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INTERNATIONAL

# USAID/ UGANDA SCHOOL HEALTH AND READING PROGRAM

Why early grade reading matters and  
What do to about it?  
An economist's perspective

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4 June 2015

This  
is  
how  
most  
3rd-grade kids  
in  
Uganda  
read

This  
is  
how  
most  
3rd-grade kids  
in  
rich countries (OECD)  
read

# Outline

“Proof” that early grade reading matters to socio-economic development is indirect and takes 4 steps

1. Early →
2. Better reading →
3. More educ. quality and attainment →
4. Greater econ growth and social development

But I will reverse this order and argue from 4 “backwards” to 1...

# First some slides to situate context

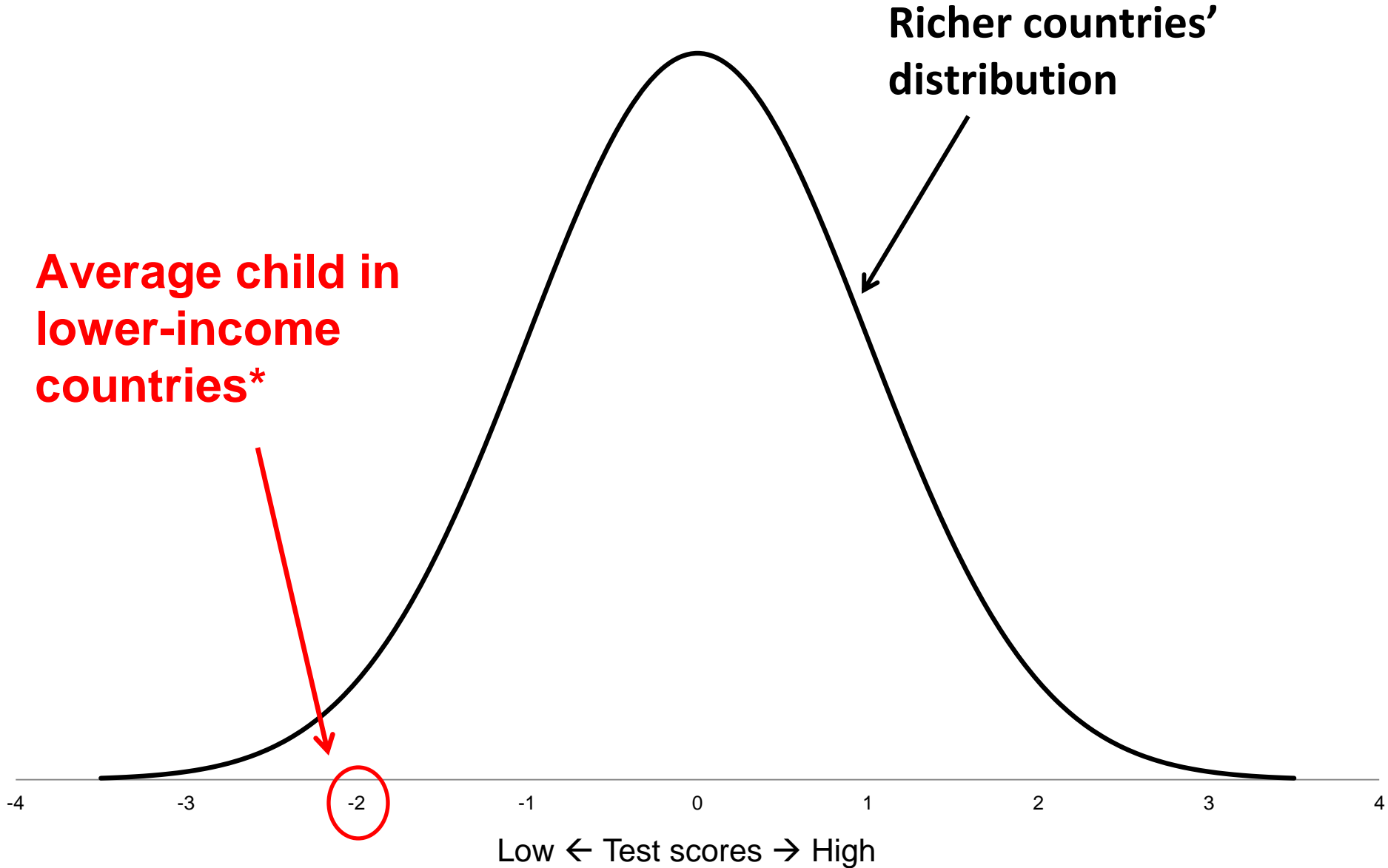
Median child in low-income countries is at 5th percentile of high-income

Or, 50% of children in LI countries learn at the level of the least-learning 5% in HI countries

