

# Economic Individualism, Perceived Fairness, and Policy Preference: A Cross-Cultural Comparison

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## ABSTRACT

Based on survey data from Germany, Estonia, China, Taiwan, Vietnam and Japan, this empirical analysis found substantial intercountry and interculture differences in economic individualism, perceived price fairness, and attitudes towards government policies involving price fairness and income inequality. Cultural differences are in line with the Hofstede dimension uncertainty avoidance. Several socio-demographic variables such as gender, major and religion demonstrated significant impacts. It is also revealed that economic individualism and fairness perception of price changes influence policy preferences. Taken together, our work showed that culture shapes individuals' fairness beliefs and perceptions, and these in turn affect their preferences for government economic policies regarding price fairness and inequality.

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*JEL Codes:* D90, F40

## 1 Introduction

How does culture affect people's value beliefs in terms of economic individualism and fairness perception of demand-based pricing? And how do these beliefs

affect the public's attitudes toward government economic policy, like price limit intervention and economic development programs that increase both welfare and inequality? These are the two core questions which this paper aims to answer.

Economic individualism refers to the view that each individual is responsible for their own welfare and that economic success is a function of hard work and thrift (Feldman, 1983). This value varies across countries. It seems to be higher in societies in which individual effort and self-reliance are more valued and lower in countries with long-emphasized equality and a welfare state. Similarly, different cultures and political systems shape fairness perceptions of demand-based pricing. This can be dependent on the utilization history of markets and the role of the government on the one hand, and differences in relative importance of freedom and fairness in different cultures on the other.

But how are economic individualism and fairness perception of demand-based pricing implicated in policy attitudes? Bobo (1991) reports a negative association between these values and attitudes towards social welfare policies. This is in line with the concept of procedural fairness, which implies that how social and economic inequality is created affects fairness assessment of individuals. Inequality tends to be judged as fair when it is related to individual merit factors such as talent and effort rather than external and structural injustice sources like luck and personal connections (Whyte, 2010; Durante *et al.*, 2014). Therefore, we conjecture that a higher degree of economic individualism will lead to less critical attitudes towards price changes and inequality. Similarly, people with a more positive perception of demand-based pricing would tend to prefer free market mechanisms. They would show higher readiness to advocate economic development plans which increase both welfare and inequality and would be more resistant to government intervention in the market to prevent price increases.

To examine our assumptions, we constructed a cross-country survey and compared data from four Asian countries (China, Taiwan, Vietnam and Japan) and two European ones (Germany and Estonia). A comparison among these countries is interesting because they are orthogonal in terms of cultural roots and are different in their current political and economic systems. On the one hand, the four Asian countries with Confucian culture are generally characterized as Eastern, collectivistic cultures, whereas Germany and Estonia with their Christian cultural roots are characterized as western, individualistic ones. On the other hand, China and Vietnam as communist countries lack progress in democracy, although they are largely succeeding in building market economies. Although Estonia, Taiwan, Japan and Germany have a democratic political system, Estonia has a communist history and Taiwan's democracy did not exist until the end of the twentieth century. The distinct political and economic systems lead to different government roles in guiding overall social and economic development. Given the different cultural roots, economic and

political systems, a rather divided and complex picture of both underlying values and policy preferences in these countries would be expected.

Indeed, we found substantial intercountry differences in economic individualism, perceived price fairness, and attitudes towards price changes and income inequality. People from East Asian countries and Estonia, in particular those from Taiwan, China and Vietnam, demonstrated a statistically significant higher value in economic individualism and higher likelihood to perceive market pricing as fair than their counterparts from Germany. People from Taiwan, China and Vietnam also showed stronger support for development programs as well as price limit intervention. Religions such as Christianity and Buddhism and cultural dimensions like uncertainty avoidance contributed to these intercultural differences. We also found that economic individualism and fairness perception of price changes have a significant impact on policy preferences: while there was a positive relationship between economic individualism and the two government policies, the association of price fairness perception with support for development programs was positive and with price limit intervention was negative.

The paper is organized as follows. Section 2 introduces the cultural and political factors that potentially influence economic individualism, fairness assessment of price changes, and attitudes towards free market and income inequality of individuals. Section 3 presents our questionnaire and gives an overview of the participants. Section 4 reports the empirical results of our descriptive and regression analyses. The final section concludes.

## 2 The Role of Culture and Political Systems

Both fair behavior and perceptions of fairness depend upon normative expectations (Bicchieri and Chavez, 2010). **Culture** shapes economic individualism and fairness perceptions because different cultures with different value systems and philosophical backgrounds may result in different social norms and individual beliefs (Hennig-Schmidt *et al.*, 2010). Empirical research found that procedural fairness beliefs differ between countries and this in turn leads to different attitude towards economic policies. Europeans are more likely to relate inequality to luck than Americans (Alesina and Angeletos, 2005). Compared to citizens from other countries, Germans are more pessimistic about the fairness of distribution and chances of upward mobility (Bellani *et al.*, 2021). On the other hand, in international comparison Chinese people tend to show a less critical attitude, despite their strong aversion to inequality (Whyte, 2010). This can, at least partially, be explained by the heavy emphasis on individual effort and ability and opportunities for upward mobility in Chinese culture.

