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Tolerance for Income Inequality and Redistributive Preferences: Cross-nation and
Multilevel Perspectives

A dissertation submitted in partial satisfaction
of the requirements for the degree
Doctor of Philosophy in Political Science

by

Thiam Chye Tay

2013

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ABSTRACT OF THE DISSERTATION

Tolerance for Income Inequality and Redistributive Preferences: Cross-nation and
Multilevel Perspectives

by
Thiam Chye Tay

Doctor of Philosophy in Political Science
University of California, Los Angeles, 2013

Professor Mark Q. Sawyer, Chair

A country's level of objective income inequality and a person's income are predictors of individual level redistributive preferences. These theoretical assertions arise from formal models that ignore the subjective dimensions of income inequality. A country's level of objective income inequality, usually measured in Gini ratios, affects the life chances of individuals but not a person's normative values about income inequality. Such subjective dimensions of income inequality are important because they affect substantive outcomes. This dissertation examines the determinants of one subjective dimension of income inequality, individual tolerance for income inequality, and its effect on a person's redistributive preferences.

This dissertation contributes to the income inequality literature by conceptualizing and testing the determinants of individual tolerance for income inequality. Using a cross-nation

dataset of 87 countries, I show that an individual's subjective social status affects his level of tolerance for income inequality and I present a counterintuitive finding: a country's level of wealth and objective income inequality do not systematically affect an individual's level of tolerance for income inequality. Substantively, a person who lives in a poor country with high objective income inequality (e.g., Nigeria) and another person who lives in a rich country with low objective income inequality (e.g., Switzerland) are equally likely to feel that their respective country's level of income inequality is *not* too high.

Redistribution is a government's way of reducing inequality but people who live in the same country have different levels of preferences for redistribution. This dissertation's second contribution is to the redistribution literature. I argue that a person's level of tolerance for income inequality and other socio-economic characteristics (e.g., income) affect his preferences for redistribution. Specifically, a person who feels that his country's level of objective income inequality is too high is more likely to support government redistribution. Contrary to extant studies, this dissertation finds that a country's level of wealth and objective income inequality do not systematically affect its citizens' preference for redistribution. I argue that the crux of the theoretical and empirical connections between redistribution and inequality are the multiple income inequalities that citizens perceive and a country's level objective income inequality, by itself, does *not* systematically affect a person's degree of preference for redistribution.

The dissertation of Thiam Chye Tay is approved.

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2013

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Glossary

1. Japanese and Chinese terms are given in the conventional Western practice.
2. The long vowels of Japanese terms (e.g., Tōkyō) are observed and Chinese words are given mainly in Hanyu Pinyin

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2012 “Normative values about Income Inequality and Redistribution in 87 Countries”
2012 “Going beyond the Gini Ratios: Normative Values about Income Inequality in Philippines”
2010 “Swing States and Turnout Buying: The Legislative Determinants of Distributive Politics in India (1972-1995) ”
2010 “Voter Turnout and Distributive Politics in Mexico: Pronasol (1990-1994)”

Chapter 1 Introduction

Income inequality is an important socio-political issue in most countries. Most studies on income inequality, however, focuses on the distribution of income among individuals living in a spatial locality. The focus on this objective dimension of income inequality (hereafter, objective income inequality) is important as the level of disparity of the distribution of incomes—summarizes the degree of life chances that one has. The higher the level of income inequality for a spatial locality, the lower the life chances of a low-income individual who resides in the lowest end of the income distribution. This is because a low-income individual is less likely to have access to “better” opportunities and amenities than a high-income individual.

Income inequality is also perceived and experienced by people. To the extent that measures of a country’s level of objective income inequality can show the skewness of the distribution and be a proxy measure of a person’s life chances in society, people’s normative values about income inequality and perceptions of income inequality are also important socio-political issues. Nevertheless, systematic study of individual perceptions of income inequality has lagged behind the study of the objective aspects of income inequality. Much fewer studies have examined these subjective dimensions of income inequality. One group of studies examines individual evaluation of just earnings of different occupations in society (e.g., Kuhn 2011) while another group of studies examines the determinants of the fairness of income inequality (e.g., Cramer and Kaufman 2011).

This dissertation contributes broadly to the literature on income inequality by examining one subjective dimension of income inequality—normative values about income inequality—and specifically tolerance for income inequality. A person’s level of tolerance for income inequality is his evaluation of his country’s level of income inequality, specifically if he feels that his country’s level of income inequality is too large. This differs from justice evaluation because an individual uses a self-defined benchmark to evaluate income inequality while an individual makes a justice evaluation based on a just level that is based on a combination of societal norms and personal norms. In addition, this dissertation also examines a closely related topic on individual redistributive preferences. A government redistributes largely with the aim of reducing inequality among its citizens. Nevertheless, different citizens have different preferences for redistribution because they expect themselves and others to benefit from the redistributive policies in different ways. Thus, this dissertation examines the determinants of individual preference for redistribution.

1.1. Context: Country level objective income inequality and wealth

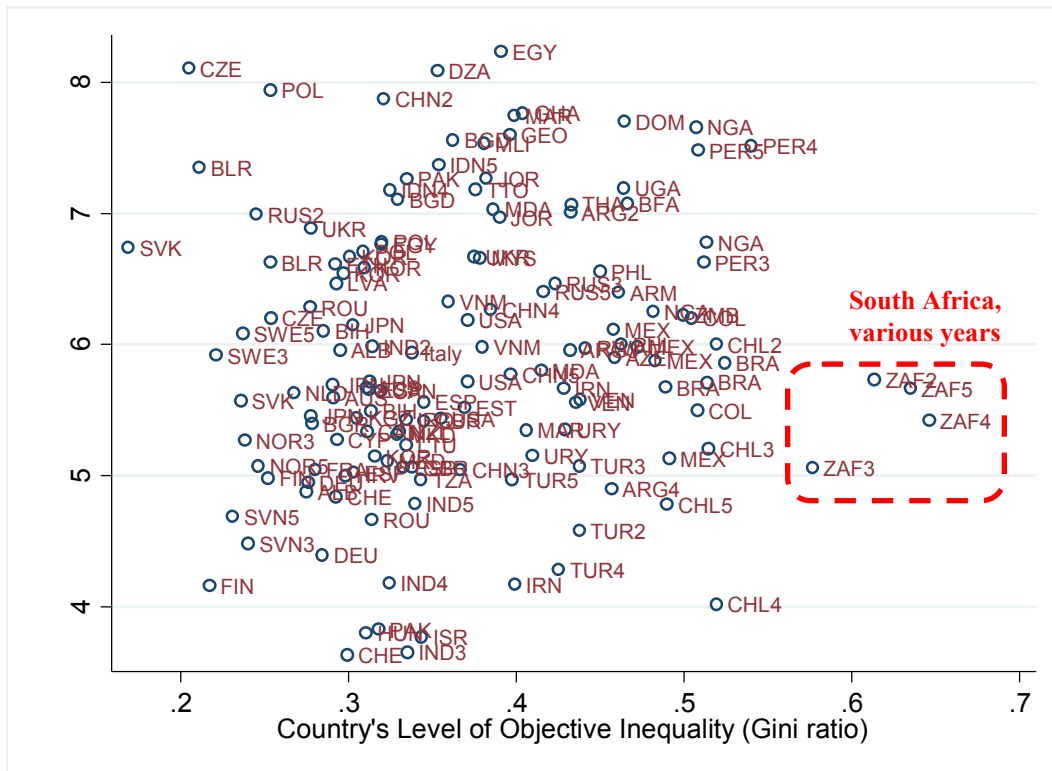
Extant studies posit that a country’s level of objective income inequality affect a range of important aggregate socio-political outcomes: redistribution (Alesina and Glaeser 2004; Kenworthy and Pontusson 2005; Lupu and Pontusson 2011; Milanovic 2000), political stability (Lichbach 1989, 1990), civil wars (Cederman et al. 2011), and health (Kondo et al. 2012). At the individual level, extant studies have also shown that that people who live in countries with different levels of objective income inequality would have different preferences and attitudes such as government redistribution (Alesina and Giuliano 2011), propensity to vote (Anderson and Beramendi 2008), and level of national pride (Solt 2010). The implicit causal logic linking a

person's context—objective inequality—and his individual incentive to act is that the person would somehow know that he is living in a country with high/low inequality and his knowledge of this country level attribute will change his incentive to act.

Figure 1.1 shows the relationship between a country's level of objective income inequality and a country's mean level of tolerance for income inequality—across 77 countries (149 country-years) from 1994 to 2007. A country's aggregate level of tolerance for income inequality is a measure of its threshold of tolerance for income inequality and is aggregated by averaging all the individual levels of tolerance for income inequality in each country. Citizens who live in a country with a high aggregate level of tolerance for income inequality implies that its they are likely to have higher levels of tolerance for income inequality than citizens of another country with a lower level of tolerance for income inequality. If extant studies' causal logic of the effect of country-level objective income inequality on individual level behavior is robust, the expected relationship between a country's level of objective income inequality and a country's level of aggregate level of tolerance for income inequality would be negative, i.e., the higher the country's level of objective income inequality, the lower the country's level of aggregate level of tolerance for income inequality.¹

¹ Each respondent is asked to similar question that teases out an individual's level of tolerance for income inequality based on his choice along a ten-point scale that ranges from one "incomes should be made more equal" to ten "we need larger income differences as incentives." Respondents who chooses the responses that are nearer to one are taken to be having low levels of tolerance for income inequality, i.e., they feel that the level of income inequality in their country is too large.

Figure 1.1. Country level objective income inequality and aggregate tolerance for income inequality



Notes: N=148 country-years from 1994 to 2007. The survey data are from the first four waves of WVS, data on objective income inequality are from Solt (2009). The country codes the ISO 3166-1 alpha-3 codes and the number that comes after this code represents the country's mean tolerance for income inequality for a particular WVS survey-wave. A number "2" indicates WVS wave 2 (1989-1993), "3" indicates WVS wave 3 (1994-1999), number "4" indicates WVS wave 4 (1999-2004), and number "5" indicates WVS wave 5 (2005-2007).

Nevertheless, the patterns from the WVS data counter this intuition and show the absence of a systematic relationship between a country's objective income inequality and its aggregate level of tolerance for income inequality. South Africa, for instance, has the highest level of objective income inequality in the sample for all four survey waves (1990-2006) of the WVS but its mean level of tolerance for income inequality is far above that of countries with low objective

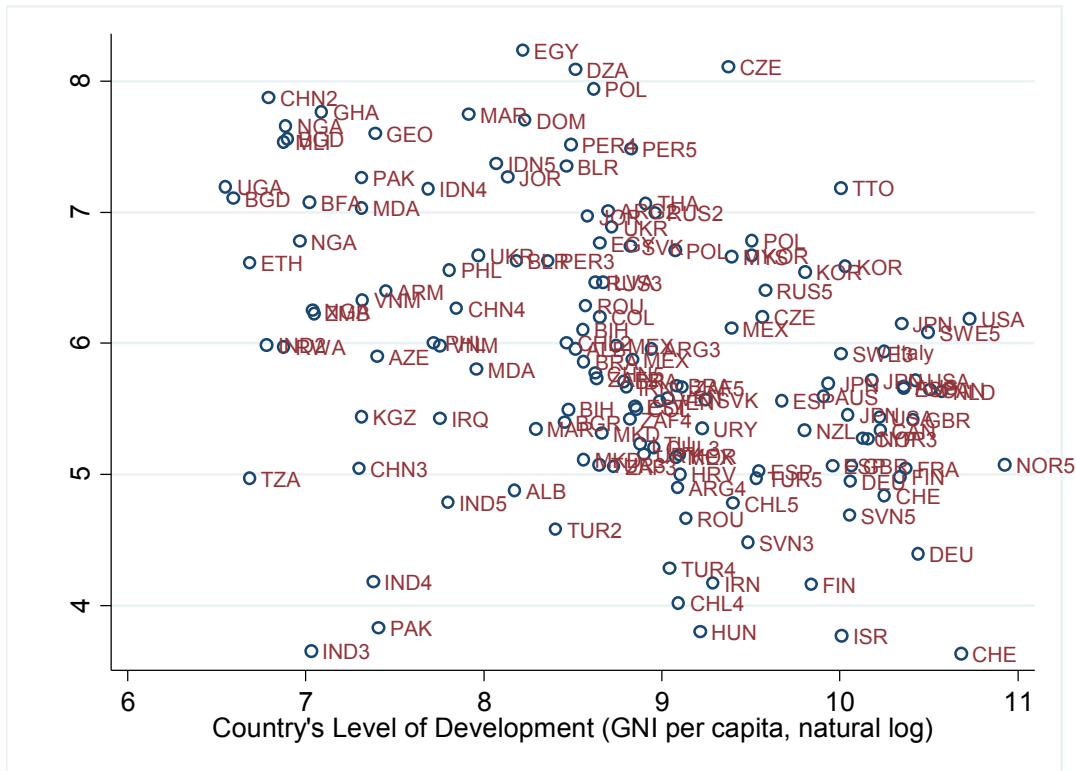
income inequality such as Switzerland (labeled as CHE) and Finland (labeled as FIN).² In other words, despite the high South African objective income inequality, South Africans are on average more tolerant of their country's *high* objective income inequality than the Swiss and Finnish citizens.

Another common variable associated with inequality is a country's level of development. The nexus between a country's level of development (or wealth) and the level of objective income inequality continues to be a vibrant field of research (see Boix 2010). Scholars argue that a country's level of development positively correlates with its aggregate level of tolerance for income inequality (e.g., Hirschman and Rothschild 1973). Individuals who live in a developed country have postmaterialist values that de-emphasize the role of income as an indicator of status in society (Beck 1992; Inglehart 1997).

Again, the WVS data refute this expectation by showing the absence of a systematic relationship between a country's level of development—and its mean level of tolerance for income inequality. Figure 1.2 shows the relationship between a country's level of development—measured in terms of gross national income (GNI) per capita—and a country's mean level of tolerance for income inequality—across 77 countries (149 country-years) from 1994 to 2007.

² In the highlighted portion of the left panel in Figure 1.1, the data labels of ZA2, ZA3, ZA4, and ZA5 represent the different years that the South African WVS surveys were conducted, i.e., waves 2, 3, 4, and 5 respectively.

Figure 1.2. Country level development and aggregate tolerance for income inequality



Notes: N=148 country-years from 1994 to 2007. The survey data are from the first four waves of WVS and data on the level of development are from the World Bank's gross national income (GNI) per capita based on purchasing power parity. The country codes the ISO 3166-1 alpha-3 codes and the number that comes after this code represents the country's mean tolerance for income inequality for a particular WVS survey-wave. A number "2" indicates WVS wave 2 (1989-1993), "3" indicates WVS wave 3 (1994-1999), number "4" indicates WVS wave 4 (1999-2004), and number "5" indicates WVS wave 5 (2005-2007).

Accordingly, the patterns in Figures 1.1 and 1.2 are counterintuitive and they have greater theoretical implications on how a country's level objective income inequality affects individual level outcomes. If a country's level of objective income inequality affects individual level behavior as what extant studies posit and that individual values about income inequality—individual tolerance for income inequality in this case—is a proximate factor that affects individual level behavior; then why is there no apparent systematic relationship between a country's level of objective income inequality and its aggregate level of tolerance for income

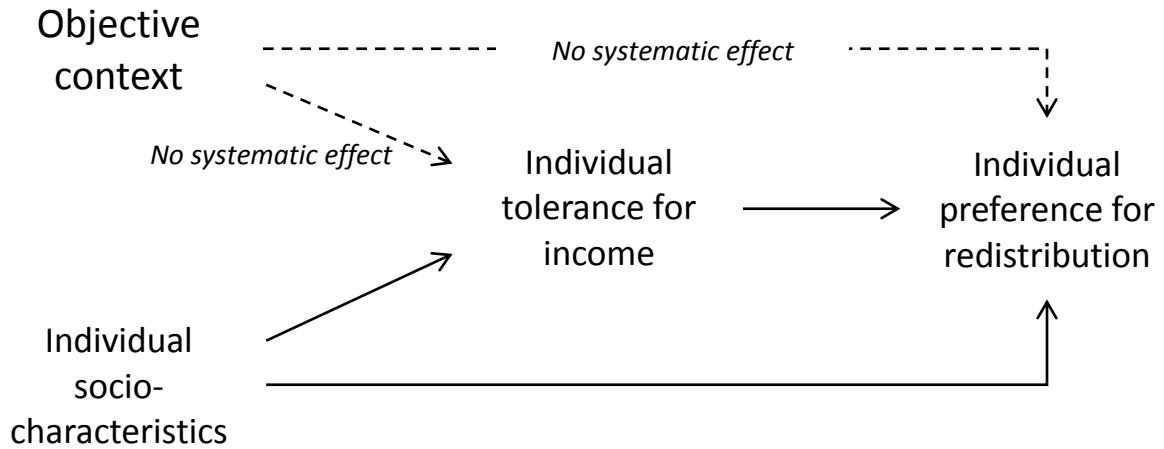
inequality? This is not an aggregation issue and as Chapter 1 will show: a country's level objective income inequality indeed does *not* affect its citizens' levels of tolerance for income inequality.

1.2. The Argument in Brief

This dissertation's two main dependent variables are a person's level of tolerance for income inequality and individual preference for redistribution (Figure 1.3). The argument and statistical analysis hinges on the study of two sets of explanatory variables, the explanatory variables at the macro-level (objective context) and micro-level (individual socio-economic characteristics).

This dissertation argues that an individual's subjective social status, income, and gender affect his level of tolerance for income inequality. The higher the social status that a person perceives himself to be, the higher his income, or being a male, increases his level of tolerance for income inequality. Moving away from individual level characteristics, this dissertation argues that an individual's objective context—a country's level of objective income inequality and level of wealth—do *not* affect its citizens' levels of tolerance for income inequality.

Figure 1.3. Dissertation's main arguments



A person's level of tolerance for income inequality affects his preference for redistribution. The higher a person's level of tolerance for income inequality is, the more likely that he would *oppose* government redistribution. Consistent with extant studies, an individual with higher income has a greater likelihood of opposing redistribution. Furthermore, this dissertation argues that a country's objective context—level of wealth and objective income inequality—do not affect its citizens' redistributive preferences. The societal norms on income inequality affect his redistributive preferences.

1.3. Explaining subjective dimensions of income inequality

As early as in 1920, sociologist Franklin Giddings conceptualized the linkage between subjective dimensions of inequality and objective inequality and as he opined, “the conditions that tend to create subjective inequality tend to establish objective equality, and, conversely, the creation of objective equality tends to increase subjective inequality” (Giddings 1920, 553). Yet, research on

inequality has overwhelmingly focused on the objective aspects of inequality. Fifty years later, political scientist, Robert Dahl in *Polyarchy*, emphasized the importance of subjective aspects of inequality because “between a condition of objective inequality and the response of a disadvantaged person lie the perceptions, evaluations, expectations—in short, the psyche—of the individual” (Dahl 1971, 95). In short, there is an important theoretical gap in the inequality—subjective and objective dimensions—literature and this dissertation advances the theoretical understanding of the subjective dimensions of inequality and its connection with objective inequality.

This dissertation contributes to the income inequality literature in two ways. First, a person’s subjective social status affects his level of tolerance for income inequality. An individual has a sense of his position in the societal hierarchy hence this subjective social status becomes a cognitive anchor that in turn affects his level of tolerance for income inequality. An individual with high subjective social status could feel that he has benefited from the distributive procedure hence feel that his country’s level of income inequality is not too large. This is not a new finding to the group of studies that focuses on the subjective dimensions of income inequality (Hadler 2005; McCall 2005) but this chapter’s contribution is to show the generalizability of the United States and Europe-centric findings across time and space by using a larger sample of countries outside of United States and Europe—a dataset that covers 87 countries over 23 years (1987-2009).³

³ McCall (2005) focuses on United States and uses data from United States’ General Social Survey (GSS) and ISSP. Page and Jacobs (2009) also focus on the United States and use original survey and historical data from major newspaper polls. Hadler (2005) uses a much larger sample than the previous two studies but the sample is Euro-centric and covers only the year of 1999. Hadler’s sample is included in this dissertation’s analysis.

Second, this dissertation presents a counterintuitive finding: a country's level of objective income inequality does *not* affect an individual's level of tolerance for income inequality. There is a strong assumption in the objective income inequality that a geographic locality's (e.g., country and neighborhood) would systematically affect a person's values and perceptions about income inequality. Nevertheless, this assumption has not been rigorously tested by extant studies.⁴ Specifically, this dissertation is the first study that uses a large dataset and a rigorous method to show that a country's level of income inequality has no statistically significant effect on its citizens' levels of tolerance for income inequality. To put the finding in concrete terms, a change of objective income inequality at the country-level does not systematically affect its citizens' levels of tolerance for income inequality, i.e., their evaluations of the country's level of income inequality as too large, too small, or neither. They may perceive the change in the level of objective income inequality but their perceptions do not necessarily affect their levels of tolerance for income inequality. A person's level of tolerance for income inequality is a normative value that is less subjective to changes in the environment than his perceptions of income inequality.

These two main findings question a fundamental assumption in the broader inequality literature that uses a country's level of objective income inequality as a causal factor: a country's level of objective income inequality creates structural incentives that affect its citizens' policy preferences and behaviors. If individual values about income inequality are proximate factors that affect individuals' behaviors while a country's level objective income inequality—as Chapter 2 and 3 will show—does *not* affect individual values about income inequality, scholars

⁴ Hadler (2005) is the only study that has examined the effect of objective income inequality but his sample size of 30 countries is too small for him to include multiple control variables at the country level in his statistical model. This dissertation's use of the WVS sample, for instance, has at least 148 country-years.

should be more cautious in attributing a country's objective income inequality as a causal factor that affects individual level substantive outcomes (e.g., individual preferences for redistribution). For example, studies that use the canonical Romer-Meltzer-Richard model to predict a country's aggregate redistribution assumes that a country's level of objective income inequality affects individual level behavior (Meltzer and Richard 1981; Romer 1975). I argue that citizens do not necessarily perceive a country's increasing level of objective income inequality as an undesirable phenomenon or as a trend that is detrimental to societal well-being. Their normative values about income inequality would largely shape how they view income inequality and are the more important factors in explaining substantive outcomes.

1.4. Explaining redistributive preferences

Aggregate redistribution is a government's re-allocation of wealth to groups within society and it is affected by public opinion on redistribution (Brooks and Manza 2006). The latter, however, is an aggregation of the individual preferences for redistribution or redistributive preferences of the masses. Because individual redistributive preference is the key driver of the formation of public opinion on redistribution, numerous studies have examined the factors that affect individual preference for redistribution. At the micro-level, individual self-interest (Meltzer and Richard 1981; Romer 1975), social interdependence (Shayo 2009), and/or evaluation of social justice (Bénabou and Tirole 2006) affect individual preference for redistribution; and at the country level, a country's level of objective income inequality (Pittau et al. forthcoming) affect individual preference for redistribution.

This dissertation differs fundamentally from most extant studies because it reframes the thinking on individual preference for redistribution. This chapter posits the presences of multiple

subjective income inequalities in a country instead of extant studies' focus on a *single* country-level objective income inequality—often measured in Gini ratios. The dominant theoretical insights on the formation of individual preference for redistribution extend from the Romer-Meltzer-Richard model (Meltzer and Richard 1981; Romer 1975). This model posits that individual preference for redistribution is a function of his country's level of objective income inequality and his location in the income distribution.⁵ The Romer-Meltzer-Richard model therefore theorizes a connection between country level objective income inequality and individual level income. Multiple subjective income inequalities exist within a country because individuals have different normative values about income inequality. Because redistribution is essentially about the re-allocation of resources to reduce inequality within a country, individuals form their preferences for redistribution based on their normative values of income inequality rather than react to changes in the level of their country's objective income inequality. This chapter, thereby, questions the validity of the Romer-Meltzer-Richard model's premise that centers on the objective income-inequality-individual income nexus.

This dissertation contributes to the individual preference for redistribution literature in two ways. First, I introduced a previously underemphasized factor, individual normative values about income inequality to explain individual preference for redistribution.⁶ Because redistribution involves the reallocation of resources to some groups (e.g., the poor) in society, an individual forms his preference for redistribution based on his normative values about income

⁵ To be more precise, the Romer-Meltzer-Richard model formalizes the model in terms of the median voter's income relative to the mean income. The intuition is that the median voter is *the* "decision maker" in a democracy.

⁶ The concept of tolerance for income inequality is related to an emerging group of studies that focuses on the socio-psychological dimensions of inequality. McCall and Kenworthy (2009) use "concern for inequality" and "perceptions of inequality" to explain individual preference for redistribution. This chapter extends the generalizability of their findings to 87 countries vis-à-vis the single-country focus on the United States.

inequality. By using one type of normative values about income inequality, individual tolerance for income inequality, as the explanatory variable, this chapter argues that an individual with high tolerance for income inequality is more likely to oppose redistribution. This effect is strong and robust based on a large sample that includes data on the responses from 350,000 respondents from 86 countries in five continents over a long period of 23 years.

Another contribution to the redistributive preference literature is to highlight a different dynamics between inequality and individual preference for redistribution. The conventional way is to focus on how a country's level of objective income inequality affects individual preference for redistribution. Nevertheless, objective income inequality is a contextual factor and—as Chapters 4 and 5 will show—has no systematic effect on individual preference for redistribution. This dissertation's findings are based on a much larger sample and it counters Pittau et al.'s (forthcoming) finding of a positive effect for a country's level of income inequality on individual redistributive preferences European countries and the United States. I argue that the form of inequality that directly affects individual preference for redistribution is individual values about income inequality. There are numerous subjective income inequalities that occur in a country with a single objective income inequality. Individual values about income inequality function are cognitive filters that make a person more resistant to new information that challenges their normative values about income inequality. Consequently, changing objective income inequality—a contextual condition—is unlikely to have any systematic effect on individual preference for redistribution.

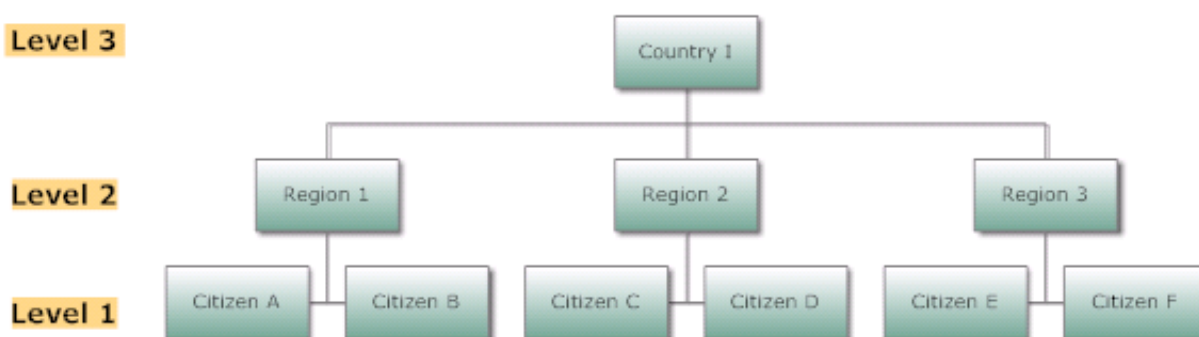
1.5. Data and methodology

This dissertation shows the empirical validity of these arguments by using better data and methodology than extant studies. This dissertation uses the two largest cross-nation datasets, International Social Survey Program (ISSP) and the World Values Survey (WVS), and this dissertation's empirical analysis covers a larger number of countries over a longer period of years than extant studies in subjective dimensions of income inequality and individual preference for redistribution. This dissertation, for instance, uses four sample years of ISSP data—1987, 1992, 1999, and 2009—instead of the usage of single-year samples by extant studies. Hadler (2005) and Pittau et al. (forthcoming), for instance, use a single year sample of ISSP data to examine the determinants of tolerance for income inequality and individual preference for redistribution respectively. Furthermore, this dissertation further tests the findings with another large cross-nation dataset, WVS that covers a period from 1989 to 2008 and more than 80 countries. No work to the best of my knowledge has used both cross-nation datasets in the same study. The use of a large dataset increases the generalizability and robustness of the findings.

The examination of individual level dependent variables entails the use of the appropriate statistical method to tease out the causal mechanisms affecting this individual level effect at the macro-level (e.g., country and region) and micro-level (e.g., a person's characteristics). Accordingly, this dissertation mainly uses the estimation strategy of hierarchical linear modeling (HLM), a very commonly used method in public health and education research but less popular in political science. This dissertation also uses a better estimation strategy than extant studies. Most studies use one-level logistic regression models (e.g., Alesina and Giuliano 2011) and the studies that use the most sophisticated method use two-level HLM (e.g., Pittau et al., forthcoming). This dissertation goes beyond extant studies by using three-level HLM (Figure

1.4). By convention, individuals and respondents are referred to as level 1, regions and countries are referred to as level 2 and level 3 respectively. A three-level model posits that individuals are nested within regions and the regions are in turn nested within countries (Bryk and Raudenbush 1992). The use of a three-level models prevents the underestimation of the standard errors vis-à-vis the use of two or single-level models and thereby reduces the risk of finding false positives of statistically significant results. Furthermore, the inclusion of variables that are specific to within-nation regions allows the inclusion of controls of region objective income inequality and region wealth into the models. These two important region variables capture the variations *within* nations and have not been tested by extant cross-nation studies.

Figure 1.4. Logic of three-level HLM models



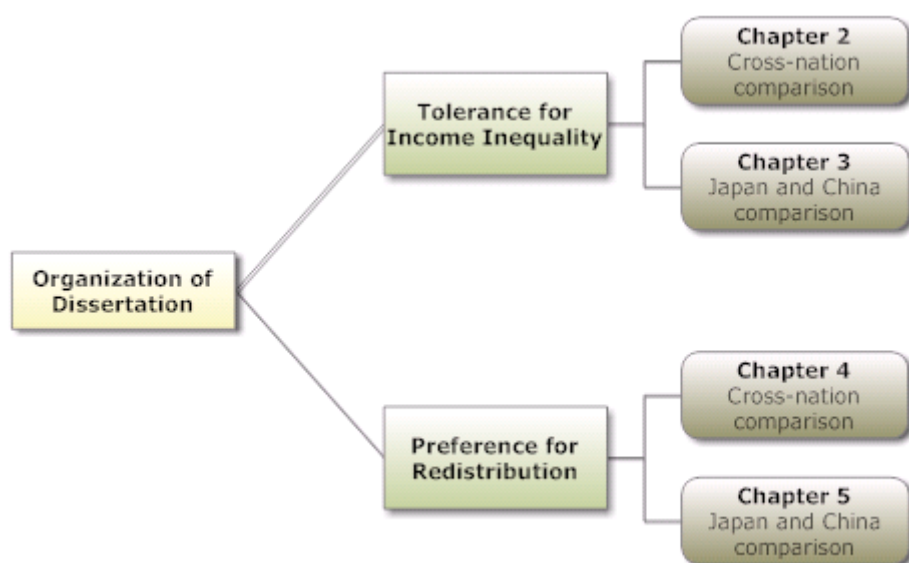
Notes: Level 1: Individuals or respondents; level 2: within-country regions; level 3: countries

1.6. Dissertation plan

This dissertation puts forth the rethinking of the linkage between subjective aspects of income inequality—normative values about income inequality—and objective income inequality. It also

shows how this factor explains individual preference for redistribution. There are six chapters in this dissertation, with Chapter 1 is introduction and Chapter 6 is conclusion (Figure 1.5). The first part of the dissertation focuses on the examining the determinants of individual tolerance for income inequality. In Chapter 2, I explain the patterns of tolerance for income inequality in 87 countries over a period of 21 years from 1987 to 2009. Using multilevel modeling, I show that a person's objective context—country wealth and country objective income inequality—does *not* affect his level of tolerance for income inequality. At the individual level, a person's subjective social status, income, and gender strongly affect his level of tolerance for income inequality.

Figure 1.5. Organization of dissertation



Note: Chapter 1 is introduction and Chapter 6 is conclusion.

In Chapter 3, I test the robustness of Chapter 2's cross-nation findings with a two-country comparison of Japan and China from 1990 to 2007. These two countries are chosen because they are large countries—in terms of population and size of economy—and the discourses on income inequality are not entangled with race, ethnicity, and immigration. This case selection removes the confounding effect of race, ethnicity, and immigration at the societal and individual levels. Both Japan and China are ethnically homogeneous with very negligible immigration rates. The findings generally support the key findings in Chapter 2. This chapter also contributes to the Japanese and Chinese studies by using multi-year samples to tease out the determinants of tolerance for income inequality in respective countries. Specifically, Chapter 3 argues that a strong societal belief in Japanese society about social stratification increases the effect of individual level subjective social status on a citizen's level of tolerance for income inequality while in China, the absence of such a strong societal belief reduces the effect of individual subjective social class on individual tolerance for income inequality.

Having established the theoretical construct and empirical basis of individual tolerance for income inequality, the second part of the dissertation—Chapters 4 and 5—examines how this factor affects individual preferences for redistribution. These two chapters advance the conceptualization of the linkage between inequality and redistribution by showing the relative importance of the subjective dimensions of inequality over extant studies' focus objective income inequality.

Chapter 4 uses a much larger cross-nation sample of 87 countries that over 23 years than extant studies and make two main findings: at the aggregate level, a country's objective condition—wealth and income inequality—do not systematically affect individual preference for redistribution while at the individual level, a person's level of tolerance for income inequality

affect his level of support for redistribution. Consistent with mainstream redistributive preference literature, a person's gender, income, and level of education affect his redistributive preferences. In addition, this chapter also highlights the differences between support for different types of government redistribution, i.e., redistribution that aims to reduce income inequality, help the unemployed, or help the poor.

Chapter 5 tests the robustness of the Chapter 4 findings by using Japan and China for in-depth case comparison. The case comparison of Japan and China shows that an individual's level of tolerance for income inequality is a robust predictor of individual preference for redistribution in both countries. The effects of other individual level predictors such as income and gender on individual preference for redistribution are less robust. Similar to the cross-nation sample, a person's individual context—the wealth and objective income inequality of a region—does not affect his level of preference for redistribution.

Chapter 2 Tolerance for Income Inequality

Numerous studies argue that a country's level of objective income inequality affects the policy preferences and behavior of individuals living within it.⁷ The spectrum of effects ranges from a person's preference for redistribution (Lupu and Pontusson 2011) to his propensity to vote (Anderson and Beramendi 2008). A fundamental assumption in this literature is that a country's level of objective income inequality would somehow affect individual level policy preferences and behavior. This assumption is logically appealing. An individual who hears news about rising income inequality would perceive income inequality has worsened. Nevertheless, would he feel that the level of income inequality is too large or too small? This question is about an individual's level of tolerance for income inequality and it is one type of individual normative values about income inequality. Individual values about income inequality form a proximate factor that affects individual level policy preferences and behavior hence a country's level of income inequality would at best weakly affect individual level behavior.

To re-emphasize, an individual's level of tolerance for income inequality is simply the extent to which an individual views his country's income inequality to be acceptable. As

⁷ This chapter focuses on individual level outcomes and differs from the studies that examine how a country's level of objective income inequality affects *aggregate* outcomes. The examples include *aggregate* redistribution (Alesina and Giuliano 2011), regime stability (Haggard and Kaufman 2012), and aggregate turnout (Schattschneider 1960).

explained in section 2.2, this normative value is not about his estimation of the size of income inequality in his country. Most studies on perceptions—not values—about income inequality usually show how a country’s changing objective income inequality correlates with public opinion on inequality (see Bartels 2008). I argue in this chapter that an individual’s subjective social status affects his level of tolerance for income inequality and that the level of his country’s objective income inequality does not affect his level of tolerance for income inequality.

With the detailed explanation of the context of my inquiry about the determinants of tolerance for income inequality setting the stage, this chapter proceeds as follows. The next section explains the broad cross-nation patterns of tolerance for income inequality. Section 2.2 explains how an individual’s subjective social status—the main explanatory variable of interest—affects his level of tolerance for income inequality and section 2.3 discusses the other competing explanations. Section 2.4 then describes the cross-nation survey data—the International Social Survey Program (ISSP) and the World Values Survey (WVS)—that this chapter is using. I then explain the multilevel logit estimation strategy, i.e., treating the survey respondents as individuals who are nested within regions and the regions that are in turn nested within countries. Finally, section 2.5 discusses the empirical results, and robustness checks; and section 2.6 concludes.

2.1. Individual tolerance for income inequality

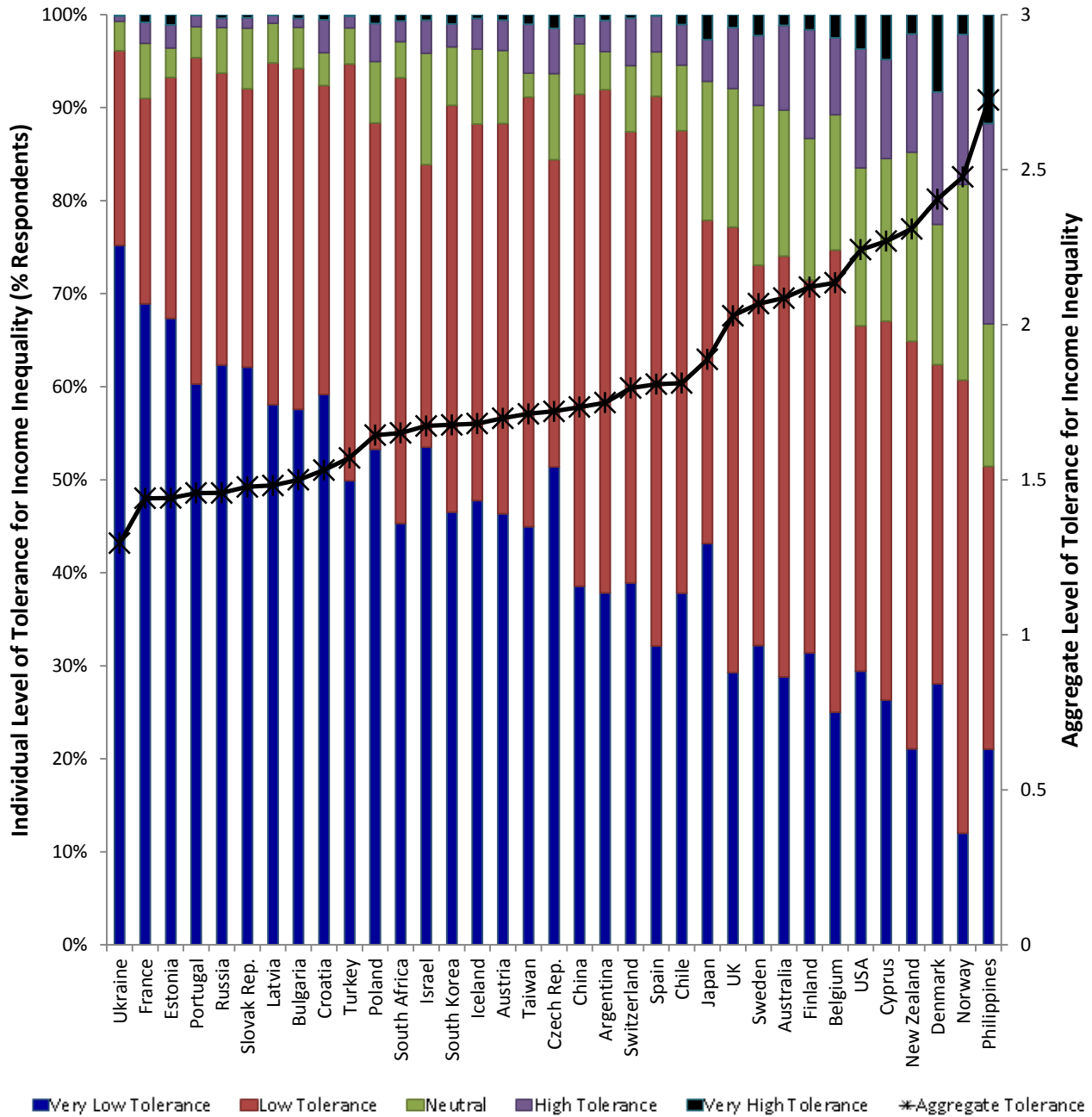
Individual tolerance of income inequality is one type of normative values about inequality.⁸ Figure 2.1 shows the pattern of individual tolerance for income inequality in 35 countries across five continents in 2009. The left axis indicates the proportion of respondents who indicated their

⁸ Other individual values about income inequality include the nature of income inequality (e.g., if it only benefits the rich) and the utility of income inequality (e.g., income inequality is necessary for prosperity).

level of tolerance for income inequality—very low, low, neutral, high, and very high—in each country as visualized by the stacked graphs while the right axis indicates the aggregate mean of the level of tolerance for income inequality for each country on five-point scale with five indicating the highest level of tolerance for income inequality. A country's aggregate level of tolerance for income inequality is at best a statistical summary of the within country norms about income inequality. This dissertation focuses on individual level of tolerance for income inequality but not on country level aggregate level of tolerance for income inequality. These within country societal norms on income inequality are best teased out by qualitative methods (e.g., ethnography) and I leave this for future research.

The countries are ranked based on the aggregate level of tolerance for income inequality in an ascending order. The most obvious pattern is that the vast majority of citizens—mean of 83.5 percent of respondents—in the 35 countries has low or very low tolerance for income inequality, i.e., they feel that income differences in their countries are too large while a small minority of citizens—mean of 7.3 percent of respondents—has large tolerance for income inequality, i.e., they feel that income inequality in their respective countries is not too large. One common perception is that individuals who live in welfare regimes are more likely to have high levels of tolerance for income inequality because there are comprehensive social welfare programs. The data in Figure 2.1 indicates otherwise and does not show any obvious systematic association between a country's welfare regime type and the aggregate proportion of individual levels of tolerance for income inequality. Interestingly, there is a wide variation of the proportion of respondents with high and very high tolerance for income inequality even among the countries with social democratic welfare regime: the countries with the most generous welfare programs. For example, Denmark (22.5 percent) and Norway (18.2 percent) have the second and third

Figure 2.1. Levels of individual tolerance for income inequality in 2009



Notes: Countries are ranked in ascending aggregate levels of tolerance for income inequality (N=48,917 in 35 countries in 2009). Survey data are from the ISSP social inequality module (2009). The survey statement is “differences in income in their respective countries are too large.” The original response categories of “strongly agree,” “agree,” “disagree,” and “strongly disagree” are recoded as very “very low tolerance,” “low tolerance,” “neutral,” “high tolerance,” and very high tolerance for income inequality respectively.

