



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# **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](mailto:Eliza.Zhunusova@zeu.uni-giessen.de)

# Structure of the presentation

**I. Background**

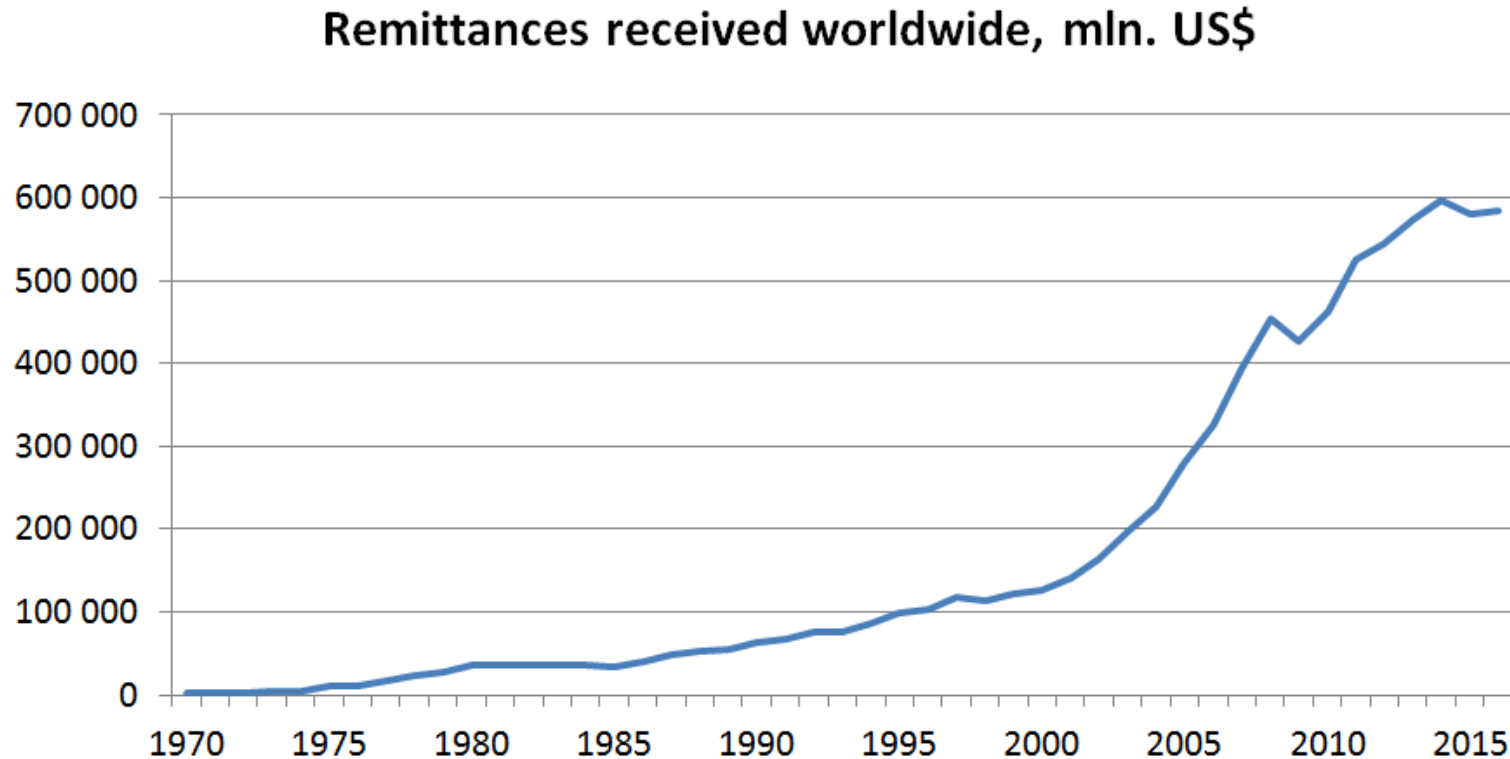
