Statutory Corporate Tax Rates and Income Distribution — Panel Data From 95 Countries Using Driscoll and Kraay Standard Errors and Quantile via Moments

Brandon Parsons
Pepperdine University

The study uses the statutory corporate tax rate to explain before and after tax and transfer income distribution. The unbalanced panel has 95 countries from 1988 to 2018. The study uses Driscoll & Kraay standard errors and Quantile Via Moments. The study finds higher corporate tax rates appear to lessen income inequality in most cases, small coefficients suggest it is minor and insignificant for after-tax and transfer income distribution in developed countries. Furthermore, in an augmented model with fewer observations spanning 1988 to 2005, the average rate of personal income tax progressivity significantly reduces net income inequality while the statutory corporate tax rate is insignificant. Therefore, findings may indicate increases in personal income tax rate progressivity may be more effective policy tools than changes in statutory corporate tax rates to moderate growing income inequality.

Keywords: income inequality, statutory corporate tax rate, average personal income tax rate

INTRODUCTION

The research studies the nexus of two economic phenomena: the worldwide reduction of statutory corporate tax rates (CTR) and growing income inequality. Since 1980, statutory CTR has decreased worldwide (Tax Foundation, 2021). The average corporate tax rate was around 40 percent in 1980; in 2021, the average is about 23 percent (Tax Foundation, 2021). Over the same period, income inequality has increased in over 70 percent of countries (United Nations, 2021). High income inequality can adversely affect economic and societal dimensions (Brown & Picket, 2017). For example, high income inequality can depress capital investments (Karklins, 2005). Less physical and human capital investment will lead to less gross domestic product (GDP) and economic growth (Karklins, 2005). High levels of income inequality can lead to political protest and violence (Feirarbend & Feierabend, 1966; Gurr, 1968; Huntington, 1968). Therefore, studying determinants that may mitigate or exacerbate income inequality is essential.

This study examines how the CTR may explain increasing income inequality in the net Gini coefficient (after tax and transfer) and the market Gini coefficient (before tax and transfer). An unbalanced panel data includes 95 countries from 1988 to 2020. The research uses two different econometric techniques to robustly test results. The study uses a two-way fixed effects model with Driscoll and Kraay (1998) standard errors that accounts for heterogeneity, autocorrelation, and cross-sectional dependence. The researcher also uses Quantile via Moments to test the relationship between CTR and Gini coefficients across the distribution of the conditional mean. A full panel and panels based on income level are used to discern differences. The study generally finds increases in the CTR decrease both the net and market Gini

coefficients. In high income countries, increases in CRT reduce the market Gini coefficient but do not significantly influence the net Gini coefficient. Increases in CRT reduce both the market and net Gini coefficient in middle- and lower-income countries. In an augmented model that includes the average personal income tax (PIT) progressivity rate, CRT loses its significance in all panels. The study's findings may suggest that personal income tax (PIT) progressivity has a more pronounced impact on income distribution than adjustments to statutory corporate tax rates.

The study reviews the relationship between the corporate tax rate and income inequality. The econometric model and model specification testing are in the methods section. The findings, discussion, and conclusion offer insight into the results and consider the study's contributions and limitations.

LITERATURE REVIEW - CORPORATE TAX RATE AND INCOME INEQUALITY

Along with personal income taxes, corporate taxes are an essential source of revenue for countries (OECD, 2020). Differences in corporate tax rates among countries have far-reaching effects. Furthermore, flexibility in the arm's length principle can lead to a firm-biased transfer pricing methodology, which allows firms to limit tax liabilities and shift profits (Huizinga & Laeven, 2020). Specifically, corporations can shift profits from countries with high corporate taxation rates to countries with lower ones (Huizinga & Laeven, 2020). The outcome can reduce the corporate tax base in countries with higher corporate tax rates while increasing them in countries with lower corporate taxes (Bartelsman & Beetsma, 2003; Wier, 2020).

There is a debate on the effects of CTR on income inequality (Nallareddy et al., 2018; Hager & Baines, 2020; Faccio & Iacono, 2021). The United States Tax Cuts and Jobs Act of 2017 claims corporate tax cuts from 35 percent to 21 percent will lead to wage increases for working-class employees, lowering income inequality (CEA, 2017). Alternatively, top corporate shareholders tend to be those with the highest incomes; thus, one might assume lower corporate taxation increases corporate profits and share values, increasing the income of high-income groups. Furthermore, lower corporate taxes could lower the tax revenue available to redistribute to lower-income groups, thus increasing income inequality. In a study in the United States, Nallareddy et al (2018) find when States cut corporate tax by 1 percent, the top 1 percent's incomes increase by .9 percent. Researchers also claim top earners shift more compensation from labor income to capital income to reduce tax liability when there are increases in either corporate or personal income tax rates (Nallareddy et al., 2018). Hager & Baines (2020) also claim that reducing corporate taxes strengthens corporate power and concentration in an economy. The researchers claim it leads corporations to favor shareholder value enhancements rather than investment in productivity improvements or innovation. The outcome benefits top shareholders more than working- and middle-class employees.

The effect of corporate taxation on income inequality is complex, and there is disagreement on who bears the incidence of corporate taxes (Harberger, 1962; Summers, 1989; Poterba, 1994). Corporate taxation affects the demand for capital, labor, and the return to capital (Ablett & Hart, 2005; Faccio & Iacono, 2021). The economic incidence of taxes and its ultimate effect on income inequality depends on tax burden shifts (Musgrave & Musgrave, 1984). Researchers claiming the incidence of the tax falls on labor argue workers are better off when there is a reduction because they capture the gains of increased productivity through higher wages (Kotikoff, 2014; Clausing, 2017). Other researchers claim gains from corporate tax cuts tend to go to top shareholders and business owners (Serrato & Zidar, 2016). Some recent studies find workers bear about half the tax burden from increases in corporate taxes (Aralampalam et al., 2012; Fuest et al., 2018).

An added complexity is the effects of corporate taxes on prices, wages, and the consumer. For example, higher corporate taxes can lead to higher prices and potentially inflation in cases where corporations have pricing power. In addition, higher prices could lead to declining sales in firms with little pricing power, which could increase unemployment. The higher corporate taxes also might lead to lower wages or smaller wage increases if the demand for labor is low. In these cases, higher CTR could increase income inequality.

This research adds to the literature as one of the first to analyze the relationship between CSR and the Gini coefficient in a large-N study. Furthermore, the study uses multiple methods to increase the robustness

of the results. Moreover, Quantile via Moments examines the relationship between CSR and the net Gini coefficient across the lower and upper distribution of the Gini coefficient distributional mean.