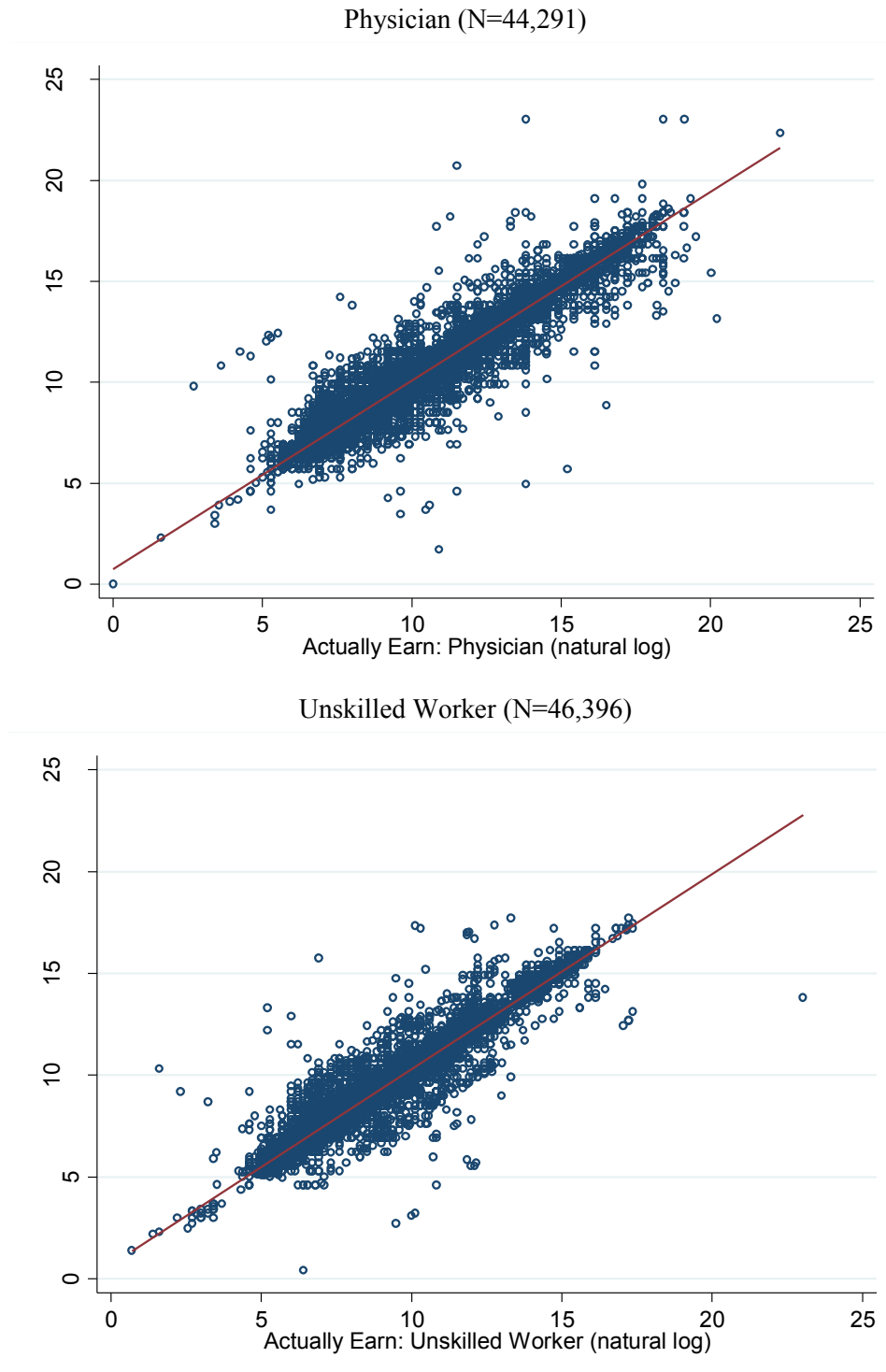
highest proportion of respondents with high or very high tolerance for income inequality while Iceland and Austria only have about 4 percent of respondents with high tolerance for income inequality. Even in United States, a country, with widespread belief in the role of meritocracy in determining an individual's income (Hochschild 1981), about 66.5 percent of American respondents has low or very low tolerance for income inequality. This proportion is similar to that of two social democratic welfare regimes, Norway's 60.7 percent and Finland's 71.5 percent.

A person's individual values about income inequality differ from his assessment of the magnitude of his country's level of income inequality. This is by far the most widely explained aspect of subjective dimensions of income inequality (Castillo 2011; Gijsberts 2002; Jasso and Rossi 1977; Kelley and Evans 2009; Kuhn 2011; Shepelak and Alwin 1986).⁹ A person's assessment of the magnitude of income inequality is usually operationalized in a ratio of an individual's perceived earnings and just earnings of particular occupations. A British, for instance, may perceive a typical shop owner to be earning £3,000 and assess that a typical shop owner's *just* earning, i.e., the amount that he should earn, is £5,000. Conversely, another British citizen's perception of the actual earning and his assessment of a just earning of a typical shop owner could differ dramatically from the first British citizen. Using the same sample that is used for Figure 2.1, Figure 2.2 shows the pattern of this subjective aspect of income inequality among the respondents in 35 countries in 2009. The top panel shows the positive relationship between respondents' perceived level of a physician's income ("actually earn") and his assessment of the just or legitimate level of a physician's income ("should earn").

The positive relationship suggests that an individual who perceive a physician to be earning high income is also likely to assess a high income for a physician to be just. This positive

⁹ Kelley and Evans (2009) examine the determinants of a person's assessment of the magnitude of his country's level of income inequality despite using the term "tolerance for income inequality" for their title.

Figure 2.2. Perceived and deserved earnings of physicians and unskilled workers



Notes: Data are from the ISSP social inequality module (2009). The horizontal axis is the natural log of the respondents' perception of the actual earnings of physicians or unskilled workers and the vertical axis is the natural log of respondents' assessment of the level of earnings that a physician or unskilled worker *should* earn.

relationship also holds true for the subjective assessment of perceived and just earnings for the category of unskilled workers (bottom panel, Figure 2.2). In other words, individuals have referents (e.g., referent groups or self-referent constructs) that simultaneously affect their perceived amount of actual pay and just pay of particular occupations. If an individual has a referent that increases his propensity to perceive a physician's earning to be higher than the mean perceived physician earning, then his assessment of the just earning for a physician would also tend to be *higher* than the mean assessment of just physician earning. Accordingly, an individual's perception of the magnitude of income inequality—his assignment of monetary values to perceived and just incomes in different occupations—does *not* reveal much about his level of tolerance for income inequality—the central concept in this dissertation. Individual tolerance for income inequality is the extent that individuals evaluate income inequality within their country as acceptable—either too large, too small, or somewhere in between—irrespective of his estimations of his country's level of income inequality.

Tolerance for income inequality—this dissertation's main concept of interest—also differs from another group of studies that examines the *perceptions* of inequality in the United States (Bartels 2008; Xu and Garand 2010). Using data from the American National Election Studies (ANES) survey, these scholars measure individual perceptions of inequality based on responses to the ANES statement: “do you think the difference in incomes between rich people and poor people in the US today is larger, smaller, or about the same as it was 20 years ago?” The perception of inequality that the ANES question seeks to tease out is quite similar to that of the estimation of magnitude of income inequality—as examined by studies such as Jasso and Rossi

(1977), Kelley and Evans (2009), and Kuhn (2011).¹⁰ This chapter's focus on tolerance for income inequality differs from these studies' operationalization of perception. To reiterate, tolerance for income inequality captures respondents' evaluations of their country's income inequality, i.e., if they perceive their country's level of income inequality to be *too* large. To re-emphasize, two respondents may choose the option of "smaller" to the ANES question but this response only capture their perception of the *magnitude* of United States' income inequality but not their level of tolerance for the level of income inequality in United States.

2.2. Subjective social status

I argue that an individual's subjective social status affects his level of tolerance for income inequality. An individual's subjective social status is his "belief about his location in a status order" (Davis 1956, 154). Accordingly, an individual's subjective social status is a cognitive anchor where he anchors information that readily comes to his mind in the process of assessing tasks and issues such as routine tasks, legal judgments, probability estimates, and social justice (Chapman and Bornstein 1996; Fischhoff and Beyth 1975; Jacowitz and Kahneman 1995; Markovsky 1988; Tversky and Kahneman 1974; Wegener 1987). This belief is much broader than individual feelings of relative deprivation because an individual evaluates his subjective social status based on a range of cross-temporal—past, present, and future—and cross-group comparisons (e.g., gender, race, religion, and region of birth). Numerous studies in health and psychology have shown that an individual's subjective social status predicts his health, psychological, and socio-economic outcomes (Clark et al. 2008; Cundiff et al. 2011), but only

¹⁰Scholars have criticized that the responses to this question could suffer from agreement bias because respondents are more likely to choose the "larger" response over the "smaller" and "about the same" responses (Kenworthy and McCall 2008).

one work—Hadler (2005)—has used subjective social status to explain an individual’s level tolerance for income inequality. Using a small Europe-centric sample of 30 countries for a single year of 1999, Hadler (2005) shows that an individual’s subjective social status has a statistically significant but a *very small* substantive effect on his level of tolerance for income inequality. This dissertation goes beyond Hadler (2005) by using all the available ISSP samples—from the years of 1987, 1992, 1999, and 2009—to test the generalizability of his findings across time.

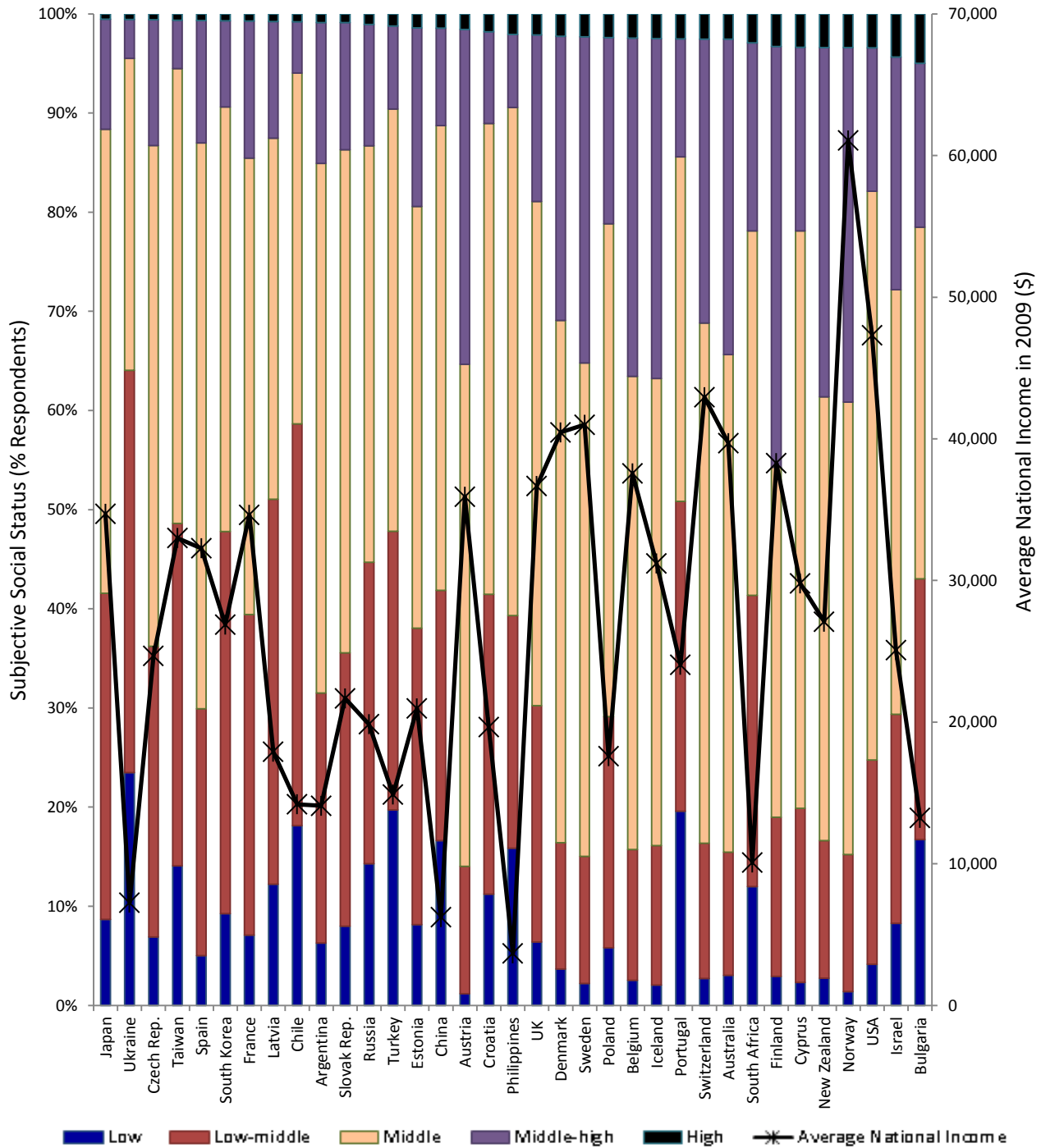
Why would an individual with high subjective social status have high tolerance for income inequality? There are three plausible explanations. First, he is more likely to be satisfied with the status quo hence he would naturally perceive that the current distributive procedure and distributive outcome (i.e., income inequality) has benefited him and would continue to benefit him in the future. Second, he may not be fully aware of the true nature of his country’s level of income inequality. This individual may subscribe to the societal belief in the notion of “middle class” society creates a self-fulfilling prophecy that the majority of the citizens living in the country has a middle-class like standard of living. Finally, he may just not care about his country’s income inequality. Because he has benefited from the system, he would perceive that other individuals like him are “deserving” and the rest of the people in society are “less deserving.” This person is also more likely to view income inequality as a natural outcome of a selective process where this high subjective social status individual perceives himself to have “won” the game. In short, the causal relationship between individual subjective social status and his level of tolerance for income inequality is clear: a person who self-places himself as one with high subjective social status is more likely to have a high level of tolerance for income inequality.

An individual’s subjective social status is teased out from a respondent’s self-placement on a ten-point scale. This metric of subjective social status originated in the 1960s and is widely

used in different disciplines such as public health (Cantril 1965). Figure 2.3 displays the pattern of subjective social status of respondents in 35 countries in 2009. The left axis indicates the proportion of respondents' level of subjective social status—low, low-middle, middle, middle-high, and high—in each country as visualized by the stacked graphs while the right axis indicates the country wealth in terms of income gross national income (GNI) per capita, based on purchasing power parity (PPP).

The countries are arranged in order based on the proportion of respondents who indicate that they are of high social status in an ascending order. Most citizens in a 35 country-sample in 2009 perceive themselves to be in the middle of the social hierarchy while small minorities of respondents either perceive themselves to be of the lowest or highest social status. An average of 45.7 percent of respondents across these 35 countries perceive themselves to have a middle social status with one being the lowest and five being the highest. This is true even for high-income countries (e.g., Switzerland: 52.5 percent) and low-income countries (e.g., the Philippines: 49.8 percent). In contrast, a very small minority, i.e., a mean of 2.1 percent and 18.7 percent of respondents in the 2009 sample self-place themselves as high or the highest subjective social status. Interestingly, a relatively low proportion of the Finns—who live in a highly egalitarian society—perceives themselves to be of middle social status (27.3 percent) while another 57.1 percent of Finns perceives themselves to be of high or of the highest social status in Finnish society.

Figure 2.3. Subjective social status: proportion of respondents across nations in 2009



Notes: Countries are ranked in ascending aggregate levels of proportion of respondents who indicate that they are of high social status. N=48,917 in 35 countries. Survey data are from the ISSP social inequality module (2009). The survey question is “in our society there are groups which tend to be towards the top and groups which tend to be towards the bottom. Below is a scale that runs from top to bottom. Where would you put yourself now on this scale?” Data on the average income for each country is the gross national income (GNI) per capita, based on purchasing power parity (PPP) in current international dollars; and the data are obtained from the World Bank database.

2.3. Gaps in extant studies

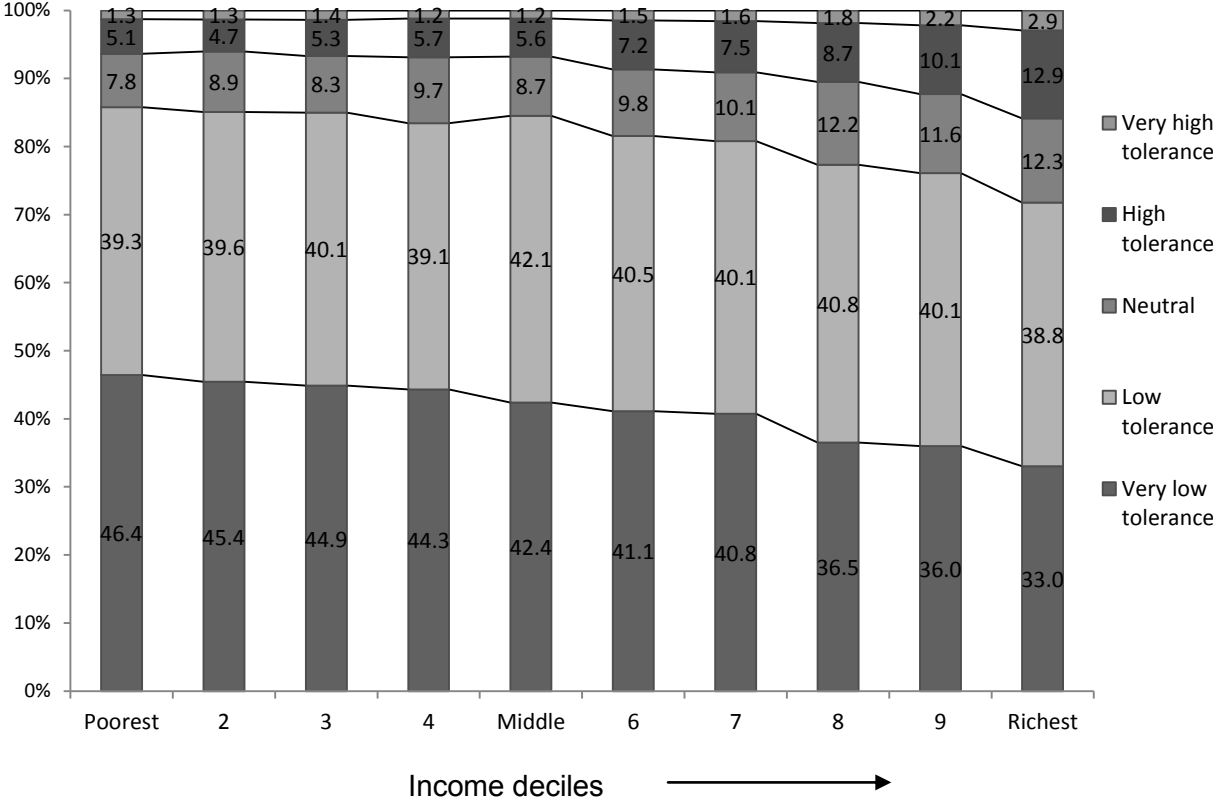
The emerging group of studies on tolerance for income inequality argues that individual characteristics *and* country level characteristics affect an individual's level tolerance for income inequality (Hadler 2005; McCall 2005; Page and Jacobs 2009).¹¹ At the micro-level, these studies argue that high-income individuals tend to have higher tolerance for income inequality. The logic is intuitive because high-income individuals perceive themselves to be the beneficiaries of a distributive outcome (i.e., income inequality) and they would therefore have greater levels of tolerance for income inequality. Nevertheless, most individuals are “boundedly rational agents” hence they do not have an accurate sense of their rank within society based on income (Simon 1957). Low-income individuals, for instance, tend to *overestimate* while higher income individuals tend to *underestimate* their social positions. Accordingly, the effect of income on individual tolerance of income inequality would be attenuated.

Data from 44 countries over a span of 22 years (1987, 1992, 1999, and 2009) illustrate that there is no simple linear relationship between an individual's income and his level of tolerance for income inequality (Figure 2.4). Most citizens across income deciles in the 44 countries feel that income inequalities within their respective countries are too large. The proportion of respondents with low or very low tolerance for income inequality that ranges from 72 to 86 percent. About 71.8 percent of the respondents in the richest decile either have low (38.8 percent) or very low tolerance (33.0 percent) for income inequality. In other words, more than two-thirds of the richest individuals in the sample feel that the level of their country's income inequality is too large. This parallels the observation that a substantial proportion of

¹¹ As mentioned the values about income inequality literature includes a much larger group of studies that examines other subjective aspects of income inequality (e.g., Castillo 2011; Gijsberts 2002; Jasso and Rossi 1977; Kelley and Evans 2009; Kuhn 2011; Shepelak and Alwin 1986).

respondents in the poorest decile have either high (5.1 percent) or very high (1.3 percent) tolerance for income inequality. This is not surprising as studies have shown that low-income individuals—despite being poor and not benefiting from the current distributive procedures—may not oppose income inequality because they expect themselves to rise up the social ladder in the future (e.g., Hochschild 1981).

Figure 2.4. Tolerance for income inequality across income deciles (1987 to 2009)

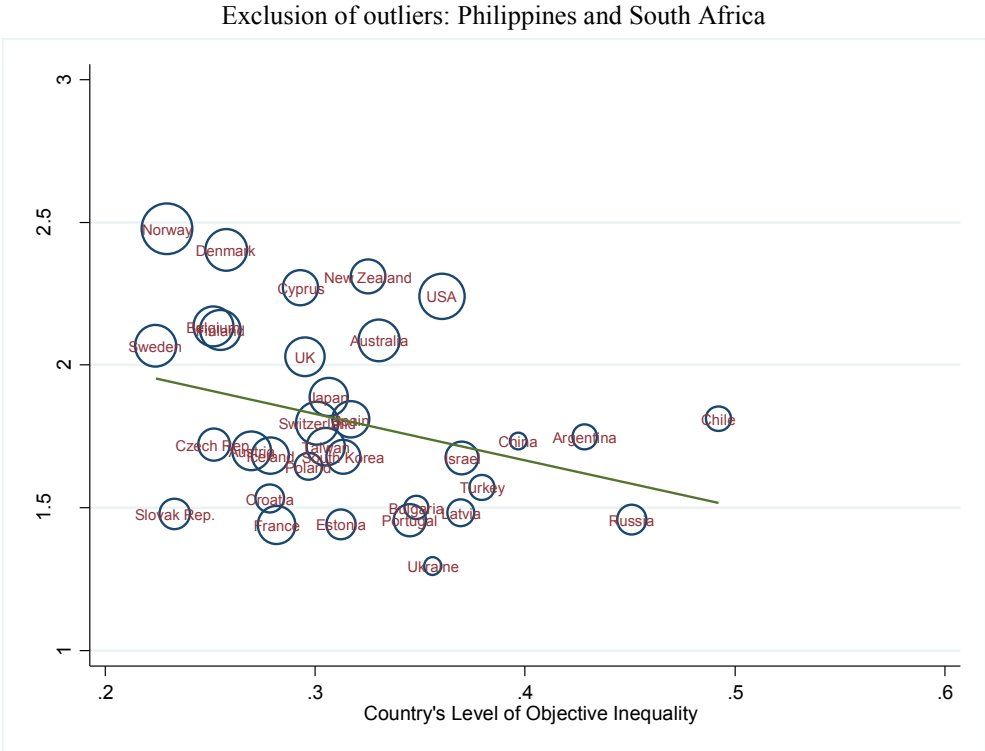
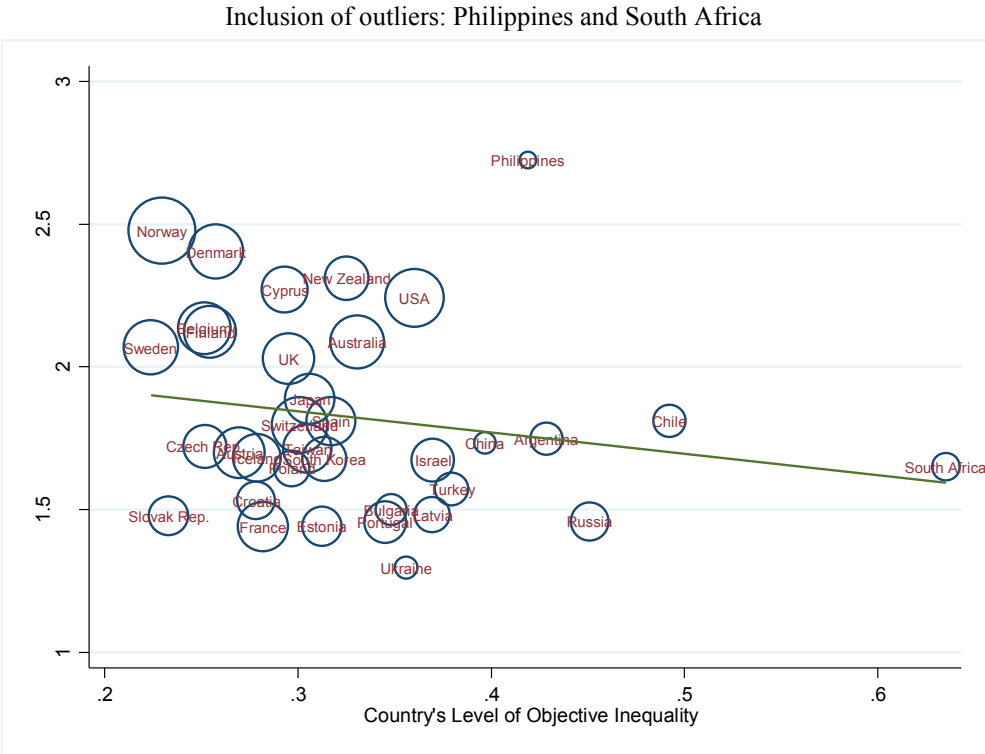


Source: N=94,786 in 89 country-years. Survey data are from the pooled from the ISSP social inequality modules of 1987, 1992, 1999, and 2009. The original response categories of “strongly agree,” “agree,” “disagree,” and “strongly disagree” are recoded as very “low tolerance,” “low tolerance,” “high tolerance,” and “very high tolerance” respectively.

At the macro-level, extant studies argue that an individual's context—societal norms, level of objective income inequality, and level of development—at the national level affect his level of tolerance for income inequality. Hirschman and Rothschild (1973) explain the “tunnel effect” in societies where individuals would develop lower tolerance for income inequality as a country's economic growth progresses. They argue that people infer about their *future* prospects from the others in society who are advancing up the social ladder and they in turn expect themselves to improve their income in the future and join this group of people who are currently doing well in society (Hirschman and Rothschild, 1973, 546). This argument conflates the casual dynamics at the country level and individual level. A person is rationally bounded and is unlikely to rationalize the impact of changing country level objective income inequality on him. A person's knowledge of others moving ahead in society is largely derived from his experiences and the information that he obtains from the media and his social networks. Accordingly, this paper differs from Hirschman and Rothschild's (1973) by positing that a country's level of objective income inequality and subjective dimensions of income inequality would affect substantive outcomes differently. Objective dimensions of income inequality affect one's life chances while the subjective dimensions of income inequality (e.g., tolerance for income inequality) affects his behavior and policy preferences.

To illustrate my argument further, Figure 2.5 shows a weak negative relationship between a country's aggregate level of tolerance for income inequality and its level of objective income inequality—measured in terms of Gini ratio—in 35 countries in 2009. This chapter's dependent variable is individual level tolerance for income inequality and differs from the summary measure of the mean level of tolerance for income inequality for all respondents within the country in Figure 2.5. Nevertheless, this aggregation of a country's level of tolerance for income

Figure 2.5. Aggregate tolerance for income inequality and objective income inequality



Notes: Survey data are from the ISSP social inequality module (2009) and Gini ratio data are from Solt (2009). This figure uses data from ISSP while Figures 1.1 and 1.2 use WVS data. The circles illustrates weighting by country income and the larger the size of the circle, the higher the level of country’s average income.

inequality provides meaningful comparison with its level of objective income inequality. As Figure 2.5 shows, Nordic countries that tend to have generous welfare programs (e.g., Norway and Sweden) have low levels of objective income inequality yet they have the second and third highest proportion of respondents who expresses that they have very high tolerance for income inequality. In other words, people who live in the Nordic countries are less likely to feel that the level of income inequality in their respective countries is too large. This is logically consistent because people who live in Nordic countries with low objective income inequality hence they are less likely to feel that the level of income inequality is too large. This observation is however countered by the pattern of the United States. The United States has a substantively higher level of objective income inequality than the Nordic countries yet it has a similar proportion of respondents with high tolerance for income inequality. In short, this pattern reinforces the observations from Figures 1.1 and 1.2 illustrate the need to systematically explore the dynamics—if any—between a country’s level of objective income inequality and individual level tolerance for income inequality.

Furthermore, there is no obvious systematic effect of country wealth. The size of the circles illustrates weighting by country income and the larger the size of the circle, the higher the level of country’s average income. Besides the cluster of Nordic countries in to the top left of the top panel Figure 2.5, i.e., countries with high aggregate levels of tolerance for income inequality and high objective income inequality and there is a cluster of high-income countries (e.g., France and Japan) in the lower left of the figure with low objective income inequality but with low level of aggregate levels of tolerance for income inequality. In other words, for citizens who live in this latter group of countries, they tend to feel that the levels of income inequality in their countries are too high despite living in countries with *low* levels of objective income inequality.

One may argue that the presence of two outliers, Philippines and South Africa, may distort the relationship. The bottom panel of Figure 2.5 removes these two outliers and the slope of the fitted regression line remains negative but it is steeper than the fitted regression line in the top panel. In short, Figure 2.5 shows that a country's objective characteristics—level of objective income inequality and level wealth—has a weak negative relationship with its aggregate level of tolerance for income inequality. The paper will test the statistical relationship between country level objective characteristics and individual level subjective dimensions of income inequality more rigorously in the next two sections.

Another important observation is the U.S.-European centric nature of ISSP datasets. Figure 2.5 uses the 2009 sample that has the greatest number of non-European nations than the previous three ISSP samples of 1987, 1992, and 1999. There are six non-European countries in the bottom panel: Argentina, Chile, China, Japan, South Korea, and Taiwan. These non-European countries tend to be clustered in the lower right of the figure and this highlights the potential continental and cultural bias of the extant studies of using the ISSP samples. This dissertation is the first systematic study—to the best of the author's knowledge—to use the latest, i.e., 2009, sample. Extant studies mainly *only* use one or two of the 1987, 1992, or the 1999 ISSP samples. Hadler (2005), for instance, uses the 1999 sample hence this dissertation advances the understanding of tolerance for income inequality by using *all* the ISSP samples that has the question on individual tolerance for income inequality and also include more non-European by using the World Values Survey dataset.

2.4. Empirical setup

The main empirical analysis consists of a series of models of individual tolerance for income inequality. This section introduces the variables, describes the data, and specifies the models. To re-emphasize, this dissertation uses a much larger cross-nation data—cross-section and cross-temporal—than what extant studies have used. The larger dataset ensures greater variability of the characteristics at the individual, within country-region, and country levels thereby ensuring the generalizability of the findings. Moreover, this chapter also exploits the nested nature of the data with multilevel modeling, i.e., respondents who are nested within regions and with regions that are in turn nested within countries. This approach is widely used in other disciplines such as in education where researchers typically examine students who are nested within classrooms and their classrooms that are in turn being nested within schools. This chapter presents the first-of-its-kind application three-level multilevel modeling in the inequality literature by incorporating within-country regions as a level of analysis; and allows the within-country income differences in terms of spatial localities (e.g., the Moscow region within Russia) to be incorporated into the analysis.

2.4.1 *The Data*

This chapter uses a dataset that is much more comprehensive than other studies on tolerance for income inequality has ever used.¹² The data on individual tolerance for income inequality are from the ISSP module on social inequality (1987, 1992, 1999, and 2009) and the three waves of

¹²Hadler (2005) uses only one year of the ISSP dataset while McCall (2005) uses data only from one country—the United States. For the list of countries included in the dissertation, see Appendix A.

WVS in the periods from 1999 to 2007.¹³ The ISSP and WVS datasets are the only cross-nation datasets that have a question that teases out tolerance for income inequality. Covering a time span of 23 years, the ISSP dataset includes 44 countries and the WVS dataset includes 89 countries. The countries are representative of the various welfare regime types, political regime types (democracy and authoritarian), and level of development (high-income and low-income). The ISSP dataset is OECD-centric but this weakness is ameliorated by the presence of 35 developing countries in the WVS dataset.

To re-emphasize, the data on the region where respondents lived in are available hence the survey data set is hierarchical in three-levels: individual respondents who are nested within sub-national regions and these regions are in turn nested within a country (e.g., the regions of New England and Pacific with are nested within the United States).¹⁴ Furthermore, the repeated cross-sectional nature of these two datasets minimizes the risk of response instability because a temporal dimension is incorporated in the datasets (Feldman 1989). Most extant studies potentially suffer from this methodological problem because they use single-year data (e.g., Hadler 2005).

¹³ WVS was conducted for five rounds from 1981 to 2007 but this chapter uses only the latest three rounds due to data availability. The first round (1981 to 1984) is excluded from the analysis because it does not have the question on tolerance for income inequality while the second round (1989 to 1993) is excluded because the question on subjective social status-class status is only asked in multiple countries from wave three onwards.

¹⁴For example, in the 2009 ISSP, 53,155 ISSP respondents are nested in 400 sub-national regions that are in turn nested within 38 countries. The locations of the American respondents in the 2009 ISSP are categorized into nine macro regions: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific.

2.4.2 Main Variables of Interest

The dependent variable is an individual's level of tolerance for income inequality: *High Tolerance for Income Inequality*. It is a dummy variable that is coded one for a respondent who strongly disagrees to the statement in the ISSP survey that differences in income in their respective countries are *too* large and zero otherwise.¹⁵ The adverb "too" indicates his evaluation of his country's level of income inequality. WVS also has a similar question that teases out an individual's level of tolerance for income inequality based on his choice along a ten-point scale that ranges from one "incomes should be made more equal" to ten "we need larger income differences as incentives." Individuals who choose the options that are nearer to "we need larger income differences as incentives" are more likely to have high tolerance for income inequality than who choose categories that are close to "incomes should be made more equal." I recoded on a scale of zero to one, with one indicating an individual who choose eight, nine, or ten would have very high levels of tolerance for income inequality.

This operationalization in terms of high tolerance for income inequality is chosen over using a dummy variable for *low* tolerance for income inequality in order to minimize the influence of social desirability bias.¹⁶ Hadler (2005) and McCall (2005) adopt such an operationalization and I argue that their operationalization potentially generates biased statistical findings. Expressing one's opinion that income inequality in his country is too large is socially desirable hence a respondent whose true position is high tolerance for income inequality may

¹⁵ There are five ordinal responses that range from (1) strongly agree, (2) agree, (3) neither agree nor disagree, (4) disagree, to (5) strongly disagree.

¹⁶ An individual's *low* tolerance for income inequality could be coded one for respondents who choose *strongly agree* for the ISSP question that income differences in their respective countries are too great. Similarly, for the WVS question, *low* tolerance for income inequality, can be operationalized for respondents who choose the number options that are close to the spectrum of "incomes should be made more equal." Extant studies have labeled this problem as "agreement bias." (Kenworthy and McCall 2008).

choose the options that are nearer to the spectrum of low tolerance for income inequality. Similarly, this chapter is not operationalizing tolerance for income inequality as an ordinal variable for the same reason. Accordingly, this chapter's operationalization of tolerance for income inequality—in terms of high tolerance for income inequality—is the best operationalization and the resulting regression estimates are likely to be underestimated. In other words, the subjective social status variable's true effect on individual tolerance for income inequality is likely to be stronger than this chapter's regression estimates would suggest. Nevertheless, the chapter will also include the operationalization of individual tolerance of income inequality as an ordinal variable in the robustness tests.

The explanatory variable is an individual's subjective social status and it is operationalized in two ways: respondents' self-placement on a ten-point scale (ISSP survey) or in terms of class (WVS). Extant scholars operationalized subjective social status in either of the two ways. For example, Hadler (2005) operationalizes subjective social status in terms of the ten-point scale while McCall (2005) operationalizes in terms of subjective social status in terms of class on a five-point scale. First, an individual's subjective social status is teased out from his self-placement on this ten-point scale in the ISSP survey that is laid out vertically with ten at the top—indicating very high subjective social status—and one at the bottom—indicating very *low* subjective social status. An individual's subjective social status, *High Subjective Social Status-Rank*, is coded as one for individuals who rank themselves at the ninth and tenth rung of the social ladder and zero otherwise. Second, an individual's subjective social status based on class in the WVS is teased out from his self-placement in terms of class rather than rank because the WVS dataset does not have a question that allows respondents to self-place themselves on a one-to-ten scale as in an ISSP survey. *High Subjective Social Status-Class*, in the WVS dataset is a

dummy variable that is coded one for respondents who choose to self-place themselves as upper class or upper middle class to the question.¹⁷ The notion of class has conceptual weaknesses because it could potentially invoked different cultural interpretations of class (Erickson 1996; Kraus et al. 2011; Lott 2002).

2.4.3 Control variables

This chapter controls for other factors that could affect an individual's level of tolerance for income inequality. An individual's income tends to be positively correlated with his tolerance for income inequality (Hadler 2005). Household income, *Income Quintiles*, is operationalized in quintiles from the lowest/poorest (first quintile) to the highest/richest (fifth quintile) level of household income. Operationalizing household income in quintiles allows comparability across countries because an individual's position in the income distribution is teased out in terms of his position in the income hierarchy within his country. Education is another control variable. Individuals with higher education tend to have higher levels of tolerance for income inequality (ibid.). A respondent's level of education, *College Degree*, is coded one if a respondent who has a college degree and above and zero otherwise. Gender and age could also affect individual tolerance for income inequality. Gender, *Male*, is a dummy variable that is coded as one for male and zero otherwise. Age captures the cohort effect and individual life experiences. Age squared is included in order to control for concavity. *Married* is a dummy variable that is coded as one if an individual is married and zero otherwise.

Context could affect individual tolerance for income inequality via three channels: country, region, and local. At the country level, a country's level of objective income inequality,

¹⁷ The WVS question is "would you describe yourself as belonging to the upper class, upper middle class, lower middle class, working class, or lower class?"

Country Objective Income Inequality, is measured in terms of Gini coefficient with zero as perfect equality and one as perfect inequality. Data on each country's objective income inequality are post-tax and post-transfers and are obtained from the Standardized World Income Inequality Database (SWIID) (Solt 2009). The SWIID is the largest source of standardized measures of income inequality for 153 countries since 1960 and is better suited for cross-nation analysis than the World Income Inequality Database (WIID) of the World Institute for Development Economics Research of the U.N. University (UNU-WIDER). The previous year's data are chosen because of a possible lag between objective income inequality and its effects—if any—on an individual's level of tolerance for income inequality. Another country-level factor is a country's level of development, *Country Wealth*, measured as its gross national income (GNI) per capita, based on purchasing power parity (PPP) in current international dollars; and the data are obtained from the World Bank database.

At the region level, a region's wealth may affect an individual's level of tolerance for income inequality. *Region Wealth*, regional GDP per capita, is measured purchasing power parity (PPP) in constant 2005 U.S. dollars obtained from the Organization of Economic Cooperation and Development (OECD) Regional Database. There is no standardized data at the sub-national level for non-OECD countries hence non-OECD countries are excluded from the analyses with three-level models.

Finally, an individual's local context is proxied by *Urban*, that is coded one if a respondent lives in an urban area and zero otherwise. Large objective inequality occurs in large metropolitan areas and an urban area's high population density and spatial segregation makes income inequality within urban areas more visible to individuals (Quillian 2012). *Urban* is

excluded from the statistical test using the WVS dataset because of the large proportion of missing values.¹⁸

The summary statistics is shown in Table 2.1.

Table 2.1. Descriptive statistics

Variable	Mean	Std. Dev.	Mean	Std. Dev.
	ISSP		WVS	
Level 1 (Individual)				
High Tolerance for Income Inequality (=1)	.02	.12	.37	.48
High Subjective Social Status-rank (=1)	.02	.13		
High Subjective Social Status-class(=1)			.20	.40
Income Quintiles (1: poorest; 5: richest)	2.8	1.40	2.51	1.18
Male (=1)	.46	.50	.49	.50
Age	45.69	16.86	40.18	15.87
Age ² /100	23.72	16.44	18.66	14.52
College Degree (=1)	.15	.36	.14	.35
Married (=1)	.61	.49	.59	.52
Urban (=1)	.37	.48		
Level 2 (Within country regions)				
Region Wealth (natural log)	10.13	.38		
Level 3 (Country-year)				
Country Objective Income Inequality	.31	.07	.37	.09
Country Wealth (natural log)	9.74	.67	8.80	1.10

¹⁸ There are about 36.3 percent of missing values for the urban variable in the four-wave WVS dataset.

2.4.4. Model specifications

ISSP and WVS data are multilevel where individuals are nested within countries hence a one-level logistic regression could cause the standard errors associated with tolerance for income inequality to be underestimated (Steenbergen and Jones 2002). Accordingly, this chapter uses a hierarchical generalized linear model (HGLM) with a logit link regression and it includes separate error terms for each region and each country thereby mitigating omitted variable bias by capturing country-specific and region-specific effects that remain outside the model. There are three-levels in this model: country, regions within a country (e.g., United Kingdom's Greater London region), and individuals. *Country Objective Income Inequality*, and *Country Wealth* are country level variables; *Region Wealth* is a region level variable, and the rest of the variables are individual level variables. This modeling strategy is better than Hadler's (2005) two-level modeling because this chapter includes an additional level at the regional level and the larger dataset used reduce the degrees of freedom problem because Hadler's (2005) sample only has 30 countries.

Then for individual i , region j , and country k , the log odds of an individual with high tolerance for income inequality are estimated as follows.

Individual High Tolerance for Inequality $_{ijk}$

$$\begin{aligned} &= \gamma_{000} + \gamma_{100} \text{High Subjective Social Status}_{ijk} + \gamma_{200} \text{Income Quintile}_{ijk} + \gamma_{300} \text{Male}_{ijk} + \gamma_{400} \text{Age}_{ijk} \\ &+ \gamma_{500} \text{Age}^2_{ijk} + \gamma_{600} \text{Degree}_{ijk} + \gamma_{700} \text{Married}_{ijk} + \gamma_{800} \text{Urban}_{ijk} + \gamma_{010} \text{Region Wealth}_{jk} \\ &+ \gamma_{001} \text{Country Objective Income Inequality}_k + \gamma_{002} \text{Country Wealth}_k + r_{0jk} + \mu_{00k} \end{aligned}$$

This 3-level model includes varying intercepts with separate error terms for each region (r_{0jk}) and country (μ_{00k}). These two error terms account for the particular circumstances at the region and country levels that the model does not account for. The three-level and two-level models will be used for different specifications that account for individual respondents nested within countries. Finally, dummy variables for survey wave-years, region (e.g., Europe and Asia-Pacific), and OECD membership status are added to control for unobserved heterogeneity. This dissertation improves over extant studies (e.g., Hadler 2005) use of two-level—country and individuals—models by incorporating regions.

2.5 Main empirical results

Tables 2.2 and 2.3 present the results. There is strong support for the hypothesis that an individual's subjective social status affects his level of tolerance for income inequality. A person's household income also affects his level of tolerance for income inequality but its effect on an individual's level of tolerance for income inequality is very weak. Finally, the statistical analyses indicate that a country's level of objective income inequality and wealth do *not* affect its citizens' levels of tolerance for income inequality.

2.5.1 Main findings

The three-level logit model uses the 2009 ISSP sample with individuals who are nested within sub-national regions, and the regions which in turn are nested within countries. An individual's subjective social status has a strong effect on his level of tolerance for income inequality (Table 2.2). The results are robust across two other samples—a pooled ISSP sample (1987-2009) and a pooled WVS sample (1994-2007)—and the results are displayed in columns 2 and 3 respectively.

For the 2009 ISSP sample, a person with high subjective social status (rank) has a log odds of .802 of having a high level of tolerance for income inequality. The log odds increases to .818 in the pooled ISSP sample. Similarly, a person with high subjective social status (class) has a log odds of .243 of opposing redistribution in the WVS sample. The results are substantively similar for separate two-level logistic regressions for separate wave years of the ISSP (1987, 1992, 1999, and 2009) and the WVS (three waves: 1994-1999, 1999-2004, and 2005-2007).

Country wealth and country objective income inequality—the two most important contextual factors—in the income inequality literature and the field of comparative politics, do *not* have statistically significant effects on individual tolerance for income inequality. At the region level, the wealth of a region also does not affect individual tolerance for income inequality. The null finding for the impact of country objective income inequality supports Hadler's (2005) finding that was based on a single-year 30-country sample. This chapter shows the generalizability of the null effect of country objective income inequality on individual tolerance for income inequality. Furthermore, this chapter's null finding for country wealth counters Hadler's finding of a negative and statistically significant effect on tolerance for income inequality. Using both the U.S.-Europe centric ISSP dataset and the WVS dataset that includes a greater proportion of developing countries, this chapter shows a country's level of wealth has not statistically significant effect on a person's level of tolerance for income inequality.

