



Inequality and finance: the role of economic literacy

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- The finance-inequality nexus has garnered significant attention.
- Advancements in the financial sector can potentially mitigate income inequality.
- Recent global surge in income inequality makes this exploration crucial (Alvaredo et al., 2018).

Theoretical studies on the finance-inequality nexus offer mixed findings:

- Negative relationship: Financial development can ease credit constraints, benefiting the poor and reducing inequality (Galor and Moav, 2004; Braun et al., 2019).
- U-shape relationship: Financial development initially benefits the wealthy, exacerbating inequality. However, as it progresses, broader access leads to more equitable income distribution (Greenwood and Jovanovic, 1990).

Empirical evidence on the finance-inequality relationship is also mixed:

- Reduces Inequality: Financial development is associated with lower income inequality (Clarke et al., 2006; Beck et al., 2007; Claessens and Perotti, 2007; Demirgüç-Kunt and Levine, 2009; Thornton and Di Tommaso, 2020).
- Increases Inequality: Other studies find a positive relationship between financial development and income inequality (Jaumotte et al., 2013; de Haan and Sturm, 2017).

- Mixed findings in the literature on the finance-inequality relationship.
- Highlighting the need to explore the mechanisms underlying these relationships.
- What is the importance of economic literacy as a mechanism in the finance-inequality nexus?

Literature Review (cont.) and Motivation

- Enhances individuals' ability to navigate financial markets, accumulate wealth, and manage investments (Lusardi and Mitchell, 2007; 2014; Fornero and Monticone, 2011).
- Promotes broader financial access, reducing barriers to financial services (Jappelli, 2010; Van Rooij et al., 2011; Lo Prete, 2013; 2018).
- Potential to foster a more inclusive financial system, thereby mitigating income inequality through improved financial development.

Research Question

- How does economic literacy impact the relationship between financial development and income inequality?
- Can economic literacy complement financial development to reduce income inequality?

- Previous literature (Lo Prete 2013; 2018) differs in methodology and data, leading to different conclusions.
- Our model uses a comprehensive financial development index that takes into account financial depth, access, and efficiency.
- We employ SGMM estimations to address endogeneity issues.

- Our panel dataset consists of 48 countries over the period 1995-2006.
- Income Gini
- IMF Financial development index (Svirydzenka, 2016): depth, access, and efficiency of financial institutions and markets.
- Economic literacy: Economic Literacy Competence Index.
- Controls for macroeconomic and demographic characteristics.
 - GDP per capita growth
 - Inflation
 - Trade openness
 - Schooling
 - Age dependency ratio

Table 1 - List of Countries

Countries (Abbreviations)			
Argentina	ARG	Korea (South)	KOR
Australia	AUS	Lithuania	LTU
Austria	AUT	Luxemburg	LUX
Belgium	BEL	Malaysia	MYS
Brazil	BRA	Mexico	MEX
Bulgaria	BUL	Netherlands	NLD
Canada	CAN	Norway	NOR
Chile	CHL	Peru	PER
China	CHN	Philippines	PHL
Czech Republic	CZE	Poland	POL
Denmark	DEN	Portugal	PRT
Estonia	EST	Romania	ROM
Finland	FIN	Slovakia	SVK
France	FRA	Slovenia	SVN
Germany	GER	South Africa	ZAF
Greece	GRE	Spain	ESP
Hungary	HUN	Sweden	SWE
India	IND	Switzerland	CHE
Indonesia	IDN	Thailand	THA
Ireland	IRL	Turkey	TUR
Israel	ISR	Ukraine	UKR
Italy	ITA	United Kingdom	GBR
Japan	JAP	United States	USA
Jordan	JOR	Venezuela	VEN

Table 2 - Descriptive Statistics (1995-2006)

Variable	Mean	Std. Dev	Min	Max
Income Gini	36.837	9.038	23.000	64.800
GDP per capita growth (%)	1.015	1.016	0.925	1.069
Financial Development Index	0.509	0.224	0.0897	1.000
Economic Literacy Index	4.972	1.435	1.190	8.160
Schooling	3.651	1.277	0.793	7.458
Inflation	9.526	41.201	-2.577	913.211
Trade Openness (%)	80.061	46.386	15.635	307.485
Age Dependency Ratio (%)	51.640	7.795	36.743	77.685

Table 3 - Correlations

	GINI	FINDEV	SCHOOL	ECLIT
GINI	1.0000			
FINDEV	-0.3814***	1.0000		
SCHOOL	-0.5749***	0.4760***	1.0000	
ECLIT	-0.4321***	0.4965***	0.6494***	1.0000

