



Revisiting the nexus between globalization and the shadow economy

**Untying the influences of de jure vs. de
facto globalization**

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Introduction and Motivation

- This study looks at the impact of globalization on the size of the shadow economy.
- The shadow economy includes all market-based economic activity that goes unreported.
 - These activity would be included in GDP had they been reported, thus the shadow economy excludes the criminal sector.
- The presence of the shadow economy exists in all countries to varying degrees (Loayza, 2016; Schneider, 2005; Schneider & Enste, 2000).
 - E.g., the average size of the shadow economy is 28% of GDP, where Bolivia (70.1%) has the largest shadow economy and Switzerland the smallest (5.1%).

Introduction and Motivation

- The shadow economy is associated with a reduction in tax revenues resulting in a lower quality and quality of public goods.
- The shadow economy also distorts official statistics that policy makers rely on for conducting policy.
- For these reasons policy makers and researchers have looked for ways to combat the shadow economy.

Introduction and Motivation

- Berdiev and Saunoris (2018) show that more globalization countries have, on average, smaller shadow economies.
- Globalization is associated with less trade restrictions, higher quality institutions, and lower taxes and regulations due to inter-country competition.
- As a result, globalization reduces the net return of the producing underground.

Introduction and Motivation

- However, globalization is multidimensional and can have differing effects on the size of the shadow economy.
- Recently, Gylgi et al. (2019) disaggregate globalization into:
 - **de jure globalization** is defined as institutions and policies put in place to promote the exchange of people, goods and, ideas across borders.
 - **de facto globalization** is defined as actual movement of people, goods, and ideas across borders.
- Gygli et al. (2019) find that de facto and de jure globalization have differing effects on economic growth.

Introduction and Motivation

- This study contributes to the literature by extending the work of Berdiev and Saunoris (2018) to answer two related questions:
 1. Using more recent data, does globalization significantly reduce the size of the shadow economy?
 2. Are the influences of de jure and de facto globalization on the shadow economy similar?

Theoretical Discussion

- The decision to participate in the shadow economy is theoretically grounded in Becker's (1968) work on the economics of crime.
- Individuals assess the perceived marginal benefits and marginal costs of partaking in underground work.
- Globalization raises the net return of participating in the shadow economy by:
 - Reducing the trade restrictions (e.g., tariffs and quotas).
 - Supporting institutions that allow a free and open exchange of goods, services, and people, which then gives rise to improved quality of institutions and lower taxes and regulations due to inter-country competition.

Theoretical Discussion

- In terms of de jure globalization, several studies show evidence that trade restrictions induce individuals to move underground to skirt the higher costs (Schneider and Enste (2000); Berdiev and Saunoris (2018); Saunoris and Sajny (2017)).
 - Early and Peksen (2019) show that nations that face sanctions experience a larger shadow economy.
 - Berdiev et al. (2018) show that nations that support institutions that support freedom to trade internationally have smaller shadow economies.
- Regarding de facto globalization, various scholars have shown that cross-border trade and foreign direct investment reduce participation in the informal sector (see, e.g., Goel et al. (2019); Blanton et al. (2018); Huynh et al. (2020); Esaku (2021); Canh et al. (2021)).

Theoretical Discussion

- Recently, Gygli et al. (2019) find that de jure globalization is driving the positive relationship between globalization and growth.
- This begs the question, are the impacts of de facto and de jure globalization on the prevalence of the shadow economy different?
- We rely on the empirical analysis to answer this question and estimate the impact of these two types of globalization on the shadow economy.

Data and Empirical Model

- The data set used in the analysis is a panel of 124 countries observed annually from 1991-2017.
- The main dependent variable is the size of the shadow economy measured as a % of GDP from Medina and Schneider (2019).
 - The shadow economy is estimated using the Multiple Indicators, Multiple Causes (MIMIC) method.
- The main independent variable is the KOF Globalization Index from Dreher (2006,2008) and is measured on a scale of 0 to 100 (higher numbers denote more globalization).
 - This index is disaggregated into de facto and de jure globalization from Gygli et al. (2019).

Data and Empirical Model

- A cursory look at the data shows a clear negative relationship between all three measures of globalization and the shadow economy.