Table 2.2. Determinants of high tolerance for inequality

	(1)	(2)	(3)
	ISSP (2009)	ISSP (1987-2009)	WVS (1989-2007)
High Subjective Social Status-Rank	.802*** (.14)	.818*** (.09)	
High Subjective Social Status-Class			.243*** (.02)
<i>Country level controls</i>			
Country Objective Income Inequality	-1.15 (2.39)	-.729 (1.3)	.346 (.3)
Country Wealth	-.757 (.636)	.056 (.2)	-.05 (.03)
<i>Region level control</i>			
Region Wealth	.511 (.29)		
<i>Individual level controls</i>			
Income Quintiles	.0664 (.044)	.111*** (.02)	.135*** (.007)
Male	.621*** (.11)	.418*** (.06)	.0918*** (.01)
Age	.001 (.02)	-.008 (.01)	-.0001 (.002)
Age ² /100	-.003 (.02)	.003 (.01)	-.00007 (.003)
College Degree	.415*** (.125)	.324*** (.08)	.107*** (.01)
Married	-.239* (.12)	-.161* (.07)	.0419** (.02)
Urban	-.017 (.12)	.09 (.07)	
Log Likelihood	-26,449.2	54,065.1	-70,2918.4
No. of regions	312		
No. of countries	21	44	79
No. of country-years		89	148
Observations	22,219	122,304	220,510

Notes:

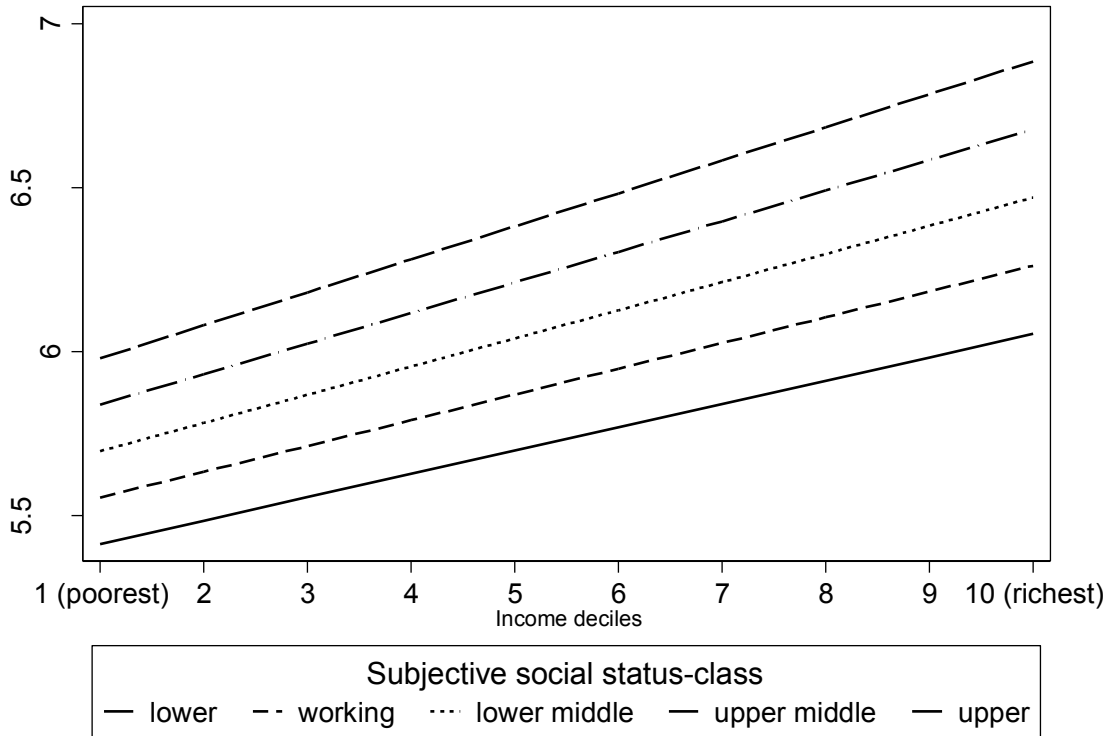
[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variable for columns is a dummy variable that is coded one if a respondent has high tolerance for income inequality and zero otherwise. Results in column 1 are generated from three-level logistic regression and results columns 2 and 3 are generated from two-level logistic regression.

[3] All models include dummies for different continent regions and OECD countries, and controls for aggregate levels of tolerance for income inequality at the country and regional levels.

Consistent with existing studies, other individual socio-demographic characteristics— income, gender, and degree—also affect an individual’s propensity to have a high tolerance for income inequality (Hadler 2005, 145-9; McCall 2005). A person who has high household income, is a male, or has a degree, has a greater propensity to have high tolerance for income inequality than an individual who has low household income, is a female, or has no degree respectively. A person’s predicted level of tolerance for income inequality increases across income deciles and the predicted probability increases as one’s subjective social status-class increases from lower to upper subjective social status-class in a WVS pooled sample (Figure 2.6). The effect of subjective social status (class) on the predicted levels of tolerance for income inequality is the strongest—based on the steepness of the slope—for individuals who self-place themselves as belonging to the upper class and the weakest for individuals who self-place themselves as belonging to the lower class. Furthermore, the slopes for individuals who self-perceive themselves to be of the lower class and upper class are the gentlest and steepest respectively. In other words, the impact of subjective social status-class on individuals across income deciles is weaker for individuals who self-perceive themselves to be of the lower class than for individuals who self-perceive themselves to be of the higher class. Consequently, the magnitude of the difference in the predicted levels of tolerance for income inequality between an individual who self-perceives to be of lower class and another individual who self-perceives to be of the higher class is the smallest at the first decile and the greatest in the tenth income decile.

Figure 2.6. Predicted levels of level of tolerance for income inequality



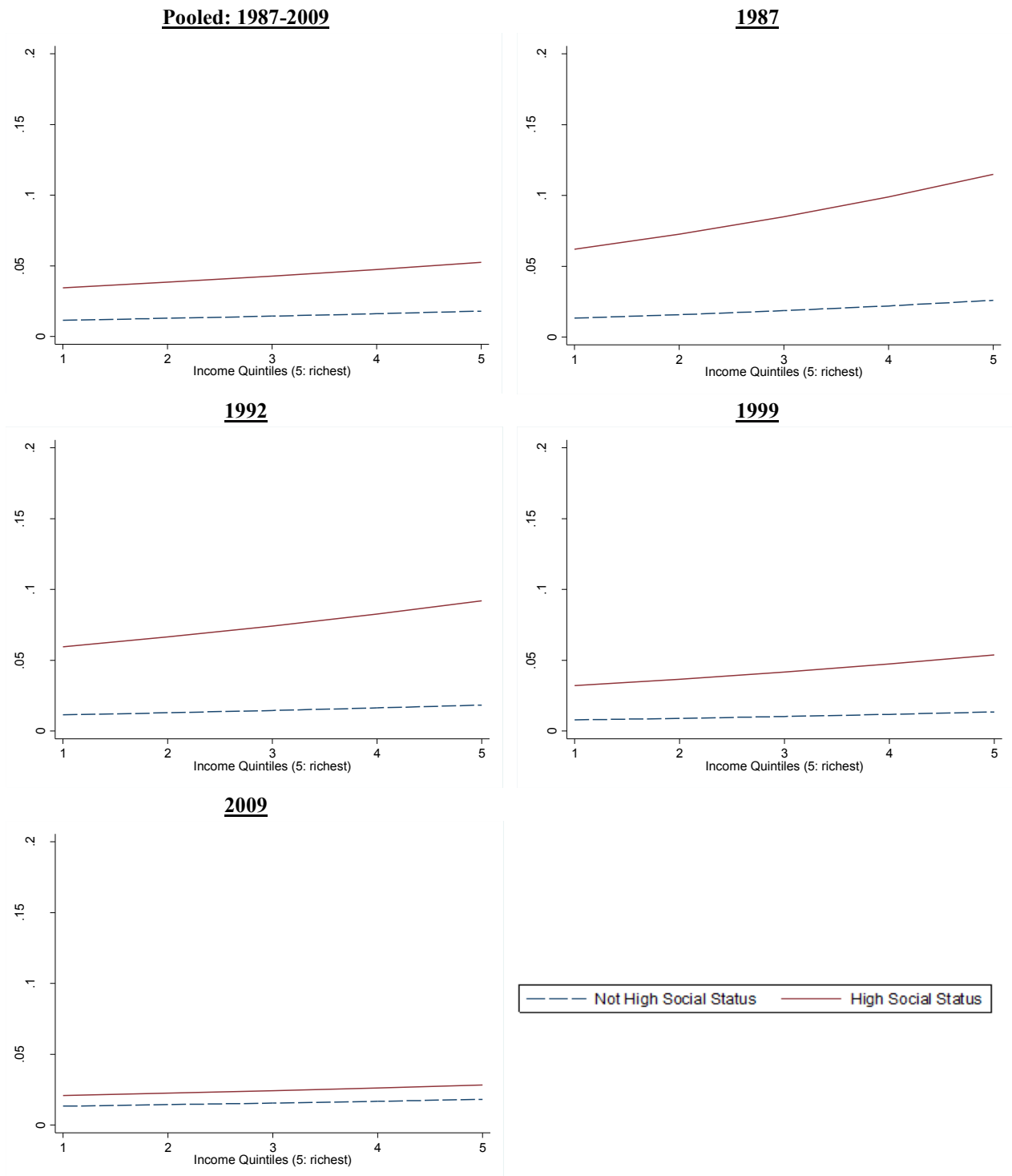
Notes: The predicted levels of tolerance for income inequality are generated from a continuous regression pooled WVS data.

An person’s income, however, has a very weak effect on individual tolerance of income inequality. For easier interpretation, Figure 2.7 shows the predicted probabilities of having a high tolerance for income inequality for individuals with high subjective social status (solid line) and those without high subjective social status (dashed line) across income quintiles. The predicted probabilities are generated from the two-level logistic regressions for the pooled ISSP sample and separate ISSP wave samples. For an individual with *high* subjective social status, there is a very *small* range for the *changes* of the predicted probability of having high tolerance for income inequality across income quintiles in the five samples in Figure 2.7; and the maximum is only about five percent predicted probability in the 1987 ISSP sample. In other words, for individuals

with high subjective social status, there is *little* difference—albeit statistically significant—in the predicted probability of him having a high level of tolerance for income inequality based on his level of income; regardless of him being poor or rich.

This observation is illuminating because it questions the emphasis that most studies place on the importance of individual income as an explanatory factor for individual tolerance of income inequality. Individual income is a statistically significant factor but it has a weak effect on individual tolerance of income inequality. The top left panel of Figure 2.7 shows that in a pooled sample of four-wave ISSP data (1987-2009), a low income individual with high subjective social status-rank has a predicted probability of 3.5 percent of having a high tolerance for income inequality vis-à-vis a the predicted probability of 1.2 percent for another low income individual who does *not* have high subjective social status-rank. The predicted probability for a low-income individual with high subjective social status of having a high tolerance for income inequality ranges from 2.1 percent (2009) to 6.2 percent (1987). The variation of the predicted probability is largely due to the increasing sample size in terms of the number countries and

Figure 2.7. Predicted probability of high tolerance for income inequality (ISSP samples)



Notes: Each yearly ISSP sample contains different number of countries. There is a total of 76 country-years in the pooled ISSP sample (1987, 1992, 1999, and 2009) and the number of countries in each ISSP year sample are eight (1987), twelve (1992), 22 (1999), and 36 (2009). About 62 percent of the country years in the combined sample are OECD countries and the proportion of OECD countries in each year sample are 87.5, 50, 63.6, and 58.8 percent for 1987, 1992, 1999, and 2009 respectively.

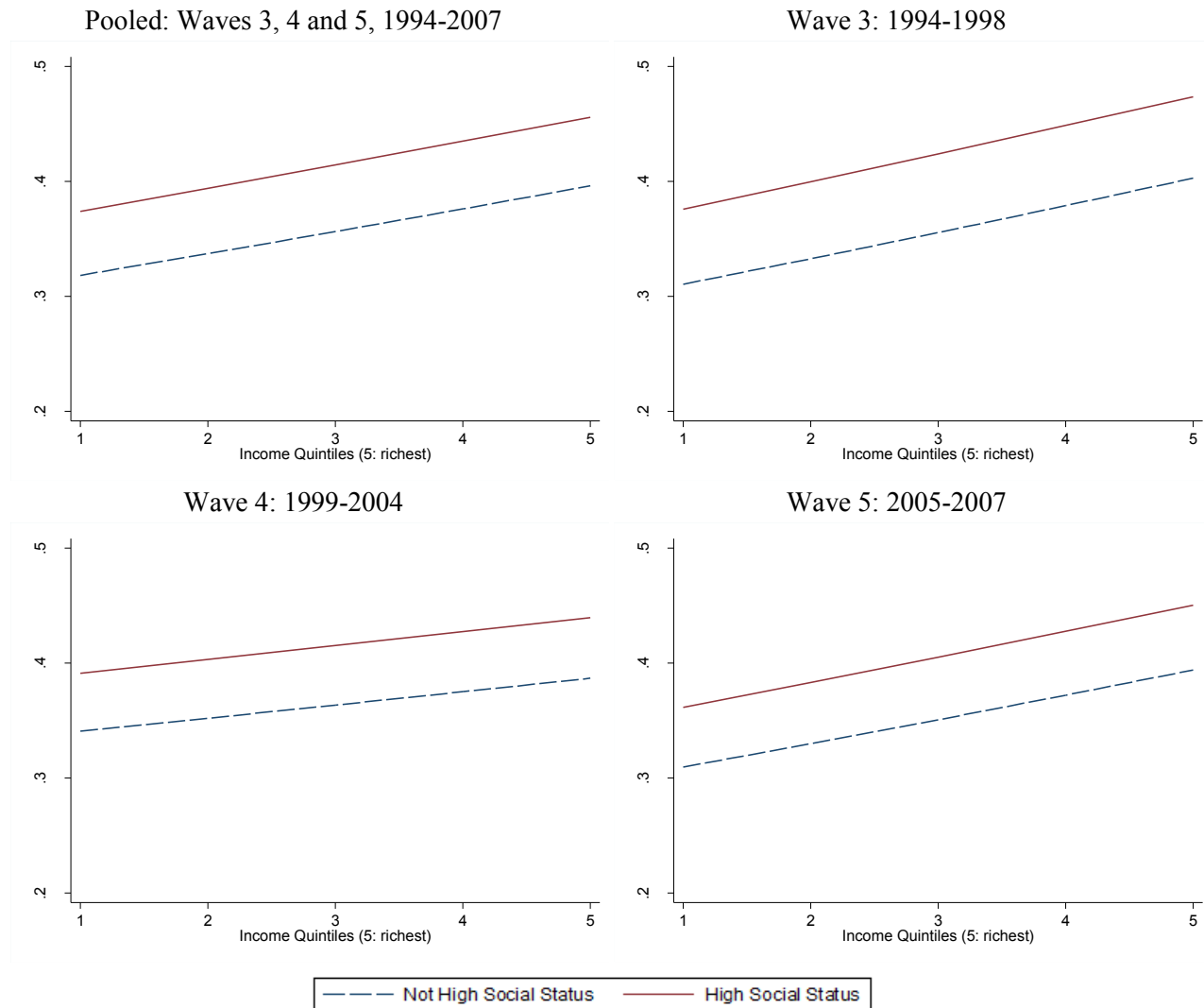
respondents.¹⁹ Nevertheless, the main finding from Table 2.2 and Figure 2.7 is clear: an individual with high subjective social status is more likely to have a high level of individual tolerance of income inequality.

These observations are supported by the estimates obtained from the various WVS samples. Unlike the ISSP samples, an individual's subjective social status is operationalized in terms of his self-placement in terms of class. *Subjective Social Status-Class* is coded one if a person self-places himself as belonging to the upper or upper-middle class, and zero otherwise. Similar to Figure 2.7, Figure 2.8 shows the predicted probabilities of having a high tolerance for income inequality for individuals with high subjective social status-class (solid line) and those without high subjective social status-class (dashed line) across income quintiles in various WVS samples. The predicted probability for a low-income individual with high subjective social status of having a high tolerance for income inequality ranges from 36.2 percent in wave 5 to 39.1 percent in wave 4. The variation of the predicted probability is due largely to the changes in the sample size.²⁰

¹⁹ There are eight, twelve, 22, and 36 countries in the 1987, 1992, 1999, and 2009 samples with the number of respondents that ranges from 15, 982 to 51, 049.

²⁰ There are 45, 32, and 41 countries in Wave 3, 4, and 5 respectively and the number of respondents ranges from 51,971 to 73,501.

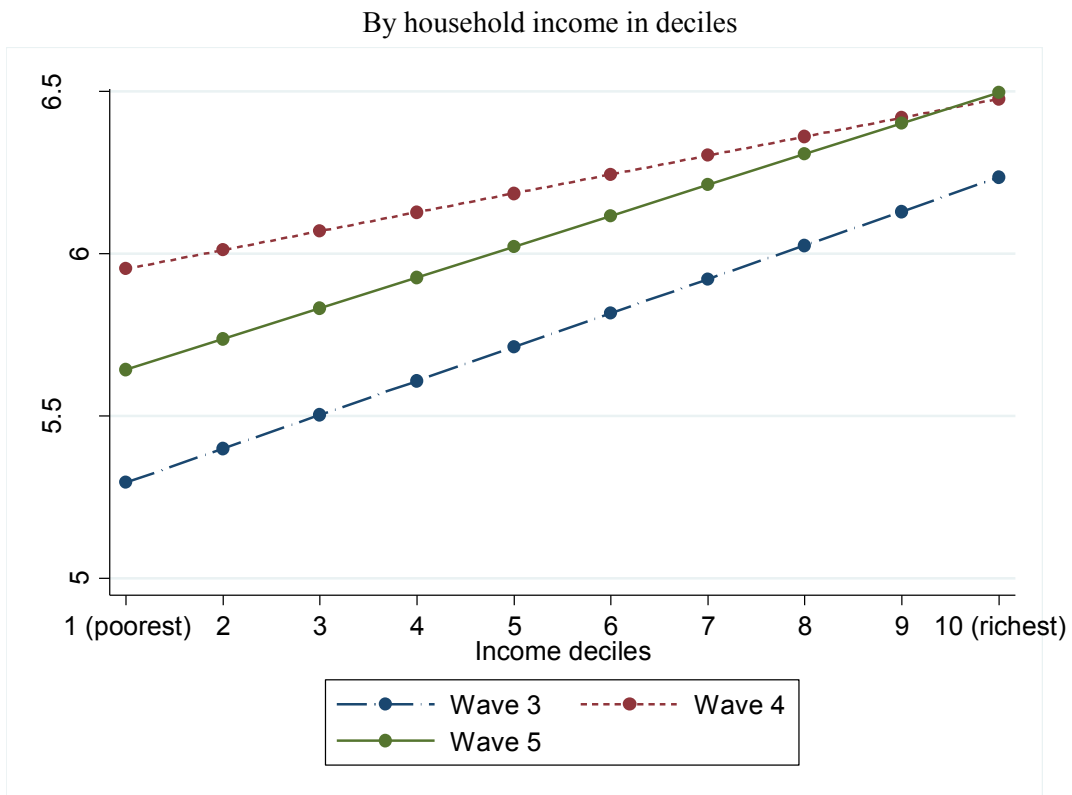
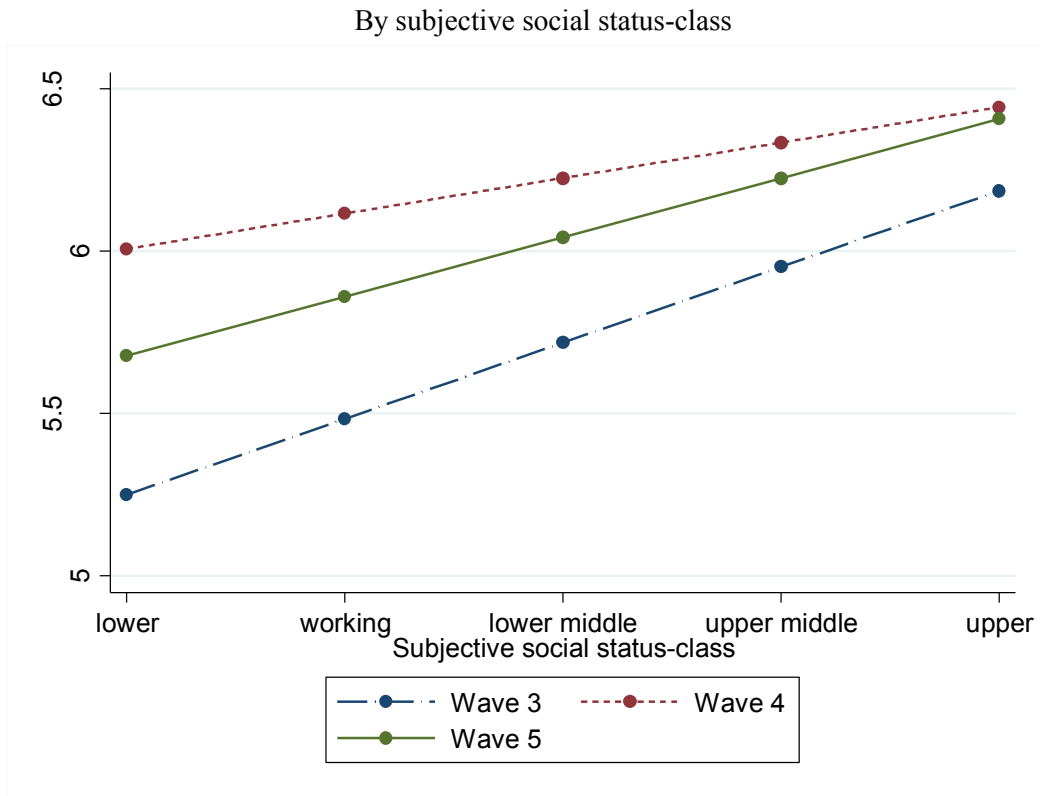
Figure 2.8. Predicted probability of high tolerance for income inequality (WVS samples)



Notes: Each yearly WVS sample contains different number of countries. There is a total of 118 country-years in the pooled WVS sample (1994-2007) and the number of countries in each WVS year sample are 45 (Wave 3), 32 (Wave 4), and 41 (Wave 5).

To further illustrate the effect of subjective social status-class on individual levels of tolerance for income inequality, Figure 2.9 shows the changes in the predicted levels of an individual's level of tolerance for income inequality based on different levels of subjective social status-class—lower, working, lower middle, upper middle, and upper—and income deciles. As the top panel shows, the effect of subjective social status-class on individual tolerance for

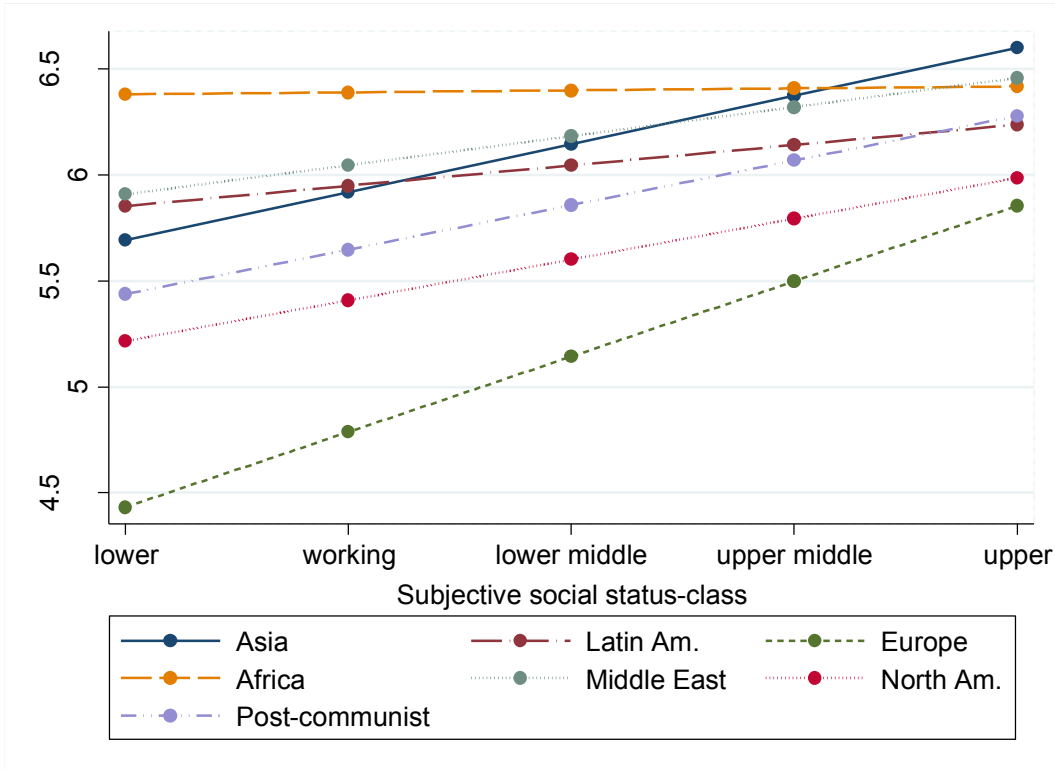
Figure 2.9. Predicted levels of individual tolerance for income inequality: by waves



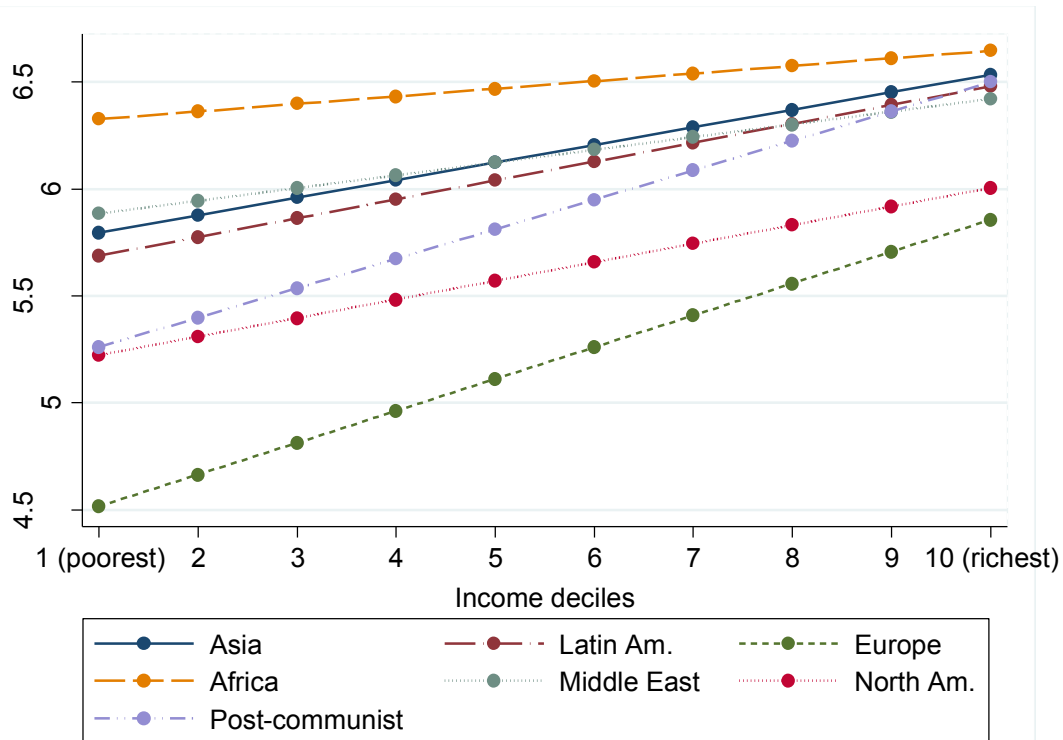
income inequality is the strongest in wave 3 (1994-1998) followed by wave 5 (2005-2007) and wave 4 (1999-2004) samples. The bottom panel shows the effect of individual household income in deciles on individual level of tolerance for income inequality. The pattern is the similar to that of the left panel with the strongest effect of individual household income on tolerance for income inequality being the strongest in wave 3. Similarly, effect of subjective social status-class and individual income on individual tolerance for income inequality becomes closer in terms of magnitude as a person perceives himself to be of higher social class and has higher income.

There is a substantive variation in the impact of subjective social status-class and household income among the different countries in the continents. The impact of both factors is the greatest in European countries and the weakest in the African and Latin American countries. The effect of an individual's subjective social status-class is almost zero for African countries but there is a substantive effect—albeit weak—of individual household income on the predicted level of individual tolerance for income inequality. Individuals who live in African countries on average have the highest level of tolerance for income inequality. For an African who self-perceives himself to be of the lower class or upper class, his predicted level of tolerance for income inequality is 6.38 or 6.41 respectively. The .03 difference highlights the weak impact of subjective social status-class on Africans. In contrast, the impact of subjective social status-class is much greater for Europeans. For a European who self-evaluate himself to be of the lower class or upper class will have predicted level of tolerance for income inequality at 4.43 or 5.85 respectively. The substantive effect of subjective social status-class on Europeans is larger—1.42—than for Africans at .03. Nevertheless, the predicted levels of tolerance for income inequality for Europeans are generally much lower than Africans. The strong effect of subjective social status-class and household income on an individual's propensity to have a high level of

Figure 2.10. Predicted levels of individual tolerance for income inequality: by continent
By subjective social status-class



By household income in deciles



tolerance for income inequality for European and post-communist countries highlight the limitations of the generalizability of mainstream studies that use European samples. Hadler's (2005) 30-country sample only has four non-European countries—Brazil, Chile, Japan, and Philippines. Studies on other aspects of subjective dimensions of income inequality mostly use one-year ISSP samples, hence the generalizability of their findings should be questioned.

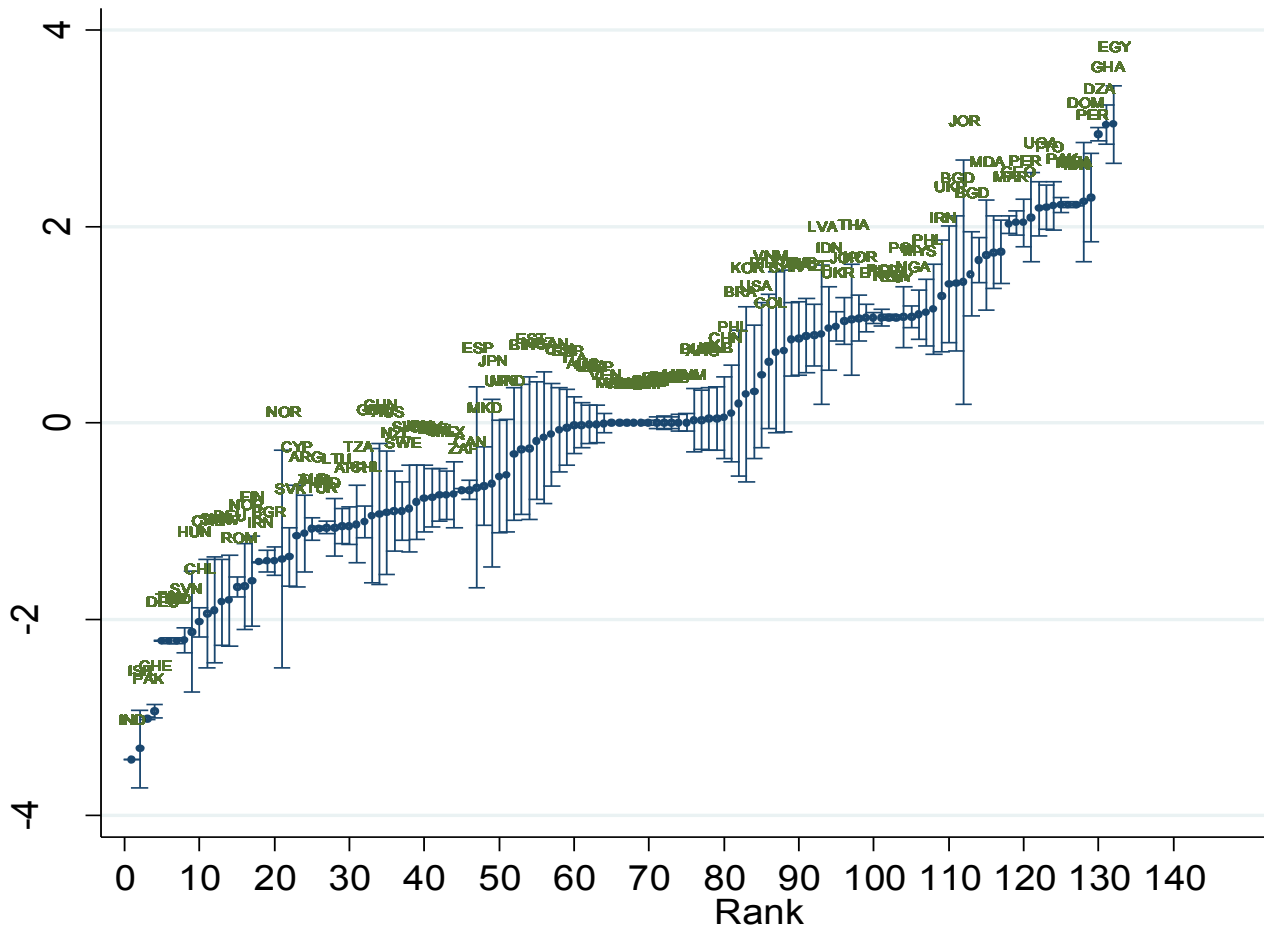
2.5.2 Country level contexts

A country's level of objective inequality does not affect individual tolerance for income inequality. In other words, there is no statistically significant difference in the level of tolerance for income inequality for a person who lives in a country with high objective income inequality (e.g., South Africa) or a country with low objective income inequality (e.g., Norway). Similarly, a country's level of wealth does not affect individual tolerance for income inequality. This finding counters Hirschman and Rothschild's (1973) prediction that more developed societies would have greater levels of tolerance for income inequality. This statistical finding also rules out the postmaterialist explanation that individuals who live in rich countries are likely to de-emphasize the importance of income as a measure of social status.

Figure 2.11 ranks the countries in the pooled WVS sample base on the size of the magnitude of estimates of subjective social status-class on the likelihood of an individual having a very high level of tolerance for income inequality. Each point is the magnitude of the estimate with the respective 95 percent confidence intervals for the separate single-level logistic regressions for each 148 country-years. The magnitude of the impact of subjective social status-class tend to be extremely high for some low and middle-income countries (e.g., Egypt, Ghana

and Peru) and the United Kingdom is the only high-income country that is ranked within the top twenty countries where the impact of individual subjective social status -class is the greatest.

Figure 2.11. Predicted probability: by rank



Notes: Each point is the magnitude of the estimate with the respective 95 percent confidence intervals for the separate one-level logistic regressions for each country-year.

2.6. Robustness

A series of robustness tests validates the findings from section 2.5 and strengthen this chapter's main claim: an individual's subjective social status and other socio-economic characteristics affect his level of tolerance for income inequality and the level of objective income inequality of his country does not affect an individual's level of tolerance for income inequality.²¹

Table 2.3 present the results from the models that measure an individual's level of tolerance for income inequality in terms of an ordinal variable: with one indicating very *low* tolerance for income inequality and five indicating very *high* tolerance for income inequality on a five-point scale. The positive sign of the estimates for subjective social status indicates that an individual with high subjective social status has a higher chance of having a very high tolerance for income inequality vis-à-vis an individual who does *not* have high subjective social status. In model 1, a one unit increase in *High Subjective Social Status-Rank* increases a person's level of tolerance for income inequality by .40.

Other individual level socio-economic characteristics are statistically significant: income, gender, age, and education. An individual who is either rich, a male, young, or has a college degree has a higher predicted level to have high tolerance for income inequality than a individual who is either poor, a female, old, or does not have a college degree. The effect of income is small as a person's income increase to the next one quintile, his level of tolerance for income inequality increase by only .062 on a ten-point scale (model 1). Similarly, the impact of gender on tolerance for income inequality is also small. The impact of age is fairly substantial. An increase in one year of age *decreases* a person's level of tolerance for income inequality by .013.

²¹ Besides the robustness test discussed in section 2.6, I also tested the baseline models with different operationalizations of the control variables and the results are substantively similar to those in Tables 2.2 and 2.3. For example, respondent and household income in deciles, a respondent's religion, and objective income inequality that is measured in post-tax and post-transfers.

Table 2.3. Robustness: two-level continuous regressions

	(1)	(2)	(3)
	ISSP (2009)	ISSP (1987-2009)	WVS (1989-2007)
High Subjective Social Status-Rank	.400*** (.024)	.339*** (.012)	
High Subjective Social Status-Class			.354*** (.04)
<i>Country level controls</i>			
Country Objective Income Inequality	.149 (.126)	.135 (.2)	.009 (.002)
Country Wealth	.037 (.043)	.0490* (.02)	-.037* (.02)
<i>Region level controls</i>			
Region Wealth	-.057 (.029)		
<i>Individual level controls</i>			
Income Quintiles	.062*** (.001)	.0560*** (.003)	.120*** (.01)
Male	.109*** (.013)	.0775*** (.006)	.100*** (.02)
Age	-.013*** (.002)	-.0101*** (.001)	-.004 (.003)
Age ² /100	.010*** (.002)	.00906*** (.001)	.003 (.003)
College Degree	.118*** (.018)	.101*** (.009)	.176*** (.019)
Married	-.0165 (.015)	-.0260*** (.007)	.056* (.02)
Urban	.0243 (.016)	.0241*** (.001)	
Log Likelihood	-24,910.3	-97,442.2	-256,132
No. of regions	312		
No. of countries	21	44	79
No. of country-years		89	148
Observations	28,116	122,304	220,510

Notes:

[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variable is an ordinal variable that is coded one and five for a respondent who has very low or very high level tolerance for income inequality respectively. Results are generated from three or two-level continuous regressions.

[3] All models include dummies for different continent-regions and OECD countries, and controls for aggregate levels of tolerance for income inequality at the country and regional levels.

There is pattern of decreasing levels of tolerance for income inequality as we move up the age groups. I also tested for the possible interaction effect between individual income and the region wealth—a level two contextual factor. The interaction variable is statistically significant and the magnitude of the coefficient is substantively the same

A country's level objective income inequality is not statistically significant in all the samples and individual level socio-economic variables—income, gender, and degree—are of the expected signs and are statistically significant. Country wealth is statistically significant in models 2 and 3. Model 2 uses a sample that comprises mainly European countries hence an individual who lives in a wealthier European country is more likely to have higher levels of tolerance for income inequality. This effect is small and reflects largely the divide between the West European countries and the post-communist countries. Country wealth is also statistically significant in model 3 but with the opposite sign. Model 3 uses a sample of developed and less developed countries hence the substantive effect is that individuals who live in low-income countries are more likely to have high levels of tolerance for income inequality. The substantive effect is small and not robust upon testing with different waves of WVS samples

2.7. Conclusions

Using a better estimation strategy and much larger dataset than extant studies, this chapter shows that an individual's subjective social status affects his level of tolerance for income inequality. This finding is robust across different operationalizations of the concept of individual tolerance for income inequality, operationalization of the control variables, and different model specifications. These results are largely consistent with extant studies (e.g., Hadler 2005; McCall 2005) but I show the robustness of the findings with a better estimation strategy of three-level

HLM and the generalizability with a larger sample that covers more countries over a longer period.

Another main finding is that a country's level of objective income inequality does *not* affect an individual's level of tolerance for income inequality. This finding is counterintuitive because most studies on objective income inequality implicitly assume that the changes in a country's level of objective income inequality would somehow affect the individual level preferences and political action. This chapter, however, show that a country's level of objective income inequality has no statistically significant effect on individual tolerance for income inequality.

The null finding of the effect of a country's level of objective income inequality on individual level tolerance for income inequality has larger theoretical implications for the objective income inequality literature. Numerous studies argue that a country's level of objective income inequality affect individual level outcomes such as individual preferences for redistribution (Meltzer and Richard 1981; Romer 1975). Nevertheless, a person uses his normative values about income inequality—tolerance for income inequality in this chapter—to evaluate income inequality within his country. Accordingly, I argue that extant studies should be more cautious in claiming that a country's level objective income inequality affects substantive outcomes; and they should account for the subjective dimensions of income inequality.

This chapter also finds the null effect of country wealth on individual tolerance for income inequality. This null effect counters the prediction of modernization scholars who predicts the increasing development of a country in terms of economic growth would generate socio-economic transformations that would postmaterialist beliefs important. In other words, citizens who live in such countries would emphasize more on the non-materials aspects of life

hence income is relatively less important to individuals; and by extension be less concern with income inequality. This chapter's null finding therefore challenge the theories of this group of studies.

Having explained the nature of individual level tolerance for income inequality and its determinants with a cross-nation sample in this chapter, the next chapter will conduct an in-depth case comparison of Japan and China.

Chapter 3 Tolerance for Income Inequality: Japan and China

In 2009, the Japan Democratic Party (DPJ) beat the dominant party, Liberal Democratic Party (LDP), by a large vote margin based on an political agenda of reducing socio-economic inequality in Japan; and since 2002, Chinese President Hu Jintao implemented five-year plans that emphasize the reduction of income inequality for the achievement of a “harmonious society” (*hexie shehui*). This chapter aims to further test the external and internal validity of the findings in Chapter 2 by focusing on an in-depth comparison of two countries, Japan and China. Chapter 2 has shown that a country’s level of objective income inequality do *not* systematically affect individual tolerance for income inequality. A competing hypothesis that region level objective income inequality could affect tolerance for income inequality was not ruled because of the lack of comparative data on objective income inequality within countries. This chapter therefore aims to test the Chapter 2 findings by controlling for regional objective income inequality in Japan and China with Japanese and Chinese data.

This chapter contributes to extant studies in the tolerance for income inequality literature and area studies. First, this chapter contributes to the tolerance for income inequality literature by showing that a person’s self-evaluation of his placement in terms of social class affects his level

of tolerance for income inequality. By controlling for objective income inequality and wealth of five Japanese regions, this chapter supports the findings in chapter 2 by showing that higher a person's level of subjective social status-class is, the greater a person's level of tolerance for income inequality.²² In addition, a rich person or a male also has a greater propensity to have a higher level of tolerance for income inequality vis-à-vis a poor individual or a female. These results largely support the findings in Chapter 2.

Second, this chapter contributes to the fields of Japanese studies and Chinese studies. This chapter's finding of the importance of the role subjective social status, income, and gender in affecting individual tolerance for income inequality largely supports extant studies on Japan in terms of human well-being, i.e., perceptions—not normative values—of income inequality, happiness, self-rated health, and life satisfaction. Nevertheless, this chapter's null findings on a person's age, level of education, marital status, and employment status counter these extant studies' emphasis on the importance of these individual level socio-economic characteristics. This chapter also contributes to Chinese studies by supporting extant studies' emphasis on the importance of the urban-rural divide in China. A Chinese citizen living in an urban area has a greater propensity to have a high level of tolerance for income inequality vis-à-vis another Chinese citizen who lives in the rural area. This difference is largely due to the Chinese government's household registration system (*hukou* system) that provides relatively more privileges for urban residents.

This chapter also contributes to both Japanese and Chinese studies fields by highlighting the importance of societal norms on income inequality. In Japan, the pervasive societal belief that people are ranked in society based on social status is shown in the importance of subjective

²² Of the extant studies on tolerance for income inequality, Hadler (2005) does not control for within nation contextual but McCall (2005) only control for region wealth and objective income inequality.

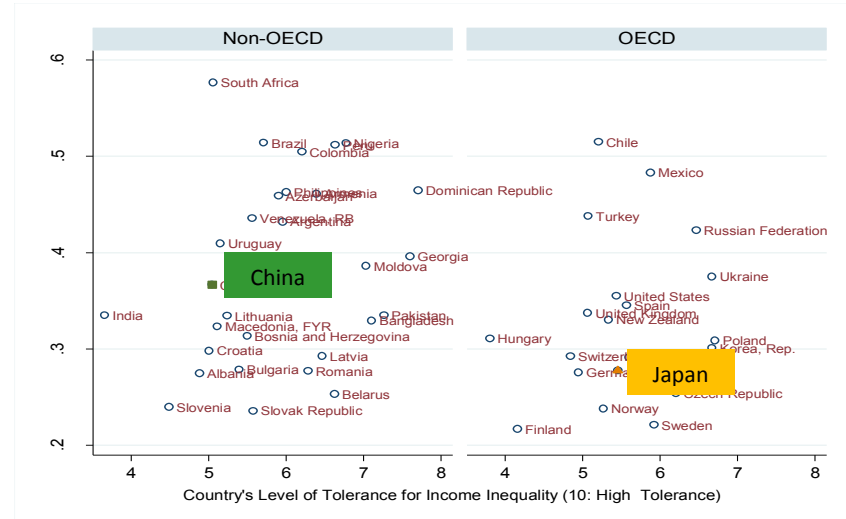
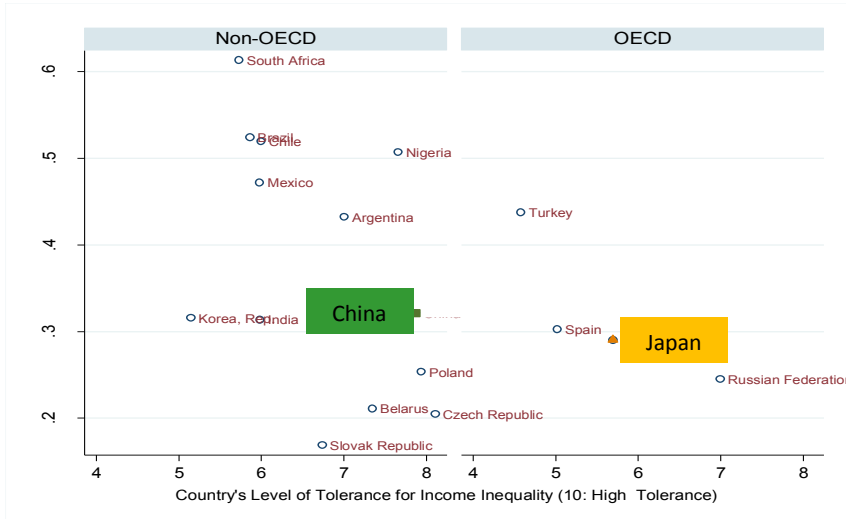
social status and income on an individual's level of tolerance for income inequality. In China, there is no pervasive societal norm in the whole of China but varying levels of societal norms in different Chinese regions.

