“Where on Earth is Everybody? Deciphering the Development Impact of Migration from Microdata

Prepared for:
The Changing Face of Global Mobility:
Celebrating 10 years of the International Migration Institute

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World Bank

January 2016

I. MIGRANTS EVERYWHERE

Barcelona vs. Juventus

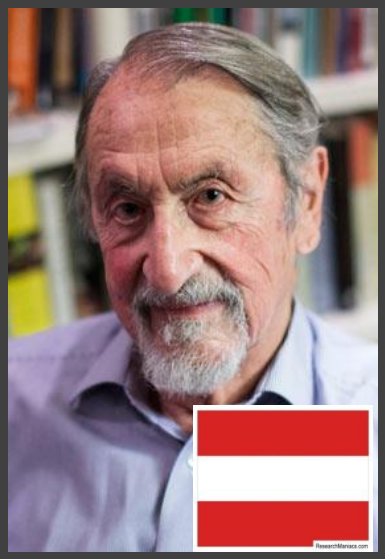
UEFA Champions League
Final
June 6, 2015, Berlin

I. MIGRANTS EVERYWHERE

Côte d'Ivoire
World Cup Champion ☺
2018

I. MIGRANTS EVERYWHERE

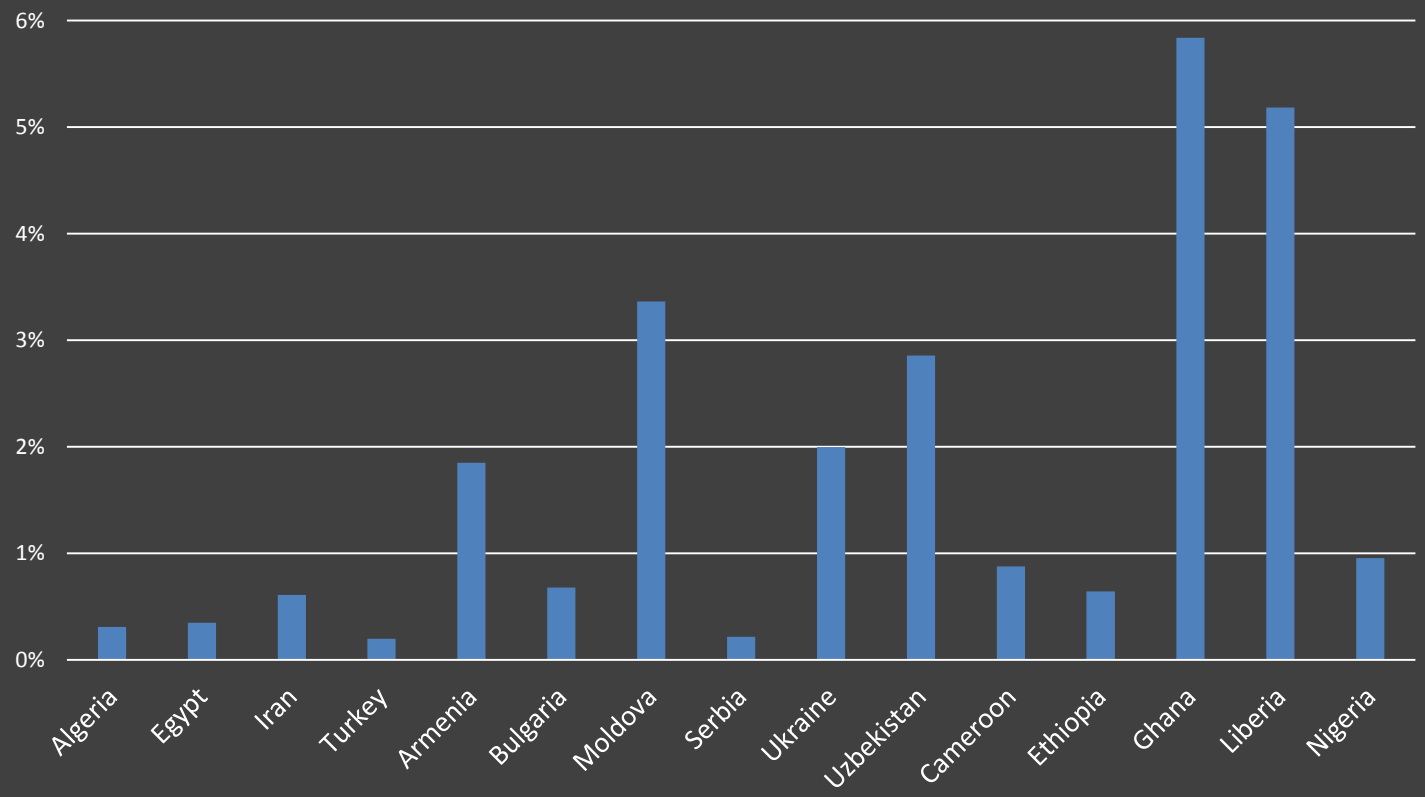
2012-15
Academy Awards
for
Best Director



2013
Nobel Prize
in
Chemistry

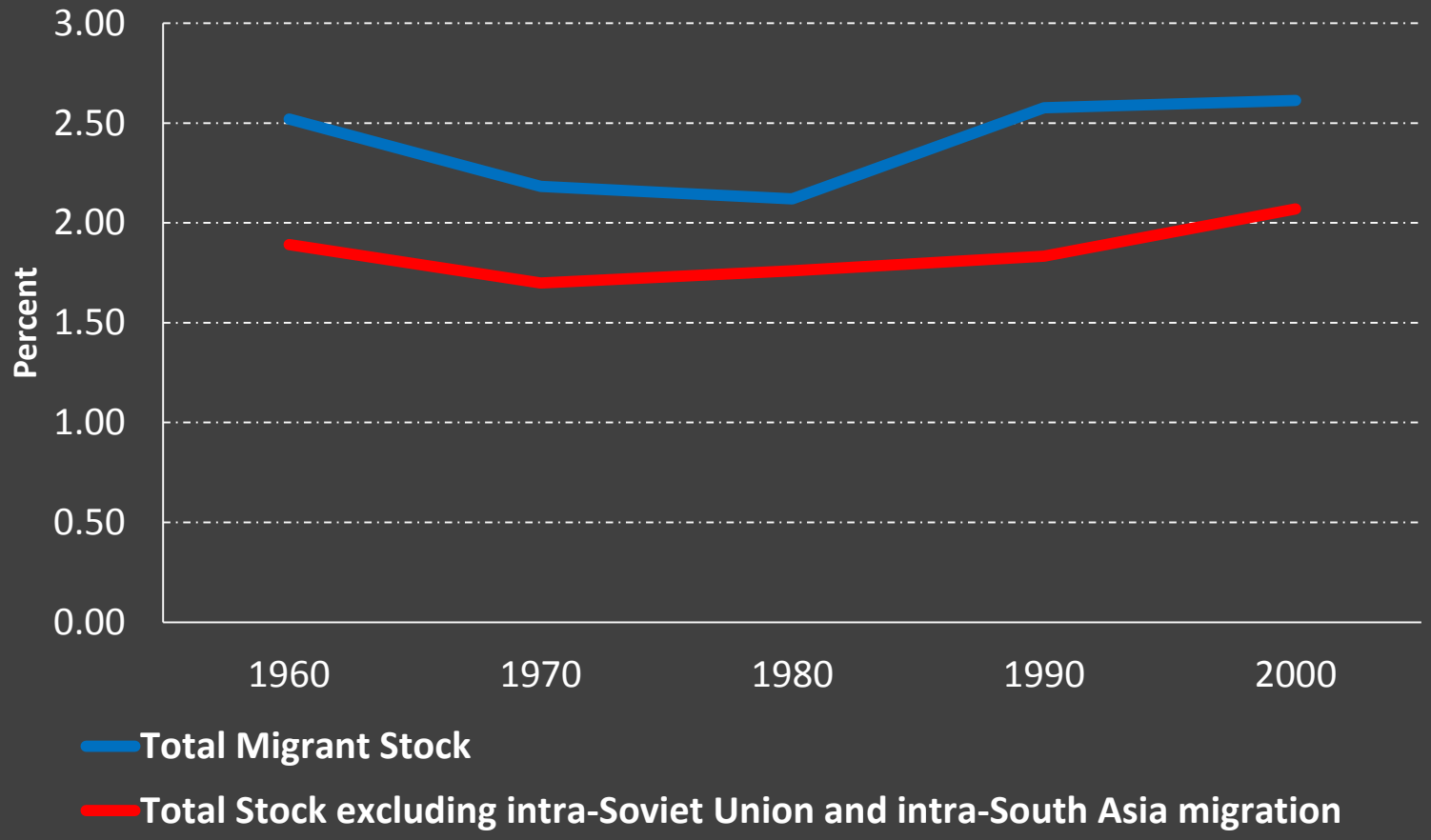
I. MIGRANTS EVERYWHERE – NOT REALLY !!!

Share of the Population Applying for the US Diversity Visa 2015 (%)



I. MIGRANTS EVERYWHERE – NOT REALLY !!!

The World Migrant Stock as a Share of World Population



GLOBAL MIGRATION PATTERNS

“In God we trust, all others must bring data”

Edward W. Deming

I. GLOBAL BILATERAL MIGRATION DATABASES

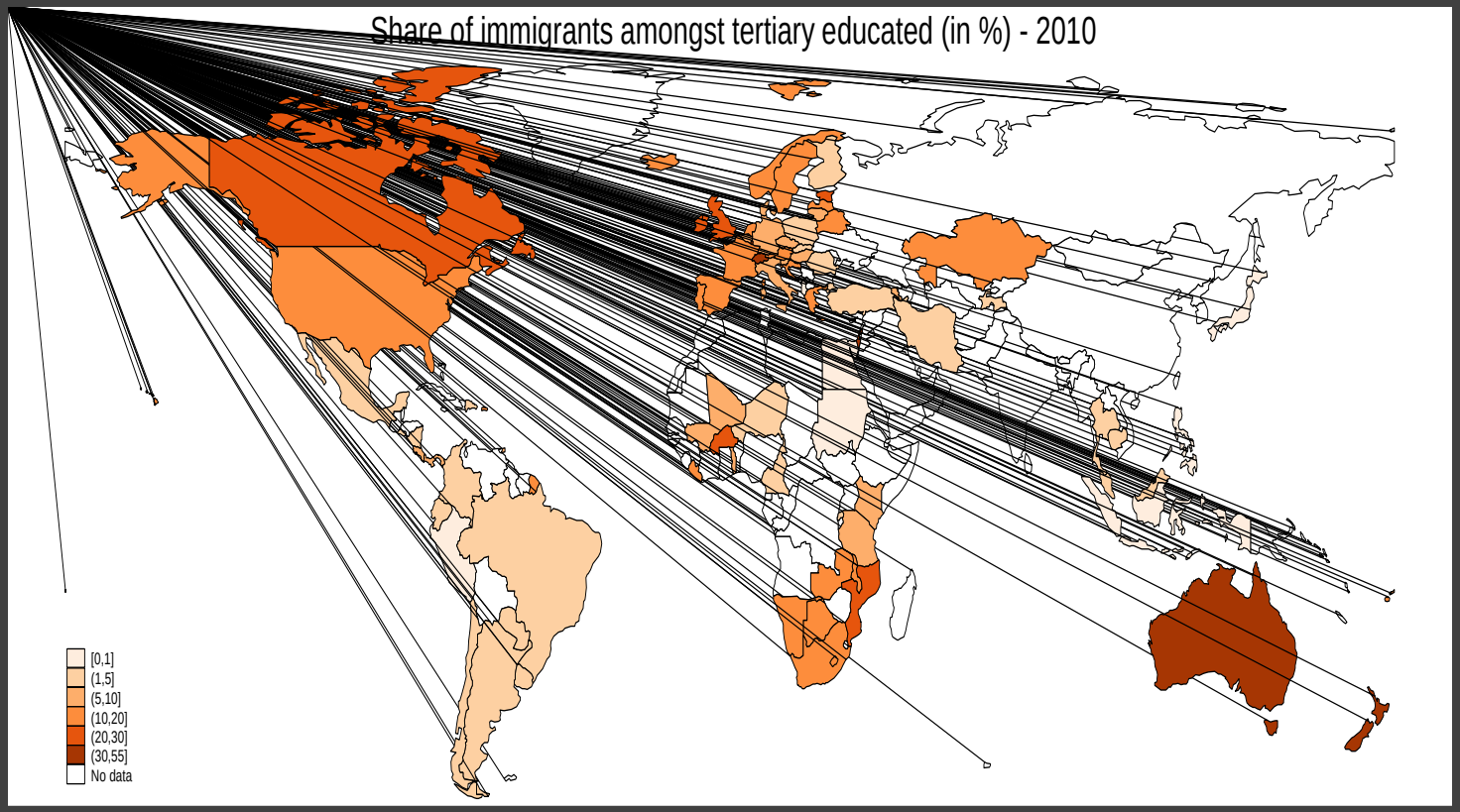
CENSUS BASED DATA

Main Challenges

A. How to define countries consistently– Soviet Union !
B. Origin regions in censuses are not standard – South Asia, Ex-French Africa
C. Non-harmonized census dates
D. Definition of a migrant – place of birth vs nationality
E. Very few other economic, social indicators in the data
F. MISSING CENSUS ROUNDS!

