

Why the Equalizing Effects of Democracy Do Not Work*

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Meltzer and Richard (1981) argued that democracy mitigates income inequality through redistribution if democracy gives more people the right to vote, regardless of income level, and if the political system reflects the interests of the lower-income class earning below median income. According to the Meltzer and Richard model, the spread of democracy globally over the past 40 years should have lowered global income inequality; however, the validity of the model has not been borne out in reality as income inequality has risen in nearly every country. This study refers to prior political and economic research to model why, unlike the Meltzer and Richard (1981) hypothesis, redistribution policies under democracy have failed to adequately counter widening income inequality. By analyzing a variety of scenarios — including captured democracy, policy regime, corrupt government, absence of a political party representing lower-income class interests under a two-party system, and class betrayal voting through identity cleavages — this study finds that even after income redistribution policies are implemented, income inequality may still end up worse than otherwise would have been expected in a democratic system.

JEL Classifications: D30, D31

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1. INTRODUCTION

Over the past 40 years, two variables related to the economy and politics have moved in counterposing directions. First, democratization trends in post-1990 South America and the Eastern European bloc have shown a dramatic shift from autocratic regimes to more open

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governance and democracy. According to the *Global Report on Conflict, Governance, and State Fragility*, published in 2017, the number of autocratic regimes reached a peak of 89 nations in 1977, and then dropped quickly to 21 countries by 2017. Furthermore, the number of democracies doubled from 49 nations in 1989 to 95 in 2017, also reflecting the recent rapid spread of democracy.

On the other hand, statistics on income distribution show a steep decline in global income equality. World Inequality Report 2018, published by World Inequality Lab, concludes that income inequality has risen as a global phenomenon in almost every nation since 1980, with North America, China, India, and Russia showing larger increases in inequality, and countries of Europe experiencing relatively slower widening of income gaps. In 2016, the share of income earned by the top 10% by income stood at 47% in the US and Canada, 41% in China, 46% in Russia, and 37% in Europe. Additionally, between 1980 and 2016, 27% of the increase in global real income was captured by the world's top 1% by income, while only 12% was captured by the bottom 50%. As a result, we can clearly identify the countervailing trends of increasing democratization and decreasing income equality over the past 40 years.

Schattschneider (1960), a political scholar, claimed that the function of democracy is to provide the public with an alternative power system to counter economic power. In other words, democracy should protect citizens from unfair policies and systems created by those holding economic power, by endowing the masses with an alternative power system to rely on. Similarly, economists like Meltzer and Richard (1981) asserted that democracy would result in income redistribution policies and systems that work to protect the middle and lower classes. They posited that, if democratization gives more people the right to vote, regardless of income, and if the political system reflects the interests of the lower-income class earning below median income, the government will enact policies that redistribute income and alleviate income inequality. Since the median voter is the decisive voter in a majoritarian democracy, as lower-income citizens gain suffrage, the median voter will also come to have a lower relative income, leading to an increase in demand for income and wealth distribution. Schattschneider and Meltzer and Richard all believed in democracy's equalizing effects. However, as seen over the past 40 years, global income inequality has, in fact, increased against such expectations.

Prior empirical and theoretical research in both economics and political science have looked at whether democracy actually promotes equality, and, if not, what factors are preventing the Meltzer and Richard model from gaining acceptance. This study reviews literature that questions Meltzer and Richard model predictions and examines expected results under a variety of political regime scenarios. Additionally, this study investigates the theoretical reasons why, under certain regime types, redistribution policies fail to achieve their aims and, instead, result in higher income inequality.

Chapter II of this study attempts to explain the results of previous empirical studies of Meltzer and Richard and why the Meltzer and Richard model has failed to predict real-world trends related to income inequality. Chapter III further examines Meltzer and Richard's theory and proposes

models that explain how redistribution could actually lead to worsening income inequality. Chapter IV summarizes and concludes the study.

2. RESULTS OF PREVIOUS STUDIES OF THE MELTZER AND RECHARD MODEL

2.1. Previous Empirical Studies of the Meltzer and Richard Model

Because decisions are made on a majority basis in a democracy, as income inequality grows, the middle- and lower-income voters, who together make up a majority, are likely to support redistribution policies. Based on this logic, Meltzer and Richard claimed that democracy produces equalizing effects.¹⁾ However, lower- and middle-income voters have been unable to effectively raise taxes on the wealthy even during times of rising income inequality and thus, income redistribution efforts have not been successful. Rather, a small number of high earners have used their economic position to influence political decisions, policy changes and market rules to favor themselves and monopolize market opportunities (Stiglitz, 2012). In the end, the so-called equalizing effects of democracy espoused by Meltzer and Richard have not materialized.

Empirical studies show that the relationships between income inequality, democracy and redistribution are not based on a single dynamic. While Rodrick (1999) demonstrated a positive relationship between democracy and wage share, several studies (Sirowy and Inkeles, 1990; Gradstein and Milanovic, 2004; Scheve and Stasavage, 2009, 2010, 2012; Mulligan, Gil, and Sala-i-Martin, 2004) have failed to clearly delineate the relationships between democracy, income inequality, and redistribution policies. Indeed, empirical evidence from inter-country comparison studies contradicts the Meltzer and Richard model and shows that redistribution policies are more effective in countries with lower income inequality than in those with higher income inequality, thus presenting the so-called *Robin Hood paradox* (Iversen and Soskice, 2009).

If, as indicated above, previous empirical studies show that the relationships between democracy, redistribution, and inequality are far more complex than the model posited by Meltzer and Richard, what are the factors preventing the Meltzer and Richard theory from acting as expected? First, Meltzer and Richard failed to clearly understand how an increase in income inequality threatens and distorts the political decision-making process in a democracy. As a result, the Meltzer and Richard model fails to predict that an increase in inequality in the economic sphere could lead to changes in the distribution of power in the political domain. They naively

1) The concept of democracy here follows the somewhat relaxed definition of Acemoglu and Robinson (2006), where democracy is defined based on political equality and rule by the majority, rather than Tilly (2007) or Dahl's (1998) definitions, which are based on the relationships between nation and citizen or on procedural justice. Political equality is understood to be the condition where the majority's preferences and interests are fairly represented in society, while political inequality is defined as a situation where the preferences and interests of the elite are overrepresented.

believed that a political sphere emphasizing equality can control an economic sphere where the factors of inequality play out. In other words, to improve conditions of economic inequality under democracy based on the assumptions of the Meltzer and Richard model, the distribution of power must be distributed more evenly in the political sphere than the distribution of income in the economic sphere. The Meltzer and Richard model fails if income equality results in an uneven distribution of political power.

2.2. Explanations of Why the Meltzer and Richard Theory Fails to Work as Predicted

Meltzer and Richard assumed that (i) the distribution of voters by income level was weighted toward the lower-income level and that lower-income voters would make up the voting majority. Since the political sector operates under the principle of one person, one vote, Meltzer and Richard believed that lower-income voters would dominate the political arena. Furthermore, they assumed that (ii) there exist political mechanisms to mediate the interests of lower-income groups.