This chapter proceeds as follows. The next section highlights the patterns of objective income inequality and aggregate levels of tolerance for income inequality from a within nation perspectives in Japan and China. Section 3.1 provides a literature review of the studies on tolerance for income inequality in Japan and China in English and non-English sources. Section 3.2 explains the empirical setup and section 3.3 highlights the main results by comparing them with the findings of extant studies. Section 3.4 includes checks on the robustness of the results and section 3.5 concludes.

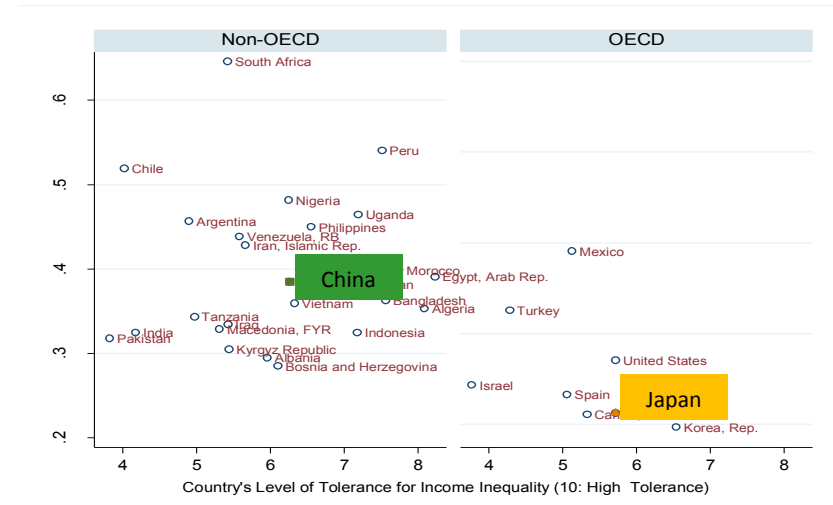
3.1. Patterns of subjective and objective income inequality in Japan and China

Figure 3.1 shows the evolution a country's level of objective income inequality and the aggregate levels of tolerance for income inequality from 1989 to 2007. Each wave sample is split into samples of non-OECD and OECD countries. China's level of objective income inequality is moderately high level—between .3 and .4—but has gradually increased over the last two decades. Its level of aggregate level of tolerance for income inequality is also moderate—between 5 and 6—relative to other non-OECD countries. There is a gradual decline in the aggregate level of tolerance for income inequality as objective income inequality increased. With the first wave as the baseline, where China had an objective income inequality of .32 and 7.8 of aggregate level of tolerance for income inequality, the level of tolerance for income inequality decreased to 5.0 but gradually increased to 5.8 in wave 4 and 6.3 in wave 5. Japan, an OECD member, has much.

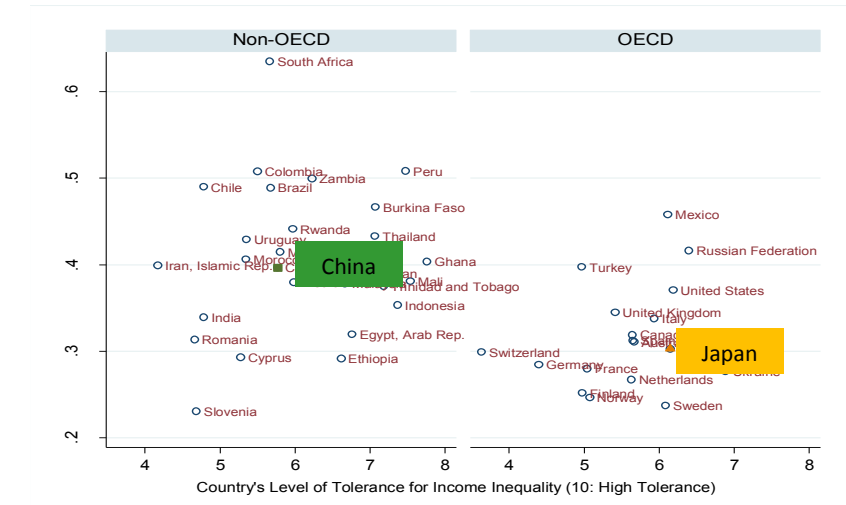
Figure 3.1. Japan and China in the international context: objective income inequality and aggregate level of tolerance for income inequality
 Wave 2 (1989-1993) Wave 3 (1994-1999)



Wave 4 (1999-2004)



Wave 5 (2005-2007)



Note: Data are from waves two to five of the World Values Survey (WVS). Russia is not an OECD member but is included in the OECD panel for the purpose of comparison with other developed countries. OECD status is based on the year when a country officially joined OECD.

lower objective income inequality than China yet has similar levels of tolerance for income inequality as China in the four waves. Interestingly, despite entering into the two “lost decades” with poor economic growth and increasing objective income inequality, Japan’s level of aggregate tolerance for income inequality increased. In other words, Japanese citizens on average were increasingly perceiving that Japan’s income inequality as not too large despite living a period with rising objective income inequality

One common methodological problem among extant studies is that they do not disentangle the confounding of individuals ideological beliefs, political ideology, political affiliation, and religion (Bartels 2008; McCall 2005). Americans who are pro-Democrats tend to be more inequality-averse than pro-Republicans. Furthermore, these studies use omnibus survey responses to test their hypothesis hence runs the risk of confounding and omitted variable bias. Japan and China are methodologically suitable cases because these two countries are chosen because they are large countries—in terms of population and size of economy—and the issues on income inequality are not entangled with race, ethnicity, and immigration. This case selection removes the confounding effect of race, ethnicity, and immigration at the societal and individual levels. Both Japan and China are ethnically homogeneous and with very low immigration rates.

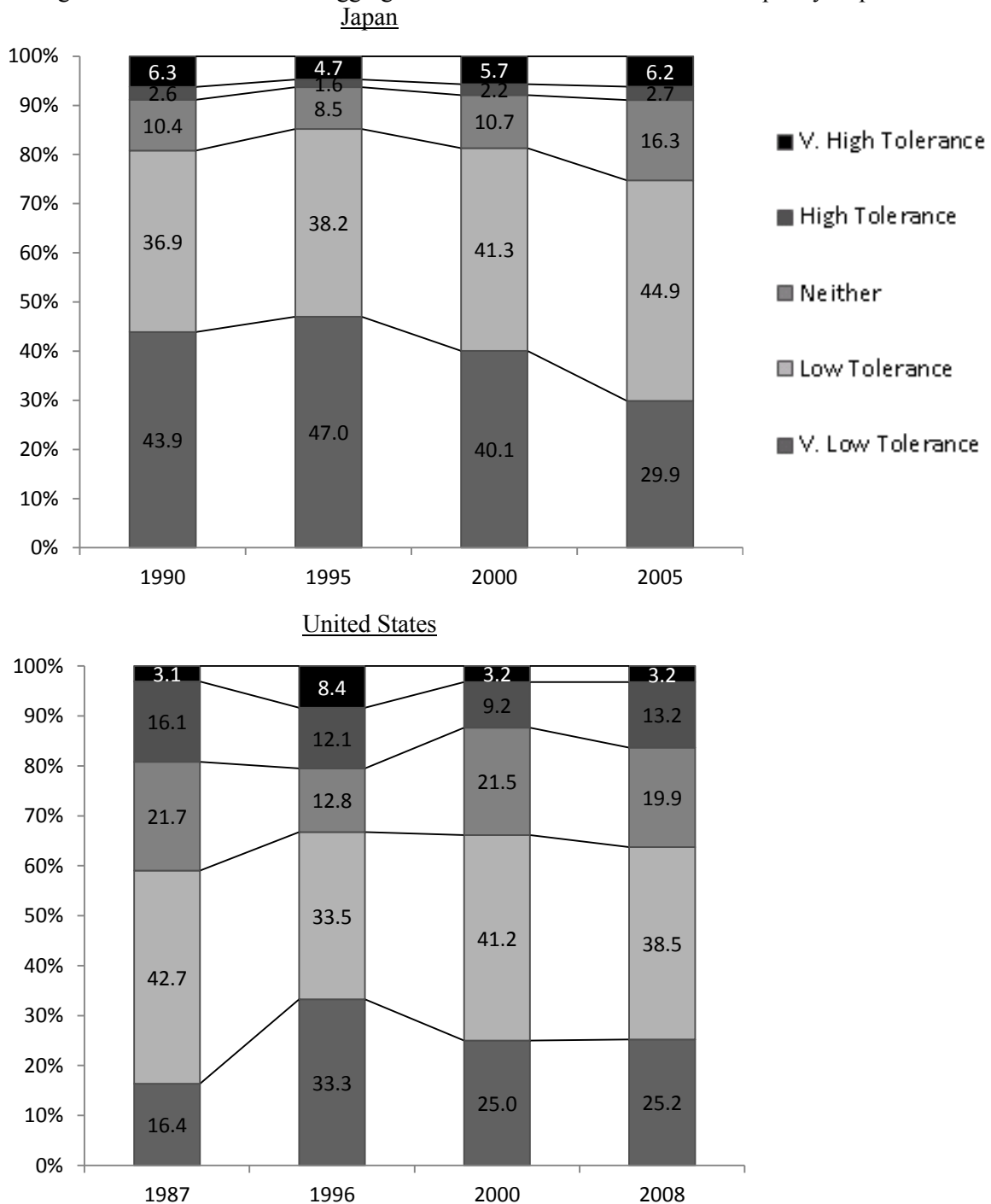
Inequality in Japan: the subjective and objective aspects

Very few studies deal with the normative and subjective dimensions of income inequality. Nevertheless, Japanese scholars largely agree that objective income inequality in Japan has increased from the 1980s (Tachibanaki 2005). The structural forces driving the rise of income inequality is aging population, household size reduction, lower economic growth, and structural changes in the labor market (Ōtake 2005). Japan has the largest proportion of people who are

older than 65 years old and sub-replacement fertility (Eggleston and Tuljapurkar 2010). These two demographic dynamics increase the income inequality among the elderly because of the skewed coverage of pensions of the aged population and the low fertility rate implied decreasing size of the average Japanese households. Japan is mired in an economic downturn since the burst of the asset bubble in 1989 and this has increased Japan's objective income inequality. The prolonged economic downturn created structural unemployment that disproportionately affected the demographic group of the late twenties and early thirties (Brinton 2011).

The impact of these structural factors on individual level normative evaluation of income inequality is relatively much underexplored than Japan's objective income inequality. The popular belief that Japan is a middle-class society from 1960s and was encapsulated by the belief of Japan as a society of high equality where every Japanese citizen was of the main stream and popularized in the media as "mainstream of one hundred million" (*Ichioku sōchūryū*). A comparison of the patterns of the levels of tolerance for income inequality in Japan (1990, 1995, 2000, and 2005) and the United States (1987, 1996, 2000, and 2008) highlight that an average Japanese, is more likely to feel that his country's level of income inequality is not high vis-à-vis the average an American citizen. The proportion of Japanese respondents who either have very low or low tolerance for income inequality averaged 80.5 percent and 16.6 percent higher than the 63.9 percent of Americans respondents who felt the same way about the level of income inequality in the United States. Interestingly, the proportion of individuals who feel the Japan's income inequality is too large decreased to an all-time low of 74.8 percent in 2005, the year where Prime Minister Koizumi Junichirō initiated a series of structural reforms that created mass lay-offs.

Figure 3.2. The evolution of aggregate level of tolerance for income inequality: Japan and U.S.



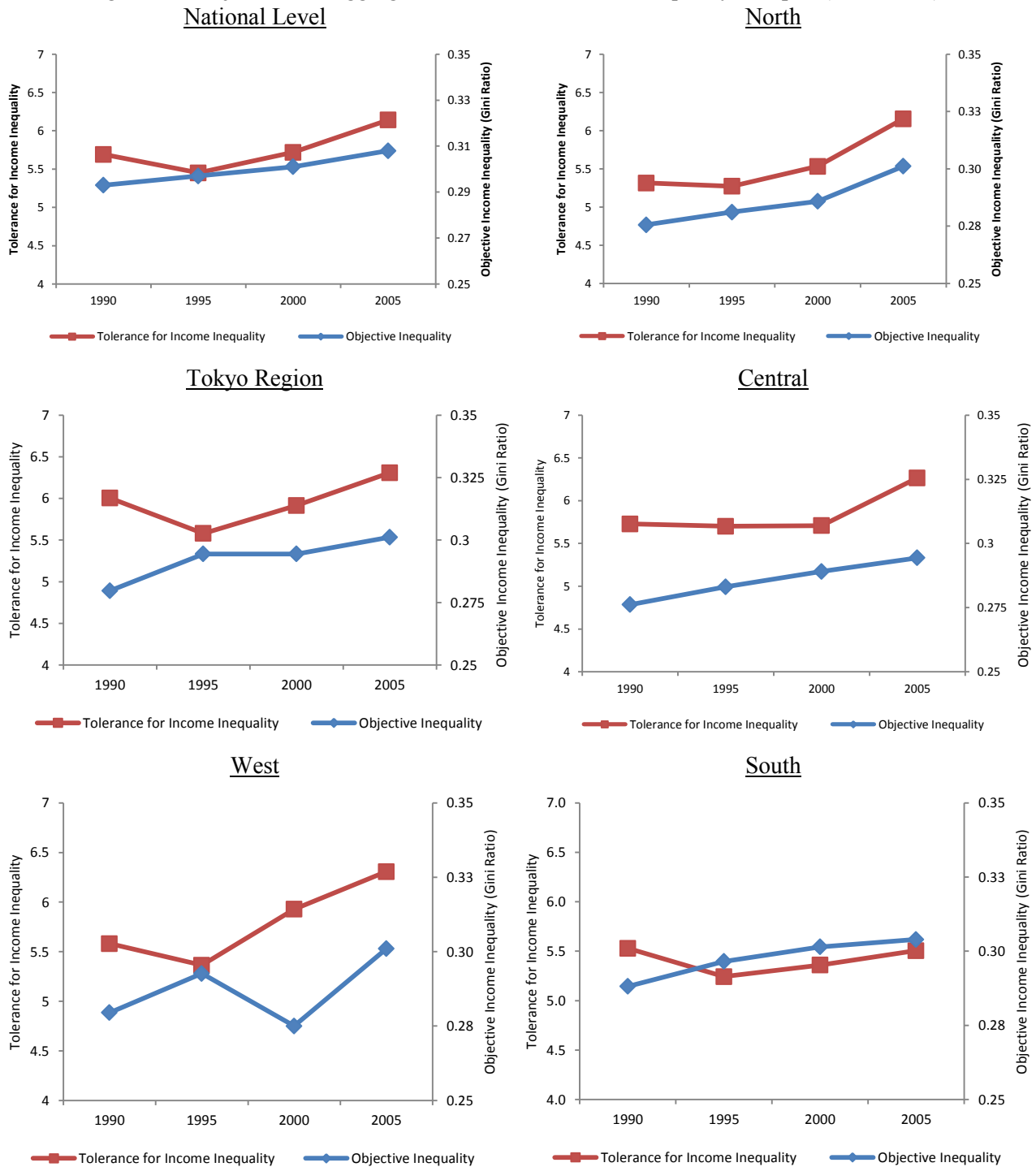
Notes: Survey data are from waves two to five of WVS. A statement that teases out an individual's level of tolerance for income inequality based on his choice along a ten-point scale that ranges from one "incomes should be made more equal" to ten "we need larger income differences as incentives." Individuals who choose the options that are nearer to "we need larger income differences as incentives" are more likely to have high tolerance for income inequality than who choose categories that are close to "incomes should be made more equal." I recoded the ten point scale in a five-point scale ranging from very low tolerance for income inequality to very high tolerance for income inequality.

Regional inequality exists in Japan with high concentration in the Tokyo region: the political, financial, and industrial hub of Japan. Moreover, there are elite-driven projects that try to create a discourse on income inequality (Chiavacci 2008). Figure 3.3 displays the evolving trends of the subjective aspects of income inequality and the more familiar objective income inequality (measured in Gini ratio) in four survey-years for Japan as a whole and five other Japanese regions: north, Tokyo, central, west, and south.²³ The Tokyo and west regions are the most industrialized and urbanized regions and the Northern region depends largely on agriculture and fishing.

The top left panel shows a general pattern of increasing level of the aggregate level of income inequality in Japan and its objective income inequality. The top left panel shows the pattern of Japan's objective income inequality gradually increased from .293 in 1990 to .308 in 2005, a level which is moderate level of income inequality by international standards (trend line with a square shaped marker). Interestingly, the aggregate level of tolerance for income inequality also increased, i.e., despite the widening gap between the rich and the poor (measured in Gini ratio), the average Japanese are more likely—not *less* likely—to feel that Japan's income inequality is *not* too large. This pattern of the divergence of a region's objective income inequality and the respondents' normative values about income inequality is generally repeated in other regions. Studies have shown the different cultural characteristics of regions in Japan (NHK Hoso Bunka Kenkyujo 1997). Accordingly, these patterns therefore suggest the presence of regional level norms about income inequality.

²³ The regions are the north region (Hokkaido and Tohoku), Tokyo region (Kanto), central region (Chubu and Hokuriku), west region (Kinki), and south region (Chugoku, Shikoku, and Kyushu). The surveys were conducted in September 1990, November 1995, and July/August 2005. The month of the conduct of the 2000 WVS survey is not known.

Figure 3.3. Objective and aggregate tolerance for income inequality in Japan (1990-2005)



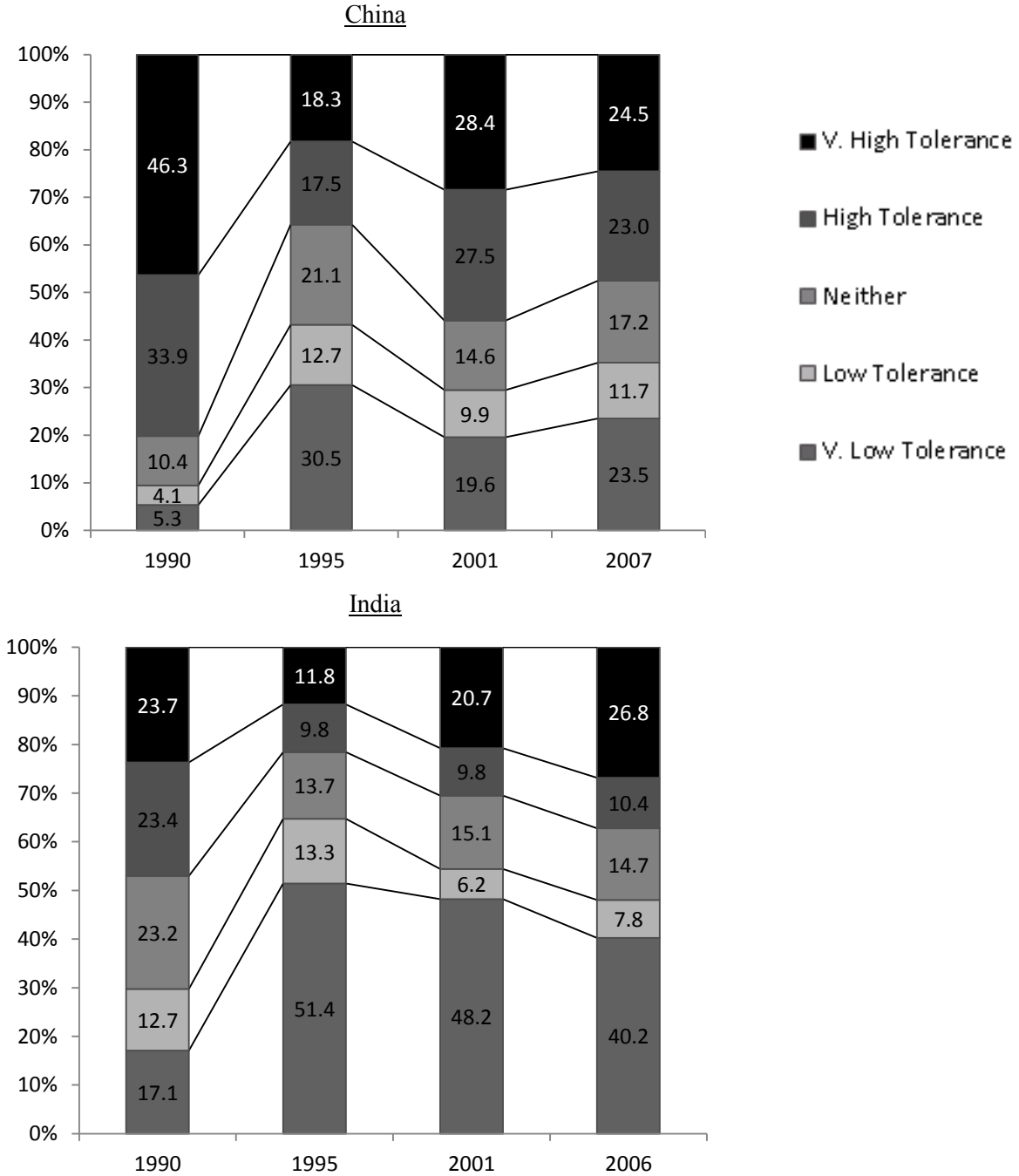
Notes: The left and right axes are for aggregate level of tolerance for income inequality (box marker) and level of objective income inequality (diamond marker). The aggregate level of tolerance for income inequality is obtained from the mean of the level of tolerance for income inequality of respondents in the region based on a ten-point scale with ten indicating very high levels of tolerance for income inequality respectively. The regions are north region (Hokkaido and Tohoku), Tokyo region (Kanto), central region (Chubu and Hokuriku), west region (Kinki), and south region (Chugoku, Shikoku, and Kyushu).

The study of inequality in Japan remains largely the domain of Japanese sociologists. The dominant paradigm is the social stratification paradigm that emphasizes the importance of class consciousness. Class consciousness is prevalent among Japanese and arose as early as the 1950s and continued even after the burst of the asset bubble in 1989. Ohtake (2008) is the best systematic study and based on a single nationally representative sample in 2002 on the subjective aspects of income inequality in Japan. Their dependent variable is about individual perception of the change in the level of income inequality and differs from this chapter's dependent variable of normative values about income inequality.

Inequality in China: the subjective and objective aspects

Perceived rising income inequality is the perennial concern of the Chinese government because of the mass political upheaval that it could generate and thereby threaten elite regime survival. Interestingly, a substantive proportion of Chinese citizens have high tolerance for income inequality, i.e., they do *not* feel that income inequality in China is too large. In 1990, less than a year after the government suppression of protestors in Beijing in 1989, nearly half of the Chinese respondents feel that China's level of income inequality is not too high. The proportion of respondents who feel that China's level of income inequality is not too high ranged from 18.3 to 28.4 percent over the next eighteen years. This proportion is much higher than that of the more developed countries such as Japan and the United States (see Figure 3.2). A comparison with India, another emerging large economy, has a similar substantial proportion of respondents who feel that India's level of income inequality is not too high. The main difference between China

Figure 3.4. The evolution of aggregate level of tolerance for income inequality: China and India



Notes: Survey data are from waves two to five of WVS. A statement that teases out an individual's level of tolerance for income inequality based on his choice along a ten-point scale that ranges from one "incomes should be made more equal" to ten "we need larger income differences as incentives." Individuals who choose the options that are nearer to "we need larger income differences as incentives" are more likely to have high tolerance for income inequality than who choose categories that are close to "incomes should be made more equal." I recoded the ten point scale in a five-point scale ranging from very low tolerance for income inequality to very high tolerance for income inequality.

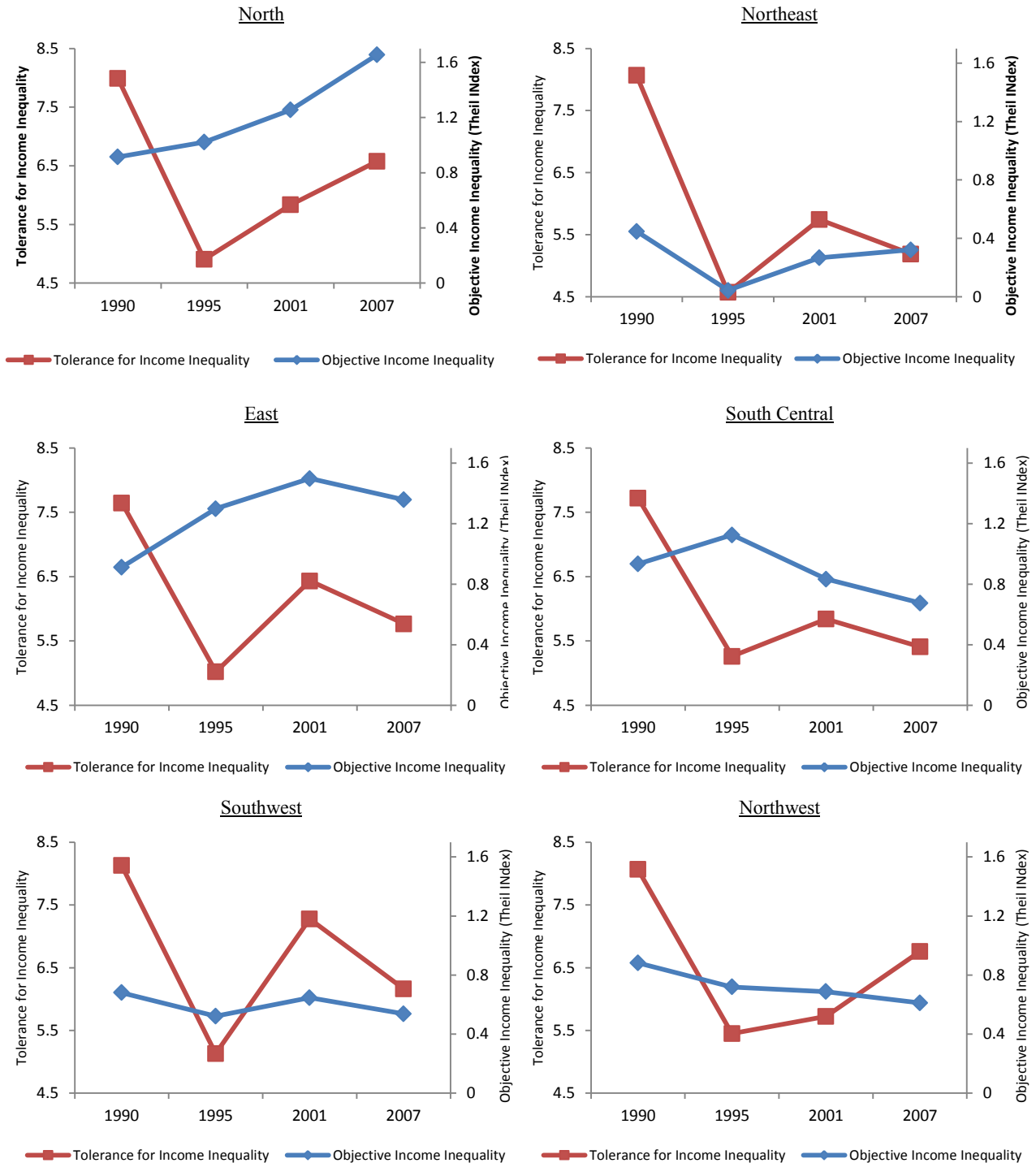
and India is the very large proportion of Indians who feel that India's level of income inequality is too *large*. This proportion ranges from 17.1 percent in 1990 to 51.4 percent in 1995.

The notions of equality, equity and justice in China have their roots in the Confucian tradition (Turner 2012, 26-27). In the era of imperial Chinese dynasties, for instance, the system of meritocracy was implemented to ensure fairness in the recruitment of senior bureaucrats. The rapid socio-economic transformation that accompanied rapid economic growth has increased the saliency of issues of equality (*pingdeng*) and equity (*gongping*). Moreover, Chinese citizens generally support the ideology of meritocracy (Whyte and Guo 2009).

Scholars on perceptions of inequality—not normative values about income inequality—in China usually study it from a sociological perspective (Treiman 2012; Xie et al. 2009; Whyte 2010; Wu 2009). These studies generally find the importance of age, gender, and income. There is, however, mixed empirical evidence for the presence of a class consciousness in China. There is a differentiation between class based on income (*jieceng*) and class based on politics (*jieji*) in contemporary China (Li 2010; Zhu 2007, 2-5). Class based on politics, *jieji*, is a legacy from the pre-reform China where egalitarianism (*pingjunzhuyi*) and political loyalty to the Communist Party of China (CPC) was the norm. Individuals were stratified based on political connections with the CPC hence a CPC member is perceived as occupying a higher social position than non-CPC members.

Huge regional disparities in China with the coastal regions developing much more rapidly than the inner regions (Skinner 2005). The east and south central regions are the key drivers of China's national economic growth while the southwest and northwest regions are the least developed Chinese regions. The most striking pattern is the steady changes of objective income inequality vis-à-vis the rapid fluctuations of aggregate level of tolerance for income inequality in

Figure 3.5. Objective and aggregate tolerance for income inequality in China (1990-2007)



Notes: The left and right axes are for aggregate level of tolerance for income inequality (box marker) and level of objective income inequality (diamond marker). The aggregate level of tolerance for income inequality is obtained from the mean of the level of tolerance for income inequality of respondents in the region based on a ten-point scale with ten indicating very high levels of tolerance for income inequality respectively. The regions are north region (Beijing, Tianjin, and Hebei), northeast region (Liaoning, Jilin, and Heilongjiang), east region (Shanghai, Jiangsu, Zhejiang, Fujian, and Shandong), south central region (Guangdong Guangxi, Hainan, Henan, Hubei, and Hunan), southwest region (Sichuan, Guizhou, Yunnan, Tibet), and northwest (Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang).

the Chinese regions (Figure 3.5). The Chinese regions that are most troubled by separatist movements, Xinjiang and Tibet are located in the poorly developed northwest and southwest regions respectively. Interestingly, the levels of objective income inequality have declined in both regions yet the levels of tolerance for income inequality have increased. In other words, the levels of tolerance for income inequality for both regions have increase and Chinese citizens who live in these regions are increasingly more likely to feel that China's income inequality is not too large. In contrast, despite the decreasing levels of objective income inequality in the rich east and south central regions, the levels of tolerance for income inequality have *decreased*. Chinese citizens who live in these two regions have become increasingly more likely to feel the opposite, i.e., the level of China's income inequality is too high.

3.2. Empirical setup

This chapter uses the World Values Survey (WVS) data because the data cover a period of sixteen years from 1990 to 2005 and the organization collects survey responses from representative Japan sample in four cross-sectional years: 1990, 1995, 2000, and 2005.²⁴ The average of four-year gaps between each cross-section survey allows slow-moving trends to manifest. The year 1990 was the year after the 1989 asset bubble burst and the Japanese economy was rapidly growing in the two decades before. The WVS data on China covers a longer period of eighteen years from 1990 to 2007. The year 1990 was the aftermath of the Tiananmen Square Incident where mass protests that arose from a mixture of grievances over rising income inequality and dissatisfaction with the Chinese regime. The other three samples are

²⁴ Two high quality social surveys on China were conducted by professors Donald Whyte and Donald Treiman in 2004 and 2008 but they were unable to release the data to the author.

from the years of 1995, 2001, and 2007. These three periods marked the leadership transitions from three Chinese leaders, Yang Shangkun, Jiang Zemin, and Wen Jiabao, respectively.

3.2.1 *Dependent variable*

The dependent variable is an individual's level of tolerance for income inequality: *Tolerance for Income Inequality*. The WVS statement that teases out an individual's level of tolerance for income inequality based on his choice along a ten-point scale that ranges from one "incomes should be made more equal" to ten "we need larger income differences as incentives." *Tolerance for income inequality* is an ordinal variable that is coded from one (very tolerance for income inequality) for individuals who choose "incomes should be made more equal" to ten (very high tolerance for income inequality) where a respondent chooses ten "we need larger income differences as incentives."

3.2.2 *Explanatory variables*

The explanatory variable is an individual's subjective social class and it is operationalized in terms of class (WVS). *Subjective Social Status-Class*, in the WVS dataset is an ordinal variable that is coded on a five-point scale for respondents who choose to self-place themselves as lower class (1), working class (2), lower middle class (3), upper middle class (4), and upper class (5).

Chapter 2 found two important predictors that affect individual tolerance for income inequality: gender and income. Gender, *Male*, is a dummy variable that is coded as one for male and zero otherwise. Gender discrimination is a deeply entrenched problem in Japan and China (Gregory 2003). Accordingly, a male is more likely to have higher level of tolerance for income inequality than a female because the probability of him witnessing and experience discrimination

is lower than a female who has the same socio-economic characteristics. Household income, *Income Quintiles*, is operationalized in quintiles from the lowest/poorest (first quintile) to the highest/richest (fifth quintile) level of household income. Operationalizing household income in quintiles allows comparability across countries because an individual's position in the income distribution is teased out in terms of his position in the income hierarchy within his country.

3.2.3 Contextual variables

This chapter introduces the important variable of objective income inequality at the regional level which was not tested in Chapter 2. Contexts affect individual preference for redistribution via three channels: region and local levels. This chapter analyzes Japan's 47 prefectures into five regions because this is the lowest geographic resolution of the location of respondents. The five regions are the northern region (Hokkaido and Tohoku), Tokyo region (Kanto), central region (Chubu and Hokuriku), west region (Kinki), and south region (Chugoku, Shikoku, and Kyushu). This chapter analyzes China's 33 provinces and autonomous regions into six regions because this is the lowest geographic resolution of the location of respondents. The regions are north region (Beijing, Tianjin, and Hebei), northeast region (Liaoning, Jilin, and Heilongjiang), east region (Shanghai, Jiangsu, Zhejiang, Fujian, and Shandong), south central region (Guangdong, Guangxi, Hainan, Henan, Hubei, and Hunan), southwest region (Sichuan, Guizhou, Yunnan, Tibet), and northwest (Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang).

There are two control levels at the region level. *Region Objective Income Inequality* is operationalized by the mean of the prefecture-level income inequality, i.e., Gini ratio, at the regional level, with zero as perfect equality and one as perfect inequality. The data are obtained from the relevant years of the National Survey of Family Income and Expenditure (*Zenkoku*

Shōhi Jittai Chōsa). For China, the data on regional level objective income inequality is measured in Theil index and is obtained from the *University of Texas Inequality Project* (Moran 2003). *Region Wealth* is the pre-tax and equalized average individual income of the region and it is obtained from the relevant years of the *Statistical Observations of Prefectures* (Tōkei de Miru Todō Fuken no Sugata) and the *Historical Statistics of Japan* (Nihon no Chōki Tōkei Keiretsu). Region wealth data on Chinese regions are obtained from the National Bureau of Statistics of China.

Urbanization captures the local context. Contexts affect individual perceptions of inequality by making it more salient (Xu and Garand 2010). An individual, for instance, who stays in an area with more instances of poverty and/or richness, is more likely to perceive greater opportunity. Extending from the innumeracy literature on race whereby individuals living in neighborhoods with a greater proportion of racial minority groups are more likely to *overestimate* the proportion of racial minority groups in the nation (Mock and Weisberg 1992; Nadeau et al. 1993). Because income inequality tends to be concentrated in urban areas hence this increases individual chances of witnessing poverty-richness divide. *Urbanization* is coded as an ordinal variable in a five-point scale with rural districts (1), towns (2), small cities (3), medium cities (4), and very large cities (5). In China, an individual's household registration *hukou*, is an important factor in an individual's social mobility in China. Extant studies show that an individual who has a urban *hukou* is more likely to have more opportunities than an individual with a non-urban *hukou* (Chan 2009; Wang 2008).

3.2.4 Control variables

Japan is widely perceived to be a society that emphasizes credentials (*Gakureki Shakai*). An individual's level of education strongly determines one's social mobility (Kikkawa 2006;

Koizumi 2010; Kondo 2000; Okano 2000). Education is one of the predictors of voter turnout in Japan but it highly correlates with the explanatory variable and the important control variable of income. This is because social mobility enables an individual to earn higher income. This chapter posits that a high income individual is most likely to be more educated than an individual with lower income. *Employed* is a dummy variable that is coded as one if an individual is employed fulltime and zero otherwise. The ongoing Japanese economic downturn has created a large number of Japanese youths who are structurally unemployed (Brinton 2011). This would in turn affect individual tolerance for income inequality in Japan because work-place welfare programs form a key pillar of Japan's social welfare safety net.

In addition, there are other cognitive factors that individual beliefs in the role of luck also affect individual tolerance for income inequality. This is operationalized as an four-category ordinal variable, *Importance of Luck*, that ranges from one if a respondent indicates that religion is not all important in his life to four if a respondent indicates the importance of religion in his life. Another important cognitive factor is a person's perception of macrojustice, i.e., his feeling of the level of fairness in the distributive procedures and distributive outcomes in society. This feeling is teased out from a respondent's answer to WVS statement, "claiming government benefits to which you are not entitled." *Feeling of Macrojustice* is coded in a ten-point scale that is coded one for a respondent who indicates "always justifiable" to ten for a respondent who indicates "never justifiable" to the WVS statement: "claiming government benefits to which you are not entitled." A person who feels a high level of macrojustice is more likely to have a high level of tolerance for income inequality because he may feel that income inequality—a distributive outcomes—arises from fair distributive procedures in society (e.g., recruitment policy based on the ideology of meritocracy).

The descriptive statistics are shown in Table 3.1.

Table 3.1. Descriptive statistics

Variable	Japan		China	
	Mean	Std. Dev.	Mean	Std. Dev.
Level 1 (Individual)				
Tolerance for Income Inequality (<i>1: very low to 10: very high</i>)	5.76	2.18	6.06	3.14
Subjective social status (<i>1: lower to 5: upper</i>)	2.73	.83	2.48	.94
Male (=1)	.47	.50	.51	.50
Household income quintiles (<i>1: poorest to 5: richest</i>)	2.76	1.37	2.49	1.05
Importance of luck	1.89	.89	1.61	.83
Feeling of macrojustice (<i>1: low to 10: high</i>)	8.93	1.88	8.50	2.42
High interpersonal trust (=1)	.42	.49	.54	.50
Age	45.79	15.55	41.3	13.6
College Degree (=1)	.34	.47	.14	.35
Married (=1)	.74	.44	.82	.38
Urbanization (<i>1: rural; 5: very large cities</i>)	3.20	1.45	3.02	1.33
Level 2 (Region)				
Region Objective Income Inequality (Gini ratio)	.29	.0097		
Region Objective Income Inequality (Theil index)			.897	.41
Region Wealth (natural log)	14.88	.113	8.80	1.00

3.2.5 Model specifications

This chapter uses two main estimation strategies: single-level logistic and multi-level logistic regressions with WVS data. The ordered logistic regression is specified as follow:

$$\textit{Individual Tolerance for Income Inequality}_{irt} = \alpha_0 + \beta_1 X_{irt} + \beta_2 P_{irt} + \delta_r + \eta_t + \epsilon_{irt}$$

where *Individual Tolerance for Income Inequality*_{rt} indicates the response to the question on the level of tolerance for income inequality of individual *i*, interviewed at time *t* in region *r*. *X*_{irt} is the vector of explanatory variables, *P*_{irt} is the vector of individual and contextual controls that are further described below. Region fixed effects (δ_r) and time fixed effects (η_t) control for unobserved heterogeneity that is particular to the regions and year.²⁵ This model specification is better than extant studies on income inequality and turnout because it include controls for contextual effects (e.g., regional income inequality).

Because individuals are nested within countries, hence a one-level logistic regression could cause the standard errors associated with self-rated health to be underestimated. Then for individual *i* and region *j*, an individual's predicted level of tolerance for income inequality are estimated as follows

²⁵ For Japan, I used dummy variable for each years for 1995, 2000, and 2005 and excluded the year 1990 to control for auto-correlation. For China, I used dummy variable for each years for 1995, 2001, and 2007 and excluded the year 1990 to control for auto-correlation.

$$\begin{aligned}
& \textit{Individual Tolerance for Income Inequality}_{ij} \\
&= \gamma_{00} + \gamma_{10} \textit{Region Objective Income Inequality}_j + \gamma_{20} \textit{Region Wealth}_j \\
&+ \gamma_{1j} \textit{Subjective Social Status}_{ij} + \gamma_{2j} \textit{Male}_{ij} + \gamma_{3j} \textit{Household Income}_{ij} \\
&+ \gamma_{4j} \textit{Importance of Luck}_{ij} + \gamma_{5j} \textit{Feeling of Macrojustice}_{ij} + \gamma_{6j} \textit{High Interpersonal Trust}_{ij} \\
&+ \gamma_{7j} \textit{Age}_{ij} + \gamma_{8j} \textit{Age}^2_{ij} + \gamma_{9j} \textit{Married}_{ij} + \gamma_{10j} \textit{College Degree}_{ij} + \gamma_{11j} \textit{Employed}_{ij} + \\
&\gamma_{12j} \textit{Urbanization}_{ij} + r_{ij}
\end{aligned}$$

The error term allows the average of *Individual Tolerance for Income Inequality* is to account for the particular circumstances at the country levels that the model does not account for. The same specification is used for the estimate of the log odds of an individual who has high life satisfaction.

3.3. Main empirical results

Table 3.2 presents the results of two-level regressions. Japan and China have differing patterns of the determinants of individual tolerance for income inequality. Results from Japanese samples largely support the findings in the cross-nation analysis in Chapter 2. There is strong support for the hypothesis that an individual's level of subjective social status in terms of class affects his level of tolerance for income inequality. In addition, the propensity to have higher levels of tolerance for income inequality increases if an individual is a male and his level of household income is higher. Results obtained from the Chinese samples do not support the findings in Chapter 2. In addition, the findings of the contextual factors, however, are consistent with those in Chapter 2, i.e., a region's level of wealth and objective income inequality do *not* have a statistically significant effect on the level of individual tolerance for income inequality.

Table 3.2. Two-level regression results: ordinal dependent variables

	(1) Japan (3 waves)	(2) China (3 waves)	(3) China (2 waves)
Subjective social status-class	.376*** (.05)	.066 (.043)	
Male	.429*** (.09)	.136 (.073)	.110 (.09)
Household income quintiles	.115*** (.03)	.020 (.039)	.145** (.05)
<i>Level Two Control</i>			
Region objective income inequality	.917 (.11)	.598 (.05)	.552 (.04)
<i>Level One Controls</i>			
Importance of luck	.096* (.05)	.066 (.04)	.027 (.06)
Feeling of macrojustice	.038 (.02)	.041** (.02)	.026 (.02)
High interpersonal trust	.079 (.08)	-.112 (.07)	-.057 (.09)
Age	-.029 (.02)	-.039* (.02)	-.026 (.02)
Age ² /100	.028 (.02)	.040 (.02)	.017 (.03)
Married	.040 (.11)	.095 (.12)	-.046 (.14)
College degree	.111 (.08)		
Education		.060 (.04)	.028 (.05)
Employed	-.016 (.09)	.177* (.08)	-.083 (.09)
Level of urbanization	.057* (.03)		.066** (.02)
Log Likelihood	-4,321.1	-5,358.4	-3,512.6
Region-years	15	18	12
Observations	2,176	2,444	1,679

Notes:

[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variables are ordinal variables of individual tolerance for income inequality ranging from one (very low tolerance for income inequality) to ten (very high tolerance for income inequality). All the results are generated from two-level ordered logistic regressions.

[3] Model 1 uses Japanese samples from 1995, 2000, and 2005. Model 2 uses Chinese samples from 1995, 2001, and 2007. Model 3 uses Chinese samples from 1990 and 1995.