I. GLOBAL BILATERAL MIGRATION DATABASES

Immigrant Population as fraction of Destination Country Population



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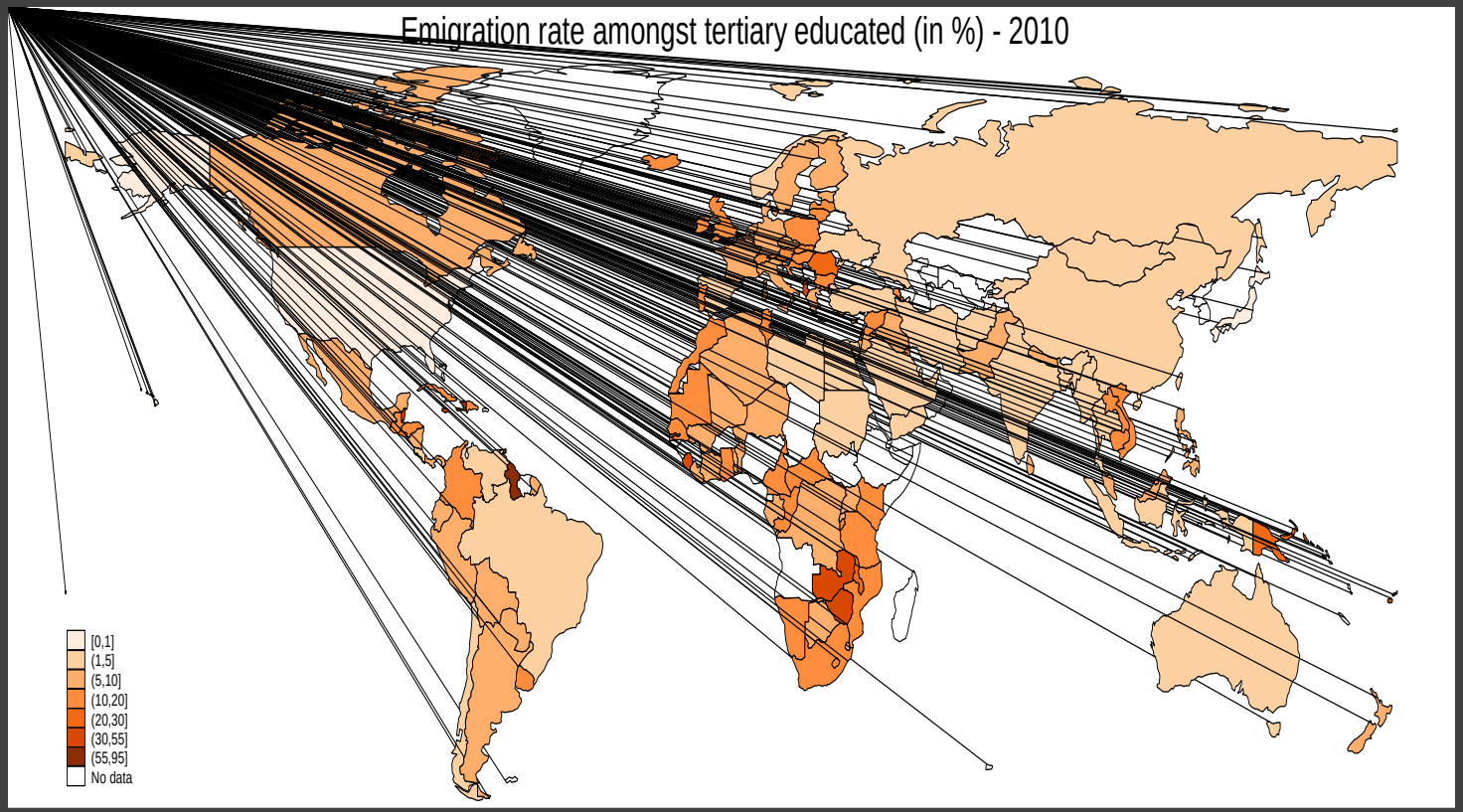
Emigrant Population as fraction of Origin Country Population



I. GLOBAL SKILLED MIGRATION DATABASES

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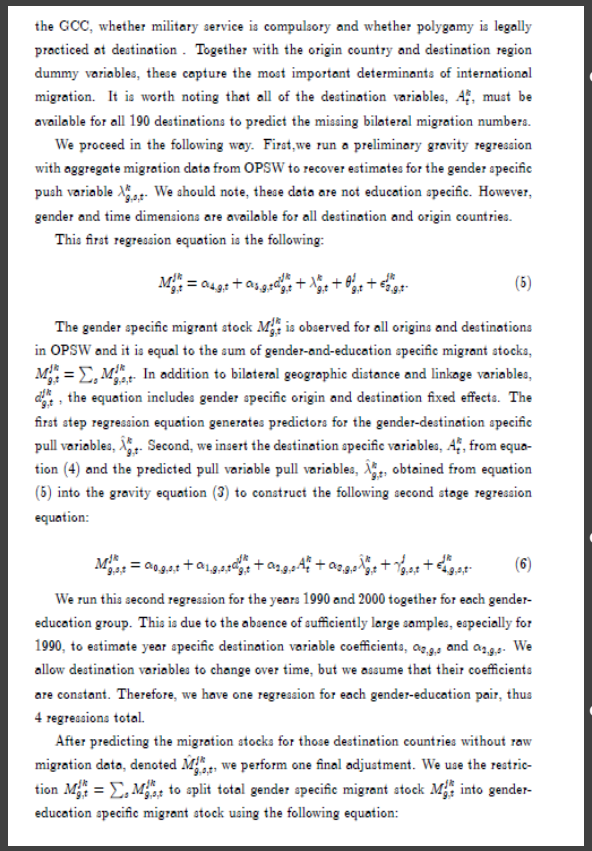
Estimation methods allow us to:



the GCC, whether military service is compulsory and whether polygamy is legally practiced at destination . Together with the origin country and destination region dummy variables, these capture the most important determinants of international migration. It is worth noting that all of the destination variables, A_t^s, must be available for all 190 destinations to predict the missing bilateral migration numbers.

We proceed in the following way. First,we run a preliminary gravity regression with aggregate migration data from OPSW to recover estimates for the gender specific push variable $\lambda_{g,o,t}^s$. We should note, these data are not education specific. However, gender and time dimensions are available for all destination and origin countries.

This first regression equation is the following:

$$M_{g,t}^{ls} = \alpha_{4,g,t} + \alpha_{5,g,t} d_{g,t}^{ls} + \lambda_{g,t}^s + \theta_{g,t}^l + \epsilon_{2,g,t}^{ls}. \quad (5)$$

The gender specific migrant stock $M_{g,t}^{ls}$ is observed for all origins and destinations in OPSW and it is equal to the sum of gender-and-education specific migrant stocks, $M_{g,t}^{ls} = \sum_o M_{g,o,t}^{ls}$. In addition to bilateral geographic distance and linkage variables, $d_{g,t}^{ls}$, the equation includes gender specific origin and destination fixed effects. The first step regression equation generates predictors for the gender-destination specific pull variables, $\hat{\lambda}_{g,t}^s$. Second, we insert the destination specific variables, A_t^s, from equation (4) and the predicted pull variable pull variables, $\hat{\lambda}_{g,t}^s$, obtained from equation (5) into the gravity equation (3) to construct the following second stage regression equation:

$$M_{g,o,t}^{ls} = \alpha_{6,g,o,t} + \alpha_{1,g,o,t} d_{g,t}^{ls} + \alpha_{2,g,o} A_t^s + \alpha_{2,g,o} \hat{\lambda}_{g,t}^s + \gamma_{g,o,t}^l + \epsilon_{4,g,o,t}^{ls}. \quad (6)$$

We run this second regression for the years 1990 and 2000 together for each gender-education group. This is due to the absence of sufficiently large samples, especially for 1990, to estimate year specific destination variable coefficients, $\alpha_{2,g,o}$ and $\alpha_{2,g,o}$. We allow destination variables to change over time, but we assume that their coefficients are constant. Therefore, we have one regression for each gender-education pair, thus 4 regressions total.

After predicting the migration stocks for those destination countries without raw migration data, denoted $\hat{M}_{g,o,t}^{ls}$, we perform one final adjustment. We use the restriction $M_{g,t}^{ls} = \sum_o M_{g,o,t}^{ls}$ to split total gender specific migrant stock $M_{g,t}^{ls}$ into gender-education specific migrant stock using the following equation:

- *Identify the importance of different gravity variables*

  Distance
  Border
  Language
  Colonial links
  Diaspora

- *Determine how these variables change over time, by skill level and gender*

- *Predict the migration levels for missing corridors and construct a full global migration matrix*

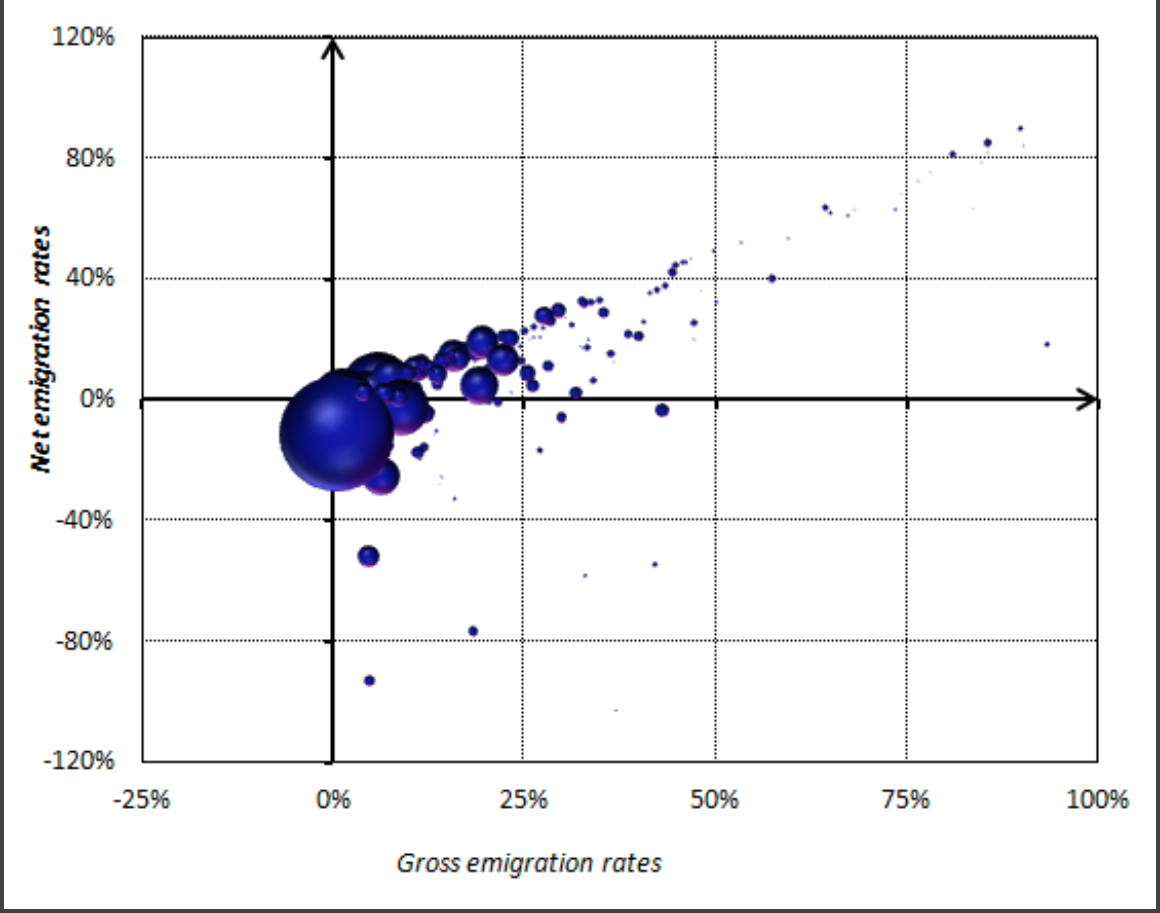
I. GLOBAL SKILLED MIGRATION DATABASES

Bilateral Statistics

		DESTINATIONS	
		High-income	**Developing**
ORIGINS **High-income**	High-skill (%)	38.2	21.5
	Women (%)	52.6	47.7
	Growth (%)	8.6	12.5
Developing	High-skill (%)	30.5	10.4
	Women (%)	46.8	48.9
	Growth (%)	55.6	7.1