Previous studies have demonstrated that the Meltzer and Richard theory fails for the following reasons. First, contrary to assumption (i), if political power is distributed unevenly due to various factors, even in a democracy, redistribution efficiency will fall. For instance, if the rich have invested in mechanisms (e.g., lobby and interest groups, collective action, threats to withdraw capital, media and ideological mobilization) to maintain de facto political power in response to the expanded suffrage brought about by democratization or the set of policies that promote the interests of the rich gain social legitimacy, then the real distribution of political power is no longer determined solely by voting numbers.²⁾ In this case, the decisive voter is no longer the middle-income class, but rather higher-income voters who have accumulated real political power (Acemoglu and Robinson, 2008; Hacker and Pierson, 2010; Bartel, 2008; Gilens, 2005; Stiglitz, 2012; Schattschneider, 1960; Przeworski, 2014; Bresser-Pereira, 2014). Under another scenario, if lower-income voters face voting obstacles (e.g., if they are unable to vote due to work or similar reasons, such as in the US, or must pre-register to vote), the decrease in voter turnout of lower-income voters leads to an upward shift in the voter income distribution, raises the median income of voters and thus reduces the effectiveness of the expected redistribution policy in reducing inequality (Stiglitz, 2012). Second, if the upper echelons of society encourage “privatization of conflict” to promote cleavages in a way that benefits the higher-income class, the lower-income class will be divided by the cleavages thus created, leading lower-income voters

2) Zingales (2017) points out that the ability of the elite to capture de facto political power through investment is evidence that contracts, rules, and laws are imperfect. If imperfections in contracts, rules, and laws are not completely eliminated through prior regulation, the possibility remains that those with disproportionate power can intervene in the distribution of economic rent. Zingales explains that the elite invest in de facto political power mechanisms because they expect increased rent distribution gains by influencing political, legal, and regulatory systems to outweigh the costs of those investments. Zingales names the cycle wherein wealth produces political power and political power produces wealth the *Medici vicious circle*.

to vote based on identity, rather than class (Schattschneider, 1960; Rodrik, 2014; Rodrik and Mukand, 2016). For instance, if cleavages are created in society based on regional, religious, and racial or tribal conflict, then the voting-bloc unity of lower-income voters (who would otherwise make up the majority) will be divided. If the lower- and higher-income classes share similar identities on issues related to regional, religious, and racial conflict, many lower-income voters will vote with the higher-income class, resulting in *class betrayal* voting.³⁾ As a result, redistribution policies may not be implemented, even as income inequality rises. Thirdly, Meltzer and Richard assume the political system can coordinate the interests of lower- and middle-income voters. However, as seen in a two-party system without a party representing lower-income voters, only middle- and higher-income voters are represented by center-right and center-left parties, effectively disenfranchising lower-income voters. In this scenario, lower-income voters cannot fully trust the pre-election promises of the middle-class center-left party to redistribute income to the lower-income class through taxation. Once in office, the center-left party can break its campaign pledges and tax both lower- and higher-income voters, redistributing the wealth instead to the middle-income class, an outcome that activates the mechanisms of Director's law. Adversely, if lower-income voters support the center-right party, that party will keep taxes low, partially benefitting the lower-income voters as well, but in this case, redistribution policies are left to wither.⁴⁾ Thus, if the political system does not effectively mediate the interests of the lower- and middle-income classes, then lower-income voters are likely to support the center-right party, leading to an increase in income inequality through lack of effective redistribution policies (Lijphart, 2012; Hall and Soskice, 2001; Iversen and Soskice, 2009 and 2015). Lastly, government corruption and the resulting lack of trust that voters have in government are yet further reasons that the Meltzer and Richard theory fails. The more corrupt a government becomes and the less trust voters have in their government, the more likely voters are to oppose high taxes and to refuse to pay taxes.⁵⁾ As a result, even if income inequality increases, voters will prefer lower tax rates and smaller government, thus impairing the effectiveness of redistribution policies (Algan, Cahuc, and Sangnier, 2016; Rothstein, 2005).

3) For example, while the Democratic Party has been in power by emphasizing the economic conflict after the New Deal, the Republican Party has highlighted issues such as race, welfare, crime, and resistance movements that cause conflicts of identity, and as a result, Nixon came to power in 1972.

4) Iversen and Soskice (2009) found that, analyzing 17 developed countries during 1945-1998, the proportion of the right-wing government was 26% in the proportional representation system, but it reached 74% in the majority system. The results indicate that the proportional representation system is more likely to induce the formation of a left-led coalition government that is more favorable to income redistribution and welfare system than the majority system.

5) Rothstein (2005) explains that the high level of social capital in the Nordic countries is due to the transparency and trust of the government, not the developed social network. In the same vein, he points out that the weakening of public policy in the United States is associated with a decline in trust in government. He argues that the greater the redistribution and the larger the government's welfare expenditure, the higher the public's trust in the government's transparency.

3. MODEL

3.1. Basic Assumptions

We assume that a country is divided into three groups based on income level: l represents the lower-income class, m the middle-income class, and h the higher-income class.⁶⁾ Total income (M) and total population (N) are fixed and standardized at 1. The shares of lower-, middle- and higher-income class income to total income are represented by a_h , a_m , and a_l , respectively. These shares represent before-taxes-and-transfers income (or *market income*) of each class.

$$a_h + a_m + a_l = 1 \quad (1)$$

and assume that $a_h > \frac{1}{2}$, $a_m > 0$ and $a_l > 0$.

The level of market-income inequality is measured by the gap between the income share of the higher-income class (a_h) and that of other classes ($1 - a_h$). Thus, $a_h - \frac{1}{2}$ represents the level of market-income inequality and the degree of class cleavage (Rodrik and Mukand, 2016).

The shares of the population for the lower-, middle- and higher-income classes are denoted by n_h , n_m , and n_l , respectively. These three variables total a value of 1, and it is assumed that the total population and the population share of each class are fixed.

$$n_h + n_m + n_l = 1. \quad (2)$$

Furthermore, the middle-class population share is assumed to be larger than the lower- and higher-income classes: $n_m > n_l$ and $n_m > n_h$.

The utility of class i (u_i) in equation (3) depends on the respective class's post-taxes-and-transfers income (or disposable income) (y_i), which is determined by equation (4),

$$u_i = y_i, \quad (3)$$

$$y_i = (1-t)a_i + \hat{g}_i y_i, \quad (4)$$

$$\begin{aligned} \hat{g}_i &= g_i - n_i c \frac{g^2}{2} - \gamma_i \left(g_i - n_i \frac{g^2}{2} \right) > 0 \\ &= (1-\lambda_i) \left(g_i - n_i c \frac{g^2}{2} \right), \end{aligned} \quad (5)$$

Where $i \in \{h, m, l\}$, $t > 0$, $c > 0$, $0 \leq \gamma_i < 1$, $\hat{g}_i > 0$, and $g = g_h + g_m + g_l = t$.

6) We use the terms *class* and *group* interchangeably and without any differences in meaning.

t represents the tax rate in equation (4) and all three classes receive an equal tax rate. \hat{g}_i represents net transfers in-kind provided by the government which are redistributed to class i in the form of transfers in-kind. The government collects taxes from and distributes transfers in-kind to each class, but there is some loss (or *leakage*) in the processes of tax collection and redistribution. Equation (5) defines net transfers in-kind (\hat{g}_i), which are purely redistributed to class i , g_i represents the gross redistribution received by class i when there is no leakage in the redistribution process. These losses occur for two different reasons: *Okun-type leakage* and *Waldfoegel-type loss*.

In the *leaky bucket theory*, Okun (1975) argued that government would leak resources in the process of collecting taxes and transferring income. He pointed out that the maintenance costs (e.g., purchasing computers, maintaining employees, legal services, documentation) incurred in the process of transferring taxes are a typical source of leakage. We assume, based on Okun's theory, that leakage will quadratically increase as the total amount of redistribution by the government (g) increases ($c(g^2/2)$). Here, c represents the parameter of the first type of loss incurred during collection and transfer. This loss that each class bears depends on the population share of each class (n_i): $n_i c(g^2/2)$.

