



Inclusivity of Factor Flows in a Labor-Surplus Economy: Experience of the Philippines

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Leveraging labor emigration and FDIs for inclusive growth in the Philippines

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Assuming a scenario of full employment, labor emigration has notable impacts on wages, employment, and production within the capital- and labor-intensive sectors of labor-sending economies, such as the Philippines. Similarly, foreign direct investments (FDIs) manifested impacts on these variables within both capital-intensive industries, notably manufacturing, and labor-intensive sectors, such as agriculture.

Given that remittance and FDI flows have become part of the economic fabric of the Philippines, it is imperative to thoroughly study and manage their impacts. This *Policy Note* highlights the necessary interventions to reinforce the positive impacts of migration, remittances, and FDI flows on inclusive growth within the capital-intensive sector. Simultaneously, it recommends measures to mitigate the adverse effects of these factors on inclusive growth within the labor-intensive sector.

Using Philippine data from 1991 to 2021, the authors applied vector autoregression to estimate how wages, employment, and production in the capital- and labor-intensive sectors respond to impulses emanating from deployment, remittances, and FDI flows. These findings provide the basis for recalibrating development strategies on labor emigration and FDIs to promote inclusivity.

Salient Points:

- Empirical evidence shows that the deployment of workers abroad, remittances, and foreign direct investment flows in the Philippines do not contribute positively to inclusive growth because they tend to worsen the labor-intensive agricultural sector.
- The Philippines can still pursue inclusivity by addressing critical economic constraints (e.g., inadequate infrastructure, access to financing, regulatory barriers), investing in human capital formation, providing assistance to agriculture, and redirecting remittances toward savings, investment, and entrepreneurship. Furthermore, addressing the insufficient capital in the capital-intensive industry is crucial, as it hinders its capacity to absorb labor from the labor-intensive sector.
- With the right intervention and complementary policy frameworks, remittance and FDI flows are key macroeconomic variables that can be leveraged in promoting inclusive growth.

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Rationale of the Study

The impacts of immigration on the labor markets of receiving developed economies have been widely established in the literature.

Not much has been done on the effects of labor emigration on the labor market of sending developing economies

Direct and immediate impacts of labor emigration



Reduction in the labor force of the sending economy.



Contraction of the PPF of the sending economy.

Conditioned on degree of unemployment in the sending economy.



Address unemployment in the sending economy.



Generate cash remittances that augmented foreign currency reserves, enhanced household consumption levels, and stabilized the Philippine economy during crises.

Long-term impacts of labor emigration



Integrates the impact of an increase in wage rate on the capital-labor ratio and on commodity prices.



Holding interest rates constant, an increase in wage rate will increase factor price ratio, which will increase commodity price ratio.



The increase in commodity prices favoring labor-intensive goods will increase the production of labor-intensive goods and reduce production of capital-intensive goods.

Hypothesis

H_{a1} : Labor emigration becomes inclusive since it provides employment opportunities for unemployed laborers left behind in the sending-economy.

H_{a2} : FDI flows become inclusive in the long-run since it can give opportunities for unemployed laborers left behind in the sending-economy.

Research Problem Statement

Does labor emigration and FDIs have an impact on the production and employment of labor-intensive sectors versus capital-intensive sectors in the Philippines?

Addressing this problem statement will generate two outcomes:

- Validate our Hypothesis 1 and Hypotheses 2.
- Answers this follow up question:
 - *How can development strategies that rely on labor emigration and FDI be recalibrated and made sufficient to achieve inclusive growth?*



Research Objectives

- General objective:
 - To determine if migration and FDI flows have an impact on the wages, employment, and production of the labor-intensive sector versus capital-intensive sector in the Philippines.