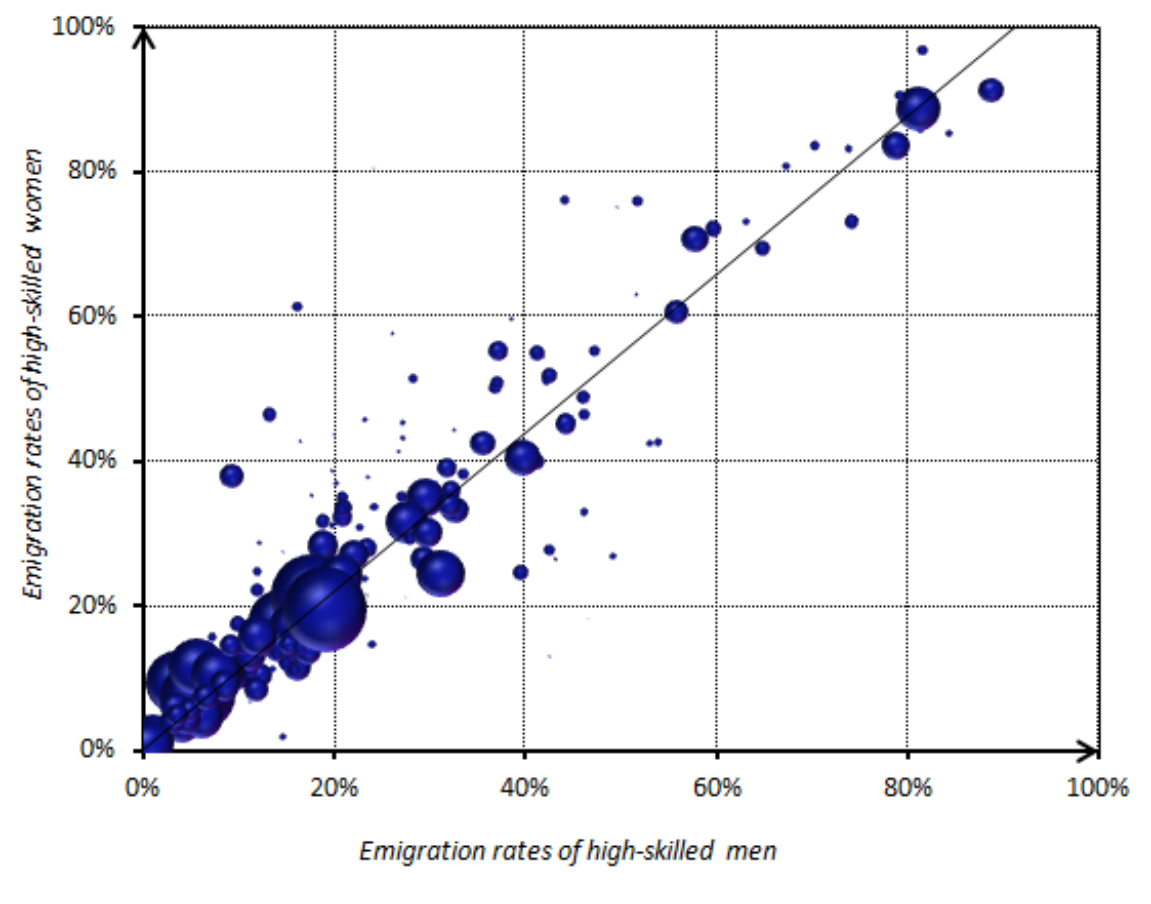
I. GLOBAL BILATERAL MIGRATION DATABASES

Gross versus Net High Skilled Emigration Rates (%)



I. GLOBAL BILATERAL MIGRATION DATABASES

Emigration rates of high-skilled women and men



I. GLOBAL BILATERAL MIGRATION DATABASES

CENSUS BASED DATA

Main Challenges

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II. WHAT IS BRAIN DRAIN?
PLACE OF BIRTH vs. TRAINING

"Who Really is a Foreign Doctor?"
w/ D. Phillips

A. There are NO database that covers individual labor market histories of migrants.
B. Merge administrative (American Medical Association) and Census (American Community Survey) data to identify location of birth, education and age of migration for 320,000 foreign Doctors in the US.

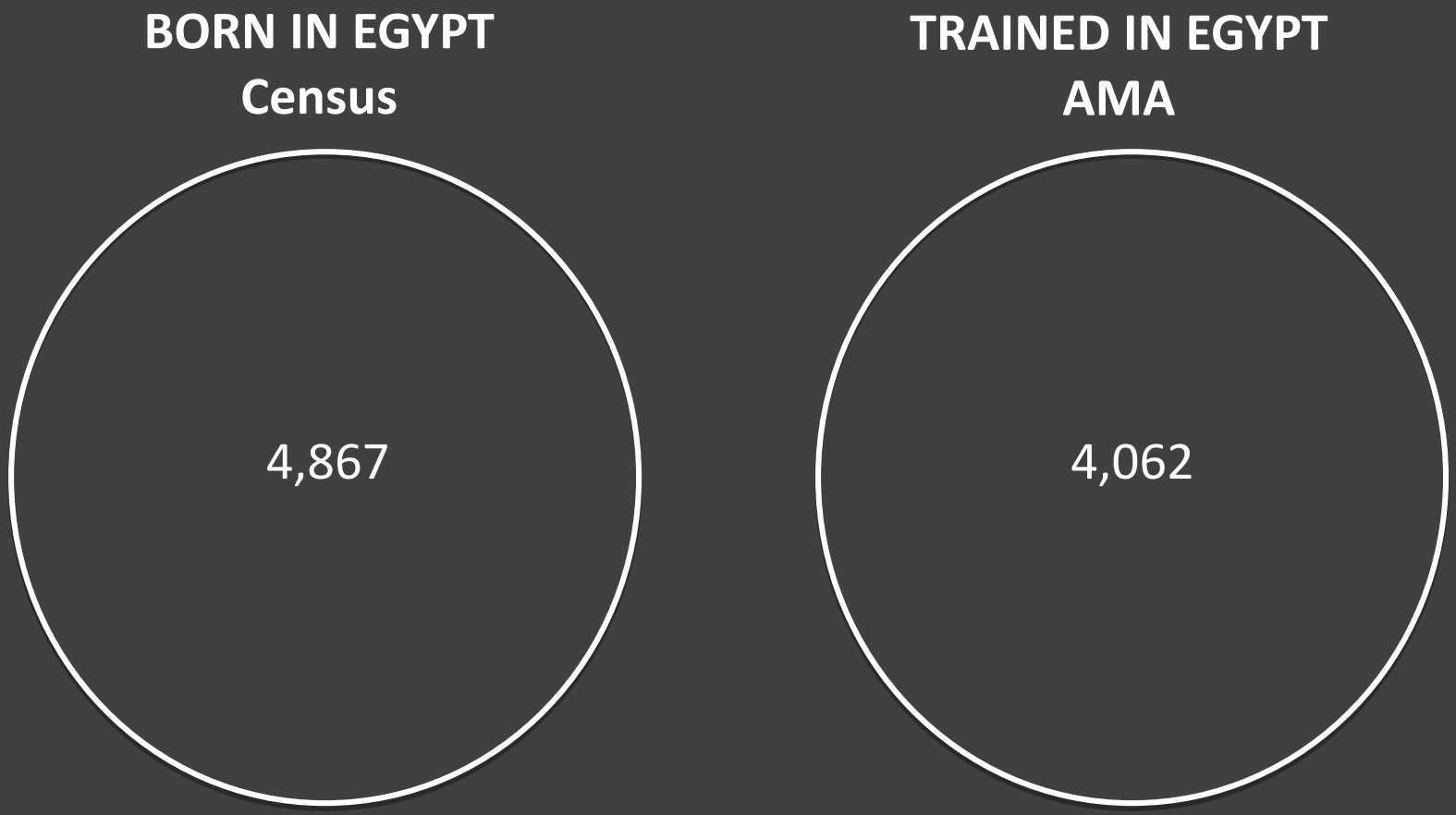
I. PLACE OF BIRTH vs. TRAINING

ADMINISTRATIVE + CENSUS BASED DATA

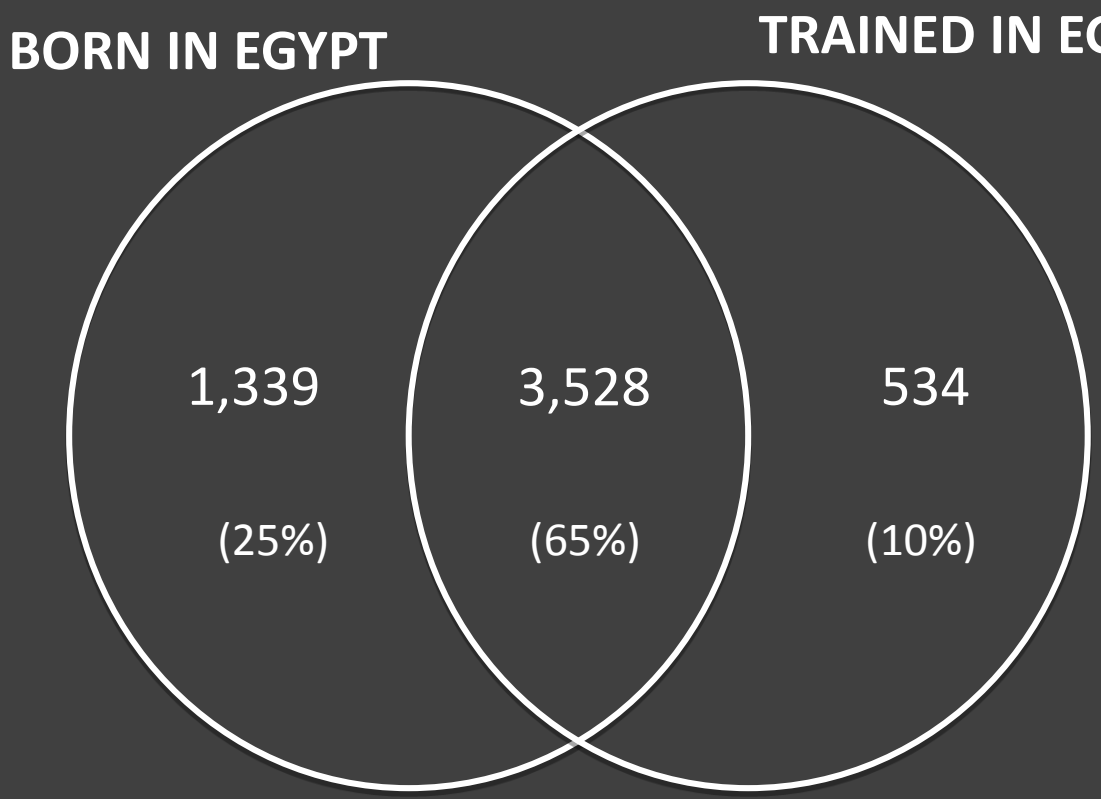
Main Issues

A. Need individual life histories to identify determinants and impact of migration
B. Expensive to collect raw data!
C. Need to merge separate databases – administrative and survey data
D. MISSING DATA!