**II. Theory, methods and data**

**III. Remittances and Dutch disease effects**

**IV. Summary and conclusions**

# I. Background

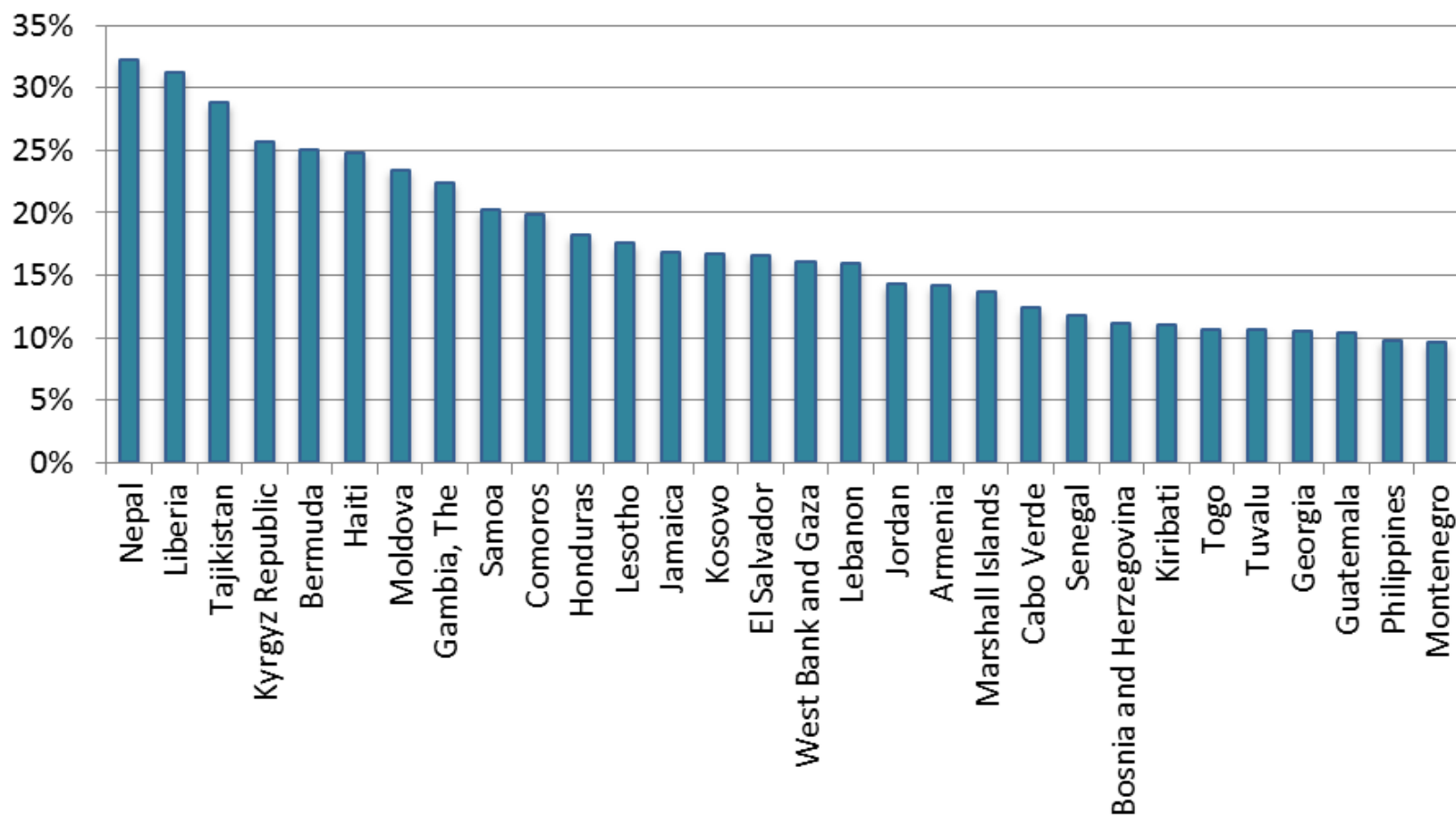
**Fig.1: Remittances sent by migrants, global dynamics**