But which cultural dimensions are relevant and how can they affect economic individualism and fairness perception of price changes? To answer this question, we follow the method often practiced in previous research and use **Hofstede's cultural dimensions** theory. We focus on the four classical dimensions based on the Hofstede VSM94 questionnaire: individualism (IDV), power distance (PDI), masculinity (MAS) and uncertainty avoidance (UAI).

Individualistic and collectivistic cultures differ in the extent of interdependencies between their members. In societies with high values of **individualism**, such as Germany, the individual person and their values are more important than groups that they may belong to, whereas individuals from collectivistic countries identify themselves as part of larger social groups (Hofstede, 2011). Moreover, people who rate high on collectivism are biased in favour of their in-group (Chen *et al.*, 1998). As Brewer and Chen (2007, p. 137) note, collectivists often reveal less consideration than individualists for the welfare of strangers. However, in recent years, the constructs of individualism and collectivism have been criticized. Several studies have shown that individualism and collectivism differ within countries themselves (e.g. Vandello and Cohen, 1999). A recent meta-analysis from Oyserman *et al.* (2002) has shown that Americans (who generally have high scores on measures of individualism) are found to be no less collectivistic than East Asians, depending on the scale contents of collectivism. Since the in-group used to assess social differences is unknown, it is difficult to form an expectation for individualism.

**Power distance** captures the interpersonal relation based on wealth, power, and social status in general (Hofstede, 2011). For individuals with high scores in power distance, inequality and injustice are expected and taken for granted, while they are not seen as acceptable by individuals with lower scores (Gudykunst *et al.*, 1988). This is also reflected in demand-based pricing, with price changes being more likely to be perceived as fair in cultures with higher acceptance of hierarchy (Vodosek, 2000; Beldona and Kwansa, 2008). At the cultural level, compared to East Asian countries, Germany has a heavier emphasis on equality due to its West European background (Singelis *et al.*, 1995; Hofstede *et al.*, 2010). Consequently, low values of power distance (Germany in our sample) are expected to be associated with a more negative fairness assessment.

**Masculinity** represents preferences towards achievement and material rewards for success. A "masculine" society generally has a more competitive character. Men in "feminine" countries have the same modest, caring values as the women; in the masculine countries, women are somewhat assertive and competitive, but not as much as men (Hofstede, 2011, p. 12). Hence, higher scores of masculinity are expected to be related to a less critical assessment of inequalities.

**Uncertainty avoidance** deals with a society's tolerance for ambiguity and indicates to what extent a culture programs its members to feel either

uncomfortable or comfortable in unstructured situations (Hofstede, 2011, p. 10). Uncertainty-avoiding societies try to minimize the possibility of such situations through behavioural codes, laws and rules (Hofstede, 2011). High inequality, but also free markets, come along with more diverse outcomes and more possibilities. Taken together, it is expected that individuals in high (vs. low) uncertainty-avoiding countries would have a more negative attitude towards inequality and free markets.

While talking about the impact of culture, the role of **religion and philosophical background** cannot be ignored. The possible influences of religion on development of the Western welfare state have already been the subject of the earlier research (Esping-Andersen, 1990). With egalitarianism embedded in New Testament Christianity, equality has been described as “an unshakable principle of the Christian tradition” (Todorov, 1999). However, on the development of the western welfare state, the influence of Catholicism and Protestantism is different. While Catholic social doctrine developed a strong positive legitimation for social policy intervention, reformed Protestantism due to its emphasis such as on self-help and individual asceticism is associated to economic individualism and had an anti-welfare state character (Feldman, 1983; Manow, 2002). In East Asian cultures, Confucianism, Buddhism and Taoism have a profound influence. In Confucianism, proportional equality, treating people differently according to their position, or “role-based equality”, is a fundamental principle (Li, 2012). Social and economic inequalities are accepted and tolerated, since they are viewed as helpful to encourage personal effort (Li, 2012). The brotherhood of monks and low emphasis on hierarchy in Buddhism, however, reflects an egalitarian ethic and principle of equality in this religion (Jayasuriya, 2008). On the other hand, Wu wei (noninterference or freedom) and the emergence of spontaneous order (harmony) when people are left alone to pursue their own happiness and prosperity, two fundamental principles of Taoism, adhered to the principle of freedom and economic liberalism (Dorn, 1998; Dorn, 2016; Irwin, 2016).

Independent of culture, notions on fairness and attitudes toward free markets and inequality could also be affected by the **institutions or political systems** with which individuals live. Irrespective of fairness preferences, the fairness assessment of the inhabitants of a country could be influenced by the political system through increased attention or sensitivity to social differences. Market pricing is more likely to be accepted and taken as rational in countries with longer and more extensive utilization of markets. However, the evidence in empirical research on the impact of political systems is divided. On the one hand, it is found that East Germans have a stronger preference for redistribution than West Germans, which cannot be explained by self-interest alone (Alesina and Fuchs-Schündeln, 2007; Bischoff *et al.*, 2008). This effect increases with increasing time lived under communism and decreases with increasing time lived in the reunified Germany. On the other hand, Shiller *et al.*

Table 1: Overview of survey participants in each country.

Variable	China	Taiwan	Japan	Vietnam	Estonia	Germany
<i>N</i>	715	707	226	913	113	906
Female	58%	50%	33%	69%	58%	65%
University student	80%	39%	95%	70%	82%	85%
Average age	23.6	25.8	20.9	22.4	23.4	25.0

(1991) found that respondents from both the Soviet Union and the USA shared basically similar opinions on price changes and income inequality. Similarly, Bian and Keller (1999) found that market principles appear to dominate most of the Chinese and Californian responses, while Canadian respondents demonstrated significant concern for the protection of consumers' interests. Therefore, the impact of political systems is still unclear.