Figure 1

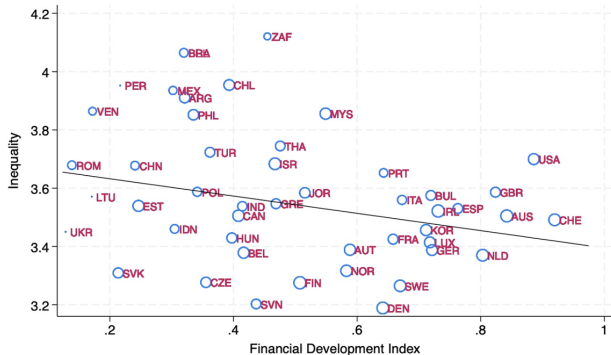


Fig. 1: Financial development and inequality. Linear regression fit: Coefficient = - 0.079, standard error = 0.047, t statistic = - 1.66. Country markers are weighted by the level of economic literacy, a bigger circle indicating a higher level of economic literacy.

Figure 1

- The negative regression slope indicates that higher financial development correlates with lower income inequality, as seen in previous studies.
- Country markers are weighted based on the level of economic literacy. A larger circle indicates higher economic literacy within the population.
- Advanced countries like Great Britain (GBR) show a positive correlation between inequality and financial development but lower literacy, whereas Finland and Sweden (SWE) maintain low inequality despite less financial development due to higher economic literacy.

Estimation Methodology

To address business cycle issues, we split the sample period from 1995 to 2006 into four distinct non-overlapping intervals, including three years each.

$$Y_{i,t} = \alpha + \gamma Y_{i,t-1} + \beta_1 \text{FINDEV}_{i,t} + \beta_2 \text{ECLIT}_{i,t} + \beta_3 (\text{FINDEV} \times \text{ECLIT})_{i,t} + \beta_4 X_{i,t} + \phi_i + \psi_t + \epsilon_{i,t} \quad (1)$$

- $Y_{i,t}$ corresponds to the 3-year average of the Income Gini coefficient
- *ECLIT* is the economic literacy competence index
- *FINDEV* is the financial development index
- Vector *X* includes trade openness, inflation, and the real GDP per capita growth that capture macroeconomic conditions, as well as age dependency ratio and the average years of secondary school attainment that capture demographic characteristics.
- Interaction term: *FINDEV*ECLIT* to capture non-linear effects.
- ψ_t refers to time-specific effects.
- ϕ_i refers to unobserved country fixed effects.
- error term $\epsilon_{i,t}$ contains all other unobserved time-varying sources of variation in income inequality.
- Pooled Ordinary Least Squares (OLS) and System Generalized Method of Moments (SGMM) estimations.

Table 4 - Pooled OLS Results

	(1)	(2)	(3)	(4)	(5)
L.GINI	0.9504*** (0.0191)	0.9072*** (0.021)	0.9159*** (0.0209)	0.9162*** (0.0208)	0.9235*** (0.0188)
FINDEV	-0.0004 (0.025)	-0.0261 (0.0213)	-0.0423* (0.024)	-0.2084** (0.0834)	-0.2526*** (0.0815)
ECLIT			0.0017 (0.0042)	-0.0178 (0.0111)	-0.0235** (0.0107)
FINDEV*ECLIT				0.0308** (0.0151)	0.0371** (0.0153)
SCHOOLING		-0.0308*** (0.0113)	-0.0262* (0.0142)	-0.0174 (0.014)	
INFLATION		-0.0043*** (0.0009)	-0.0042*** (0.0011)	-0.0047*** (0.0011)	-0.0044*** (0.0011)
TRADE		-0.0169*** (0.0058)	-0.0172*** (0.0064)	-0.0129* (0.0068)	-0.0105* (0.006)
GDPCAPGR		-0.4399 (0.4088)	-0.4202 (0.4335)	-0.5899 (0.427)	-0.6439 (0.4333)
AGEDEP		0.0394 (0.0286)	0.04 (0.0324)	0.0395 (0.0317)	0.0307 (0.0304)
Observations	103	100	93	93	93
R-squared	0.972	0.9795	0.9795	0.9803	0.98

