Fiscal decentralization and gender equality: empirical evidence across countries

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Abstract

Globally, over the last few decades, countries have become increasingly decentralized but only recently did they recognize the need for incorporating a gender dimension into such policies. As a result, the relationship between fiscal decentralization, which implies delegating fiscal powers from national to subnational governments, and gender equality remains elusive. In this paper, I study the impact of expenditure decentralization on gender equality using panel data from the Organisation for Economic Co-operation and Development – OECD countries between 2006 and 2021. I find that decentralization of expenditure increases gender equality in these countries. My results also demonstrate that unionization, the extent of a country's integration with the rest of the world, urbanization, population growth, and the state of democracy also matter for gender equality. This suggests that these factors should also accompany expenditure decentralization if the governments of these countries want to further promote gender equality through such public policies.

Keywords: fiscal decentralization, gender equality, public expenditure

1 INTRODUCTION

In Forster's view, "Gender inequality is perhaps the single most significant impediment to achieving a more just, equitable, prosperous, and inclusive world" (Forster, 2020:10). Major world institutions that promote macroeconomic and financial stability globally also emphasize the importance of gender equality for building and maintaining strong economies. The ILO (2000) defines gender equality as a situation free of stereotypes, biases, and discrimination across genders. On average across countries, long-term GDP per capita would be 20% higher if the gender employment gap were closed and there would be 5-6 trillion dollars' worth of economic gains globally if women participated in new businesses at the same rate as men (World Bank, 2023a). One of the major sustainable development goals of the United Nations (UN) is to ensure equal opportunities for women so that they can actively participate in all levels (i.e., political, economic and public) of decision-making in the economy.

The issue of gender equality has relevance not only for developing but also for developed countries. Although gender inequality can often be observed to persist severely in the Global South, Forster (2020) points out that this economic deficiency also characterizes countries in the Global North. That is why one will find pro-gender-equality initiatives like gender budgeting in OECD countries or the Feminist International Assistance Policy (Global Affairs Canada, 2017:3) in Canada. In the OECD countries, despite some progress in recent decades, gender inequalities prevail in areas that include entrepreneurship, compensation, participation in the labor market, education, health, and so on. This reflects not only the difficulty in drafting, implementing, and assessing gendered public policies but also the greater scope for misallocation and misuse of public resources (Downes, Von T. and Nicol, 2017).

Fiscal decentralization, where more authority and autonomy are delegated from national to subnational governments, has become increasingly common in both developed and developing countries over the last few decades (Treisman, 2007). It is generally argued that decentralization improves the overall efficiency of government, although it might not always be the case. Martinez-Vazquez, Lago-Peñas, and Sacchi (2017) suggest that it has become essential to study how fiscal decentralization influences society, politics, and the economy since subnational governments worldwide have become increasingly responsible for providing public goods and services. The available literature has widely explored fiscal decentralization's effect on various socioeconomic variables like economic growth, income inequality, and poverty, as well as the provision of public goods and services. Although gender equality is a potentially desirable outcome of the decentralization process and a major sustainable development goal of countries around the world there are only a few studies on how fiscal decentralization affects gender equality.

Using cross-sectional data Williams (2018) found no empirical evidence of any relationship between a country being federal and the extent of gender inequality; however, several limitations of the analysis can be pointed out. First, the analysis was cross-sectional so it was not possible to control for unobserved heterogeneity between countries and over time. Second, the outcome variable studied was "federalism" a dummy variable indicating whether a country has a unitary or federal constitution. Lessman (2009) asserts that a dummy variable does not adequately represent the decentralization process. Third, the Human Development Index (HDI) was the only control variable used in the regressions and thus estimation was very likely biased due to omitted variables that could also affect gender inequality. Finally, potential endogeneity bias in the relationship was also ignored during empirical analysis.

Naeem and Khan (2021) examined how fiscal decentralization affects gender equality using panel data but its results cannot be generalized since the study was done only for developing countries. Another concern is that the authors used a system-GMM estimator to tackle endogeneity in which lagged values of fiscal decentralization were used as instrumental variables. However, this way of addressing endogeneity is problematic since in the process of using past values as instruments the estimator might end up producing too many instruments resulting in an overestimation of the coefficients of the endogenous variables (Roodman, 2009).