The second type of loss, similar to Waldfoegel's (2001) deadweight loss of gifts at Christmas, is caused by the mismatch between the type of transfer in-kind preferred by each class and the type actually provided. This loss occurs because the government transfers income collectively, rather than transferring income in ways that take the preferences of each class into account. Parameter γ_i represents this second type of loss. If class i receives its preferred type of transfer, γ_i has a value close to zero. We assume that each class cannot consume all of the transfers received and leaves some of the unfavorable transfers $\gamma_i(g_i - n_i c(g^2/2))$ unused. Thus, of the redistributed transfers in-kind that are not lost due to the first type of leakage ($g_i - n_i c(g^2/2)$), class i consumes only a fraction $(1 - \gamma_i)$, and γ_i represents the waste rate of transfers in-kind caused by this mismatch. Let us further assume that the type of transfer in-kind favored by each class is dependent on *identity*⁷⁾ (e.g., ideology, moral values).⁸⁾ Thus, if the lower- and higher-income classes have similar racial, religious, and regional identities, the types of transfers in-kind

7) Akerlof and Kranton (2000) explain that preferences and interests are not formed externally, but rather, socially. A subject's preferences and interests are decided by who they think they are within society (i.e., their identity) and how they justify this identity. Sen (2006) similarly claims that human interests form, not only from structural or physical characteristics (e.g., gender, race, class), but also from social standards, morals, values, ideas and other ideological factors. According to Akerlof and Kranton, individuals seek to belong in a certain societal arena and mimic the societal standards of that specific arena. If gender identity were regarded as a standard, there would exist a male and female category in society, with different diction, action, physical characteristics, clothing and the like to represent the male and female standard, respectively.

8) For instance, if a society made up of Christians, Hindus and Muslims experiences identity cleavages from religion, redistribution in the form of beef would lead to members of individual religions experiencing different levels of post-redistribution income. Hindus, not eating beef, would experience a decline in post-tax income, while Christians and Muslims would experience no significant loss. Thus, there would be a cleavage in society between Hindus, who do not eat beef, and Christians and Islamists, who do eat beef. However, if redistribution is provided in the form of pork, while Christians and Hindus would not be against this, Muslims would oppose such a redistribution, thus creating a cleavage between Christians and Hindus against Muslims.

preferred by the two classes would be similar regardless of differences in income. Further, if one society is so homogenous that no identity cleavages exist, then the types of transfers in-kind desired by all three classes would be the same. In this case, $\gamma_i = 0$. Thus, two forms of cleavage exist in our model: the first being a class — or economic — cleavage, and the second being an identity cleavage, measured by γ_i .

3.1.1. Basic cases

(1) Autocracy

$$y_h = a_h + g - c \frac{g^2}{2}, \quad (6)$$

$$y_m = a_m(1-t), \quad (7)$$

$$y_l = a_l(1-t). \quad (8)$$

Under an autocracy, the higher-income class sets the tax rate and the middle- and lower-income classes pay all of the tax, as shown in equations (7) and (8). These resources are used only for redistribution to the higher-income class, and all the losses incurred in the process of redistribution are borne solely by the higher-income class (equation (6)). In this particular political regime, because only the high-income class receives the benefits of the redistribution, and does so without negotiating with other classes, the high-income class can decide on the form of redistribution it prefers ($\gamma_i = 0$). Based on this, we can derive the following equation using balanced budget constraints and equations (7) and (8).

$$g = t(a_m + a_l) = t(1 - a_h). \quad (9)$$

We substitute equation (9) into equation (6).

$$y_h = a_h + t(1 - a_h) - \frac{ct^2(1 - a_h)^2}{2}. \quad (10)$$

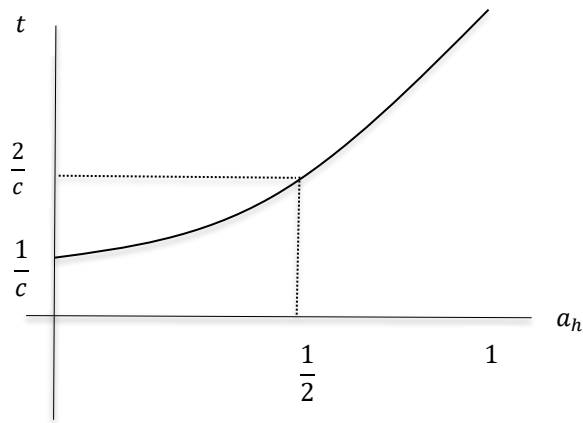
From equation (10), we can then derive the tax rate (t_a) that maximizes the higher-income class's disposable income:

$$t_a = \frac{1}{c(1 - a_h)}. \quad (11)$$

As seen in figure 1, in the higher-income class market-income interval ($\frac{1}{2} < a_h < 1$), the higher-income class still continues to raise tax rates to burden the lower- and middle-income classes,

even as income inequality or economic cleavages widen, and this can be measured by $a_h - \frac{1}{2}$. The higher-income class transfers income from the middle- and lower-income classes through taxation to raise its own earnings, making autocracy an extractive political regime (Acemoglu and Robinson, 2012).

Figure 1 Autocracy



(2) Democracy

Case (2) differs from case (1) in that, unlike under autocracy, the middle-income class under a democratic political system functions as the decisive voter (i.e., the median voter), with all voters (including those of the lower-income class) being given the right to vote. Because no identity cleavages are present under this scenario, we assume $\gamma = 0$.

(2-1) Director's law: The fact that the middle-income class forms the majority means that $n_m > \frac{1}{2}$.

$$y_h = a_h(1-t), \tag{12}$$

$$y_m = a_m(1-t) + g - c \frac{g^2}{2}, \tag{13}$$

$$y_l = a_l(1-t), \tag{14}$$

$$g = t(a_h + a_m + a_l) = t. \tag{15}$$

In (2-1), the majority middle-income class (i.e., the decisive and median voter) decides the tax rate. In equations (12), (13) and (14), taxes are paid by all three classes, while the middle-income class reaps the benefits (equation (13)).

George Stigler cited the argument of fellow professor Director criticizing income redistribution policy and the welfare system under such a scenario and coined the term *Director's law* to describe this dynamic. Stigler argued that a democracy where tax policy is determined by the majority (i.e., the middle-income class) will collect taxes from the lower- and higher-income voters to benefit solely the middle-income class. In other words, democracy sacrifices the lower-income class to fill the pockets of the middle-income class.

Se plugs equation (15), which represents the balanced budget constraint, into equation (13).

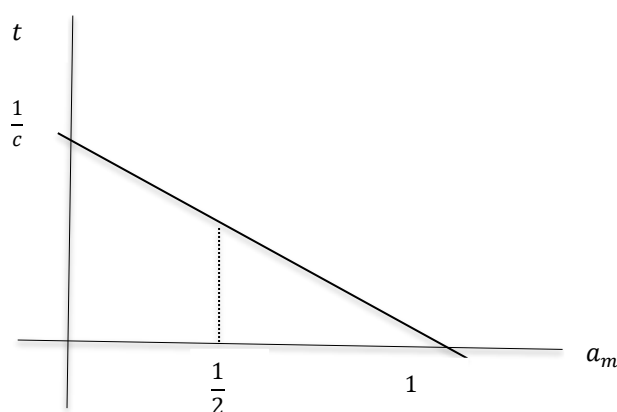
$$y_m = a_m(1-t) + t - \frac{ct^2}{2}. \quad (16)$$

The majority middle-income class then maximizes its own disposable income through a tax rate (t_{dr}) that can be derived from equation (16):

$$t_{dr} = \frac{1-a_m}{c}. \quad (17)$$

Comparing equations (11) and (17), we see that autocracy results in a higher tax rate than under Director's law. As seen in figure 2, since middle-class income (a_m) is between 0 and $\frac{1}{2}$, the closer a_m is to 0, the higher the tax rate applied to lower- and higher-income voters will be in order to distribute more of that tax revenue to the middle-income class. Based on Director's law, Friedman criticized such a government income redistribution policy for sacrificing the lower-income class to maximize benefits to the middle-income class.

