



Bilateral Migration Model and Data Base

Terrie L. Walmsley

Aims of Research

- **Numerous problems with current data on numbers of migrants:**
 - Opaque data collection, Regional focus, Non-separation of alternative definitions, Incomplete
- **Other missing data: bilateral remittances and labor force by skill**
- **Create a global matrix of bilateral labor migration**
- **Create a Global Data Base and Model with bilateral labor migration and remittances**
- **Improve our ability to capture key relationships between countries and hence the distributional impact of Migration policies.**
- **Collaborate with DRC on Migration, Globalisation and Poverty**

Bilateral Labour Migration Data Base

- **226*226 Matrix of immigrant stocks**
- **5 versions – incrementally filled**
 - **Two matrices for the first four versions - foreign born and nationality**
 - **Fifth version decided on foreign born data**
 - **UN definition that a migrant is “any person who changes his or her country of usual residence’**
- **Sources: Censuses, Registers, Permits, Surveys**
 - **All record slightly different data**
 - **Predominantly used Censuses and Population Registers if Census was unavailable**
 - **Latest round 1995-2004**

Bilateral Labour Migration Data Base

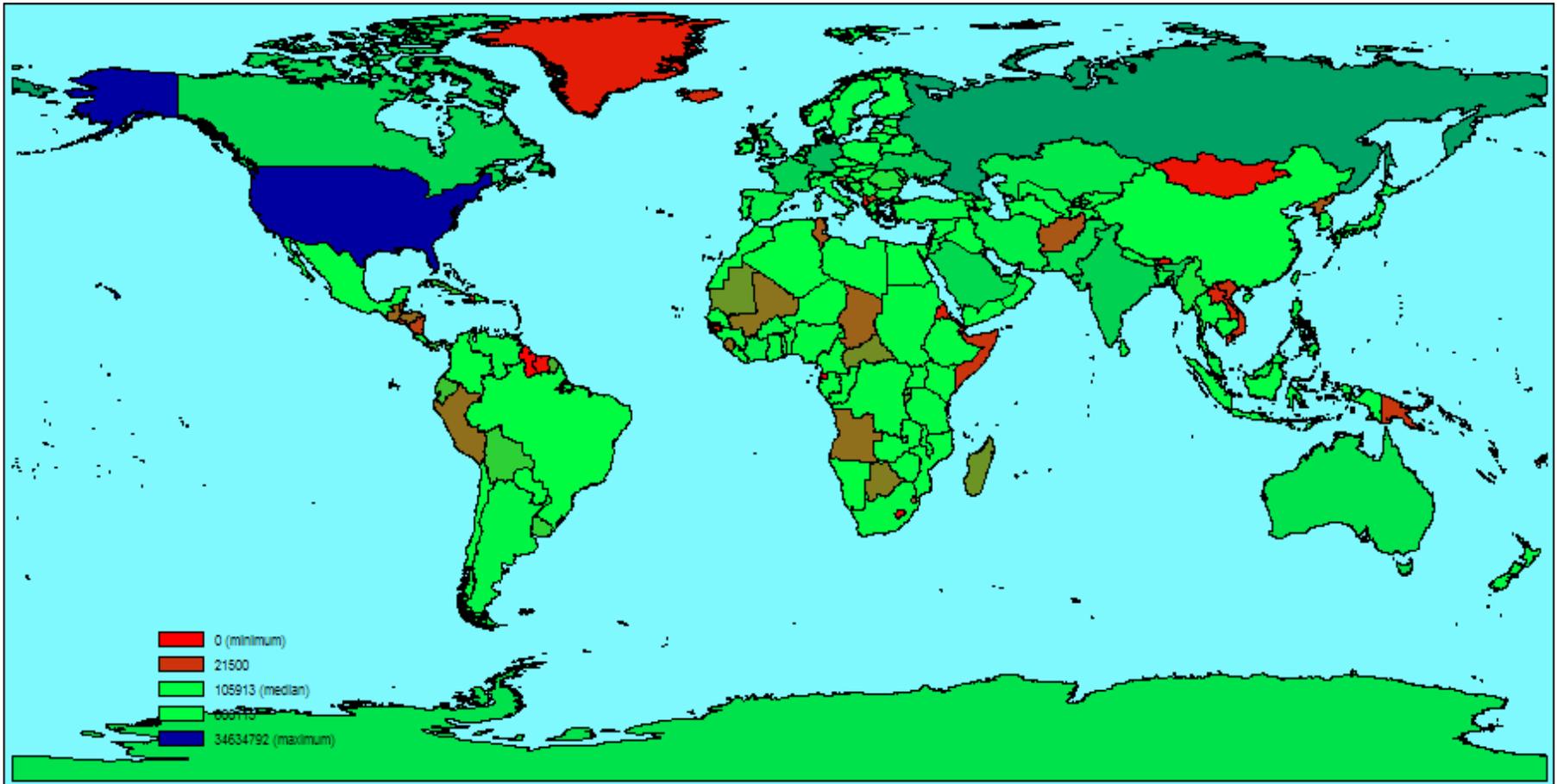
Data now available:

http://www.migrationdrc.org/research/typesofmigration/global_migrant_origin_database.html

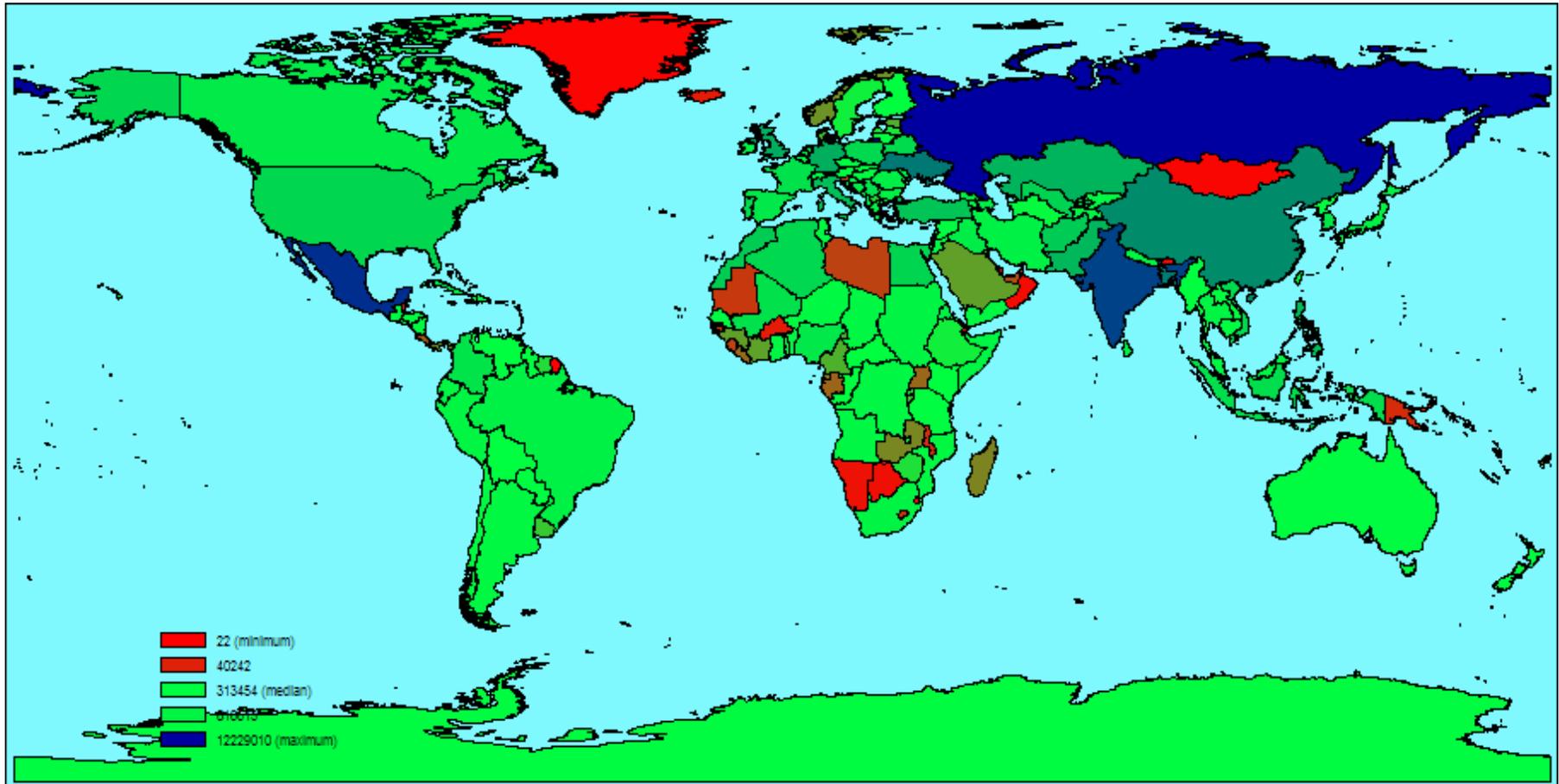
Documentation:

Parsons, Christopher, Ronald Skeldon, Terrie Walmsley and Alan Winters, "Quantifying the international bilateral movements of migrants", DRC Working Paper No WP-T13, Sussex University, United Kingdom, 2005

Immigrant Population Stocks by Host Country (226 Labor Importers)

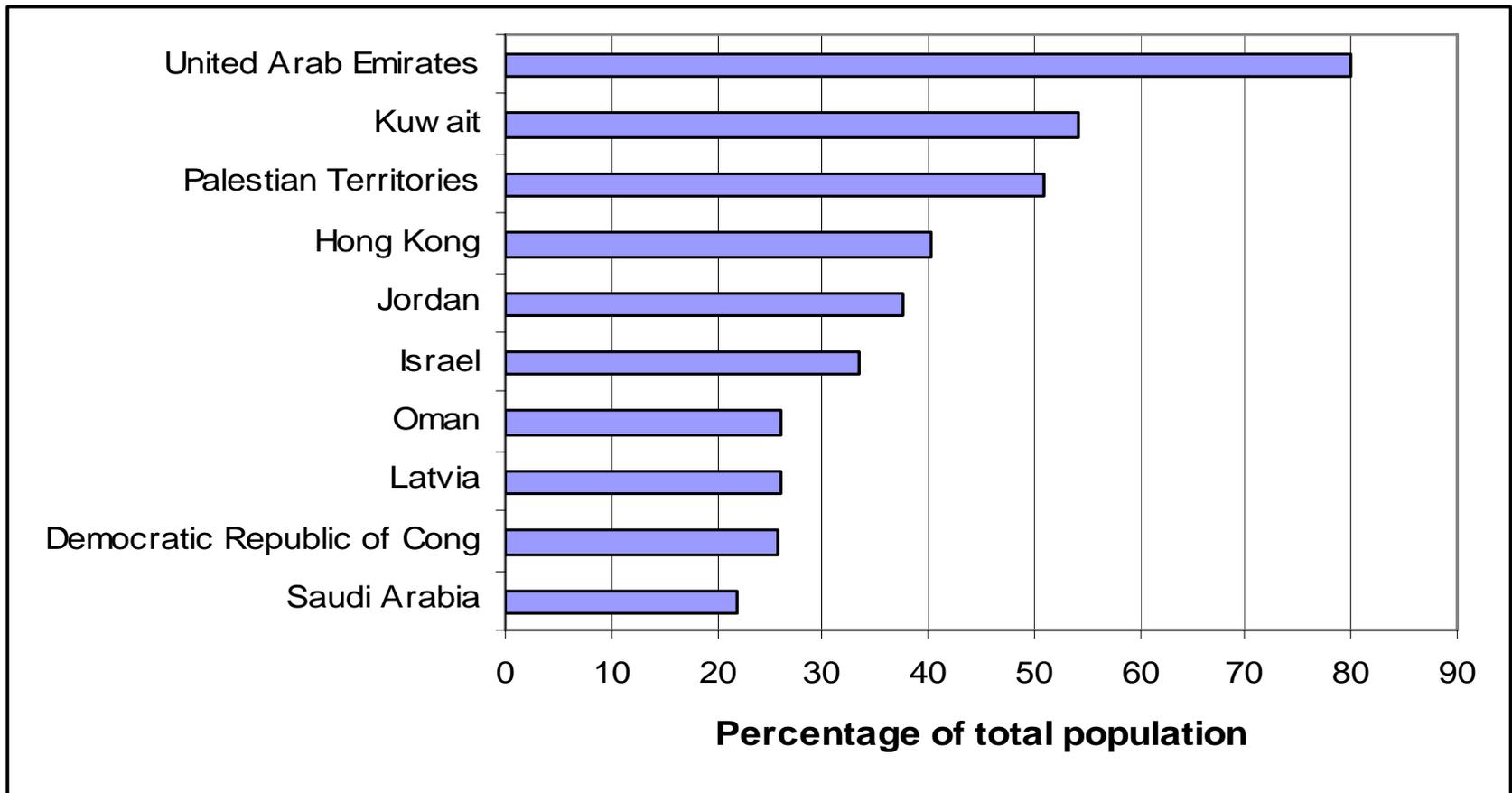


Migrant Population Stocks by Home Country (226 Labor Exporters)



Data Summary

Top ten countries with highest percentage foreign population:



Data Summary

Host Region

Sending Region	Host Region						
	<i>Oceania</i>	<i>Asia</i>	<i>North America</i>	<i>South America</i>	<i>Europe</i>	<i>Africa</i>	
Oceania	14	1	1	0	1	1	
Asia	29	52	26	6	29	27	
North America	3	6	45	5	5	11	
South America	1	2	6	58	3	3	
Europe	48	32	20	30	52	32	
Africa	4	8	3	1	11	25	
Total	100	100	100	100	100	100	

Host Region

Sending Region	Host Region							Total
	Oceania	Asia	North America	South America	Europe	Africa		
Oceania	39	15	20	0	19	7	100	
Asia	2	44	18	0	28	7	100	
North America	1	11	71	1	10	6	100	
South America	1	14	29	28	22	7	100	
Europe	4	25	13	2	47	8	100	
Africa	1	24	8	0	41	25	100	