Table 5 - SGMM Main Results

	(1)	(2)	(3)	(4)	(5)
L.GINI	0.9671** (0.3947)	0.6426*** (0.1657)	0.7976*** (0.1935)	0.8512*** (0.3109)	0.9252*** (0.1693)
FINDEV	-0.0351 (0.3002)	-0.0623 (0.1168)	-0.0333 (0.1423)	-0.6695** (0.2907)	-0.5571** (0.2073)
ECLIT			0.0109 (0.0222)	-0.0813** (0.0364)	-0.0723** (0.0329)
FINDEV*ECLIT				0.1149* (0.0621)	0.1017** (0.0389)
SCHOOLING		-0.1011 (0.1033)	-0.0835 (0.1314)	0.0183 (0.0745)	
INFLATION		-0.0026 (0.0036)	-0.0031 (0.0056)	-0.0037 (0.0047)	-0.0039 (0.0043)
TRADE		-0.0552 (0.0665)	-0.0256 (0.0503)	0.0018 (0.0493)	0.0309 (0.0379)
GDPGAPGR		-1.2859 (1.2045)	-1.1882 (2.0397)	-0.8982 (0.937)	-2.1247 (1.383)
AGEDEP		0.1623 (0.1264)	0.144 (0.1173)	0.1027 (0.1347)	0.0205 (0.1125)
Observations	103	100	93	93	93
Number of Instruments	8	21	24	27	24
p-value Hansen test	0.901	0.097	0.254	0.781	0.801
AR(2) test	0.869	0.512	0.398	0.358	0.941

Table 6 - SGMM Robustness Checks (1)

	(1)	(2)	(3)	(4)	(5)	(6)
L.GINI	0.826** (0.3395)	0.8249*** (0.3023)	0.8812*** (0.2183)	0.8088*** (0.2702)	0.8865*** (0.1691)	0.9232*** (0.2052)
FINDEV	-0.6351* (0.3269)	-0.6127* (0.3172)	-0.6761** (0.3034)	-0.6708* (0.3416)	-0.6646** (0.2898)	-0.5921** (0.2546)
ECLIT	-0.0692* (0.0383)	-0.0678* (0.0369)	-0.0865* (0.0444)	-0.0794** (0.0373)	-0.0821** (0.0359)	-0.0663** (0.031)
FINDEV*ECLIT	0.1028 (0.0624)	0.1002* (0.0585)	0.1195* (0.0626)	0.1088* (0.059)	0.1171** (0.053)	0.1041** (0.0508)
TRANSITION	-0.0001 (0.0675)					
ADVANCED		-0.0069 (0.0736)				
AMERICAS			0.0075 (0.0712)			
EUROPE				0.0168 (0.062)		
ASIA PACIFIC					-0.0441 (0.0629)	
MIDDLE EAST / AFRICA						0.0416 (0.0676)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	93	93	93	93	93	93
Number of Instruments	29	29	29	29	29	29
p-value Hansen test	0.669	0.657	0.657	0.762	0.548	0.788
AR(2) test	0.537	0.468	0.468	0.118	0.126	0.273

Table 7 - SGMM Robustness Checks (2)

	(1)	(2)
L.GINI	0.8039*** (0.1207)	0.7364*** (0.1095)
FINDEV	-0.6043** (0.2308)	-0.4630** (0.2027)
ECLIT	-0.0781** (0.034)	-0.0526* (0.0274)
FINDEV*ECLIT	0.1011** (0.0428)	0.0712** (0.0341)
FINDEV*PERIOD 98-00	0.0535 (0.0525)	
FINDEV*PERIOD 01-03	-0.0276 (0.0372)	
FINDEV*PERIOD 04-06	0.0088 (0.0426)	
ECLIT*PERIOD 98-00		0.0052 (0.0108)
ECLIT*PERIOD 01-03		-0.0033 (0.0065)
ECLIT*PERIOD 04-06		0.0003 (0.0149)
SCHOOLING (log)	0.0104 (0.0436)	-0.0248 (0.0434)
Controls	Yes	Yes
Observations	93	93
Number of Instruments	30	30
p-value Hansen test	0.794	0.784
AR(2) test	0.825	0.954

Robustness Checks

- Robustness checks confirm the stability of the finance-inequality nexus and the complementary role of economic literacy.
- The results are consistent over time and across different regions and types of economies.

Key Findings

- Financial development significantly reduces income inequality.
- Economic literacy plays a complementary role.
- Results are robust across different economies and regions.
- No significant changes in importance over time.

Conclusion

- The economic literacy channel complements the finance-inequality nexus.
- An advanced financial sector combined with higher levels of economic literacy can significantly reduce income inequality.
- Results robust between transition and advanced economies and across different world regions.
- The importance of financial development and economic literacy for the reduction of income inequality have remained stable over time.

Policy Implications

- Policymakers should encourage programs to improve economic competences among the population.
- Incorporate economic education into school curricula and community programs.
- Promote workplace training to improve financial understanding.
- This would lead to more clear and accountable financial processes to reduce risks in the financial sector and subsequently to reduction of income disparity.

- Use a non-linear GMM approach, allowing for threshold effects with endogenous regressors and threshold variables (Seo and Shin, 2016), in order to investigate the level of economic literacy at which financial development reduces income inequality the most.

Thanks!

**Thank you for attending my presentation!
Any questions?**

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