Figure 1: Overall globalization and the shadow economy

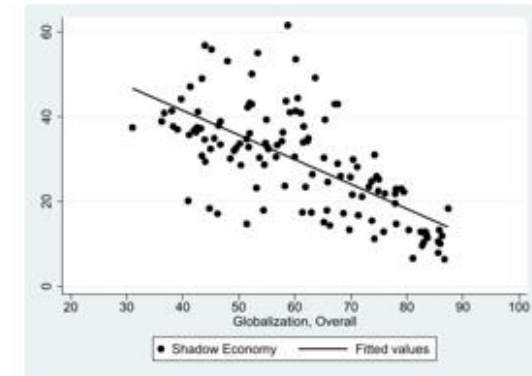


Figure 2: De facto globalization and the shadow economy

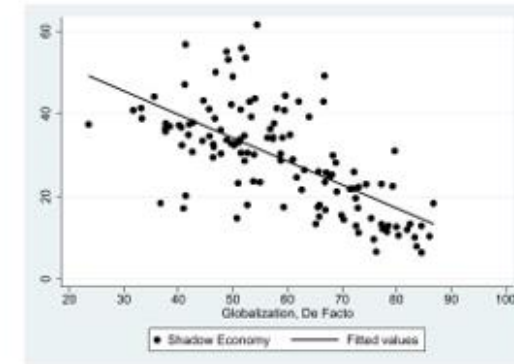
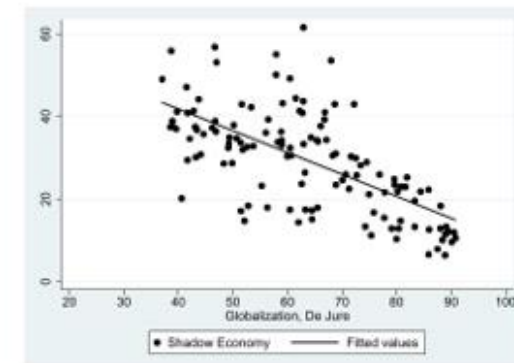


Figure 3: De jure globalization and the shadow economy



Data and Empirical Model

- The econometric model is:

$$Shadow_{it} = \beta_0 + \beta_1 Globalization_{it}^k + \gamma' X_{it} + \tau_t + \mu_i + \varepsilon_{it}$$

- where i and t denote country and year, respectively
 - k denotes overall globalization, de jure globalization, and de facto globalization.
 - X is a vector of controls including: *Economic Growth*, *Democracy*, *Government Size*, *Bureaucratic Quality*, and *Education*
 - τ_t denotes time effects, μ_i denotes country-specific effects, and ε_{it} denotes the random error term with usual properties.
- Each model is estimated using the fixed effects estimation with cluster-robust standard errors.

Results

- Results show that all three measures of globalization reduce the size of the shadow economy.
- De jure globalization has a greater impact at reducing the size of the shadow economy.
- The coefficients on the control variables match expectations.

Globalization and the shadow economy: Baseline model				
Dependent Variable: <i>Shadow</i>				
	(1.1)	(1.2)	(1.3)	(1.4)
<i>Globalization, Overall</i>	-0.138*** (0.035)			
<i>Globalization, De Jure</i>		-0.112*** (0.027)		-0.099*** (0.022)
<i>Globalization, De Facto</i>			-0.074*** (0.027)	-0.037* (0.020)
<i>Economic Growth</i>	-0.074*** (0.015)	-0.074*** (0.015)	-0.078*** (0.015)	-0.074*** (0.018)
<i>Democracy</i>	0.440 (0.375)	0.470 (0.391)	0.398 (0.392)	0.460** (0.234)
<i>Bureaucratic Quality</i>	-0.566*** (0.179)	-0.537*** (0.181)	-0.642*** (0.191)	-0.541*** (0.096)
<i>Government Size</i>	0.201*** (0.036)	0.194*** (0.037)	0.210*** (0.037)	0.196*** (0.021)
<i>Education</i>	-0.026** (0.012)	-0.023* (0.012)	-0.032*** (0.012)	-0.024*** (0.005)
Country Effects	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes
Adjusted R ²	0.715	0.715	0.707	0.717
Observations	2,331	2,331	2,331	2,331
Number of countries	124	124	124	124

Notes: Asterisks denote the following significance levels: *** p < 0.01, ** p < 0.05, and * p < 0.1.

Results

- Overall, we find that globalization reduces the size of the shadow economy, which supports the findings of Berdiev and Saunoris (2018).
- We also find that both de facto and de jure globalization reduce the size of the shadow economy, with de jure globalization showing the largest shadow-reducing impact:
 - A ten percent increase in de facto globalization decreases the size of the shadow economy by 1.7 percent.
 - A ten percent increase in de jure globalization decreases the size of the shadow economy by 2.8% percent.
- These results are robust after accounting for the influence of outliers, an alternate measure of the shadow economy, endogeneity, non-linearities, and levels of development.

Concluding Remarks

- This paper adds to the literature on the determinants of the shadow economy by examining the impact of de jure globalization and de facto globalization.
- We find that globalization reduces the spread of the shadow economy, whereas the effects of de jure globalization are significantly greater than the effects of de facto globalization.
- Consequently, the policies and institutions that encourage inter-country exchange are more important for limiting participation in the underground sector than the actual flow of economic activity across national borders.