Research Objectives

- Specific objectives:
 - To show the trends in migration flows, FDI flows, wages, employment, and production in the labor- and capital-intensive sectors of the Philippines;
 - To estimate an empirical model that will capture the impacts of labor emigration and FDIs in the production and employment in the labor- and capital-intensive sectors in the Philippines;
 - To explicate conditions and provide policy implications on how labor emigration and FDIs can effectively lead to inclusive growth.
-

Scope and Limitations



Relies on the data made available by the Philippine Statistics Authority (PSA) and other sources such as BSP and the World Bank (WB)

Measure of labor emigration: deployment and remittances
Measure of employment: wages and employment level
Measure of remittances and FDIs: flows



Hence, there is limit in:

the number of variables that can be included in the empirical analysis to conserve degrees of freedom
the unit of analysis of empirical results (i.e., instead of a more granular unit of time like monthly or quarterly, an annualized analysis would prevail)



Due to limitations in the availability of disaggregated, consistent, and granular data:

Manufacturing sector represents the capital-intensive sector
Agricultural sector represents the labor-intensive sector

Significance of the Study

Augment the discourse by providing perspectives on the economic consequences of labor emigration than of the usual immigration

Assist government and policymakers to recalibrate policy not just to promote and regulate labor emigration but also harness its impacts on inclusivity and its impact in compelling FDI inflows

For government, policymakers, and economic players to find ways to maximize these benefits and sustain the positive impetus

Generate policy implications that can recalibrate development strategies using FDIs as an adequate vehicle to promote inclusive growth

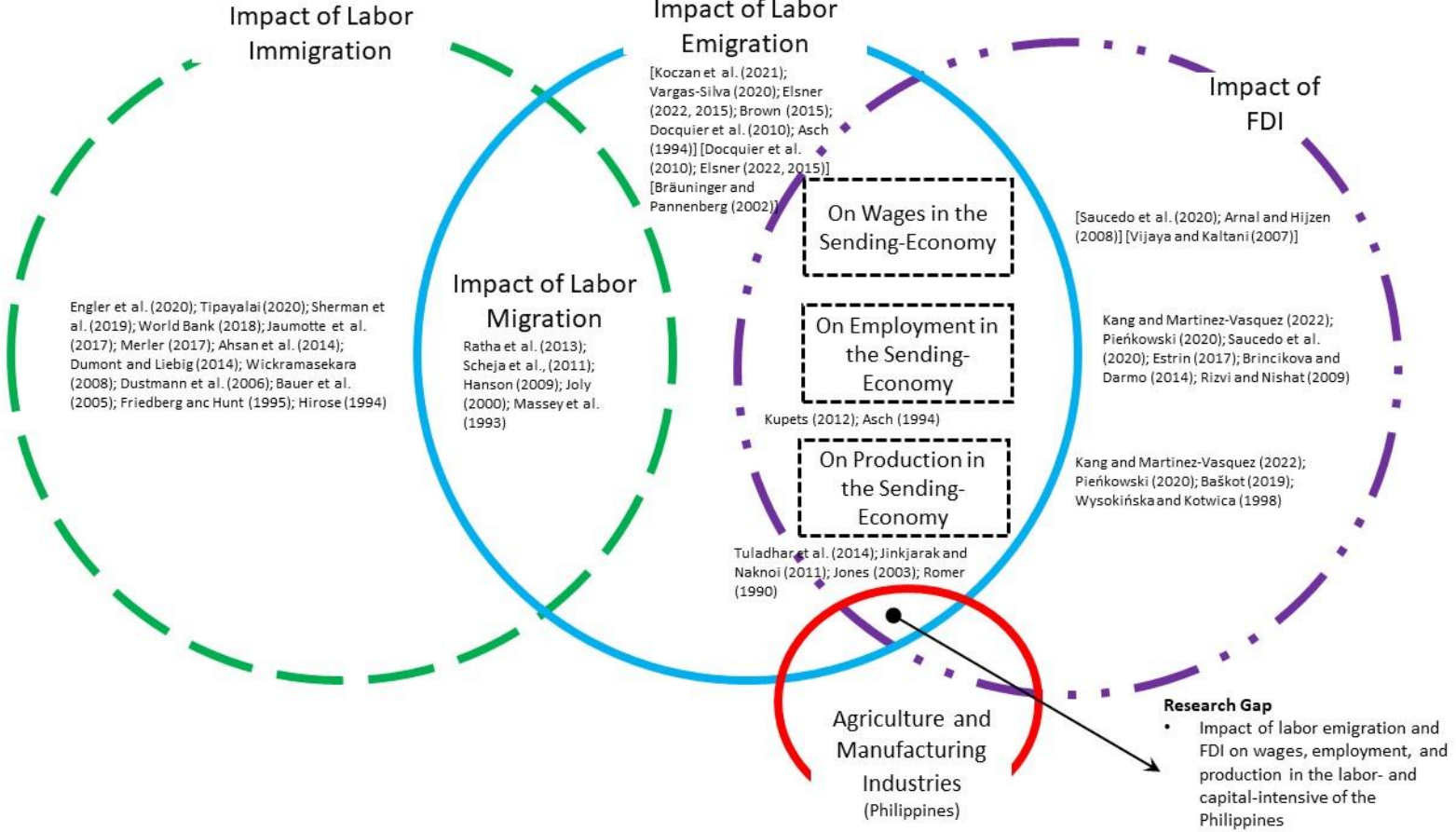
Renew developmental strategies and policies not only to attract more FDIs but also to leverage it to catalyze inclusive economic growth in the Philippines

