The impact of migrant remittances on economic development of the Kyrgyz Republic

Eliza Zhunusova*
*Justus-Liebig University of Giessen, Institute of Agricultural Policy and Market Research
Contact: Eliza.Zhunusova@zeu.uni-giessen.de
Structure of the presentation

I. Background

II. Theory, methods and data

III. Remittances and Dutch disease effects

IV. Summary and conclusions
I. Background

Fig. 1: Remittances sent by migrants, global dynamics

Remittances received worldwide, mln. US$

Source: World Bank 2016, Annual Remittances Data
I. Background

Fig.2: Remittances as share of GDP, %

Source: World Bank 2016, Annual Remittances Data
I. Background

Fig. 3: Annual Inflow of Workers’ Remittances to the KR

Source: World Bank 2014, Annual Remittances Data and National Statistical Committee
I. Background

No. of migrants: 300,000 to 500,000 people (IOM, 2006)

Major destinations: Russia (>90%) & Kazakhstan (LiK survey)

Reasons for migration:
- Low incomes, esp. rural
- Lack of employment opportunities

Potential effects:
- Lost labor effect (e.g. in agriculture)
- Remittances → poverty reduced
- Remittances → Dutch disease effects
I. Background

Research questions:

How do remittances affect the economy of the KR?

1. The effect of remittances on the Real Exchange Rate?

2. The link between remittances and structural changes in the Kyrgyz economy?
II. Theory, methods and data

Remittances and Dutch Disease Effects

- Term: adverse effects on Dutch manufacturing of the natural gas discoveries of the 1960s (Corden 1984)

- Transmission mechanism \(\rightarrow\) increase in capital inflows could cause RER appreciation
  - spending effect
  - resource movement effect
II. Theory, methods and data

L - Labor demand
w - Wage
S - Services
T - Tradable
M – Manufacturing

OS-OT: total labor supply
A- initial equilibrium
G- new equilibrium

Source: Corden and Neary (1982)
II. Theory, methods and data

DD transmission mechanisms (Lartey et al. 2008):

**Spending effect:**
- larger income due to remittances leads to increased demand for nontradables $\rightarrow$ higher relative price for $P_n$ (since $P_t$ is given.
- Real appreciation occurs and manufacturing sector shrinks.

**Resource-movement effect:**
- movement of labor out of tradable (manufacturing) sector to nontradable sectors (e.g. services)
II. Theory, methods and data

The econometric model:

\[ Y_t = \sum_{j=0}^{p} a_j R_{t-j} + \beta X_t + \varepsilon_t, \quad t=2,3\ldots T \]

Dependent variables, \( Y \):

- Real Effective Exchange Rate
- Tradable to Nontradable Ratio
- Sectorial Outputs for Agriculture, Manufacturing, Services as % of GDP

\( R \): Remittances as % of GDP

\( X \): M2 as % of GDP, Terms of Trade, Trade Openness, GDP per capita, GDP growth, Government Expenditure, FDI and other investment, Crisis/Political Instability
II. Theory, methods and data

Key equations:

I. Real Exchange Rate
II. Tradable to Nontradable Ratio
III. System of equations for Agriculture, Manufacturing and Services

Estimation methods:

– Two Stage Least Squares for equations I and II
– General Method of Moments 3SLS for system of eq. III

Instruments for Remittances:

Real Russian GDP and its lags

Data sources:

NBKR, NSC, World Bank, IMF
III. Remittances and Dutch disease effects

Fig. 4: Real Exchange Rate and Remittances, 2000Q1 – 2014Q4

Source: Own illustration based on the data of the NBKR. For the REER index, the year 2000 is the base period.
III. Remittances and Dutch disease effects

Fig. 5: Tradable to Nontradable Ratio and Remittances

Source: Own illustration based on the data of the NBKR
Table 1: 2SLS estimates of Remittances’ effect on REER

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>REER</th>
<th>REER CIS</th>
<th>REER non-CIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remittances, % of GDP</td>
<td>-0.345</td>
<td>-0.729*</td>
<td>1.044*</td>
</tr>
<tr>
<td>Real GDP growth rate, %</td>
<td>-0.010</td>
<td>-0.020</td>
<td>0.020</td>
</tr>
<tr>
<td>M2, % of GDP</td>
<td>0.010</td>
<td>0.054</td>
<td>-0.177</td>
</tr>
<tr>
<td>Terms of Trade</td>
<td>0.406**</td>
<td>0.371**</td>
<td>0.343</td>
</tr>
<tr>
<td>Trade Openness</td>
<td>0.055</td>
<td>0.222</td>
<td>0.138*</td>
</tr>
<tr>
<td>Foreign Direct Investment, % of GDP</td>
<td>-0.215***</td>
<td>-0.188**</td>
<td>-0.208*</td>
</tr>
<tr>
<td>Non-FDI inflows, % of GDP</td>
<td>-0.113**</td>
<td>0.068</td>
<td>-0.209**</td>
</tr>
<tr>
<td>Government expenditure growth rate, %</td>
<td>0.041**</td>
<td>0.046</td>
<td>0.038</td>
</tr>
<tr>
<td>Foreign aid, mln. US$</td>
<td>-0.036**</td>
<td>-0.031</td>
<td>-0.059**</td>
</tr>
<tr>
<td>Crisis/Political Instability</td>
<td>0.771</td>
<td>-0.551</td>
<td>-2.033</td>
</tr>
<tr>
<td>Time trend</td>
<td>0.051</td>
<td>0.012</td>
<td>0.229</td>
</tr>
</tbody>
</table>