METHODS AND DATA

Data Description and Variable Selection

The dependent variables are the net (after tax and distribution) and market (before tax and distribution) Gini coefficients from the Standardized World Income Inequality Database (SWIID) (Solt, 2015). The SWIID measures income inequality on a scale between (0) and (100). Higher values reveal worse income distribution. The SWIID provides the most complete Gini coefficient data (Solt, 2015). Data on statutory corporate tax rates is from the Tax Foundation (2021). The CTR is a fixed rate on corporate income. The researcher acknowledges that some countries may have specific industries with "preferential treatment" and lower corporate tax rates, subsidies, and other incentives. This large-N study has limitations in obtaining "preferential treatment" granular data across countries. Country-specific research should consider preferential treatment—the CTR range from (0) lowest to (75) percent. See Appendix 1 for the list of countries by panel and Appendix 2 for descriptive statistics.

Figure 1 shows the CTR over the last 30 years by a country's income level. The general downward trend in corporate tax rates across income groups over the previous 30 years is noticeable. Also, the corporate tax rates are higher in low and lower-middle-income countries than in high and upper-middle countries.

FIGURE 1
NET GINI COEFFICIENT AND CORPORATE TAX RATE

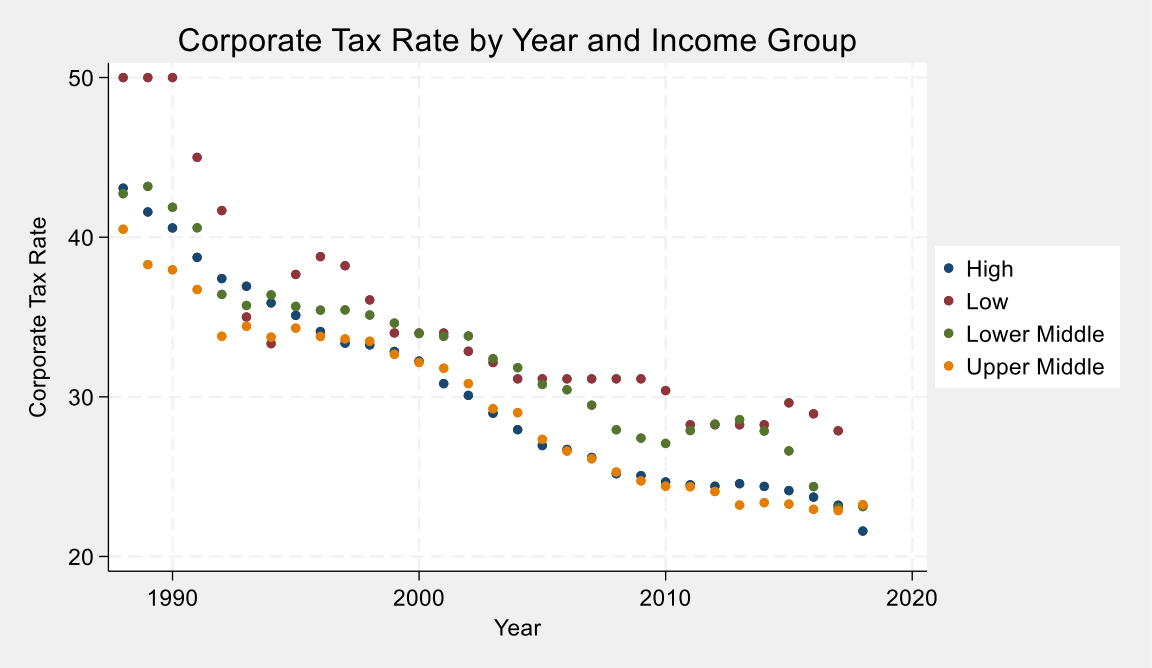
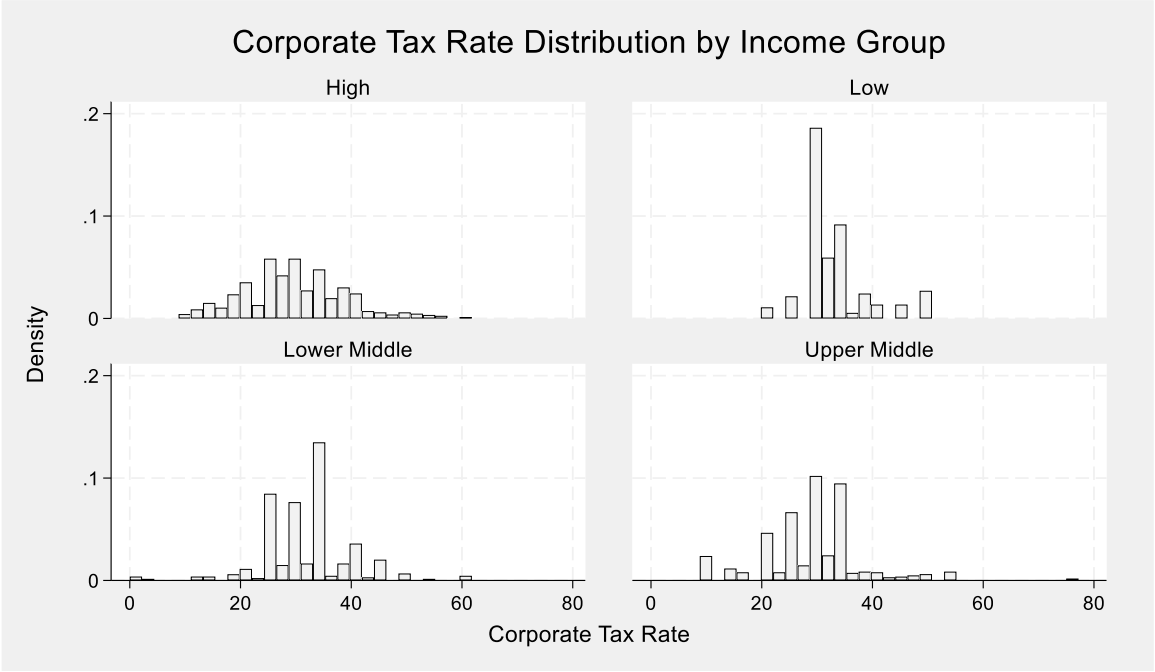


Figure 2 shows the distribution of corporate tax rates by income group over the last 30 years. Density distribution is more bell-shaped in the high income group—density distribution peaks between 20 and 40 in each panel. The overall mean is (30.4) with a standard deviation of (8.86).