Figure 2 Director's Law



(2-2) Meltzer and Richard model:

$$n_l < n_m < \frac{1}{2} \text{ and } n_m + n_l > \frac{1}{2}, \quad \frac{n_m}{n_m + n_l} = n_1 \text{ and } \frac{n_l}{n_m + n_l} = n_2,$$

$$y_h = a_h(1-t), \quad (18)$$

$$y_m = a_m(1-t) + n_1g - \frac{cg^2}{2}n_1, \quad (19)$$

$$y_l = a_l(1-t) + n_2g - \frac{cg^2}{2}n_2, \quad (20)$$

$$g = t(a_h + a_m + a_l) = t. \quad (21)$$

The case in (2-2) is similar to that of (2-1), in that the middle-income class is still the largest of the three groups. However, under this scenario, the middle-income class cannot achieve a majority without forming a coalition with the lower-income class. We assume there exists a political mechanism to coordinate the interests of the lower- and middle-income classes, and this scenario also assumes a society with a homogenous identity (thus $\gamma = 0$), such that only economic or class cleavages remain in the society because everyone holds the same identities (i.e., moral values). The middle-income class, the median voter, decides the tax rate, but taxes are paid by all three classes (equations (18)-(20)) and redistributed to both the lower- and middle-income voters. We assume that the rate of distribution is directly proportional to the lower- and middle-income class population ratios (n_1 and n_2). The following shows the result of substituting equation (21), the balanced budget formula, into equation (19).

$$y_m = a_m(1-t) + n_1t - \frac{ct^2}{2}n_1. \quad (22)$$

The middle-income class, the median voter, then sets the tax rate (t_{mr}) that maximizes its disposable income, which is derived from equation (22):

$$t_{mr} = \frac{n_1 - a_m}{cn_1}. \quad (23)$$

Comparing equations (17) and (23) shows us that the Director's law scenario results in a higher tax rate than under Meltzer and Richard.

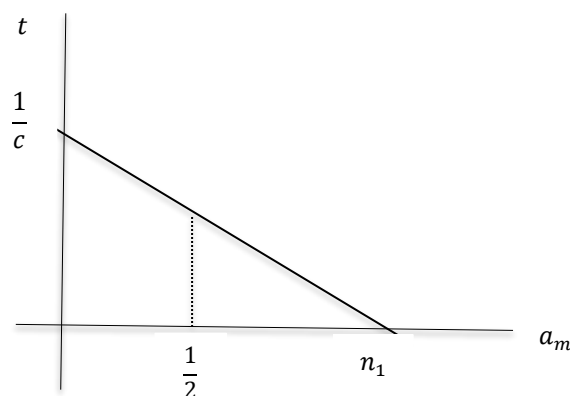
Figure 3 Meltzer and Richard Model

Figure 3 illustrates that the middle-income class prefers higher taxation or more income redistribution as a_m falls or as the middle-income class's market income drops.

3.1.2. Cases where the Meltzer and Richard model does not work

(3) Captured democracy

$$y_h = (1-t)a_h + \left(g - \frac{cg^2}{2} - \Gamma\right), \quad (24)$$

$$\Gamma = \beta g, \quad (25)$$

$$y_m = a_m(1-t), \quad (26)$$

$$y_l = a_l(1-t). \quad (27)$$

The higher-income class, which is in the minority, will invest in de facto political power (through lobbying, forming political circles, donating election funds, or mobilizing physical force, ideology and media, etc.) to influence the decision-making process in a democracy operating according to the principle of majority rule. When such investments prove successful, voters in the minority higher-income class, regardless of their number, are able to influence parties on both the right and the left to mold taxation and redistribution policies in their favor. Such a democracy, where the rich wield power accumulated in the economic sphere to influence the political sphere, is referred to as a *captured democracy* (Acemoglu, Naidu, Restrepo, and Robinson, 2013).

The likelihood of a democracy becoming a captured democracy increases when voters only exercise their political rights during elections and elected officials have no way of being held accountable for the promises they make while campaigning. Schattschneider (196) called this a

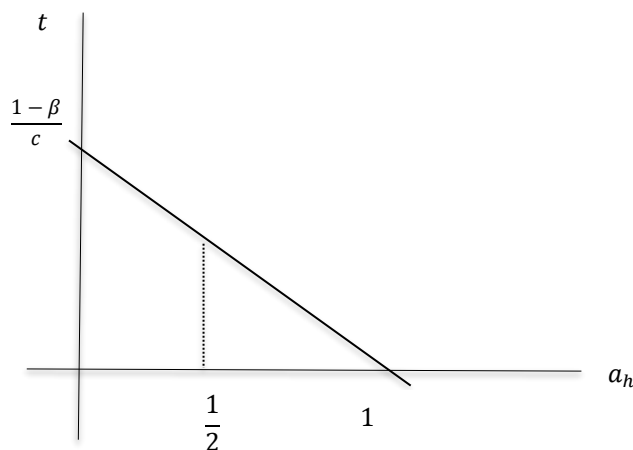
semi-sovereign democracy. In a semi-sovereign democracy, even as candidates run for office promising to redistribute wealth, upon being elected, newly installed officials are likely to be lobbied by the higher-income class, and this dynamic results in a *sponsorship-benefit structure*, which contributes to the emergence of a captured democracy. The Meltzer and Richard theory is challenged even more when a captured democracy forms as a result of this sponsorship-benefit structure.

We assume that the higher-income class pays a certain amount (Γ) (equation (24)) to control the political system and that Γ increases as the expected magnitude of redistribution (g) rises. In other words, we assume $\Gamma = \beta g$ (equation (25)), and that the tax burden falls on all three classes (equations (24), (26), and (27)). The tax rate is determined by the higher-income class, which has expanded its political influence. When substituting the balanced budget constraint ($g = t$) into equation (24) and solving for the tax rate (t_c) that maximizes higher-income class disposable income, we derive the following:

$$t_c = \frac{1 - a_h - \beta}{c} \tag{28}$$

Figure 4 represents a captured democracy scenario where, because a_h is larger than $\frac{1}{2}$, β is less than $\frac{1}{2}$. The closer a_h is to $\frac{1}{2}$, or the relatively lower the higher-income class market income is, the higher tax rates will rise to distribute more of the wealth to the higher-income class.

Figure 4 Captured Democracy



(4) Policy regime: Higher-income class-friendly policy regime

Przeworski (2014) and Bresser-Pereira (2014) use the term *policy regime* to refer to a state of strategic equilibrium in a particular period when political parties of differing ideological positions propose and implement mutually similar policies for strategic reasons. Thus, under a policy

regime, parties compete by proposing ways of executing a single dominant policy, instead of opposing other party policies at a fundamental level. Because particular policies become the socially acceptable norm, similar policies are put in place regardless of which party gets elected. Key examples include the post-World War II Keynesian policy regime and the neoliberal policy regime that began in the 1980s. After World War II, government intervention and fiscal policies based on Keynesian economic theory became the accepted approach to boosting economic growth, but as trust in markets grew over time, by the 1980s, parties on both the right and left had come to support open markets, liberalization, and market competition. In particular, the trickle-down effect was emphasized by parties across the spectrum during the neoliberal period, and so prioritizing efforts to raise the competitiveness of corporations (which belong to the higher-income class) over redistribution policies was accepted as the social norm.