No. of observations                     | 59     | 59        | 59           |
Test of overidentifying restrictions    | 0.008 (p=0.92) | 0.839 (p=0.36) | 3.11 (p=0.08) |

Source: Own estimations. Remittances are instrumented by Russian GDP and own 1st lag.
*, **, and *** indicate statistical significance at 10, 5 and 0.1% respectively.
### Table 2: Remittances’ effect on Tradable-to-Nontradable Ratio (2SLS)

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Tradable to Nontradable Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remittances, % of GDP</td>
<td>-4.472***</td>
</tr>
<tr>
<td>Real GDP growth rate, %</td>
<td>1.616***</td>
</tr>
<tr>
<td>M2, % of GDP</td>
<td>0.929*</td>
</tr>
<tr>
<td>Terms of Trade</td>
<td>1.281</td>
</tr>
<tr>
<td>Trade Openness</td>
<td>0.359</td>
</tr>
<tr>
<td>Foreign Direct Investment, % of GDP</td>
<td>0.373</td>
</tr>
<tr>
<td>Non-FDI inflows, % of GDP</td>
<td>0.291</td>
</tr>
<tr>
<td>Government expenditure growth rate, %</td>
<td>-0.210</td>
</tr>
<tr>
<td>Foreign aid, mln. US$</td>
<td>-0.113</td>
</tr>
<tr>
<td>Seasonal Adjustment</td>
<td>Yes</td>
</tr>
<tr>
<td>No. of observations</td>
<td>59</td>
</tr>
<tr>
<td>Test of overidentifying restrictions</td>
<td>3.01 (p=0.082)</td>
</tr>
</tbody>
</table>

Source: Own estimations. Remittances are instrumented by Russian GDP and own 1st lag. *, **, and *** indicate statistical significance at 10, 5 and 0.1% respectively.
Table 3: Remittances’ effect on individual sectors (GMM -3SLS)

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Agricultural Output, % of GDP</th>
<th>Manufacture Output% of GDP</th>
<th>Services Output% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remittances, % of GDP in t-1</td>
<td>-1.300***</td>
<td>0.292</td>
<td>0.591***</td>
</tr>
<tr>
<td>Real GDP growth rate, %</td>
<td>0.247***</td>
<td>-0.061**</td>
<td>-0.179***</td>
</tr>
<tr>
<td>M2, % of GDP</td>
<td>0.156*</td>
<td>-0.196**</td>
<td>0.059</td>
</tr>
<tr>
<td>Terms of Trade</td>
<td>-0.514**</td>
<td>0.710**</td>
<td>-0.128</td>
</tr>
<tr>
<td>Trade Openness</td>
<td>0.396***</td>
<td>-0.105</td>
<td>-0.131**</td>
</tr>
<tr>
<td>1st quarter</td>
<td>-11.440***</td>
<td>7.222**</td>
<td>-0.396</td>
</tr>
<tr>
<td>2nd quarter</td>
<td>-13.165***</td>
<td>3.371</td>
<td>8.479***</td>
</tr>
<tr>
<td>3rd quarter</td>
<td>21.225***</td>
<td>-7.970**</td>
<td>-6.845**</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.317</td>
<td>33.528***</td>
<td>52.87***</td>
</tr>
<tr>
<td>No. of observations</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test of overidentifying restrictions</td>
<td>4.93 (p=0.17)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Own estimations. Remittances are instrumented by Russian GDP and its 2nd and 3rd lags. *, **, and *** indicate statistical significance at 10, 5 and 0.1% respectively.
IV. Summary and conclusions

• Remittances: increasing importance worldwide and for KR
• Both positive and negative effects possible
• In the Kyrgyz Republic:
  – Remittances led to REER depreciation w.t. CIS-region
  – Remittances led to REER appreciation w.t. non-CIS region
  – Nontradable sector grew faster than tradable sector because of remittances
  – Remittances had negative impact on agriculture, but positive on services sector
• The results suggest that:
  – Dutch disease effects partially present
  – Policies needed to counterveil the negative effects (e.g. better institutions, incentives to invest remittances).


Thank you for your attention.
Feedback and questions welcome!

Contact email: Eliza.Zhunusova@zeu.uni-giessen.de