### 3 Methodology

#### 3.1 Questionnaire

Our questionnaire was part of the Preferences, Attitudes, Norms and Decisions in Asia Research Project (PANDA). The survey was advertised via mailing list and social media at universities. For our analysis, we used a subset of questions that are related to attitudes towards fairness, inequality, and economic individualism. We also asked scenario-based questions to elicit attitudes towards markets and government intervention. To measure culture, we included 16 questions from the Hofstede VSM94. In addition, we collected information on demographic backgrounds such as age, gender, major, education level, income, religion, employment status, etc.

#### 3.2 Participants

The surveys were conducted in China, Taiwan, Japan, Vietnam, Germany and Estonia. In total, 3625 people participated. Most were university students – therefore, our sample is not representative but is comparable across countries within our sample. To better understand country differences, cross-cultural research often prefers to compare well-defined groups between different countries rather than using a comparison of representative samples, thus reducing distortions by population differences (Hofstede, 2001). The sample selection is also relevant as the young, educated people will probably play a particularly important role in the future economic and political development of these countries. Table 1 summarizes the sample in each country.

## 4 Results

### 4.1 Economic Individualism

Based on Bobo (1991), we measured economic individualism with the following four questions which tap into views on the extent, causes, and legitimacy of social and economic inequality, as well as views on the fairness of business profits:

1. *All in all, I think social differences in this country are justified.*
2. *Differences in social standing between people are acceptable because they basically reflect what people made out of their opportunities they had.*
3. *Only if differences in income and social standing are large enough is there an incentive for individual effort.*
4. *Business profits are distributed fairly in this country.*

A five-point ordinal (Likert) scale from “strongly disagree (1)” to “strongly agree (5)” was used to measure perceived fairness for each scenario. We created average scales for the four dimensions. Individuals with high scores on the economic individualism scale indicate a greater commitment to individualism. For reliability analysis, Cronbach’s alpha was calculated to assess the internal consistency of the scale. The internal consistency of the questionnaire is satisfying, with Cronbach’s alpha of 0.721.

Figure 1 shows the average responses to this index for each country and their respective standard errors. Smaller standard errors indicate a better

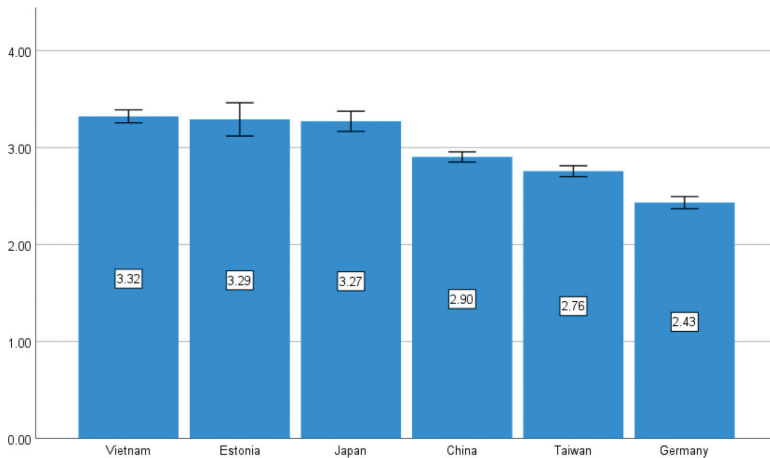


Figure 1: Economic individualism.

representation of our sample for the whole population. All East Asian countries and Estonia have a higher value in economic individualism than Germany. This can be explained, on the one hand, by the high emphasis on social equality and welfare in the social democratic Germany. On the other hand, subjects in East Asian samples are more inclined to attribute social differences to individual effort. Consequently, the East Asians might not perceive the inequality in their country as negatively as the Germans did. Alternatively, they may perceive social and economic differences as being less than they really are, with the opposite being true for Germans. Indeed, believing in justified social differences is not significantly related to actual social differences: the two countries with the lowest belief in fairness also have the lowest actual inequality (Taiwan and Germany), see Figure A1 in the Appendix. Here, the five answer categories have been recoded to a dichotomous variable “Agree/Disagree”, where the 2 possible answers “strongly agree” and “agree” represent agreement with the statement and the remaining three values a rejection. In summary, fairness perception is thus clearly dominated by cultural and political factors.

#### 4.2 Attitudes Toward Price Changes

With the following question, first applied in Shiller *et al.* (1991), we want to measure the fairness perception of price increases in response to excess demand and thus a support for free markets:

*On a holiday, when there is a great demand for flowers, their prices usually go up. Is it fair for flower sellers to raise their prices like this?*

As Figure 2 shows, the majority of the respondents from all countries perceive the price increase as fair. This is quite surprising as the price increase is not justified by cost changes and this kind of market exploitation should influence fairness judgment negatively (Kahneman *et al.*, 1986; Bies *et al.*, 1993; Tarrahi *et al.*, 2016). Compared to the results from previous studies, which were listed in Table A1 in the Appendix, our finding is in line with those of Hemesath and Pomponio (1995) and Fan *et al.* (1998) which also found high acceptance of free-market price changes. Conversely, Shiller *et al.* (1991), Boycko and Shiller (2016), Habibi *et al.* (1995) and Özbafı (1997) reported a much lower approval rate for the question. As Fan *et al.*, 1998 suggested, these somewhat contradictory findings may be explained by age differences, since our sample, like the one of Hemesath and Pomponio (1995) and Fan *et al.* (1998), mainly consists of students. Overall, however, the outcome is similar to the pattern of economic individualism. Although Germany has the longest utilization of free markets, its social democracy endorses a lower fairness perception of demand-based pricing.



