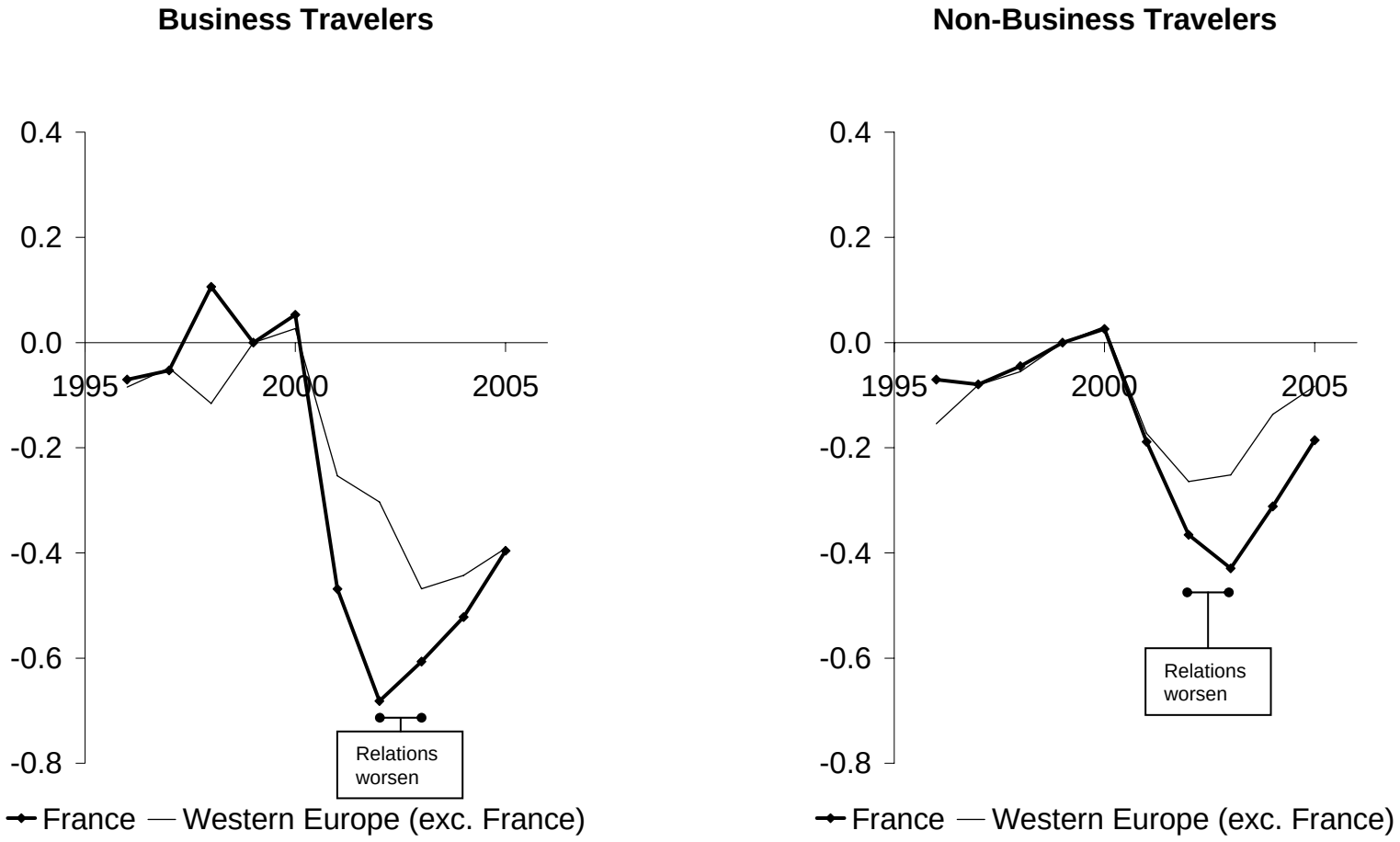
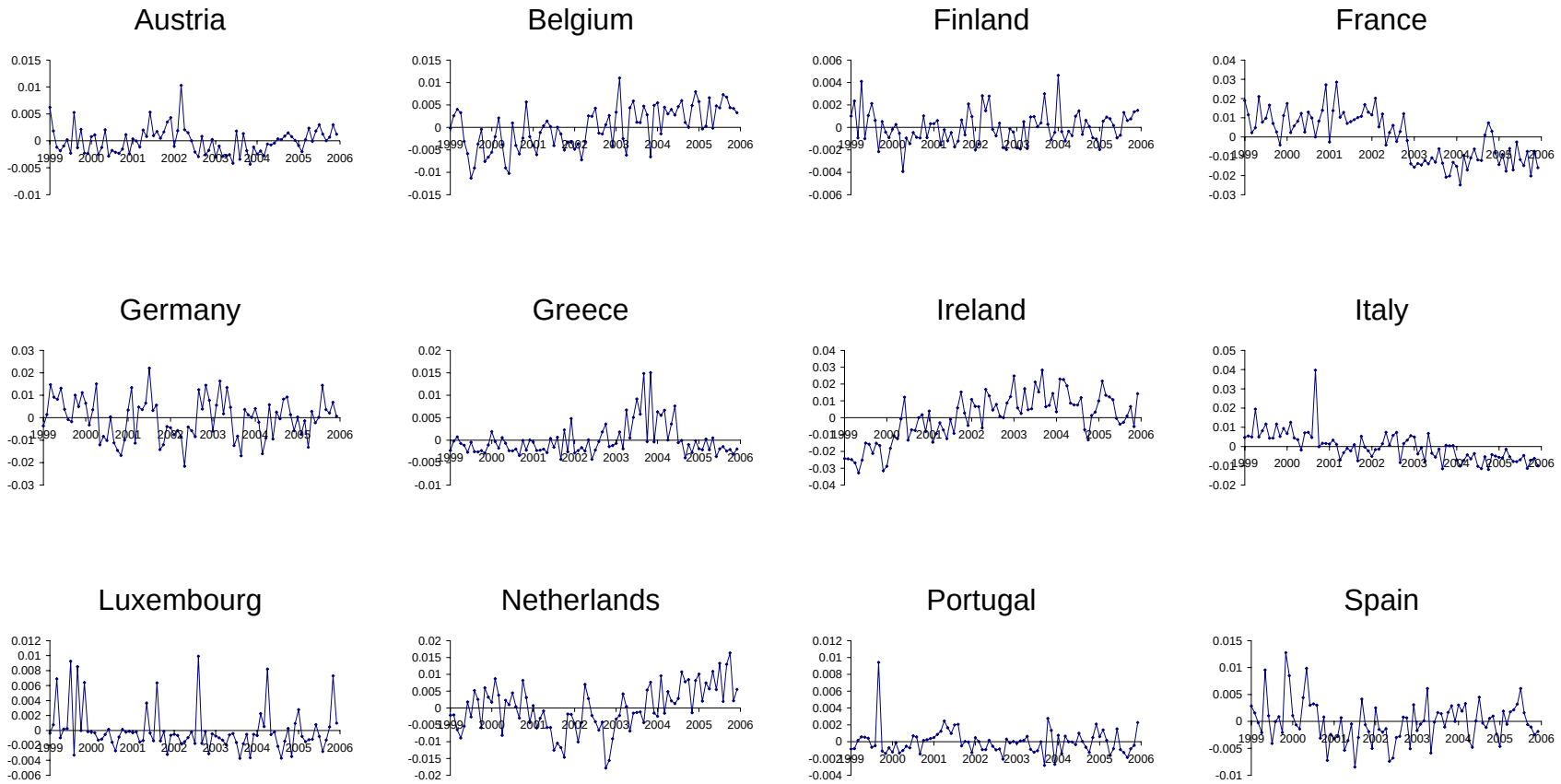
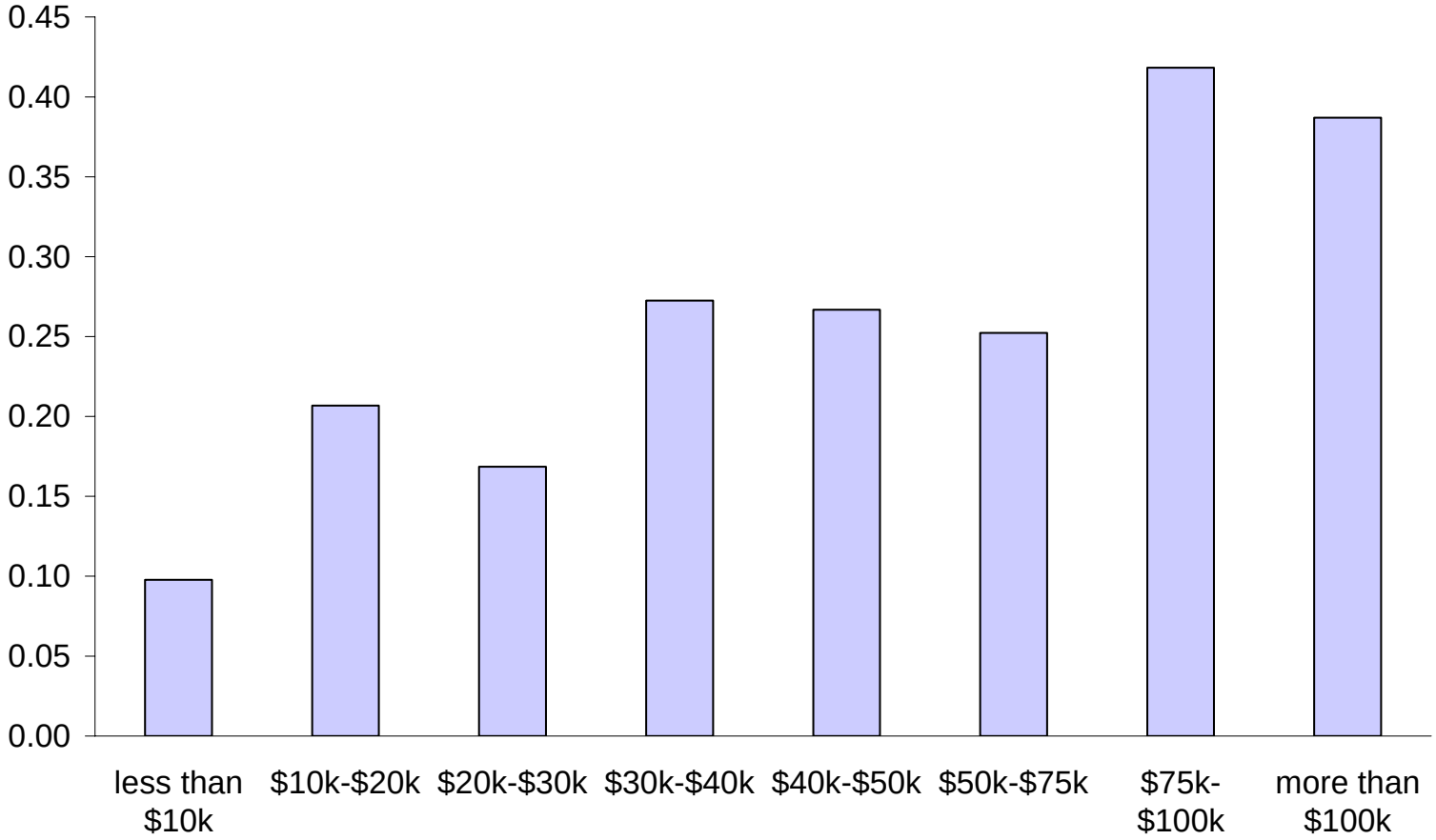


Figure 7. Changes in Log Travelers to US from France and Western Europe (Source: Office of Travel and Tourism Industries)



Appendix [Not for Publication] Figure A1. Average of Countries' Shares of US Imports from Eurozone and Exports to Eurozone (Residual After Netting Out of Month Fixed Effects)



Appendix [Not for Publication] Figure A2. Fraction Who "Lost Respect" for France for its role in the Situation in Iraq, by Family Income (NBC/Wall Street Journal Poll, 7-9 December 2002)

Note: The question asked was: “Now let me read you a list of nations that are playing a role in the situation with Iraq. For each one, please tell me whether you have gained respect for that nation, lost respect for it, or whether your opinion of it is unchanged. If you do not know enough to answer, please just say so.” The question was asked about Israel, Germany, Great Britain, France, Russia, and Saudi Arabia.