If the redistribution of wealth to the higher-income class (or subsidies to corporations belonging to the higher-income class) can be justified and accepted by the lower- and middle-income classes, then, unlike under a captured democracy, the higher-income class can set the tax rate at its preferred level and redistribute wealth to itself without having to pay additionally to justify these policies. Therefore, under this scenario, we assume $\Gamma = 0$ (equation (29)).

$$y_h = (1-t)a_h + g - \frac{cg^2}{2}. \quad (29)$$

Under a higher-income class-friendly policy regime, such as neoliberalism, the tax rate (t_{pr}) that maximizes the disposable income of the higher-income class is as follows:

$$t_{pr} = \frac{1-a_h}{c}. \quad (30)$$

Figure 5 Policy Regime of Higher-income Class-friendly Policy Regime

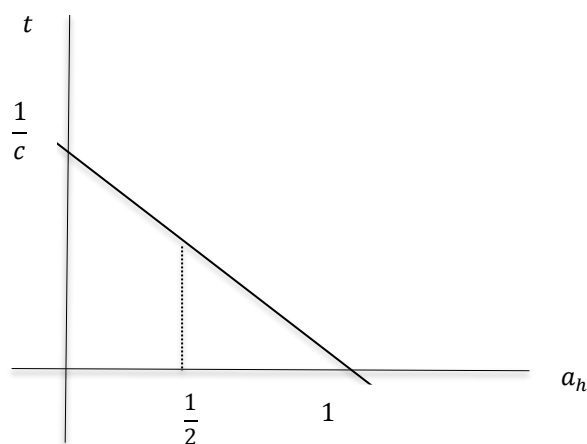


Figure 5 shows the equation under a policy regime in which the market income of the higher-income class (a_h) sits between $\frac{1}{2}$ and 1. In this scenario, the closer a_h is to $\frac{1}{2}$, or the lower the higher-income class income is, the higher the tax rate imposed to redistribute wealth to the rich.

(5) Corrupt government

The more corrupt a government is and the less trust voters have in it, the more voters may oppose government-led redistribution policies and high tax rates. Under this scenario, voters prefer lower tax rates and smaller government (Algan, Cahuc, and Sangnier, 2016; Rothstein, 2005). Thus, even if income inequality rises, lower tax rates and smaller government prevent redistribution policies from being implemented. Corrupt government also leads to greater leakage during redistribution, increasing c in equation (5). In this case, the Meltzer-Richard model must be modified to accommodate these changes as follows, where $c' > c$.

$$y_m = a_m(1-t) + n_1g - \frac{c'g^2}{2}n_1, \tag{31}$$

$$y_l = a_l(1-t) + n_2g - \frac{c'g^2}{2}n_2. \tag{32}$$

The tax rate (t_{tr}) set under a corrupt and nontransparent government is lower than the tax rate (t_{mr}) under Meltzer and Richard, reflecting the relatively inefficient income redistribution.

$$t_{tr} = \frac{n_1 - a_m}{c'n_1} < \frac{n_1 - a_m}{cn_1} = t_{mr}. \tag{33}$$

Figure 6 Corrupt Government

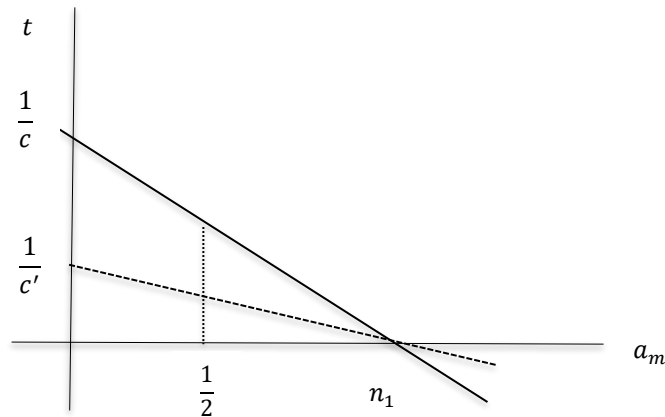


Figure 6 illustrates the outcome under a corrupt government. Compared to the Meltzer and Richard scenario (solid line), c increases to c' when the government is corrupt (marked by a dashed line). In this case, under the same degree of inequality, voters prefer lower tax rates under a corrupt government than they would if the government were clean.

(6) Absence of a political party capable of representing lower-income class interests under a two-party system

The Meltzer-Richard model assumes the presence of a political mechanism to coordinate the interests of the lower- and middle-income classes. However, when only two parties exist to represent the middle- and higher-income voters and lower-income voters do not have a party voice, as described in the Iversen and Soskice (2009) model, the analysis reaches a different conclusion than that reached under the Meltzer-Richard model.⁹⁾

First, let us assume that both the lower- and higher-income classes do not individually enjoy an absolute majority and each can only win election with support of the lower-income class (equation (34)):

$$n_m < \frac{1}{2}, n_m + n_l > \frac{1}{2}, n_h + n_l > \frac{1}{2}. \quad (34)$$

The lower-income class holds the deciding vote in this case and can either vote for income redistribution by supporting the middle-class party or vote for lower taxes by supporting the higher-income class party. However, the lower-income class faces a question of trust when voting for the middle-income class party. Because there is no party to represent their own interests, lower-income voters cannot be certain whether the middle-income class party will follow through with its promises. In other words, while the middle-income class party promises to also work for the interests of the lower-income class before getting elected, the lower-income class cannot be certain that after the election, the middle-income class will not tax the lower-income class and only redistribute wealth to the middle-income class. The lower-income class does not know whether it will face a situation under the Meltzer and Richard model or under Director's law. Thus, the lower-income class weighs whether supporting the middle-income class will give them greater disposable income through redistribution or whether supporting the higher-income class will result in greater disposable income thanks to a lower tax rate. In the second case, income redistribution cannot be expected even under rising income inequality.

Let us denote λ as the probability that the middle-income class party will keep to its promises post-election. Given that λ lies between the values of $0 < \lambda \leq 1$, the closer λ is to 1, the

9) Iversen and Soskice's (2009) model assumes that there exists only right and left wing parties, with no party to represent the middle-income class.

greater the likelihood the middle-class party will keep its promises. In this case, the lower-income class's decision about whom to vote for is determined by the following equation.

$$\lambda \left[a_l(1-t_{mr}) + n_2g - \frac{cg^2}{2}n_2 \right] + (1-\lambda)[a_l(1-t_{dr})] < a_l(1-t_{pr}). \quad (35)$$

The left-hand side of the equation (35) represents expected disposable income when the lower-income class votes for the middle-income class party based on trust (λ). On the other hand, the right-hand side represents the expected disposable income the lower-income class will receive if voting for the higher-income class party. The first element of the left-hand side of the equation represents a scenario where the Meltzer and Richard case applies as a result of the middle-income class party keeping the promises it made before the election. The second element represents a scenario where the middle-income class does not keep its promises and Director's law applies. Thus, the left-hand side uses trust as the basis for a weighted evaluation of predicted lower-income class disposable income. On the right-hand side of the equation, because the lower-income voters voluntarily decide to vote for the higher-income class party based on expected disposable income, income redistribution occurs only in favor of the higher-income class.¹⁰⁾

As seen in equation (36) derived from equation (35), when the level of trust (λ) drops below a certain level (λ^*), the lower-income voters cast their vote for the higher-income class party and wealth redistribution does not take place.¹¹⁾

$$\lambda < \lambda^* = \frac{a_l(1-t_{pr})}{a_l(t_{dr} - t_{mr}) + n_2t_{mr} - \frac{ct_{mr}^2}{2}n_2}. \quad (36)$$

The following occurs when $\lambda < \lambda^*$.

$$y_h = (1-t)a_h + g - \frac{cg^2}{2}, \quad (29)$$

$$y_m = a_m(1-t), \quad (7)$$

$$y_l = a_l(1-t). \quad (8)$$

10) We assume a tax rate (t_{pr}) equal to that under a policy regime, where the higher-income class does not need to incur additional costs to set a tax rate most advantageous to themselves.