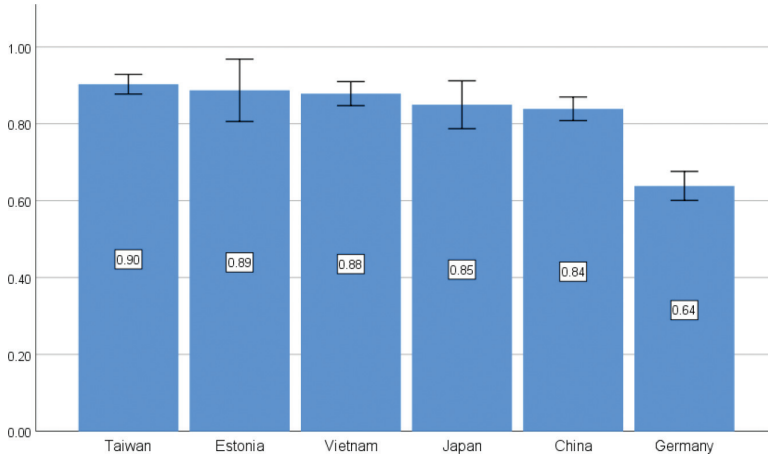


Figure 2: Support for free market.

*Should the government introduce limits on the increase in prices of flowers, even if it might produce shortage of flowers?*

This follow-up question aims to evaluate whether the government should regulate an unfair situation or intervene in the market in general. Figure 3 reveals that this is rarely supported by subjects from Estonia, Germany and Japan. However, about half of the Chinese and Vietnamese respondents would favor such an intervention. These results paint a similar picture as the past studies. As Table A2 in the Appendix shows, the level of agreement in the samples from China, Russia, Iran and Turkey is much higher than in the USA sample. In addition, the approval ratio had decreased sharply after the system change in Russia. Taken together, the results reveal that political and economic systems may have a significant impact on individual preferences and attitudes towards the role of the government. Individuals from countries with a strong regime and substantial state intervention in social and economic issues are more comfortable with a price limit set by the government.

#### 4.3 Attitudes Towards Income Inequality

Do economic individualism and fairness perception of demand-based pricing affect attitudes towards future economic development plans involving income inequality? To elicit this, we used the following hypothetical scenario from Shiller *et al.* (1991):

*Suppose the government wants to undertake a reform to improve the productivity of the economy. As a result, everyone will be better*

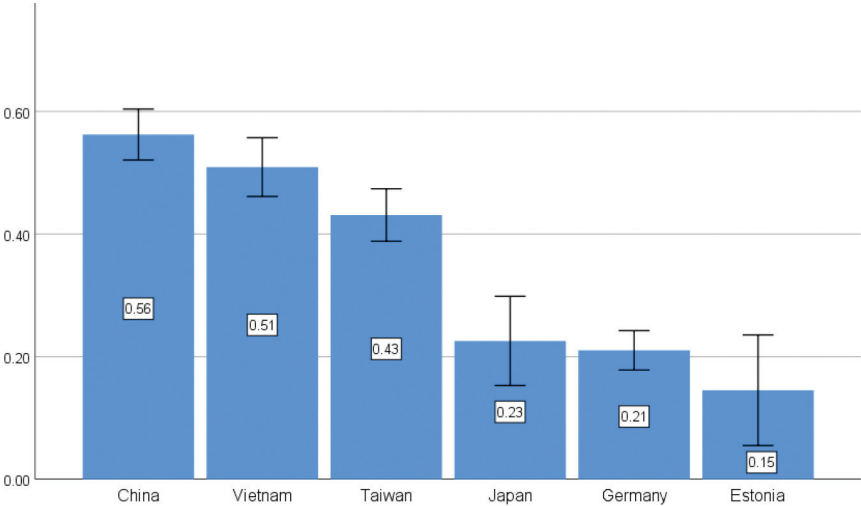


Figure 3: Support for price limit by government.

*off, but the improvement in life will not affect people equally. A million people (people who respond energetically to the incentives in the plan and people with certain skills) will see their incomes triple while everyone else will see only a tiny income increase, about 1%. Would you support the plan?*

The question implies that the government reform improves the standard of living for all citizens, but with unequal distribution. It also implies that even when everybody is better off with the reform, people may have fairness concerns. Subjects could indicate their agreement or disagreement on a dichotomous answer scale of Yes/No. Figure 4 illustrates the share of agreement with this program. In agreement with our previous results, the majority of the respondents from all countries except Germany supported the government’s plan. Respondents with Eastern ethnic backgrounds demonstrate a higher tendency to accept it than those with Western ethnic backgrounds. Overall, this fits well with the results of past surveys, as one can see in Table A3 in the Appendix. The majority in six of eight country samples agreed on this plan. Furthermore, China and Russia, both with a communist background, reported a substantially higher share of acceptance than the market-oriented country USA. Within our study, the outcome of this item shares a similar pattern to economic individualism and fairness perception of demand-based pricing. This may reveal that higher economic individualism and stronger support for free markets lead to a less critical attitude towards inequality.