In this study, I investigate how fiscal decentralization affects gender equality in developed countries and to my knowledge, this is a novel study using data on OECD countries. Specifically, panel data on OECD countries during the period 2006-2021 was utilized, with a focus on expenditure decentralization since it has been observed by Sow and Razafimahefa (2018) that unlike other types of decentralization such as revenue, expenditure decentralization directly influences health and education outcomes as well as the efficiency in public goods and services provision. Also, Gemmell, Kneller, and Sanz (2013) point out that in these countries

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spending has been decentralized more than revenue in the last few decades. Moreover, expenditure decentralization was found by Cavusoglu and Dincer (2015) to be more effective than revenue decentralization in decreasing income inequality.

In the empirical estimation, endogeneity issues are tackled using instrumental variables, and additional estimation was performed to establish the robustness of the findings. The key result is that expenditure decentralization increases gender equality across the OECD countries. This finding is robust to different measures of outcome and instruments. The results also show that unions, population growth, urbanization, the extent of a country's integration with the rest of the world, and the state of democracy matter for gender equality. Although the level of development and unemployment influence gender equality as well, the finding is not robust.

Next, the related literature on fiscal decentralization and its impact on different socioeconomic variables is reviewed. The data and empirical methodology are then presented and discussed. After that, the empirical results and robustness checks are analyzed before I conclude my paper.

2 RELATED LITERATURE
Theoretical considerations provide no clear-cut direction about the relationship between fiscal decentralization and various socio-economic outcomes. For example, advocates argue that the delivery of public goods and services is more efficient in a decentralized setting since local governments have better access to and thus information about local preferences (Oates, 2005). As public institutions are geographically close to the local population there is also greater accountability that might lead to increased public investment in the key sectors of the economy (such as health and education) and improved public service outcomes (Ahmad, Brosio and Tanzi, 2008; Fredriksen, 2013). On the contrary, critics argue that the benefits of decentralization might not be fully realized since local governments might grow and simply become unmanageable. If they face soft budget constraints then local public officials might end up adopting inefficient public policies. Macroeconomic instability might also result from their failure to attract the investments necessary for innovation and technological progress (Treisman, 2000; Ivanyna and Shah, 2011; Weingast, 2014).

Similar ambiguity is also evident in empirical studies on fiscal decentralization. Baskaran and Feld (2013) found a negative effect of fiscal decentralization on economic growth across 23 OECD countries during 1975-2008. In contrast, Eller (2004) notes a positive effect of fiscal decentralization on economic growth while Thornton (2007) encounters no evidence of such a relationship among the OECD countries. Gemmell, Kneller, and Sanz (2013) using data on 23 OECD countries between 1972-2005 find that expenditure decentralization deters economic growth whereas revenue decentralization facilitates it. However, for a similar sample of OECD countries Bodman (2011) observes that neither spending nor revenue decentralization has any effect on economic growth.

Tselios et al. (2012) for 102 EU regions during 1995-2000 and Lessman (2012) for regions across 54 developed and developing countries during 1980-2009 found that fiscal decentralization decreases income inequality in less developed regions but increases income inequality in high-income regions. On the contrary, Cavusoglu and Dincer (2015) observe that in the U.S., fiscal decentralization decreases income inequality only in the rich states.

Fernandez, Luna and Rambousek (2019) observe that for sustainable development of any economy, achieving gender equality is vital since it allows for the distribution of resources, programs, and decisions without discriminating across genders and thus leads to inclusive growth. However, according to the World Bank (2023b), it is difficult to establish and sustain gender equality even under the most favorable conditions since it involves complex and often controversial issues. In almost every industrialized country women's economic status in terms of employment and earnings falls behind men as a result of having children and Gornick (2004) asserts that such economic outcomes can be transformed through public policies. For instance, across 18 high-income countries in the West gender poverty gap for lone mothers and elderly women was mitigated by social transfers (Brady and Burroway, 2012).

In their systematic review, King et al. (2020) find that generally in high-income countries greater gender equality improves the health outcomes of both men and women. Jimenez-Rubio's (2011) exploratory empirical analysis of Canadian provinces during the period 1979-1995 showed that fiscal decentralization of health services improved the health outcomes of the population.