Literature Review

Table 1. A-priori impacts of labor emigration and FDIs on wages, employment, and production in the sending-economy based on scholarly literature.

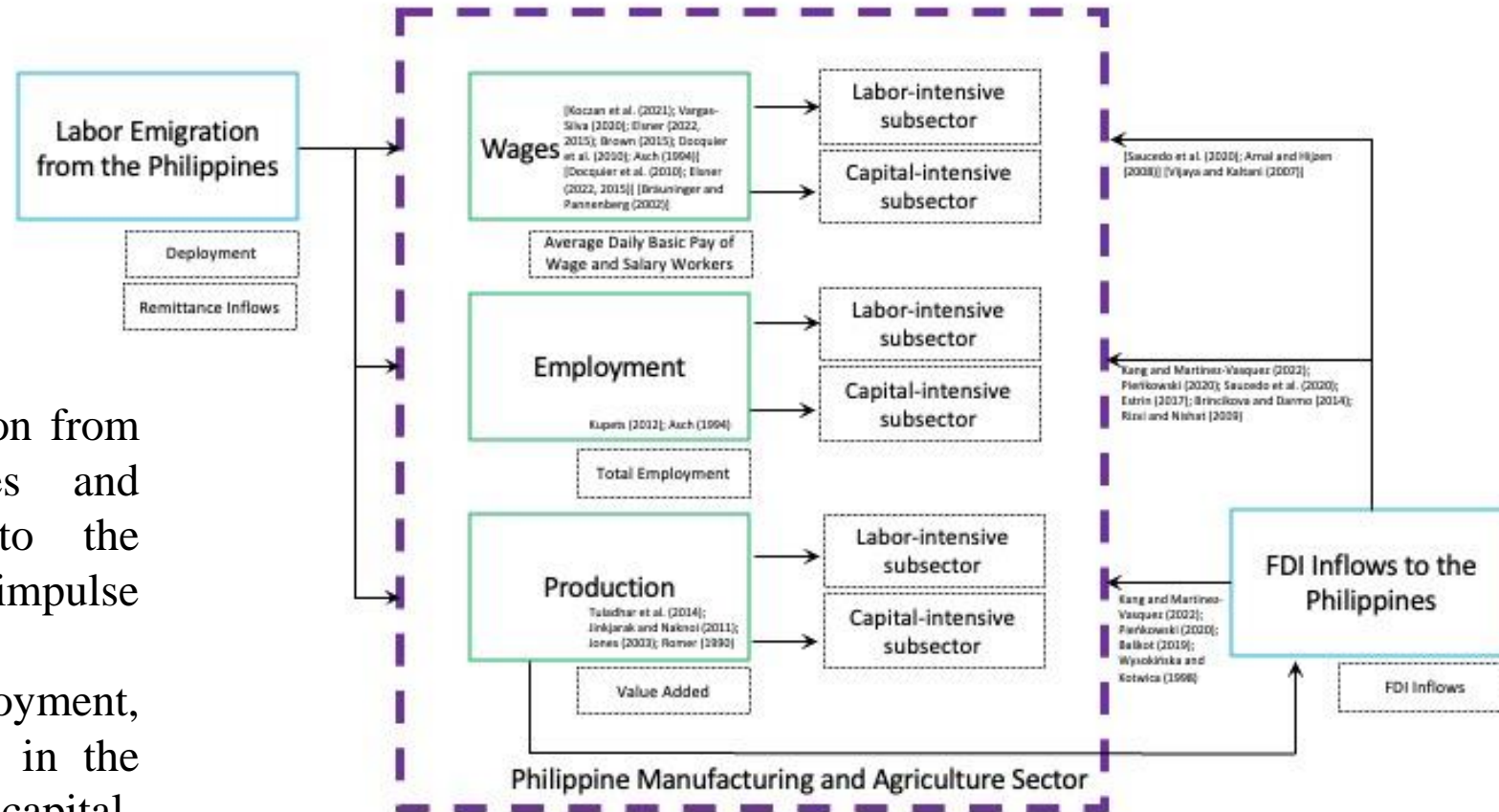
Impulse	Response	Impact	Source
Labor emigration	Wages in the sending-economy	+	Koczan et al. (2021); Vargas-Silva (2020); Elsner (2022, 2015); Brown (2015); Docquier et al. (2010); Asch (1994)
		-	Docquier et al. (2010); Elsner (2022, 2015)
		0	Bräuninger and Pannenberg (2002)
	Employment in the sending-economy	+	Kupets (2012); Asch (1994)
	Production in the sending-economy	-	Amuedo-Dorantes and Pozo (2023); Tuladhar et al. (2014); Jinkjarak and Naknoi (2011); Jones (2003); Romer (1990)
FDI	Wages in the sending-economy	+	Saucedo et al. (2020); Arnal and Hijzen (2008)
		-	Vijaya and Kaltani (2007)
	Employment in the sending-economy	+	Kang and Martinez-Vasquez (2022); Pieńkowski (2020); Saucedo et al. (2020); Estrin (2017); Brincikova and Darmo (2014); Rizvi and Nishat (2009)
	Production in the sending-economy	+	Kang and Martinez-Vasquez (2022); Pieńkowski (2020); Baškot (2019); Wysokińska and Kotwica (1998)

Research Gap



Conceptual Framework

1. Labor emigration from the Philippines and FDI inflow to the Philippines as impulse variables;
2. Wages, employment, and production in the labor- and capital-intensive subsectors of the Philippines.



Model Specification

- Vector Autoregression
 - VAR(p) model
 - Resembles a structural equation except that several endogenous variables are considered together.
 - Each endogenous variable is explained by its lagged values of all other endogenous variables in the model
 - Used in analyzing the dynamic behavior of time series variables towards forecasting, structural inference, and policy analysis

$$\begin{cases} DEPLY_t \\ WMNFG_t \\ EMNFG_t \\ PMNFG_t \end{cases}; \begin{cases} DEPLY_t \\ WAGRI_t \\ EAGRI_t \\ PAGRI_t \end{cases} \quad (2)$$

$$\begin{cases} \ln REMIT_t \\ WMNFG_t \\ EMNFG_t \\ PMNFG_t \end{cases}; \begin{cases} \ln REMIT_t \\ WAGRI_t \\ EAGRI_t \\ PAGRI_t \end{cases} \quad (3)$$