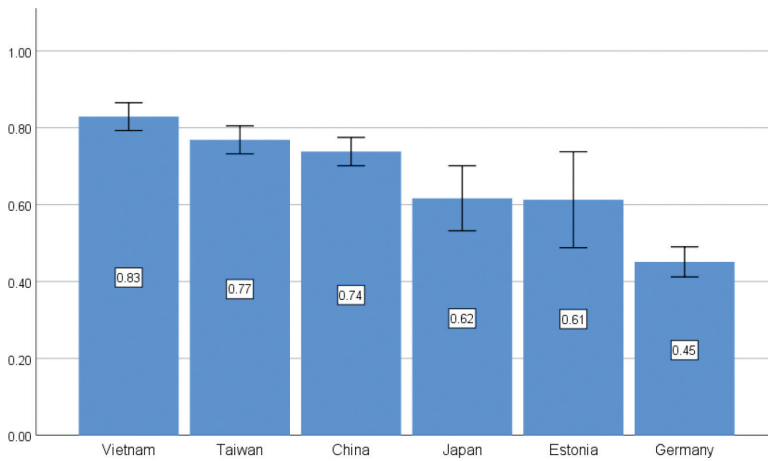


Figure 4: Acceptance of unequal Pareto-improvement government program.

#### 4.4 Control Variables

Our baseline control variables include age, female, education, student, economic-related majors, and income. The questionnaire captured the monthly household income as well as the household size, which we used to calculate the per capita income. We adjusted this with purchasing power parity provided by World Bank (2011). Unfortunately, a mistake was made in one of the translations. In the Japanese version, the monthly household income was not queried as in the other questionnaires. The data suggests that the respondents stated the annual household income. We therefore adjusted the income from Japan to monthly income. We have excluded the top and bottom 5% of incomes to filter out outliers. The female variable is coded with 1 for female and 0 male. Our control variable education is coded 1 for BA, MA, PhD degrees and 0 for high school and other degrees. The dummy variable student is coded 1 for university and high school students and 0 for non-student. We also measured their study majors, with economic-related majors coded as 1 and mathematics-related and social-science related majors coded as 0. For religions Buddhism, Christianity, Taoism and Confucianism, a single dummy was created. We have also created a dummy variable for every country. Hence, this leads to 6 country dummies. In our regressions, Germany is used as the reference country.

#### 4.5 Belief, Perception, and Policy Preferences

The cited studies all controlled for variables such as age, sex and education, but did not include a cultural dimension in their analysis. Tables 2, 3 and 4 present the results of ordinary least squares (OLS) regression analyses of

Table 2: Regression analysis of economic individualism and free market support. Base line country: Germany.

Independent variables	Economic Individualism	Free Market Support
Age	0.009 (0.347)	-0.009 (-0.335)
Female	-0.057*** (-2.629)	-0.078*** (-3.349)
Student	-0.006 (-0.207)	0.001 (0.024)
University degree	0.003 (0.138)	-0.016 (-0.593)
Economics major	0.054** (2.261)	0.073*** (2.873)
Income	0.02 (0.918)	0.019 (0.843)
Buddhism	0.011 (0.471)	-0.049* (-1.927)
Christianity	0.102*** (4.174)	0.074*** (2.807)
Confucianism	-0.023 (-1.065)	0.035 (1.487)
Taoism	-0.025 (-1.079)	0.07*** (2.829)
IDV	0.005 (0.217)	-0.004 (-0.171)
PDI	-0.014 (-0.614)	-0.01 (-0.410)
MAS	0.21*** (9.62)	0.024 (1.022)
UAI	-0.106*** (-4.903)	-0.082*** (-3.537)
Estonia	0.131*** (6.096)	0.071*** (3.067)
Taiwan	0.296*** (8.133)	0.287*** (7.335)
China	0.32*** (9.757)	0.212*** (6.03)
Vietnam	0.323*** (11.175)	0.167*** (5.345)
Japan	0.236*** (9.407)	0.102*** (3.789)
<i>N</i>	1798	1804
Adjusted $R^2$ (%)	22.5	10.3

**Note:** Cell entries are standardized coefficients beta and figures in parentheses are *t*-values. \*\*\*, \*\*, and \* correspond to 10%, 5%, 1% significance level.

Table 3: Regression analysis of attitudes towards government intervention (price limits).

Independent variables	Price Limit	Price Limit	Price Limit
Economic individualism		0.052** (2.124)	0.075*** (2.970)
Free market support		-0.129*** (-5.515)	-0.116*** (-4.955)
Age	-0.039 (-1.400)	-0.036 (-1.277)	-0.040 (-1.436)
Female	0.079*** (3.398)	0.087*** (3.820)	0.077*** (3.315)
Student	0.002 (0.065)	0.001 (0.026)	0.003 (0.095)
University degree	0.009 (0.316)	0.004 (0.148)	0.007 (0.250)
Economics major	-0.032 (-1.262)	-0.029 (-1.132)	-0.027 (-1.072)
Income	-0.017 (-0.747)	-0.014 (-0.613)	-0.013 (-0.581)
Buddhism	0.063** (2.466)		0.055** (2.171)
Christianity	-0.081*** (-3.097)		-0.082*** (-3.106)
Confucianism	-0.007 (-0.295)		-0.002 (-0.070)
Taoism	0.007 (0.266)		0.016 (0.662)
IDV	0.019 (0.785)		0.017 (0.736)
PDI	0.009 (0.377)		0.008 (0.736)
MAS	-0.026 (-1.095)		-0.038 (-1.579)
UAI	0.065*** (2.802)		0.063*** (2.715)
Estonia	-0.024 (-1.025)	-0.017* (-0.729)	-0.025 (-1.099)
Taiwan	0.175*** (4.483)	0.250*** (7.442)	0.186*** (4.634)
China	0.297*** (8.438)	0.342*** (11.046)	0.296*** (8.201)
Vietnam	0.141*** (4.522)	0.185*** (6.289)	0.138*** (4.315)
Japan	-0.003 (-0.107)	0.024 (0.912)	-0.008 (-0.304)
<i>N</i>	1804	1798	1798
Adjusted $R^2$ (%)	10.6	11.2	12.1