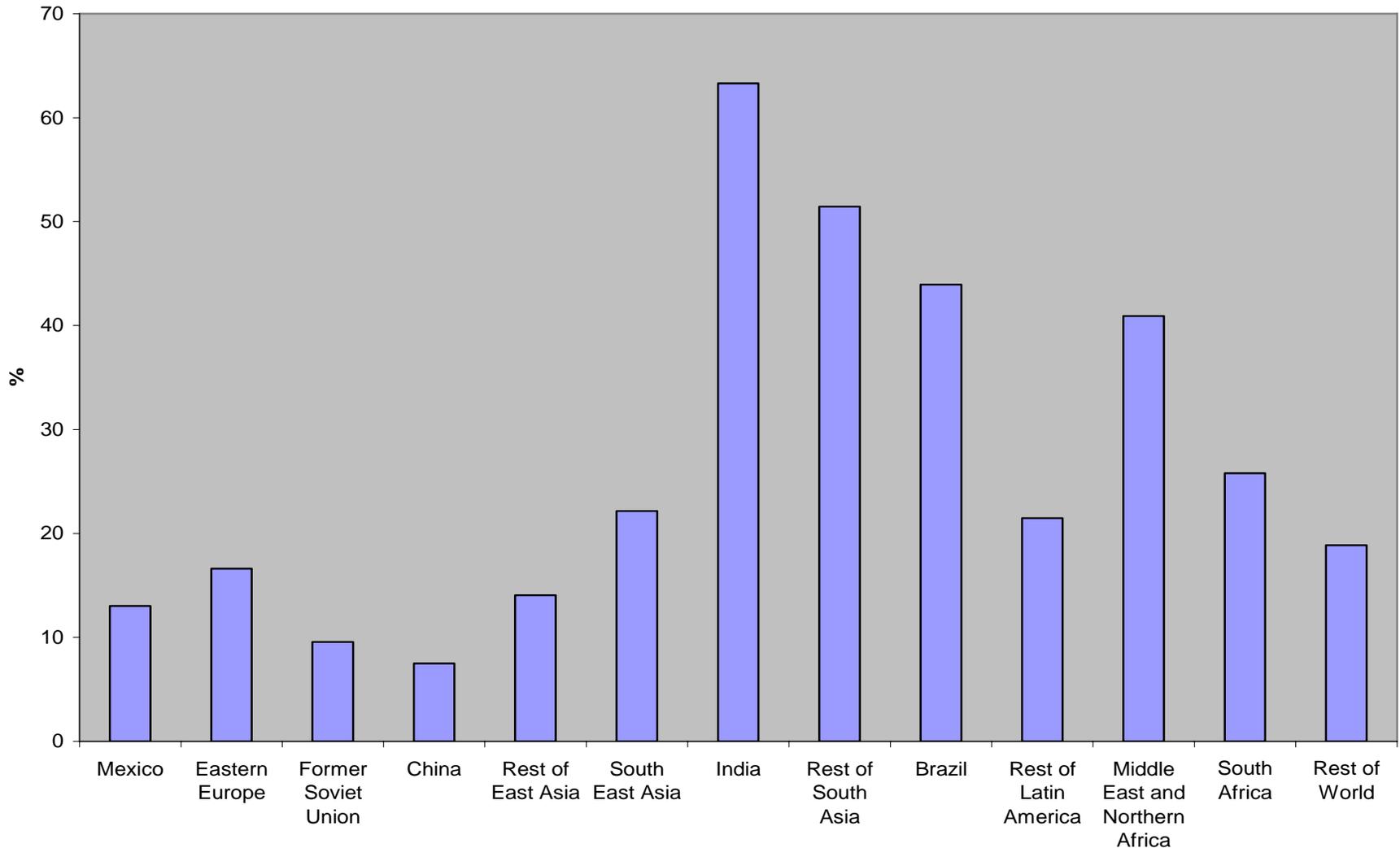
GMig2 Data Base

- **Based on GTAP 6 Data Base**
 - **2001 base year**
 - **87 countries/regions and 57 commodities**
 - **Input-Output tables, Trade, Protection, Taxes and Tariffs**
- **Plus**
 - **Bilateral Migration data by skill**
 - **Bilateral Wages**
 - **Bilateral Remittances**