11) We assume the existence of balanced budget constraints.

When no party represents the voice of the lower-income class and trust by the lower-income class in the middle-class party is low, the tax rate is set at the same level as the tax rate (t_{pr}) under a policy regime:

$$t_{pr} = \frac{1 - a_h}{c}. \quad (30)$$

(7) Class betrayal voting due to identity cleavages

Contrary to the Meltzer and Richard model, let us assume that there exist in a society not only economic cleavages, but also identity cleavages. Therefore, unlike the cases described above, the types of transfers in-kind preferred by each class will be different. In this case, the middle-income class does not enjoy an absolute majority, and for either the middle-income class party or higher-income class party to win election, either must win the support of the lower-income class (equation (34)), and further, identity plays a large role in the lower-income class's choice of ally. The lower-income class considers not only economic interests but also identity when choosing a coalition partner. By supporting the class that represents an identity closer to its own, the lower-income class attempts to minimize its losses (Waldfoegel-type loss) and maximize its own disposable income.

Unlike previous scenarios, in this case we assume that redistribution is carried out for the benefit of all classes. However, since the types of transfers in-kind are chosen by the classes that form the coalition, the class left out of the coalition does not receive its preferred type of redistribution and is thus likely to suffer relatively high losses from that redistribution (or high γ_i).

We can consider the following two sub-cases.

(7-1) In the first case, the lower-income class's interests align closely with those of the middle-income class in terms of income redistribution, but the lower- and higher-income voters share a similar identity (religion, race, ethnicity, etc.) so that the lower-income class supports the higher-income class by forming a coalition. In this case, the tax rate is set at a level that maximizes the sum of the disposable incomes of the lower- and higher-income voters, who have formed the coalition, and the types of transfers in-kind provided are those preferred both by the lower- and higher-income classes.

(7-2) The second case assumes that the lower- and middle-income classes share similar redistribution interests and identity, and thus form a coalition. Under this scenario, redistribution is implemented based on the types of transfers in-kind favored jointly by the lower- and middle-income classes, and the tax rate is set at a level that maximizes the sum of the coalition's disposable income.

(7-1) Coalition between the lower- and higher-income classes

$$y_h = a_h(1-t) + (1-\gamma_{hl}) \left(n_h g - \frac{cg^2}{2} n_h \right), \quad (37)$$

$$y_m = a_m(1-t) + (1-\gamma_m) \left(n_m g - \frac{cg^2}{2} n_m \right), \quad (38)$$

$$y_l = a_l(1-t) + (1-\gamma_{hl}) \left(n_l g - \frac{cg^2}{2} n_l \right), \quad (39)$$

where $\gamma_m > \gamma_{hl}$.

Because the lower- and higher-income classes share similar identities, the lower-income class supports the higher-income class party. Taxes are paid by all classes, but the types of transfers in-kind chosen are favorable to both the lower-income and higher-income classes (equation (37) and (39)). γ_{hl} denotes the parameter of mismatch between the types of transfers in-kind that are actually provided and the respective types preferred by the lower- and higher-income classes making up the coalition. Thus, γ_{hl} reflects the level of similarity between the lower- and higher-income class identities.¹²⁾ The closer γ_{hl} is to 0, the closer the similarities between their identities. γ_m represents the loss incurred by the middle-income class excluded from the coalition ($\gamma_m > \gamma_{hl}$). The tax rate chosen maximizes the sum of the disposable incomes of those in the governing coalition (lower-income class income + higher-income class income).

We substitute the balanced budget constraint formula ($g = t$) into equation (37).

$$y_h = a_h(1-t) + (1-\gamma_{hl}) \left(n_h t - \frac{ct^2}{2} n_h \right). \quad (40)$$

We substitute $g = t$ into equation (39).

$$y_l = a_l(1-t) + (1-\gamma_{hl}) \left(n_l t - \frac{ct^2}{2} n_l \right). \quad (41)$$

The sum of the disposable incomes of the lower- and higher-income classes (y_{hl}^c), or addition of equation (40) and (41), is represented by equation (42).

$$y_{hl}^c = (a_h + a_l) - t(a_h + a_l) + (1-\gamma_{hl})(n_h + n_l) \left(t - \frac{ct^2}{2} \right). \quad (42)$$

12) We assume that the identity gap is based on a reference point the same distance from the identity of both classes.

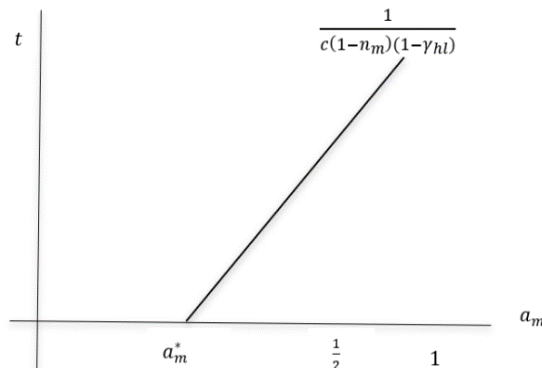
Then the tax rate (t_{hl}) that maximizes y_{hl}^c can be written as follows.

$$t_{hl} = \frac{a_m - n_m - \gamma_{hl} + n_m \gamma_{hl}}{c(1 - \gamma_{hl})(1 - n_m)}. \quad (43)$$

Since tax rate t_{hl} is positive, we assume $a_m > n_m(1 - \gamma_{hl}) + \gamma_{hl} = a_m^*$.

Figure 7 shows that the higher the market income of the middle-income class, the higher the tax rate becomes, so that more wealth can then be redistributed to the lower- and higher-income classes. This is the opposite of the situation under Director's law where, instead of the lower- and higher-income classes sacrificing for the sake of the middle-income class, the middle-income class sacrifices to maximize the wealth of the lower- and higher-income classes. Silvio Berlusconi, Italian politician and tycoon, coming into power as the head of a political coalition between the lower- and higher-income classes following the global financial crisis, would be a prime example of this case (Amable and Palonbarini, 2014).