Source: World Bank 2016, Annual Remittances Data

# I. Background

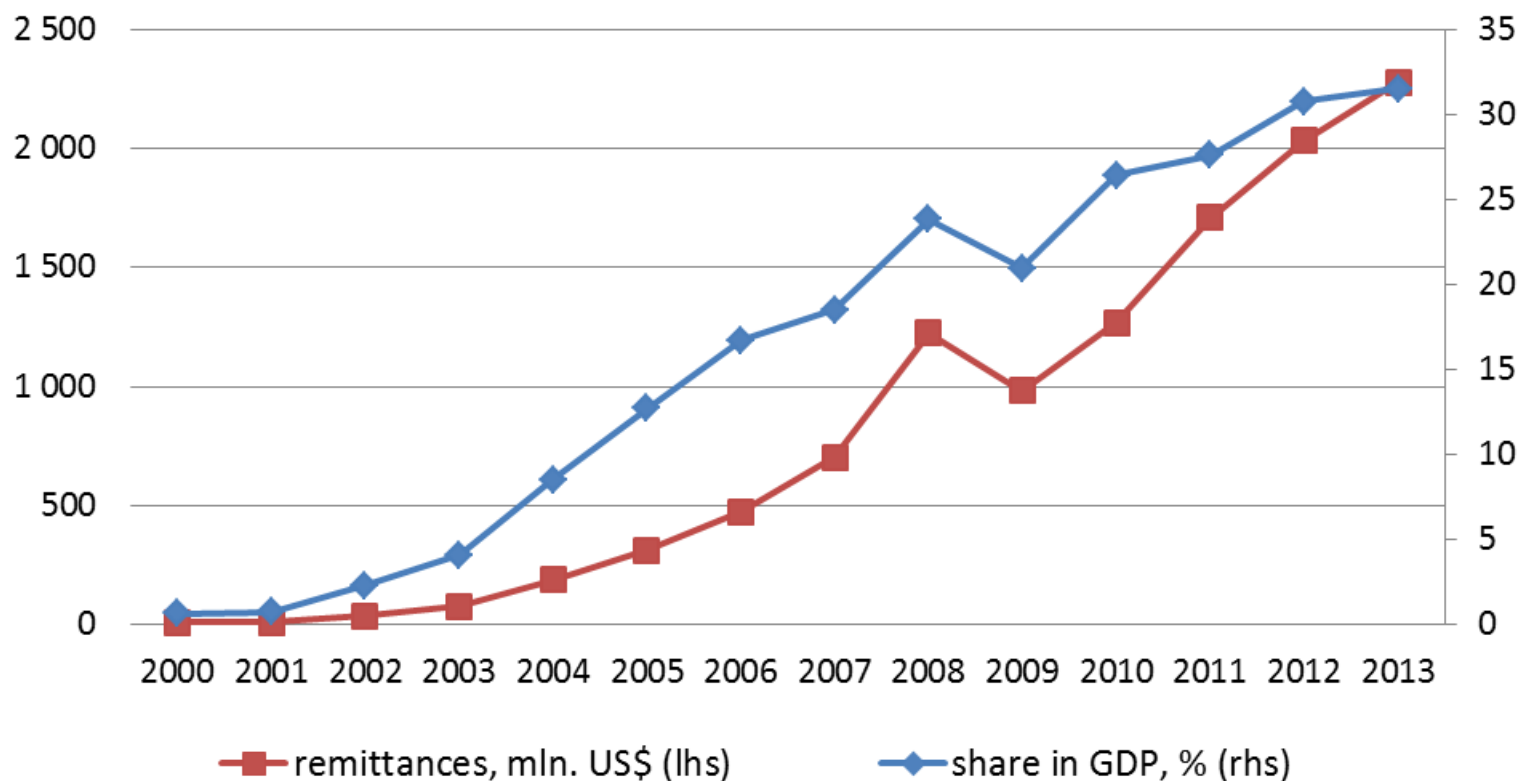
Fig.2: Remittances as share of GDP, %



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?