II. PLACE OF BIRTH vs. TRAINING

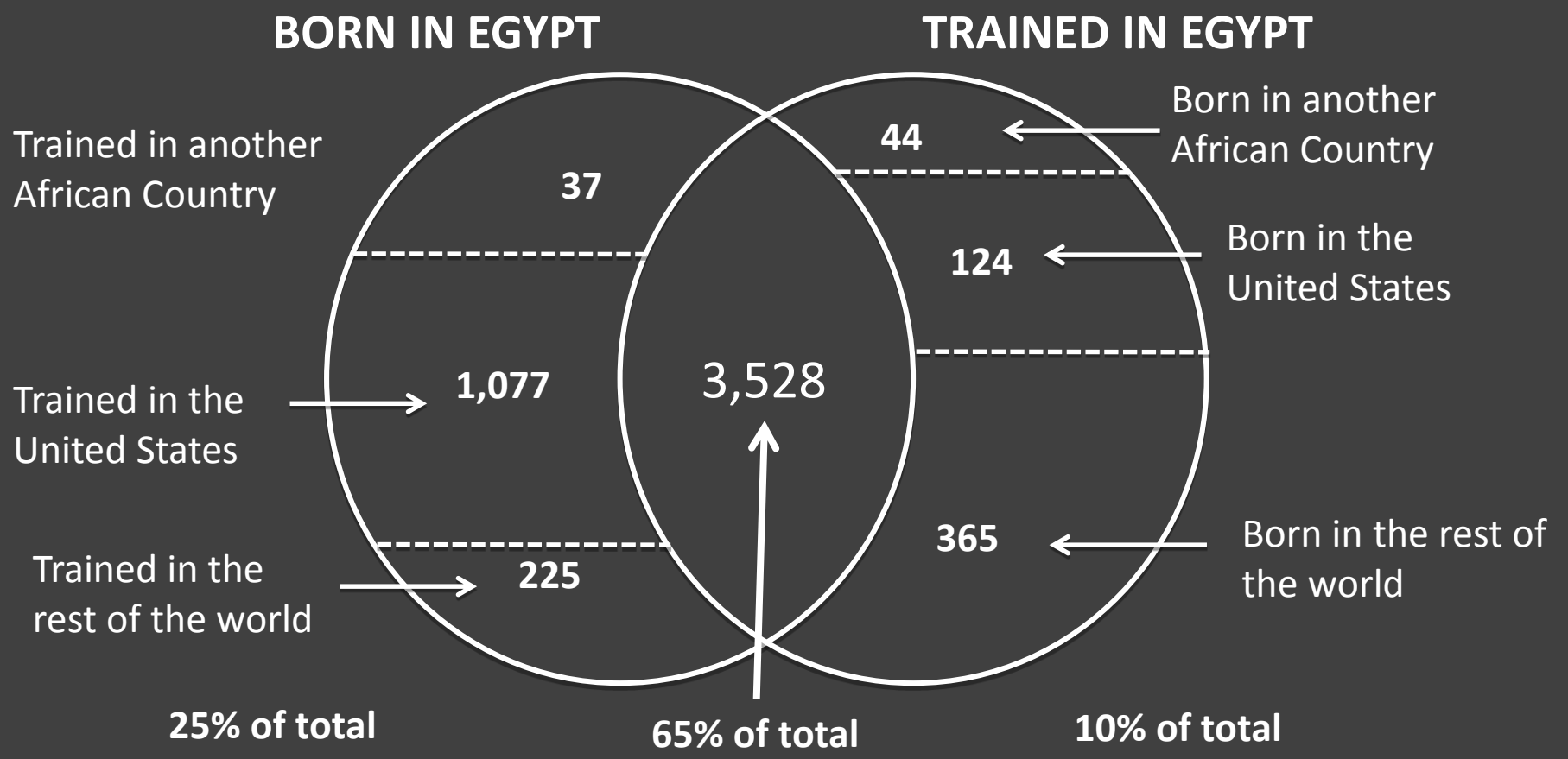


II. PLACE OF BIRTH vs. TRAINING



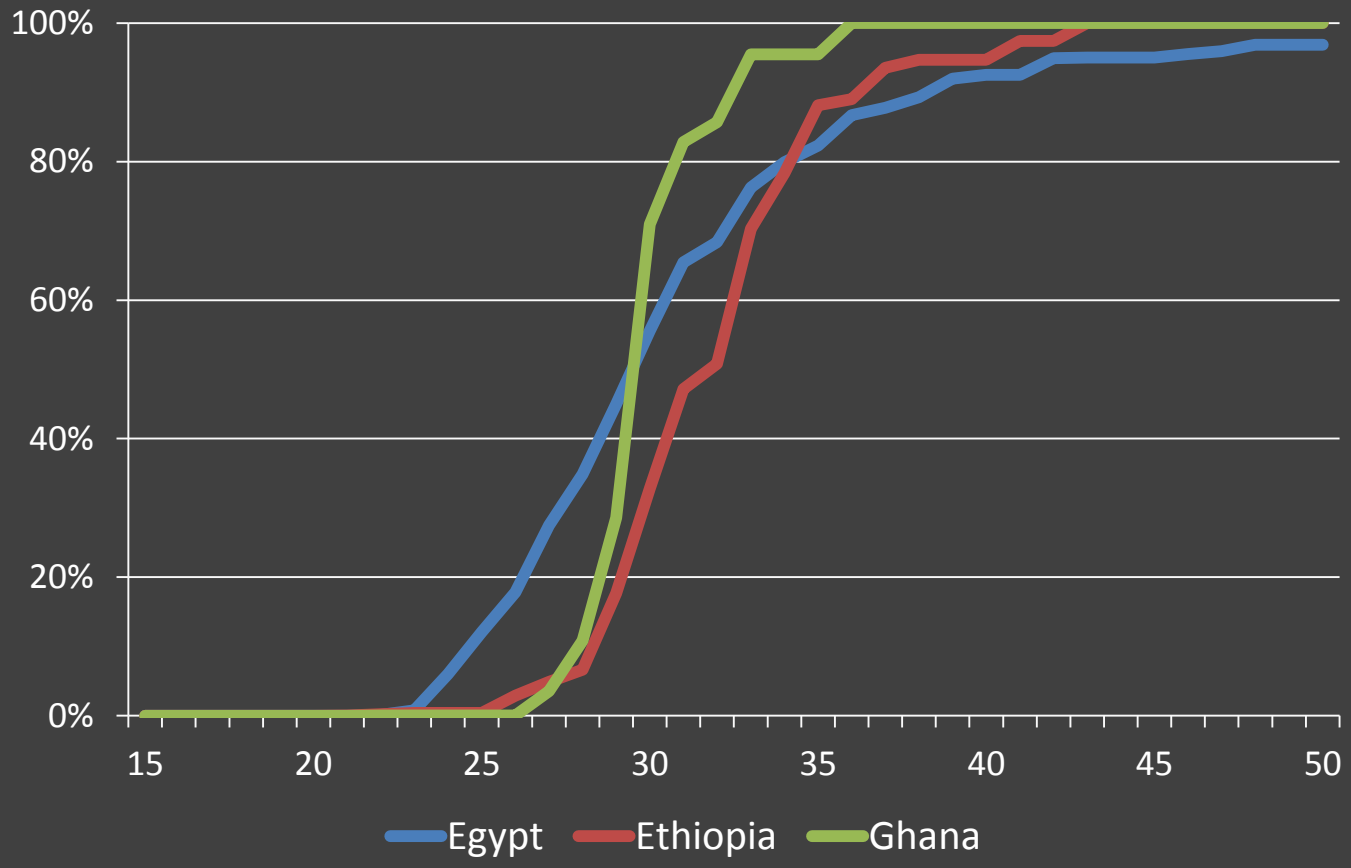
TOTAL NUMBER OF “EGYPTIAN” DOCTORS IN THE US: 5,401

II. PLACE OF BIRTH vs. TRAINING



II. PLACE OF BIRTH vs. TRAINING

Cumulative probability distribution of Age of Migration of doctors trained at home



I. PLACE OF BIRTH vs. TRAINING

ADMINISTRATIVE + CENSUS BASED DATA

Main Issues

A. Need individual life histories to identify determinants and impact of migration
B. Expensive to collect raw data!
C. Need to merge separate databases – administrative and survey data
D. MISSING DATA!

IMPACT OF IMMIGRATION ON LABOR MARKETS IN MIDDLE-INCOME COUNTRIES

III. LABOR MARKET IMPACT OF MIGRATION

"Immigrants versus Natives?
Displacement and Job Creation"
w/ M. Wagner

MAIN FEATURES

A. Detailed labor force data on wages, employment status, sectors of employment, age, location, nationality to control for SELECTION effects!

I. LABOR MARKET IMPACT OF MIGRATION

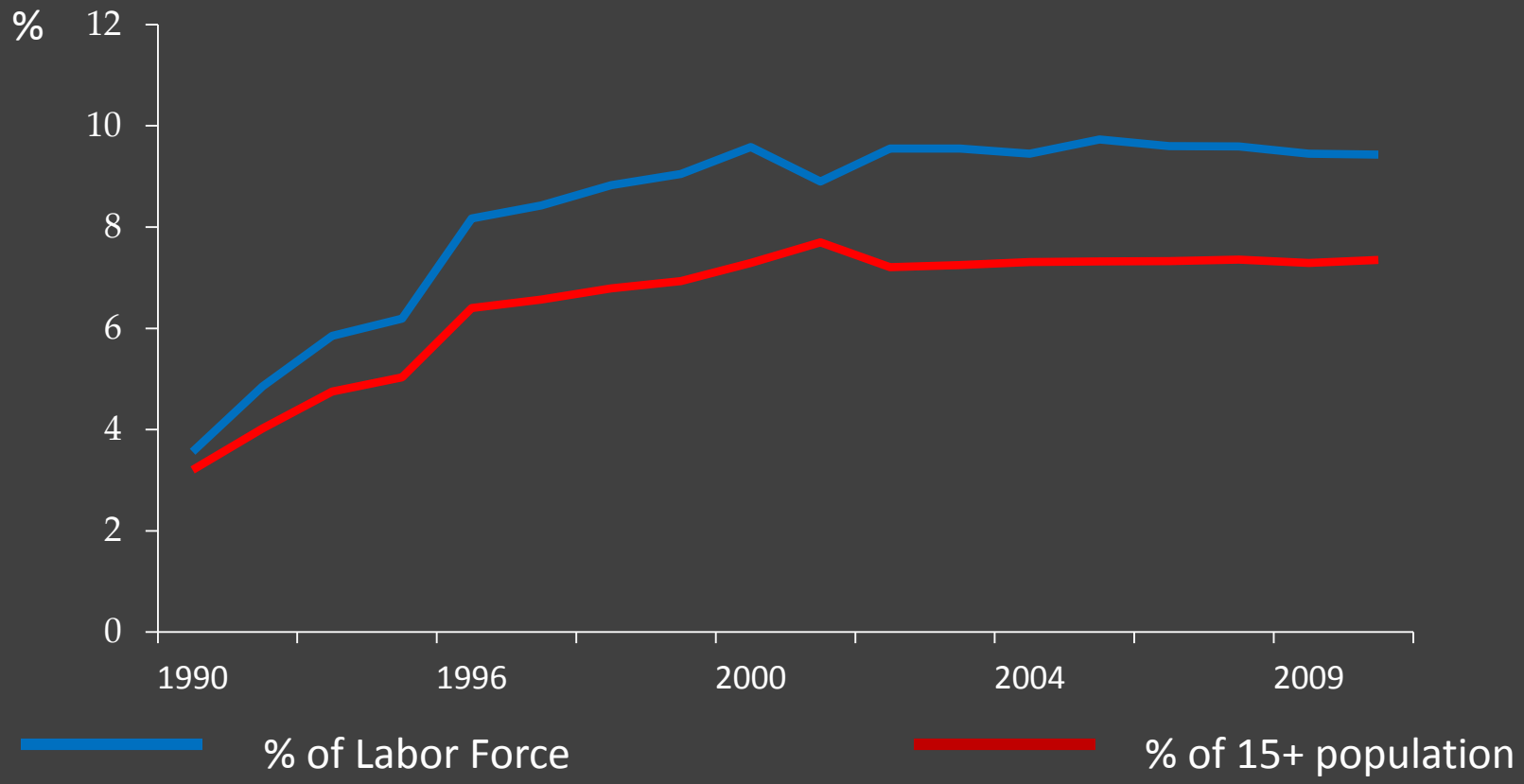
ADMINISTRATIVE + SURVEY BASED DATA

Main Issues

A. Need locally representative data – across geographic units, occupations, sectors, age groups, education levels, nationalities and TIME!
B. Expensive to design appropriate sampling frame and collect data!
C. Availability?
D. MISSING DATA!