**Note:** Cell entries are standardized coefficients beta and figures in parentheses are t-values. \*\*\*, \*\*, and \* correspond to 10%, 5%, 1% significance level.

Table 4: Regression analysis of attitudes towards an unequal Pareto improvement.

Independent variables	Pareto Improvement with Inequality	Pareto Improvement with Inequality	Pareto Improvement with Inequality
Economic individualism		0.152*** (6.292)	0.141*** (5.615)
Free market support		0.102*** (4.396)	0.096*** (4.121)
Age	0.031 (1.103)	0.033 (1.204)	0.03 (1.099)
Female	-0.063*** (-2.719)	-0.049** (-2.191)	-0.048** (-2.068)
Student	0.012 (0.380)	0.013 (0.423)	0.012 (0.400)
University degree	0.018 (0.685)	0.021 (0.790)	0.020 (0.737)
Economics major	0.055** (2.170)	0.043* (1.710)	0.040 (1.609)
Income	0.026 (1.145)	0.020 (0.883)	0.022 (0.960)
Buddhism	0.016 (0.630)		0.019 (0.764)
Christianity	0.061** (2.339)		0.040 (1.526)
Confucianism	0.052** (2.215)		0.052** (2.237)
Taoism	-0.022 (-0.893)		-0.025 (-1.036)
IDV	-0.007 (-0.309)		-0.008 (-0.330)
PDI	0.001 (0.054)		0.004 (0.178)
MAS	0.046** (1.973)		0.014 (0.600)
UAI	-0.075*** (-3.246)		-0.052** (-2.268)
Estonia	0.063*** (2.765)	0.034 (1.505)	0.038* (1.666)
Taiwan	0.292*** (7.488)	0.215*** (6.475)	0.222*** (5.600)
China	0.240*** (6.834)	0.175*** (5.713)	0.174*** (4.862)
Vietnam	0.216*** (6.974)	0.154*** (5.299)	0.154*** (4.857)
Japan	0.032 (1.176)	-0.011 (-0.431)	-0.012 (-0.424)
<i>N</i>	1798	1798	1798
Adjusted $R^2$ (%)	11.3	13.4	13.7

**Note:** Cell entries are standardized coefficients beta and figures in parentheses are *t*-values. \*\*\*, \*\*, and \* correspond to 10%, 5%, 1% significance level.

the determinants. The dependent variables are economic individualism, fairness perception in price changes (free market support) (Table 2), and policy preferences (government price limit intervention and support for unequal Pareto-improvement government program) (Tables 3 and 4), respectively. For policy preferences, we constructed three regressions for each. Model one (the very left one) includes religion and cultural dimensions but not economic individualism and free market support, model two vice versa, and model three (the very right one) includes both. By doing this, we want to analyze the impact of belief (economic individualism) and perception (free market support) on policy preferences and see whether there are any mediator effects of them.

The economic individualism model in Table 2 shows that gender has a significant impact, with females being less likely to hold such values than their male counterparts. This confirms the dominant idea in literature that males are more likely to have had socializing experiences that would encourage individualistic orientations than females (e.g. Bobo, 1991; Beldona and Namasivayam, 2006; Bischoff *et al.*, 2008). Unlike Bobo (1991) which found a negative effect of education and positive effect of family income, neither education nor income effects are significant here. That no effect of education was identified may lie in our sample structure which is mainly comprised of university students. Differently, the insignificant effect of income could not be attributed to our sample structure since we captured the household income and used per capita income in our regression, instead of the income of the subjects. Therefore, the result is quite surprising. However, the commitment to economic individualism is greater among people with economic majors, which is in line with previous literature (e.g. Keller and Sarin, 1995; Fehr *et al.*, 2006). The positive effect of Christianity may lie in the dominance of Protestants in our data, which, however, cannot be confirmed since we did not inquire about the variations of each religion in our questionnaires. Although Christianity is quite common in Germany and Estonia and much less in the Asian countries, 47.2% of the subjects in Germany and 59.4% in Estonia did not state to be Christians. Hence, the number of non-Christians in these countries should be sufficiently high to not mix up this effect with a country effect. In terms of cultural dimensions, both IDV and PDI showed no significant effect. However, there was a positive effect of MAS and a negative one of UAI. Both effects meet our expectation. Higher scores in MAS mean stronger preferences towards achievement and competition, thus leading to a less negative perception of inequality. The negative association between UAI and economic individualism might be due to the more diverse outcomes coming forth in a society with higher inequality. Compared to respondents from Germany, respondents from all other countries in our sample showed a higher value in economic individualism. This confirms the results of our descriptive analyses in Subsection 4.1. It can be explained by the social democratic political system in Germany which values social equality and welfare on the one hand, and the stronger tendency of East Asians to

relate inequality to individual effort on the other. The magnitude of betas shows that even though social-demographic variables such as gender and major have an impact on economic individualism, the beta weight of these and thus their impact is generally smaller than for religion and cultural dimensions, and notably smaller than for country dummies, especially for the Asian ones.