There is a paucity of research that examines how fiscal decentralization affects gender equality. In theory according to Williams (2018), "federalism" which involves decentralization of power to more local levels is in general neither good nor bad for gender equality. On one hand, decentralization creates more opportunities for women's political participation thus increasing their scope for promoting a gender equality agenda. According to political scientists such effects of decentralization can spill over to neighboring local units consequently increasing competition among them and thus improving policies. On the other hand, decentralization can act as a barrier to gender equality as communities at the local level might be more conservative in terms of gender roles and ideologies than their national counterparts and thus hinder any kind of feminist reforms at the local level. Decentralization could also push women towards less resourced and inferior positions of decision-making for the government. There could be further costs for women if political lobbying results in women's rights and/or benefits (such as access to child care and reproductive health services) being distributed asymmetrically across different local units. The discussion points to ambiguity from a theoretical perspective regarding how decentralization will influence gender equality as it depends on the underlying mechanisms at work (Vickers, 2012; Stockemer and Tremblay, 2015; Williams, 2018).

Williams (2018) applies linear regression analysis on cross-sectional data for 24 countries in 2016 and controlling for HDI finds no evidence of any statistically significant relationship between a country being federal and its gender inequality index. Stockemer and Tremblay (2015) show that though gender equality is one of the normative principles underlying modern democracy globally women remain marginalized in politics even today. Using descriptive statistics and regression analysis they investigate the impact of federalism on female representation using data on 99 countries from 1995 to 2010. They find that federal countries have between three to four percentage points more female parliamentarians than unitary countries.

The only available study that examines how fiscal decentralization affects gender equality in a cross-country framework is by Naeem and Khan (2021). Their dynamic panel data analysis on 29 developing countries showed that fiscal decentralization worsened gender equality in lower-middle-income countries but to a lesser extent than in upper-middle-income countries in their sample regardless of whether the outcome analysed was the decentralization of revenue or expenditure.

3 DATA

The sample data in this paper covers an unbalanced panel of 27 OECD countries during 2006-2021: Australia, Austria, Belgium, Canada, Czechia, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, United Kingdom, United States. Table 1 presents the variables and data sources. Figure 1 shows a scatter plot of expenditure decentralization against the gender equality index from which high variation in both these variables can be seen across the OECD countries.

FIGURE 1

Scatter plot of expenditure decentralization on gender equality across OECD countries, 2006-2021, with a linear regression line
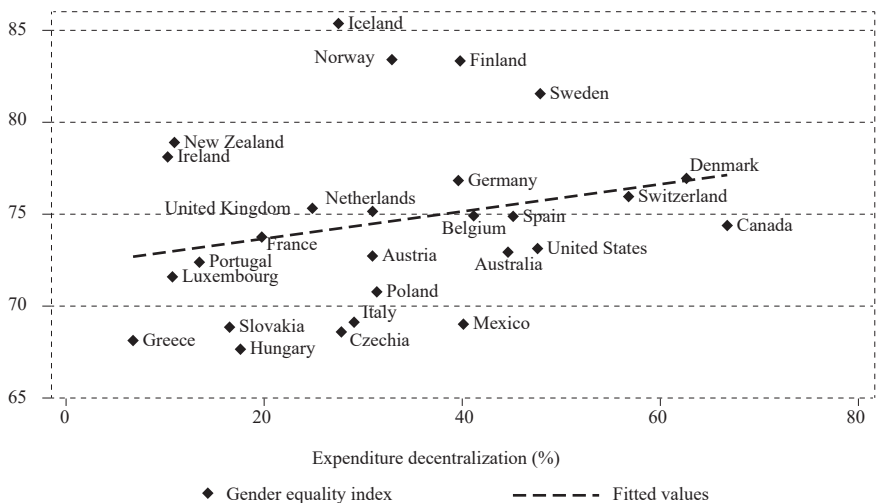
Source: Author's illustration.

The plot also includes the line of best fit which slopes upward indicating that countries with higher levels of expenditure decentralization attain higher equality in terms of gender.

However, at this stage, it will not be possible to make a claim based merely on such a visual inspection that the relationship is causal. The reason is that various factors other than expenditure decentralization will likely impact gender equality across the countries. Another concern would be the issue of endogeneity as a result of potential reverse causality where countries with high gender equality might lobby for higher decentralization of expenditure. Hence, to isolate and estimate the actual effect of expenditure decentralization on gender equality in a reliable manner using the appropriate empirical techniques I resort to regression analysis.