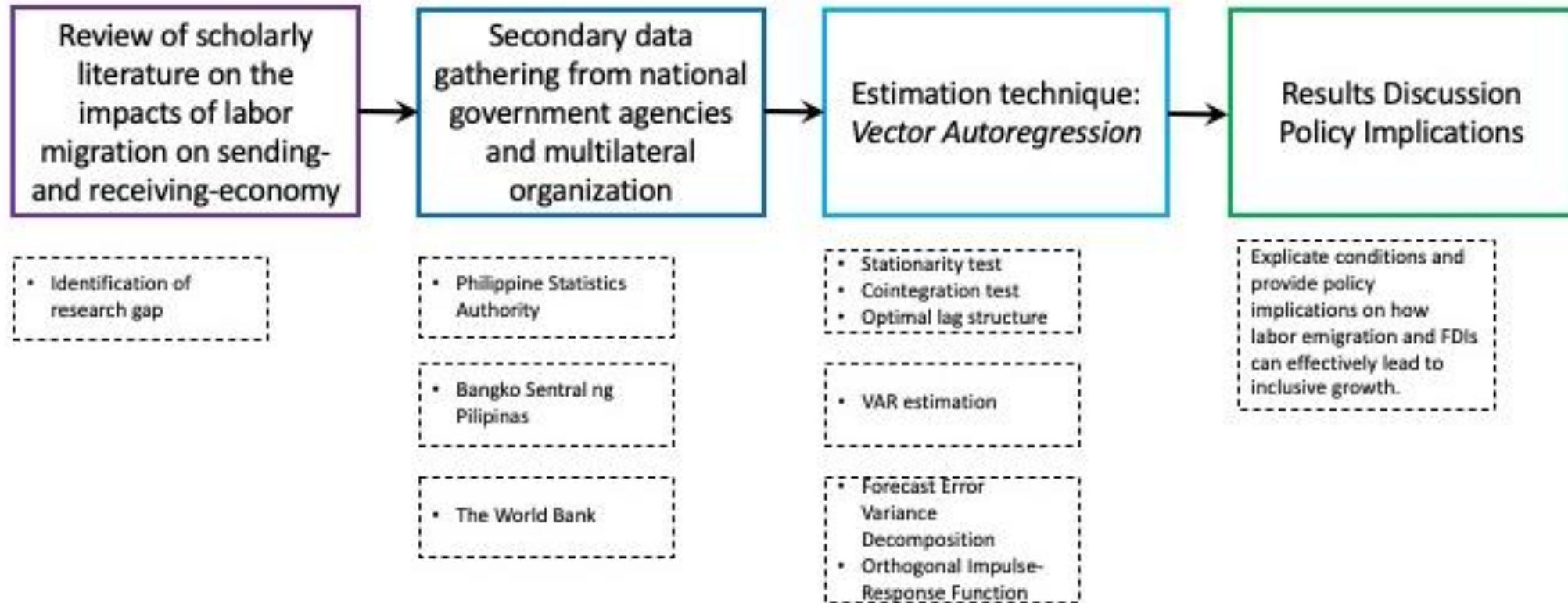
$$\begin{cases} \ln FDIFL_t \\ WMNFG_t \\ EMNFG_t \\ PMNFG_t \end{cases}; \begin{cases} \ln FDIFL_t \\ WAGRI_t \\ EAGRI_t \\ PAGRI_t \end{cases} \quad (4)$$

$$\begin{cases} \ln FDIFL_t \\ PMNFG_t \end{cases}; \begin{cases} \ln FDIFL_t \\ PAGRI_t \end{cases} \quad (5)$$