As before, the model of free market support in Table 2 shows that women perceive it as less fair when prices rise due to demand excess than men. Student and income showed no significant effects, but economics-related majors did. Christianity and Taoism are positively related to free market support. While the positive effect of Christianity may again be explained by the central ideas of self-help and individual asceticism in reformed Protestantism, the effect of Taoism may be attributed to the fundamental principles of noninterference and spontaneous order in this religion, as mentioned before. Unlike in the economic individualism model, a negative effect of Buddhism was identified. This can be explained by the high importance of equality in this religion. Among the cultural dimensions, UAI showed a significant impact. People with higher scores in this may feel more uncomfortable with sudden price increases and are more likely to perceive the new situation as unfair than people with lower ones. In terms of country dummies, we can again infer that Germany has the lowest acceptance rate for the price increase. As the magnitude of the betas reflects, people from Asian countries and Estonia, in particular those from Taiwan and China, are much more likely to perceive the price increase as fair. This can again be explained by the cultural and political factors mentioned above. Similar to the economic individualism model, overall, country dummies again demonstrate a greater beta weight and therefore a stronger impact in this model.

Listed in Table 3, the three regression models for government price limit intervention show that female has a positive impact on this policy. While Buddhism increases the likelihood of support for price limit intervention, Christianity reduces the likelihood. These are in agreement with the previous results in Table 2. Aside from the positive effect of UAI, East-Asian people are also more supportive of an intervention. The positive effect of economic individualism may lie in the higher acceptance of government intervention in the countries with a communist background, which also showed higher values in economic individualism. The negative impact of the free market support is quite intuitive, since people are in general against governmental interventions if they prefer free markets. Although the relationship between these two variables is trivial, it is important to see that economic individualism remains significant after controlling for the free market support. While the beta of economic individualism is rather small, just as the ones for female, Buddhism, Christianity and UAI, the significant country dummies still have the strongest impact.

For the Pareto improvement government program which increases inequality, female again reduces the chance of support across all three models, as can be seen in Table 4. Confucianism shows a significant positive impact which



can be explained by its emphasis on “role-based equality” and personal effort. Consistent with the previous results, UAI shows a negative impact. Except Japan, all other countries showed a significantly higher likelihood of accepting this plan than Germany. As expected, both economic individualism and free market support have a positive impact. However, different to the models on price limit, the models here have a greater magnitude of beta for economic individualism than for free market support. This indicates that economic individualism has a stronger impact on people’s attitudes towards an unequal Pareto improvement than free market support. The effect of economic individualism is in line with Bobo (1991), which showed a negative association between this item and welfare policy commitments. It is also plausible that individuals who favor free markets are also more likely to support the development plan. Comparing the three models, we find that the significant positive effect of economic majors, Christianity and MAS in model one disappear in model three, which indicates a mediator effect of economic individualism and free market support on support for the Pareto improvement government program which increases inequality.

## 5 Conclusion and Discussion

Based on the data gathered in China, Vietnam, Taiwan, Japan, Estonia and Germany, this work provides important insights into the cultural and political impact on economic individualism and fairness perception of demand-based pricing, and how the beliefs influence policy preferences of individuals. Overall, the responses to the questions on fairness of price changes, government intervention and income inequality in our survey are in line with the ones from previous surveys. Yet, our data and analyses provided much more information and deeper insights.

Our regression analyses showed a negative impact of female both on economic individualism and perceived fairness of demand-based pricing. This is consistent with previous research findings which indicated women are more socially-minded and more in favour of redistribution. An economics-related major increases the value of these two beliefs, which is also in accordance with much of the previous literature. Economics students perceive the costs or efficiency losses resulting from redistribution as more serious, thus forming different fairness judgments regarding inequality than people from other majors (Fehr *et al.*, 2006). In addition, our analysis also demonstrated a remarkable influence of religion. Christianity is positively related to economic individualism and fairness perception in price changes which may be explained by the high emphasis on self-reliance and individual asceticism in Protestantism. The negative effect of Buddhism on fairness perception in price changes, on the other hand, can be explained by the low emphasis on hierarchy in this religion.

More importantly, after having controlled for a series of socio-demographic variables, cultural dimensions, in particular masculinity (MAS) and uncertainty avoidance (UAI) demonstrated enormous impact. MAS is positively correlated to economic individualism, which may be explained by its features like preferences towards achievement and competition. UAI has a highly significant negative impact on economic individualism and perceived price fairness of demand-based pricing. Uncertainty-avoiding societies feel uncomfortable in unstructured situations which could be brought about by high inequality and free markets. In addition, we also found remarkable intercountry differences. In both dimensions, East Asian countries and Estonia have a higher value than Germany. Apart from the cultural factors mentioned above, the result can also be attributed to the different political systems in these countries. Compared to their counterparts, Germans have in general a more negative perception of inequality due to the social democracy in their country. This system emphasizes social equality and welfare. Rather than individual merit factors such as talent and effort, Germans tend to relate social and economic inequality to external and structural injustice sources.