LI median is **2 SDs** below HI median

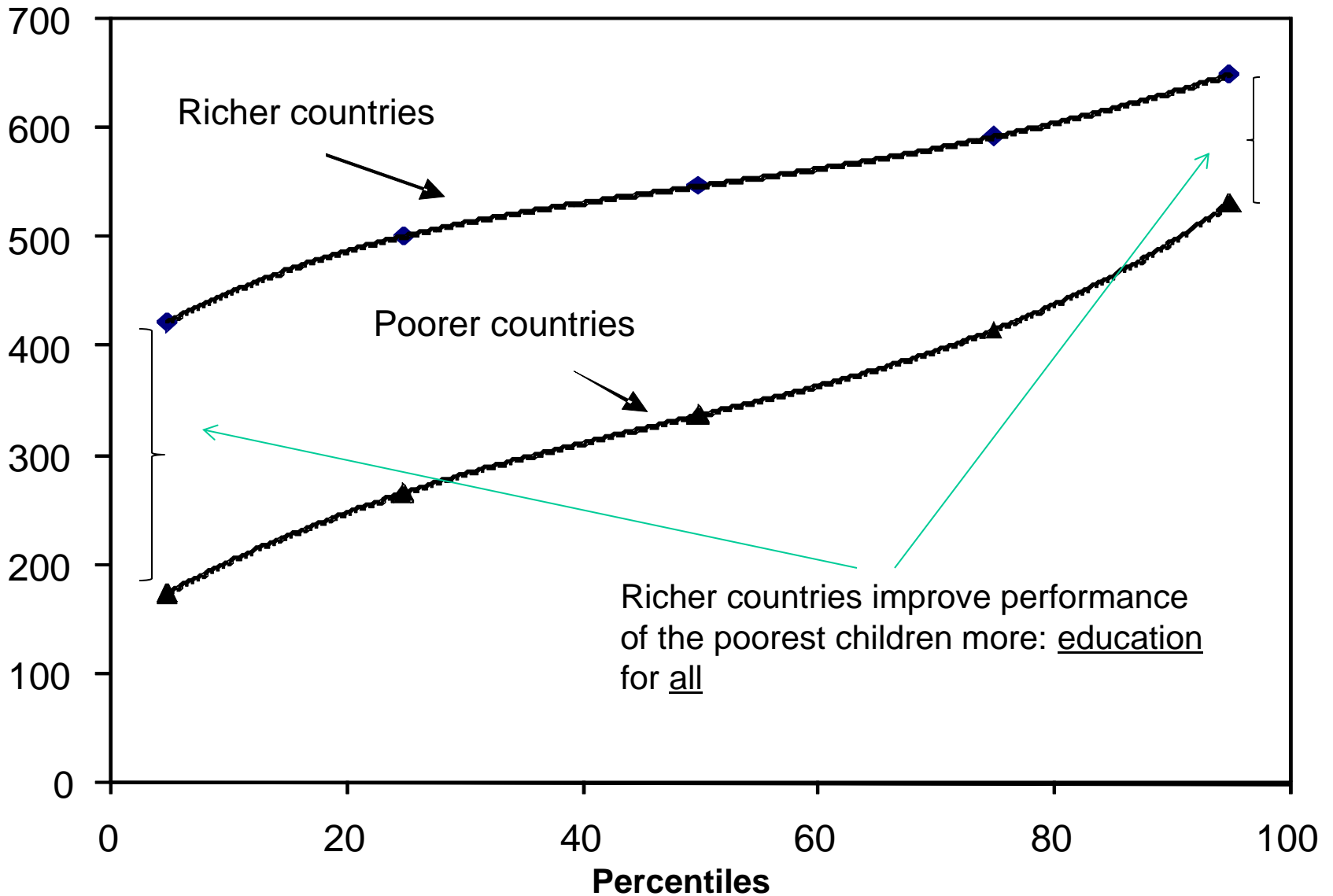
*What does even this mean???*

# Distribution of children's learning



\*About 2 SDs below the rich country median

# PIRLS\* 2006 Results

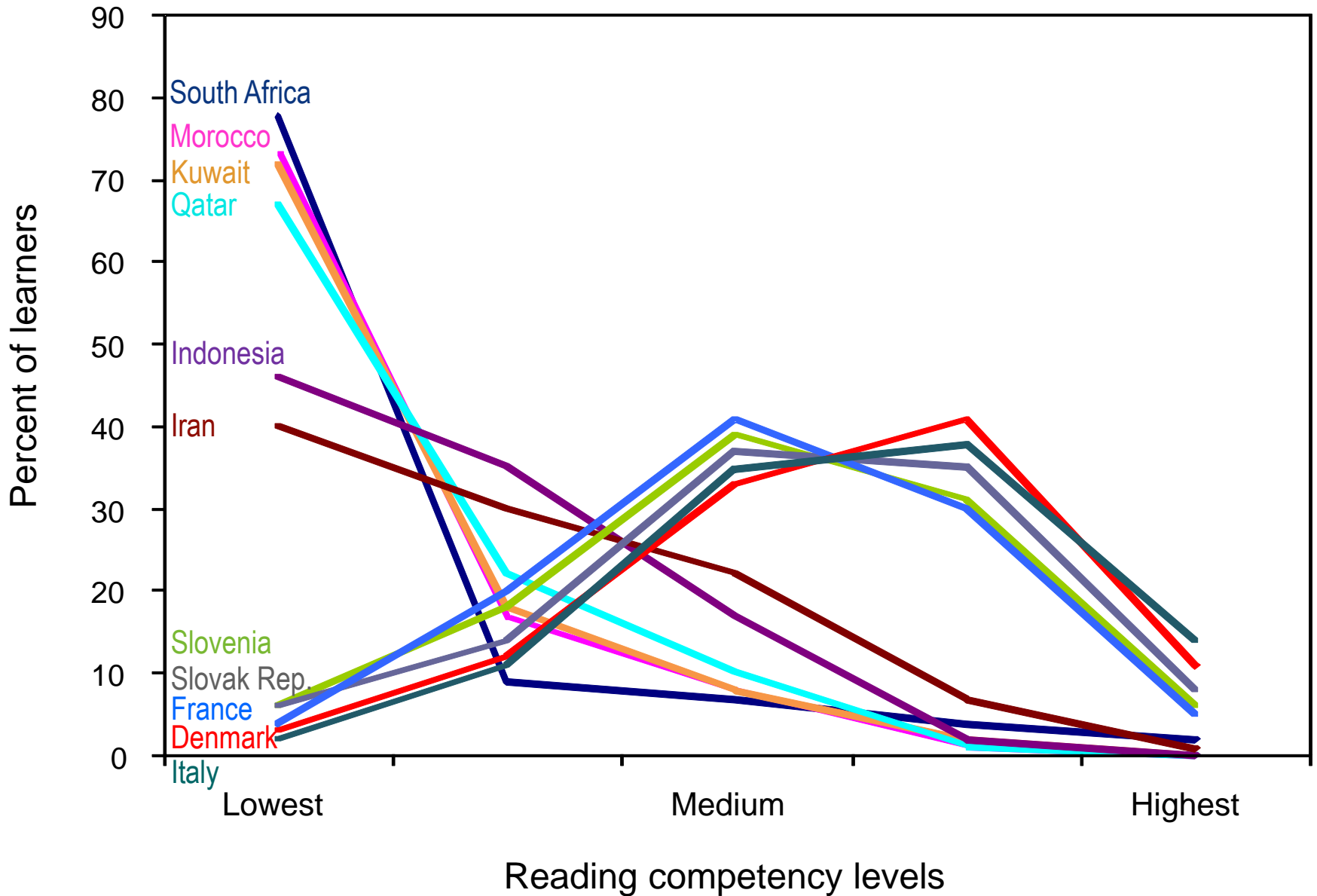


\*Progress in International Reading Literacy Study

# Why focus on the least-learning?

The following “movie” shows that the “standard path” is to “bring up the bottom” ...

# PIRLS\* 2006 Results

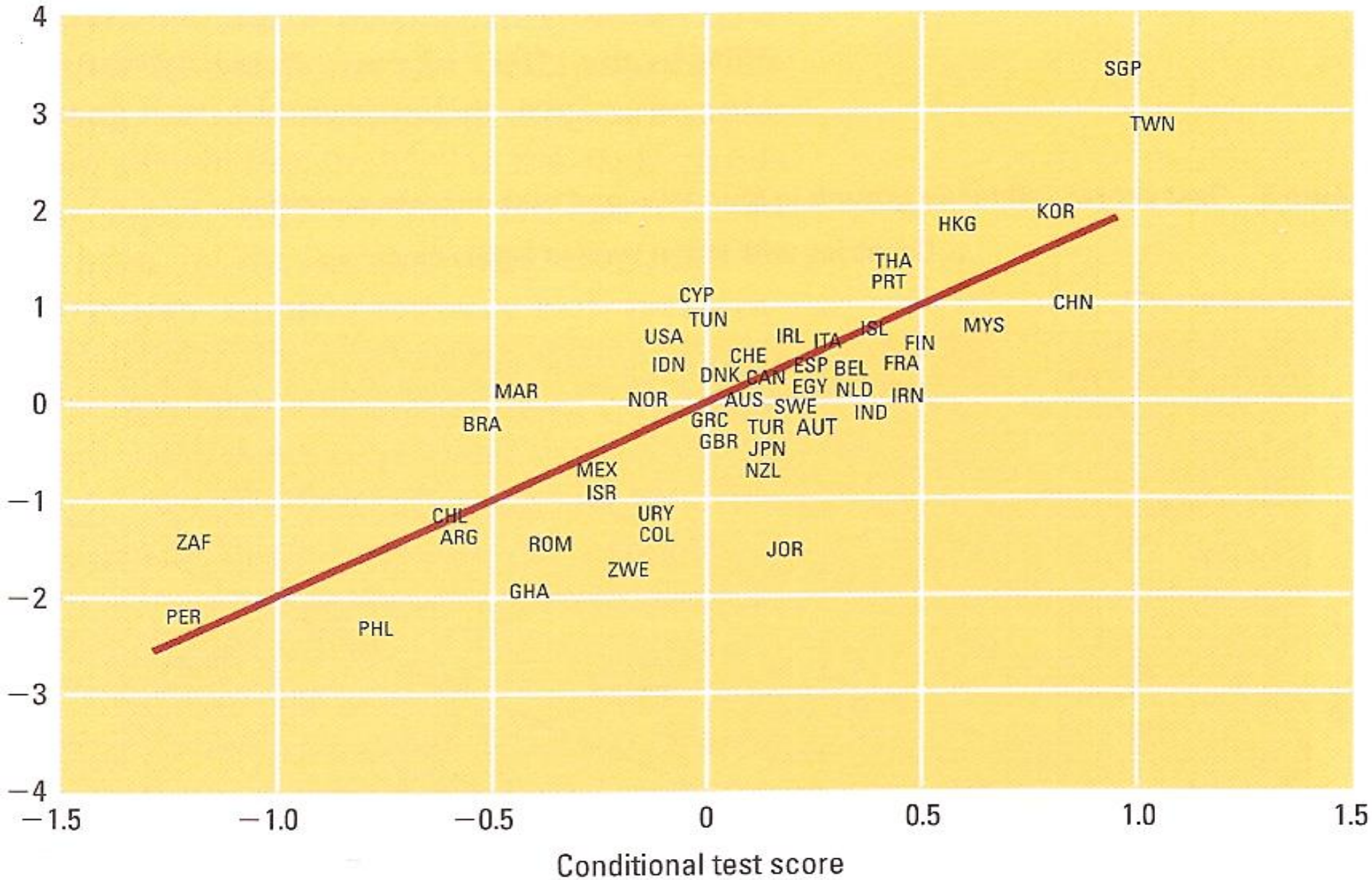




- But why do these lags matter?
- First argument:
  - Learning, attainment →
    - More development
    - Greater equality