Variable Description

Variable Code	Variable Description	Measurement	Time Measure	Data Source
$DEPLY_t$	Deployment of OFWs abroad	Total number of OFWs deployed (in thousand persons)	Annual	PSA (Survey on Overseas Filipino)
$WMNFG_t$	Wages in the Philippine manufacturing industry (capital-intensive sector)	Average daily basic pay of wage and salary workers in the Philippine manufacturing industry (capital-intensive sector) (in PHP)	Annual	PSA (Labor Force Survey)
$WAGRI_t$	Wages in the agricultural industry (labor-intensive sector)	Average daily basic pay of wage and salary workers in the Philippine agricultural industry (labor-intensive sector) (in PHP)	Annual	PSA (Labor Force Survey)
$EMNFG_t$	Employment in the Philippine manufacturing industry (capital-intensive sector)	Employment in the Philippine manufacturing industry (capital-intensive) (number of people employed)	Annual	World Bank
$EAGRI_t$	Employment in the agricultural industry (labor-intensive sector)	Employment in the Philippine agricultural industry (labor-intensive) (number of people employed)	Annual	World Bank
$PMNFG_t$	Production in the Philippine manufacturing industry (capital-intensive sector)	Value added of the Philippine manufacturing industry (capital-intensive) (production level)	Annual	World Bank
$PAGRI_t$	Production in the agricultural industry (labor-intensive sector)	Value added of the Philippine agricultural sector (labor-intensive) (production level)	Annual	World Bank
$\ln REMIT_t$	Logarithmic values of remittance inflows to the Philippines	OFWs' cash remittances (in thousand USD) expressed in logarithmic values	Annual	BSP (Overseas Filipinos' Cash Remittances)
$\ln FDIFL_t$	Logarithmic values of FDI inflows to the Philippines	FDI inflows to the Philippines (in billion USD) expressed in logarithmic values	Annual	World Bank Macrotrends (Philippines Foreign Direct Investment)

Methodological Process



Results and Discussion: Standard Time Series Tests

Stationarity

- All variables are stationary at first differencing

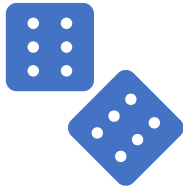
Cointegration

- Equations demonstrated cointegration

Lag Structure

- 4

Results and Discussion: VAR(p) estimates



VAR(p)

Measures magnitude of impact of impulse variable on response variable



OIRF

Illustrates the response of a variable to impulses from another variable across time

Indicates whether impulses are absorbed by the economy and whether responses dissipate



FEVD

Illustrates the variations in the response variable caused by the impulse variable

Indicates the power of the impulse variable on the response variable

Key Findings: Capital-intensive sector

Equation	Impulse	Response of Capital-Intensive Sector	Key Findings			Overall Remarks	Consistent with theory	Consistent with literature
			VAR	OIRF	FEVD			
2	Deployment	Wages	+	+	+	Deployment increases wages.	✓	✓
		Employment	+	+	+	Deployment increases employment.	✓	✓
		Production	0	+/-	+	Deployment has no significant impact on production.		
	Wages	Employment	+/-	+/-	+	Wages have an ambiguous impact on employment.		✓
	Employment	Production	0	+/-	+	Employment has no significant impact on production.		

Key Findings: Capital-intensive sector

Equation	Impulse	Response of Capital-Intensive Sector	Key Findings			Overall Remarks	Consistent with theory	Consistent with literature
			VAR	OIRF	FEVD			
3	Remittances	Wages	-	-	+	Remittances reduce wages.		✓
		Employment	-	-	+	Remittances reduce employment.		✓
		Production	0	+/-	+	Remittances have no significant impact on production.		
	Wages	Employment	+/-	+/-	+	Wages have an ambiguous impact on employment.		✓
	Employment	Production	+	+	+	Employment has positive impact on production.	✓	✓