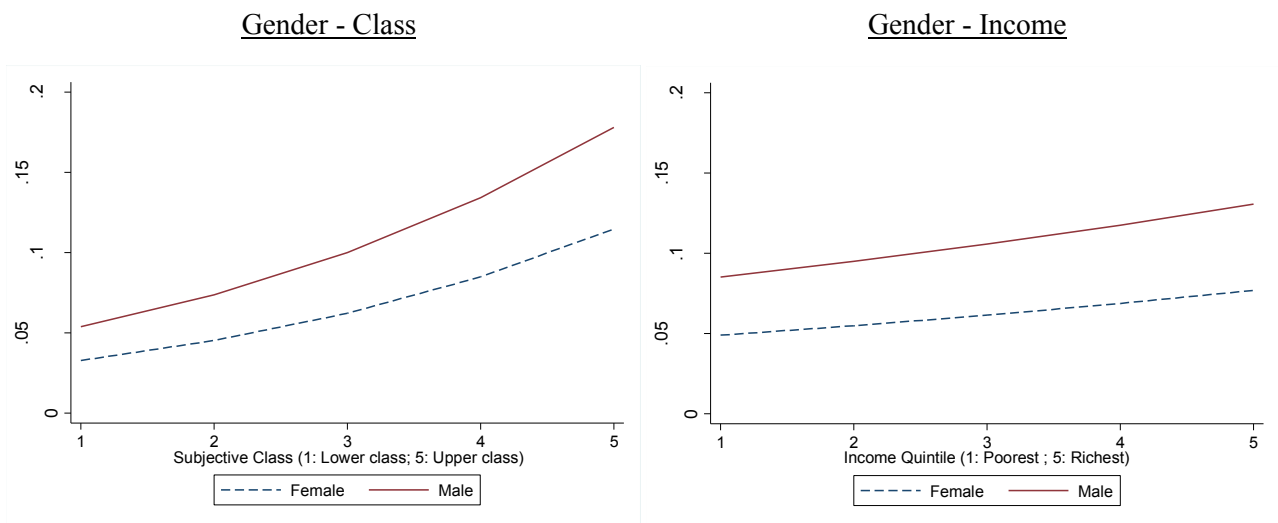
The two-level models uses a pooled sample of the 1995, 2000, and 2005 samples with individuals who are nested within five Japanese regions and a pooled sample of 1990, 1995, 2001, and 2007 samples with individuals who are nested within six Chinese regions. There is a degrees of freedom issue for the model because the number of level two observations, region-year, is only 15. Accordingly, model 1 has only one regional level predictor, region objective income inequality. Consistent with Chapter 2 findings, the region level societal norms of income inequality is statistically significant. The author also tested for the effects of region's level of wealth but it is not statistically significant.

Japan

In Japan, three individual level variables are important predictors of individual tolerance for income inequality: subjective social status-class, gender, and household income. For easier interpretation, Figure 3.6 (left panel) shows the predicted probabilities of an individual having a high tolerance for income inequality for respondents who are males (solid line) and who are females (dashed line) across subjective social status-class. A male who perceives himself of lower class has a 5.4 percent predicted probability of having a very high level of tolerance for income inequality vis-à-vis 3.3 percent predicted probability for a female who also perceives herself to be of lower class. This predicted probability increases to 17.8 percent for a male who perceives himself to be of the upper class and 11.4 percent for a female. In short, males *ceteris paribus* have a higher predicted probability of having a high level of tolerance for income inequality than females. Conversely, the effect of household income on an individual's predicted probability of having a high tolerance for income inequality is much weaker. For a male, the predicted probability of a low-income individual of having a high level of tolerance for income

inequality is 8.4 percent and it is only 4.5 percent lower than the 12.9 percent predicted probability for a high-income individual. The weak effect of income also holds true for a female and the difference in the predicted probability of an individual whose income is of the lowest income quintile vis-à-vis an individual whose income is of the highest income quintile is only 2.8 percent.

Figure 3.6. Predicted probability of tolerance for income inequality (Japan)



Notes: Pooled WVS sample from the years of 1995, 2000, and 2005.

There are significant non-findings. While extant studies find that individuals who are older (Ōtake 2005), less education (Nakamura 2011), and not working full-time (Higuchi 2001) tend to be on the losing end in the period of rising objective income inequality, this chapter finds that an individual's age (except for the 2005 sample), level of education, and employment status have no statistically significant effect on an individual's level of tolerance for income inequality.

This chapter's findings also counter Ohtake's (2008) finding on the importance of age, education, and employment status.

China

The findings on the determinants of individual level tolerance for income inequality show mixed support for the findings in Chapter 2. An individual's levels of subjective social status is not a statistically significant predictor in model 2.²⁶ The only statistically significant predictors are feeling of macrojustice, age, and employment status. At the contextual level, a region's level of objective income inequality and wealth does not affect an individual's level of tolerance for income inequality. These findings counter extant studies' claim that objective income inequality in China affect individual happiness (Jiang et al. 2012). These findings could be the result of the pooled sample and the next section will show that estimation results for yearly samples.

3.4. Separate sample regressions

This section examines the robustness of the findings in table 3.2 by analyzing separate sample years and adding additional covariates.

Japan

Table 3.3 displays the results from single-level ordered logistics regressions with a pooled sample and yearly samples. The results are substantively similar to the models that use two-level ordered logistic regressions as shown in Table 4.2. Model 1 uses a pooled sample of 1995, 2000, and 2005 samples but the 1990 sample is not used because it does not have the variable of

²⁶ Model 2 comprises only three wave samples (1995, 2001, and 2007) because the 1990 sample does not have data on individual level subjective social status.

subjective social status. The results are largely similar to all the models in Table 4.2. An individual's level of subjective social status, gender, household income, the belief in the role of luck in life, and the level of urbanization of the location that he lives in are statistically significant predictors of an individual's level of tolerance for income inequality.

An individual's subjective social status has a strong effect on his level of tolerance for income inequality (Table 3.3). This result is robust across different model specifications. Two other individual level variables are important predictors of individual tolerance for income inequality: gender, and household income. Gender is also robust across all specification except in the year of 2005 while an individual's level of household income is robust across all models except for the years of 2000 and 2005. Interestingly, an individual's age is statistically significant in the 2005 sample (model 5). A younger individual is more likely to have high levels of tolerance for income inequality. Again, the important non-findings are again repeated in this table. An individual's age, level of education, and employment status do *not* have statistically significant effects on an individual's level of tolerance for income inequality

Table 3.3. Single level regression results ordinal dependent variable (Japan)

	(1)	(2)	(3)	(4)	(5)
	All Years	1990	1995	2000	2005
Subjective social status	.372*** (.05)		.329*** (.1)	.499*** (.09)	.282** (.09)
Male	.429*** (.09)	.719*** (.2)	.586*** (.16)	.498*** (.15)	.258 (0.15)
Household income quintiles	.129*** (.03)	.254*** (.07)	.241*** (.06)	.07 (.05)	.105 (.06)
Importance of luck	.100* (.05)	.086* (.04)	.114 (.08)	.215** (.08)	-.014 (.08)
Feeling of macrojustice	.036 (.02)	.07 (.05)	.057 (.04)	.038 (.03)	.027 (.04)
High interpersonal trust	.089 (.08)	.073 (.17)	0.128 (0.14)	.138 (.13)	.067 (.14)
Age	-.026 -0.02	-.012 (.04)	.02 -0.03	-.037 -0.03	-.069* (.03)
Age ² /100	.025 (.02)	.009 (.05)	-.025 (.03)	.036 (.03)	.071* (.03)
Married	.036 (.11)	.069 (.29)	.107 (.21)	-.051 (.17)	.042 (.19)
College degree	.105 (.08)	-.072 (.27)	-.071 (.16)	.167 (.14)	.174 (.15)
Employed	-.03 (.09)	-.321 (.2)	-.156 (.17)	-.068 (.16)	.132 (.17)
Level of urbanization	.060* (0.03)	.025 (.06)	.025 (0.05)	.134** (0.05)	.019 (0.05)
Regional dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes				
Log Likelihood	-4314.4	-895.5	-1326.0	-1570.0	-1393.9
Observations	2176	435	662	790	724

Notes:

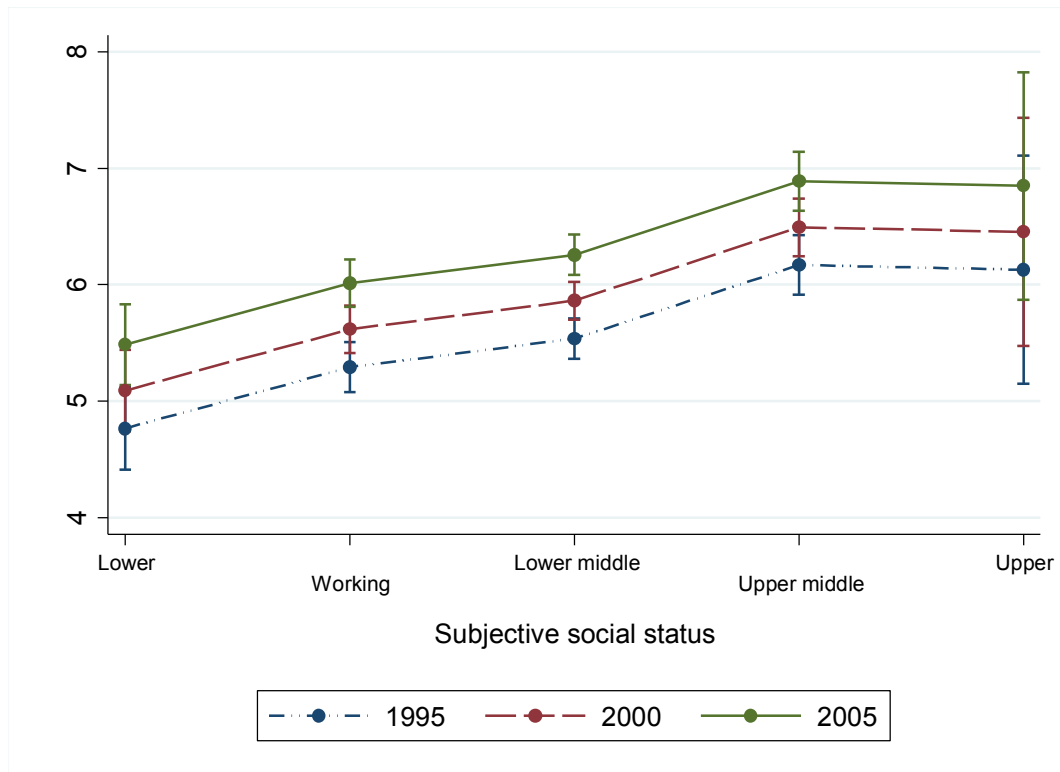
[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variables are ordinal variables of individual tolerance for income inequality ranging from one (very low tolerance for income inequality) to ten (very high tolerance for income inequality). Results are generated from single-level ordered logistic regressions.

[3] All models include dummies for different Japanese regions.

To better illustrate the effect of individual subjective social status on individual tolerance for income inequality for Japan across different years, Figure 3.7 illustrates the predicted levels of tolerance for income inequality across the five categories subjective social status—lower, working, lower middle, upper middle, and upper—with 95 percent confidence intervals. The magnitude of the effect of subjective social status is the highest in the 2005 followed by 2000 and 1995. The estimates for both ends of subjective social status—especially the category of upper class—tend to be less precise as indicated by the wider 95 percent confidence intervals. For a cross-section comparison, an individual who perceives himself to be of the lower class and another individual who perceives himself to be of the upper class is predicted to have 5.49 and 6.85 levels of tolerance for income inequality on a ten-point scale in 2005. For a cross-time comparison, a person who self-perceives to be of the lower class is predicted to have 4.77, 5.10, and 5.49 levels of tolerance for income inequality on a ten-point scale in the years of 1995, 2000, and 2005 respectively.

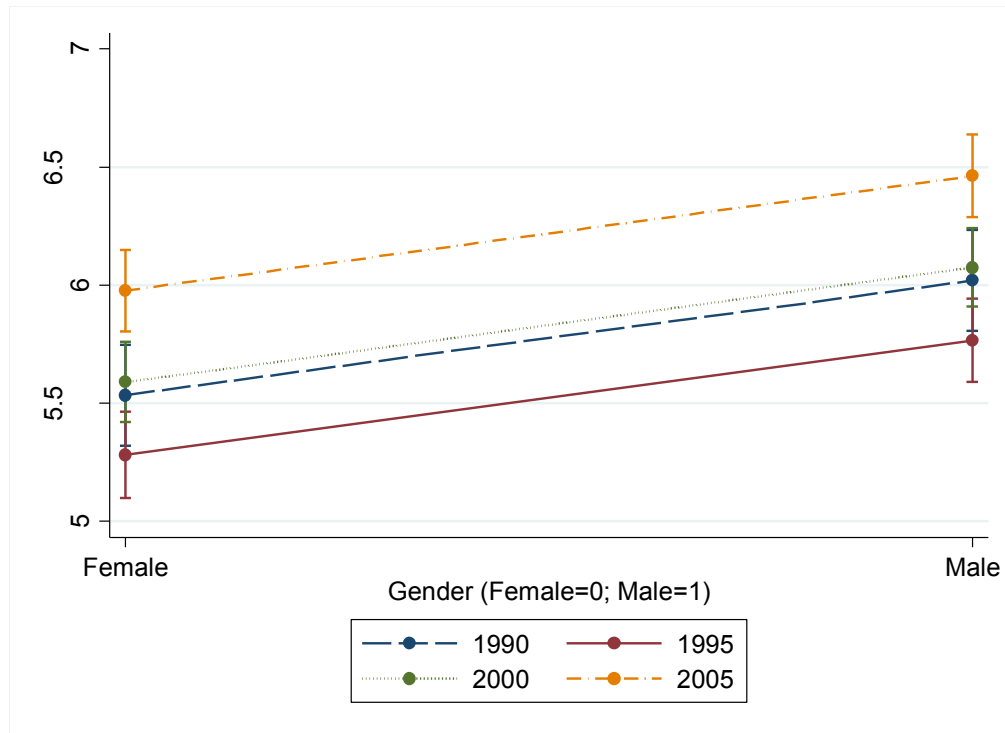
Figure 3.7. Predicted level of tolerance for income inequality: Japan



Notes: The predicted levels of tolerance for income inequality are generated from a continuous regression.

An individual's gender has a statistically significant effect on an average Japanese citizen's level of tolerance for income inequality. Japanese society has structural gender discrimination against females hence it is not surprising to find that females tend to have lower predicted levels of tolerance for income inequality in all sample years, i.e., females tend to feel that income inequality in Japan is too large. The effect of gender on it is the strongest in 2005 and the weakest in 1995. In 2005, *ceteris paribus*, a male has a predicted level of tolerance for income inequality at 6.45 vis-à-vis the 5.98 for a female.

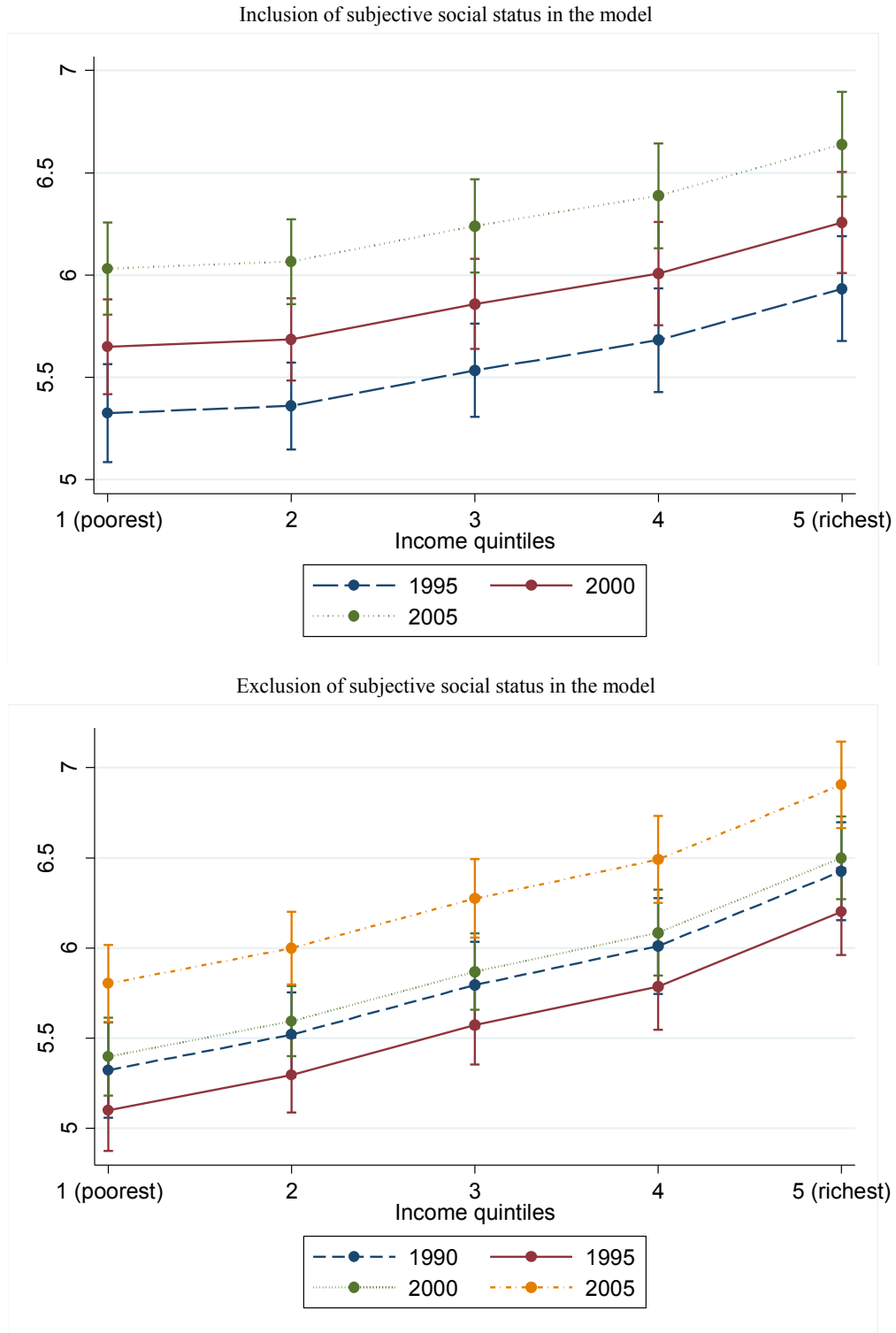
Figure 3.8. Predicted level of tolerance for income inequality: Japan



Notes: The predicted levels of tolerance for income inequality are generated from a continuous regression.

As with findings in Chapter 2, person's level of household income also has a statistical significant effect on an average Japanese citizen's level of tolerance for income inequality. The top panel of Figure 3.9 shows the predicted levels of tolerance for income inequality across income quintiles for three samples, 1995, 2000, and 2005. The sample of 1990 is excluded because there is no question on individual subjective social status for the particular survey year. The bottom panel of Figure 3.9 shows the predicted levels of tolerance for income inequality that excludes subjective social status from the regressions. It shows that the removal of subjective social status from the regression models increases the predicted levels of tolerance for income inequality. This highlights the potential methodological pitfall of overemphasizing the role of income without including the appropriate covariates.

Figure 3.9. Predicted level of tolerance for income inequality: Japan



Notes: The predicted levels of tolerance for income inequality are generated from a continuous regression. There is no data on subjective social status-class in 1990 hence the top panel has no predicted levels of tolerance for income inequality for the year 1990.

China

There is no single explanatory variable that systematically predicts a Chinese citizen's level of tolerance for income inequality. In the pooled sample (1990, 1995, 2001, and 2007), only an individual's feeling of macrojustice was statistically significant. Gender, age, and household income are only statistically significant at the ten percent level. Subjective social status, one of the most important predictors, is not statistically significant in the Chinese samples. One plausible explanation for the difference between Japan and China is the strong class consciousness in Japanese society that is absent in the Chinese society.

In the 1995 sample, urbanization is important and is consistent with extant studies (Treiman 2012; Wu and Treiman 2004, 2007; Zhang and Treiman 2013). Nevertheless, the robustness of the effect of urbanization is not testable because of the lack of data for subsequent years. As mentioned, the level of urbanization is closely associated with because link to the household registration system (*hukou*) that in turn determine the privileges and rights of residents.

In the 2001 sample, only a person's employment status affects his level of tolerance for income inequality. The results counter Martin Whyte's (2010) findings based on a 2004 sample. This chapter finds that an individual who is employed is more likely to have higher levels of tolerance for income inequality but Whyte finds the opposite finding (Whyte 2010, 108). More importantly, there were important null findings. Whyte finds that household income, gender, educational level but these variables are *not* statistically significant in the model.

The results for 2007 sample are largely consistent with extant studies. Wu (2009) uses a 2005 sample of another Chinese survey and finds that individuals who perceive high levels of fairness of inequality in China tend to have high tolerance for income inequality. Contrary to Wu (2009), an individual's level of education is not statistically significant.

Table 3.4. Single level regression results ordinal dependent variable (China)

	(1)	(2)	(3)	(4)	(5)
	All Years	1990	1995	2001	2007
Subjective social status-class			0.089 (.07)	0.143 (.09)	0.054 (.01)
Male	0.127 (.07)	0.16 (.2)	0.14 (.12)	0.249 (.14)	0.166 (.13)
Household income quintiles	0.063 (.04)	0.039 (.08)	0.148* (.07)	-0.116 (.08)	0.033 (.09)
Importance of luck	0.053 (.04)	0.095 (.13)	0.032 (.07)	0.176 (.1)	0.066 (.08)
Feeling of macrojustice	0.039** (.01)	-0.01 (.04)	0.024 (.03)	0.043 (.04)	0.058* (.03)
High interpersonal trust	-0.081 (.06)	0.021 (.15)	-0.091 (.11)	-0.177 (.14)	-0.053 (.13)
Age	-0.032 (.02)	0.023 (.05)	-0.035 (.03)	-0.031 (.05)	-0.04 (.04)
Age ² /100	0.031 (.02)	-0.041 (.05)	0.025 (.03)	0.039 (.05)	0.04 (.04)
Married	0.023 (.01)	-0.016 (.24)	0.016 (.18)	0.42 (.23)	0.075 (.21)
Education	0.049 (.04)	-0.004 (.09)	0.031 (.07)	0.073 (.09)	-0.009 (.07)
Employed	0.071 (.07)	-0.338 (.2)	-0.024 (.1)	0.494** (.2)	0.062 (.01)
Level of urbanization		-0.169 (.1)	0.082*** (.02)		
Regional dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes				
Log Likelihood	-6,695.2	-1,168.3	-2,269.1	-1,434.0	-1,629
Observations	3,119	620	1,035	669	740

Notes:

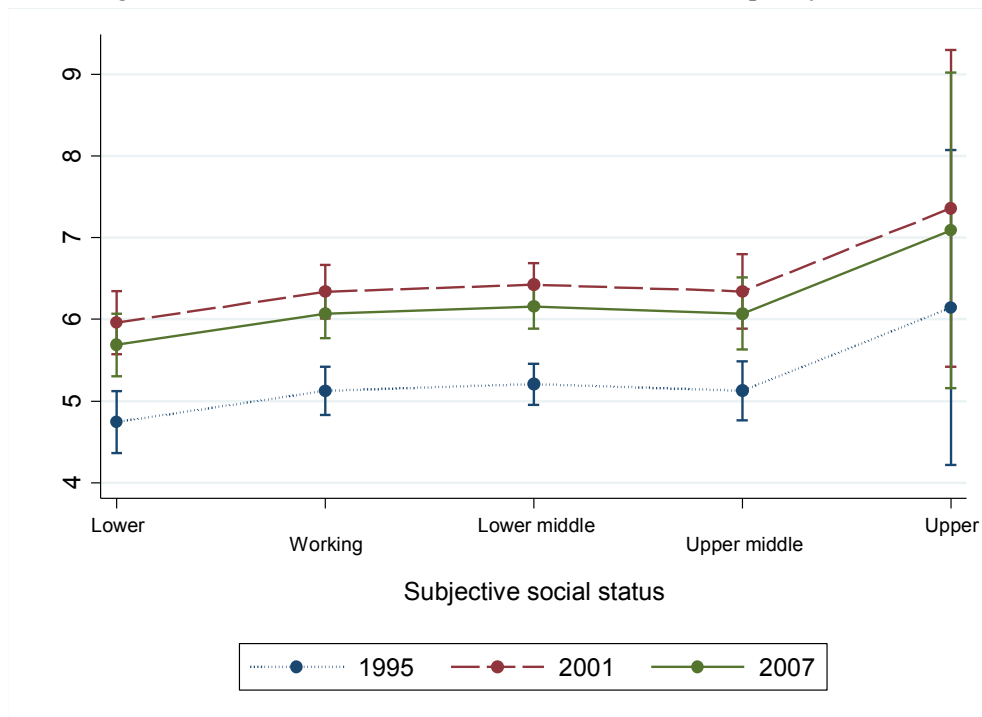
[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variables are ordinal variables of individual tolerance for income inequality ranging from one (low tolerance for income inequality) to ten (high tolerance for income inequality). Results are generated from single-level ordered logistic regressions.

[3] All models include dummies for different Chinese regions.

To better illustrate the effect of individual subjective social status on individual tolerance for income inequality for China across different years, Figure 3.10 illustrates the predictive margins of subjective social status across five categories—lower, working, lower middle, upper middle, and upper—with 95 percent confidence intervals. The magnitude of the effect of subjective social status is the highest in the 2001 followed by 2007 and 1995. The estimates for the subjective upper class tend to be less precise as indicated by the wider 95 percent confidence intervals. For a cross-section comparison, an individual who perceives himself to be of the lower class and another individual who perceives himself to be of the upper class is predicted to have 5.96 and 7.36 levels of tolerance for income inequality on a ten-point scale in 2001. For a cross-time comparison, a person who self-perceives to be of the lower class is predicted to have 4.74, 5.96, and 5.69 levels of tolerance for income inequality on a ten-point scale in the years of 1995, 2001, and 2007 respectively.

Figure 3.10. Predicted level of tolerance for income inequality: China



Notes: The predicted levels of tolerance for income inequality are generated from a continuous regression.

3.5. Conclusions

The findings in this chapter show mixed support for the cross-nation findings in Chapter 2. Findings from Japan generally support the findings in Chapter 2 but not the findings from China. In Japan, as with the findings from the cross-nation samples, a person's level of subjective social status (class), income, gender, and age have statistically significant effect on his level of tolerance for income inequality. A person's level of subjective social status (class) is the most robust predictor across different samples. Chinese samples, however, do not support the findings from Chapter 2. These findings also showed mixed support for extant studies in Japanese studies (e.g., Ohtake 2008) and Chinese studies (e.g., Whyte 2010).

The only consistent result obtained from both the Japanese and Chinese samples is at the contextual level. The key difference in model specifications between Chapters 2 and this chapter is the inclusion of objective income inequality of regions. The most important null findings is that a region's level of wealth and objective income inequality do *not* affect an individual's level of tolerance for income inequality. This supports the finding of the null effect objective characteristics at the country (wealth and objective income inequality) and region (wealth) levels in Chapter 2. Accordingly, the findings from Chapters 2 and 3 support dissertation's main argument that a spatial locality's objective characteristics—wealth and objective income inequality—at both the country and region levels do *not* affect individual tolerance for income inequality.

At the individual level, a person's subjective social status is a robust predictor for Japan but not for China. This suggests the possibility of country-specific societal norms that affects the linkage between a person's subjective social status and his level of tolerance for income inequality. In Japan, the mass belief in the middle class society remained pervasive despite the

increasing objective income inequality at the national level. There are, however, no such mass beliefs in a middle class society in China but class consciousness is deeply in-grained in Chinese society. This is closely connected with the household registration system (*hukou*) in China where urban residents tend to have better access to education, healthcare, and employment opportunities. This dissertation's use of survey data suggest one plausible reason for the an individual's subjective social class to have no statistically significant effect on his level of tolerance for income inequality. The rapid socio-economic transformation in the period from 1990 and 2007 may explain the rapidly changing societal norms hence explain the huge variations in the patterns of the determinants of individual tolerance for income inequality across different samples. This is shown by the fact that there is no single predictor that is robust across different Chinese samples. Japan, an industrialized economic giant, in contrast, has much more stable patterns of the determinants of individual level tolerance for income inequality.

This chapter's findings have larger implications on the developmental paradigm in Asia. The dominant paradigm in the economic development discipline and among international organizations (e.g., World Bank and Asian Development Bank) is the emphasis on the need for Asian countries to promote equitable growth via inclusive growth strategy (Zhuang 2010). This chapter highlights the gap between objective income inequality and individual political attitudes and actions via the introduction of the concept of tolerance for income inequality. While Asian governments could introduce policies that reduce objective income inequality, they should also address the implications of the subjective dimensions of income inequality.

Chapter 4 Preferences for Redistribution

This chapter expands the inquiry on the normative values about income inequality by conceptualizing the linkage between inequality and redistribution. Extant studies on redistributive preferences overemphasize the importance of income and how the distribution of income within a country affects individual level redistributive preferences. This distribution—more commonly known as objective income inequality—is a structural context that affects the life chances of individuals. The implicit assumption in the redistribution literature is that individuals living within countries would somehow know that the level of objective income inequality changes and these changes in structural context would in turn affect their redistributive preferences. I argue otherwise and Chapters 2 and 3 have partially challenged this assumption by showing the null effects objective income inequality—at the country level and region level—on a person’s level of tolerance for income inequality. This chapter shifts the focus to another important political effect, individual preference for redistribution, and tests the effects of the impact of objective income inequality on individual preference for redistribution.

This chapter, as with extant studies (e.g., Alesina and Giuliano 2011; Pittau et al. forthcoming), emphasizes the importance of income inequality, but this chapter departs from these studies by focusing on the subjective aspects of income inequality and I argue that—besides individual income—these factors are important predictors of redistributive preferences.

Each country has one objective income inequality—depending on the measures—because the entity of interest is the sample of individual incomes but there are multiple subjective income inequalities. The multiple subjective income inequalities exist because individuals who live within the same country have different levels of tolerance for income inequality. Thus, despite living in a country with a single objective income inequality, each country have multiple subjective income inequalities that in turns affects a person’s degree of preference for redistribution.

By focusing on one subjective dimension of income inequality, tolerance for income inequality, this chapter argues that a person’s level of tolerance for income inequality affects his preference for redistribution. The higher a person’s level of tolerance for income inequality is, the more likely that he would oppose government redistribution. Other social economic characteristics are important too (e.g., income and gender).. Furthermore, this chapter argues that a country’s objective context—level of wealth and objective income inequality—do not affect its citizens’ redistributive preferences. The societal norms on income inequality affect his redistributive preferences.

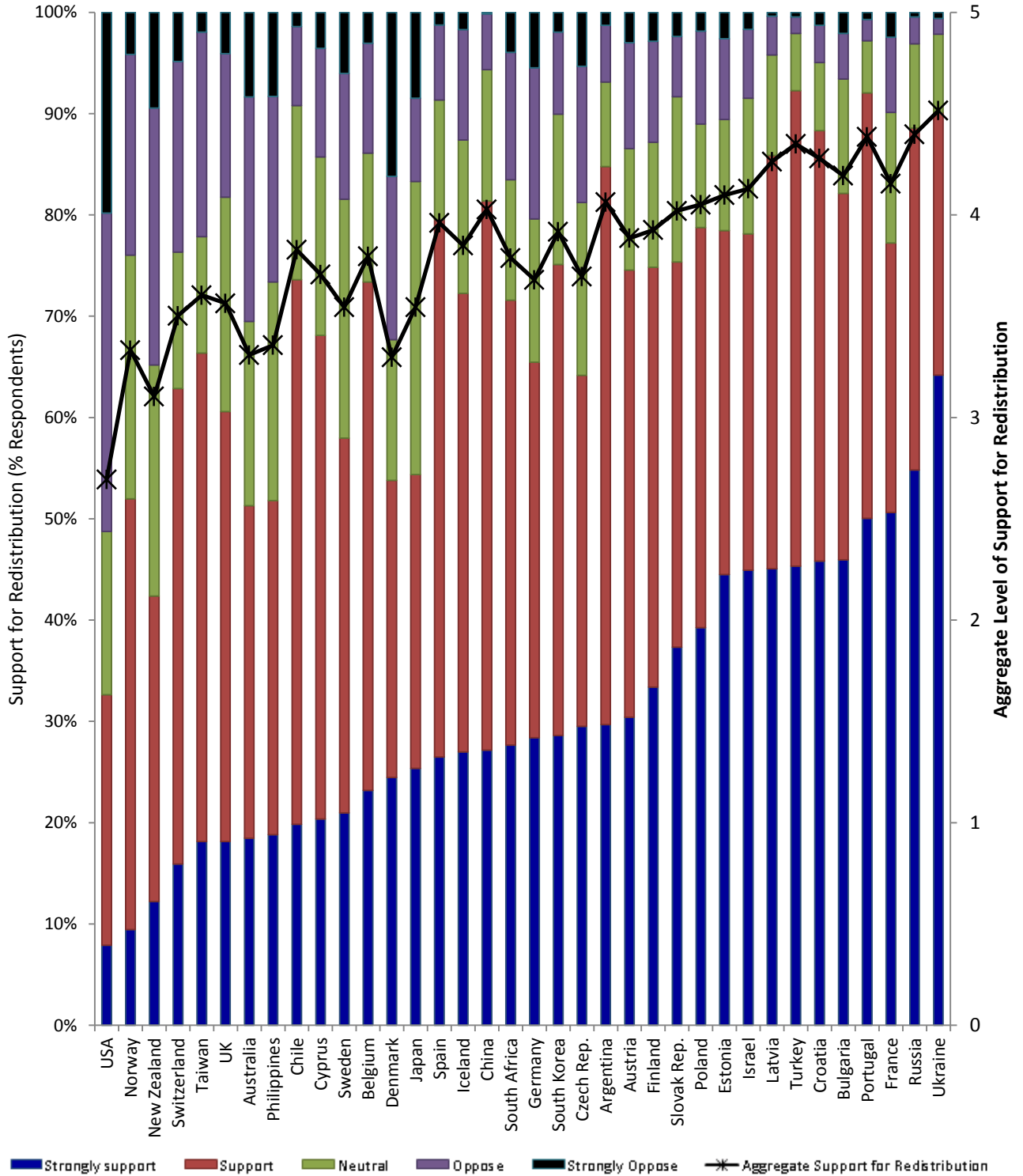
Section 4.1 will explain the relationship between an individual’s preference for redistribution and his tolerance for income inequality, section 4.2 reviews the literature on individual preference for redistribution. Section 4.3 explains the empirical setup with the best cross-nation datasets: the International Social Survey Program (ISSP) and the World Values Survey (WVS). These two datasets allow me to show the generalizability of my findings beyond Europe and the United States. Almost all extant studies suffer from selection bias by not including Asian and African countries (except Dion and Birchfield 2010). Section 4.4 explains the main results, the robustness test, and a comparison of sub-samples. Section 4.5 concludes

4.1. Patterns of redistributive preferences

A person's preference for redistribution—this chapter's dependent variable—is his degree of support for redistribution. More than two-thirds of respondents support redistribution in a sample of 36 countries in four continents in 2009 (Figure 4.1). The countries in Figure 4.1 are arranged in ascending order of the proportion of respondents in each country who *strongly supports* redistribution. A post-communist country such as Russia has 88.6 percent of its respondent *supporting* redistribution, more than 36 percent higher than Norway, a social-democratic welfare country. Consistent with extant studies' common portrayal of the United States as a country of citizens who generally oppose redistribution (Alesina and Glaeser 2004; Kaun 2008; Lee and Roemer 2006), the United States has the highest proportion of respondents who oppose redistribution in this sample. In 2009, 51.3 percent of American respondents strongly oppose redistribution. American respondents are not alone, as another seven countries have a substantial proportion of respondents—more than 20 percent of respondents—who oppose redistribution. Interestingly, Denmark, a social democratic welfare state that has generous welfare programs, has the third highest proportion of respondents who oppose redistribution, i.e., 32.3 percent. The other six countries with greater than twenty percent of respondents who oppose redistribution are Australia, New Zealand, Norway, the Philippines, Switzerland, and Taiwan.

At the other extreme, the three countries with the highest proportion of respondents who support redistribution are Portugal (92 percent), Turkey (92 percent), and Ukraine (90 percent). South Africa, the country with the highest objective income inequality, has only 72 percent of its respondents supporting redistribution, just 3 percent lower than the 75 percent for South Korea—a country with a moderate level of objective income inequality. While most countries tend to

Figure 4.1. Individual preferences for redistribution (2009)

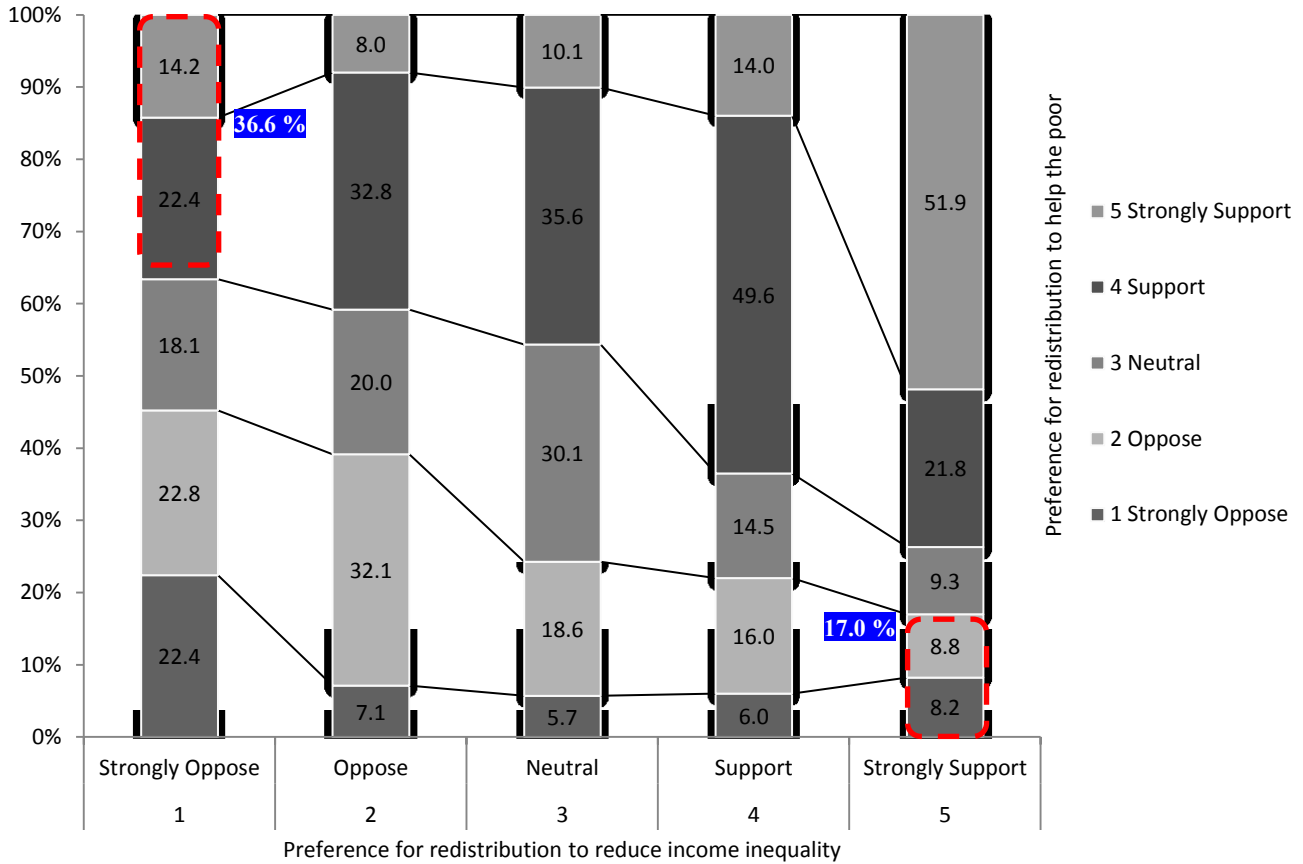


Notes: Survey data are from the ISSP social inequality module (2009). The survey statement is “it is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.” (N=49,561). The original response categories of “strongly agree,” “agree,” “disagree,” and “strongly disagree” are recoded as very “oppose,” “neutral,” and “support” respectively.

have the majority of the respondents support redistribution, there are countries that have a substantial proportion of respondents who are ambivalent, i.e., neither supporting nor opposing redistribution. The top three countries with the greatest proportion of respondents who are neutral on their preferences for redistribution are Japan (29 percent), Norway (24 percent), and Sweden (24 percent).

Individuals have differing levels of preferences for different types of redistribution. An individual, for instance, may support redistribution to reduce income inequality in general but not support redistribution that benefits specific groups (e.g., the poor or the unemployed). Amongst other factors, an individual may feel that the poor is undeserving (Katz 1990). This statement is borne out by the patterns of support for government redistribution to help the poor among respondents grouped based on their extent of support for redistribution to reduce income inequality (Figure 4.2). There are substantial proportions of individuals who support/oppose redistribution to reduce income inequality yet *oppose/support* redistribution to help the poor. For example, about 36.6 percent of those who strongly oppose redistribution to reduce income inequality either support or strongly support redistribution to help the poor; and about 17.0 percent of the strong supporters of redistribution to reduce income inequality either oppose or strongly oppose redistribution to help the poor. In other words, these two groups of respondents adopt diametrically opposite positions on different aspects of redistribution. The first group of respondents strongly *opposes* redistribution to reduce income inequality yet *support* or *strongly support* redistribution to help the poor. The other group is the exact opposite where the respondents *strongly support* redistribution to reduce income inequality yet *oppose* or *strongly oppose* redistribution to help the poor.

Figure 4.2. Individual preferences for different types of redistribution



Notes:

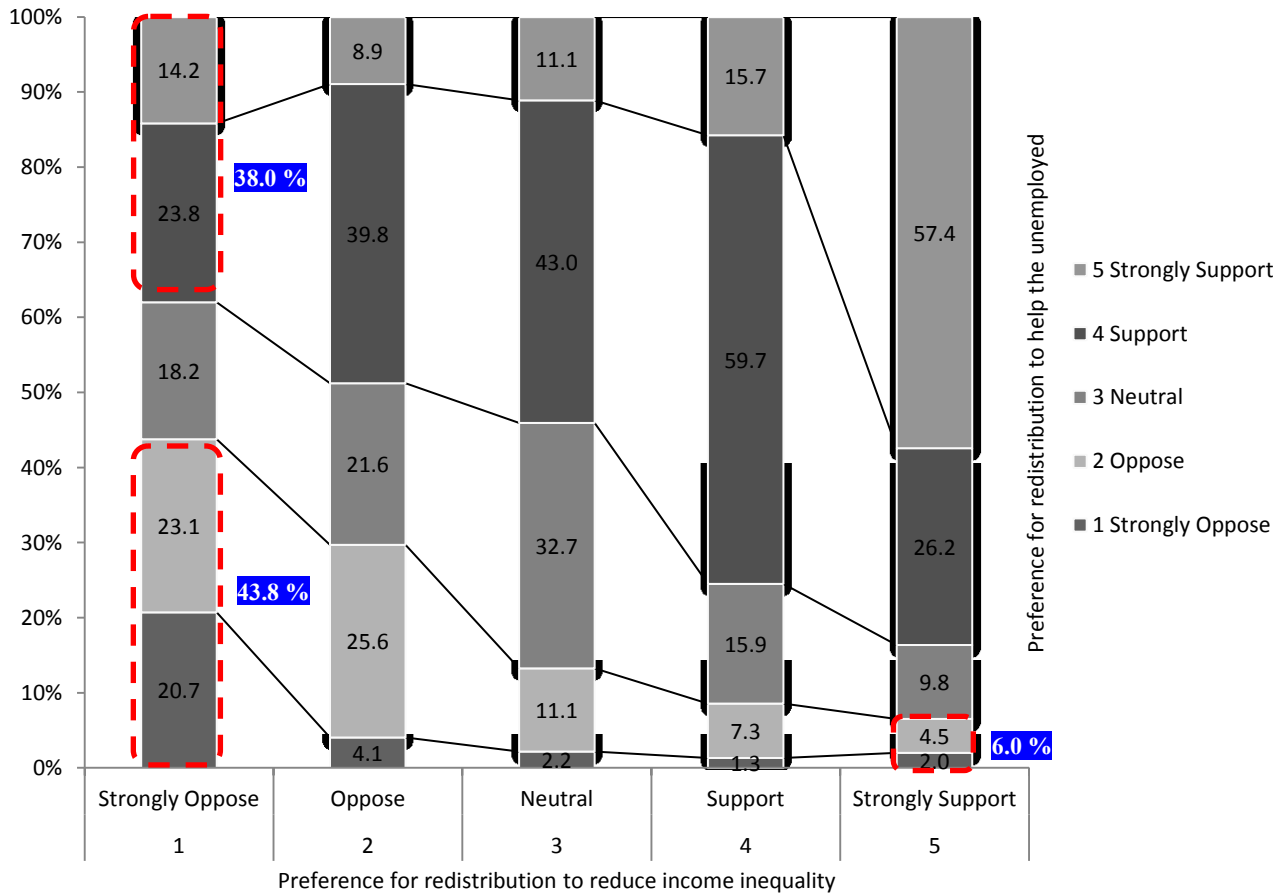
[1] Survey data are from the pooled samples from the ISSP Social Inequality modules in 1987, 1992, 1999, and 2009 (N=62,768).