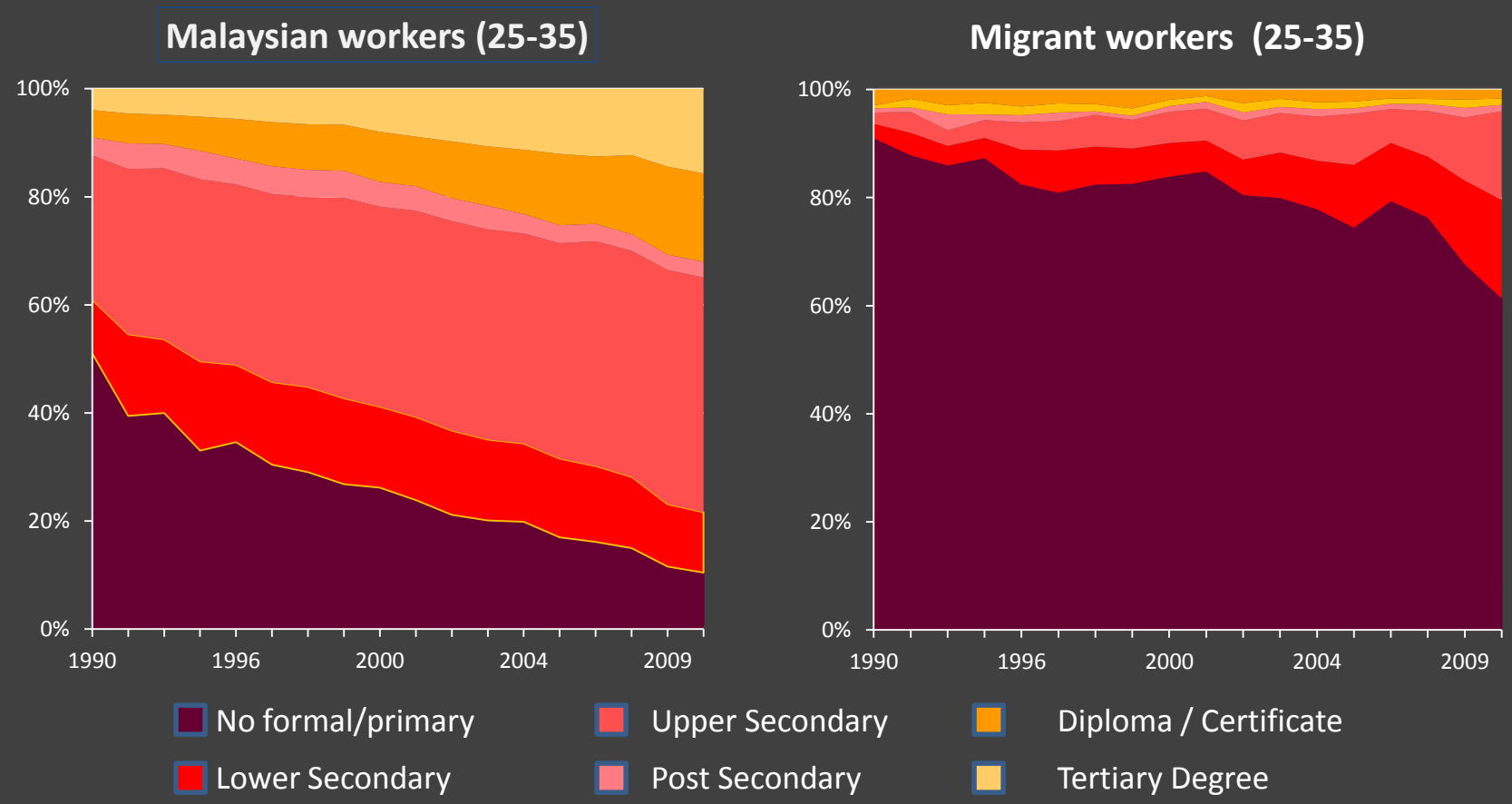
II. LABOR MARKET IMPACT

MALAYSIA
Migrant Workers as a Share of Labor Force



II. LABOR MARKET IMPACT

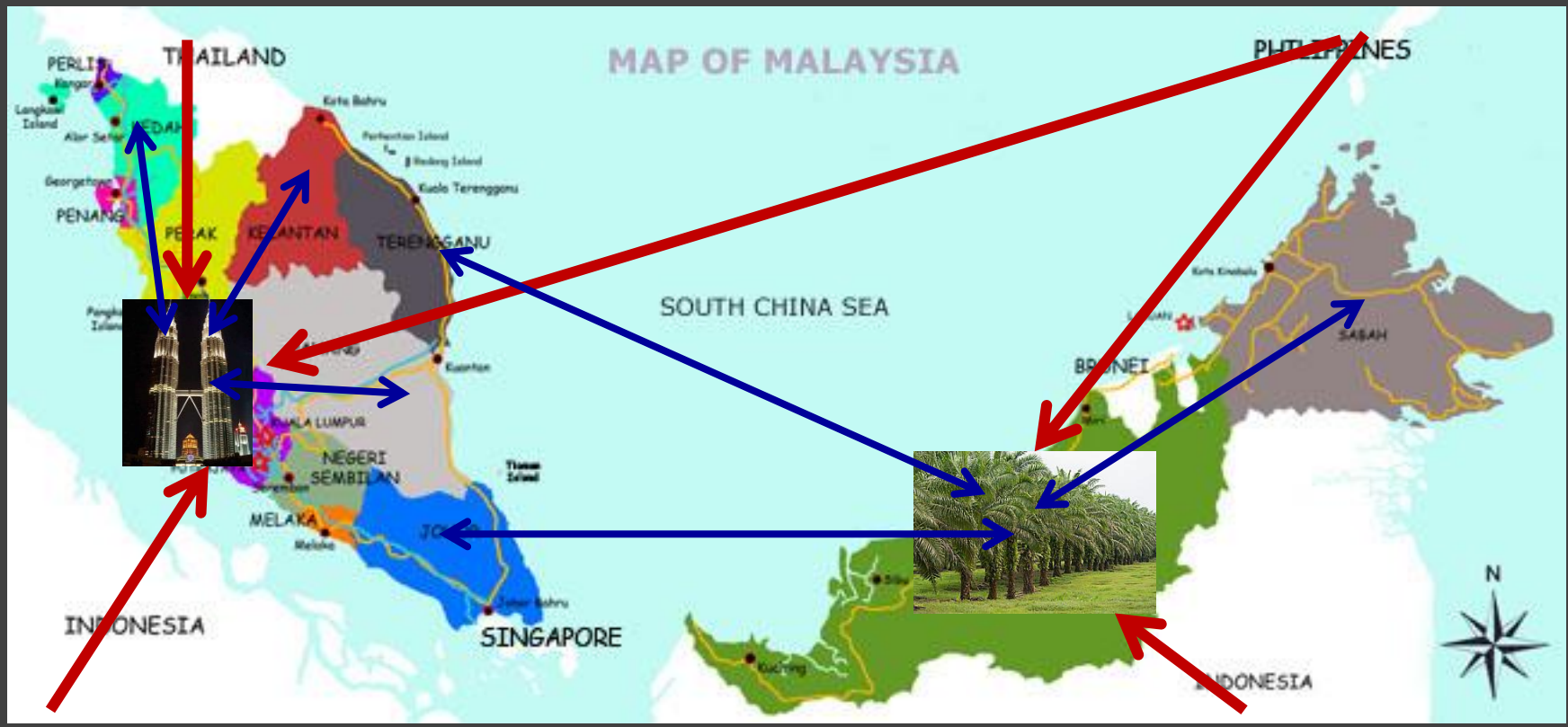
MALAYSIA
Education Distribution



Source: Malaysian Labor Force Surveys, 1990-2010,
Del Carpio, Ozden, Testaverde, Wagner (2013)

II. LABOR MARKET IMPACT

Endogenous Location Choices



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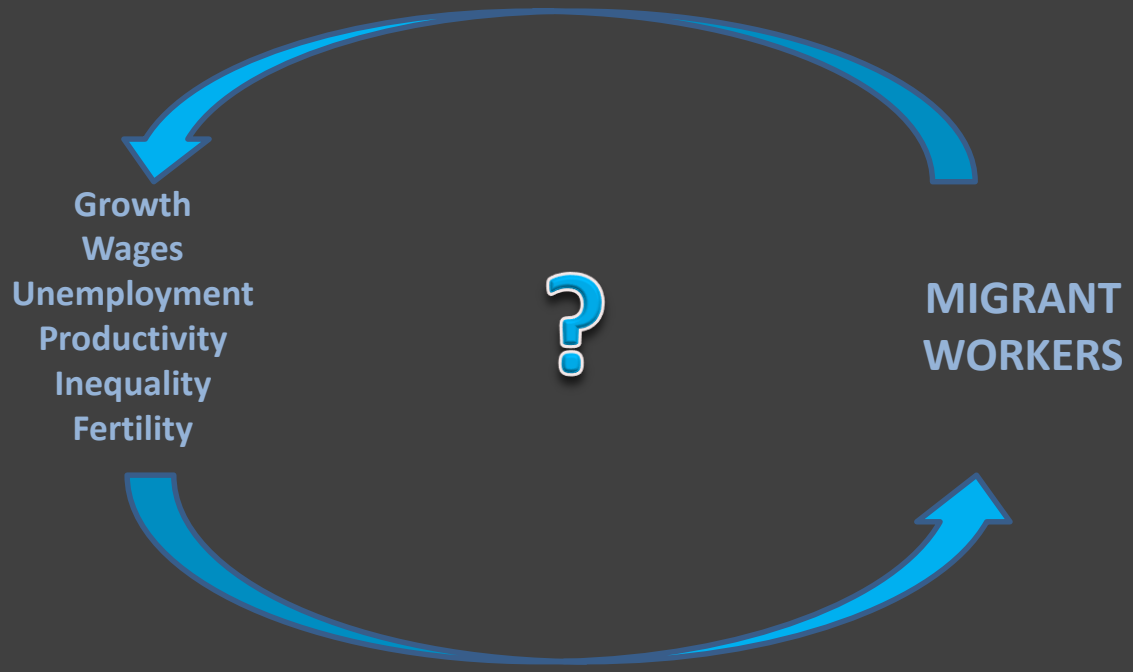
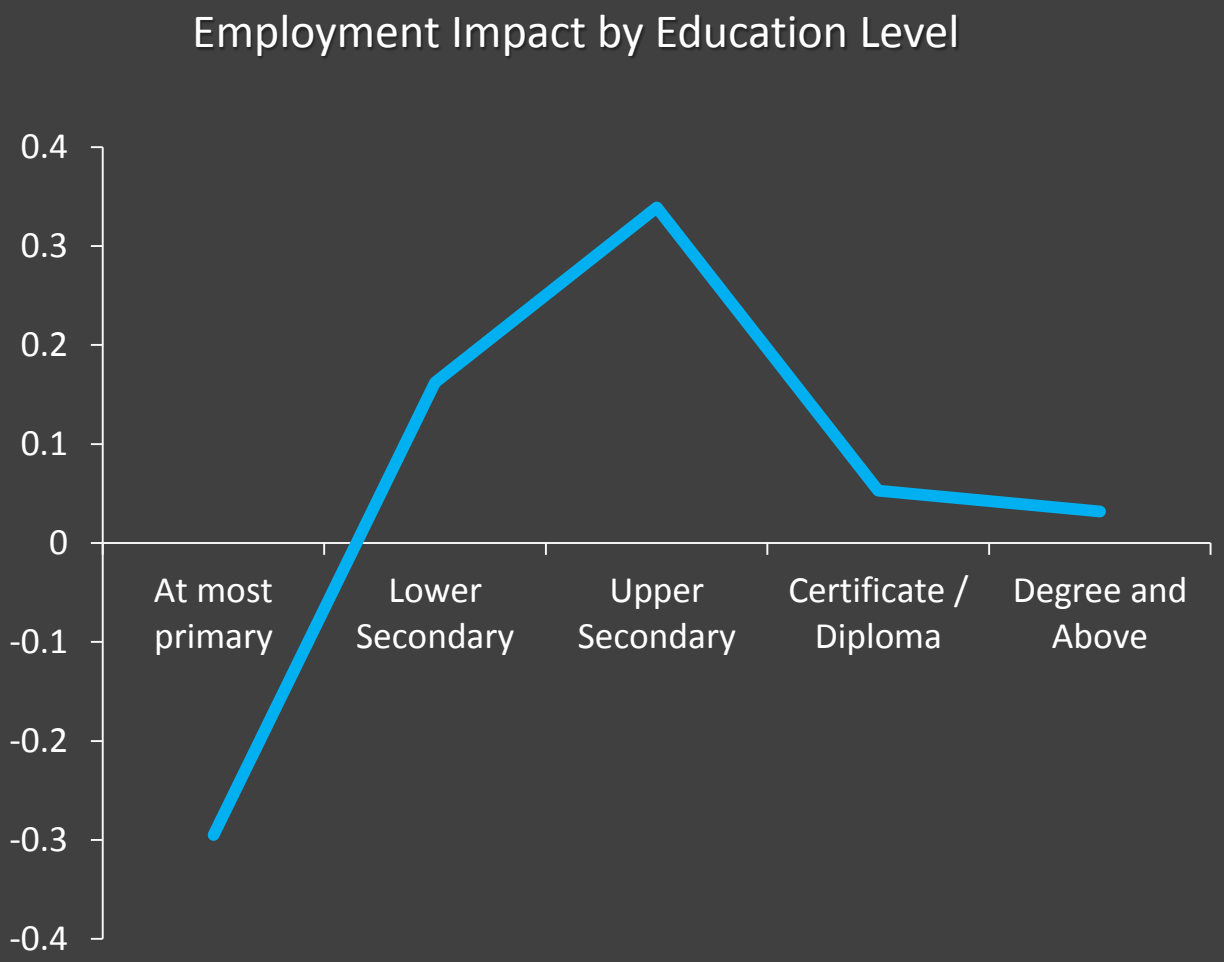
Endogenous Location Choices