**Dutch  
disease  
effects?**

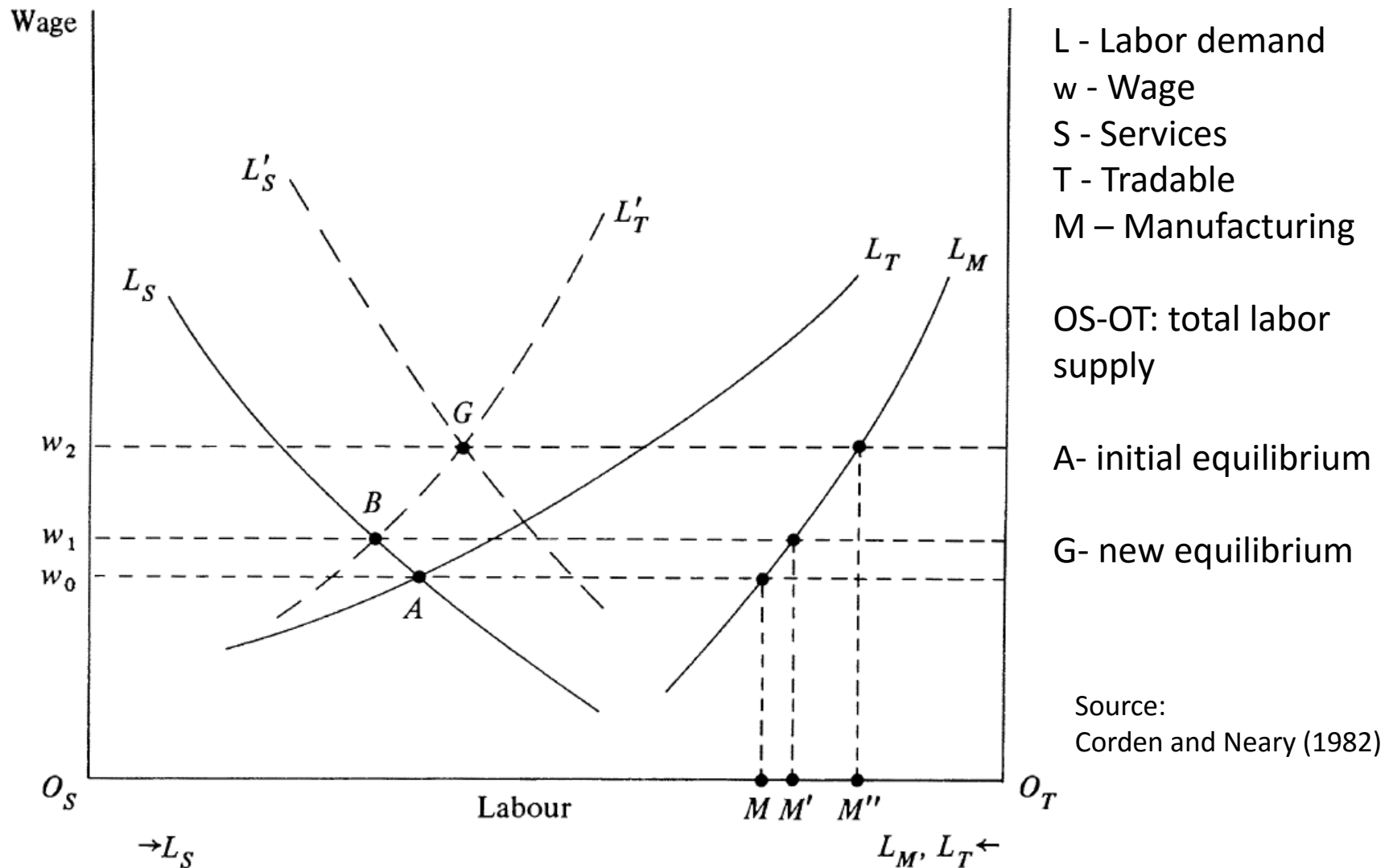


## II. Theory, methods and data

### Remittances and Dutch Disease Effects

- Term: adverse effects on Dutch manufacturing of the natural gas discoveries of the 1960s (Corden 1984)
- Transmission mechanism → increase in capital inflows could cause RER appreciation
  - spending effect
  - resource movement effect

## II. Theory, methods and data



## 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:

$$Y_t = \sum_{j=0}^p \alpha_j R_{t-j} + \beta X_t + \varepsilon_t, \quad t=2,3,\dots,T$$

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:

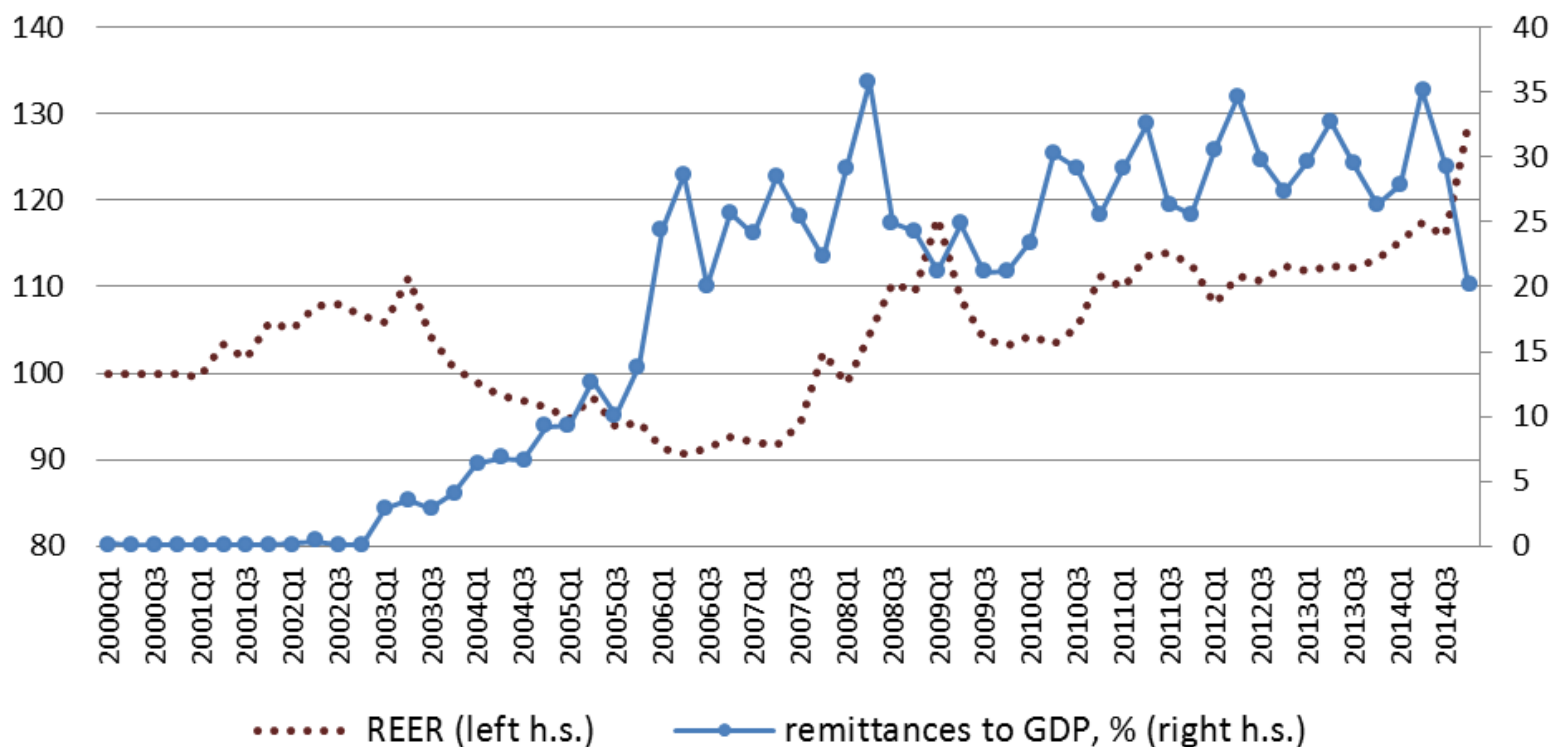
Real Russian GDP and its lags

Data sources:

NBKR, NSC, World Bank, IMF

### III. Remittances and Dutch disease effects

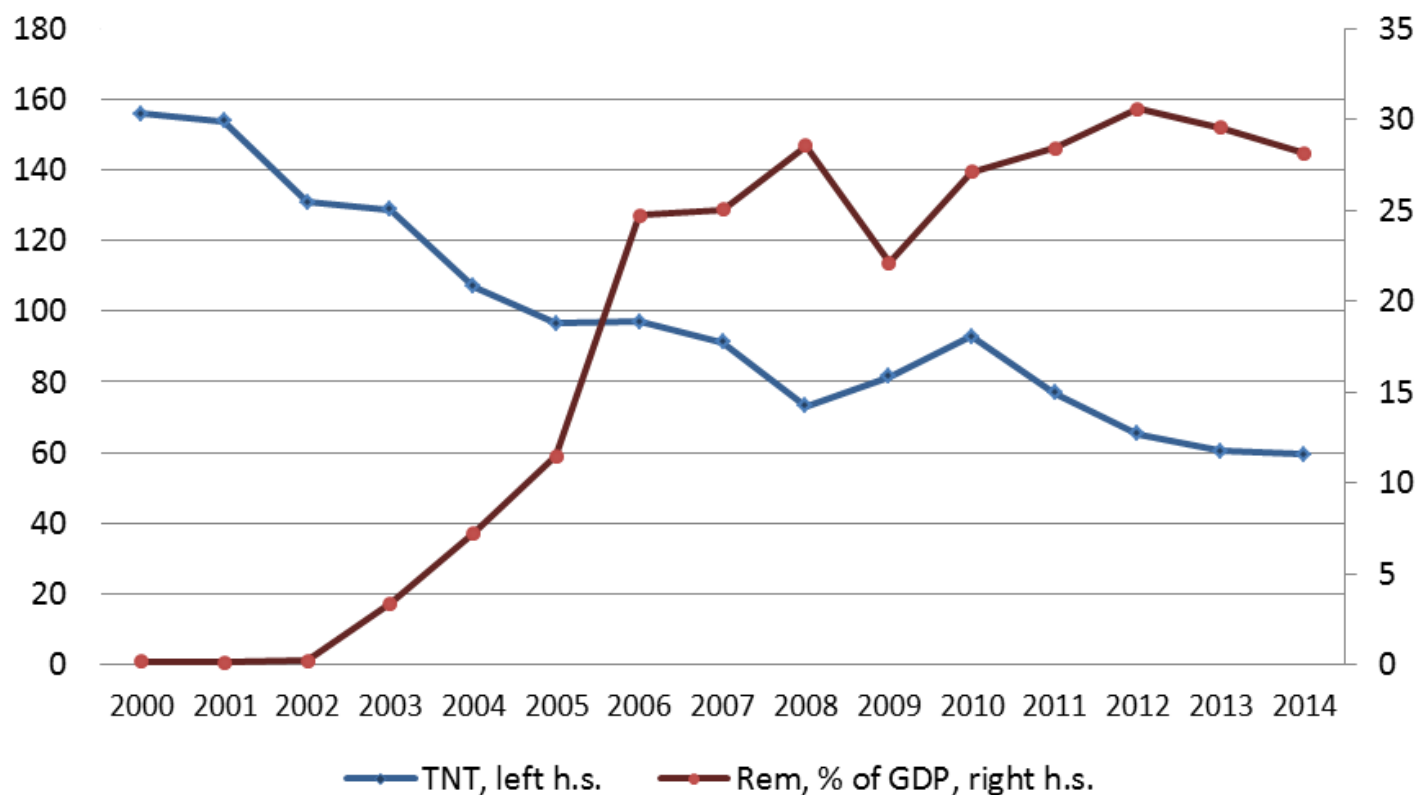
Fig.4: Real Exchange Rate and Remittances, 2000Q1 – 2014Q4



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**

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

\*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 0,1% respectively



**Table 2: Remittances' effect on Tradable-to-Nontradable Ratio (2SLS)**

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

Source: Own estimations. Remittances are instrumented by Russian GDP and own 1<sup>st</sup> lag. \*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 0,1% respectively

**Table 3: Remittances' effect on individual sectors (GMM -3SLS)**

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

Source: Own estimations. Remittances are instrumented by Russian GDP and its 2<sup>nd</sup> and 3<sup>rd</sup> 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).

# References

- Corden, W.M. (1984): Booming Sector and Dutch Disease Economics: Survey and Consolidation. *Oxford Economic Papers, New Series*. Vol. 36, No.3, pp. 359-380
- Corden, W.M. and J.P Neary (1982): Booming Sector and De-Industrialization in a Small Open Economy. *The Economic Journal*, Vol. 92, No. 368, pp. 825-848
- German Institute for Economic Research, DIW Berlin and Stockholm International Peace Research Institute (SIPRI). Life in Kyrgyzstan Panel Study, 2010-2013. IDSC of IZA.
- International Organization for Migration (2006): Migration Perspectives Eastern Europe and Central Asia. Planning and Managing Labour Migration (Ed. By R.R. Rios) October 2006, Vienna.
- Lartey, E.K.K., F. S. Mandelman, and P. A. Acosta (2008): Remittances, Exchange Rate Regimes, and the Dutch Disease: A Panel Data Analysis. Federal Reserve Bank of Atlanta. Working Paper 2008-12
- World Bank (2016): Annual Remittances Data. Last retrieved on 22.10.2016 from: [www.econ.worldbank.org](http://www.econ.worldbank.org)

**Thank you for your attention.**  
**Feedback and questions welcome!**

Contact email: [Eliza.Zhunusova@zeu.uni-giessen.de](mailto:Eliza.Zhunusova@zeu.uni-giessen.de)