[2] Individual preference for redistribution for reducing inequality is teased out from the statement, “it is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.”

[3] Individual preference for redistribution help the poor is teased out from “the government should spend less on benefits for the poor.” The original response categories of “strongly agree,” “agree,” “disagree,” and “strongly disagree” are recoded as very “strongly support,” “support,” “neutral,” “oppose,” and “strongly oppose,” respectively.

This pattern is also seen in the different extent of support for redistribution to help the unemployed (Figure 4.3). The group of respondents who strongly *oppose* redistribution for reducing income inequality is divided evenly in their levels of support for redistribution to help the unemployed. Specifically, 43.8 percent of this group of respondents either oppose or strongly oppose redistribution to help the unemployed while another 38.0 percent of them either support or strongly support redistribution to help the unemployed. The pattern of preference for redistribution to help the unemployed is more asymmetric among the group of respondents who strongly *support* redistribution to reduce income inequality. More than half—57.4 percent—of this group of strong supporters for redistribution to reduce income inequality, also support redistribution to help the unemployed. Nevertheless, only about 6 percent of them either oppose or strongly oppose redistribution to the unemployed. This value of 6 percent is less than half of the corresponding 17 percent of in Figure 4.2 of the same group of people who either oppose or strongly oppose government redistribution to help the poor.

Figure 4.3. Individual preferences for different types of redistribution



Notes:

[1] Survey data are from the pooled samples from the ISSP Social Inequality modules in 1987, 1992, 1999, and 2009 (N=60,225).

[2] Individual preference for redistribution for reducing inequality is teased out from the statement, “it is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.”

[3] Individual preference for redistribution help the unemployed is teased out from “the government should provide a decent standard of living for the unemployed.” The original response categories of “strongly agree,” “agree,” “disagree,” and “strongly disagree” are recoded as very “strongly support,” “support,” “neutral,” “oppose,” and “strongly oppose,” respectively.

4.2 Theories about individual preference for redistribution

Redistribution is widely perceived as a way to reduce the inequality in distributive outcomes in society. An individual's normative values about income inequality, therefore, affects his preference for redistribution because he consciously or subconsciously evaluates income inequality—a distributive outcome—in the formation of his preference for redistribution. An individual with high tolerance for income inequality would *believe* that income inequality—a distributive outcome—is *not* too large and is therefore more likely to oppose redistribution.

This chapter reframes the thinking on the formation of individual preference for redistribution by showing how subjective dimensions of income inequality—*not* a country's level of objective income inequality—affect individual preferences for redistribution. The dominant theoretical explanation in mainstream literature—based on the Romer-Meltzer-Richard model—posits that individual preference for redistribution is a function of a country's level of objective income inequality and the individual's position in the income ladder within the country. Notwithstanding the substantial number of studies that found no empirical support for the model (e.g., McCarty and Pontusson 2009), mainstream studies continue to extend from the model and/or to test the predictions that are derived from the model.

On the theoretical front, scholars have extended the Romer-Meltzer-Richard model to include other individual level attributes, such as expectation of social mobility (Bénabou and Tirole 2006; Piketty 1995) and fairness (Alesina and Angeletos 2005). Shayo (2009) departs slightly from the Romer-Meltzer-Richard model by modeling how individuals' social identities—nation, rich, and poor—affect his preference for redistribution. Nevertheless, his categories of rich and poor are based on individual income and therefore hinges on the Romer-Meltzer-Richard model's basic premise that individual income affect individual preference for

redistribution.²⁷ On the empirical front, studies that control for a country's level of objective income inequality (Pittau et al. forthcoming) or studies that do *not* control for a country's level of objective income inequality (Alesina and Giuliano 2011; Fong 2001; Guillaud forthcoming), find that individual income is statistically significant in explaining individual preference for redistribution. In short, mainstream literature has generally converge on a set of explanations that centers on the objective income inequality-income theoretical nexus that includes additional factors that range from individual perception of fairness to individual mode of social identification.

This chapter reframes the thinking on the formation of individual preference for redistribution by laying out the premise that individual values about income inequality and *not* a country's level of objective income inequality have a determining effect on individual preference for redistribution. Thus, this chapter rejects mainstream studies' theoretical premise that individual preference for redistribution is a function of changing country-level objective income inequality and individual income. To re-emphasize, this chapter, as with mainstream studies, emphasize the importance of income inequality in affecting individual preference for redistribution. Nevertheless, this chapter argues that the income inequality that matters more is the individual level normative values about income inequality, and not a country's level of objective income inequality. One type of individual values about income inequality is an individual's level of tolerance for income inequality. A country may have a level of income inequality that is "objectively" measured by various formulae (e.g., Gini ratio and Theil index) but individuals have different levels of tolerance for income inequality. Two individuals who live

²⁷ Furthermore, Shayo (2009) a priori assumes an individual's level of national pride—his explanatory variable—over other forms of identities (e.g., ethnic) is questionable because individuals have multiple identities and it is unclear why an individual's level of national pride would be the primary mode of identification for an individual to form his preference for redistribution.

in the same country with a Gini ratio of .30 would have different normative views if a .30 Gini ratio is too *high* or too *low*. Consequently, their preferences for redistribution would also differ based on their normative values about income inequality. The individual who perceives .30 Gini ratio as not high more likely to oppose redistribution than the other individual who perceives the *same* Gini ratio as too low because he sees no necessity for the government to redistribute to reduce the level of income inequality.

In addition, this chapter's concept of tolerance for income inequality has two theoretical advantages over extant studies' concepts. First, individual tolerance for income inequality as a concept captures the latent quality of individual normative values about income inequality. Conversely, mainstream studies' main variable of interest, income, is usually statistically significant yet scholars rarely go beyond the theoretical argument that the rich tend to oppose redistribution because it does not benefit them. There are, however, multiple reasons for rich individuals to oppose redistribution. Besides self-interest, another plausible reason is that a rich individual oppose redistribution because he feels that the poor are not deserving. In short, the individual preference for redistribution literature has identified a series of factors that affect redistribution but it is less clear as to why these factors increase the propensity for individuals with particular attributes to oppose redistribution. Tolerance for income inequality, in contrast, is clearly identifiable as a type of individual's normative values about income inequality.

Second, tolerance for income inequality overcomes extant studies' weakness in theorizing the linkage between income inequality and individual preference for redistribution. This chapter agrees with the mainstream literature on the importance of income inequality in affecting individual preference for redistribution but differs from mainstream literature by positing that individual normative values about income inequality—not objective income

inequality—affects individual preference for redistribution. The Romer-Meltzer-Richard model, for instance, theorizes income inequality as the objective income inequality at the country level and posits that it creates differential incentives for individuals with different incomes to change their preferences for redistribution. The causal mechanism depicted in this parsimonious model is overly simplistic because it makes two assumptions: individuals have perfect information on the country’s level of objective income inequality and individuals would react to changing levels of objective income inequality based on their level of income. This chapter, however, argues that individuals are unlikely to have perfect information on his country’s level of objective income inequality and even if they have the information, they are unable to evaluate the extent to which changing objective income inequality would affect their welfare. Moreover, individual values about income inequality function as a cognitive filter that makes a person highly resistant new information—arising from changing objective income inequality—that challenges their beliefs

4.3 Empirical setup

The main empirical analysis consists of a series of models of individual preference for redistribution. This chapter mitigates the selection bias in extant studies by using the two largest cross-nation datasets on individual preference for redistribution—ISSP and WVS—to test my hypothesis.²⁸ Extant studies generally focuses on United States (McCall and Kenworthy 2009; Page and Jacobs 2009), Europe (Finseraas 2009), or both regions(Guillaud forthcoming; Pittau et al. forthcoming). Only two studies on individual preference for redistribution use a sample that includes countries outside the United States and Europe (Alesina and Giuliano 2011; Dion and

²⁸Extant studies on cross-nation individual preference for redistribution either use the WVS dataset (e.g., Alesina and Giuliano 2011; Luttmer and Singhal 2011; Shayo 2009) or the ISSP dataset (e.g., Guillaud forthcoming; Lupu and Pontusson 2011). The studies that focuses only on the United States usually use the General Social Survey (e.g., Kenworthy and McCall 2009).

Birchfield 2010).²⁹ This chapter uses the largest dataset ever assembled in the individual preference for redistribution literature and tests the various theories on individual preference for redistribution that spans over a long period of 23 years and across 86 countries in five continents

In addition, this chapter improves over extant studies in terms of research design by using two-level and three-level hierarchical linear modeling (HLM). Mainstream studies in the individual preference for redistribution literature tend to use single-level models (e.g., Alesina and Giuliano 2011; Guillaud forthcoming; Shayo 2009) but it tend to lead to the underestimation of the standard errors hence resulting in false positives of obtaining statistically significant results. An emerging group of studies uses two-level multilevel models that treat individuals as level one and countries as level two units (e.g., Blekesaune and Quadagno 2003; Finseraas 2009; Pittau et al. forthcoming). These models, however, are still inadequate because there is a substantial amount of within country variation that modeling two-levels—individual and country—do not capture. This chapter improves over extant studies by using three-level models to account for the spatial variation between the regions within countries (e.g., the regions of Saarland and Hamburg in Germany). This is the lowest geographic resolution of the location of the respondents in the ISSP and WVS datasets. Three-level models have not been used in studies on individual preference for redistribution but it is prevalent in the fields of education and public health where the sample usually comprises students (level 1) who are nested in classrooms (level 2), and the classrooms are in turn nested within schools (level 3).

²⁹ This chapter includes 30 non-European and non-North American countries whereas the next largest sample used by a published work—used by Dion and Birchfield (2010)—includes only 21 Latin American countries and excludes Asian and African countries. Another problem with their sample is the use of a region-based survey dataset, Latinobarometer that is not comparable with the cross-nation ISSP dataset that they are using.

Second, this chapter focuses on the determinants of individual propensity to *oppose* redistribution instead of mainstream studies' operationalization of individual preference for redistribution as an ordinal variable—typically a five-point scale that ranges from strongly support to strongly oppose. Indicating support for redistribution is a socially desirable act because it is associated with reducing the social “problem” of income inequality.³⁰ Because respondents who indicate opposition to redistribution are countering the social norm hence they have a strong policy preference for the government *not* to redistribute; *vis-à-vis* the other groups of individuals who are neutral and supportive of redistribution. Accordingly, this mode of operationalization as opposition to redistribution truly reflects this respondent's preference for redistribution.

Furthermore, operationalizing preference for redistribution in terms of opposition to redistribution also makes substantive sense because the individuals who hold such strong policy positions are likely to be politically active and vote in order to choose a government that matches their policy preferences. Their vote choice need not be a result of their preferences for redistribution but the bottom line is that those who tend to oppose redistribution are more likely to be politically active than other respondents who have other types of preference for redistribution. Nevertheless, this chapter would operationalize individual preference for redistribution in two others ways for robustness check, i.e., shifting the focus to the opposite end, i.e., operationalizing in terms of individual propensity to *strongly support* redistribution; and the

³⁰Unsurprisingly, the dominant pattern in most societies—as Figure 4.1 has shown—is support for redistribution. About 68.0 percent of the 115,506 ISSP respondents (1987-2009) and 61.3 percent of 234,148 WVS respondents (1989-2005) support government redistribution to reduce income inequality. On top of these two groups of respondents, another 14.4 percent of the ISSP respondents and another 23.7 percent of the WVS respondents are neutral on their preferences for redistribution. In short, the remaining 17.6 percent of ISSP respondents and 15.1 percent of the WVS respondents either oppose or strongly oppose redistribution.

conventional way of operationalizing preference for redistribution as an ordinal variable that covers the spectrum from opposition to redistribution to support for redistribution.

4.3.1 Dependent Variable

The main dependent variable, *Oppose Redistribution-Reduce Inequality*, is teased out from the ISSP statement, “it is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.” Respondents choose from a five-point scale ranging from (1) strongly agree, (2) agree, (3) neither agree nor disagree, (4) disagree, to (5) strongly disagree. *Oppose Redistribution-Reduce Inequality* is coded one for respondents who *strongly disagree* to the statement and zero otherwise.

The ISSP has additional questions that enable the testing individual preference for other types redistribution: redistribution to help the poor and redistribution to help the unemployed (see Figures 4.2 and 4.3). Individual preference for government redistribution to help the unemployed, *Oppose Redistribution-Help Unemployed*, is teased out from “the government should provide a decent standard of living for the unemployed;” and individual preference for government redistribution to help the poor, *Oppose Redistribution-Help Poor*, is teased out from the statement, “the government should spend less on benefits for the poor.” Similarly, the chapter operationalizes both types of redistribution with one for responses that “strongly disagree” to the respective statement and zero otherwise.

The other commonly used major cross-nation dataset is the WVS dataset.³¹The WVS statement that teases out individual preference for redistribution is based on statement that asks

³¹ This chapter’s choice of the WVS question for redistribution is similar to that used by Alesina and Giuliano (2011) but differs from the question used by another group of scholars (e.g., Shayo 2009). Shayo (2009), for instance, choose another WVS question to operationalize individual preference for redistribution, i.e., based on respondent choice along a ten-point scale that ranges from one “incomes

respondents to choose along a ten-point scale with one stating that “people should take more responsibility to provide for themselves” to ten stating that “the government should take more responsibility to ensure that everyone is provided for.” In other words, respondents who choose either one or near to one are opposed to redistribution while those who choose either nine or ten are supportive of redistribution. *Oppose Redistribution-Reduce Inequality* is coded one if a respondent chooses options one or two and zero otherwise.

4.3.2 Explanatory variable

This chapter’s explanatory variable is an individual’s level of tolerance for income inequality. As in Chapter 2, *High Tolerance for Income Inequality* is measured as a dummy variable with one for a respondent who *strongly disagree* to the ISSP statement that “differences in income in their respective countries are too large” and zero otherwise. This question teases out a respondent’s evaluation of income inequality. WVS also has a statement that teases out an individual’s level of tolerance for income inequality based on his choice along a ten-point scale that ranges from one “incomes should be made more equal” to ten “we need larger income differences as incentives.” Individuals who choose the options that are nearer to “we need larger income differences as incentives” are more likely to have high tolerance for income inequality than who choose categories that are close to “incomes should be made more equal.” I recoded on a scale of zero to one, with one indicating an individual who choose eight, nine, or ten would have very high levels of tolerance for income inequality and zero otherwise.

should be made more equal” to ten “we need larger income differences as incentives.” The wording of this particular WVS statement is obviously link to individual normative values about income inequality. Moreover, there is no specific mention of government in this statement hence it is unrelated to individual preference for redistribution.

4.3.3 Control variables

This article controls for other factors that could affect individual preference for redistribution. Individuals with higher income are expected to oppose redistribution (Corneo and Grüner 2002). Household income, *Income Quintiles*, is operationalized in quintiles from the lowest (first quintile) to the highest (fifth quintile) level of household income. Operationalizing income in quintiles allows comparability across nations because it measures an individual's relative position in the income distribution within their respective countries. Education is another control variable. Individuals with higher education tend to oppose redistribution. A respondent's level of education, *Degree*, is operationalized as respondent who has a college degree and above as one and zero otherwise.³²

Gender and age also affect individual preference for redistribution (Guillaud forthcoming). *Male*, is a dummy variable that is coded as one for male and zero otherwise. Age captures the cohort effect and individual life experiences. Age squared is included in order to control for concavity. *Married* is a dummy variable that is coded as one if an individual is married and zero otherwise. A person's religious beliefs also affects his individual preference for redistribution (Scheve and Stasavage 2006; Tan 2006). *Catholic* is coded as one if an individual self-reports to be a Catholic and zero otherwise. Of course, this variable is less applicable in Muslim-majority (e.g., Indonesia) and Buddhist majority countries (e.g., Japan) but extant

³² An alternative operationalization will be to operationalize an individual's education with more granularity (e.g., upper secondary) but cross-nation differences in the coding of education levels in datasets for ISSP 1987 and 1992 makes it difficult to define a standardized way of operationalization. From a substantive perspective, an individual with a degree is more likely to find higher paying jobs that have a much higher barrier of entry for non-degree holders.

studies have found that these two religious beliefs have no effect on individual preference for redistribution (Alesina and Giuliano 2011).³³

Union membership is likely to make one less likely to oppose redistribution because they would have more information on the costs and benefits of redistribution. *Union* is coded as one if an individual is an union member and zero otherwise. *Employed* is coded as one if an individual is currently working full-time. Studies have shown that an individual's occupation proxies for the level of risk that an individual faces in jobs that are threatened by globalization (Iversen and Soskice 2001; Rehm 2009). Accordingly, *Employed* is expected to correlate positively with the dependent variable.

Besides individual attributes, socio-psychological factors also affect individual preference for redistribution. An individual who *perceives* himself to have risen up the social ladder is less likely to support redistribution to improve others' chances of succeeding in the future. This logic is quite similar to the "prospect of upward mobility" (POUM) hypothesis (Benabou and Ok 2001) except that this chapter conceptualize social mobility as a cognitive shortcut for an individual's justice evaluations of income inequality. An individual, for instance, may oppose redistribution simply because he feels that the group that potentially benefits from the redistribution is not deserving and counters his expectation of fair distributive procedure. *Improved Social Mobility* is operationalized as a dummy variable that is code one for responses if an individual perceives that the status of his job is "much higher" than his father's job and zero otherwise.

³³ An important variable is a person's level of religiosity. This could be operationalized as the frequency of church attendance but data on this variable, is however, available for one-third of the 148 country-year samples. Furthermore, there is a methodological issue of confounding between religious affiliation and religiosity.

An individual's level of national pride affects his level of preference for redistribution (Shayo 2009). *High national pride* is coded one if an individual chooses "very proud" of their national identity and zero otherwise. In addition, individual beliefs in the role of luck also affect individual preference for redistribution (Alesina and Angeletos 2005). *Hard work determines outcomes* is teased out from a respondent's response to a ten-point scale with one indicating his strongest agreement to the statement that "in the long run, hard work usually brings a better life" and ten, indicating his strongest agreement to the statement that "hard work doesn't generally bring success - it's more a matter of luck and connections." *Hard work determines outcomes* is coded as one if an individual chooses one and zero otherwise.

4.3.4 Contextual variables

Contexts affect individual preference for redistribution via three channels: country, region, and local. At the country level, studies have found that a country's level of income inequality affects individual preference for redistribution (Dion and Birchfield 2010). Data on each country's objective income inequality are post-tax and post-transfers and are obtained from the Standardized World Income Inequality Database (SWIID) (Solt 2009). Another country-level factor is a country's level of development as measured by the country's gross national income (GNI) per capita, based on purchasing power parity (PPP) in current international dollars; and the data are obtained from the World Bank database.

Below the country level, I include two more variables to control for the within-country variation. At the region level, a region's wealth may affect individual preference for redistribution. A region's wealth, regional GDP per capita, *Region Wealth*, based on purchasing power parity (PPP) in constant 2005 U.S. dollars and the data are obtained from the Organization

of Economic Cooperation and Development (OECD) Regional Database. Disparities in wealth among regions within countries are common phenomena. Based on World Bank data, an individual living in Great Britain's Wales country has the lowest per capita income, i.e., only 42.2 percent of the Greater London region's per capita income in 2009. In contrast to the individual preference for redistribution literature, the framing of redistribution is regional redistribution where the government would redistribute to a spatial locality (e.g., municipality and provinces). Nevertheless, it plausible that individuals who are living in high-income regions are more likely to oppose redistribution because they may perceive government redistribution would disproportionately benefit individuals who live in low-income regions.

Finally, at the local level, an individual's local context is proxied by *Urban*, that is coded one if a respondent lives in an urban area and zero otherwise. Individuals in the urban area may be exposed to more income inequality hence would have a higher tendency to opposed redistribution. Furthermore, the rural-urban difference could generate competition for valuable federal resources thereby making a ruralite and an urbanite differ in the level of support for redistribution. Most extant studies do not control for this important variable but I have included it to control for unobserved heterogeneity within countries. *Urban* is excluded from the statistical test using the WVS dataset because of the large proportion of missing values.³⁴

The descriptive statistics are shown in Table 4.1.

³⁴ There are about 36.3 percent of missing values for the urban variable in the four-wave WVS dataset.

Table 4.1. Descriptive statistics

Variable	ISSP		WVS	
	Mean	Std. Dev.	Mean	Std. Dev.
Level 1 (Individual)				
Oppose Redistribution–Reduce Inequality (=1)	0.05	0.21	.15	.36
Oppose Redistribution–Help Poor (=1)	0.08	0.26		
Oppose Redistribution–Help Unemployed (=1)	0.03	0.17		
High Tolerance for Income Inequality (=1)	0.02	0.28	.17	.37
Improved Social Mobility (<i>Improved</i> =1)	0.46	0.75		
Income Quintiles (1: poorest; 5: richest)	2.84	1.40	2.51	1.18
Male (=1)	0.46	0.50	.49	.50
Age	45.69	16.86	40.18	15.87
College Degree (=1)	0.15	0.36	.14	.35
Catholic (=1)	0.35	0.48	.34	.47
Married (=1)	0.61	0.49	.59	.52
Employed (=1)	0.50	0.50	.91	.29
Union (=1)	0.25	0.43	.06	.23
Urban (=1)	0.37	0.48		
High national pride (=1)			.61	.49
Hard work determines outcomes (=1)			.25	.43
Level 2 (Region)				
Region Wealth (natural log)	10.20	9.14		
Level 3 (Country)				
Country Objective Income Inequality	.31	0.07	.38	.098
Country Wealth (natural log)	9.92	9.34	8.80	1.10

4.3.5 Model Specifications

ISSP and WVS data are multilevel: individuals are nested within regions that are in turn nested within countries, hence a one-level logistic regression could cause the standard errors associated with individual preference for redistribution to be underestimated (Steenbergen and Jones 2002). Then for individual i , region j , and country k , the log odds of opposing redistribution are estimated as follows.

$$\begin{aligned}
 & \text{Oppose Redistribution--Reduce Inequality}_{ijk} \\
 & = \gamma_{000} + \gamma_{100} \text{High Tolerance for Income Inequality}_{ijk} + \gamma_{200} \text{Income Quintile}_{ijk} \\
 & + \gamma_{300} \text{Improved Social Mobility}_{ijk} + \gamma_{400} \text{Male}_{ijk} + \gamma_{500} \text{Age}_{ijk} + \gamma_{600} \text{Age}^2_{ijk} + \gamma_{700} \text{College Degree}_{ijk} \\
 & + \gamma_{800} \text{Catholic}_{ijk} + \gamma_{900} \text{Married}_{ijk} + \gamma_{1000} \text{Employed}_{ijk} + \gamma_{1100} \text{Union}_{ijk} + \gamma_{1200} \text{Urban}_{ijk} \\
 & + \gamma_{010} \text{Region Wealth}_{jk} + \gamma_{001} \text{Country Objective Income Inequality}_k + \gamma_{002} \text{Country Wealth} \\
 & k + r_{0jk} + \mu_{00k}
 \end{aligned}$$

This 3-level model includes varying intercepts with separate error terms for each region (r_{0jk}) and country (μ_{00k}). These two error terms allow the average of *Oppose Redistribution--Reduce Inequality* to account for the particular circumstances at the region and country levels that the model does not account for. The three-level and two-level models will be used for different specifications that account for individual respondents nested in countries. The author acknowledges the potential methodological pitfall of including too many control variables because some of the variables could be confounded (e.g., importance of luck and feeling of macrojustice). With about twelve variables in the model is the normal practice in the redistributive literature (e.g., Alesina and Giuliano 2011; Pittau et al., forthcoming).

4.4 Main empirical results

There is strong support for the hypothesis that an individual with high tolerance for income inequality *opposes* redistribution. In addition, an individual's context—country, region, and urban—does not have systematic effect on individual preference for redistribution.

The analysis is divided into four sub-sections. Sub-section 4.4.1 uses three-level HLM models—the first of its kind in the individual preference for redistribution literature—to control for individual, regional, and country level factors. This specification differs from extant studies (e.g., Alesina and Giuliano 2011; Pittau et al. forthcoming) by controlling for within country variations in regional wealth by using the methodologically suitable method of three-level logit models. Next, I leverage upon rich information of the cross-section and cross-time nature of the datasets by using two-level HLM models—the most common modeling strategy of extant individual preference for redistribution studies—with individuals who are nested within countries. Pooled ISSP and WVS samples are used in separate regressions with OECD-centric ISSP sample and the more diverse WVS sample. The latter sample has a substantial proportion of less-developed countries.

The first two sub-sections provide a broad overview of the findings from a whole-of-sample perspective but do not provide in-depth insights. Sub-section 4.4.3 ameliorates this weakness by examining specific sub-samples. Sub-section 4.4.3 examines eleven ISSP countries and fifteen WVS countries from a cross-time and cross-section perspective while sub-section 4.4.4 compares the United States—the country with widespread opposition to redistribution—and Japan. Japan is chosen largely because it is the third largest economy in the world yet its welfare institutions differ largely from Europe and the United States (Estévez-Abe 2008). Most studies focus on the “Atlantic divide” between the United States and European countries (e.g.,

Pittau et al., forthcoming) and find—unsurprisingly—similarities and differences. I choose Japan as a case comparison with the United States for fresh perspectives.

4.4.1 Three-level Model Results: Individual, Region, and Country

Using a sample of 28,116 respondents who are nested within 312 country-regions (e.g., Greater London in Great Britain), and these country-regions are in turn nested within 21 OECD countries, I used three-level logit regressions to leverage upon the nested structure of the ISSP data.³⁵ Moreover, this ISSP sample is an easy case to support existing studies' argument that a country's level of objective income inequality affects individual preference for redistribution (e.g., Pittau et al. forthcoming) due to the contagion effect of the 2008 global financial crisis. The global financial crisis would have depressed economic growth and created widespread perceptions of growing economic inequality across different countries from 2008 to 2009 (Galbraith 2012). Thus, this would in turn generate increased popular desire for redistribution among the citizens.

Table 4.2 presents the results. The dependent variables are dummy variables of opposition to the three types of redistribution: reduce inequality, help the unemployed, and help the poor in columns 1, 2, and 3 respectively. The explanatory variable, individual tolerance of income inequality, strongly affects individual preference for redistribution. An individual with high tolerance for income inequality is more likely to oppose government redistribution for reducing income inequality, helping the unemployed, and helping the poor respectively.

³⁵ The sample consists of 21 countries and 312 regions at the sub-national level in 2009. The 21 countries represents the category of welfare states based on Esping-Anderson's classification: liberal welfare state (Australia, New Zealand, Great Britain, and United State), conservative welfare state (Austria, Belgium, France, Germany, Portugal, and Spain), and social-democratic welfare states (e.g., Denmark, Finland, Norway, and Sweden) (Esping-Anderson 1990). The countries that do not fall within any of these categories are Chile, Czech Republic, Japan, Poland, Slovak Republic, South Korea, and Turkey.

Table 4.2. Determinants of opposition to redistribution in 2009

	(1)	(2)	(3)
	Oppose - Reduce Inequality	Oppose - Help Unemployed	Oppose - Help Poor
High Tolerance for Income Inequality	3.141*** (.13)	2.075*** (.16)	1.550*** (.186)
<i>Country level controls</i>			
Country Objective Income Inequality	.884 (2.78)	1.623 (3.42)	-.265 (2.45)
Country Wealth	1.14 (.68)	.519 (.76)	.117 (.54)
<i>Region level control</i>			
Region Wealth	-.137 (.23)	.079 (.25)	-.088 (.19)
<i>Individual level controls</i>			
Income Quintiles	.292*** (.032)	.122*** (.037)	-.128*** (.029)
Improved Social Mobility	-.015 (.073)	.122 (.089)	-.109 (.073)
Male	.409*** (.074)	.147 (.089)	.018 (.070)
Age	.014 (.015)	.008 (.017)	-.005 (.013)
Age ² /100	-.007 (.015)	-.010 (.017)	.004 (.013)
College Degree	.381*** (.082)	-.242* (.11)	-.500*** (.105)
Catholic	-.097 (.10)	-.002 (.11)	-.049 (.083)
Married	.105 (.083)	-.133 (.098)	.060 (.076)
Employed	.075 (.089)	.267* (.106)	.092 (.082)
Union	-.384*** (.092)	-.225* (.11)	.109 (.085)
Urban	.006 (.089)	-.086 (.11)	-.025 (.096)
Log Likelihood	-26,730.1	-26,110.6	-26,474.6
Number of Regions	312	312	312
Number of Countries	21	21	21
Observations	19,013	19,033	18,945

Notes:

[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variable for columns 1 to 3 is a dummy variable that is coded one if a respondent strongly opposes redistribution to reduce income inequality (column 1), to help the unemployed (column 2), and to help the poor (column 3), and zero otherwise. Results generated from three-level logistic regressions.

[3] All models include dummies for different continent regions and OECD countries, and controls for aggregate levels of tolerance for income inequality at the country and regional levels.

An individual's context has mixed impact on his individual preference for redistribution. At the country level, a country's levels of objective income inequality and wealth have no systematic effect on individual opposition to redistribution. This counters the theoretical expectations and empirical findings of extant studies (e.g., Pittau et al. forthcoming). Using two-level HLM modeling and a U.S.-European sample, Maria Grazia Pittau, Riccardo Massari, and Roberto Zelli (forthcoming) finds statistically significant effect of a country's level of objective income inequality on individual preference for redistribution. This chapter's use of three-level modeling that controls for region wealth and it shows that a country's level of objective income inequality has not statistically significant effect on an individual's propensity to oppose redistribution.

Recall that this 2009 sample is an easy case to support extant studies' claim that a country's level of objective income inequality affect individual preference for redistribution; hence the null finding supports this chapter's claim that a country's level of objective income inequality does not affect individual preference for redistribution.³⁶ Furthermore, this is supported by the absence of systematic effects on individual preference for redistribution of another two contextual factors below the country level—region and urban. The substantive implication is that region specific societal norms could affect a person's level of opposition to redistribution. Because the data used is survey data on a set of representative sample, it is impossible to tease out the nature of this societal norm for income inequality.

³⁶This chapter's null finding of the effects of objective income inequality on individual preference for redistribution is consistent with that found by a small number of studies (e.g., Lübker 2007) but this chapter's contribution is to introduce the concept of tolerance for income inequality and test the predictions with a much larger sample than extant studies.

Other individual level socio-economic characteristics

Consistent with other studies (Alesina and Giuliano 2011; Pittau et al. 2011), other individual socio-economic characteristics also affect an individual's propensity to oppose redistribution. For income, an individual with high income has a higher propensity to oppose redistribution to reduce income inequality and help the unemployed but has a *lower* propensity to oppose redistribution to help the poor. This finding makes sense because low income individuals are less likely to *oppose* redistribution to help the poor because they are the ones who would benefit from the redistribution. For level of education, an individual with a degree has a high propensity to oppose redistribution to reduce income inequality but has a *lower* propensity to oppose redistribution to help the unemployed or the poor.

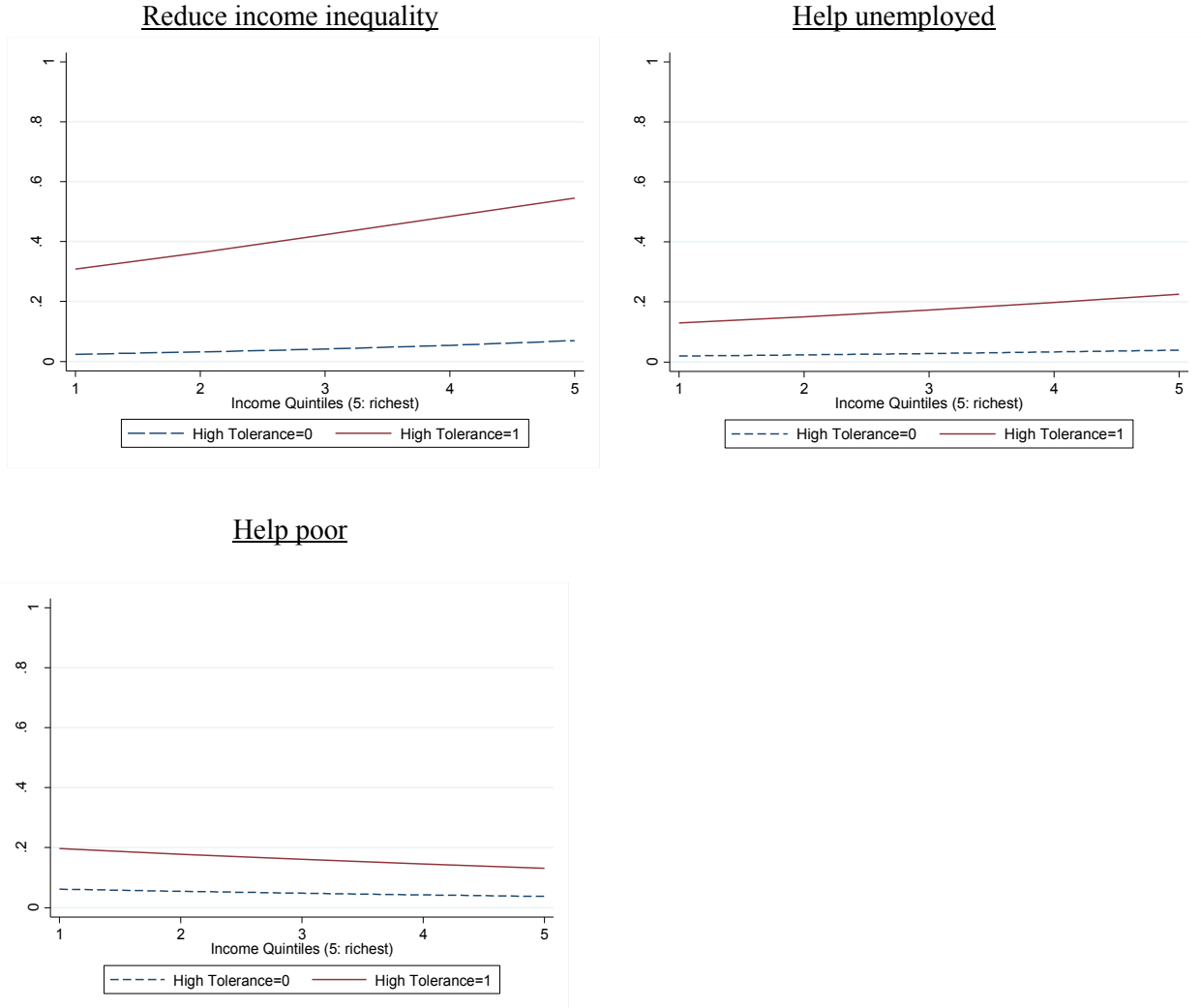
Interestingly, the variable, *Employed*, is only statistically significant for explaining an individual's propensity to oppose redistribution to help the unemployed. An individual who is employed has a *lower* propensity to oppose redistribution. One plausible reason is that the unemployed could view the unemployed as undeserving. For union membership, *Union*, an individual who is a union member has a *lower* propensity to oppose redistribution for reducing income inequality or for helping the unemployed but it has no statistically significant effect his propensity to oppose redistribution for helping the poor.

Interestingly, an individual's past experiences of social mobility do not affect his propensity to oppose redistribution. In other words, when an individual makes his policy preference on redistribution, his past experiences in the moving up/down the social ladder do not affect his level of propensity to oppose redistribution. This null finding supports the finding that individual tolerance for income inequality affects individual opposition to redistribution (see Davis 1982). Individual tolerance for income inequality is an individual's normative values

about income inequality and an individual associates this with redistribution because income inequality is a distributive outcome in society. Accordingly, I argue that an individual emphasizes more on the macro-level societal phenomenon of income inequality over his social position in the income inequality rank.

Income is the variable that the redistributive preference literature agrees is the most important predictor of individual preference for redistribution. To illustrate the weak effects of income on an individual's opposition to redistribution, Figure 4.4 shows the predicted probabilities of opposing redistribution for individuals with high tolerance for income inequality (solid line) and those who do not have high tolerance for income inequality (dashed line) across income quintiles—the most important explanatory variable in the preference for redistribution literature. As the top left panel shows, a rich individual in the highest income quintile who has a high tolerance for income inequality has a predicted probability 54.6 percent of opposing redistribution to reduce inequality vis-à-vis a the predicted probability of 7.0 percent for another rich individual who does *not* have high tolerance for income inequality. The large difference in predicted probabilities between both types of individuals also exists even if they are of the lowest income quintile. For the poorest individuals in the 2009 sample, a poor individual with high tolerance for income inequality has a predicted probability of 17.6 percent of opposing redistribution vis-à-vis the 2.4 percent for a poor individual who does not have a high tolerance for income inequality. The difference in the magnitudes of predicted probabilities of opposing redistribution to help the unemployed (top right panel) and to help the poor (bottom left panel) are much smaller than the difference in the category of opposing redistribution to reduce income inequality.

Figure 4.4. Predicted probability of opposing redistribution



Notes: Predicted probabilities of individual opposition to redistribution to reduce income inequality, help the unemployed, and help the poor are generated from three-level logistic regressions. Individuals with high tolerance for income inequality (solid line) and individuals who do *not* have high tolerance for income inequality (dashed line).

Table 4.2 and Figure 4.4 show the differential impact of individual household income on individual preference for redistribution. A person's income has a positive and statistically significant effect on a person's level of opposition to reduce income inequality and unemployed. The effect of income on the latter is however weaker (top left and right panels of Figure 4.4).

The impact of income on a person's propensity to oppose government redistribution to the poor is negative, albeit weak, and has an opposite effect. The lower a person's income is the lower his propensity to oppose government redistribution to help the poor. This challenges the association of individual income with self-interest (e.g., Corneo and Grüner 2002). A person at the lowest income quintile is more likely to oppose government redistribution to help the poor than a rich person. This chapter's use of survey dataset, ISSP, does not have questions that tease out the motivations behind this observation. One plausible explanation is that the poor has a level of denial of pity from others. Because they are poor, they would rather not want the government to redistribute to the poor so that people in other classes would not despise the poor. Another plausible explanation is the bounded rationality problem. Individuals with lower income may not know—except for those living in extreme poverty—that they are in the lower or lowest end of the income distribution hence they would not want the government to redistribute to those who they perceived to be “poorer” than them.

4.4.2 Two-level model results: individual and country

The findings in sub-section 4.4.1 are generalizable to a larger sample of countries outside Europe and United States, and across a long time frame of 23 years. This is achieved by the use of a pooled ISSP samples from four survey years (1987, 1992, 1999, and 2009) and another pooled sample from four survey-waves of WVS (1989-1993, 1994-9, 1999-2004, and 2005-2007).³⁷

Rich information is therefore obtainable the pooled ISSP sample that has a maximum of 122,301

³⁷The WVS sample comprises a substantial number of non-European and non-North American countries, and includes African countries. The ISSP dataset only has one African country, South Africa, but it is not representative of a typical African country.

respondents who are nested in 89 country years and the pooled WVS sample that has maximum of 224,614 respondents who are nested in 148 country-years.

The estimation results in Table 4.3 are obtained from two-level logit modeling with individuals (level 1) nested within countries (level 2).³⁸ Each model contains dummy variables that account for the unobserved heterogeneity across time (i.e., survey wave-year) and space (i.e., geographic location in a continent and OECD country status). The results from the pooled samples are consistent with those in the previous sub-section. An individual with a high level of tolerance for income inequality has a very high propensity to oppose redistribution in the domains of reducing income inequality, helping the unemployed, and helping the poor (in columns 1, 2, and 3 respectively). In addition, the substantive results are similar when using separate ISSP samples by year and separate WVS samples by wave-years.

Similar to findings with the 3-level model in Table 4.2, an individual's income, gender, or level of education affects his propensity to oppose redistribution to reduce income inequality or to oppose redistribution to help the unemployed. Interestingly, the factors that affect individual propensity to oppose redistribution to help the poor differ from the factors that affect individual preference for the other two types of redistribution (i.e., reduce income inequality and help the unemployed). For example, individual income exhibits the expected negative sign but is not statistically significant. Another example is an individual's local context. *Urban* is statistically significant and positive hence indicating that individuals who live in urbanized areas are more likely to oppose redistribution to help the poor. One plausible reason is that individuals

³⁸The 2009 sample used for the two-level logit model has 36 countries. The 2009 sample used for the three-level logit modeling only has 21 countries in Table 3.2 because of the lack of regional level data for the rest of the countries.

Table 4.3. Determinants of opposition to redistribution (pooled sample)

	ISSP sample			WVS sample
	(1)	(2)	(3)	(4)
	Oppose - Reduce Inequality	Oppose - Help Unemployed	Oppose - Help Poor	Oppose - Reduce Inequality
High Tolerance for Income Inequality	3.03*** (.07)	1.96*** (.1)	1.317*** (.112)	.778*** (.01)
<i>Country level controls</i>				
Country Objective Income Inequality	-1.43 (12.0)	-1.18 (1.7)	1.71 (1.6)	.801 (.64)
Country Wealth	.320* (.1)	.448* (.22)	-.583** (.2)	.002 (.07)
<i>Individual level controls</i>				
Income Quintiles	.301*** (.02)	.163*** (.03)	-.081*** (.02)	.117*** (.01)
Improved Social Mobility	.001 (.03)	.050 (.035)	-.025 (.04)	
Male	.454*** (.04)	.150* (.07)	-.029 (.04)	.069*** (.02)
Age	.025** (.01)	.008 (.01)	-.004 (.008)	-.009** (.003)
Age ² /100	-.023** (.009)	-.012 (.01)	.003 (.008)	.014*** (.003)
College Degree	.498*** (.05)	-.196* (.09)	-.263*** (.07)	-.06*** (.02)
Catholic	-.104 (.05)	-.0537 (.08)	-.026 (.06)	.017 (.025)
Married	.008 (.05)	.0243 (.074)	-.01 (.05)	.062*** (.02)
Employed	.08 (.05)	.200* (.086)	-.055 (.05)	.02 (.02)
Union	-.423*** (.05)	-.269** (.08)	-.063 (.06)	
Urban	.069 (.045)	-.076 (.08)	.012 (.05)	
High national pride				.083*** (.02)
Log Likelihood	-96,700	-55,237.7	-57,794.0	-136,729.3
No. of Countries	36	36	36	79
No. of Country-years	89	89	89	148
Observations	68,736	39,768	41,106	96,285

Notes:

[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variable for columns 1 to 3 is a dummy variable that is coded one if a respondent strongly opposes redistribution to reduce income inequality (columns 1 and 4), to help the unemployed (column 2), and to help the poor (column 3), and zero otherwise. All results are generated from two-level logistic regressions.

[3] All models include dummies for different survey continent regions and OECD countries, and controls for aggregate levels of tolerance for income inequality at the country and regional levels.

living in the rural areas tend to have lower income. The urbanites are therefore more likely to oppose redistribution to help the poor because this type of redistribution would divert federal government resources from them to the poor.

