The effects of remittances and migration on accumulation and growth of poor developing countries

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Motivation

Hype
Chami et al.
First model: 7x7, 4 samples

Only one direct effect:

\[ \text{wr} \rightarrow \text{s} \text{ (% GDP)} \]

\[ \text{s} \rightarrow \text{sepri (only in poor 42)}, \text{s} \rightarrow \text{ri} \]

\[ \text{s} \rightarrow \text{lit} \rightarrow \text{growth} \]

\[ \text{growth} \rightarrow \text{s, inv} \]

\[ \text{ri} \rightarrow \text{inv} \rightarrow \text{growth} \]

Growth dampens \text{wr} (not in poorest with dwr)
2nd model: 14x14; poor countries only

Table 1: Signs of significant regressors

<table>
<thead>
<tr>
<th>dep. variable</th>
<th>nm/l</th>
<th>gdppc</th>
<th>d(log(l))</th>
<th>wr/gdp</th>
<th>savgdp</th>
<th>gfcfgdp</th>
<th>ri</th>
<th>taxy</th>
<th>peegdp</th>
<th>lit</th>
<th>odagdp</th>
<th>wld</th>
<th>oec</th>
<th>riusa</th>
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<tr>
<td>regressors (a)</td>
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<td>adj.R-sq. (J-st.)</td>
<td>(24)</td>
<td>(75)</td>
<td>(72)</td>
<td>0.93</td>
<td>0.87</td>
<td>0.86</td>
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<td>0.95</td>
<td>1</td>
<td>0.9</td>
<td>1</td>
<td>1</td>
<td>0.72</td>
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</tbody>
</table>

(a): details on lags, logs, exponential terms and there combinations can be found in Ziesemer (2008a).
Issues

- Worker remittances and growth
- Should we search for growth effects in growth regressions alone?
- Separate vs. system estimation

<table>
<thead>
<tr>
<th>Endogen.? $\rightarrow$ SUR? $\downarrow$</th>
<th>No</th>
<th>Yes</th>
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<tbody>
<tr>
<td>Cov(i,j) = 0</td>
<td>LS (or dyn.pan. meth)</td>
<td>IV</td>
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<tr>
<td>Cov(i,j) &gt;(&lt;) 0</td>
<td>SUR</td>
<td>3SLS (ignores fe(?)) (GMM-HAC)</td>
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</tbody>
</table>
Approach: From single equation regression to multiple interacting effects

- Countries below $1200 (2000)
- Fixed effects or Arellano-Bover if coefficient of lag dep var obeys
  \[ \beta_{FE} < \beta_{AB} < \beta_{OLS} \]
- Simulation of system of equations
- Counterfactuals
Multiple robustness checks:

• (i) Forecasting properties
• (ii) All non-linear results are plotted in order to check for counterintuitive effects from over fitting.
• (iii) In the system simulations we check for end-of-sample realism (non-contamination 1).
• (iv) System simulations check (are not forecasts) for the long-run stability (non-contamination 2).
Major channels of remittances

• Remittances incr GDPpc, savings directly
• Remittances incr peegdp (lit,Lgr,GDPpc)
• Remittances decr tax/GDP (lit,Lgr,GDPpc)
• Remittances reduce emigrat. (Lgr,GDPpc)
System simulation

Figure 1: Regression based simulation of migration hump, investment and remittance ratio, and rates of literacy, growth of labour force and GDP per capita
If migrants would send only 50%...

Figure 3: The effects of remittances on literacy, investment, and growth of the labour force and GDP per capita

Years 1960-2150

- --- investment
- --- literacy
- --- gdppc
- --- Labour growth
Effects of emigration

Emigration

• reduces labour force growth (inv↓, gdppc↑)
• Reduces savings ratios (taxy↓, lit↓, Lgr.↑, gdppc↓)

After all repercussions: numerical evaluation enhances gdppc
Summary of model 2

• Remittances are good for accumulation and growth, mainly via higher savings, more emigration (and literacy), less labour growth.

• Emigration enhances growth through the reduction of the labour force with counter effects from lower investment and the link ‘savings-tax-education-labour-growth’.
Special topics

Consequences of the credit crisis

Collinearity

Explicit channels in systems

Disasters, conflicts, and political instability

Aid and migration hump
Major channels of aid in model 2

- Two positive:
  1. Aid, increases investment, incr. GDP pc gr
  2. Aid incr. Peegdp & literacy, decr L-growth, and incr GDP pc; but

- Three negative
  1. Aid, decreases savings and emigration
  2. Aid also increases L-growth directly
  3. Aid decreases GDPpc (growth) directly
UN: Aid/GDP doubled from 9.4% to 18.5%

Figure 2: The effects of doubling aid on investment, literacy, labour force growth and GDP per capita
More simulation plots available:

Related work

Revising: Worker remittances and government behaviour in the receiving countries
(DWH test for endogeneity;
what test for pre-determined vs. exogenous?)

Other papers
with Joan Muysken on immigration and growth in NL
(model and VECM) and

with Muysken and Vallizadeh on immigration,
unemployment and GDP/welfare (theory and calibration
to German data)
Net immigration flows as a share of labour force changes in LDCs under $1200, 1960-2005 (LOESS)
Net immigration flows as a share of the labour force changes in LDCs above $1200 (2000), 1960-2005 (LOESS)
Published articles


Worker remittances, migration, accumulation and growth in poor developing countries: Survey and analysis of direct and indirect effects. *Economic Modelling* 29, 2012, 103-118.