FIGURE 2
CORPORATE TAX RATE HISTOGRAM BY INCOME GROUP



The study controls other covariates widely supported by other income inequality studies (Brown & Pickett, 2017; Furcey & Ostry, 2019; Barro, 2000). During model specification and testing, the study also considered covariates measuring foreign direct investment inflows (FDI), GDP growth rate, and socioeconomic conditions. The measures of foreign direct investment inflows (FDI), GDP growth rate, and socioeconomic conditions were statistically insignificant and led to worse F-test scores. The covariates used in the econometric model are from the World Bank, Penn World Tables, or the International Country Risk Guide (ICRG). The control variables include:

1. The natural log per capita GDP (World Bank)
2. The dependency ratio (World Bank)
3. Manufacturing as a percentage of GDP (World Bank)
4. Human capital index (Penn World Tables)
5. Ethnic Tension (ICRG)
6. Religious Tension (ICRG)
7. GDP Growth Rate (World Bank)
8. Unemployment Rate (World Bank)
9. Regime (ICRG)
10. Inflation (World Bank)
11. Government Stability (ICRG)

The natural log of per capita GDP and GDP growth rate control for development level (Heston et al., 2012). Kuznet (1955) and Kaldor (1957) find higher growth rates lead to worsening income distribution as a country begins to develop but then lowers as it further develops into a wealthier country. The human capital index is a measure constructed by average schooling and its returns (Feenstra, Inklaar, & Timmer, 2015). Human capital's effects on income distribution are mixed (Parsons, 2022). Knight & Sabot (2013) find increases in human capital can increase or decrease income inequality based on the labor market composition. However, Parsons (2022) finds that human capital often reduces income inequality. Employment in manufacturing controls for economic structure (Young, 2013). The dependency ratio controls for demographic distribution. A higher dependency ratio means a larger non-working population,

worsening income distribution (Burtless, 2009). The GDP-adjusted sum of imports and exports and FDI inflows controls globalization and trade. Open markets have more foreign investment (ceteris paribus) and can worsen income distribution (Stiglitz, 2013). For example, trade can lead to higher unemployment if domestic markets are disrupted by foreign competition (Stiglitz, 2013). The study controls for business cycles and business climate through unemployment and inflation. Higher unemployment can worsen income distribution since a greater share of the population lacks a working income (Furceri & Ostry, 2019). Finally, the study controls for cultural tension, government stability, and regime type. Cultural tension, government stability, and regime type affect income inequality and international business expansion decisions (Brown and Picket, 2017).

Empirical Framework

Data is from 95 countries in the following panels:

1. Full Panel (n=95; 2,494 observations)
2. High-Income Panel (n=38; 1,045 observations)
3. Middle-and-Lower Income Panel All (n=57; 1,449 observations)

All countries with available data are used in the panels. The panel is unbalanced with data from 1988 to 2018. An unbalanced panel is used to increase observations relative to a balanced panel. The econometric model regresses the net and market Gini coefficients on the corporate tax rate and covariates. The selection of panels by income group is to detect differences based on economic development measured by World Bank income classification.

Econometric models (1) and (2) borrow fundamentals from Barro (2000) and Lundberg & Squire (2003). The study uses two models for the net Gini coefficient (1) and the market Gini coefficient (2). The econometric model is used for each panel.

$$GiniNet_{it} = \alpha + CorpTxRt_{it} + X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad and \ (i = 1, \dots n; t = 1, \dots T) \tag{1}$$

$$GiniMkt_{it} = \alpha + CorpTxRt_{it} + X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad and \ (i = 1, \dots n; t = 1, \dots T) \tag{2}$$

$GiniNet_{it}$ is the after-tax and transfer measure of income inequality for country (*i)* and time (*t)*. $GiniMkt_{it}$ is the before-tax and transfer measure of income inequality for country (*i)* and time (*t)*. $CorpTxRt_{it}$ is the measure of the statutory corporate income tax rate that varies across time and country. X_{it} is the vector set of ceteris paribus control variables used in the model that vary across time and countries. The parameter α contains a constant and individual-specific variable invariant over time. The μ_i captures unobservable individual-specific effects and λ_t captures unobservable time-specific effects. ε_{it} is the error term.

Model specification testing includes the Hausman test for fixed versus random effects, joint test for time fixed-effects, Wald test for heteroscedasticity, Pesaran test for cross-sectional dependence, Woolridge test for autocorrelation, and variance inflation factor (VIF) for multicollinearity. The results from specification testing support the use of two-way fixed effects for both country and time. The econometric model must also account for the data set's heteroskedasticity, autocorrelation, and cross-sectional dependence. The variance inflation factor (VIF) is (1.99) with no individual variable above (4.00) VIF. The largest VIF scores are for the human capital index and the natural log of per capita GDP.

Specification testing suggests using Driscoll & Kraay (1998) standard errors. Driscoll & Kraay standard errors use cross-sectional averages of nonparametric standard errors to account for heteroscedasticity, cross-sectional dependence, and autocorrelation. The Stata program "xtscc" uses Newey-West (1987) corrections to cross-sectional averages. The program adjusts the standard errors to maintain reliable covariance matrix estimators independent of the cross-sectional dimensions. Driscoll & Kraay (1998) standard errors depend on large-T asymptotics, and criteria are met since observations span up to 31 years. The econometric model has two-way fixed effects for both time and country. A three-year lag is used in the econometric model to account for autocorrelation.

A potential problem with the econometric approach is endogeneity. First, omitted variable bias could be present if an unobserved variable jointly determines the corporate tax rate and the Gini coefficient. The potential problem is lessened with fixed effects estimations (Baltagi, 2001). Also, panel structure helps mitigate omitted explanatory variables (Wooldridge, 2010; Baltagi, 2013). If an unobserved variable varies within countries, the fixed effect for country does not capture that variation—using control variables that account for this issue. Second, reverse causality would find higher or lower income inequality causes changes in corporate tax rates. Specifically, policymakers identify growing income inequality and attempt to lessen it by leveraging the corporate tax rate. The potential of reverse causality is small. First, theory does not provide clear direction on the relationship between CRR and income inequality (Nallareddy et al., 2018; Hager & Baines, 2020; Faccio & Iacono, 2021). Increases in corporate tax rates could lead to the transfer of profit to lower tax rate countries, leading to a loss in tax revenue (Huizinga & Laeven, 2020).

Additionally, increases in corporate taxes could adversely affect investment decisions and the amount of tax revenue from corporations (Huizinga & Laeven, 2020). Third, selection bias and missing data can result in outcomes not representative of the population. To increase observations and overall representation, the uses different panels based on development status and an unbalanced panel.

The study also uses Machado and Silva's (2019) Quantile via Moment (MM-QR) to increase the robustness of the results. Quantile via Moments analysis addresses heterogeneity, cross-sectional dependence, and the potential existence of endogeneity in independent variables (Machado and Silva, 2019). Quantile via Moments produces reliable estimates in cases of nonlinearity since it has location-based asymmetries (Machado and Silva, 2019). Furthermore, Quantiles via Motion estimate how regressors affect the conditional mean across its entire distribution. Model (3) depicts the Quantile via Moment method, which addresses endogeneity and heterogeneity problems of nonlinearity and asymmetric association of the dependent variable. Model (3) absorbs both time and country. The study also clusters the standard errors of individual countries.

$$Q_y(\tau|X_{it}) = \left(a_i(\tau) + \delta_i q(\tau)\right) + X'_{it}\beta(\tau) + Z'_{it}\gamma(\tau) (1)$$

whereas $a_i(\tau)$ represents the quantile -(τ) fixed and location/distribution effects for countries (i), $\delta_i q(\tau)$ is the scale effect (i.e., variability of dependent variable across different quantiles of the conditional distribution), τ is the quantile, $Q_y(\tau|X_{it})$ is the dependent variable and its quantile, $X'_{it}\beta(\tau)$ is the vector of independent variables, and $Z'_{it}\gamma(\tau)$ is the vector of differentiable transformations of individual components of X.