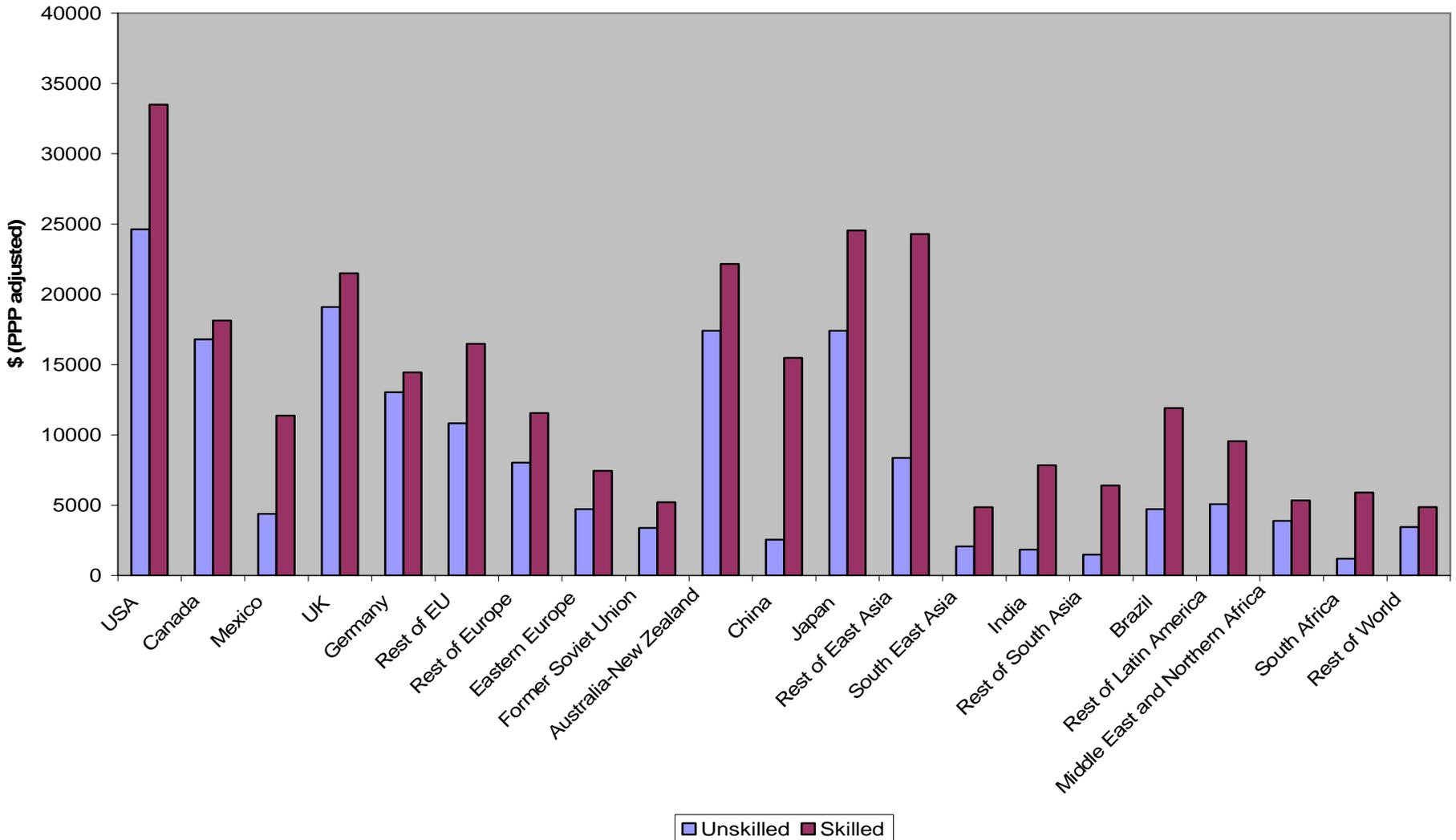
GMig2 Data Base

- **Bilateral Migration data**
 - Parsons, Skeldon, Walmsley and Winters - populations
 - Population to Labour Force
 - assume that participation rates are the same as their home region, hence migrants came with their families.
 - Skill splits
 - Used splits provided by Docquier from World Bank.
- **Wages**
 - Wages of migrants depends on home wage plus proportion of difference between wages in the host and home regions. E.g. if labor earns \$5 at home and \$10 abroad, then a migrant will earn \$8.75 ($5 + 0.75 \times (10-5)$) abroad
- **Remittances**
 - Total 'remittances in' obtained from Ratha (World Bank). Equal to 'remittances in' plus worker's compensation from IMF.
 - Bilateralized remittances using constant remittances to wage ratio Remittances rates: 7% (China) to 65% (India).

Remittance Rates



Real Wages (US\$)



Key Features of GMig2 Model

- **Based on GTAP Model**
 - Comparative static applied general equilibrium model
 - Regional household allocates income across Consumption, Government and Saving
 - Perfect competition
 - Trade and Armington specification
 - Transport margins and global bank
 - Welfare and welfare decomposition
- **Labor force is made up of domestic and foreign workers.**
- **Foreign workers have different wages and productivities to domestic workers**
- **Remittances constant share of income add to income of home region**