# Countries with higher achievement grow more

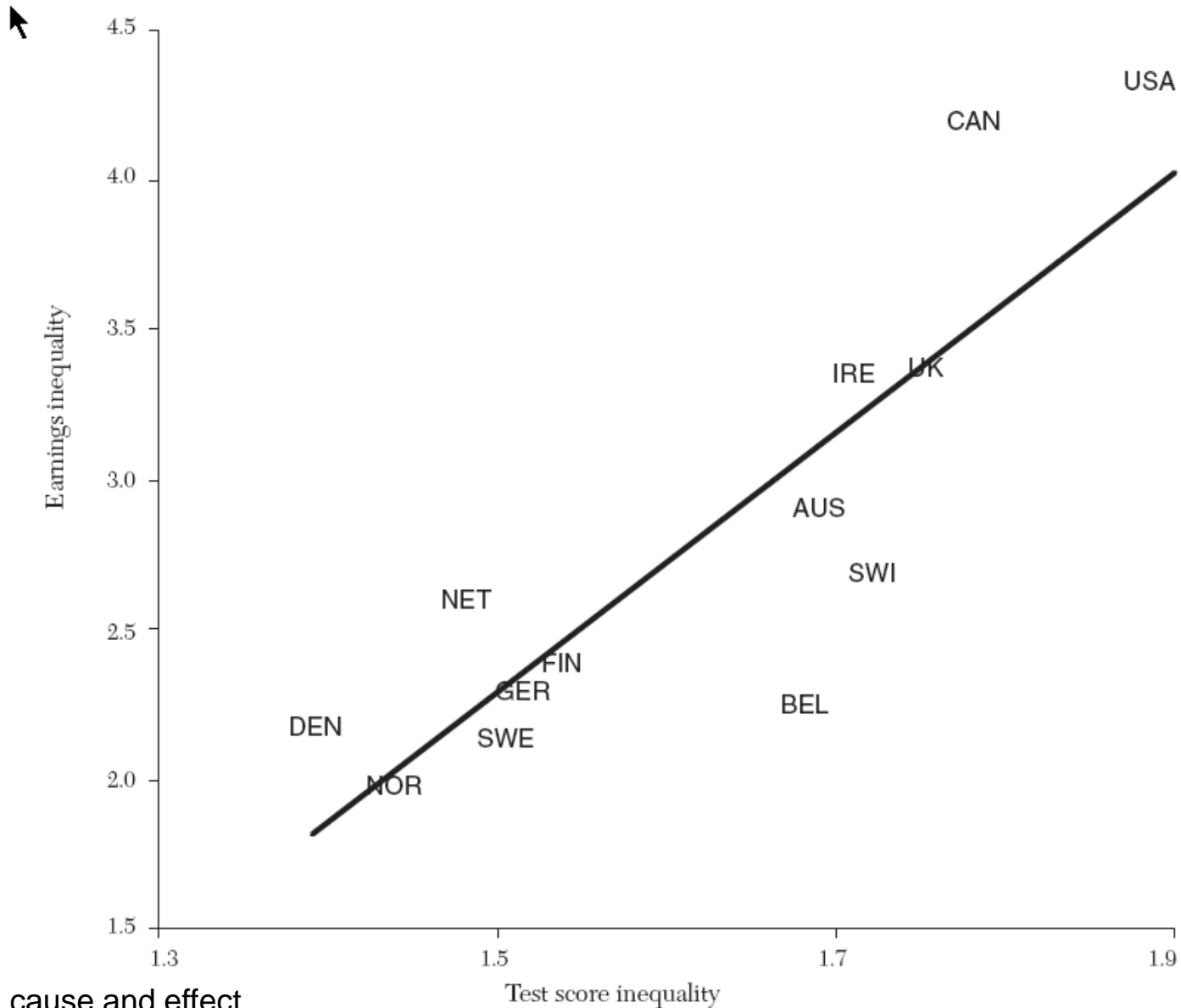
Conditional growth



coef = 1.9804387, se = .21707105, t = 9.12

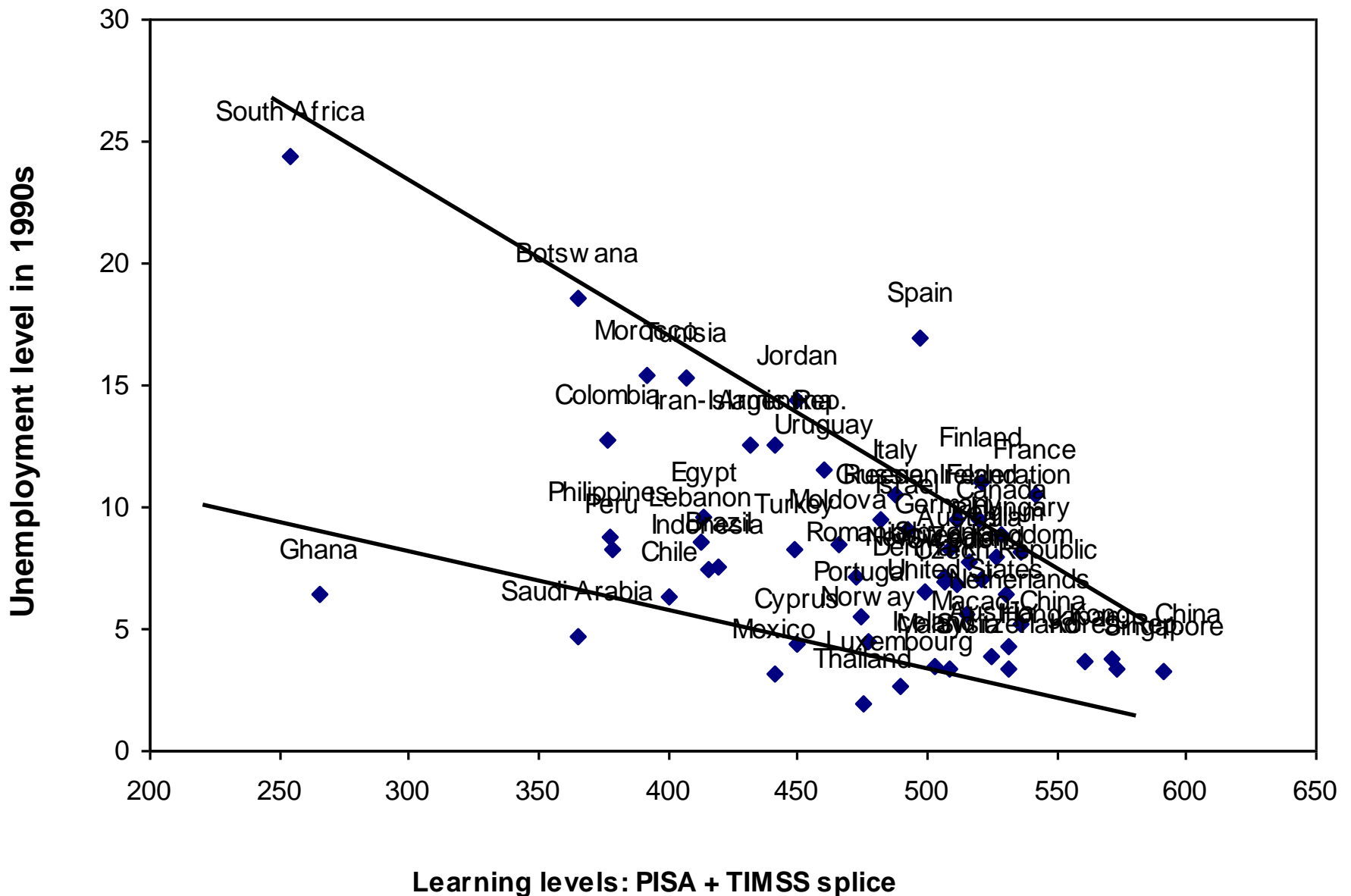
Hanushek, E. & Woessmann, L. (2007). *Education quality and economic growth*. Washington, DC: The World Bank.

# Countries with inequalities in learning have inequalities in earnings



Note: could be cause and effect

# Test scores also related to unemployment



# Non-economic effects too... from McMahon... (2004)

**Table 7**

**Estimates of Non-Market Education Externalities**

*Simulations of Outcomes Over 40 Years; Static Plus Delayed Effects*

<b>Development Goal Affected by Education</b>	<b>Percent Change in Outcome After 40 Yrs.</b>	<b>Basis for Estimate</b> (follows a 2% per capita increase in investment)	<b>Source</b>
1. Better Public Health	Positive but public vs private health effect unknown	Micro-regressions only. e.g., AIDS education	Grossman & Kaestner (1997)
2. Lower Pop. Growth	0% in Africa (!), ↓ elsewhere	↓ fertility but ↑ health	Appiah and McMahon (2002: 50-1, 65-7) See also Freedom House (1999: 536)
3. Democratization	36% ↑ in Democracy (i.e. Freedom House Index up 3.7 on a scale of 8), to 6.6	Note: 2% of per capita GDP or \$13.80 in Africa raises gross enrollment rates by about 20 percentage points	
4. Human Rights	4% ↑ in Human Rights, on Freedom House Index	" " "	
5. Political Stability	3% ↑ in Political Stability on Country Risk Guide Index	" " "	International Country Risk Guide (1995)
6. Lower Crime Rates	2% ↓ Homicide Rate 9% ↓ Property Crime	Effect from secondary enrollment rate after controlling for income	Appiah and McMahon (2002: 51-2)
	2% rate of return	Less incarceration costs	Lochner (1999)
7. Deforestation	.3% ↓ Deforestation	These occur through indirect effects on democratization and slower population growth	Appiah & McMahon (2002: 41, 52)
8. Water Pollution	5% ↓ Water Pollution		McMahon (2002 : 216, 234-5)
9. Air Pollution	14% ↓ in Air Pollution		
10. Volunteer Hours (US data)	Valued at .2% of Mkt. Rate (8.5% more give time)	More persons give time at each income level	NCES (1995:98)
11. Financial Giving	12% more give 3% +	Controlling for income	NCES (1998)
12. Reduce Inequality, & Informal Knowledge Dissemination	8% reduction in GINI after 40 years. Higher Education can increase inequality, but also disseminate technology	Literacy and Equiva-lency Programs Target the poor. Higher Educa-tion grads informally disseminate technology	Psacharopoulos (1977), McMahon (2002), Moretti (2002)

# But is this magic? How does it work?

- Take the “social” impact of education on maternal mortality
- Work out the causal pathway
- Can be done for many of these other factors

# But is this magic? How does it work?

## “Independent” factors

Health  
Sector  
Policies

Female  
Education  
(esp  
2ndary)

Econ  
growth

Other ed  
policies  
(e.g., EGR)

## Intermediate factors

% of births  
professionally  
attended

Contraceptive  
prevalence  
rate

Mother’s age  
at first birth

Number of  
children per  
woman (total  
fertility rate)

## Results

Less  
mother  
deaths

Better  
education of  
next  
generation

# But is this magic? How does it work?

## “Independent” factors

Health Sector Policies

Female Education (esp 2ndary)

Econ growth

Other ed policies (e.g., EGR)

## Intermediate factors

1

Contraceptive prevalence rate

Mother's age at first birth

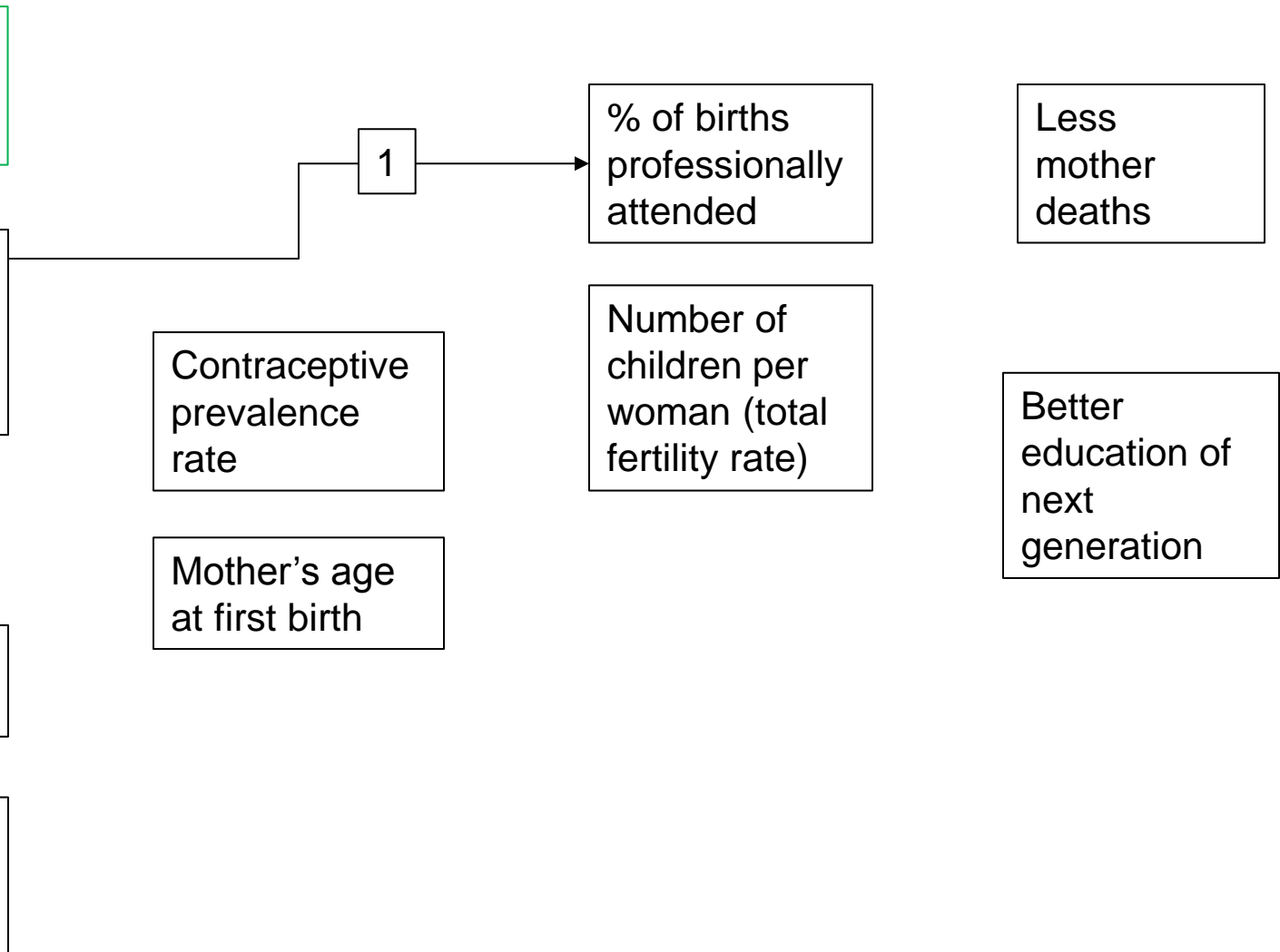
% of births professionally attended

Number of children per woman (total fertility rate)