Figure 7 Coalition between Lower- and Higher-income Classes



(7-2) Coalition between lower- and middle-income classes

The lower- and middle-income classes form a coalition. Taxes are paid by all classes, but the types of transfers in-kind are chosen to favor both the lower- and middle-income classes (equations (45) and (46)). Tax rates are set at a level that maximizes the sum of middle- and lower-income class disposable income. γ_{ml} denotes the parameter of mismatch between the types of transfers in-kind actually transferred and the types preferred respectively by the lower- and middle-income classes forming the coalition. Thus, γ_{ml} reflects the level of similarity between the lower- and middle-income class identities. γ_h represents the loss resulting from the higher-income class not receiving the types of transfers in-kind it prefers ($\gamma_h > \gamma_{ml}$).

$$y_h = a_h(1-t) + (1-\gamma_h) \left(n_h g - \frac{c g^2}{2} n_h \right), \quad (44)$$

$$y_m = a_m(1-t) + (1-\gamma_m) \left(n_m g - \frac{c g^2}{2} n_m \right), \quad (45)$$

$$y_l = a_l(1-t) + (1-\gamma_{ml}) \left(n_l g - \frac{c g^2}{2} n_l \right). \quad (46)$$

We substitute $g = t$ into equation (45).

$$y_m = a_m(1-t) + (1-\gamma_{ml}) \left(n_m t - \frac{c t^2}{2} n_m \right). \quad (47)$$

We also substitute $g = t$ into equation (46).

$$y_l = a_l(1-t) + (1-\gamma_{ml}) \left(n_l t - \frac{c t^2}{2} n_l \right). \quad (48)$$

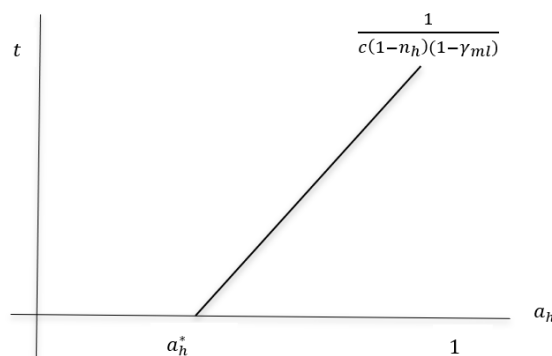
Adding together the disposable income of the middle- and lower-income classes (y_{ml}^c) — meaning, the sum of equations (47) and (48) — gives us equation (49).

$$y_{hl}^c = (a_m + a_l) - t(a_m + a_l) + (1-\gamma_{ml})(n_m + n_l) \left(t - \frac{c t^2}{2} \right). \quad (49)$$

The tax rate (t_{ml}) that maximizes y_{ml}^c can thus be derived as follows.

$$t_{ml} = \frac{a_h - n_h - \gamma_{ml} + n_h \gamma_{ml}}{c(1-\gamma_{ml})(1-n_h)}. \quad (50)$$

Since the tax rate (t_{hl}) is positive, we assume $a_h > n_h(1-\gamma_{ml}) + \gamma_{ml} = a_h^*$.

Figure 8 Coalition between the Lower- and Middle-income Classes

As seen in figure 8, when the lower- and middle-income classes form a coalition, the larger the income inequality or economic cleavage, the greater the tax rate and redistribution to the lower- and middle-income classes.

The lower-income class decides its coalition partner by comparing the outcomes under equations (39) and (46).

$$\gamma_{hl} < \gamma_{hl}^* = \frac{2}{t_{hl}(2 - ct_{hl})} \left[\frac{a_l}{n_l} (t_{ml} - t_{hl}) + (t_{hl} - t_{ml}) - \frac{c}{2} (t_{hl}^2 - t_{ml}^2) + \gamma_{ml} \left(t_{ml} - \frac{ct_{ml}^2}{2} \right) \right]. \quad (51)$$

As seen in equation (51), when the lower- and higher-income class identities are mutually similar enough (or $\gamma_{hl} < \gamma_{hl}^*$), the lower-income class better maximizes its disposable income by forming a coalition with the higher-income class and minimizing losses.

Recent studies of populism in the US and Europe identify politicians emphasizing issues pertaining more to identity cleavages (e.g., racial, tribal, religious, ideological, regional) than economic cleavages. Populist parties divide the lower- and middle-income classes by diluting the importance of redistribution and, instead, emphasize issues like tribal conflict, racial conflict, abortion, regional conflict, ideological debate, and religious conflict. If the higher-income class party can successfully turn these topics into important issues, the lower-income class has a higher chance of voting for the higher-income class party, resulting in class betrayal voting, which is due to identity cleavages dominating economic cleavages.

A prime example of class betrayal voting would be welfare system reform in the US in the 1980s. The Republican party portrayed reform as a conflict between blacks and other people of color (portrayed as receiving welfare benefits without working) and white laborers (portrayed as working hard and paying taxes). By framing the vote in such a way, the higher-income class was able to convince lower-income class white, working voters to vote for higher-income class interests as well, leading to large numbers of class betrayal votes. Furthermore, in Kansas, the state with low average income but with high numbers of Christian families, politicians convinced

Kansan voters that the election was about abortion and sexual minorities, leading voters to vote for the Republican party, which represents the interests of the higher-income class (Frank, 2004).

3.1.3. Results of income redistribution

We studied a total of nine different political regimes, including the Meltzer and Richard model, and compared market income inequality with disposable income inequality under each scenario to directly measure the effectiveness of the respective income redistribution policies. Market income inequality was measured by the difference $(a_h - (a_l + a_m))$ between the market income of the higher-income class (a_h) and the sum of the market incomes of the middle- and lower-income classes ($a_l + a_m$). Disposable income inequality was measured by the difference $(y_h - (y_l + y_m))$ between the disposable income of the higher-income class (y_h) and the sum of the disposable incomes of the middle- and lower-income classes. Thus, the following case would represent an outcome of income inequality mitigation:

$$y_h - (y_l + y_m) < a_h - (a_l + a_m). \quad (52)$$

In table A1, we have summarized our analysis of each of the nine political regimes and stated whether income inequality is alleviated or not under the respective regime.

As expected, redistribution policies under an autocracy aggravate income inequality, while in the Director's law and Meltzer and Richard model scenarios, taxation and redistribution lower income inequality. However, in a captured democracy, if β is small enough to satisfy $\beta < \beta^* = (1 - (ct_c / 2) - a_h + a_m + a_l)$, then, unlike the Meltzer and Richard model, taxation and redistribution could aggravate income inequality. Similarly, a policy regime ($\beta = 0$) could lead to worsening income inequality after taxation and distribution. Under high levels of government corruption, large losses occur as a result of redistribution, especially compared to the Meltzer and Richard model, but income inequality is lessened if net transfers in-kind by government (\hat{g}_i) are positive. However, compared with Meltzer and Richard, if the level of corruption exceeds a certain threshold, $(c' > c^* = (2 / t_{2r}^2) [(1 + a_h - a_m - a_l)(t_{ir} - t_{mr}) + (ct_{mr}^2 / 2)])$, the loss becomes large enough to cause net redistribution to drop. Next, when analyzing the scenario where no party represents the interests of the lower-income class, we notice that, similar to the policy regime case, if the lower-income class's level of trust in the middle-income class party is low enough ($\lambda < \lambda^*$), post-redistribution income inequality is aggravated, not mitigated. Lastly, we looked at two scenarios with identity cleavages. If the lower- and higher-income classes exhibit very similar identities that are also different from those of the middle-income class, then income inequality will be exacerbated through redistribution. This corresponds to class betrayal voting, where the higher-income class emphasizes race, religion and other social issues to divide the weakly bonded middle- and lower-income classes. Conversely, if middle- and lower-income classes share a similar identity, then redistribution can lead to an alleviation of income inequality. Studying the nine different cases, we observe that unlike the prediction made by Meltzer and Richard,

democracy does not always lead to income redistribution that improves income inequality. For instance, when the higher-income class wields de facto political power, when there exists a higher-income class-friendly policy regime, when government corruption is extremely high, when no party represents the interests of the lower-income class, or when the lower- and higher-income classes share a similar identity, redistribution policies can be ineffective, and even aggravate income inequality.