Research

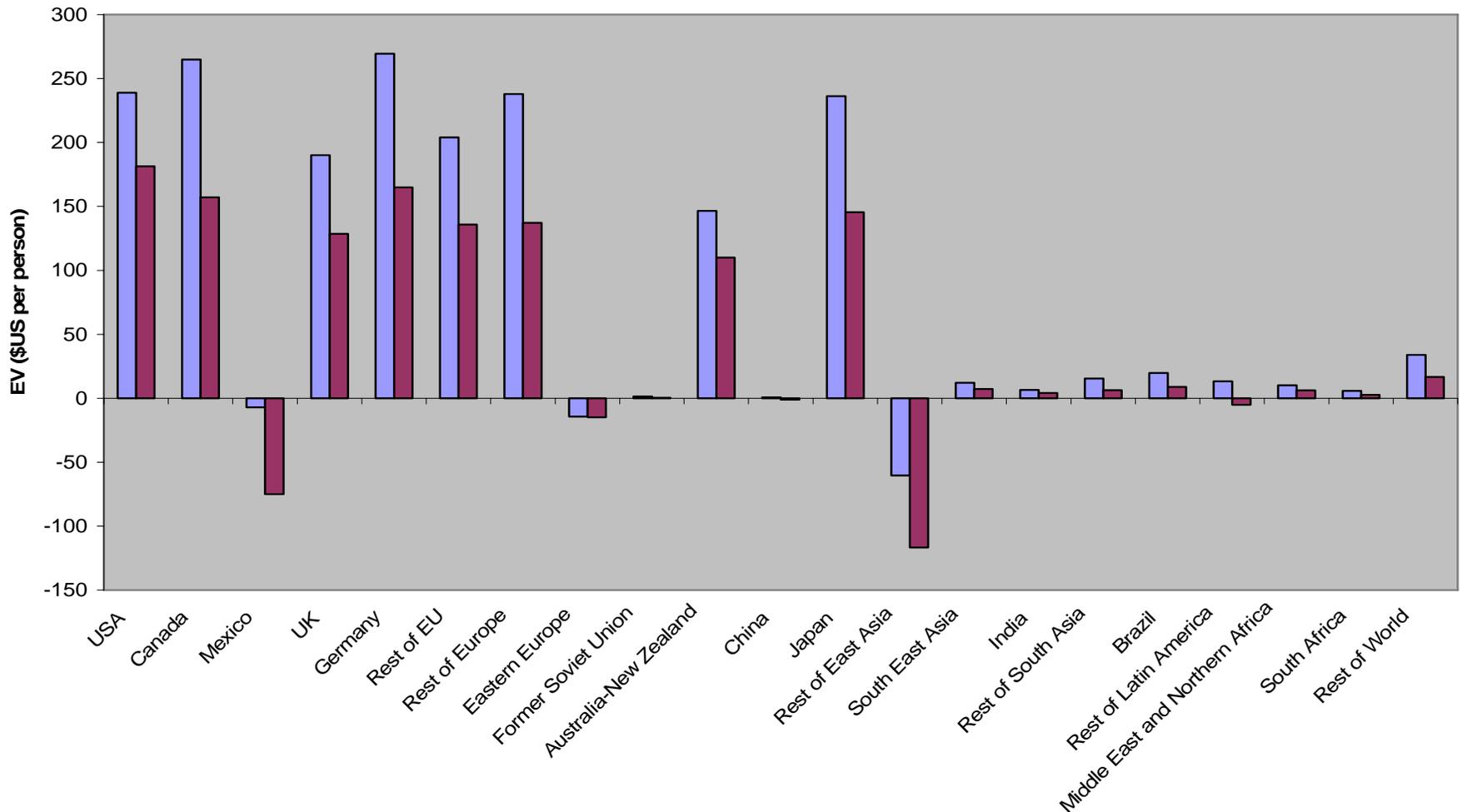
https://www.gtap.agecon.purdue.edu/models/labor_migration.asp

- **"Measuring the Impact of the Movement of Labour Using a Model of Bilateral Migration Flows"**
 - Walmsley, Terrie, Alan Winters, Syud Amer Ahmed and Christopher Parsons
- **"The Impact of Liberalizing Labor Mobility in the Pacific Region"**
 - Walmsley, Terrie, Syud Amer Ahmed and Christopher Parsons
- **"The Liberalization of Temporary Migration: India's Story"**
 - Syud Amer Ahmed and Walmsley, Terrie

"Measuring the Impact of the Movement of Labour Using a Model of Bilateral Migration Flows"

- Increase in quotas of 3% of the labour force (skilled and unskilled) of developed economies, supplied by developing economies according to shares in data base**

Welfare changes of permanent residents per worker (\$US)



Changes in real income of new Migrants per migrant (\$US) (net of remittances)

	USA		UK	
	Skilled	Unskilled	Skilled	Unskilled
Mexico	15,039	14,903	5,778	10,715
Eastern Europe	16,363	12,825	8,073	9,365
China	11,873	17,820	3,717	14,573
Rest of East Asia	-673	9,739	-9,778	5,713
India	2,886	6,154	-1,027	4,358
South Africa	15,207	14,870	7,587	11,544

“The Liberalization of Temporary Migration: India’s Story”

- **Increase movement of Labor from India to labor importing regions**
- **Include return Migration**
- **Examine impact of Brain drain, remittances and Brain Gain**

“The Liberalization of Temporary Migration: India’s Story”

	10% Return Migration	20% Return Migration
Remittances	87,356.18	87,356.18
Brain Drain	-9,272.20	-9,272.20
Brain Gain		
(Non-Movers)	138.09	471.03
(Return Migrants)	1,341.87	2,680.81
(Total)	1,479.96	3,151.84

https://www.gtap.agecon.purdue.edu/models/labor_migration.asp