4 EMPIRICAL METHODOLOGY

The basic empirical specification is as follows:

$$Y_{it} = \alpha_i + \beta_1 Dec_{it} + \gamma^{'} X_{it} + \delta_t + \varepsilon_{it} \tag{1}$$

where the i and t denote countries and years, respectively; Y denotes the gender equality index; Dec denotes expenditure decentralization; X represents country-specific characteristics that are included as control variables; α's are country fixed effects; δ's are time fixed effects; ε is a stochastic error term.

The dependent variable, Gender equality, is represented by the gender equality index which captures the size of gender-based disparities and tracks their progress over time by synthesizing the performance of both men and women along four dimensions: educational attainment, health and survival, political empowerment, and economic participation. It is a weighted average of the sub-indices along these dimensions and its value ranges from one (that indicates equality) to zero (that indicates inequality). My measure of decentralization is the ratio of subnational government expenditures expressed as a percentage of general government expenditures. It is not a perfect measure of local autonomy because subnational governments often do not have complete discretion on expenditure decisions. This might happen due to the federal laws, the extent to which a party is centralized, and/or the service standards being determined centrally (Joumard and Kongsrud, 2003; Martinez-Vazquez, Lago-Peñas and Sacchi, 2017). However, because of its strength the expenditure share of subnational government is one of the most widely used indicators in decentralization studies.

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TABLE 1
Variables and data sources

Variables	Description	Sources
Democracy index	A snapshot of the state of democracy	Economist Intelligence Unit
Gender equality index	A summary measure of progress toward gender equality	World Economic Forum
Financial development index	Indicator of depth, access, and efficiency of financial institutions and markets	International Monetary Fund
Government size	An index measuring the size of the public sector in terms of consumption, investment, transfers, etc.	Fraser Institute
Gender inequality index	A summary measure of progress toward gender inequality	United Nations Development Programme
Human development index	A summary measure of average achievement in key dimensions of human development	
Expenditure decentralization	The ratio of sub-central to general government spending	Organisation for Economic Co-operation and Development
Union	The share of wage and salary earners that are trade union members	
Real GDP per capita	GDP per capita in 2015 U.S. dollars	
Urbanization	The ratio of Urban population to Total population	
Population growth	Growth rate value	
Land area (sq. km)	Land area value	
Unemployment rate	The ratio of Unemployed to Total labor force	
Exports	The ratio of Exports to GDP	World Bank
Foreign direct investment	The ratio of Foreign direct investment to GDP	
Population	Population value	
Population density	The ratio of Population to Land Area	
Government effectiveness	Governance indicator capturing the perceptions of government effectiveness	

Source: Author's compilation.

To minimize possible omitted variable bias in estimation, control variables that are expected to affect gender equality are also included. Those variables are urbanization and population growth, to control for demographic changes such as agglomeration; real GDP per capita or HDI, to control for the level of a country's development; unions and financial development, to control for institutional characteristics that might influence gender equality by establishing standardized rates of pay, allowing workers to earn additional benefits such as paid sick and family leaves and/or by providing access to finance without discriminating across gender; unemployment rate, to control for macroeconomic conditions; government size, to control for the size of the public sector in the economy; the level of democracy, to capture the structural characteristics of the political system; exports and foreign

direct investment, to control for a country's openness to the rest of the world. Table 1A reports the descriptive statistics of the variables used in this analysis.

TABLE 1A
Descriptive statistics

Variable	Obs.	Mean	Std. dev.	Min.	Max.
Gender equality index	432	0.75	0.05	0.64	0.91
Gender inequality index	432	0.12	0.08	0.01	0.43
Year	432	n/a	n/a	2006	2021
Expenditure decentralization (%)	431	32.40	16.12	5.60	69.11
Human development index	432	0.90	0.04	0.74	0.96
Log of Real GDP per capita	432	10.48	0.61	9.07	11.63
Government size	405	6.01	0.88	4.32	8.37
Urbanization (%)	432	77.82	10.96	53.73	98.12
Population growth (%)	432	0.64	0.68	-1.85	2.89
Unemployment rate (%)	432	7.39	4.17	2.01	27.47
Union	336	32.12	21.75	8.30	92.20
Exports (%)	432	52.96	34.63	10.20	211.43
Foreign direct investment (%)	432	5.68	16.64	-42.29	138.70
Financial development index	432	0.68	0.18	0.25	1.00
Government effectiveness	432	1.34	0.56	-0.31	2.35
Democracy index	378	8.40	0.89	5.57	9.93
Log of Population	432	16.44	1.49	12.62	19.62
Log of area (km^2)	405	12.23	1.82	7.85	16.03
Log of Population density	405	4.20	1.38	0.98	6.25