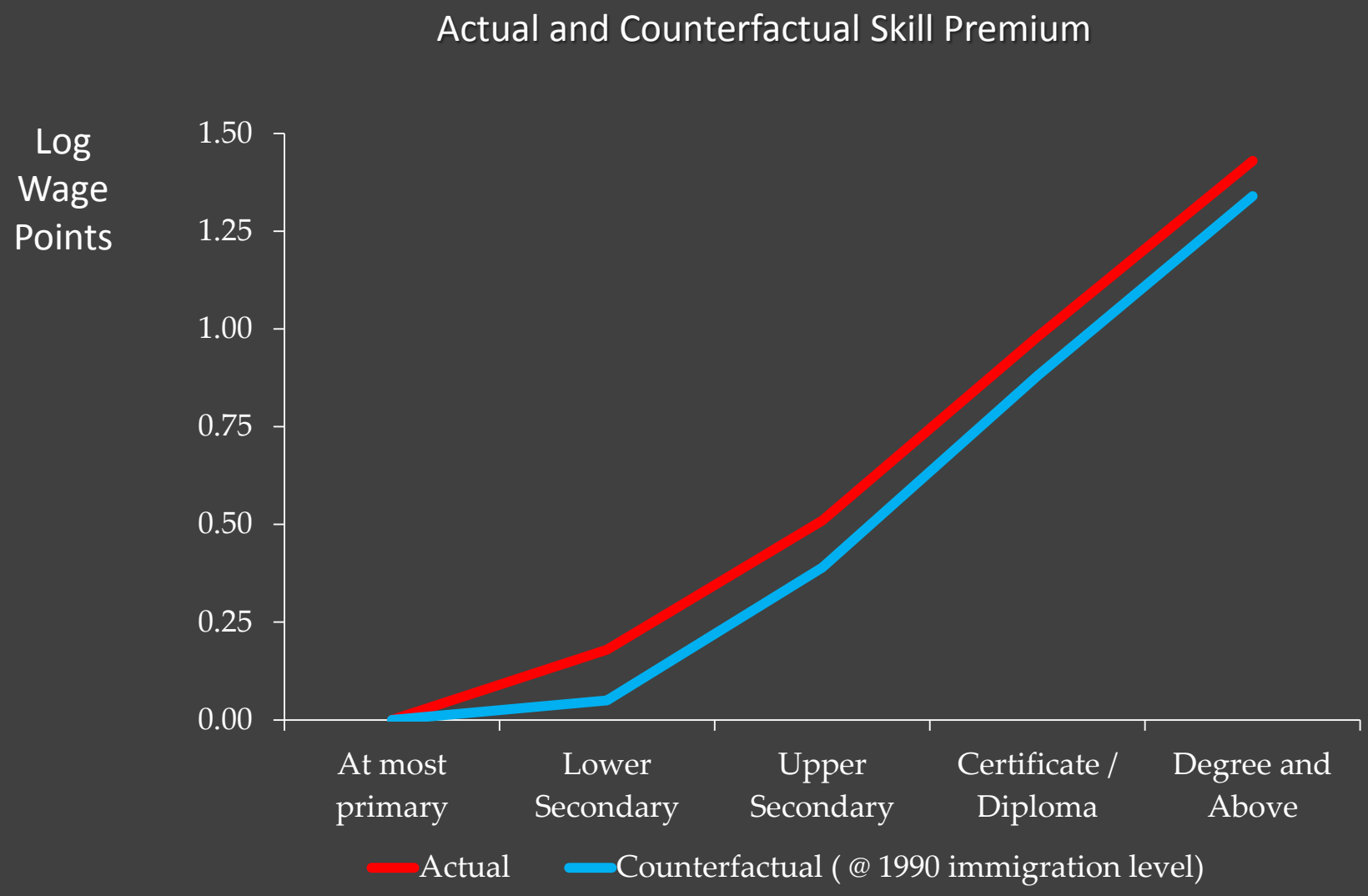


Substitution versus Scale Effects in Labor Markets

II. LABOR MARKET IMPACT



II. LABOR MARKET IMPACT

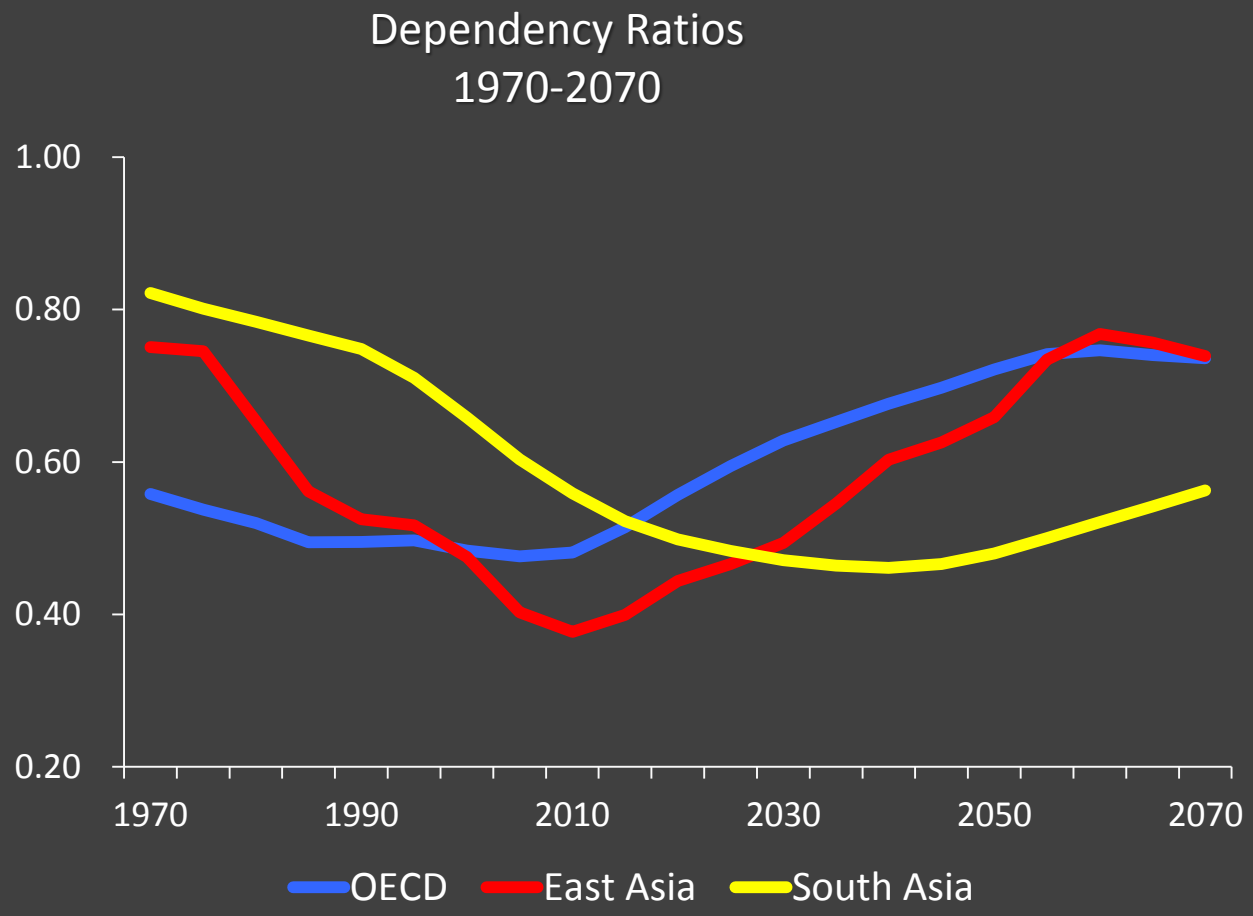


“EXCITING” NEW ISSUES

I. AG(E)ING
THE OTHER PATH TO EXTINCTION?

A. Can mobility solve global demographic imbalances?

I. AG(E)ING
THE OTHER PATH TO EXTINCTION?



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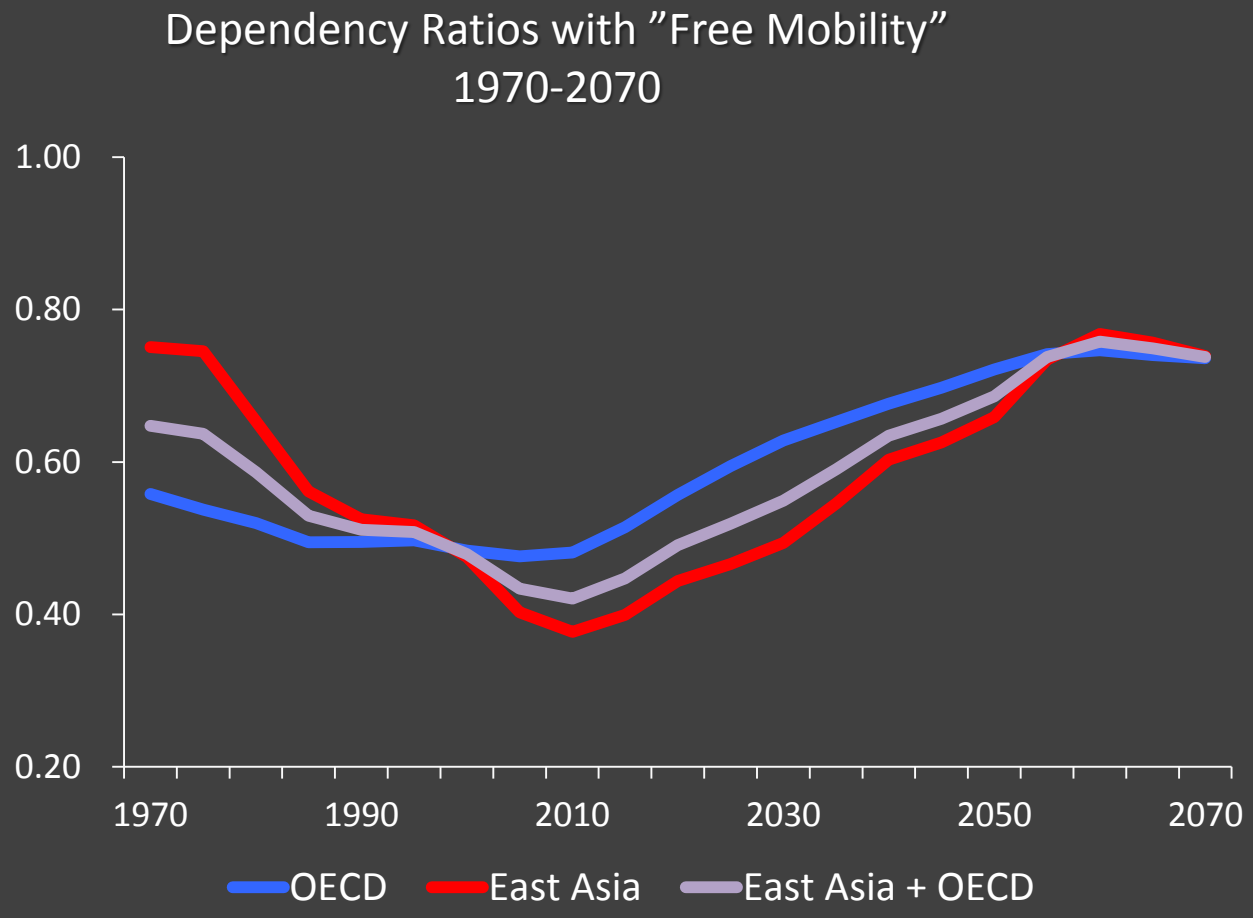
THE OTHER PATH TO EXTINCTION?