## Results

Less mother deaths

Better education of next generation





# But is this magic? How does it work?

## “Independent” factors

Health  
Sector  
Policies

Female  
Education  
(esp  
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growth

Other ed  
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## Intermediate factors

1

Contraceptive  
prevalence  
rate

Mother's age  
at first birth

% of births  
professionally  
attended

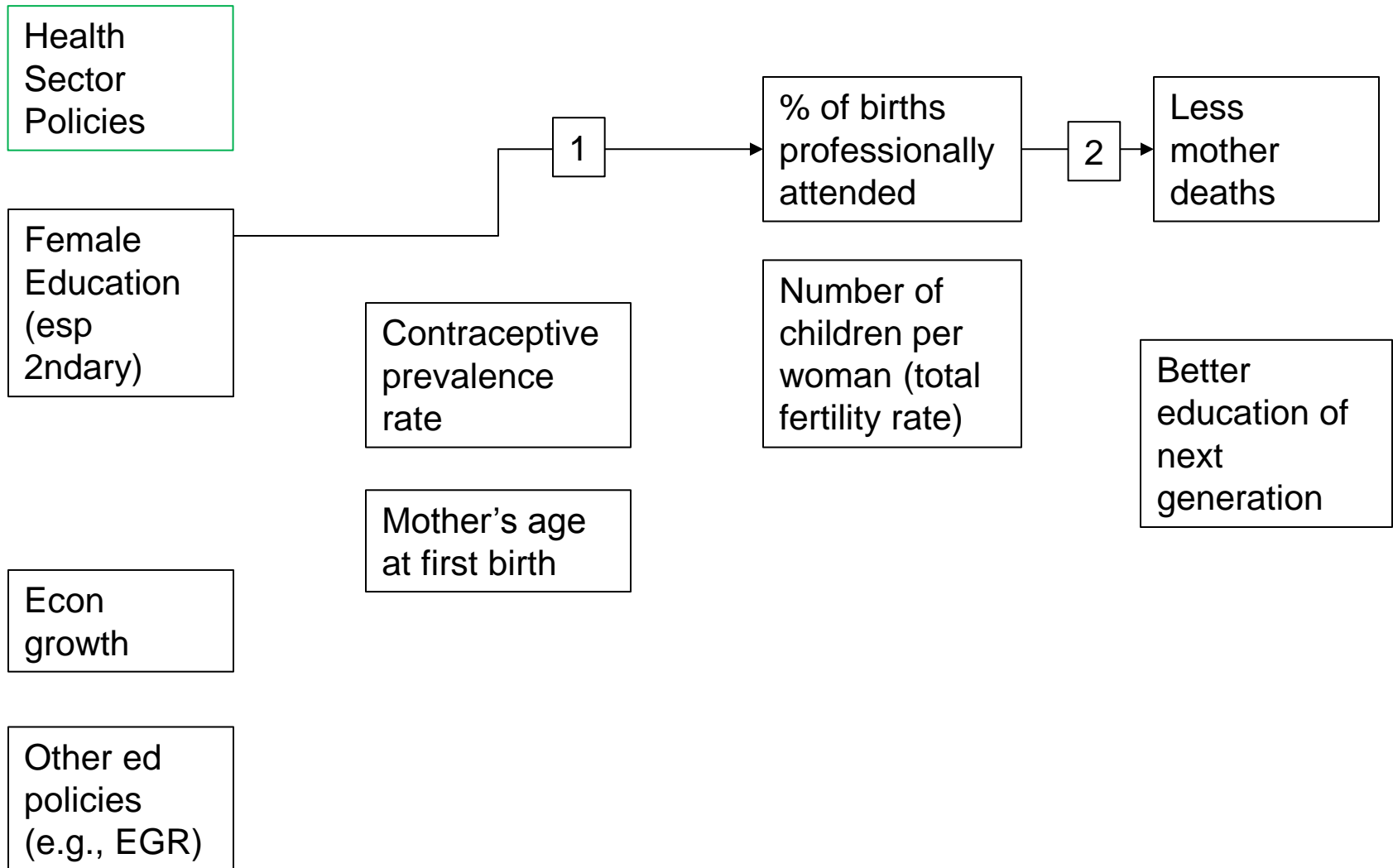
Number of  
children per  
woman (total  
fertility rate)