Source: Author's calculations.

5 EMPIRICAL RESULTS

Column 1 of table 2 shows that expenditure decentralization positively influences gender equality but the effect is statistically insignificant. When other control variables are added, column 2 shows that real GDP per capita and unemployment negatively influence gender equality while the variables union, exports, and foreign direct investment affect it positively but the other variables including expenditure decentralization remain statistically insignificant. When the Human Development Index-HDI instead of real GDP per capita is also controlled for, the results reported in column 3 hardly change in comparison with those in column 2 except that the unemployment rate and HDI are also statistically insignificant.

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TABLE 2
Basic regression results

Variables	Dependent variable: Gender equality index			
	(1)	(2)	(3)	(4)
Expenditure decentralization	0.007	-0.042	-0.0321	0.542**
	(0.079)	(0.062)	(0.068)	(0.233)
Real GDP per capita (log)		-6.826**		
		(2.910)		
Government size		0.221	0.066	0.081
		(0.707)	(0.715)	(0.430)
Urbanization		0.064	0.175	0.424***
		(0.165)	(0.173)	(0.164)
Population growth		-0.107	-0.122	-0.633*
		(0.314)	(0.354)	(0.375)
Unemployment rate		-0.234**	-0.125	-0.0169
		(0.095)	(0.092)	(0.084)
Union		0.325***	0.325***	0.219***
		(0.071)		(0.085)
Exports		0.085**		0.108***
		(0.031)	(0.024)	(0.035)
Foreign direct investment		0.015**	0.017**	0.024**
		(0.006)	(0.007)	(0.012)
Financial development		4.188	5.304	1.810
		(4.344)	(4.333)	(3.270)
Democracy		0.349	0.120	1.289*
		(1.031)	(1.053)	(0.744)
Human development index			-1.688	-10.860
			(25.740)	(21.210)
Constant	71.10***	118.8***	42.09*	
	(2.626)	(33.83)	(23.95)	
No. of observations	431	288	288	288
Countries	27	27	27	27
Country fixed effects	Y	Y	Y	Y
Year effects	Y	Y	Y	Y
KP (F-stat)				10.323
P-value (J-Stat)				0.372

Note: P-values (clustered by country) appear in parentheses below estimates; *p<0.10, **p<0.05, ***p<0.01. Column 4 uses population (in logs) and government effectiveness as instruments for the decentralization measure. The KP (F-stat) refers to the Kleibergen Paap rk Wald F-statistic; the J-stat refers to Hansen's overidentification test.
Source: Author's calculations.

Now expenditure decentralization could be endogenous as a consequence of the political circumstances prevailing in the country. Hence changes in gender equality might influence expenditure decentralization and the extent to which it is implemented. For instance, in Switzerland, female policymakers have been found to have a substantial effect on public expenditure composition (Funk and Gathmann, 2008). Then the fixed effect estimates that I have obtained so far will likely be biased. I tackle the potential endogeneity of expenditure decentralization employing the two-stage-least squares (TSLS) estimation procedure using population as an instrument. Jimenez-Rubio (2011) and Escolano et al. (2012) observe

that when the population of a country is high it becomes difficult for centralized governments to gather sufficient information for adequately meeting the needs of its citizens and hence decentralization is common in larger countries.

Another instrument used for my analysis is government effectiveness since that can trigger the decentralization process. Local governments by being geographically close to the population can gather information about local preferences more easily than centralized governments (Besley and Coate, 2003). This would lead to optimal public goods provision according to Seabright (1996) as then politicians would be able to sufficiently distinguish among groups based on their specific needs. Hence the more effective the governments are in terms of their public goods provision and accountability the more decentralized the countries can be expected to be. However public goods provision might be more costly and inefficient, i.e. local governments might be less effective if scale economies are important. In that case, the effect of government effectiveness on expenditure decentralization will go in the opposite direction. Hence a priori it would be difficult to determine the expected sign of this instrument on the decentralization process as it would depend on the political motives of the government.