4. CONCLUSION

This study examines the trending subject of income inequality and the interaction of the economic and political spheres, which are at the center of this issue. Meltzer and Richard asserted that under democracy, income redistribution policies would be promoted that would alleviate income inequality and protect the economic interests of lower- and middle-income voters. They further claimed that since democracy gives suffrage to a larger number of people, regardless of income level, if a political mechanism exists to coordinate the interests of lower- and middle-income voters, government can improve income inequality through redistribution policies. If Meltzer and Richard's theory applied in practice, the global spread of democracy should have alleviated income inequality worldwide. However, contrary to expectations under the theory, nearly all countries have experienced a rise in income inequality. Several later studies into the Meltzer and Richard model have clearly shown that the relationships between democracy, redistribution, and inequality are not as simple as the model suggests.

This study refers to prior political and economic research to model why income inequality rose in many countries over the past 40 years despite the implementation of redistribution policies, and why such policies often lacked effectiveness. We conclude that when the higher-income class wields de facto political power, when there exists a higher-income class-friendly policy regime, when government corruption is extremely high, when no party represents the interests of the lower-income class, or when the lower- and higher-income classes share a similar identity, redistribution policies can be ineffective, and even aggravate income inequality. Our results do not imply that Meltzer and Richard's theory does not work. We try to show that under certain conditions and assumptions, the result could be different from what Meltzer and Richard expected, and explain a rise in income inequality.

As Acemoglu and Robinson (2012) explain, economists have often assumed complex political problems have already been understood fully or have paid attention only to political problems that have already been solved. As a result, economists sometimes adopt naive beliefs that finding appropriate economic solutions is the key to easily solving social issues. However, as this study demonstrates, researchers need to focus on the interactions between chosen policy and the distribution of power existing between socio-political groups and how these institutions, policies and laws affect the bargaining power and de facto power of each group (Boyer, 2015).

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Table A1 Comparison of Market Income Inequality and Disposable Income Inequality under Different Political Regimes

Political Regime	Comparison of Market Income Inequality and Disposable Income Inequality
Autocracy	<p>Because $y_h - (y_m + y_l) > a_h - (a_m + a_l)$, redistribution ($y_h - (y_m + y_l)$) further aggravates income inequality, making post-distribution inequality higher than pre-distribution inequality ($a_h - (a_m + a_l)$).</p> $(y_h - (y_m + y_l)) - (a_h - (a_m + a_l)) = t_a - ct_a^2 / 2 + t_a(1 - a_h) > 0.$
Director's law	<p>Because $y_h - (y_m + y_l) < a_h - (a_m + a_l)$, income inequality improves under this scenario, making post-distribution inequality lower than pre-distribution inequality.</p> $(y_h - (y_m + y_l)) - (a_h - (a_m + a_l)) = -t_{dr}(a_h - a_m - a_l) - t_{dr} + c(t_{dr}^2 / 2) < 0.$
Meltzer-Richard model	<p>Because $y_h - (y_m + y_l) < a_h - (a_m + a_l)$, income inequality improves under this scenario, making post-distribution inequality lower than pre-distribution inequality.</p> $(y_h - (y_m + y_l)) - (a_h - (a_m + a_l)) = -t_{mr}(a_h - a_m - a_l) - n_1 t_{mr} + c(t_{mr}^2 / 2n_1) - n_2 t_{mr} + c(t_{mr}^2 / 2n_2) < 0.$
Captured democracy	<p>If the cost to gain de facto political power is low enough ($\beta < \beta^* = (1 - (ct_c / 2) - a_h + a_m + a_l)$), then, because $y_h - (y_m + y_l) > a_h - (a_m + a_l)$, policy implementation further aggravates income inequality, making post-distribution inequality higher than pre-distribution inequality</p> $(y_h - (y_m + y_l)) - (a_h - (a_m + a_l)) = -t_c(a_h - a_m - a_l) + (1 - \beta)t_c + c(t_c^2 / 2) > 0.$
Policy regime (higher-income class-friendly policy regime)	<p>Because $y_h - (y_m + y_l) > a_h - (a_m + a_l)$, policy implementation further aggravates income inequality, making post-distribution inequality higher than pre-distribution inequality. For $(y_h - (y_m + y_l)) - (a_h - (a_m + a_l)) = -t_{pr}(a_h - a_m - a_l) + t_{pr} - c(t_{pr}^2 / 2)$ to be true, $4(1 - a_h) / c$ must be $> t_{pr}$. However, because $t_{pr} = (1 - a_h) / c$ and $4(1 - a_h) / c > t_{pr}$, $y_h - (y_m + y_l) > a_h - (a_m + a_l)$.</p>

<p>Corrupt government</p>	<p>Even if corruption leads to large losses, if net transfers in-kind are positive (+), or if $n_1g - (c'g^2/2)n_1 > 0$ and $n_2g - (c'g^2/2)n_2 > 0$, then $y_h - (y_m + y_l) - (a_h - (a_m + a_l)) = -t_{mr}(a_h - a_m - a_l) - n_1t_{mr} + c'(t_{mr}^2/2)n_1 - n_2t_{mr} + c'(t_{mr}^2/2)n_2 < 0$. Because $y_h - (y_m + y_l) < a_h - (a_m + a_l)$, income inequality improves under this scenario, making post-distribution inequality lower than pre-distribution inequality. However, if $c' > c^* = (2/t_{tr}^2)[(1 + a_h - a_m - a_l)(t_{tr} - t_{mr}) + (ct_{mr}^2/2)]$ (i.e., if government corruption surpasses a certain level, thus creating large leakages in the processes of redistribution), then redistribution may be less effective than under the Meltzer-Richard model.</p>
<p>Absence of a party to represent the interests of the lower-income class</p>	<p>If the lower-income class's trust in the middle-income class party is low enough ($\lambda < \lambda^*$), the results from the absence of a lower-income class party are similar to the results under a policy regime. Because $y_h - (y_m + y_l) > a_h - (a_m + a_l)$, policy implementation further aggravates income inequality, making post-distribution inequality higher than pre-distribution inequality.</p>
<p>Identity cleavage: coalition between lower-income class and higher-income class (class betrayal vote)</p>	<p>If $\gamma_m > 2/[t_{hl}n_m(2 - ct_{hl})][(n_m t_{hl} - c(t_{hl}^2/2)n_m) + (n_l t_{hl} - c(t_{hl}^2/2)n_l)(1 - \gamma_{hl}) - (n_h t_{hl} - c(t_{hl}^2/2)n_h)(1 - \gamma_{hl}) + t_{hl}(a_h - a_m - a_l)]$ (i.e., if the identity of the middle-income class is clearly different than that of the lower- and higher-income classes), then, because $y_h - (y_m + y_l) > a_h - (a_m + a_l)$, policy implementation further aggravates income inequality, making post-distribution inequality higher than pre-distribution inequality.</p>
<p>Identity cleavage: coalition between lower-income class and middle-income class</p>	<p>If $\gamma_{ml} < 2/(n_m + n_l)t_{ml}(2 - ct_{ml})[(n_l t_{ml} - c(t_{ml}^2/2)n_l) + (n_m t_{ml} - c(t_{ml}^2/2)n_m) - (n_h t_{ml} - c(t_{ml}^2/2)n_h)(1 - \gamma_h) + t_{ml}(a_h - a_m - a_l)]$, (i.e., if the identities of the middle- and lower-income classes are adequately similar), then, because $y_h - (y_m + y_l) < a_h - (a_m + a_l)$, income inequality improves under this scenario, making post-distribution inequality lower than pre-distribution inequality.</p>