2

## Results

Less  
mother  
deaths

Better  
education of  
next  
generation

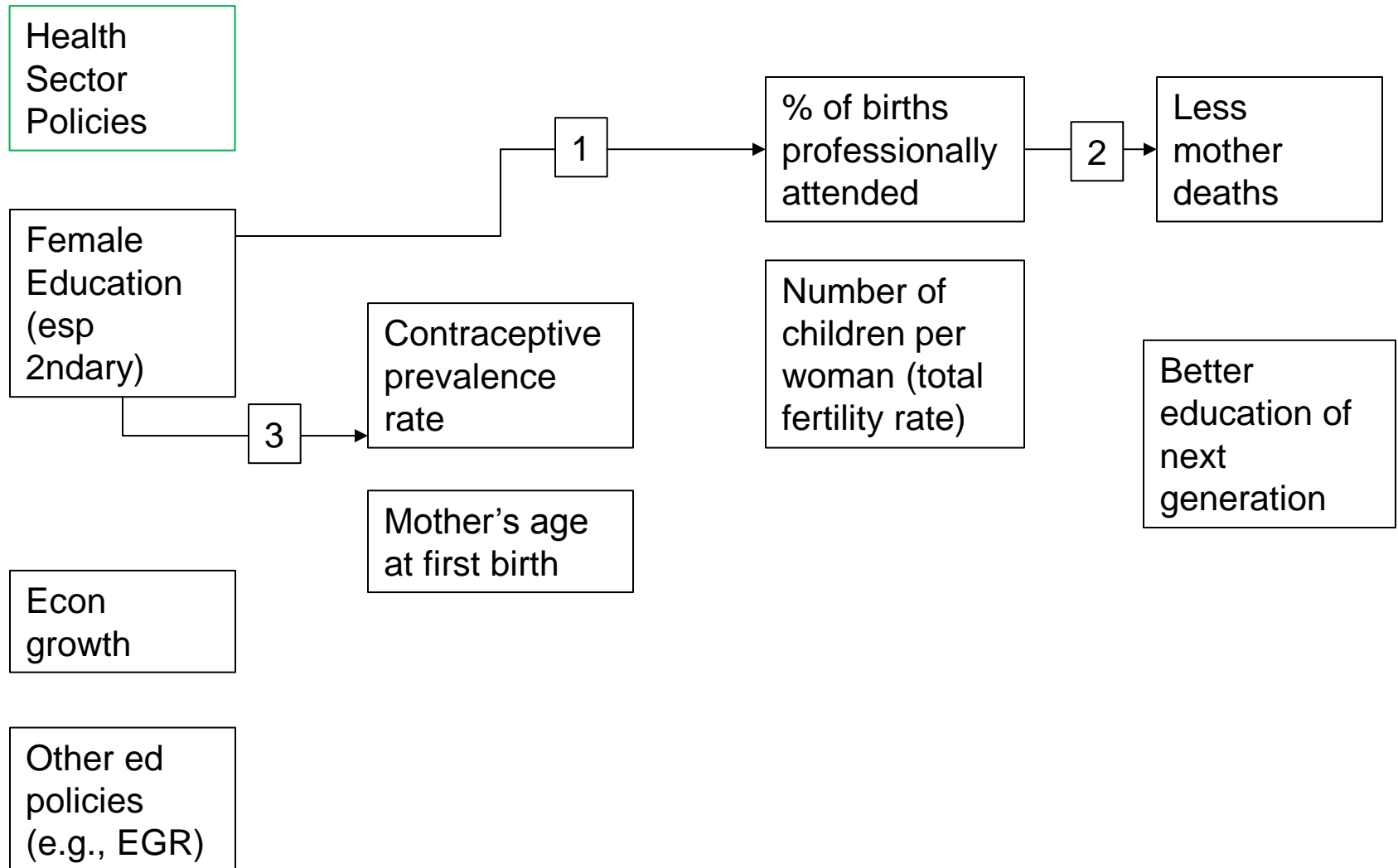


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## “Independent” factors

## Intermediate factors

## Results

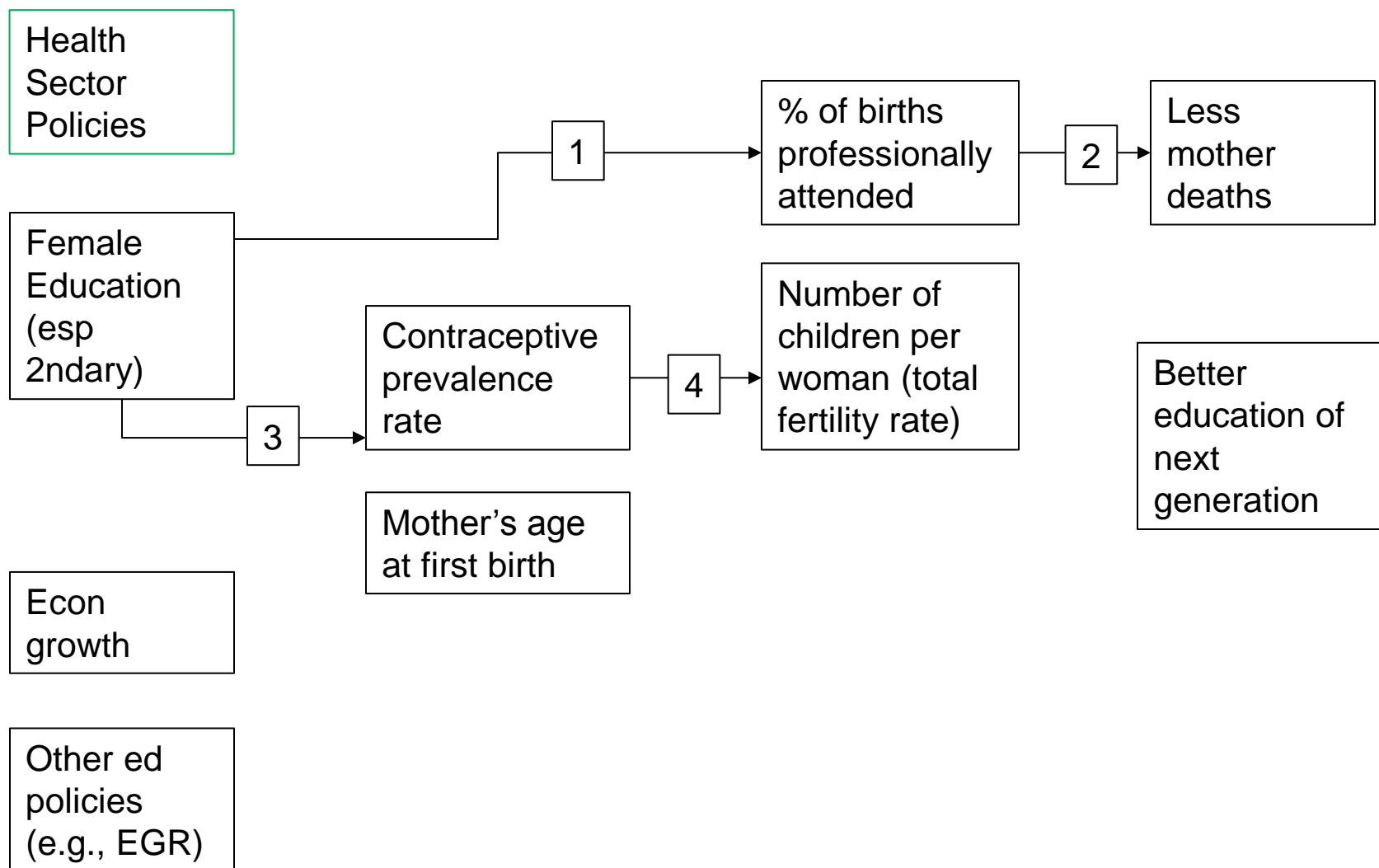


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## “Independent” factors

## Intermediate factors

## Results

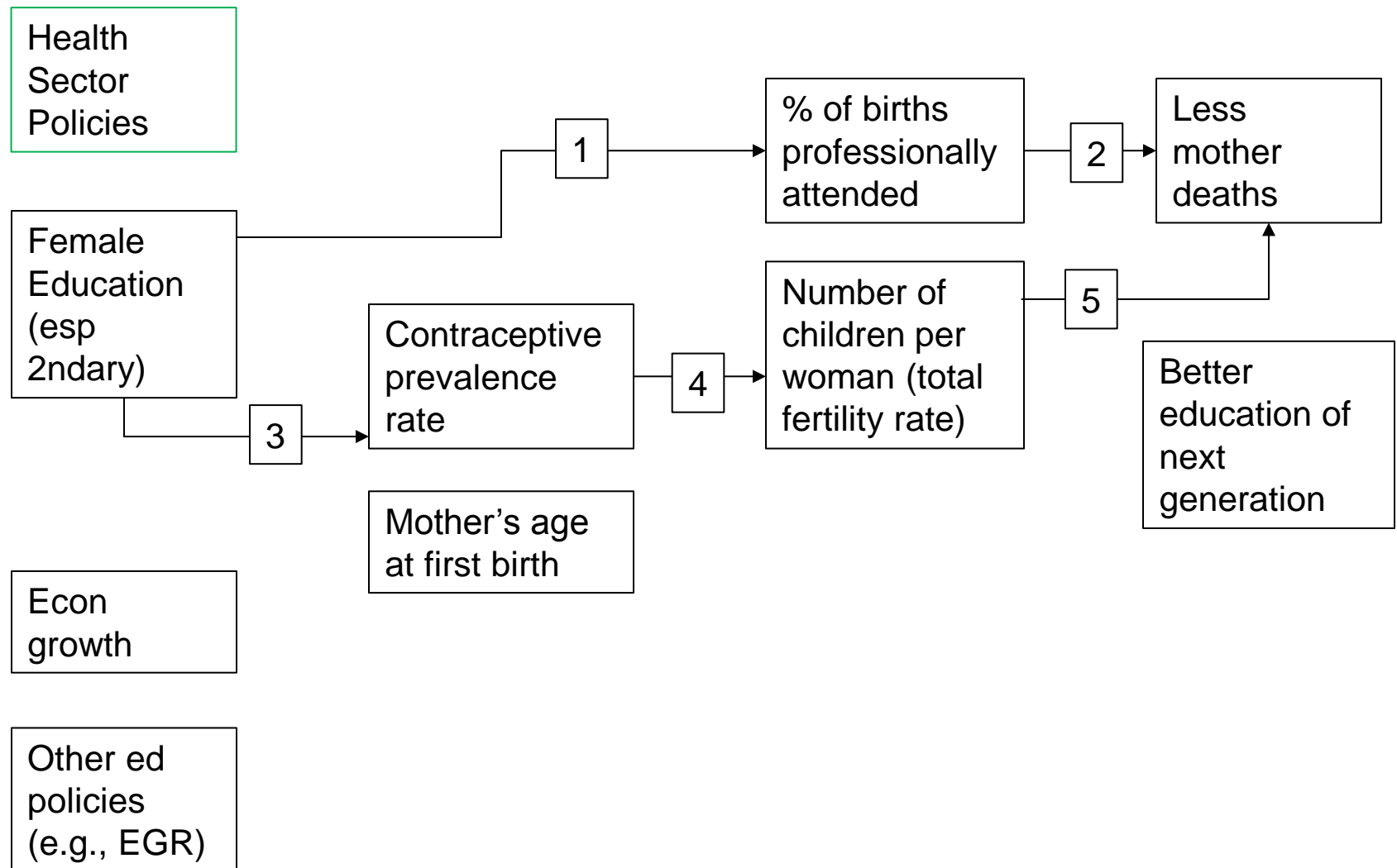