RESULTS

Market Gini Coefficient and Corporate Tax Rate

See Table 1 for results of full panel regressions with Driscoll and Kray standard errors (DKSE) and Quantile via Moments (MM-QR). The dependent variable is the market Gini coefficient. The CTR coefficient is significant and negative in the DSKE and MM-QR models. Furthermore, the negative CTR coefficients demonstrate increases in the CTR lower the market Gini coefficient (improves income distribution). For a specific example, if we apply the reduction of CTR from (35) to (21) percent in the United States, it would suggest an increase in the market Gini coefficient by 0.658 (i.e., 0.047 x 14).

TABLE 1
MARKET GINI COEFFICIENT AND CORPORATE TAX RATE – FULL PANEL

Model	DKSE	DKSE	MM-QR – 25 Quantile	MM-QR – 50 Quantile	MM-QR – 75 Quantile
Countries	95	95	95	95	95
Observations	2,495	2,495	2,495	2,495	2,495
F-Test	***	***	***	***	***
R^2	.272	.462			
Corporate Tax Rate	-.055*** (.012)	-.047*** (.009)	-.051*** (.018)	-.047*** (.018)	-.044** (.019)
Covariates					
GDP Per Cap (nat. log)	1.90*** (.548)	2.19*** (.470)	2.80** (1.28)	2.53** (.127)	1.60 (1.14)
Dependency Ratio	.145*** (.010)	.111*** (.013)	.177*** (.027)	2.21** (1.08)	.104*** (.030)
Regime		-.195 (.138)	-.206 (.157)	-.195 (.152)	-.184 (.157)
% Economy Industry		-.100*** (.023)	-.114* (.061)	-.100 (.061)	-.087 (.067)
Trade		.013** (.001)	.010* (.006)	.013** (.006)	.016** (.006)
Human Capital Index		-2.02*** (.576)	-1.81 (1.17)	-2.01 (1.26)	-2.22 (1.44)
Ethnic Tension		-.079 (.063)	-.115 (.130)	-.081 (.134)	-.044 (.151)
Religious Tension		-.034 (.072)	-.003 (.197)	-.033 (.202)	-.064 (.216)
Government Stability		-.062* (.033)	-.042 (.068)	-.061 (.059)	-.081 (.059)
Unemployment		.139*** (.019)	.145*** (.037)	.139*** (.039)	.133*** (.042)
Inflation		.001** (.000)	.010*** (.001)	.001*** (.000)	.001 (.001)

Note: *** p <0.01, ** 0.01<p<0.05, * 0.05<p<0.10. The dependent variable is the market Gini coefficient. Standard Errors are in parenthesis.

See Table 2 for the results of panel regressions with the high-income group and the market Gini as the dependent variable. Similar to the full panel in Table 1, the CTR coefficient is significant and negative across models. The negative CTR coefficients demonstrate increases in the CTR lowers the market Gini coefficient. Applying the same scenario of the reduction of the CTR from (35) to (21) percent in the United States suggests an increase in the market Gini coefficient by 0.784 (i.e., 0.56 x 14).

TABLE 2
MARKET GINI COEFFICIENT AND CORPORATE TAX RATE – HIGH INCOME PANEL

Model	DKSE	DKSE	MM-QR – 25 Quantile	MM-QR – 50 Quantile	MM-QR – 75 Quantile
Countries	38	38	38	38	38
Observations	1,054	1,054	1,054	1,054	1,054
F-Test	***	***	***	***	***
R^2	.492	.689			
Corporate Tax Rate	-.067*** (.016)	-.056*** (.010)	-.057*** (.017)	-.056*** (.018)	-.055*** (.019)
Covariates					
GDP Per Cap (nat. log)	-2.94** (1.24)	-4.21*** (.989)	-3.55*** (1.58)	-4.17*** (1.62)	-4.90*** (1.62)
Dependency Ratio	.103*** (.022)	.070*** (.020)	.083* (.051)	.070 (.046)	.054 (.045)
Regime		-.519** (.255)	-.646*** (.163)	-.525*** (.151)	-.387** (.176)
% Economy Industry		.002 (.048)	.081 (.103)	.006 (.100)	-.080 (.103)
Trade		.017*** (.001)	.018*** (.006)	.017*** (.005)	.017*** (.005)
Human Capital Index		.688 (.430)	1.52 (.139)	.731 (1.32)	-.182 (.137)
Ethnic Tension		-.192 (.115)	.302 (.253)	-.198 (.238)	-.080 (.242)
Religious Tension		.257 (.178)	.314 (.185)	.260 (.219)	.199 (.270)
Government Stability		-.064* (.033)	-.112* (.064)	-.067 (.057)	-.016 (.060)
Unemployment		.064** (.029)	.079 (.056)	.065 (.054)	.049 (.053)
Inflation		.017 (.011)	.033 (.013)	.018 (.011)	.001 (.012)

Note: *** p <0.01, ** 0.01<p<0.05, * 0.05<p<0.10. The dependent variable is the market Gini coefficient. Standard Errors are in parenthesis.

See Table 3 for the results of panel regressions with the middle- and lower-income group and the market Gini. The CTR coefficient is significant and negative until the 75th quantile of the market Gini. This suggests the CTR is more responsive in countries with better market income distribution. Moreover, it is not significant in those middle-and lower-income group countries with highly unequal market income distribution.

TABLE 3
MARKET GINI COEFFICIENT AND CORPORATE TAX RATE – MIDDLE- AND LOWER-INCOME PANEL

Model	DKSE	DKSE	MM-QR – 25 Quantile	MM-QR – 50 Quantile	MM-QR – 75 Quantile
Countries	58	58	58	58	58
Observations	1,515	1,515	1,515	1,515	1,515
F-Test	***	***	***	***	***
R^2	.203	.410			
Corporate Tax Rate	-.045*** (.016)	-.049*** (.014)	-.060** (.027)	-.051** (.025)	-.039 (.029)
Covariates					
GDP Per Cap (nat. log)	2.78*** (.307)	3.83*** (.579)	4.42*** (1.26)	3.89*** (1.24)	3.28*** (1.27)
Dependency Ratio	.082*** (.012)	.065*** (.015)	.076** (.035)	.066* (.043)	.054 (.049)
Regime		-.077 (.104)	-.115 (.164)	-.081 (.166)	-.043 (.184)
% Economy Industry		-.098** (.043)	-.149 (.085)	-.103 (.082)	-.051 (.091)
Trade		.009*** (.002)	.009 (.007)	.009 (.008)	.010 (.009)
Human Capital Index		-2.61*** (.813)	-2.34 (1.72)	-2.57 (1.85)	-2.84 (2.22)
Ethnic Tension		-.016 (.071)	-.046 (.163)	-.018 (.160)	.012 (.175)
Religious Tension		-.106 (.087)	.088 (.227)	-.104 (.231)	-.123 (.244)
Government Stability		-.059 (.040)	.031 (.092)	-.056 (.083)	-.083 (.080)
Unemployment		.140*** (.027)	.150*** (.053)	.141** (.061)	.131* (.073)
Inflation		.001** (.000)	.001*** (.000)	.001*** (.000)	.001 (.001)

Note: *** p <0.01, ** 0.01<p<0.05, * 0.05<p<0.10. The dependent variable is the market Gini coefficient. Standard Errors are in parenthesis.