The model in column 4 uses the WVS sample and includes an individual's national pride as a control.³⁹ *High national pride* is positive and it is consistent with Shayo's (2009) finding that an individual with greater national pride, is more likely to oppose redistribution. As I explained earlier, national pride confounds with ethnic identification in the context of individual preference for redistribution. Furthermore, I will show empirically in sub-section 4.4.4, this variable is no longer statistically significant once the regression models control for an individual's race, political ideology, and political attitude.⁴⁰

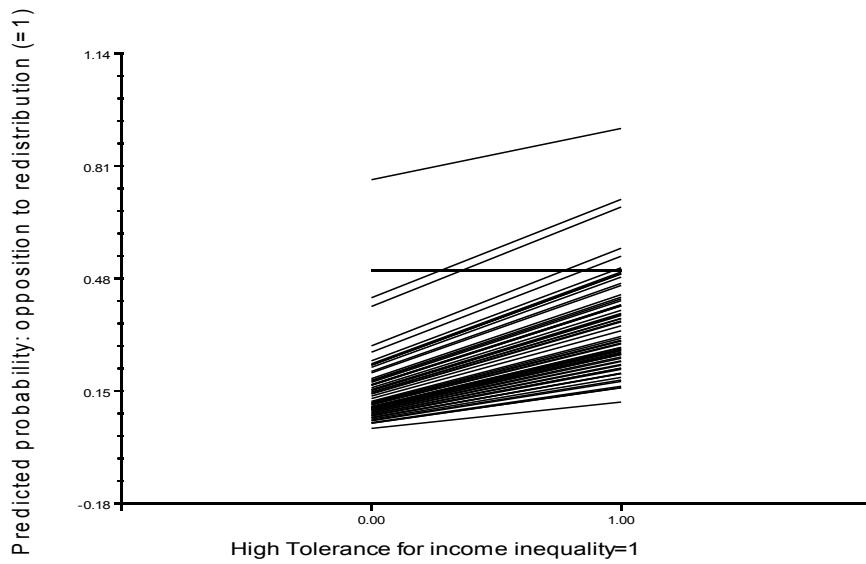
Figure 4.5 shows the effects of a person's individual tolerance for income inequality and income on his propensity to oppose redistribution. The top panel shows the sharp rise in the predicted probability of an individual to oppose redistribution if he has high level of tolerance for income inequality vis-à-vis if he does not have a high level of tolerance for income inequality across countries. Recall that HLM models posits the nesting of individuals within the 148 country-years in the WVS sample, hence the predicted probability for an individual with high levels of tolerance for income inequality ranges from 5 percent to 50 percent for most countries in the sample. The bottom panel shows the changes in the predicted probabilities of an individual opposing redistribution across 148 countries in the WVS sample. Almost all studies on

³⁹ The other three models in columns 1 to 3 does not include this variable because the ISSP dataset does not have the question that teases out an individual's level of national pride.

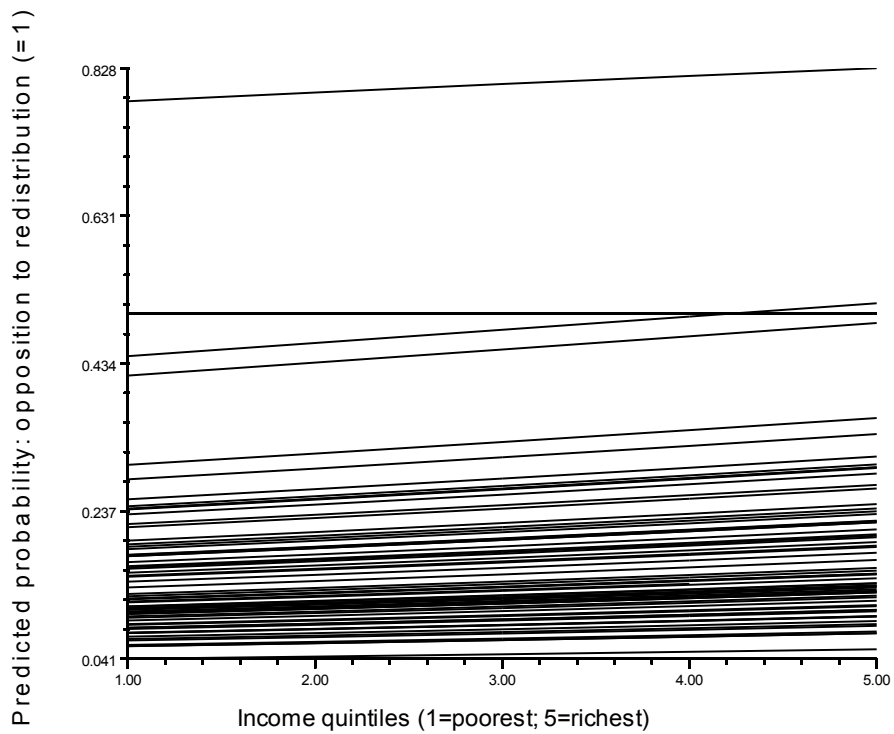
⁴⁰Shayo's (2009) regression models potentially suffer from omitted variable bias because it excludes ethnic identity as a control variable.

Figure 4.5. Predicted probability: opposition to redistribution

By tolerance for income inequality



By income quintiles



Notes: N=148 country-years and each line represents one country-year. Sample is the pooled WVS sample and the dependent variable is the binary variable of opposition to redistribution.

redistributive preference highlight the importance of a person's income in affecting his redistributive preferences. This chapter also finds a statistically significant effect for individual income but this effect is substantively small. The predicted probability of the richest respondents in most of the 148 country-years in the sample, i.e., those in the fifth quintile, has only about 24 percent predicted probability of opposing redistribution. This predicted probability is not substantially much higher than the five to ten percent predicted probability for respondents who belong to the lowest income quintile in the countries.

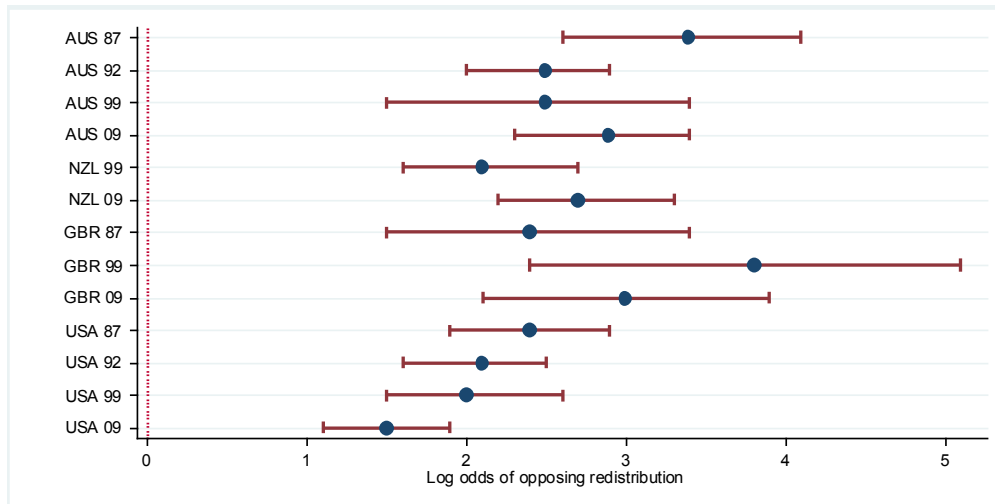
4.4.3 *Sub-sample comparisons*

This sub-section examines the between-country variations by focusing on sub-samples of 11 ISSP countries and 15 WVS countries. These cases are chosen mainly because they are representative of the different types of welfare and different stages of economic development.⁴¹ To recap, the regression results from the pooled samples in sub-sections 4.4.1 and 4.4.2 indicate that an individual who opposes redistribution, *ceteris paribus*, is on average more likely to have high tolerance for income inequality, has a high level of income, has at least a college degree, or tend to be a male. Nevertheless, such general results do not provide a good resolution of country level dynamics hence this sub-section would examine between country variations and the within-country variations across time.

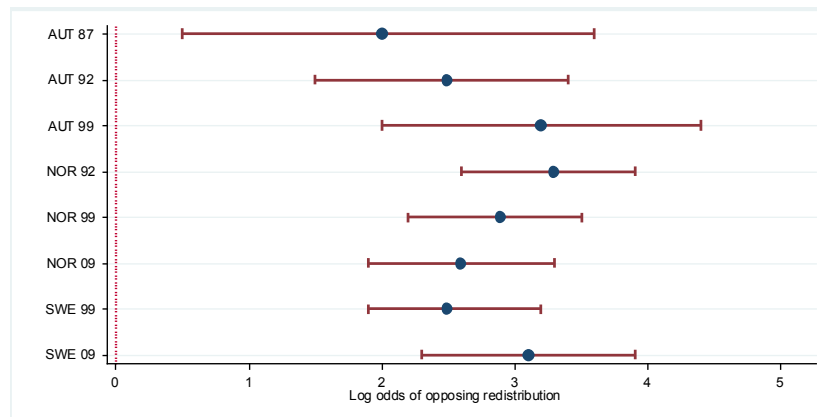
Figure 4.6 displays the log odds of individuals with high tolerance for income inequality in opposing redistribution in 31-country years from a sub-sample of eleven ISSP countries that are arranged based on the type of welfare regimes: liberal welfare regimes (Australia, New

⁴¹ In addition, I only chose countries where the same cross-nation survey is conducted for at least two years.

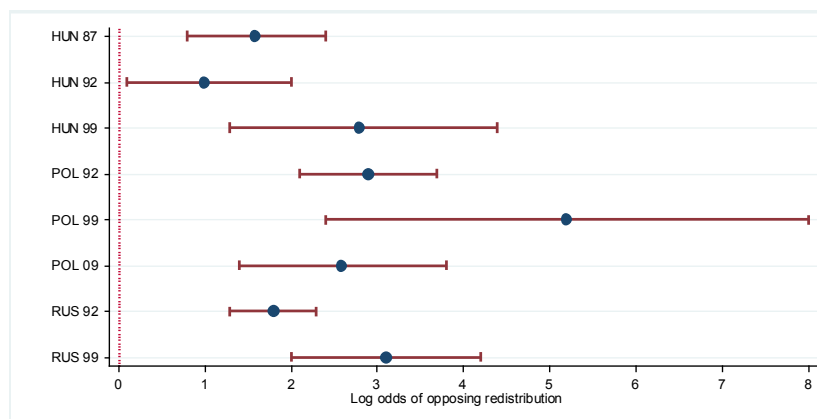
Figure 4.6. Log odds of a person with high tolerance for income inequality to oppose redistribution
Anglo-Saxon Welfare States



European Countries



Post-communist Countries



 : estimates and 95% confidence intervals

Notes: Data are from ISSP social inequality survey (1987, 1992, 1999, and 2009). The estimates are the log odds of a person with high tolerance for income inequality to oppose redistribution and 95% confidence intervals are generated from single-level logistic regressions. The dependent variable is opposition to redistribution and the models include the variable for individual tolerance for income inequality and other control variables.

Zealand, Great Britain, and the United States), social democratic welfare regimes (Austria, Norway, and Sweden), post-communist countries (Hungary, Poland, and Russia), and the Philippines. The social inequality module of the ISSP was conducted for four years over a 23-year period in 1987, 1992, 1999, and 2009, with a mean of an eight-year difference between each survey year. Thus, this eight-year period intervals would capture the cross-time variations and the time lag of long-term structural factors that could affect individual preference for redistribution.

The most important observation is the lack of a systematic between-country variation in log odds of a person with high tolerance for income inequality in opposing redistribution. This counters the popular scholarly perception of an “Atlantic divide” between the United States and Europe (Alesina and Glaeser 2004; Pittau et al. forthcoming). The log odds of an American with high tolerance for income inequality to oppose redistribution (with log odds ranging from 1.5 to 2.4) are about the same as the social welfare democratic regimes (e.g., Sweden with log odds that range from 2.5 to 3.1). Did the global shock of the 2008 global financial crisis affect individual preference for redistribution? A comparison of the results in the 1999 and 2009 ISSP surveys show no systematic trends. There were increases in the log odds in some countries (e.g., Australia) and decreases in the log odds in other countries (e.g., the United States and Great Britain) of individuals with high tolerance for income inequality to *oppose* redistribution to reduce income inequality.

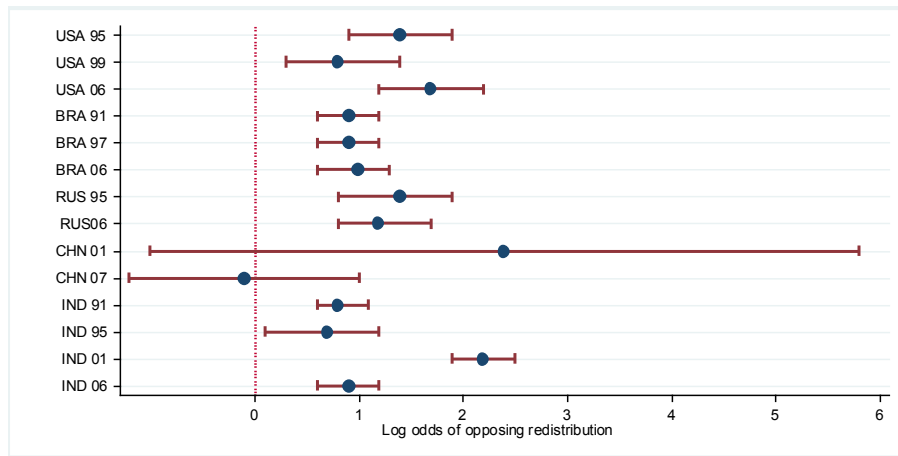
The next important observation is the general stability of the log odds of individuals with high tolerance for income inequality to oppose redistribution within countries. The mean change in the log odds of individuals with high tolerance for income inequality to oppose redistribution is small, i.e., .8 (i.e., odds of two). The log odds of an American with high tolerance for income

inequality to oppose redistribution has declined in a span of 23 years from a log odds of 2.4 in the year of 1987 to a log odds of 1.5 in the year of 2009. Different countries experienced increasing or decreasing log odds for an individual with high tolerance for income inequality to oppose redistribution but there is no systematic variation.

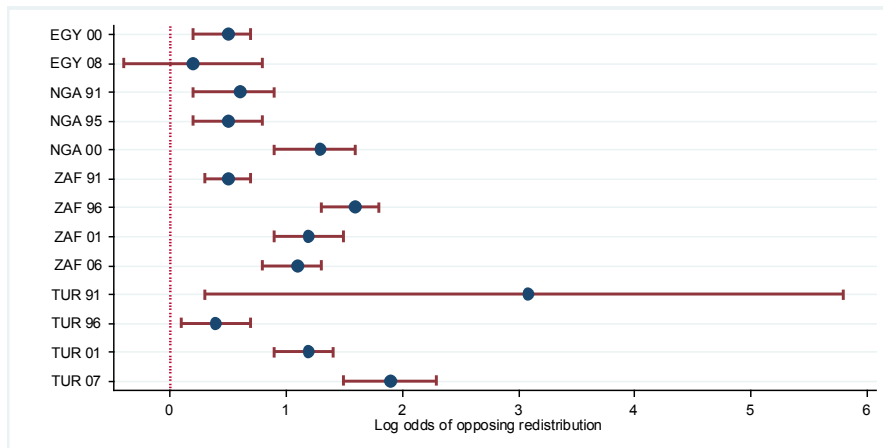
The above findings from the ISSP sub-sample are repeated in the WVS sample. Focus on the groups of people within countries with extreme opinion. Figure 4.7 displays the changes in log odd of individuals with high tolerance for income inequality to oppose redistribution in 15 developed and less developed countries from the WVS dataset. These developing countries generally have higher objective income inequality than OECD countries but this difference does not systematically affect the level of log odds of an individual with high tolerance for income inequality to oppose redistribution. In the period of the WVS survey from 1991 to 2007, the mean Gini ratio for the four largest less developed economies, the BRIC—Brazil, Russia, India and China—was .40: a value that is slightly higher than the United States'.36 and much higher than Sweden's .23.

Figures 4.6 and 4.7 indicate the absence of systematic variation between countries in terms of level of development. A cross-time comparison of a single country indicates that there are some countries with relatively stable (e.g., Finland and Brazil) and unstable (e.g., Sweden and China) effects of individual tolerance for income inequality on individual preference for redistribution. In addition, Figures 4.6 and 4.7 show the absence of an “American exceptionalism” (Lee and Roemer 2006) or the “cross-Atlantic divide” (Alesina and Glaeser 2004) in the redistributive preference literature. The top panel compares the United States with other liberal welfare states, Australia, New Zealand, and United Kingdom. The log odds of an American's propensity to oppose redistribution in the four sample years—1987, 1992, 1999, and 2009—is

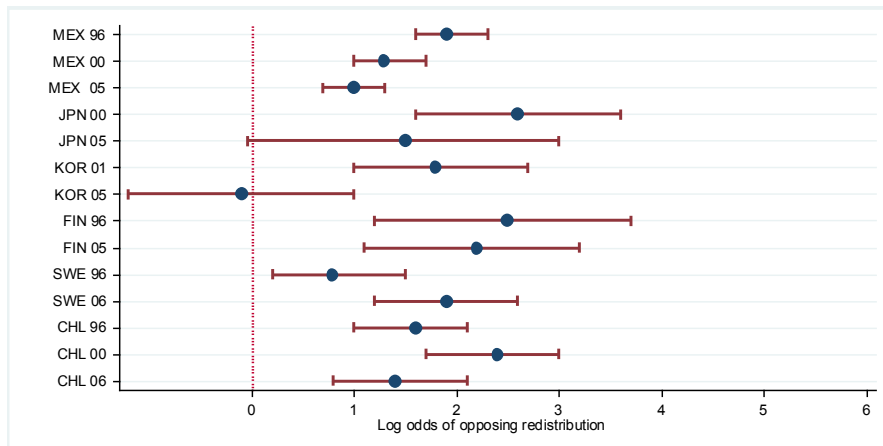
Figure 4.7. Log odds of a person with high tolerance for income inequality to oppose redistribution
BRICs and U.S.



Large Developing Countries



Selected OECD Countries



 : estimates and 95% confidence intervals

Notes: Data are from WVS (four waves, 1991-2007). The estimates are the log odds of a person with high tolerance for income inequality to oppose redistribution and 95% confidence intervals are generated from single-level logistic regressions. The dependent variable is opposition to redistribution and the models include the variable for individual tolerance for income inequality and other control variables.

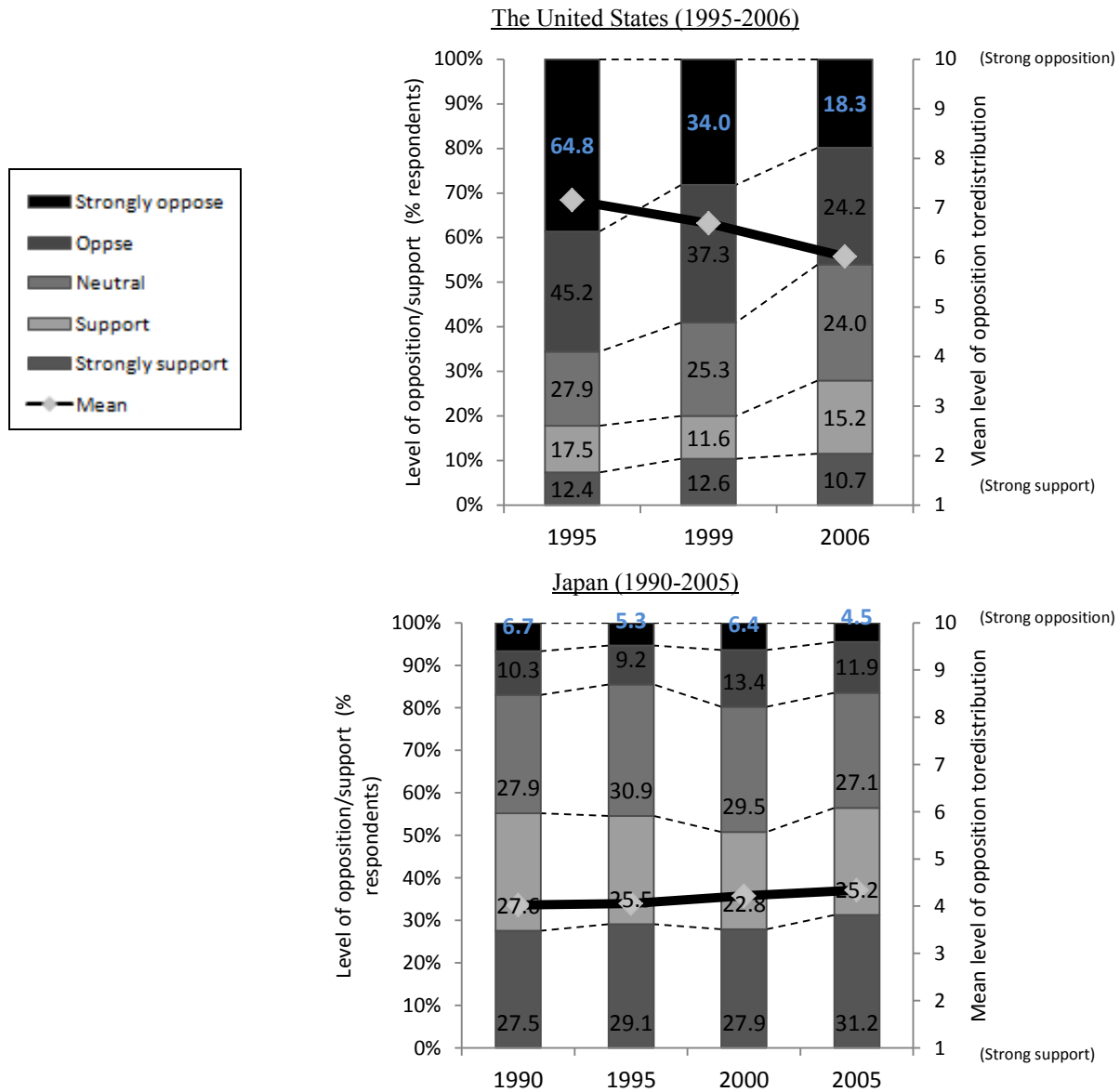
largely similar to the Australians. Similarly, Figure 4.7 compares the United States with the BRICS and the log odds of an American citizen opposing redistribution are similar to that of the Brazilians and Russians from 1995 to 2006.

4.4.4 U.S.-Japan Comparison

This sub-section chooses the world's largest and third largest economy that are widely perceived to have a relatively smaller welfare state than European countries: the United States and Japan. Figure 4.8 illustrates the evolution of public opinion on redistribution in both countries over a span of 17 years.⁴² The stacked area charts shows the distribution of the level of support for redistribution in five categories ranging from strongly support to strongly oppose (black stack) to redistribution. The single black solid line with diamond-shaped markers indicates the mean level of *opposition* to redistribution on a ten-point scale with one indicating the weakest level and ten indicating the strongest level of *opposition* to redistribution respectively. The most important difference in the pattern of public opinion in United States and Japan is that the proportion of American respondents who either oppose or strongly oppose redistribution is at least twice the proportion of Japanese respondents. This pattern is also reflected in the mean level of opposition to redistribution (see right axis and the black solid line with diamond-shaped markers) where the.

⁴² Notwithstanding the extensive studies on individual preference for redistribution in the United States, this dissertation presents the novel use of the WVS data on the United States to present results only for the United States. Extant studies either use a combination of ISSP and GSS (Brooks and Manza 2007; McCall and Kenworthy 2009) or ANES data (Xu and Garand 2010). Scholars that use WVS data usually pooled the sample and do not provide country level results. Nevertheless, no study has use WVS sample to examine the pattern of preferences for redistribution in United States hence this paper would use the WVS sample and compare its findings to extant studies' findings that use other samples (i.e., ANES, GSS, and ISSP).

Figure 4.8. Evolution of individual preference for redistribution in the United States and Japan



Notes: Survey data are from the four waves of World Values Survey (WVS). Respondents were asked to self-rate themselves on a ten-point scale with one stating that “people should take more responsibility to provide for themselves” to ten stating that “the government should take more responsibility to ensure that everyone is provided for.” The original ten categories are recoded into five categories with five being strongly oppose redistribution and being strongly supportive of redistribution (the United States: N=3,918; Japan: N=4,267). The proportion on the left axis indicates the proportion of respondents who chose particular response categories. The right axis displayed WVS ten-point scale with one indicating strong support for redistribution.

mean level of opposition to redistribution averaged 6.6 and 4.2 out of a maximum of ten for the United States and Japan respectively.

Another interesting observation for the United States is the gradual decline in the mean level of opposition to redistribution from 1995 to 2006. One plausible explanation is the enactment of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) and the Temporary Assistance for Needy Families (TANF) in 1997 in the Clinton administration. These policy changes included measures that incentivize the poor in the United States to seek employment. The addition of these incentives in these redistribution policies could have shift the American public opinion of redistribution from the perception of redistribution policies as “free lunches” to the poor to the perception that redistributive policies would incentivize the poor to seek employment instead of relying perennially on taxpayers’ money for support. The changes in the nature of the pro-poor redistributive policies could plausibly shift the American public opinion on redistribution but this dissertation’s survey data does not allow the testing of the impact of these macro-level effects on individual preferences for redistribution.

A systematic examination of the patterns of public opinion on redistribution in both countries yields interesting findings (Table 4.4). First, an individual with high tolerance for income inequality has a high propensity to *oppose* redistribution to reduce income inequality. Similarly, individuals who believe that luck determines outcome are more likely to support redistribution; and this result is consistent that extant studies’ finding (e.g., Alesina and Giuliano 2011). Second, an individual’s level of household income does *not* have a statistically significant effect on an individual’s opposition to redistribution in both countries. This finding counters extant studies’ finding that individuals with higher income tend to oppose redistribution (Alesina and Giuliano 2011; McCall and Kenworthy 2009). Third, contrary to Shayo (2009), a person’s

Table 4.4. United States and Japan: determinants of opposition to redistribution

	The United States			Japan			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	1995	1999	2006	1990	1995	2000	2005
High Tolerance for Income Inequality	1.080*** (.287)	1.129*** (.287)	1.292*** (.307)	.0510 (.714)	2.028*** (.554)	2.625*** (.384)	1.416 (1.65)
Income Quintiles	.0481 (.767)	-.0706 (.0777)	.175 (.107)	.203 (.160)	.0425 (.153)	-.0076 (.128)	-.0937 (-.47)
National Pride	.0996 (.221)	.432 (.235)	.434 (.252)	.391 (.460)	.171 (.438)	.0809 (.380)	1.719** (3.03)
Luck determines outcome	.884*** (.178)		1.049*** (.222)	2.427*** (.480)	1.169** (.439)		-.463 (-.53)
Ideology (left=1;right=10)	.124** (.0430)	.0283 (.0469)	.310*** (.0624)	.102 (.135)	-.200 (.112)	-.121 (.084)	.121 (.84)
Republican	.253 (.171)	.851*** (.198)	.617** (.232)				
JP-Liberal Dem. Pty				1.070* (.500)	.675 (.450)	.882* (.371)	-0.245 (-0.43)
Black	-.506 (.288)	.0828 (.273)	.107 (.377)				
College Degree	-.291 (.192)	-.336 (.192)	-.816 (-.880)			-.542 (.470)	-0.985 (.700)
Male	.328* (.162)	.0751 (.181)	-.178 (.200)	.339 (.77)	-.133 (.402)	.355 (.357)	.216 (.40)
Age	.0778** (.0298)	.00565 (.17)	.0262 (.0339)	-.0655 (-.61)	.298* (.138)	.0455 (.56)	.0115 (0.10)
Age ² /100	-.0693* (.0286)	.0150 (.326)	-.0150 (.0321)	.0271 (.24)	-.267* (.131)	-.0135 (.0784)	-.0132 (-0.12)
Catholic	.329 (.191)	-.0633 (.196)	.184 (.251)				
Married	-.160 (.189)	.521** (.196)	-.0427 (.216)	.714 (.97)	-.278 (.584)	-.529 (.462)	-1.000 (-1.69)
Unemployed	-.265 (.391)	.428 (.369)	-.188 (.707)			-.144 (1.22)	
Union	-.121 (.262)		-.0539 (.406)				
Urban	-.469* (.203)	.0699 (.196)	.0925 (.273)	.132 (.26)	.495 (.482)	-.0244 (.447)	-0.412 (-0.70)
Log Likelihood	-485.24	-406.19	-339.27	-90.62	-101.35	-142.82	-67.75
Observations	826	756	788	447	510	732	581

Notes:

[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variable is a dummy variable that is coded one if a respondent strongly *oppose* redistribution and zero otherwise. Results in generated from one-level logistic regression.

[3] All models include dummies for within country regions (e.g., the United States' Pacific region that includes California and the Tokyo region for Japan).

[4] For party identification, *Republican* is coded one if an individual self-identifies as a Republican supporter in the United States and zero otherwise. *JP-Liberal Dem. Pty* is coded one if an individual self-identifies as a Liberal Democratic Party supporter in Japan and zero otherwise

social identity—operationalized as an individual’s national pride in his country—does not systematically affect his high opposition to redistribution. The United States in the WVS sample has one of the highest mean score in terms of respondents’ level of national pride hence the United States is the easiest case to validate Shayo’s model. Nevertheless, the individual’s level of national pride variable’s lack of statistically significant effect after the inclusion of individual race, political ideology, and political attitude in the model indicates the possibility of confounding factors that Shayo’s model do not adequately account for.

Unsurprisingly, there are country specific factors that affect individual preference for redistribution. Individual political ideology and party affiliation in the United States is have statistically significant effects on individual opposition to redistribution and this is consistent with findings in extant studies (Roemer et al. 2007). Race, operationalized with a dummy variable if an individual is Black, is not statistically significant. Few studies have systematically analyzed Japanese individual preference for redistribution (Ohtake and Tomioka 2004). Besides individual tolerance for income inequality and individual beliefs in the role of luck that determines outcomes, no other factors in the model systematically affect individual preference for redistribution. Interestingly, education is an important factor in affecting inequality in Japan because Japanese-style meritocracy is based on education (*gakkureki shakai*) (Kikkawa 2006). Accordingly, individuals with higher education are more likely to oppose redistribution. Nevertheless, the degree variable is not statistically significant in this model.

4.5. Robustness

The previous section identifies the determinants of individual preference for redistribution for individuals with high tolerance for income inequality. A critic could point out that such an operationalization does not capture the spectrum of preferences for redistribution. This subsection addresses this potential critic by focusing on the individuals on the other end of the spectrum, i.e., individuals who indicate strong *support* for redistribution.

Table 4.5 shows the results of two level logistic regressions with individual *support* for redistribution as the dependent variable.⁴³ Recall that survey responses to the individual preference for redistribution question potentially suffer from the social desirability bias. Another way to minimize the social desirability bias is to operationalize the dependent variable as support for redistribution, with one if a respondents *strongly* agrees that government should redistribute to reduce income inequality, help the unemployed, and helped the poor. The results are consistent with the findings from other sub-sections. An individual with a high tolerance for income inequality has a *lower* propensity to *support* redistribution than an individual without high tolerance for income inequality. These results are consistent across different types of redistribution. Individual income is also statistically significant. The higher an individual's income is, the lower his propensity to oppose redistribution.

⁴³ Besides the robustness test discussed in this section, this paper also test the baseline model with different operationalizations of the control variables and the results are substantively similar to those in Tables 4.2 and 4.3. For income, respondent and household income in quintiles and deciles; for religion, a no religion dummy variable, for country level objective income inequality, post-tax and post-transfers Gini coefficient was used.

Table 4.5. Robustness tests: determinants of support for redistribution

	ISSP sample			WVS sample
	(1)	(2)	(3)	(4)
	Support - Reduce Inequality	Support- Help Unemployed	Support - Help Poor	Support - Reduce Inequality
High Tolerance for Income Inequality	-.604*** (.0909)	-.643*** (.0856)	-.038*** (.0905)	-.146*** (.0167)
<i>Country level controls</i>				
Country Objective Income Inequality	-.481 (1.187)	1.905 (1.572)	8.312** (2.667)	.00772 (.00767)
Country Wealth	-.440** (.138)	-.287 (.209)	.660 (.347)	-.0382 (.0704)
<i>Individual level controls</i>				
Income Quintiles	-.146*** (.00740)	-.154*** (.00987)	-.117*** (.0101)	-.158*** (.00575)
Improved Social Mobility	-.0257 (.0146)	.00912 (.0162)	-.0242 (.0191)	
Male	-.0309 (.0185)	.0582* (.0245)	.0729** (.0253)	-.093*** (.0120)
Age	.0289*** (.00345)	.0134** (.00455)	.0154*** (.00467)	.00417 (.00218)
Age ² /100	-.0249*** (.00357)	-.0113* (.00472)	-.0134 (.0048)	-.00304 (.00235)
College Degree	-.3546*** (.0276)	.0231 (.0327)	-.00386 (.0336)	-.201*** (.0184)
Catholic	-.147*** (.0243)	-.140*** (.0293)	-.128*** (.0310)	-.116*** (.0204)
Married	.0281 (.0208)	-.0673* (.0274)	-.0523 (.0282)	-.0230 (.0133)
Employed	-.0854*** (.0224)	-.326*** (.0301)	-.293*** (.0305)	-.0769*** (.0204)
Union	.225*** (.0231)	.227*** (.0305)	.178*** (.0319)	
Urban	-.0342 (.0208)	.0652* (.0283)	.0122 (.0289)	
High national pride				.00807*** (.0136)
Log Likelihood	-39,451	-22,582	-22,556	-85,784
No. of Countries	36	36	36	79
No. of Country-years	89	89	89	150
Observations	68,736	39,768	41,307	126,947

Notes:

[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variable is a dummy variable that is coded one if a respondent strongly supports redistribution and zero otherwise. All results are generated from two-level logistic regression

[3] All models include dummies for different survey waves, regions, and OECD countries, and controls for aggregate levels of tolerance for income inequality at the country and regional levels.

Nevertheless, there is a theoretical weakness in operationalizing individual preference for redistribution in terms of the propensity to *support* redistribution, all of the eleven individual level control variables, except for *Urban*, are statistically significant and this presents “noisy” results. Unlike the results in Tables 2 and 3 where only a few variables are statistically significant and the results are more easily interpretable. Results in Table 5 explain too much and suggest the possibility of the confounding among multiple variables in the models. In other words, gender, age, income, education, religion, marital status, employment status, union membership, and level of national pride affect the propensity for an individual to support redistribution. It becomes less clear as to which variables better explain individual support for redistribution.

To make the results more intuitive, Figure 4.9 presents the predicted levels of redistributive preferences based on a person’s level of tolerance for income inequality—the main explanatory variable of interest—and the individual socio-economic characteristics that almost all studies on redistributive preferences report as statistically significant, i.e., individual household income across decile. The vertical axis is the predicted levels of tolerance for income inequality with one and ten indicating very low and very high levels of support for redistribution respectively. The impact of a person’s income on a person’s predicted level of support for redistribution is the *strongest* for individuals with very low tolerance for income inequality (=1) and the *weakest* for individuals with very high tolerance for income inequality (=10). This is assessed based on the steepness of the slope. For example, a person who has a very high level of tolerance for income inequality would have predicted levels of support for tolerance for income inequality of 7.03 if his household income is of the lowest decile and 6.72 if his household income is of the highest income decile. In other words, a individuals who have very high levels

of tolerance for income inequality (=10), the difference in the predicted levels of preference for redistribution between a man in the lowest income decile and another man in the highest income decile is only .31. At the other extreme, the impact of income on the group of individuals with very low tolerance for income inequality (=1) is much higher. A person who has a very low level of tolerance for income inequality (=1) would have predicted levels of support for tolerance for income inequality of 5.64 if his household income is of the lowest decile and 4.60 if his household income is of the highest income decile. In other words, a individuals who have very low levels of tolerance for income inequality (=1), the difference in the predicted levels of preference for redistribution between a man in the lowest income decile and another man in the highest income decile is only 1.04—three times larger in terms of magnitude than the .31 for individuals with very higher levels of tolerance for income inequality.

Figure 4.9. Predicted levels of support for redistribution based on different levels of income and tolerance for income inequality

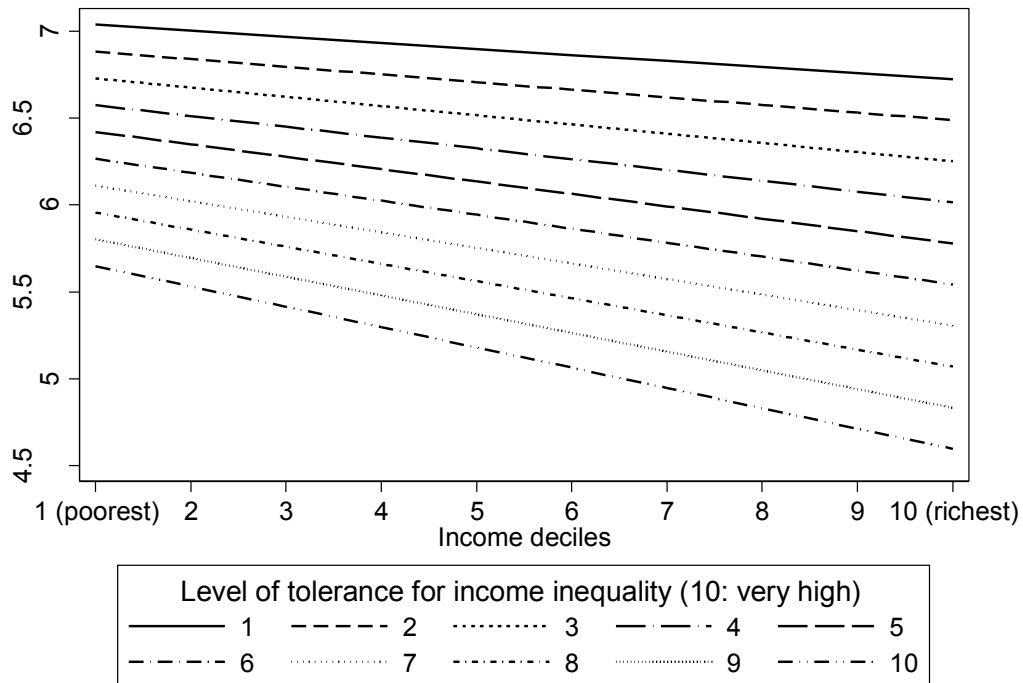
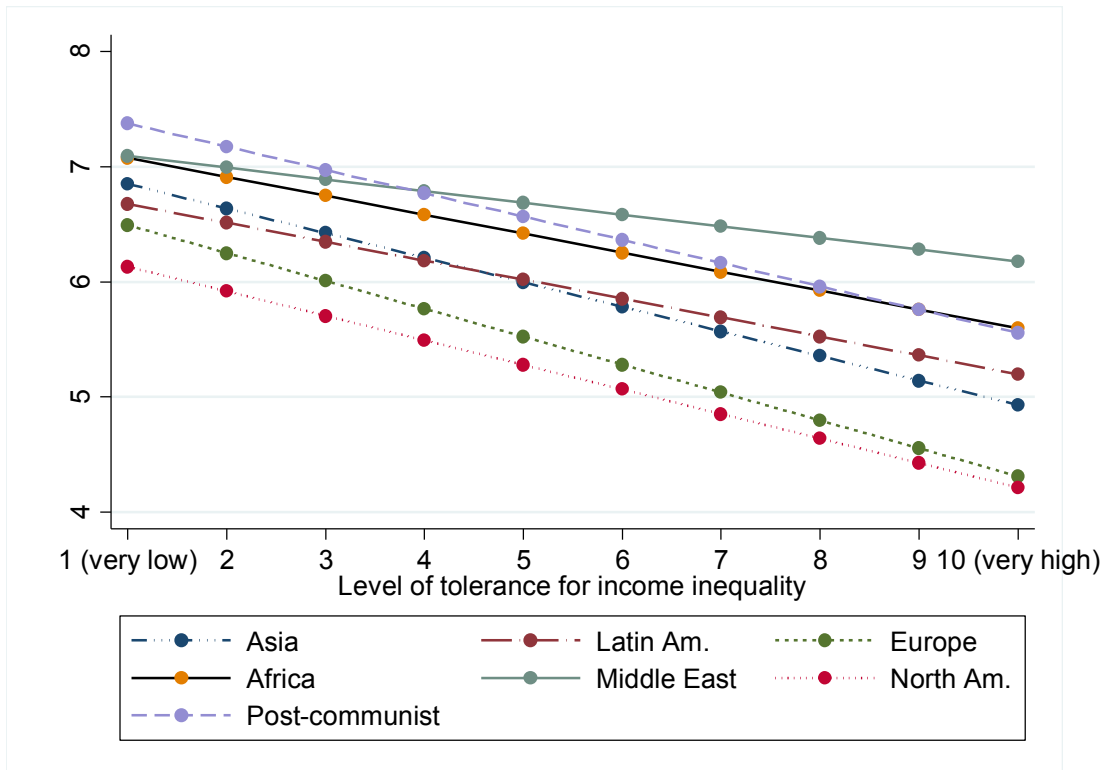


Figure 4.10 illustrates the methodological pitfall of using ISSP samples that are Europe and United States centric. As the figure shows, there are substantively important variations between continents in terms of the impact of individual tolerance for income inequality on individual preference for redistribution. First, countries outside this western world—Europe and North America—tend to have higher predicted levels of preference for redistribution. For examples, for the group of individuals with the lowest level of tolerance for income inequality, a person who lives in a post-communist country (e.g., Russia and Ukraine) is predicted to have 7.38 level of preference for redistribution vis-à-vis a North American (e.g., United States)—with

the same level of tolerance for income inequality—who is predicted to have only 6.13 level of preference for redistribution.

Figure 4.10. Predicted levels of support for redistribution based on different levels tolerance for income inequality across continents



Second, the impact of individual level of tolerance for income inequality on preference for redistribution are the strongest in the western world as shown by the steeper slopes for both continents. For two average Europeans with very low and very high levels of tolerance for income inequality, their predicted levels of preference for redistribution are 6.49 and 4.31 respectively. This difference in magnitude—2.18—is two times larger than the .91 difference between two Middle Eastern citizens who have very low and very high levels of tolerance for income inequality (the difference between 7.09 and 6.18).

Nevertheless, the observations in Figure 4.10 could also be attributed to a “ceiling effect” that is imposed by the use of logistic regression and the nature of the mean level of support for redistribution in the non-Western world. For example, because the baseline support for redistribution is high in the Middle East and the post-communist countries are already high vis-à-vis the western world, hence the substantive impact of individual tolerance for income inequality on individual preference for redistribution in the non-western world would naturally be weaker than in the western world. This methodological issue is also complicated by the huge variations in the sample sizes. There are more country-year observations of European countries as compared with other continents. The best way to mitigate this methodological limitation would be to use the samples from the new wave of WVS from 2010 to 2012 which the author has no access to as of January 2013.

4.6. Conclusions

This chapter has shown that an individual’s level of tolerance for income inequality affects his preference for redistribution. By focusing on individuals who have strong preference on redistribution, i.e., those who oppose redistribution, I leveraged upon the large sample that cover countries from five continents and shown that individuals with high tolerance for income inequality has a high propensity to oppose redistribution.

At the macro-level, a country’s level of objective income inequality does not affect individual preference for redistribution while at the individual level, an individual’s level of income affects his preference for redistribution. These two findings challenge Romer-Meltzer-Richard model because this model predicts that changing levels of income inequality would affect individual preference for redistribution. In addition, the model also predicts that different

individuals with different levels of income would react differently to this changing objective income inequality.

The findings therefore support this chapter's theorization of the effect of individual tolerance for income inequality on individual preference for redistribution. Multiple income inequalities exist within a country because individuals have different normative values about income inequality; while a country has only one objective income inequality that could be obtained via a variety of measures. Thus, this chapter's theorization provides a reframing of extant studies explanation of the factors affecting individual preference for redistribution.

Chapter 5 Redistributive Preferences in Japan and China

This chapter aims to further test the external and internal validity of the findings in Chapter 4 by focusing on an in-depth comparison of two countries, Japan and China. Chapter 4 has shown that a person's level of tolerance for income inequality affects his individual preference for redistribution and an individual's context at the country and region level do not have robust effects on a person's level of preference for redistribution. This chapter therefore aims to test the Chapter 4 findings by including regional objective income inequality in Japan and China as a control to rule out the competing hypothesis that a region's level of objective income inequality affect individual preference for redistribution.