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## “Independent” factors

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## Results

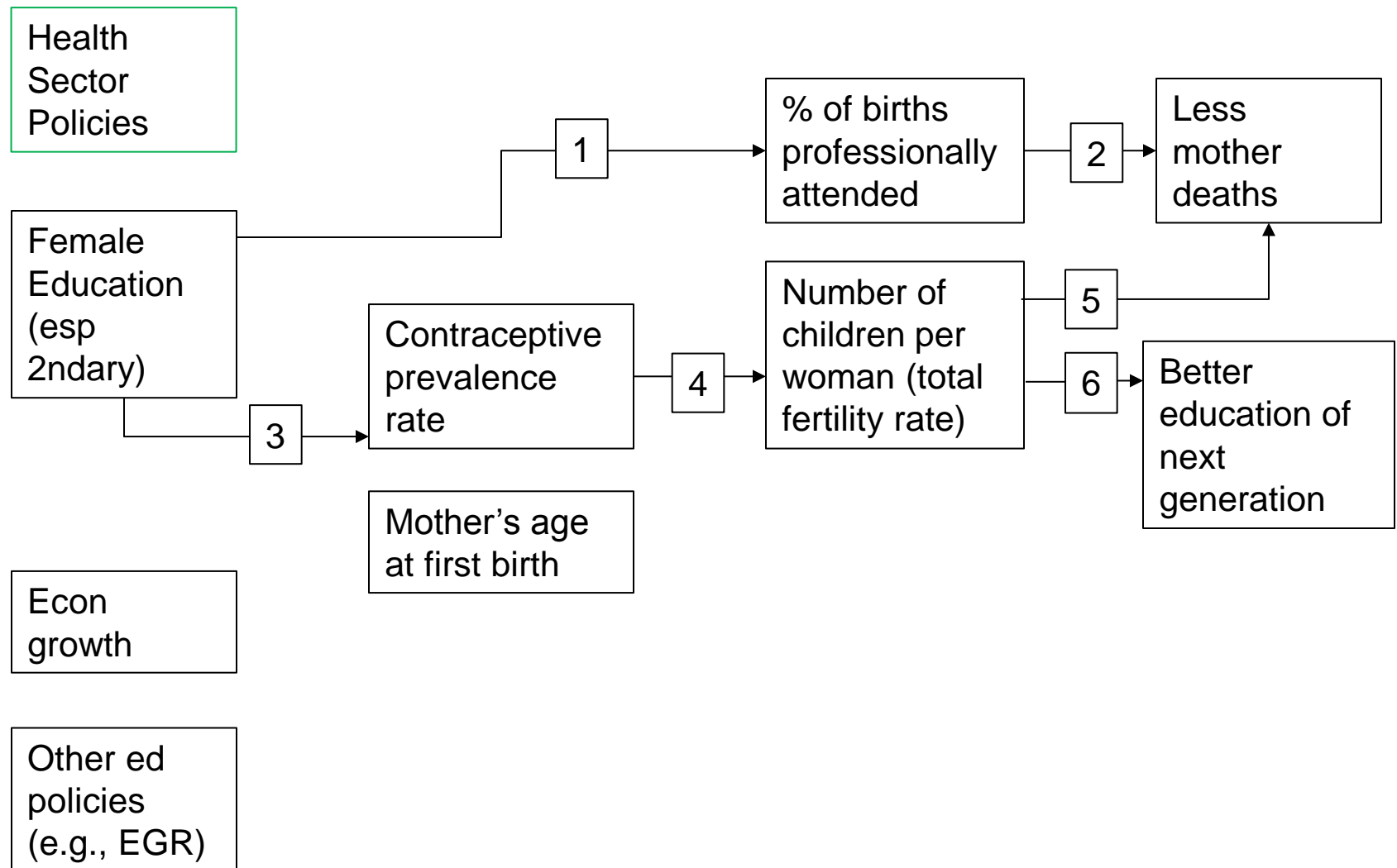


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## Results

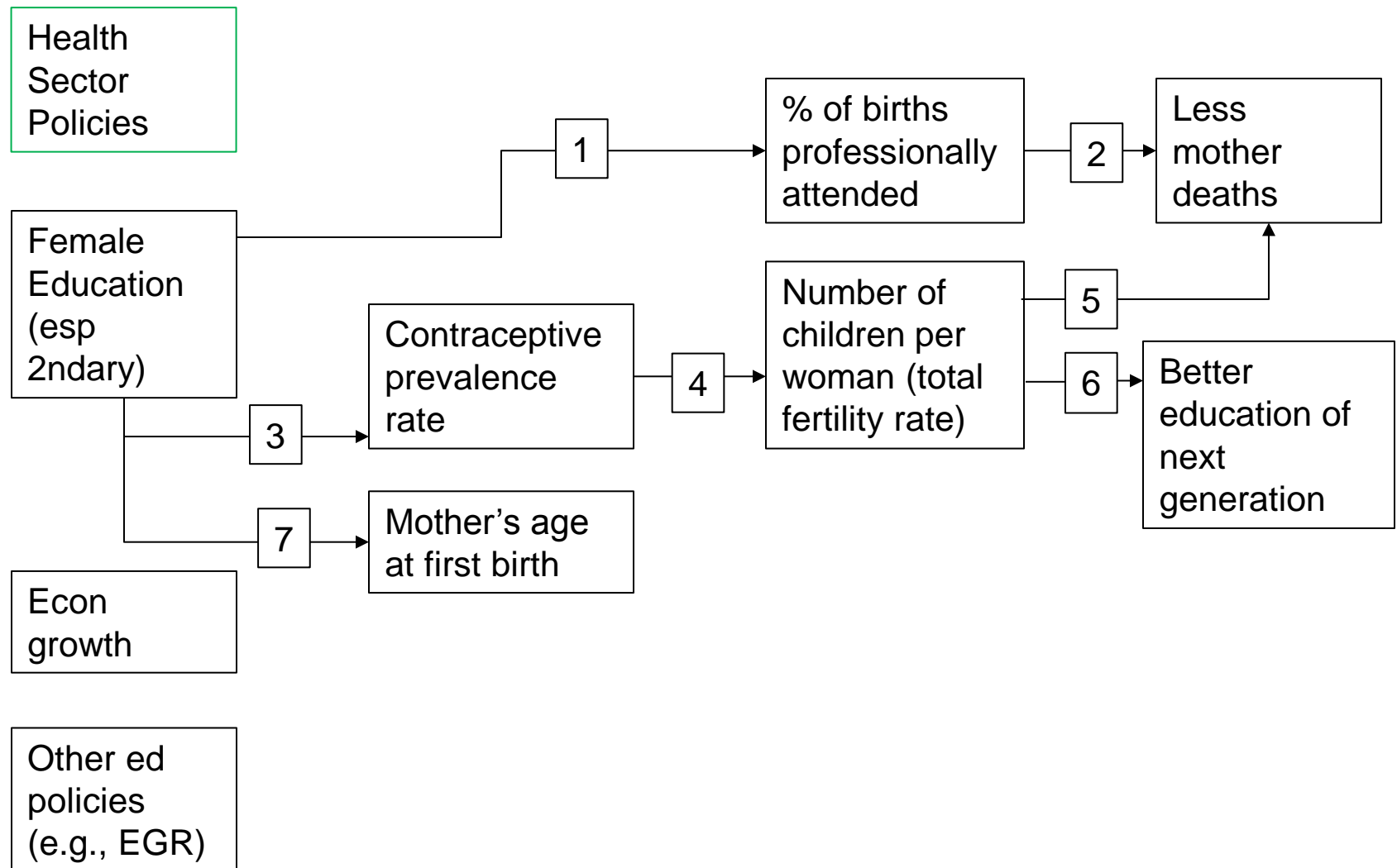


# But is this magic? How does it work?

## “Independent” factors

## Intermediate factors

## Results

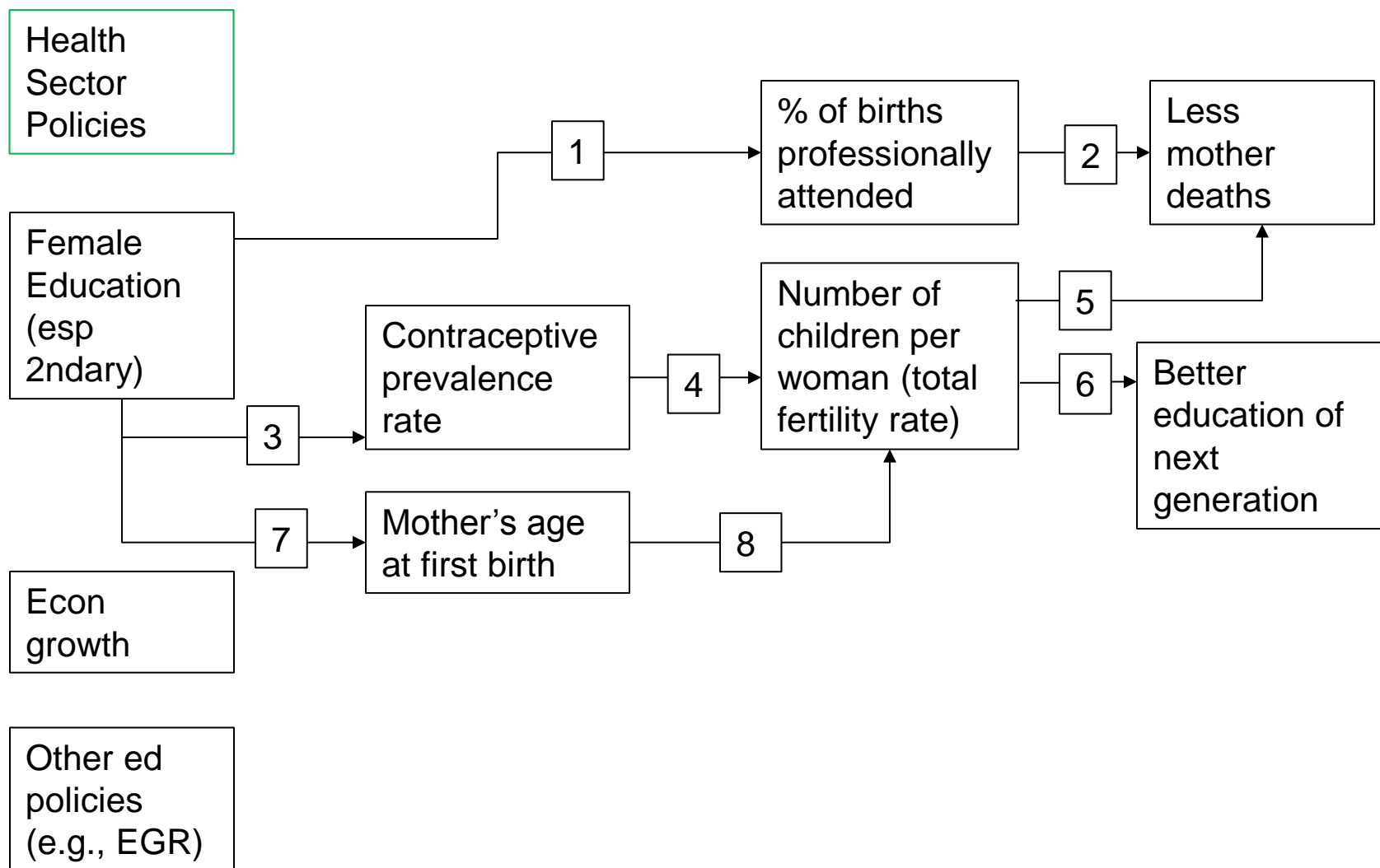


