

Migrant Labor and Remittances: Macroeconomic Consequences and Policy Responses

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Outline

- Introduction
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- Analytical Framework
- Numerical Simulations
- Effects of Tax Changes
- Conclusions

Introduction

- Labor exports from Developing countries substantial.
- The flow of remittances also substantial.
- The flow of remittances is stable (less fluctuations)
- Even governments try to encourage labors to migrate.
- This essentially is a sign of weakness of the domestic economy.

Migrant Labor and Remittances

Some Questions:

- Is exporting labor the right policy to pursue for the government of a labor exporting country?
- What are the benefits and costs to the nations of exporting labor?
- Is there any alternative policies to pursue other than encouraging/sending workers to the foreign countries?

Related questions:

- The flow of Remittances is an endogenous outcome, but not in macrodynamic models.
- Is taxing remittances a good idea? If so, under what circumstances?
- We try to provide some answers to these questions using a two small open economies model.

Migrant Labor and Remittances

- Some countries tried to tax remittances, but plans were aborted soon.
- Bhagwati tax made sense theoretically (tax base declined due to skilled worker emigration) but not practical.
- For unskilled emigration, does a version of Bhagwati tax make sense?
- Where are the negative externalities?

A Two Small Open Economies Model

Two small economies:

1. An advanced host country and a labor exporting (home) country.
2. Both countries face upward sloping supply curve of debt (borrowing premium added to the world interest rate).
3. Capital accumulation takes place in the host country. Labor and leisure choice is present in both the countries.
4. Fiscal policy instruments available for home country government: lump-sum tax, capital income tax, labor income tax, taxes on consumption, and tax on remittances.
Government maintains a balanced budget.

Host Country

- The inflow of migrant workers raises the marginal product of native workers.
- Maximizes:

$$W_h = \int_0^{\infty} H(C_h, L_h) e^{-\beta t} dt$$

Subject to

$$\dot{B}_h = r_h B_h + C_h + \dot{K}_h - r_{K_h} K_h - w_h N_h$$

With

$$r_h = r^* + \omega \left(\frac{B_h}{Y_h} \right); \quad \omega(0) = 0, \omega' > 0, \omega'' > 0$$

Home Country

- Home households maximize

$$W_d = \int_0^{\infty} [(1 - m)U(C, L) + \mu m U(C_m, L_m) + \Gamma(G)] e^{-\beta t} dt$$

Subject to:

$$\dot{B} = rB + (1 - m) \left[(1 + \tau_c)C - (1 - \tau_w)wN_d \right] - (1 - \tau_k)F_K \bar{K}_d - T \\ - (1 - \tau_m) \left\{ \mu m [w_m N_m - x - C_m] + (1 - \mu)m\Omega \right\}$$

Here: Aggregate remittances

$$R = \mu m (w_m N_m - x - C_m) + (1 - \mu)m\Omega$$

x is the fixed costs of migration.

Interest rate equation:

$$r = r^* + v \left(\frac{B}{Y + \kappa R} \right); \quad v(0) = 0, \quad v' > 0, v'' > 0$$

Internal Household Equilibrium Condition

$$\frac{U_{C_m}(\tilde{C}_m, \tilde{L}_m)}{U_C(\tilde{C}, \tilde{L})} = \frac{1 - \tau_m}{1 + \tau_c}$$

- A key channel in determining the differential impact of these various tax policies on the domestic household members (the stayers) and the migrants is the “internal household equilibrium” condition.
- Computing the differential of this equation, any change due to the structure or policy must satisfy:

$$\frac{dU_{C_m}}{U_{C_m}} = \frac{dU_C}{U_C} - \left[\frac{d\tau_m}{1 - \tau_m} + \frac{d\tau_c}{1 + \tau_c} \right]$$

Main Results

Tax changes:

- Cutting taxes on labor income and consumption have generally similar effects on the stayers, they have very different effects on the migrants.
- Introducing a tax on remittances does not appear to contribute significantly to increasing domestic income, or to enhancing the welfare of domestic residents, but it does have a substantial impact on the welfare of migrant workers.
- Cutting taxes on income or consumption is much more stimulating, and while the former also has significant benefits to migrants (through the internal household equilibrium condition), the latter does not. From a revenue generating standpoint, taxing remittances is also ineffective.
- Any tax on remittances to be effective must be part of a coordinated tax structure, whereby it introduces changes in behavior that enhance the impact of other taxes

Main Results

Structural Change

- The direct effect of a productivity increase in the home country benefits migrant workers more than it does domestic workers, while at the same time having a mild adverse impact on the host country.
- Reducing the tax on labor income together with a tax on remittances can yield enhanced benefits for all constituents in the home country
- Migration costs elimination is generally similar to those following an increase in host country productivity.
- These results bring out the importance of domestic policy to drive growth at home, rather than to encourage migrant work.
- Seeking overseas jobs for its citizens may be a short-term fix, but never serves as a long-term development policy.