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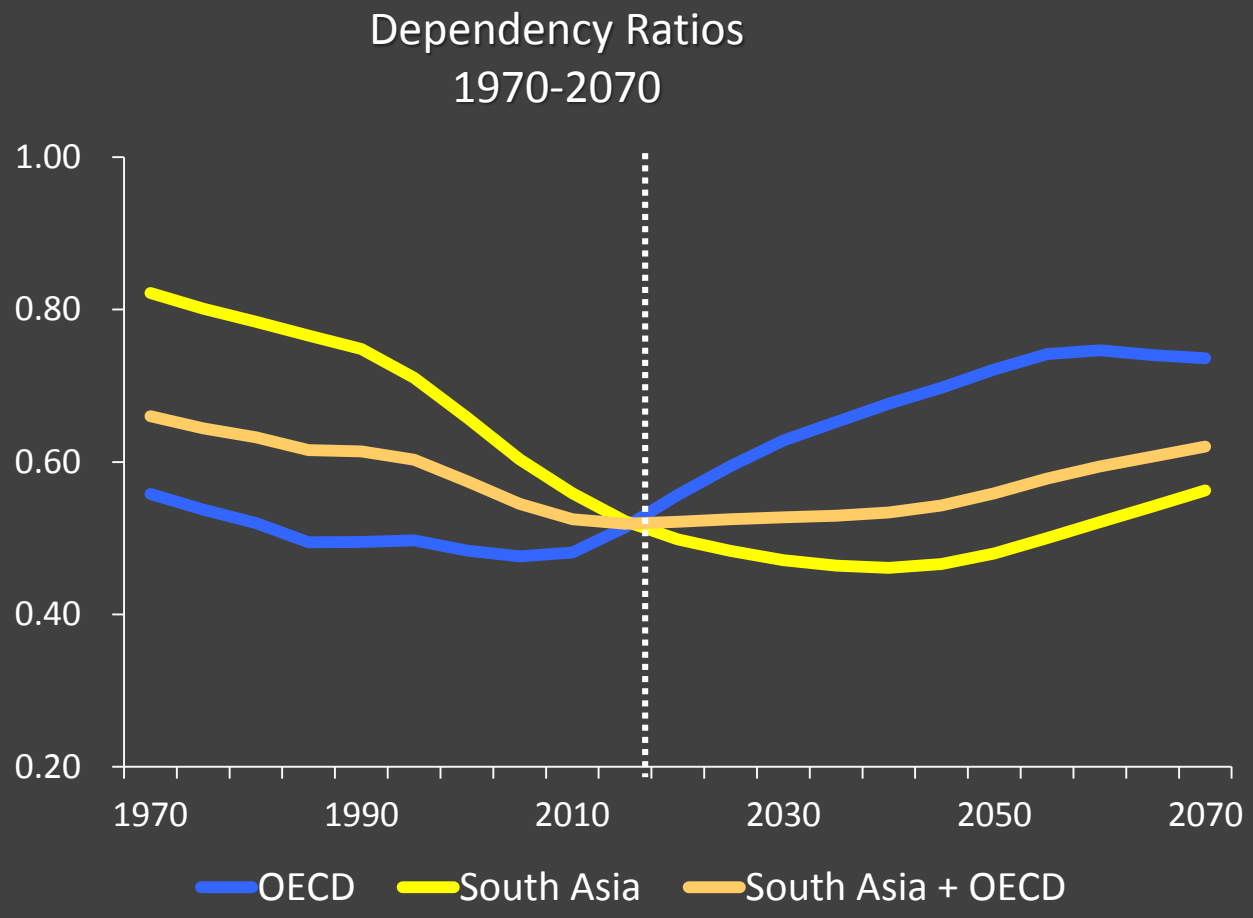


I. AG(E)ING
THE OTHER PATH TO EXTINCTION?

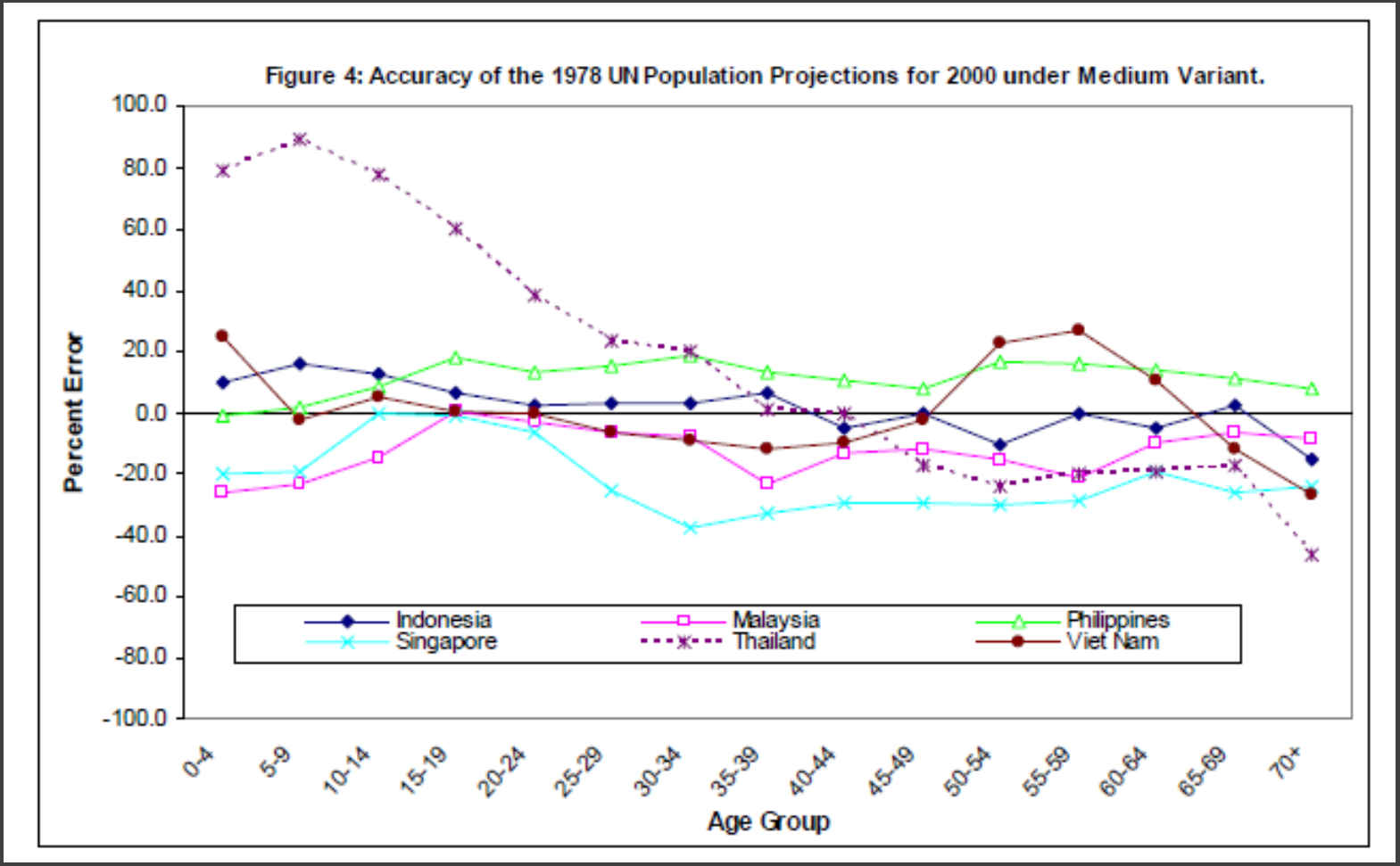
A. Can mobility solve global demographic imbalances?

Likely Answer : NO

- *Fertility is declining in developing countries faster than it did in the West*
- *Migrants demographic norms quickly converges to the natives' norms*
- *Migrants will age and need pensions in the destination countries*
- *Type of migration matters – permanent vs temporary etc*
- *DATA, DATA, DATA….*

I. AG(E)ING
THE OTHER PATH TO EXTINCTION?

Caveat: Do not Trust UN Population Projections!!!



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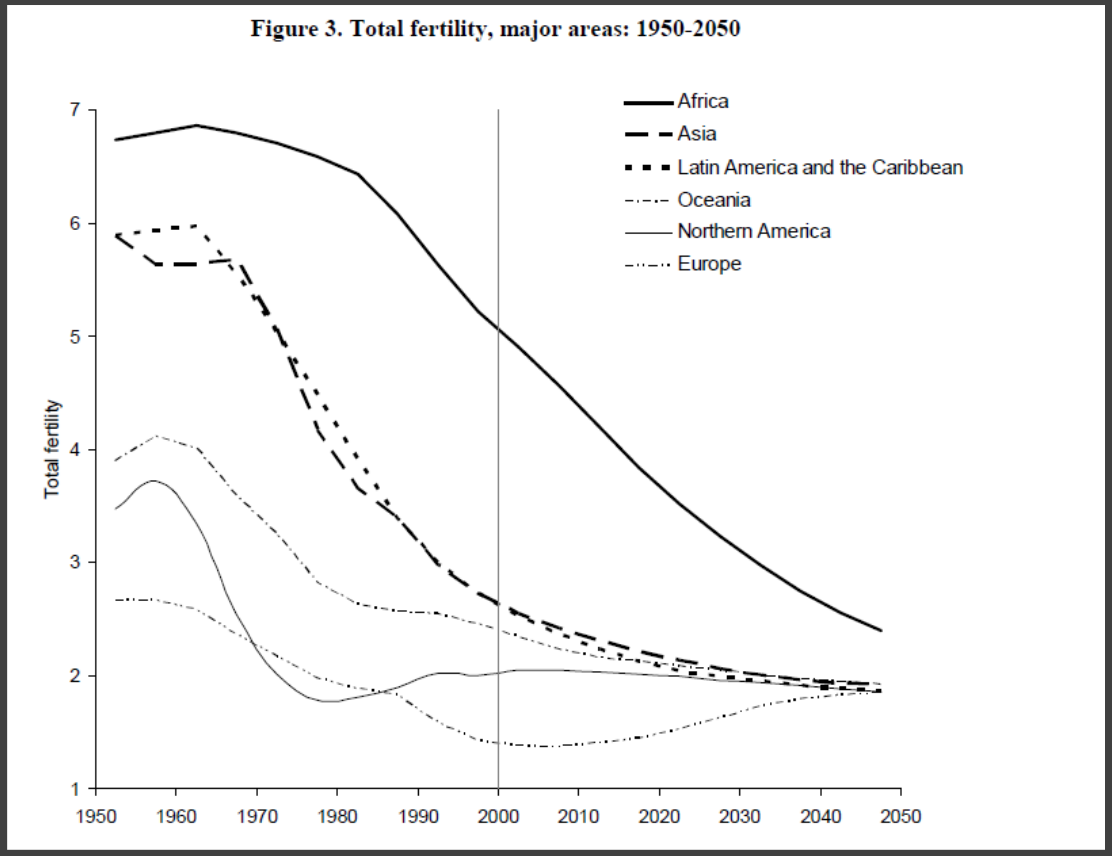

Source: World Population Report 2004, UN DESA

I. AG(E)ING

THE OTHER PATH TO EXTINCTION?