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## “Independent” factors

## Intermediate factors

## Results

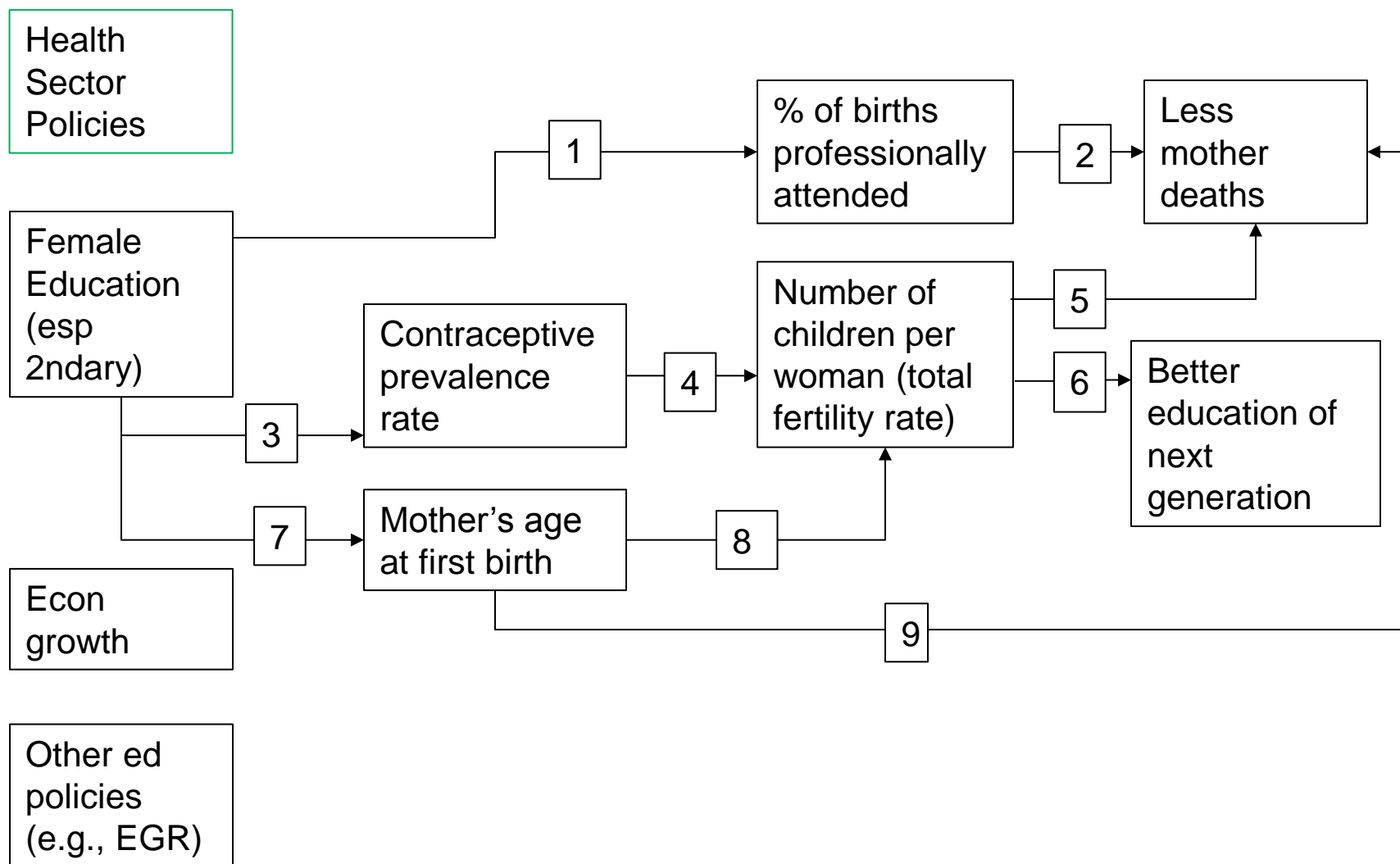


# But is this magic? How does it work?

## “Independent” factors

## Intermediate factors

## Results



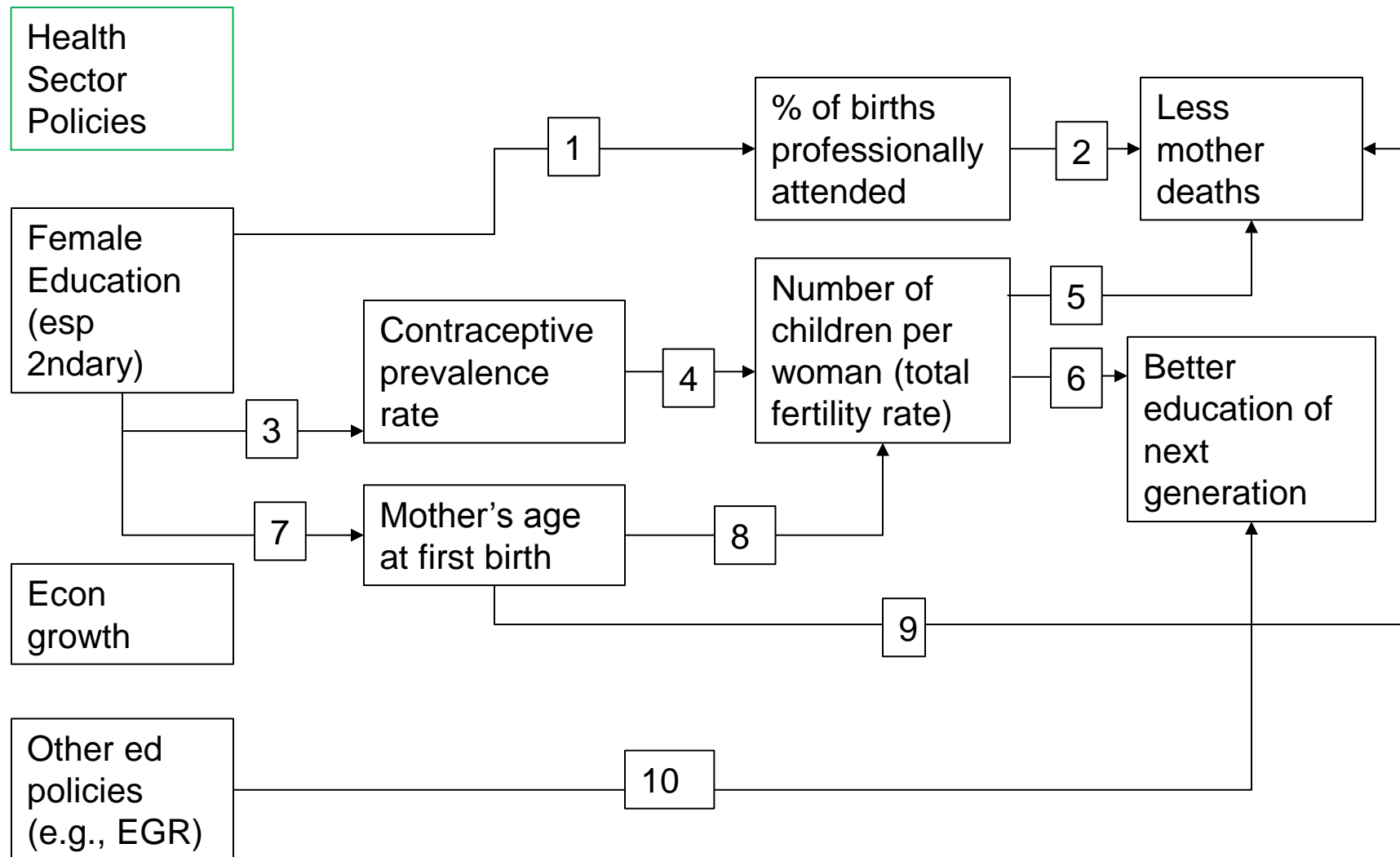


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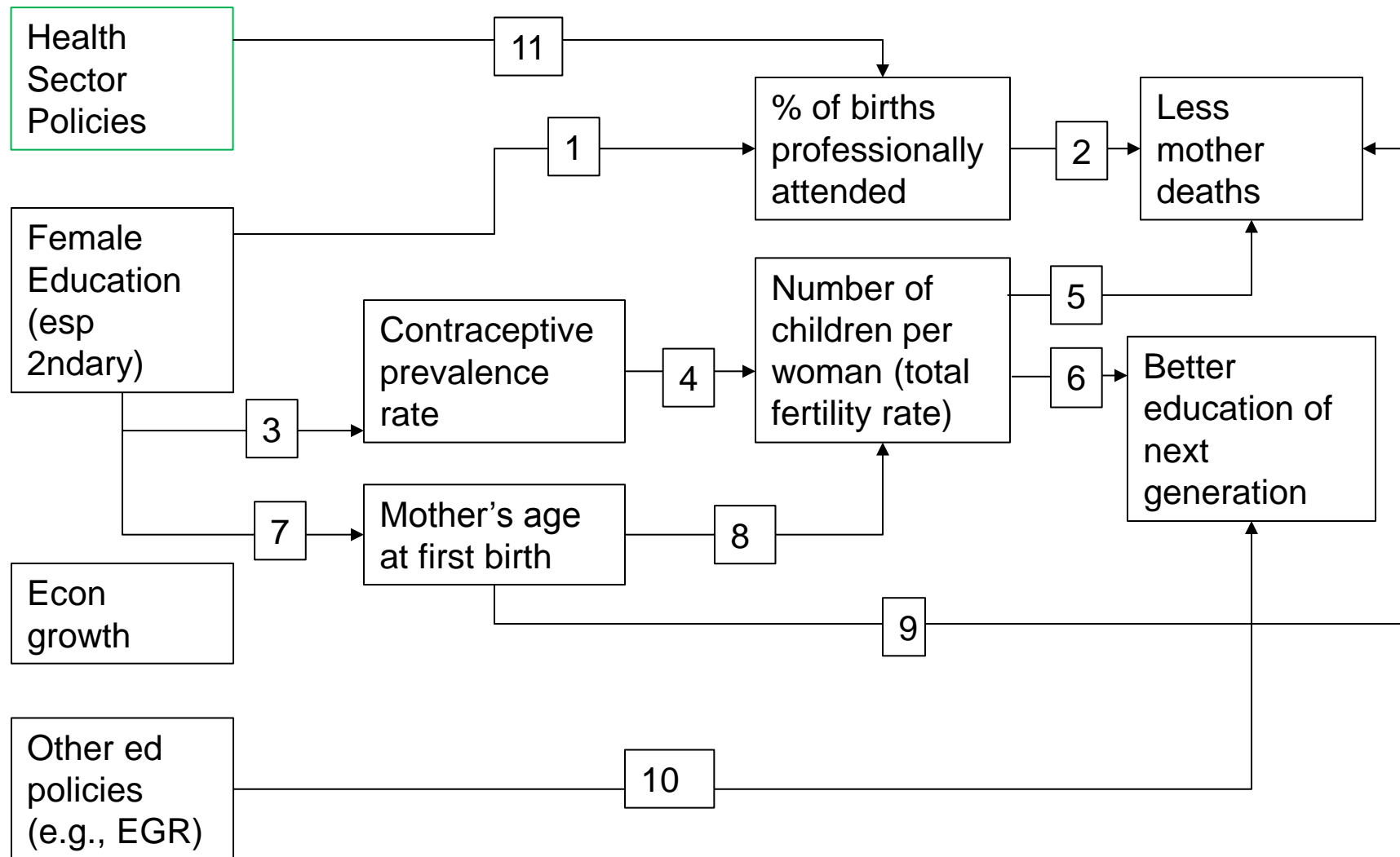


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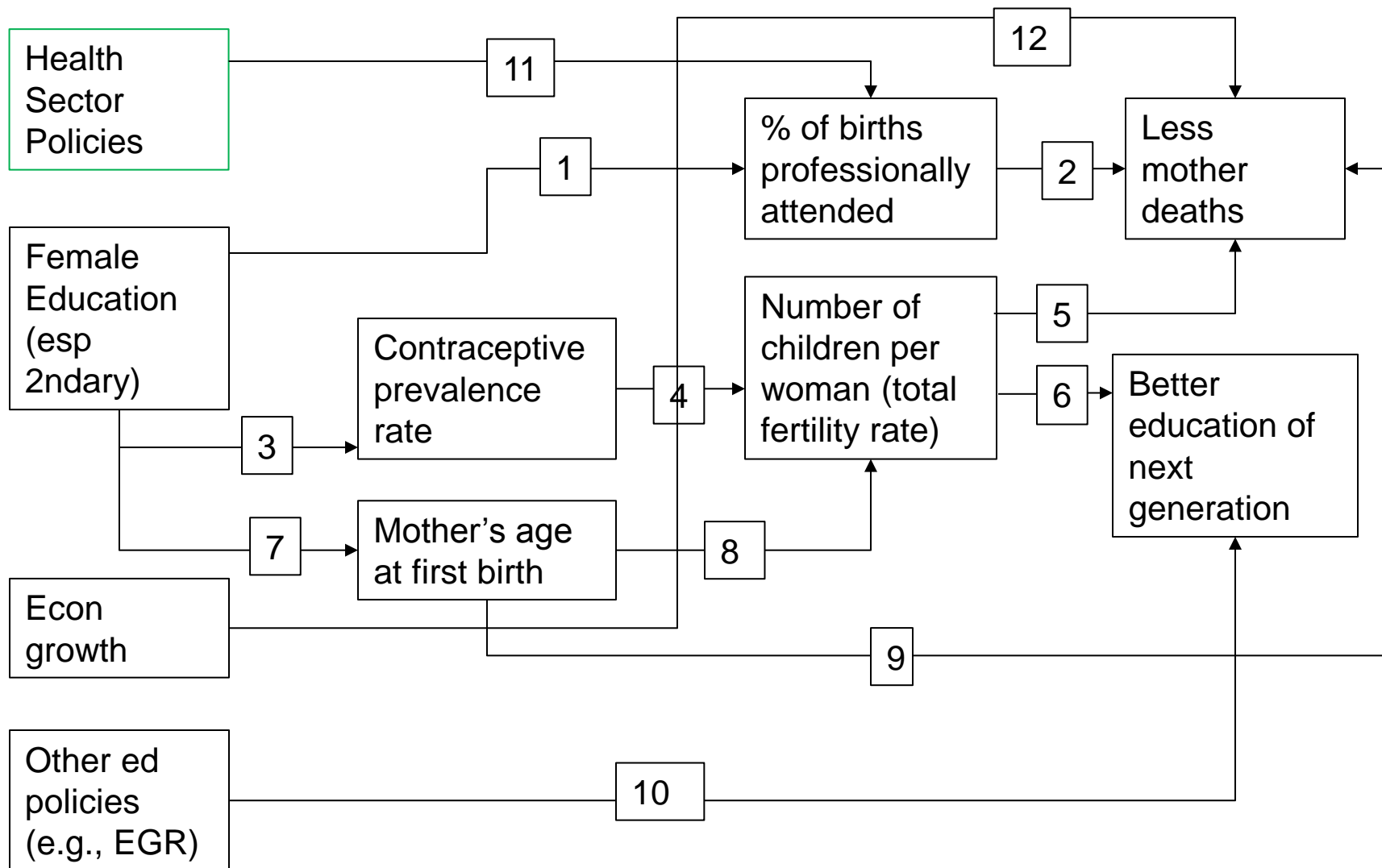