Table 3 reports estimation results for the first stage where the endogenous regressor-expenditure decentralization is regressed on the excluded instruments and the included regressors. It can be seen that both instruments influence expenditure decentralization. Specifically, when government effectiveness increases by 1 unit, expenditure decentralization decreases by 2.31 percentage points whereas a 1 percent increase in population increases expenditure decentralization by 0.185 percentage points. Now whether the causal effect of expenditure decentralization on gender equality has been identified depends on the validity of the instrumental variables. That will be inferred from standard tests that assess the strength of the first-stage regression based on the KP (Wald) F-stat as well as the J-stat for the overidentification test. As can be seen at the bottom of column 4 in table 2 the F-stat is greater than 10, which rules out weak instruments. The p-value of 0.372 is significantly larger than 0.01 which indicates that the additional instruments are exogenous.

Column 4 in table 2 reports the estimation results after instrumentation and this is my preferred specification since it takes into account the potential endogeneity of the key explanatory variable while including other relevant controls as well as fixed effects by country and year respectively. It shows that expenditure decentralization positively influences gender equality; if it increases by 1 percentage point then gender equality increases by 0.542 percentage points. As well as unions, exports, and foreign direct investment, now it can be seen that urbanization and democracy also have a statistically significant positive effect on gender equality while population growth's effect is negative.

These findings align with those of Chakraborty (2021) who argues that labor market characteristics influence gender equality, as well as Rocha and Piermartini (2023) who observe that integration of a country with the rest of the world will be necessary

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for gender-inclusive economic progress. Further, my results corroborate Andersen's (2022) finding that democracy causes gender equality as well as Pandey and Kumar's (2021) findings of urbanization being associated with lower fertility levels, increased independence, and more employment opportunities for women.

TABLE 3
First stage estimates

Variables	Dependent variable: Expenditure decentralization
Population (log)	18.53***
	(3.61)
Government effectiveness	-2.310*
	(-2.07)
Human development index	23.17
	(0.99)
Government size	-0.374
	(-0.79)
Urbanization	-0.395**
	(-2.71)
Population growth	0.560
	(1.84)
Unemployment rate	-0.258***
	(-3.53)
Union	0.128
	(1.27)
Exports	-0.0902**
	(-3.11)
Foreign direct investment	-0.013
	(-1.03)
Financial development	5.417
	(1.52)
Democracy	-2.197**
	(-2.71)
No. of observations	288
Country fixed effects	Y
Year effects	Y

*Note: P-values (clustered by country) appear in parentheses below estimates; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. First-stage regression results for the specification estimated in column 4 of table 2 above.*

Source: Author's calculations.

6 ROBUSTNESS CHECKS

The robustness of the results is assessed in various ways starting with repeating the estimation using an alternative measure of gender equality known as the gender inequality index-GII. This measure was developed by the United Nations Development Programme and it measures gender inequality rather than gender equality. While both measures reflect the same fundamental concept their components somewhat differ. The GII is a composite measure of gender inequality along three dimensions: reproductive health, empowerment, and the labor market. A low GII indicates

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low inequality between men and women, and vice versa. Hence, the estimated coefficients of its explanatory variables would be expected to have opposite signs than those that explained gender equality.

The results reported in column 5 of table 4 show that expenditure decentralization has a negative and statistically significant effect on gender inequality. Except for human and financial development, all the other explanatory variables are statistically significant with coefficient estimates having signs as expected a priori.