This chapter contributes to extant studies in the tolerance for income inequality literature and area studies. First, this chapter contributes to the redistributive preferences literature and supports Chapter 4's finding that an individual's level of tolerance for income inequality affects his preference for redistribution and the effect is robust across different yearly samples in Japan and China. It shows that objective income inequality at the region and country level do *not* affect a person's level of tolerance for income inequality. This finding further strengthens Chapter's 4 claim for the shift of focus from objective income inequality to subjective aspects of income inequality in the analysis of individual preference for redistribution. Second, this chapter contributes to the fields of Japanese studies and Chinese studies. There is only a handful of peer-

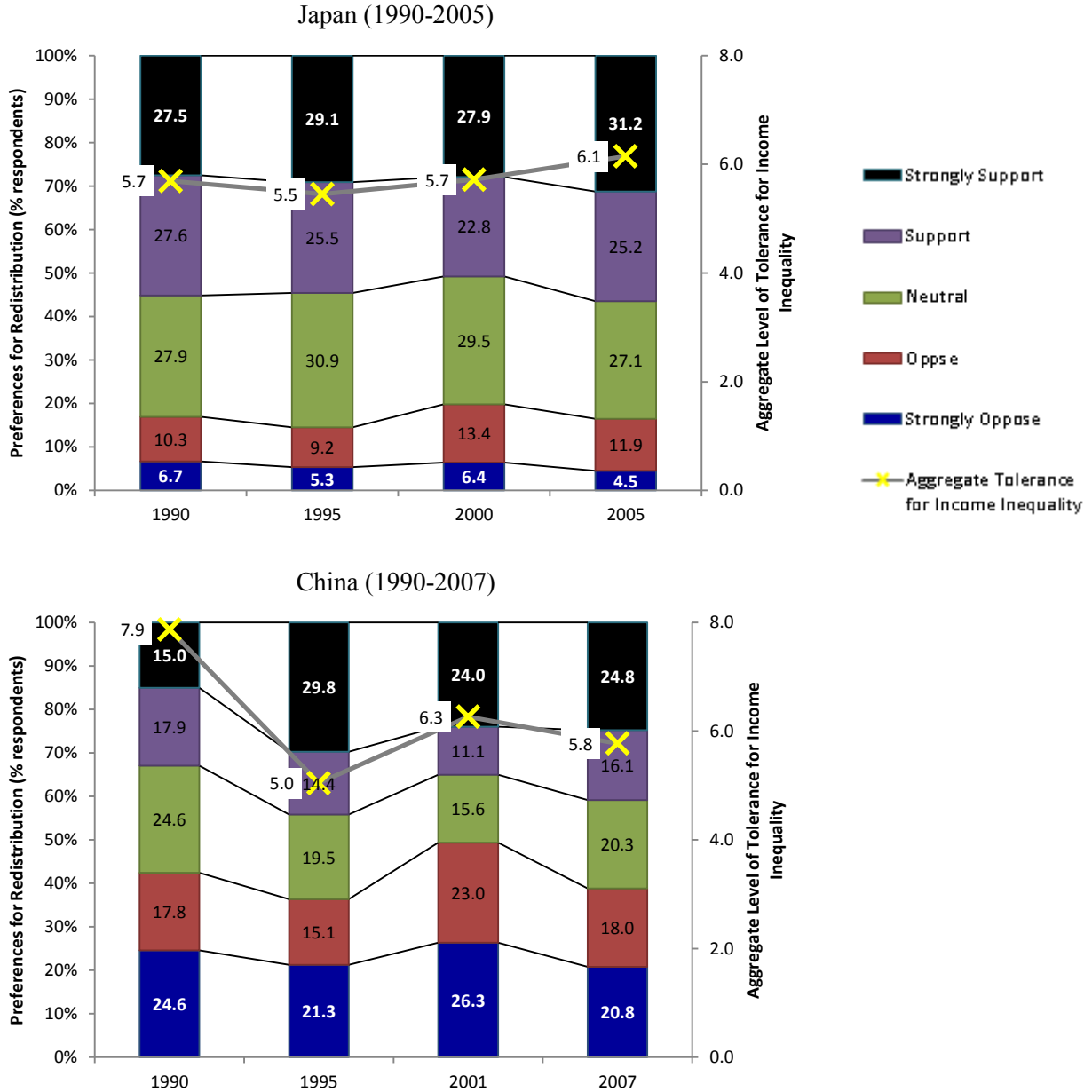
reviewed studies that analyzes the determinants of redistributive preferences in Japan and China. This chapter's finding of the importance of the role of individual tolerance for income inequality contribute to the list of other individual level factors that extant studies have found to affect individual preference for redistribution.

This chapter proceeds as follows. The next section highlights the patterns of individual preference for redistribution in Japan and China. Section 5.2 explains the empirical setup and section 5.3 highlights the main results by comparing them with the findings of extant studies. Section 5.4 includes checks on the robustness of the results with regressions of yearly Japanese and Chinese samples, and section 5.5 concludes.

5.1. Patterns of redistributive preferences in Japan and China

Japan's welfare state is an outlier among the developed nations (Estévez-Abe 2008). Most studies emphasize the "uniqueness" of the Japanese institutions (Kasza 2006; Schoppa 2006) but much less has been written on the Japanese public opinion on welfare and redistribution. Figure 5.1 show the evolution of individual preference for redistribution in Japan and China from 1990 to 2007. At least 50 percent of the Japanese respondents and at least 33 percent of Chinese respondents either support or strongly support government redistribution in the four sample-years. The pattern of the degree of support for redistribution is stable in Japan but fluctuates greatly in China. The proportion of Chinese respondents who either oppose or strongly oppose government with a range 13.0 percent (compared with Japan's 5.3 percent) and the proportion of Chinese respondents who either oppose or strongly oppose redistribution (38.8-49.3 percent) was about 2.5 times the proportion of Japanese respondents (14.5-19.8 percent). The line graph

Figure 5.1. Comparison of redistributive preferences: Japan and China



Notes: Survey data are from the four waves of World Values Survey (WVS). Respondents were asked to self-rate themselves on a ten-point scale with one stating that “people should take more responsibility to provide for themselves” to ten stating that “the government should take more responsibility to ensure that everyone is provided for.” The original ten categories are recoded into five categories with five being strongly support redistribution and one being strongly oppose to redistribution (Japan: N=4,267; China=5,037). The five categories are displayed as the stacked charts. The proportion on the left axis indicates the proportion of respondents who chose particular response categories. The right axis displayed country’s mean level of tolerance for income inequality with one indicating very low while ten indicates very high levels of tolerance for income inequality.

in Figure 5.1 illustrates the aggregate level of tolerance for income inequality in each country and the stable Japanese and fluctuating Chinese trend is repeated. Japan's mean level of tolerance for income inequality fluctuated within a small range of .7 vis-à-vis 2.8 for China on a ten-point scale. On average, Japan and China have similar levels of aggregate level of tolerance for income inequality, i.e., moderate level of tolerance for income inequality. In other words, Japanese and Chinese citizens on average feel that income inequality in their respective countries are not too large. Only a small number of studies have examined the determinants of individual preference for redistribution in Japan (Ohtake and Tomioka 2004) and China (Smyth et al. 2010). Extant studies that use samples of European countries and the United States emphasizes the importance of three groups of micro-level factors: individual self-interest (Meltzer and Richard 1981; Romer 1975), social interdependence (Shayo 2009), and/or evaluation of social justice (Bénabou and Tirole 2006) affect individual preference for redistribution; and at the country level, a country's level of objective income inequality (Pittau et al. forthcoming) affect individual preference for redistribution.

5.2. Empirical setup

The main empirical analysis consists of a series of models of individual preference for redistribution with two-level and single-level regression models; the main data source is from the World Values Survey (waves two to five).

5.2.1 *Dependent variable*

Unlike Chapter 4's use of a binary dependent variable of individual opposition to redistribution, this chapter's uses an ordinal dependent variable. The WVS statement that teases out individual preference for redistribution is based on statement that asks respondents to choose along a ten-point scale with one stating that "people should take more responsibility to provide for themselves" to ten stating that "the government should take more responsibility to ensure that everyone is provided for." In other words, respondents who choose either one or near to one are opposed to redistribution while those who choose either nine or ten are supportive of redistribution. *Support for Redistribution* is coded from one to ten with a higher score indicating a respondent's greater level of support for government redistribution.

5.2.2 *Explanatory variable*

WVS has a statement that teases out an individual's level of tolerance for income inequality based on his choice along a ten-point scale that ranges from one "incomes should be made more equal" to ten "we need larger income differences as incentives." Individuals who choose the options that are nearer to "we need larger income differences as incentives" are more likely to have high tolerance for income inequality than who choose categories that are close to "incomes should be made more equal." *Tolerance for Income Inequality* is an ordinal variable that is coded

from one to ten with one indicating very low tolerance for income inequality and ten indicating very high tolerance for income inequality. It is expected to be negatively correlated with the dependent variable.

5.2.3 Control variables

This chapter controls for other factors that could affect individual preference for redistribution in Chapter 4. Individuals with higher income are expected to oppose redistribution (Corneo and Grüner 2002). Household income, *Income Quintiles*, is operationalized in quintiles from the lowest (first quintile) to the highest (fifth quintile) level of household income. Operationalizing income in quintiles allows comparability across nations because it measures an individual's relative position in the income distribution within their respective countries. It is expected to be positively correlated with the dependent variable in Japan and China.

Education is another control variable. Individuals with higher education tend to oppose redistribution. A respondent's level of education, *College Degree*, is operationalized as respondent who has a college degree and above as one and zero otherwise. Extant studies find that education has no effect on individual preference for redistribution (Ohtake and Tomioka 2004) but this chapter would tests this because of the structural educational income inequality in Japanese society. Because of the very low proportion of Chinese population with a college degree, this chapter operationalizes the education variable for Chinese sample as a four-category ordinal variable. Each category indicates the highest level of education that an individual has obtained in terms of the number of schooling years completed: a response is coded one if the respondent completed 13 or lesser numbers of years of education and the rest of the categories are 2 (14-16 years), 3 (17-19 years), and 4 (20 years and above). Smyth et al. (2010) finds no

effect of an individual's level of education of individual preference for redistribution but this chapter would control for it because of the effect of education on individual social mobility.

Gender and age also affect individual preference for redistribution (Guillaud forthcoming). *Male*, is a dummy variable that is coded as one for male and zero otherwise. Age captures the cohort effect and individual life experiences. Age squared is included in order to control for concavity. *Married* is a dummy variable that is coded as one if an individual is married and zero otherwise. *Employed* is coded as one if an individual is currently working full-time. Studies have shown that an individual's occupation proxies for the level of risk that an individual faces in jobs that are threatened by globalization (Iversen and Soskice 2001; Rehm 2009). Accordingly, *Employed* is expected to correlate positively with the dependent variable in Japan (Ohtake and Tomioka 2004) and China (Smyth et al. 2010).

An individual's level of national pride affects his level of preference for redistribution (Shayo 2009). *National Pride* is coded one if an individual chooses "very proud" of their national identity and zero otherwise. Japan and China are the best cases to test the robustness of Shayo's (2009) theory because both are ethnically homogeneous societies and a person's level of national pride is unlikely to be confounded with ethnic differences within each country.

In addition, individual beliefs in the role of luck also affect individual preference for redistribution (Alesina and Angeletos 2005). This is operationalized as an four-category ordinal variable that ranges from one if a respondent indicates that religion is not all important in his life to four if a respondent indicates the importance of religion in his life. Another important cognitive factor is a person's perception of macrojustice, i.e., his feeling of the level of fairness in the distributive procedures and distributive outcomes in society. This feeling is teased out from a respondent's answer to WVS statement, "Claiming government benefits to which you are

not entitled.” *Feeling of Macrojustice* is coded in a ten-point scale that is coded one for a respondent who indicates “always justifiable” to ten for a respondent who indicates “never justifiable” to the WVS statement: “claiming government benefits to which you are not entitled.” A person who feels a high level of macrojustice is more likely to have a high level of tolerance for income inequality because he may feel that income inequality—a distributive outcomes—arises from fair distributive procedures in society (e.g., recruitment policy based on the ideology of meritocracy).

5.2.4 Contextual variables

This chapter introduces the important variable of objective income inequality at the regional level with was not tested in Chapter 4. Contexts affect individual preference for redistribution via three channels: region and local levels. This chapter analyzes Japan’s 47 prefectures into five regions because this is the lowest geographic resolution of the location of respondents. The five regions are the northern region (Hokkaido and Tohoku), Tokyo region (Kanto), central region (Chubu and Hokuriku), west region (Kinki), and south region (Chugoku, Shikoku, and Kyushu). This chapter analyzes China’s 33 provinces and autonomous regions into six regions because this is the lowest geographic resolution of the location of respondents. The regions are north region (Beijing, Tianjin, and Hebei), northeast region (Liaoning, Jilin, and Heilongjiang), east region (Shanghai, Jiangsu, Zhejiang, Fujian, and Shandong), south central region (Guangdong Guangxi, Hainan, Henan, Hubei, and Hunan), southwest region (Sichuan, Guizhou, Yunnan, Tibet), and northwest (Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang).

Region Objective Inequality is operationalized by the mean of the prefecture-level income inequality, i.e., Gini ratio, at the regional level, with zero as perfect equality and one as

perfect inequality. The data are obtained from the relevant years of the National Survey of Family Income and Expenditure (*Zenkoku Shōhi Jittai Chōsa*). For China, the data on regional level objective income inequality is measured in Theil index and is obtained from the *University of Texas Inequality Project* (Moran 2003).

Region Wealth is the pre-tax and equalized average individual income of the region and it is obtained from the relevant years of the *Statistical Observations of Prefectures* (Tōkei de Miru Todō Fuken no Sugata) and the *Historical Statistics of Japan* (Nihon no Chōki Tōkei Keiretsu). *Urbanization* captures the local context. Contexts affect individual perceptions of inequality by making it more salient (Xu and Garand 2010). An individual, for instance, who stays in an area with more instances of poverty and/or richness, is more likely to perceive greater opportunity. Extending from the innumeracy literature on race whereby individuals living in neighborhoods with a greater proportion of racial minority groups are more likely to *overestimate* the proportion of racial minority groups in the nation (Mock and Weisberg 1992; Nadeau et al. 1993). Because income inequality tends to be concentrated in urban areas hence this increases individual chances of witnessing poverty-richness divide. *Urbanization* is coded as an ordinal variable in a five-point scale with rural districts (1), towns (2), small cities (3), medium cities (4), and very large cities (5). In China, an individual's household registration *hukou*. An individual who has a urban *hukou* is more likely to have more opportunities than an individual with a non-urban *hukou* (Chan 2009).

The descriptive statistics are shown in Table 5.1.

Table 5.1. Descriptive statistics

Variable	Japan		China	
	Mean	Std. Dev.	Mean	Std. Dev.
Level 1 (Individual)				
Support for redistribution (<i>1: strongly oppose; 10: strongly support</i>)	6.83	2.51	5.51	3.11
Tolerance for Income Inequality (<i>1: very low to 10: very high</i>)	5.76	2.18	6.06	3.14
Male (=1)	.47	.50	.51	.50
Household income quintiles (<i>1: poorest to 5: richest</i>)	2.76	1.37	2.49	1.05
Employed	.42	.49	.60	.49
Importance of luck	1.89	.89	1.61	.83
Feeling of macrojustice (<i>1: low to 10: high</i>)	8.93	1.88	8.50	2.42
High interpersonal trust (=1)	.42	.49	.54	.50
Age	45.79	15.55	41.3	13.6
College Degree (=1)	.34	.47	.14	.35
Married (=1)	.74	.44	.82	.38
Urbanization (<i>1: rural; 5: very large cities</i>)	3.20	1.45	3.02	1.33
National pride (<i>1: not very proud; 4: very proud</i>)	2.17	.84	1.90	.76
Union member (=1)	.26	.16	.05	.22
Ruling party affiliation	.33	.47		
Level 2 (Region)				
Region Objective Inequality (Gini ratio)	.29	.0097		
Region Objective Inequality (Theil index)			.897	.41
Region Wealth (natural log)	14.88	.113	8.80	1.00

5.2.5 Model Specifications

This chapter uses two main estimation strategies: single-level logistic and multi-level logistic regressions with pooled WVS data. The ordered logistic regression is specified as follows:

$$\text{Degree of Support for Redistribution}_{irt} = \alpha_0 + \beta_1 X_{irt} + \beta_2 P_{irt} + \delta_r + \eta_t + \epsilon_{irt}$$

where *Individual Preference for Redistribution*_{irt} indicates the response to the question on the level of individual preference for redistribution for individual *i*, interviewed at time *t* in region *r*. X_{irt} is the vector of explanatory variables, P_{irt} is the vector of individual and contextual controls that are further described below. Region fixed effects (δ_r) and time fixed effects (η_t) control for unobserved heterogeneity that is particular to the regions and year.⁴⁴ This model specification is better than extant studies on income inequality and turnout because it include controls for contextual effects (e.g., regional income inequality).

Because individuals are nested within countries, hence a one-level logistic regression could cause the standard errors associated with the degree of support for redistribution to be underestimated. Then for individual *i* and region *j*, the an individual's predicted level of support for redistribution is estimated as follows

⁴⁴ For Japan, I used dummy variable for each years for 1995, 2000, and 2005 and excluded the year 1990 to control for auto-correlation. For China, I used dummy variable for each years for 1995, 2001, and 2007 and excluded the year 1990 to control for auto-correlation.

$$\begin{aligned}
& \text{Degree of Support for Redistribution}_{ijk} \\
& = \gamma_{00} + \gamma_{10} \text{Region Objective Income Inequality}_j + \gamma_{20} \text{Region Wealth}_j \\
& + \gamma_{1j} \text{Tolerance for Income Inequality}_{ij} + \gamma_{2j} \text{Male}_{ij} + \gamma_{3j} \text{Income Quintile}_{ij} \\
& + \gamma_{4j} \text{Importance of Luck}_{ij} + \gamma_{5j} \text{Feeling of Macrojustice}_{ij} + \gamma_{6j} \text{Level of Interpersonal Trust}_{ij} \\
& + \gamma_{7j} \text{Age}_{ij} + \gamma_{8j} \text{Age}^2_{ij} + \gamma_{9j} \text{Married}_{ij} + \gamma_{10j} \text{College Degree}_{ij} + \gamma_{11j} \text{Employed}_{ij} \\
& + \gamma_{12j} \text{National Pride}_{ij} + \gamma_{13j} \text{Urbanization}_{ij} + r_{ij}
\end{aligned}$$

The error term r_{ij} allows the average of *Degree of Support for Redistribution* is to account for the particular circumstances at the region levels that the model does not account for.

5.3. Main empirical findings

The main finding from two-level models support the main finding in Chapter 4: a person's level of tolerance for income inequality strongly affects his degree of support for redistribution. The higher a person's level of tolerance for income inequality, the lower his likelihood of supporting redistribution. A one unit increase of a person's level of tolerance for income inequality on a ten-point scale *decreases* his level of support for government redistribution by .29 and .16 in Japan and China respectively.

Japan

Besides an individual's level of tolerance for income inequality, a person's gender and income also affect his level of support for redistribution. These two findings are consistent with findings are consistent with the cross-nation study in Chapter 4 and with Ohtake and Tomioka's (2004) analysis of Japan. Specifically, a one unit increase in person's income to the next income quintile,

a person's level of preference for redistribution *decreases* by .135 on a ten-point scale of degree of support for redistribution.

Three null findings are of interest here. A person's age, level of education, and marital status are not statistically significant in Japan and counter the cross-nation findings in Chapter 4 (see Table 4.3). These null findings are partially consistent with Ohtake and Tomioka's (2004) findings. As with the authors, this chapter shows that education has a statistically significant effect on individual preference for redistribution but this chapter differs from Ohtake and Tomioka's (2004) finding in the effects of a person's age and marital status on individual preference for redistribution. Contrary to Ohtake and Tomioka (2004), this chapter finds that a person's age and marital status has no statistically significant effect on individual preference for redistribution.

China

Besides an individual's level of tolerance for income inequality, a person's perception of the importance of luck in life affects his level of support for redistribution. A person who perceives luck to be important in life is more likely to support government redistribution and this supports the finding of extant studies on China (Smyth et al. 2010). The most important null finding of interest here is the absence of impact of an individual's household income. Contrary to findings in Chapter 4 and Smyth et al. (2010), this chapter finds the lack of robustness of individual household income as a predictor of individual preference for redistribution. Furthermore, a person's age, level of education, and marital status are not statistically significant in China and counter the cross-nation findings in Chapter 4 (see Table 4.3). These null findings

Table 5.2. Two-level regression results: ordinal dependent variables

	(1) Japan (3 waves)	(2) China (4 waves)	(3) China (2 waves)
Tolerance for income inequality	-.292*** (.025)	-.160*** (.019)	-.156*** (.026)
Male	-.469*** (.11)	-.142 (.11)	-.143 (.15)
Household income quintiles	-.135*** (.039)	-.063 (.06)	.0539 (.083)
<i>Level Two Control</i>			
Regional objective inequality	.358 (.18)	-.120 (.79)	-.186 (.116)
<i>Level One Controls</i>			
Importance of luck	.025 (.06)	.316*** (.073)	.447*** (.103)
Feeling of macrojustice	.013 (.03)	-.034 (.025)	-.047 (.036)
Level of interpersonal trust	-.023 (.10)	-.114 (.11)	-.28 (.15)
Age	-.023 (.02)	-.001 (.32)	-.001 (.04)
Age ² /100	-.012 (.02)	.0314 (.037)	.031 (.05)
Married	.205 (.14)	-.0437 (.18)	-.160 (.24)
College degree	-.007 (.11)		
Education		.028 (.06)	-.0494 (.088)
Employed	.14 (.12)	.246* (.12)	.0600*** (.16)
Party affiliation	-.316** (.11)		
National pride	.0078 (.064)	.265*** (.076)	.205 (.105)
Level of urbanization	-.017 (.036)		.126*** (.037)
Log Likelihood	-5,280.6	-7,603.0	-4,118.7
Region-years	20	24	12
Observations	2,295	2,998	1,629

Notes:

[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variables are ordinal variables of individual tolerance support for redistribution as one and zero otherwise. All the results are generated from two-level continuous regressions.

are also largely consistent with Smyth et al.'s (2010) findings and this chapter shows similar results by using a much larger sample than this article.

5.4. Separate sample regressions

The findings in the previous section are further validated by year-by-year sample regressions for Japan and China. A person's level of tolerance for income inequality is a robust predictor of his preference for redistribution. Findings from Japanese samples are largely consistent but findings from Chinese samples are not consistent with Chapter 4's findings.

Beginning with Japan, the estimates in Table 5.3 are obtained from single-level continuous regressions. A one unit increase in the level of tolerance for income inequality for an average Japanese citizen, *ceteris paribus*, is predicted to *decrease* his preference for redistribution by log odds of .19, .26, .31, and .27 in the years of 1990, 1995, 2000, and 2005 respectively. The effect of a Japanese citizen's level of tolerance for income inequality on his level of preference for redistribution is robust across a pooled sample and separate year samples. The other important individual level variables, gender and income, are not robust across different samples.

To further illustrate the effects of a person's level of tolerance for income inequality on individual preference for redistribution on individual preference for redistribution, Figure 5.2 illustrates the changes of a Japanese citizen's level of tolerance for income inequality on the predicted levels of individual preference for redistribution across four years of 1990, 1995, 2000, and 2005. The effect of an individual's level of tolerance for income inequality on individual preference for redistribution is the highest in 2005, the lowest in 2000, and substantively similar for the years of 1990 and 1995. From a cross section perspective, in 1990 the predicted

Table 5.3. Single level regression results ordinal dependent variable (Japan)

	(1)	(2)	(3)	(4)	(5)
	All Years	1990	1995	2000	2005
Tolerance for income inequality	-.261*** (.02)	-.188*** (.05)	-.264*** (.04)	-.311*** (.04)	-.267*** (.04)
Male	-.357*** (.09)	-.173 (.24)	-.289 (.17)	-.476** (.16)	-.379* (.16)
Household income quintiles	-.093** (.03)	-.135 (.08)	-.128* (.06)	-.072 (.05)	-.095 (.06)
Importance of luck	.021 (.05)	.165 (.13)	.131 (.1)	-.034 (.09)	-.049 (.1)
Feeling of macrojustice	.011 (.02)	.045 (.06)	-.008 (.04)	.022 (.03)	-.004 (.04)
Level of interpersonal trust	-.04 (.08)	.068 (.19)	-.306* (.15)	.009 (.14)	.063 (.15)
Age	-.015 (.02)	-.027 (.05)	-.078* (.03)	-.008 (.03)	.006 (.03)
Age ² /100	.007 (.02)	.014 (.05)	.072* (.04)	.003 (.03)	-.015 (.03)
Married	.126 (.11)	.433 (.33)	.135 (.21)	.084 (.18)	.088 (.19)
College degree	-.032 (.09)	-.298 (.28)	.174 (.17)	-.288 (.15)	.202 (.16)
Employed	.101 (.09)	-.226 (.24)	.307 (.18)	.09 (.17)	.17 (.18)
LDP	-.242** (.08)	-.536** (.2)	-.206 (.18)	-.223 (.16)	-.115 (.15)
National pride	-.021 (.05)	-.234* (.12)	-.016 (.1)	.072 (.09)	-.011 (.09)
Urbanization	-.014 (.03)	.058 (.07)	-.091 (.05)	.013 (.05)	.001 (.06)
No religious beliefs	.02 (.09)	.236 (.23)	-.016 (.18)	-.025 (.16)	.178 (.18)
Log Likelihood	-4,733.2	-753.3	-1,177.3	-1,453.6	-1,306.0
Wave dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes				
Observations	2,295	360	586	706	643

Notes:

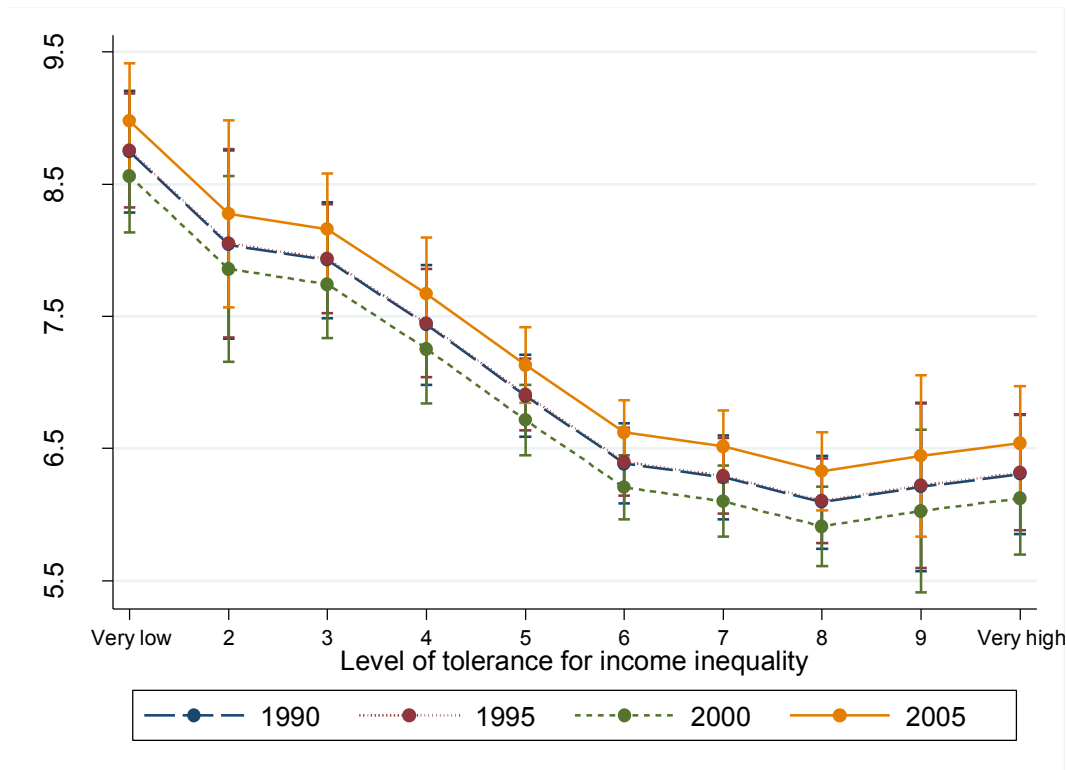
[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variables are ordinal variables of individual tolerance for income inequality. Results are generated from single-level ordered logistic regressions.

[3] All models include dummies for different Japanese regions.

preference of a Japanese with very low level of tolerance for income inequality (=1) and a Japanese with a very high level of tolerance for income inequality (=10) are 8.75 and 6.30 respectively on a ten point scale. In other words, in 1990, a Japanese with very low tolerance for income inequality, i.e., feeling that Japan's level of income inequality is too large is predicted to have a 8.75 level of support for redistribution vis-à-vis a lower score of 6.31 for another Japanese who has very high level of tolerance for income inequality. From a cross-temporal perspective, for a Japanese citizen who has a very high level of tolerance for income inequality, he is predicted to have 6.31, 6.32, 6.12, and 6.54 levels of support for redistribution in 1990, 1995, 2000, and 2005 respectively.

Figure 5.2. Predicted level of support for redistribution: Japan



Notes: The predicted levels of support for redistribution are generated from continuous regression with 95 percent confidence intervals.

Shifting the focus to China, the estimates in Table 5.4 are obtained from single-level continuous regressions. A one unit increase in the level of tolerance for income inequality for an average Chinese citizen, *ceteris paribus*, is predicted to *decrease* his preference for redistribution by log odds of .14, .10, .09, and .16 in the years of 1990, 1995, 2001, and 2007 respectively. The effect of a Chinese citizen's level of tolerance for income inequality on his level of preference for redistribution is robust across a pooled sample and separate year samples.

The other important individual level variables, gender and income, are not robust across different samples. Individual income is only statistically significant in the 1990 sample. This counters the robust finding of individual household income in Chapter 4. One plausible explanation is that income has not become a metric for an individual to evaluate the costs and benefits of redistribution to himself and other Chinese citizens who belong to other income quintiles. In the 1995 sample, three variables, importance of luck, college degree, and the level of urbanization of one's residence affect individual preference for redistribution. In 2001, one's level of national pride is the only statistically significant predictor other than individual preference for redistribution. This finding is consistent with Shayo's (2009) prediction with citizens with higher levels of national pride are more likely to support redistribution. In the 2007 sample, the other variable to be statistically significant is employment, i.e., an employed person is less likely to support redistribution. This is logical because an employed person has a stable stream of income and would prefer the government not to redistribute to help the Chinese citizens who are in need. The statistical significance of this factor could also point out the impact of the macro-level factors of slowing Chinese economic growth and growing unemployment in major Chinese cities.

Table 5.4. Single level regression results ordinal dependent variable (China)

	(1)	(2)	(3)	(4)	(5)
	All Years	1990	1995	2001	2007
Tolerance for income inequality	-.110*** (.01)	-.140*** (.03)	-.096*** (.02)	-.090*** (.02)	-.162*** (.02)
Male	-.081 (.07)	-.13 (.15)	.033 (.12)	-.178 (.14)	.136 (.13)
Household income quintiles	-.013 (.04)	.207* (.08)	-.084 (.06)	-.132 (.07)	.03 (.07)
Importance of luck	.218*** (.05)	.201 (.14)	.309*** (.07)	.09 (.12)	.092 (.09)
Feeling of macrojustice	-.021 (.02)	.017 (.04)	-.038 (.03)	-.046 (.04)	-.004 (.02)
Level of interpersonal trust	-.063 (.06)	-.194 (.15)	-.106 (.11)	.171 (.14)	-.097 (.13)
Age	-.002 (.02)	-.039 (.05)	.011 (.03)	.002 (.05)	-.009 (.04)
Age ² /100	.02 (.02)	.056 (.05)	.001 (.03)	0.017 (.06)	.022 (.04)
Married	-.032 (.1)	-.203 (.24)	-.013 (.18)	.295 (.24)	-.062 (.2)
College degree	-.059 (.09)	-.062 (.23)	-.391** (.15)	.032 (.22)	.043 (.17)
Employed	.180* (.07)	.706*** (.18)	.051 (.12)	.118 (.16)	-.371** (.14)
National pride	.184*** (.05)	.121 (.1)	.006 (.08)	.326*** (.1)	.119 (.09)
Urbanization		-.199 (.13)	.128*** (.02)		
No religious beliefs	.354* (.17)	.51 (.44)		.087 (.36)	.274 (.26)
Log Likelihood	-6,711.6	-1,331.2	-2,209.5	-1,411.7	-1,644.0
Wave dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes				
Observations	3,025	614	1,015	653	743

Notes:

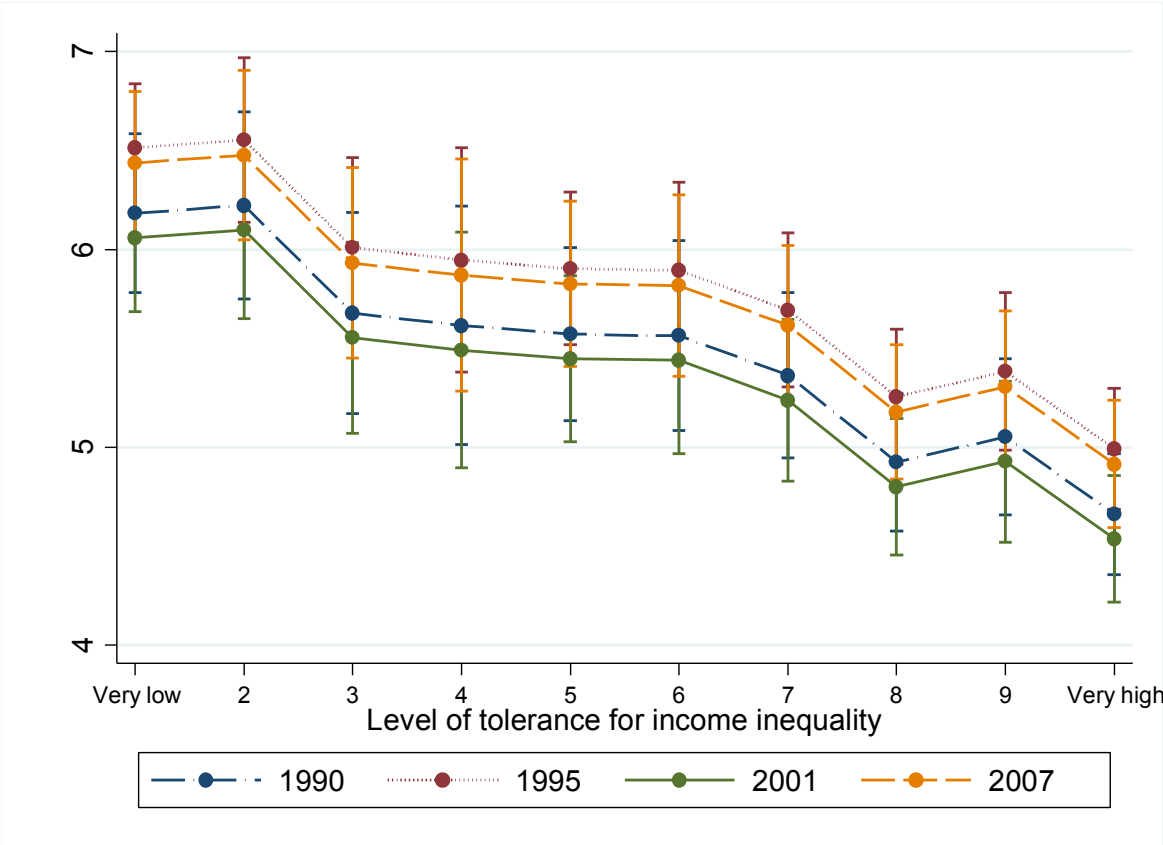
[1] Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[2] The dependent variables are ordinal variables of individual tolerance for income inequality. Results are generated from single-level continuous regressions.

[3] All models include dummies for different Chinese regions.

To further illustrate the effects of a person’s level of tolerance for income inequality on individual preference for redistribution, Figure 5.3 illustrates the changes of a Chinese citizen’s level of tolerance for income inequality on the predicted levels of individual support for redistribution across four years of 1990, 1995, 2001, and 2007. The effect of an individual’s level of tolerance for income inequality on individual preference for redistribution is the highest in 1995, the lowest in 2001. From a cross section perspective, in 1990, the predicted preference of a Chinese with very low level of tolerance for income inequality (=1) and a Chinese with a very high level of tolerance for income inequality

Figure 5.3. Predicted level of support for redistribution: China



Note: The predicted levels of support for redistribution are generated from continuous regressions with 95 percent confidence intervals.

(=10) are 6.18 and 4.66 respectively on a ten point scale. In other words, in 1990, a Chinese with very low tolerance for income inequality, i.e., feeling that China's level of income inequality is too large is predicted to have a 6.18 preference for redistribution vis-à-vis a lower score of 4.66 for another Chinese who has very high level of tolerance for income inequality. From a cross-temporal perspective, for a Chinese citizen who has a very high level of tolerance for income inequality, he is predicted to have 4.67, 4.99, 4.54, and 4.92 levels of preference for redistribution in 1990, 1995, 2001, and 2007 respectively.

5.5. Conclusions

The main finding from Chapter 5 is that an individual's level of tolerance for income inequality is a robust predictor of individual preference for redistribution. This is consistent with the cross-nation findings in Chapter 4. Nevertheless, other important predictors of individual preference for redistribution such as income and gender are not robust predictors of individual preference for redistribution in Japan and China. Separate year regressions of Japanese and Chinese samples show that different individual level socio-economic characteristics affect individual preference for redistribution differently. As for the contextual factors, two-level regressions using pooled Japanese and Chinese samples indicate that contextual factors at the regional level—objective income inequality, and wealth—do *not* have statistically significant effects on individual preference for redistribution in Japan and China.

By using the sample that covers the most years, this chapter contributes to Japanese and Chinese studies. Most studies on Japan and China have overwhelmingly focus on income inequality or redistribution at the country level but have not systematically examined individual

preference for redistribution. As mentioned in Chapter 4, multiple income inequalities exist in Japan and China and citizens who live in both countries have different levels of tolerance for income inequality. This chapter highlights the importance of tolerance for income inequality in affecting individual preference for redistribution and advances the scholarly and policy discussions on redistribution and welfare state policies in Japan and China.

Chapter 6 Conclusion, Implications, and Avenues for Future Research

Subjective dimensions of income inequality are important factors that determine substantive outcomes. This dissertation has shown that a country's level of objective income inequality affects neither a person's level of tolerance for income inequality nor his preference for redistribution. Multilevel analyses with data from a cross-nation dataset covering 87 countries over 21 years—in Chapter 2—has shown that individual level factors (e.g., subjective social status and income) affect but a country's levels of objective income inequality and wealth do *not* affect an individual's level of tolerance for income inequality. In other words, a Swiss citizen who lives in a “high-income-low objective income inequality” Switzerland and a Nigerian citizen who lives in “low-income-high objective income inequality” Nigeria are equally likely to have similar levels of tolerance for income inequality. These normative values about income inequality are not simply perceptions about income inequality and—as Chapter 2 has explained—are people's evaluations of income inequality in the country and the region where they live in.

A person's level of tolerance for income inequality is not merely his opinion or personal values because it affects his policy preferences. Focusing on redistributive preferences, multilevel analyses with data from the same cross-nation dataset, Chapter 4 shows that a

person's level of tolerance for income inequality affects his redistributive preferences. The higher a person's level of tolerance for income inequality is, the less likely he would support government redistribution. Furthermore, a country's levels of objective income inequality and the wealth do *not* systematically affect the redistributive preferences of its citizens.

These two set of findings advance the understanding of income inequality and redistributive preferences. First, this dissertation examines the determinants of one subjective dimensions of income inequality: individual tolerance for income inequality. The dissertation highlights the importance of subjective social status in affecting tolerance for income inequality and supports the findings of extant studies (Hadler 2005; McCall forthcoming).

In addition, I find the absence of systematic effect of a country's level of objective income inequality on an individual's level of tolerance for income inequality. This counterintuitive finding challenges the implicit assumption in the objective income inequality-affect-substantive outcomes literature. These studies explain how objective inequality—usually measured in terms of Gini ratio—affect a variety of outcomes ranging from redistribution (Alesina and Glaeser 2004; Kenworthy and Pontusson 2005; Lupu and Pontusson 2011; Milanovic 2000), political stability (Lichbach 1989, 1990), civil wars (Cederman et al. 2011), and health (Kondo et al. 2012), and the implicit assumption is that a country's level of objective income inequality would *casually* affect an individual and changes in the level of country objective income inequality would change the individual's incentive structure to act.

This dissertation has shown that this assumption is not valid empirically based on the HLM modeling of data from cross-nation surveys. Specifically, this dissertation shows that a country's level objective income inequality do not systematically affect a person's level of tolerance for income inequality. Future studies should reassess the theoretical implications that

arise from extant studies' finding of statistically significant relationship between a country's level of objective income inequality and substantive outcomes. There is definitely a need for scholars to re-examine the causal linkages between objective income inequality and these substantive outcomes..

Along the same lines, this dissertation introduces the new variable of individual tolerance for income inequality to explain individual redistributive preferences to the list of factors that existing studies have found to be important predictors of a person's redistributive preferences, i.e., self-interest (Meltzer and Richard 1981; Romer 1975), social interdependence (Shayo 2009), and/or evaluation of social justice (Bénabou and Tirole 2006). This dissertation argues that a person with low tolerance for income inequality would feel that his country's level of income inequality is too large and would therefore strongly support government redistribution. Contrary to extant studies, this dissertation finds that a country's level of objective income inequality and wealth do *not* affect an individual's redistributive preference. Thus, there is a substantive difference between a person's level of tolerance for income inequality—a subjective dimension of income inequality—and his country's level of objective income inequality. There are variations among different individuals living within the same country with the *same* objective income inequality to feel differently about income inequality. Accordingly, I argue that it is this subjective dimension of the *multiple* perceived and evaluations of income inequalities that affect the redistributive preferences of citizens who live in the same country and not the country's level of objective income inequality.

By relying on survey data, this dissertation has find common patterns of level of tolerance for income inequality and support for redistribution across countries. I do not suggest the presence of universal factors that affect tolerance for income inequality and preference for

redistribution because there are country-specific norms. Such norms of income inequality may be long terms cultural norms about income inequality or even simply the every-day normative values that individuals use to make sense of income inequality and other issues. This dissertation has point out gaps in the subjective aspects of income inequality and its effects on redistributive preferences that future studies could examine in the near future.

A Appendix A: Variables and Coding List of countries used in analysis, 1987-2009

This dissertation uses the ISSP social inequality surveys are conducted in the same year for all countries in four waves of 1987, 1992, 1999, and 2009 and three WVS waves of data i.e., wave 3, 4, and 5 surveys were conducted in the periods of 1994-1999, 1999-2004, and 2005-2007 respectively. Hadler (2005) uses only the ISSP 1999 data while McCall (2005) uses United States specific General Social Survey data.

Country	ISSP 1987	WVS 1991	ISSP 1992	WVS 1994- 1999	ISSP 1999	WVS 1999- 2004	WVS 2005- 2007	ISSP 2009
Albania						√		
Algeria				√		√		
Argentina		√				√		√
Armenia				√				
Australia	√		√		√		√	√
Austria	√		√		√			√
Azerbaijan				√				
Bangladesh				√		√		
Belgium								√
Belarus		√		√		√		
Brazil		√		√			√	
Bosnia and Herzegovina						√		
Bulgaria			√	√	√			√
Burkina Faso							√	
Canada			√		√	√	√	
Chile		√		√	√	√	√	√
China		√		√		√	√	√
Colombia				√			√	
Croatia								√
Cyprus					√		√	√
Czech Republic		√	√	√	√			√
Denmark								√
Dominican Republic				√				
Egypt						√	√	
El Salvador						√		
Estonia				√				√
Ethiopia							√	
Finland				√		√	√	√
France					√		√	√
Georgia				√				
Germany				√			√	√
Germany-East			√		√			
Germany-West	√		√		√			
Ghana							√	
Guatemala						√		
Hungary	√		√	√	√			

Country	ISSP 1987	WVS 1991	ISSP 1992	WVS 1994- 1999	ISSP 1999	WVS 1999- 2004	WVS 2005- 2007	ISSP 2009
Iceland								√
India		√		√		√	√	
Indonesia						√	√	
Iran						√	√	
Iraq						√	√	
Israel					√	√		√
Italy			√				√	
Japan		√		√	√	√	√	√
Jordan						√	√	
Kyrgyz Republic						√		
Latvia				√	√			√
Lithuania				√				
Macedonia						√		
Malaysia							√	
Mexico		√		√		√		
Moldova				√			√	
Morocco						√	√	
Netherlands	√						√	
New Zealand			√	√	√	√		√
Nigeria		√		√		√		
Norway			√	√	√		√	√
Pakistan						√		
Peru				√		√	√	
Philippines			√	√	√	√		√
Poland	√	√	√	√	√		√	√
Portugal					√			√
Romania				√			√	
Russia		√	√	√	√		√	√
Rwanda							√	
Serbia							√	
Slovak Republic		√		√	√		√	√
Slovenia			√	√	√		√	
South Africa		√		√		√	√	√
South Korea		√		√		√	√	√
Spain		√		√	√	√	√	√
Sweden			√	√	√		√	√
Switzerland	√	√		√			√	√
Tanzania						√		
Taiwan								√
Thailand							√	
Trinidad and Tobago							√	
Turkey		√				√	√	√
Uganda						√		
Ukraine				√			√	√
United Kingdom	√	√	√	√	√		√	√
United States	√	√	√	√	√	√	√	√
Uruguay				√			√	

Country	ISSP 1987	WVS 1991	ISSP 1992	WVS 1994- 1999	ISSP 1999	WVS 1999- 2004	WVS 2005- 2007	ISSP 2009
Venezuela				√		√		
Vietnam						√	√	
Zambia							√	

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