Net Gini Coefficient and Corporate Tax Rate

See Table 4 for the results of the full panel regressions with DKSE and MM-QR models with the net Gini coefficient as the dependent variable. The CTR coefficient is significant and negative in the DKSE and in the MM-QR models until the 75th quantile. The negative CTR coefficients suggest increases in the CTR lower the net Gini coefficient (improves income distribution). The MM-QR model results suggest CTR is more effective in countries with lower net Gini coefficients. CTR loses significance in countries with bigger net Gini coefficients (i.e., 75th quantile through the upper quantile conditional mean distribution).

TABLE 4
NET GINI COEFFICIENT AND CORPORATE TAX RATE – FULL PANEL

Model	DKSE	DKSE	MM-QR – 25 Quantile	MM-QR – 50 Quantile	MM-QR – 75 Quantile
Countries	95	95	95	95	95
Observations	2,495	2,495	2,495	2,495	2,495
F-Test	***	***	***	***	***
R^2	.187	.365			
Corporate Tax Rate	-.041*** (.013)	-.037*** (.012)	-.048** (.020)	-.037** (.018)	-.026 (.019)
Covariates					
GDP Per Cap (nat. log)	1.70*** (.392)	2.52*** (.470)	2.93** (.141)	2.53** (.127)	2.15 (.118)
Dependency Ratio	.107*** (.013)	.084*** (.017)	.088*** (.028)	.084*** (.026)	.080*** (.027)
Regime		-.145 (.119)	-.146 (.160)	-.145 (.147)	-.143 (.145)
% Economy Industry		-.045** (.021)	-.068 (.064)	-.046 (.062)	-.025 (.067)
Trade		.008*** (.002)	.008 (.005)	.009 (.006)	.009 (.006)
Human Capital Index		-2.01*** (.552)	-1.95 (1.20)	-2.01 (1.29)	-2.07 (1.47)
Ethnic Tension		.101 (.066)	.066 (.120)	.100 (.120)	.132 (.132)
Religious Tension		-.279*** (.085)	-.270 (.190)	-.279 (.186)	-.288 (.192)
Government Stability		-.014 (.036)	.018 (.069)	.012 (.058)	-.043(.050)
Unemployment		.108*** (.012)	.108*** (.039)	.108*** (.040)	.108*** (.044)
Inflation		.001** (.000)	.008*** (.001)	.001* (.000)	.001 (.001)

Note: *** p <0.01, ** 0.01<p<0.05, * 0.05<p<0.10. The dependent variable is the net Gini coefficient. Standard Errors are in parenthesis.

See Table 5 for results for the high-income panel with DKSE and MM-QR models and the net Gini coefficient as the dependent variable. The CTR is insignificant across DSKE and MM-QR models. A question arises as to why the CTR is significant in developed countries for the market Gini but not the net Gini. One explanation is the burden of tax incidence (Musgrave & Musgrave, 1984). For example, if the burden of CTR is disproportionately on higher-income individuals, higher CTR reduces market income inequality. However, higher CTR may not be as responsive to the net income inequality since revenue could be allocated to social programs instead of directly redistributed to low-income individuals. In addition, higher CTR that reduces market income inequality does not necessarily lead to less net income inequality if personal income tax is not progressive or if policy fails to reallocate income from high income groups to lower income groups (Parsons & Naghshpour, 2022). The study tests the role of progressive PIT in an augmented model in Section 4.4.

TABLE 5
NET GINI COEFFICIENT AND CORPORATE TAX RATE – HIGH INCOME PANEL

Model	DKSE	DKSE	MM-QR – 25 Quantile	MM-QR – 50 Quantile	MM-QR – 75 Quantile
Countries	38	38	38	38	38
Observations	1,054	1,054	1,054	1,054	1,054
F-Test	***	***	***	***	***
R^2	.229	.451			
Corporate Tax Rate	-.026 (.016)	-.023 (.016)	-.027 (.021)	-.022 (.021)	-.018 (.021)
Covariates					
GDP Per Cap (nat. log)	-1.25 (.927)	-3.64*** (.739)	-3.11 (1.87)	-3.69** (1.62)	-4.19*** (1.48)
Dependency Ratio	.076*** (.018)	.041*** (.015)	.045 (.052)	.041 (.046)	.038 (.043)
Regime		-.432** (.202)	-.515*** (.197)	-.432*** (.153)	-.346** (.150)
% Economy Industry		.031 (.044)	.063 (.104)	.027 (.090)	-.003 (.082)
Trade		.014*** (.001)	.015*** (.003)	.013*** (.003)	.012*** (.004)
Human Capital Index		1.27*** (.371)	1.85 (.140)	1.22 (.137)	.689 (.140)
Ethnic Tension		.021 (.100)	-.153 (.195)	.039 (.158)	.202 (.148)
Religious Tension		-.002 (.101)	-.037 (.186)	.001 (.166)	.034 (.169)
Government Stability		.006 (.034)	.011 (.055)	.007 (.046)	.022 (.048)
Unemployment		-.002 (.028)	.002 (.055)	-.002 (.047)	-.006 (.043)
Inflation		.004 (.008)	.016 (.012)	.003 (.001)	.009 (.006)

Note: *** p <0.01, ** 0.01<p<0.05, * 0.05<p<0.10. The dependent variable is the net Gini coefficient. Standard Errors are in parenthesis.

See Table 6 for results for the middle- and lower-income panel regressions with DKSE and MM-QR models. Similar to Table 3, the CTR coefficient is significant and negative until the 75th quantile. The negative CTR coefficients suggest increases in the CTR lower the net Gini coefficient. The MM-QR model results suggest higher CTR is more responsive in middle- and lower-income countries with less net income inequality.