TABLE 4
Robustness checks

Variables	Dependent variable			
	Gender inequality index	Gender equality index		
	(5)	(6)	(7)	(8)
Expenditure decentralization	-0.354**	0.523**	0.390***	0.310**
	(0.164)	(0.222)	(0.140)	(0.132)
Human development index	11.75	-10.56	-8.428	-7.144
	(14.70)	(20.95)	(19.39)	(18.81)
Government size	-1.379***	0.0803	0.077	0.075
	(0.318)	(0.426)	(0.406)	(0.398)
Urbanization	-0.509***	0.415***	0.358**	0.323**
	(0.146)	(0.161)	(0.139)	(0.138)
Population growth	0.813***	-0.616*	-0.498*	-0.426
	(0.252)	(0.365)	(0.299)	(0.277)
Unemployment rate	-0.180***	-0.021	-0.045	-0.061
	(0.055)	(0.082)	(0.069)	(0.066)
Union	-0.107*	0.223***	0.247***	0.262***
	(0.062)	(0.083)	(0.076)	(0.075)
Exports	-0.057**	0.107***	0.097***	0.091***
	(0.023)	(0.034)	(0.028)	(0.027)
Foreign direct investment	-0.015**	0.024**	0.022**	0.021**
	(0.008)	(0.011)	(0.01)	(0.009)
Financial development	2.096	1.926	2.737	3.226
	(2.444)	(3.234)	(3.115)	(3.133)
Democracy	-2.677***	1.250*	0.979	0.815
	(0.615)	(0.731)	(0.651)	(0.639)
No. of observations	288	288	288	288
Countries	27	27	27	27
Country fixed effects	Y	Y	Y	Y
Year effects	Y	Y	Y	Y
KP (F-stat)	10.323	10.363	12.100	18.61
P-value (J-Stat)	0.919	0.342	0.295	0.440

Note: P-values (clustered by country) appear in parentheses below estimates; * p<0.10, ** p<0.05, *** p<0.01. Instruments used for the decentralization measure are population (in logs) and government effectiveness in column 5; population density (in logs) and government effectiveness in column 6; population (in logs), area (in logs), and government effectiveness in column 7; population (in logs) and area (in logs) in column 8. The KP (F-stat) refers to the Kleibergen Paap rk Wald F-statistic; the J-stat refers to Hansen's overidentification test.

Source: Author's calculations.

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Next, population density[1] and government effectiveness are used as instruments and the results are reported in column 6 of table 4. Then in column 7, population, land area, and government effectiveness are employed as instruments for expenditure decentralization. Finally, population and land area are utilized as instruments and the estimation results are reported in column 8. In these last three specifications, the gender equality index is the dependent variable. The KP (Wald) F-stat remains above 10 in all the specifications of table 4 and the reported p-values all indicate the instruments' exogeneity. It can be seen that the results reported in table 4 support the key results of the analysis.

7 CONCLUSION

In this study, I investigate the effect of the decentralization of expenditure on gender equality using panel data from 2006-2021 for 27 OECD countries. In the empirical analysis, potential endogeneity concerns in the relationship were tackled using instrumental variables. The estimation results show that expenditure decentralization increases gender equality. The results remained robust when alternative indicators for the outcome as well as the instruments were employed.

My empirical results are consistent with those of Stockemer and Tremblay (2015) who found that across countries federalism promotes women's political participation. But my findings are in sharp contrast with Naeem and Khan (2021) who found that fiscal decentralization increased gender inequality in developing countries. This likely reflects the fact that developing countries did not have any gender aspect explicitly embedded in their decentralization process as the OECD countries did over the last few decades. Also, in general, fiscal decentralization works more effectively in developed countries according to Tselios et al. (2012).

Although fiscal policy has been increasingly decentralized across the OECD countries over the last few decades the gender aspects of such policies has only recently gained attention. In this paper, I find that expenditure decentralization can serve as an important policy tool to promote gender equality across OECD countries. However, the effectiveness of such policy will depend on whether it is complemented by increased urbanization, trade, foreign direct investment, unionization, and the level of democracy but decreased population growth. Chakraborty (2021) recommends that such decentralization measures tend to be more effective when targeted funds are implemented for the achievement of gender-specific outcomes. More importantly as highlighted by Downes, Von T. and Nicol (2017), rather than ad hoc such a gender budgeting initiative must be adopted in an all-encompassing manner so that it remains consistent with other sustainable development goals. However, it must be borne in mind that the process of establishing gender equality economywide will be time-consuming, which is, after all, characteristic of the accomplishment of all the goals of the government.

Disclosure statement
The author has no conflict of interest to declare.

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[1] Arzaghi and Henderson (2005) find that population and the area of the country are both important determinants of fiscal decentralization.

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