Numerical Simulation

Table 1: Baseline parameter values

Parameters of the benchmark economies

Common parameters for both countries: $\beta = 0.05$; $r^* = 0.035$; $p = 1$

Home country (Bangladesh)

Utility: $\gamma = -1.5$; $\sigma = 1.75$; $\delta = 0.3$; $m = 0.05$; $\mu = 0.5$

Production: $A_d = 0.7$; $\theta_d = 0.1$; $\zeta = -0.21$; $\bar{K}_d = 0.5$

Borrowing constraint: $b = 0.04$; $\nu = 1$; $\kappa = 1$

Government: $g = 0.2$; $\tau_k = 0.25$; $\tau_b = 0$; $\tau_c = 0.15$; $\tau_w = 0.3$; $\tau_m = 0$; $T/Y = 0.266$;

Migration cost: $\Omega = 2$, $x = 0.07$

Host country (Middle Eastern Countries)

Utility: $\phi = -1.5$; $\varphi = 1.75$

Production: $A_h = 9$; $\alpha_1 = 0.15$; $\alpha_2 = 0.5$; $\rho_1 = 0.08$; $\rho_2 = 0.5$; $\theta = 3$

Borrowing constraint: $a = 0.02$; $\omega = 1$

Benchmark Steady-state values

Benchmark steady-state equilibrium values

Variables	Description	Benchmark
<i>Home country</i> (Bangladesh)		
\bar{K}_d / \tilde{Y}	Capital-output ratio	2.6629
\tilde{N}_d	Domestic labor supply	0.2647
\tilde{C} / \tilde{Y}	Consumption-output ratio	0.8813
\tilde{R} / \tilde{Y}	Remittance-output ratio	0.0569
\tilde{B} / \tilde{Y}	Debt-output ratio	0.3934
\tilde{w}	Domestic wage rate	0.6470
<i>Host country</i> (Middle Eastern Countries)		
$\tilde{K}_h / \tilde{Y}_h$	Capital-output ratio	3.9956
$\tilde{C}_h / \tilde{Y}_h$	Consumption-output ratio	0.7504
\tilde{N}_h	Labor supply	0.3092
\tilde{N}_m	Supply of migrant worker	0.5384
$\theta \mu m \tilde{N}_m / \tilde{N}_h$	Share of migrants in the host country	0.1306
\tilde{w}_h	Native wage rate	5.2120
\tilde{w}_m	Migrant wage rate	1.0817

Notes: These equilibrium ratios are consistent with data of Bangladesh extracted from Penn World Table 9.0 and World Bank's World Development Indicators.

Changes in Taxes

A. Effects on Home Country

	Effects on Key Variables						Welfare			
	R/Y	Y	C	N_d	C_m	N_m	ΔW_d^{θ}	ΔW_m^{θ}	ΔW_s^{θ}	ΔW_d^{θ}
Benchmark $\tau_w = 0.30, \tau_c = 0.15, \tau_m = 0$	5.69%	0.1878	0.1655	0.2647	0.2853	0.5384	--	--	--	--
Effects of Each Tax Change										
Decrease in τ_w to 0.20	5.03% (-0.66%pts)	0.2058 (+9.59%)	0.1780 (+8.76%)	0.2927 (+2.80%pts)	0.2923 (+2.44%)	0.5300 (-0.85%pts)	+1.61%	+5.75%	+2.79%	+1.88%
Increase in τ_m to 0.20	5.33% (-0.36%pts)	0.1883 (+0.28%)	0.1652 (-0.14%)	0.2655 (+0.08%pts)	0.2995 (+4.97%)	0.5213 (-1.71%pts)	-0.33%	+11.87%	+0.08%	+0.07%
Decrease in τ_c to 0	5.21% (-0.48%pts)	0.2063 (+9.89%)	0.1808 (+9.27%)	0.2936 (+2.89%pts)	0.2838 (-0.52%)	0.5402 (+0.18%pts)	+1.88%	-1.20%	+2.87%	+1.88%

Increase in productivity in home country

A. Effects on Home Country

	Effects on Key Variables						Welfare			
	R/Y	Y	C	N_d	C_m	N_m	ΔW_d^d	ΔW_m^d	ΔW_s^d	ΔW_d
Benchmark $\tau_w = 0.30, \tau_c = 0.15, \tau_m = 0$	5.69%	0.1878	0.1655	0.2647	0.2853	0.5384	--	--	--	--
10% increase in A_d	4.82% (-0.87%pts)	0.2079 (+10.75%)	0.1814 (+9.62%)	0.2667 (+0.20%pts)	0.2999 (+5.11%)	0.5209 (-1.75%pts)	+9.31%	+12.39%	+3.06%	+8.62%
Policy responses										
Reduce τ_w to 0.25	4.51% (-1.18%pts)	0.2180 (+16.13%)	0.1895 (+14.53%)	0.2810 (+1.62%pts)	0.3038 (+6.49%)	0.5162 (-2.22%pts)	+10.45%	+15.92%	+4.52%	+9.88%
Reduce τ_c to 0.10	4.67% (-1.01%pts)	0.2143 (+14.14%)	0.1866 (+12.80%)	0.2757 (+1.10%pts)	0.2995 (+4.98%)	0.5213 (-1.71%pts)	+10.14%	+12.15%	+3.99%	+9.44%
Increase τ_m to 0.10	4.66% (-1.03%pts)	0.2082 (+10.88%)	0.1813 (+9.55%)	0.2671 (+0.23%pts)	0.3069 (+7.56%)	0.5126 (-2.58%pts)	+9.14%	+18.50%	+3.10%	+8.67%
Reduce τ_w to 0.27 and increase τ_m to 0.0455 to keep lump-sum tax fixed	4.56% (-1.13%pts)	0.2142 (+14.07%)	0.1863 (+12.56%)	0.2755 (+1.08%pts)	0.3054 (+7.04%)	0.5143 (-2.41%pts)	+9.96%	+17.27%	+3.97%	+9.43%

Externalities

- Individuals take foreign wage as given and then choose to migrate. But their labor supply reduces the average wage (negative externalities)
- An increased flow of remittances reduces the interest premium. It creates positive externalities.

Conclusions

- We introduced a two small open economies model with endogenous remittances.
- Internal household equilibrium condition yields a new channel of impacts of different fiscal and structural shocks.
- Tax on remittances with no changes in other taxes seems ineffective.
- A lower costs of migration and domestic productivity costs affects all stakeholders similarly.
- Seeking overseas jobs for its citizens may be a short-term fix but never serves as a long-term development policy.