TABLE 6
NET GINI COEFFICIENT AND CORPORATE TAX RATE –
MIDDLE- AND LOWER-INCOME PANEL

Model	DKSE	DKSE	MM-QR – 25 Quantile	MM-QR – 50 Quantile	MM-QR – 75 Quantile
Countries	58	58	58	58	58
Observations	1,515	1,515	1,515	1,515	1,515
F-Test	***	***	***	***	***
R^2	.238	.467			
Corporate Tax Rate	-.054*** (.019)	-.055*** (.017)	-.069*** (.025)	-.057*** (.020)	-.042 (.027)
Covariates					
GDP Per Cap (nat. log)	3.24*** (.304)	4.24*** (.546)	4.07*** (1.29)	4.30*** (1.29)	3.83*** (1.36)
Dependency Ratio	.082*** (.012)	.067*** (.019)	.078** (.039)	.068* (.040)	.056 (.046)
Regime		-.059 (.113)	-.107 (.156)	-.065 (.157)	-.015 (.174)
% Economy Industry		-.073 (.045)	-.115 (.084)	-.078 (.081)	-.034 (.095)
Trade		.007** (.002)	.005 (.007)	.006 (.009)	.008 (.011)
Human Capital Index		-3.65*** (.812)	-3.30** (1.69)	-3.60** (1.79)	-3.96* (2.19)
Ethnic Tension		.024 (.083)	-.003 (.159)	.020 (.157)	.045 (.174)
Religious Tension		-.270** (.112)	-.262 (.219)	-.269 (.224)	-.278 (.240)
Government Stability		-.079* (.043)	.040 (.089)	-.073 (.078)	-.112 (.074)
Unemployment		.146*** (.021)	.150** (.056)	.156** (.064)	.142** (.078)
Inflation		.001** (.000)	.001*** (.000)	.001*** (.000)	.001 (.001)

Note: *** p <0.01, ** 0.01<p<0.05, * 0.05<p<0.10. The dependent variable is the net Gini coefficient. Standard Errors are in parenthesis.

Corporate Tax Rate and Average Personal Income Tax Progressivity

The study uses an augmented DKSE model to analyze the inclusion of the average personal income tax (PIT) progressivity on the CTR. PIT data was not included in base models because of limited PIT data. Data on PIT progressivity is from 1988 to 2005 and comprises 145 countries. The data is from research on global tax reform and has not been updated since constructed for the study published in 2005 (Peter & Buttrick, 2009). The PIT dataset compiles income tax information from over 100 sources, including accounting firms like Deloitte and PriceWaterhouseCoopers. The average rate of progression is the slope coefficient from regressing the average tax rate on the natural logarithm of gross income. The PIT tax data indicators adjust for allowances, deductions, tax credits, significant local taxes, and other main tax code rules.

See Table 7 for results with the DKSE model in the full, high income, and middle- and lower-income panels with the net Gini coefficient dependent variable. The regression results reveal that CTR is no longer significant with the introduction of the average PIT progressivity. While the regression models have fewer observations due to limited PIT data availability, the findings suggest that increasing average PIT progressivity might be a more effective mechanism for mitigating income inequality than increases in CTR.

TABLE 7
NET GINI COEFFICIENT, CORPORATE TAX RATE, AND AVERAGE PERSONAL INCOME TAX PROGRESSIVITY – FULL PANEL

Model	Full Panel	High Income	Middle and Lower Income
Countries	92	38	54
Observations	1,290	580	710
F-Test	***	***	***
R^2	.288	.360	.352
Corporate Tax Rate	.001 (.008)	.001 (.010)	.004 (.009)
Average PIT Progressivity	-.011** (.005)	-.013** (.006)	-.019* (.010)
CTR##Average PIT	.000 (.000)	.000 (.000)	.000 (.000)
Covariates			
GDP Per Cap (nat. log)	3.32*** (.669)	-.779 (10.00)	5.26*** (.856)
Dependency Ratio	.026*** (.008)	.025 (.020)	.030** (.012)
Regime	-.086 (.060)	-.203* (.110)	-.084 (.061)
% Economy Industry	-.079** (.037)	.138** (.055)	-.226*** (.051)
Trade	-.001 (.002)	.009 (.005)	-.002 (.004)
Human Capital Index	-1.83** (.799)	2.43 (.888)	-4.95** (1.89)
Ethnic Tension	.004 (.080)	-.061 (.108)	-.067 (.103)
Religious Tension	-.193 (.039)	.049 (.100)	-.182*** (.052)
Government Stability	.043 (.049)	.011 (.051)	.036 (.045)
Unemployment	.137*** (.015)	.130*** (.016)	.142** (.030)
Inflation	.000 (.000)	.007 (.006)	.000 (.000)

Note: *** p <0.01, ** 0.01<p<0.05, * 0.05<p<0.10. The dependent variable is the net Gini coefficient. Standard Errors are in parenthesis.

DISCUSSION AND CONCLUSION

The results of the study provide important insights. First, lowering CTR worsens income distribution at the market level in nearly every panel, which suggests that higher-income groups capture a disproportionate amount of additional corporate revenue. Second, the additional market income captured by higher-income groups from lower CTR is not taxed or transferred to an extent to lower the net Gini in developing countries significantly. The outcome is partially explained by the reduction in the progressivity of personal income tax in many countries (Oishi, Kushlev, & Schimmack, 2018; Huizinga & Laeven, 2020; Parsons & Naghshpour, 2022). For example, in the United States, the personal income tax rates (PIT) for the highest income bracket reduced from 70 percent to as low as 28 percent (Tax Foundation, 2015).

Additionally, higher income groups may lower their individual income tax rates by moving income from salary-based to capital-based, as CTR or marginal income tax rates increase, to take advantage of lower income tax rates on capital gains (Saez & Zucman, 2019). To test the capital gains hypothesis, a country-specific study focusing on those countries with capital gains tax rates that are less than top marginal income tax rates. Third, in an augmented model with fewer observations from 1988 to 2005, average PIT progressivity is significant, while the CTR is not. The results suggest progressive PIT may be a more direct and effective policy tool for moderating income inequality. This is the case because CTR becomes insignificant with the introduction of the average PIT progressivity and because the relationship between CTR and income distribution is multifaceted and complex. The theoretical and practical uncertainties

include who will bear the incidence of corporate taxation, corporate inversions, and transfer pricing (Harberger, 1962; Summers, 1989; Poterba, 1994; Huizinga & Laeven, 2020)

The study has limitations. One, the study encompasses 95 countries, and there are 195 countries in the world (World Bank, 2023). Analysis of the entire population is preferable, but limitations exist with data availability on CTR, Gini coefficients, and covariates. Second, there are advantages and disadvantages to the use of panel groups. An advantage is the ease of determining overall trends in different subsets of countries. A disadvantage is that one country is among many; thus, the group absorbs individual country effects. The researcher does mitigate this by using quantile regression that looks at conditional mean along the distribution of the Gini coefficient. Nevertheless, the researcher recommends exploring cross-national and micro-level studies on the country of interest. Third, some countries do give preferential treatment to specific industries; thus, there may be cases where certain sectors or firms have corporate tax rates lower than what is reported. Country-specific studies best incorporate multiple CTRs and other incentives given to preferential industries. Future research should explore how corporate income tax rates affect tax revenue, government services, and overall government spending. It is possible that although decreases in corporate tax rates worsen income distribution, they improve the amount of government spending on services, which may enhance the quality of life.

ACKNOWLEDGMENTS

All data used in the study is publicly available and accessible. The author acknowledges funding for ICRG dataset from Pepperdine University and helpful suggestions and comments from Dr. Jared Ashworth. Any remaining shortcomings are those of the authors.