Key Findings: Capital-intensive sector

Equation	Impulse	Response of Capital-Intensive Sector	Key Findings			Overall Remarks	Consistent with theory	Consistent with literature
			VAR	OIRF	FEVD			
4	FDI flows	Wages	+	+	+	FDI flows increase wages.	✓	✓
		Employment	+	+	+	FDI flows increase employment.	✓	✓
		Production	+	+	+	FDI flows increase production.	✓	✓
	Wages	Employment	+/-	+/-	+	Wages have an ambiguous impact on employment		✓
	Employment	Production	0	+/-	+	Employment has no significant impact on production.		✓
	Wages	FDI flows	0	+/-	+	Wages has no significant impact on FDI flows.		
	Employment	FDI flows	0	+/-	+	Employment has no significant impact on FDI flows.		

Key Findings: Capital-intensive sector

Equation	Impulse	Response of Capital- Intensive Sector	Key Findings			Overall Remarks	Consistent with theory	Consistent with literature
			VAR	OIRF	FEVD			
5	Production	FDI flows	0	+/-	+	Production has no significant impact on FDI flows.	✓	

Key Findings: Labor-intensive sector

Equation	Impulse	Response of Labor-Intensive Sector	Key Findings			Overall Remarks	Consistent with theory	Consistent with literature
			VAR	OIRF	FEVD			
2	Deployment	Wages	+	+	+	Deployment increases wages.	✓	✓
		Employment	0	-	+	Deployment has no significant impact on employment.		
		Production	+	+	+	Deployment increases production.		
	Wages	Employment	-	-	+	Wages reduce employment.		✓
	Employment	Production	-	-	+	Employment reduces production.		✓

Key Findings: Labor-intensive sector

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		Production	-	-	+	FDI flows reduce production.		
	Wages	Employment	+/-	+/-	+	Wages have an ambiguous impact on employment		✓
	Employment	Production	-	-	+	Employment reduces production.	✓	✓
	Wages	FDI flows	0	+/-	+	Wages has no significant impact on FDI flows.		
	Employment	FDI flows	+	+	+	Employment increases FDI flows.	✓	✓

Key Findings: Labor-intensive sector

Equation	Impulse	Response of Labor-Intensive Sector	Key Findings			Overall Remarks	Consistent with theory	Consistent with literature
			VAR	OIRF	FEVD			
5	Production	FDI flows	0	+/-	+	Production has no significant impact on FDI flows.	✓	

Conclusions: Impact of deployment

Labor emigration is not beneficial for the labor-intensive sector (i.e., agriculture). It reduces employment and production.

Although labor emigration increases employment in the capital-intensive sector (i.e., manufacturing), it does not increase production because of limited capital inputs.

Conclusions: Impact of remittances

- Remittances are not also beneficial for the labor-intensive sector (i.e., agriculture). We have seen an apparent increase in the reservation wage with remittances. This decreases the supply of labor and production of agriculture. As a result, this decreases the demand for labor and the wage rate.



Conclusions: Impact of FDI flows

- FDI flows are beneficial for the capital-intensive sector (i.e., manufacturing) but not necessarily for the labor-intensive sector (i.e., agriculture).





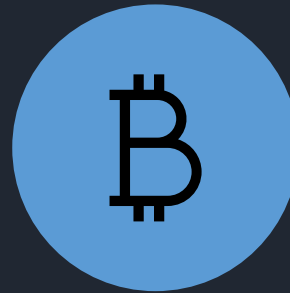
Complement labor emigration with more FDI flows.



Invest in people by prioritizing education and upscaling skills.



Enhance assistance provided to the agricultural sector.



Redirect utilization of remittances from consumption to savings-investment.

Policy Recommendations

THANK YOU

SALAMAT

Tagalog / Filipino

شكراً

Arabic

고맙습니다

Korean

धन्यवाद

Hindi

ขอขอบคุณ

Thai

ありがとう

Japanese

TERIMA KASIH

Malay / Indonesian

ຂອບໃຈ

Lao

谢谢

Chinese