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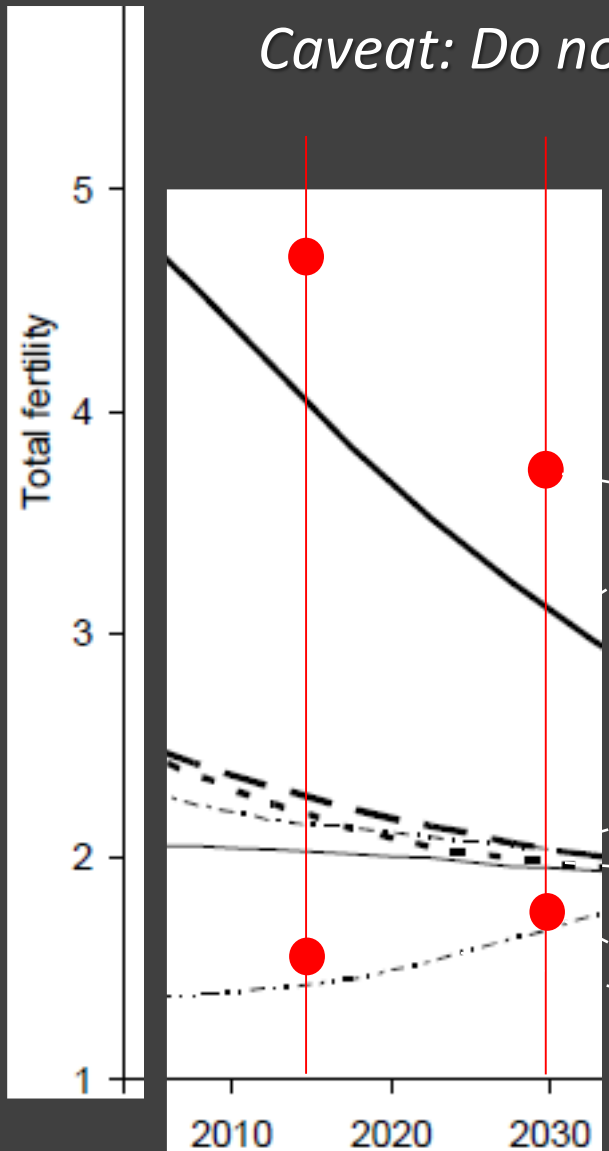


AFRICA

ASIA: 2.3 in 2015 and 2.0 in 2030

LAC: 2.3 in 2015 and 1.9 in 2030

EUROPE

I. AG(E)ING
THE OTHER PATH TO EXTINCTION?

ADMINISTRATIVE + CENSUS BASED DATA + PROJECTIONS

Main Issues

A. Need nationally representative data across age groups, education levels, nationalities and TIME!
B. Need good predictions of fertility, mortality and mobility parameters
C. Need GOOD projections based on GOOD census data!

II. ENDOGENOUS EDUCATION

A. How do people adjust their education level in response to potential immigration opportunities abroad?

It depends on the "opportunities!" (potential for brain gain effect)

In Mexico, significant negative effect of migration on schooling attendance and attainment (McKenzie & Rapoport, 2011)

In Fiji, political crisis and high rates of emigration by tertiary-educated Indians raised their investment in tertiary education. (Chand & Clemens, 2008)

II. ENDOGENOUS EDUCATION

B. How do people adjust their education level in response to potential arrival of emigrants from abroad?

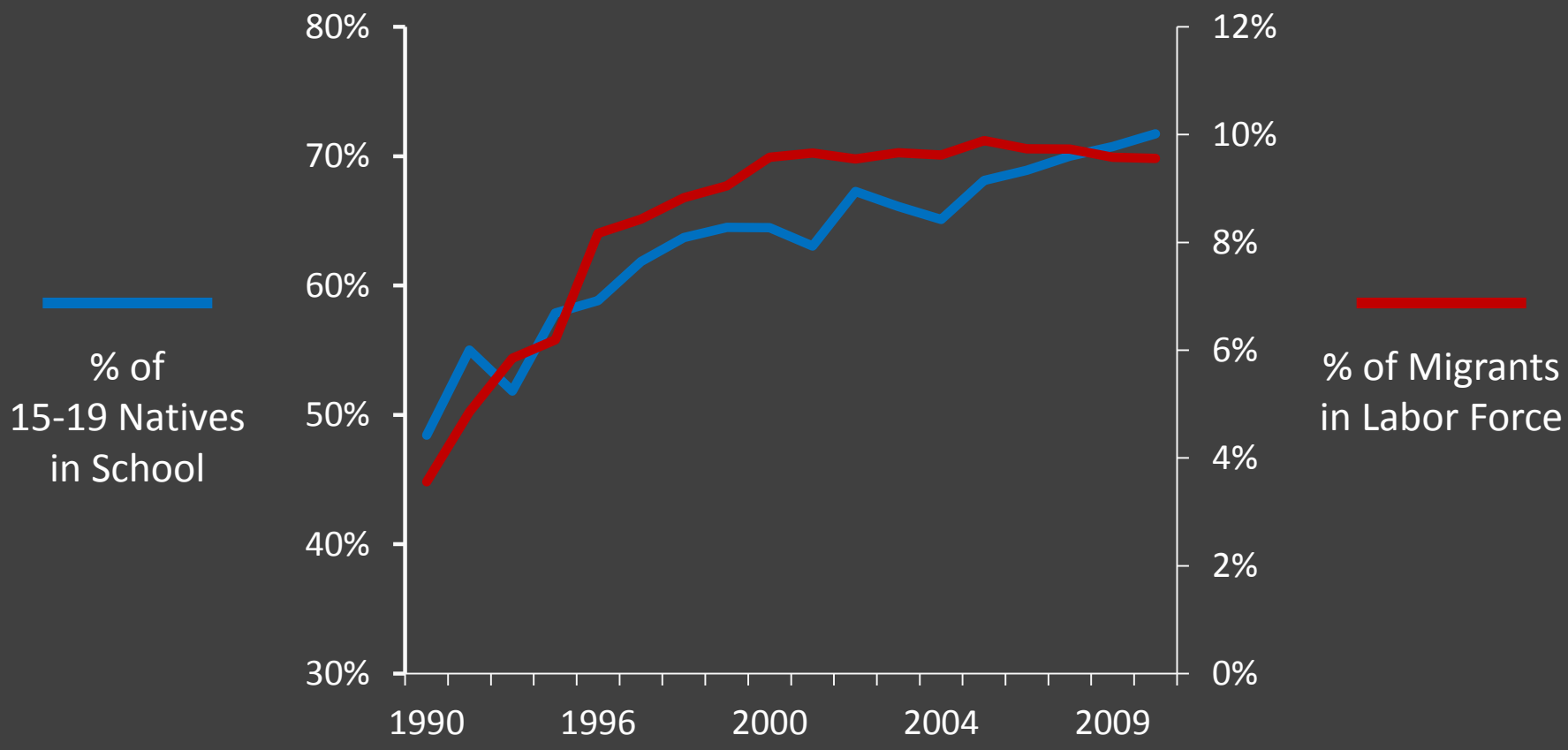
It again depends on the "type of migrants"

Post-1992 influx of Soviet mathematicians led "low-quality" American mathematicians to move to other areas whereas "high-quality" ones benefited from spillovers. (Borjas, 2012)

What about arrival of low-skilled workers?

II. ENDOGENOUS EDUCATION

MALAYSIA " for the last time ☺ "



III. FEMALE LABOR FORCE PARTICIPATION

A. How do women adjust their labor force participation, education or fertility decisions when they have access to cheap household services?

Low-skilled immigration increases labor supply of high skilled women in the US, Hong Kong and Taiwan (Cortes, 2011 and 2013)

Little evidence on fertility decisions..

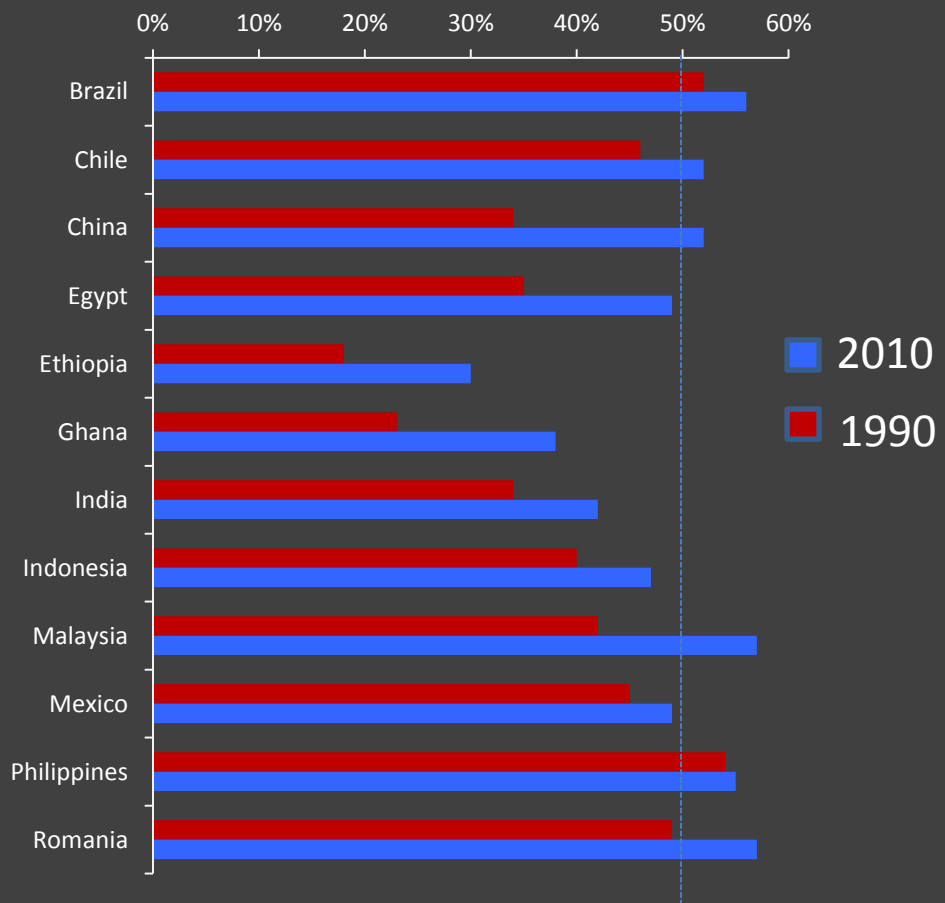
III. FEMALE LABOR FORCE PARTICIPATION

B. How do women adjust their labor force participation, education or fertility decisions when they can immigrate to high-income countries?

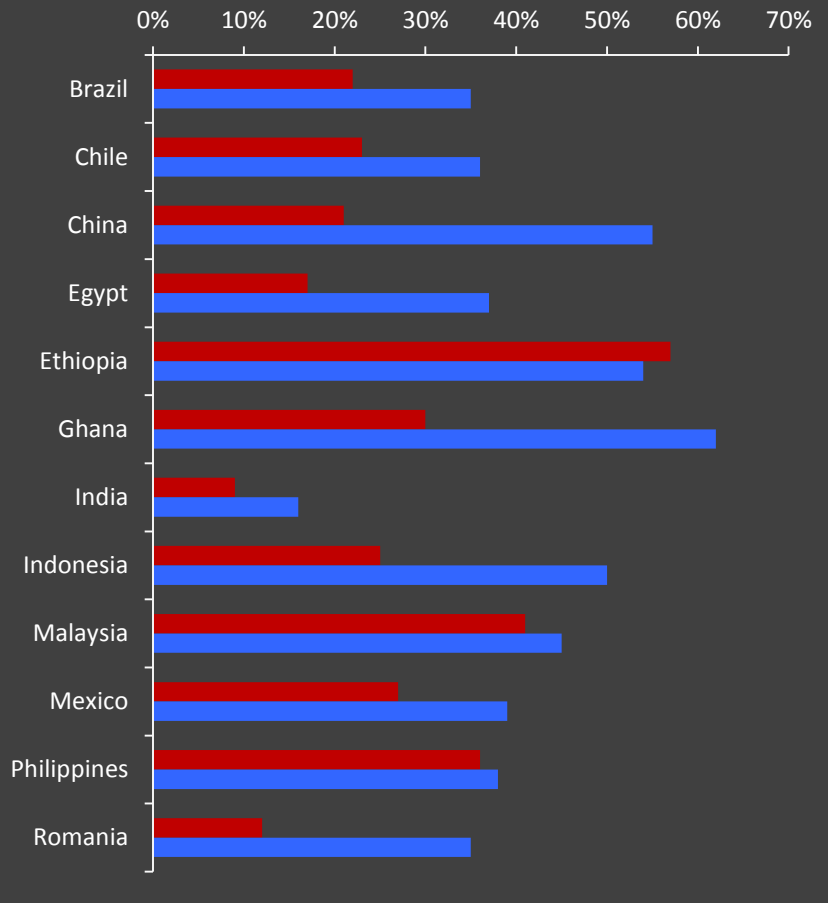
Or are women different than men in their responses?

III. FEMALE LABOR FORCE PARTICIPATION

Share of women among university students



Share of singles among college educated migrant women to the US (age 25-35)



I. ENDOGENOUS EDUCATION + FERTILITY DECISIONS

ADMINISTRATIVE + SURVEY BASED DATA + PROJECTIONS

Main Issues

A. Need nationally representative data across age groups, education levels, nationalities and TIME!
B. Need good predictions of fertility, mortality + mobility + labor force participation parameters

Thank You !

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http://econ.worldbank.org/research