REFERENCES

Ablett, J., & Hart, N. (2005). Corporate Income Tax Reform: The Neglected Issue of Tax Incidence. *Economic Analysis and Policy*, *35*(1), 45–60.

Arulampalam, W., Devereux, M., & Maffini, G. (2012). The Direct Incidence of Corporate Income Tax on Wages. *European Economic Review*, *56*(6), 1038–54.

Baltagi, B. (2001). *Econometric Analysis of Panel Data*. Hoboken: Wiley, John & Sons Publishing.

Baltagi, B. (2013). *Econometric Analysis of Panel Data*. Chichester: John Wiley and Sons.

Barro, R. (2000). Inequality and growth in panel of countries. *Journal of Economic Growth*, *5*, 5–32.

Bartelsman, J., & Beetsma, R. (2003). Why Pay More? Corporate Tax Avoidance Through Transfer Pricing in OECD Countries. *Journal of Public Economics*, *87*(9), 2225–52.

Brown, R., & Pickett, K. (2017). *The Inequality Crisis: The Facts and What We Can Do about It*. Bristol: Bristol University Press.

Burtless, G. (2009). Demographic Transformation and Economic Inequality. In W. Salverda, B. Nolan, & T.M. Smeeding (Eds.), *The Oxford Handbook of Economic Inequality* (ch. 18, pp. 435–454). Oxford, Oxford University Press.

CEA - Council of Economic Advisors. (2017). T*he Growth Effects of Corporate Tax Reform and Implications for Wages*. Report.

Clausing, K. (2017, October 26). Would Cutting Corporate Taxes Raise Workers' Incomes? *EconoFact*.

Driscoll, J., & Kraay, A. (1998). Consistent covariance matrix estimation with spatially dependent data. *Review of Economics and Statistics*, *80*, 549–560.

Faccio, T., & Iacono, R. (2021). Corporate Income Taxation and Inequality: Review and Discussion of Issues Raised in The triumph of injustice—How the rich dodge taxes and how to make them pay. *The Review of Income and Wealth*, *68*(3), 819–829. https://doi.org/10.1111/roiw.12528

Feenstra, R., Inklaar, R., & Timmer, M. (2015). The next generation of the Penn world table. *American Economic Review*, *105*(10), 3150–3182.

Feierabend, K., & Feierabend, R. (1966). Aggressive behavior within polities. *Journal of Conflict Resolution*, *10*, 249–271.

Fuest, C., Peichl, A., & Siegloch, S. (2018). Do Higher Corporate Taxes Reduce Wages? Micro Evidence from Germany. *American Economic Review*, *108*(2), 393–418.
Furceri, D., & Ostry, J. (2019). Robust determinants of income inequality. *Oxford Review of Economic Policy*, *35*(3), 490–517.
Gurr, R. (1968). A causal model of civil strife: A comparative analysis using new indices.*American Political Science Review*, *62*, 1104–1124.
Hager, S.B., & Baines, J. (2020). The Tax Advantage of Big Business: How the Structure of Corporate Taxation Fuels Concentration and Inequality. *Politics and Society*, *48*(2), 275–305.
Harberger, C. (1962). The Incidence of the Corporation Income Tax. *Journal of Political Economy*, *70*(3), 215–40.
Heston, A., Summers, R., & Aten, B. (2012). *Penn World Table Version 7.1*. Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania.
Hines, R. (2020). *Corporate Taxation and the Distribution of Income*. Working Paper 27939, National Bureau of Economic Research.
Huber, J. (2002). Deliberate discretion? *Japanese Journal of Political Science*, *4*, 157–159.
Huizinga, H., & Laeven, L. (2008). International Profit Shifting within Multinationals: A Multi-Country Perspective. *Journal of Public Economics*, *92*(5–6), 1164–82.
Huntington, S. (1968). *Political Order in Changing Societies*. New Haven, CT: Yale Univ. Press.
Kaldor, N. (1957). A model of economic growth. *The Economic Journal*, *67*(268), 591–624.
Karklins, R. (2005). *The System Made Me Do It: Corruption in Post-Communist Societies*. Armonk, N.Y: M.E. Sharpe.
Knight, J.B., &. Sabot, R.H. (1983). Educational Expansion and the Kuznets Effect. *American Economic Review*, *73*(5), 1132–1136.
Kotlikoff, L. (2014, January 5). Abolish the Corporate Income Tax. *The New York Times.*
Kuznets, S. (1955). Economic growth and income inequality. *The American Economic Review*, *45*(1), 1–28.
Lundberg, M., & Squire, L. (2003). The simultaneous evolution of growth and inequality. *The Economic Journal*, *113*(487), 326–344.
Machado, J., & Silva, S. (2019). Quantiles via moments. *Journal of Econometrics*, *213*(1).
Musgrave, R., & Musgrave, P. (1984). *Public Finance in Theory and Practice* (4th ed.). McGraw Hill, New York.
Nallareddy, S., Rouen, E., & Suárez Serrato, C. (2018). *Do Corporate Tax Cuts Increase Income Inequality?* Working Paper 24598, National Bureau of Economic Research.
Newey, W., & West, K. (1987). A simple, positive semi-definite, heteroscedasticity and autocorrelation consistent covariance matrix. *Econometrica*, *55*, 703–708.
OECD. (2020). *R&D Tax Incentive Database*. Retrieved from http://oe.cd/rdtax
Oishi, S., Schimmack, U., & Kushlev, K. (2018). Progressive Taxation, Income Inequality, and Happiness. *American Psychologist*, *73*(2), 157–168.
Parsons, B. (2023). Panel Data Analysis of the Human Capital Index and Income Inequality. *Journal of Applied Economics and International Development*, *23*(1).
Parsons, B., & Naghshpour, S. (2022). Panel Data Analysis on Income Tax Progressivity and Gini Coefficient. *Journal of Applied Business and Economics*, *24*(2).
Peters, S., & Buttrick, S. (2009). Global Reform of Personal Income Taxation, 1981-2005: Evidence from 189 Countries. *National Tax Journal*. 10.2139/ssrn.1091534
Poterba, J. (1994). State Responses to Fiscal Crises: The Effects of Budgetary Institutions and Politics. *Journal of Political Economy*, *102*(4), 799–821.
Saez, E., & Zucman, G. (2019). *The Triumph of Injustice: How the Rich Dodge Taxes and How to Make Them Pay*. W. W. Norton, New York.
Solt, F. (2015). Economic inequality and nonviolent protest. *Social Science Quarterly*, *96*(5), 1314–1327.
Stiglitz, J. (2013). The price of inequality. *New Perspectives Quarterly*, *30*(1).