Significant impacts of economic individualism and perceived price fairness on policy preferences are also identified. There was a positive association between economic individualism and support for government intervention with price limit and for a Pareto improvement program which also increases inequality. Individuals with higher economic individualism are more likely to support a Pareto improvement program because of their less negative perception of inequality. The relationship between economic individualism and support for price limit intervention could again lie in political systems: East Asians, who are higher in economic individualism than Germans, are more used to governmental intervention because of the communist background and strong regime in China and Vietnam, and the rather short democracy history in Taiwan. Higher fairness perception of price changes leads to higher rejection of price limit intervention and a higher acceptance of a Pareto improvement program. This is intuitive. Individuals with less negative fairness perception of price changes, and thus showing higher support for free markets, are more likely to reject government intervention and are less critical of inequality.

In addition to the two fundamental individual beliefs, several demographic factors and religion also have a significant, however generally smaller, impact on policy preferences. Female again reduces the likelihood of a rejection of price limit intervention and a support for a Pareto improvement program. Buddhism increases the likelihood of a support for price limit intervention, and Christianity reduces the likelihood. Significant and positive effects of economic majors, Christianity and MAS on support for Pareto improvement program are also identified. The effects disappear, however, when economic individualism and fairness perception of price changes are added, which indicates a mediator effect of the two belief variables.

## **A Appendix**

### **A.1 Key Variables**

#### **Economic Individualism:**

1. All in all, I think social differences in this country are justified. 2. Differences in social standing between people are acceptable because they basically reflect what people made out of the opportunities they had. 3. Only if differences in income and social standing are large enough is there an incentive for individual effort. 4. Business profits are distributed fairly in this country.

#### **Pareto Improvement with Inequality:**

Suppose the government wants to undertake a reform to improve the productivity of the economy. As a result, everyone will be better off, but the improvement in life will not affect people equally. A million people (people who respond energetically to the incentives in the plan and people with certain skills) will see their incomes triple while everyone else will see only a tiny income increase, about 1%. Would you support the plan?

#### **Attitude Towards Demand-Based Price Changes:**

On a holiday, when there is a great demand for flowers, their prices usually go up. Is it fair for flower sellers to raise their prices like this?

#### **Governmental Price Limit Intervention:**

Should the government introduce limits on the increase in prices of flowers, even if it might produce shortage of flowers?

A.2 Figures and Tables

Table A1: Results of past surveys – demand-based price increase.

	Russia (1991)	Russia (1995)	Russia (2016)	USA (1991)	USA (1995)	USA (2016)	China (1995)	China (1998)	Iran (1995)	Turkey (1997)
Yes	34.0%	77.0%	33.0%	32.0%	88.0%	45.0%	83.0%	78.5%	23.9%	29.4%
No	66.0%	23.0%	67.0%	68.0%	12.0%	55.0%	17.0%	36.3%	76.1%	70.6%
N	131	361	301	119	251	300	231	407	209	126

Table A2: Results of past surveys – Price limit by government.

	Russia (1991)	Russia (1995)	Russia (2016)	USA (1991)	USA (1995)	USA (2016)	China (1995)	China (1998)	Iran (1995)	Turkey (1997)
Yes	54.0%	13.0%	43.0%	28.0%	9.9%	22.0%	44.4%	63.7%	66.8%	50.4%
No	46.0%	87.0%	57.0%	72.0%	90.1%	78.0%	55.6%	36.3%	33.2%	49.6%
N	123	361	301	115	251	300	231	407	211	125

Table A3: Results of past surveys – Acceptance of unequal Pareto-improvement government program.

	Russia (1991)	Russia (1995)	Russia (2016)	USA (1991)	USA (1995)	China (1995)	China (1998)	Iran (1995)	Turkey (1997)
Yes	55.0%	74.0%	74.0%	38.0%	58.1%	68.9%	75.6%	51.0%	26.8%
No	45.0%	26.0%	26.0%	62.0%	41.9%	31.1%	24.4%	49.0%	73.2%
N	114	361	361	99	251	231	407	206	123

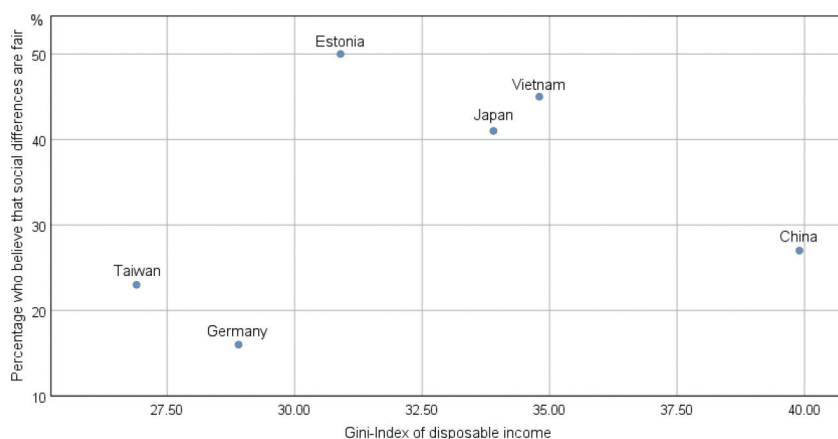


Figure A1: Gini-Index *versus* Percentage of believing in justified social differences.

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