Suárez Serrato, J., & Zidar, O. (2016). Who Benefits from State Corporate Tax Cuts? A Local Labor Markets Approach with Heterogeneous Firms. *American Economic Review*, *106*(9), 2582–624.
Summers, L. (1989). Some Simple Economics of Mandated Benefits. *The American Economic Review*. *79*(2), 177–183.
Tax Foundation. (2021, November). *Fiscal Fact*. Corporate Tax Rates around the World. No. 783.
United Nations Development Program. (2021). *Human Development Report 2020*. New York: Oxford Press.
Wier, L. (2020). Tax-Motivated Transfer Mispricing in South Africa: Direct Evidence Using Transaction Data. *Journal of Public Economics*, *184*, 104153.
Wooldridge, J.M. (2010). *Econometric analysis of cross section and panel data*. Cambridge, MA: MIT Press.
World Bank. (2023). Retrieved from https://data.worldbank.org/indicator/SL.TLF.CACT.ZS
Young, A. (2013). Inequality, the urban–rural gap, and migration. *Quarterly Journal of Economics*, *128*(4), 1727–1785.

APPENDIX 1: COUNTRIES

Full Panel, N=95	High Income, N=38	Developing, Low Income, N=7	Developing, Lower Middle Income, N=24	Developing, Upper Middle Income, N=27
Albania	Australia	Ethiopia	Angola	Albania
Angola	Austria	Malawi	Bangladesh	Argentina
Argentina	Belgium	Mozambique	Bolivia	Armenia
Armenia	Canada	Tanzania	Cameroon	Botswana
Australia	Chile	Uganda	Cote d'Ivoire	Brazil
Austria	Croatia	Yemen	Egypt	Bulgaria
Bangladesh	Cyprus	Zimbabwe	El Salvador	China
Belgium	Czech Republic		Ghana	Colombia
Bolivia	Denmark		Honduras	Costa Rica
Botswana	Estonia		India	Dominican
Brazil	Finland		Indonesia	Republic
Bulgaria	France		Kenya	Ecuador
Cameroon	Germany		Moldova	Iran
Canada	Greece		Morocco	Jamaica
Chile	Hungary		Nigeria	Jordan
China	Ireland		Pakistan	Kazakhstan
Columbia	Israel		Philippines	Malaysia
Costa Rica	Italy		Senegal	Mexico
Cote d'Ivoire	Japan		Sri Lanka	Namibia
Croatia	Latvia		Sudan	Paraguay
Cyprus	Lithuania		Tunisia	Peru
Czech Republic	Luxembourg		Ukraine	Romania
Denmark	Netherlands		Vietnam	Russia
Dominican	New Zealand		Zambia	Serbia
Republic	Norway			South Africa
Ecuador	Panama			Thailand
Egypt	Poland			Turkey
El Salvador	Portugal			Venezuela
Estonia	Singapore			
Ethiopia	Slovakia			
Finland	Slovenia			

France Germany Ghana Greece Honduras Hungary India Indonesia Iran Ireland Israel Italy Jamaica Japan Jordan Kazakhstan Kenya Latvia Lithuania Luxembourg Malawi Malaysia Mexico Moldova Morocco Mozambique Namibia Netherlands New Zealand Norway Pakistan Panama Paraguay Peru Philippines Poland Portugal Romania Russia Senegal Serbia Singapore Slovakia Slovenia South Africa South Korea Spain Sri Lanka Sudan Sweden Switzerland	South Korea Spain Sweden Switzerland United Kingdom United States Uruguay			

Tanzania Thailand Tunisia Turkey Uganda Ukraine United Kingdom United States Uruguay Venezuela Vietnam Yemen Zambia Zimbabwe				

APPENDIX 2: DESCRIPTIVE STATISTICS

Variable	Description	Observations	Mean	St. Dev.	Min	Max
Net Gini coefficient	**SWIID -** Dependent Variable – net Gini (after-tax and transfer)	2,494	37.9	8.99	19.5	66.5
Market Gini coefficient	**SWIID**- Dependent Variable – gross Gini (before tax and transfers)	2,494	46.4	6.42	22.1	70.4
Corporate Tax Rate	**Tax Foundation** - Statutory corporate tax rate.	2,494	30.4	8.86	0.0	75
Average Rate of Personal Income Tax Progressivity	**World Tax Index -** The personal income tax (PIT) dataset compiles tax rate information from over 100 distinct references from accounting firms such as Deloitte and PriceWaterhouseCoopers. The data ranges from 1981 to 2005 and averages 145 countries per year.	1,385	39.3	29.1	-1.08e-06	129
Dependency Ratio	**World Bank** - Percentage of the population in the working-age category	2,494	60.4	17.1	27.0	117
Unemployment Rate	**World Bank** - Percentage of the population unemployed	2,494	8.00	5.16	.398	33.5
Employment in Manufacturing	**World Bank** - Percentage of workforce	2,494	22.2	7.60	2.54	46.0

	employment in manufacturing.					
Inflation	**World Bank** - GDP Deflator	2,494	7.5	215	-27.0	6261
Government Stability	**ICRG -** The government stability measure is on a scale of (0) highest instability to (12) most stable. The subcomponents of the ICRG government stability score include government unity, legislative strength, and popular support.	2,494	7.81	1.81	1.0	12.0
Per Capita GDP	**World Bank and Computation -** natural logarithm of per capita GDP	2,494	8.82	1.44	5.21	11.6
Human Capital Index	**Penn World Tables -** Average schooling years and returns to education.	2,494	2.58	.668	1.06	3.97
Religious Tension	**ICRG** - The religious tension is on a scale of (0) high tension to (6) low tension. It measures suppression and exclusion of minority religious groups from political and social processes.	2,494	4.74	1.31	0.0	6.0
Regime	**ICRG -** The democratic accountability index is on a scale of (0) for autarchy to (6) for alternating democracies.	2,494	4.39	1.44	0.0	6.0
Ethnic Tension	**ICRG -** The ICRG measure of ethnic tension is on a scale of (0) high tension to (6) low tension and is based on levels of racial, nationality, or language divisions.	2,494	4.13	1.33	0.0	6.0

APPENDIX 3: CORRELATION MATRIX

	Corp. Tax Rate	GDP Per Capita	Depend. Ratio	Govern. Stability	Employ Industry%	Imp + Exp % GDP	Human Capital	Regime	Ethnic Tension	Religious Tension	Unemp.	Inflation
Corp. Tax Rate	1.00											
GDP Per Capita	-.119	1.00										
Depend. Ratio	.325	-.695	1.00									
Inst. Strength	.045	.765	-.480	1.00								
Employ Industry%	-.045	.552	-.664	.402	1.00							
Imp + Exp % GDP	-.338	.265	-.295	.225	.152	1.00						
Human Capital	-.322	.800	-.744	.617	.512	.244	1.00					
Regime	-.081	.735	-.517	.697	.392	.295	.579	1.00				
Ethnic Tension	-.104	-.101	-.098	-.099	.026	.088	-.016	.003	1.00			
Religious Tension	-.215	.130	-.127	.137	-.031	.276	.084	.129	.010	1.00		
Unemp.	.028	.086	-.066	-.024	.168	-.067	.041	-.169	-.077	.005	1.00	
Inflation	.024	-.038	.050	-.057	.008	-.073	-.068	-.064	-.144	-.026	-.012	1.00