# But is this magic? How does it work?

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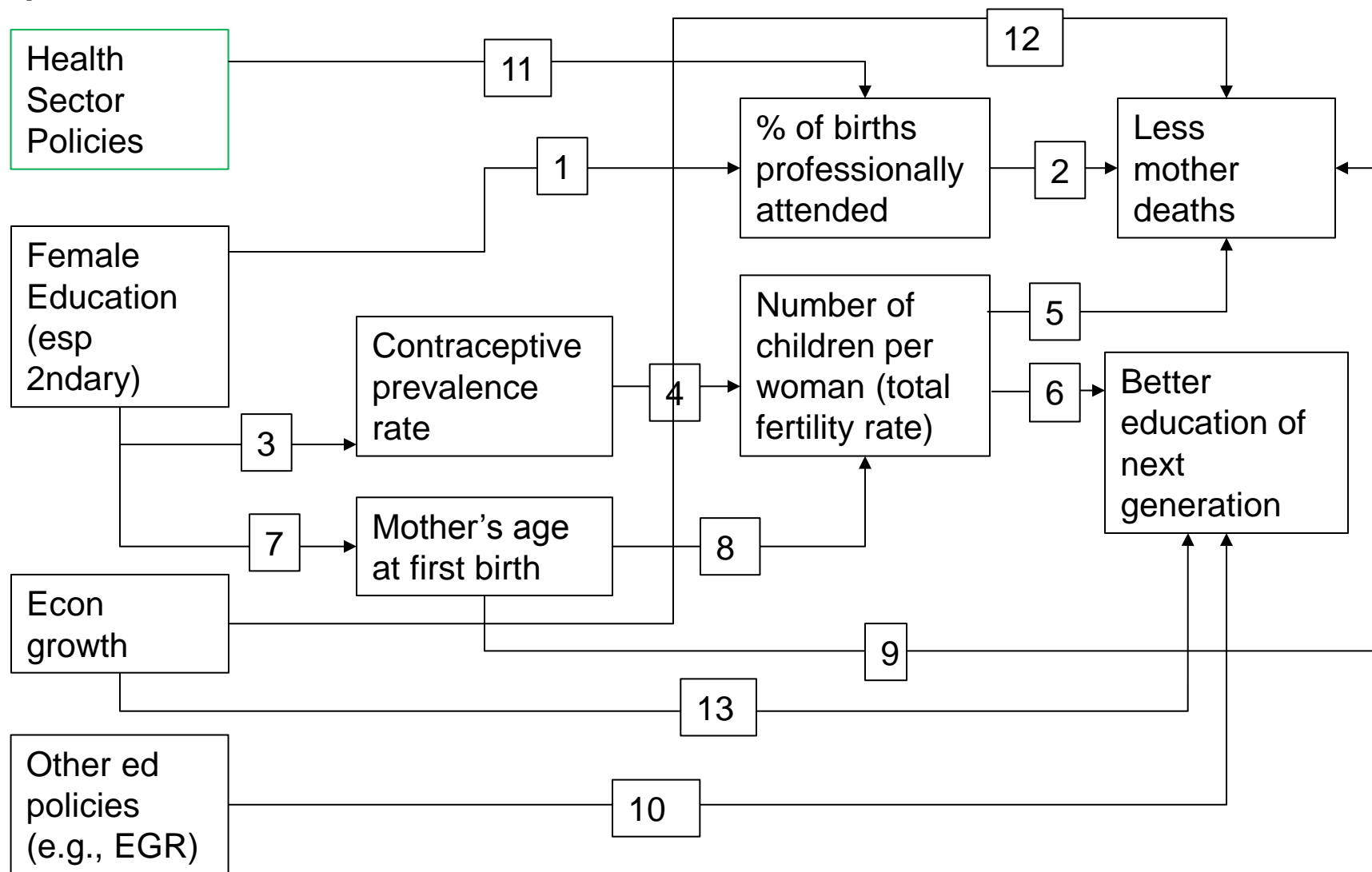


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## “Independent” factors

## Intermediate factors

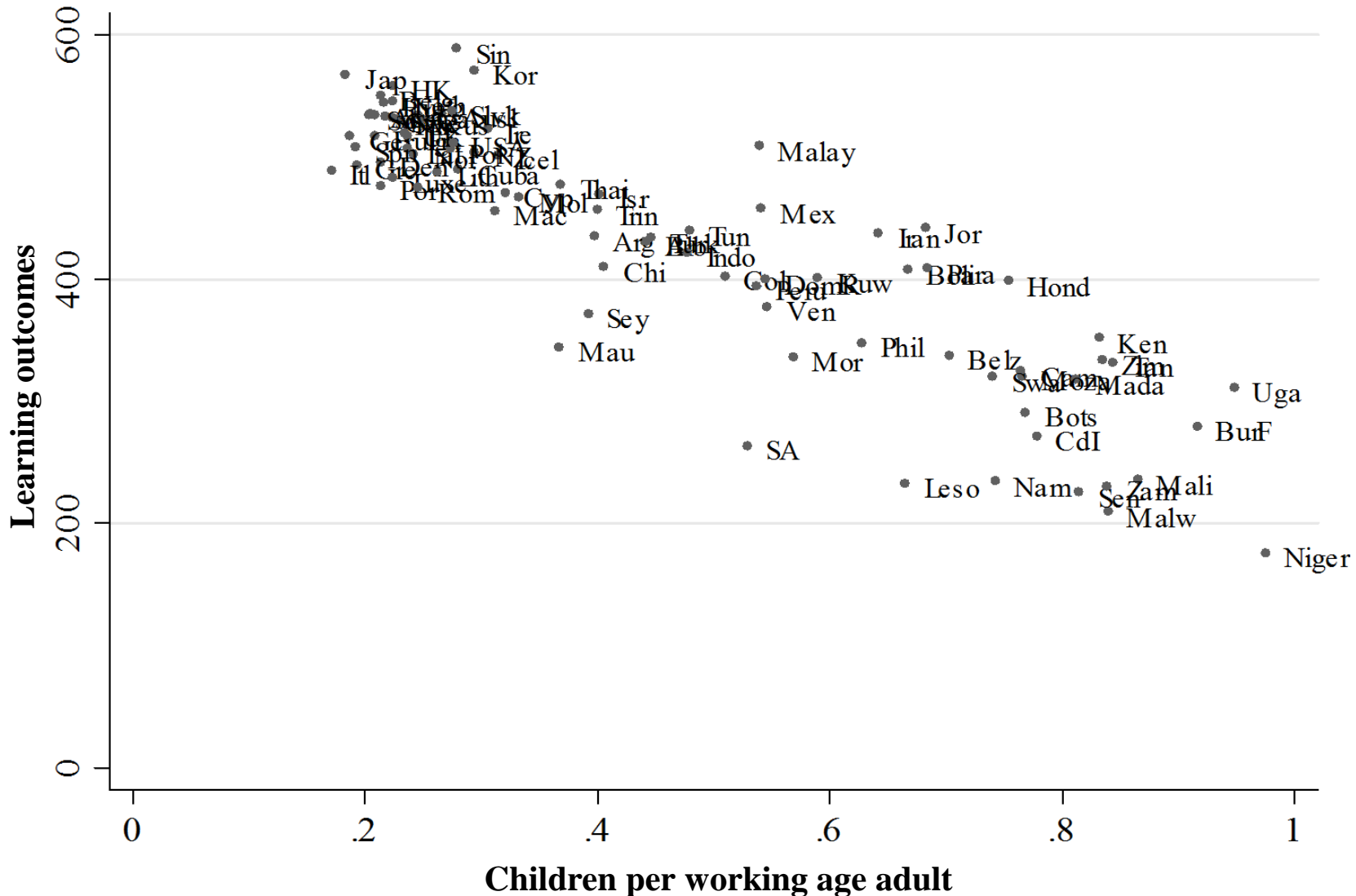
## Results



But it works both ways...

High population growth makes  
learning more difficult

Thus, countries with young populations have much lower test scores...



# Education and other factors...

- Can be a “virtuous” cycle
- Or a “vicious” cycle
- If have a “full virtuous cycle,” countries can break out of poverty in 1-2 generations (Asian Tigers)

So, we have “proven” that:

1. Quality is very low in developing world
2. Quality really matters

- **But why early reading? Why early, Why reading? What does that have to do with quality?**



# Why early?

“More time to “recover” the cost via the returns

“Learning begets learning” both cognitively and emotionally

Bad habits are cheaper to fix early (as any re-trained athlete knows)

- Comparing reading in grade 1 to 4
- Or, take it to the limit: good socialization versus prison

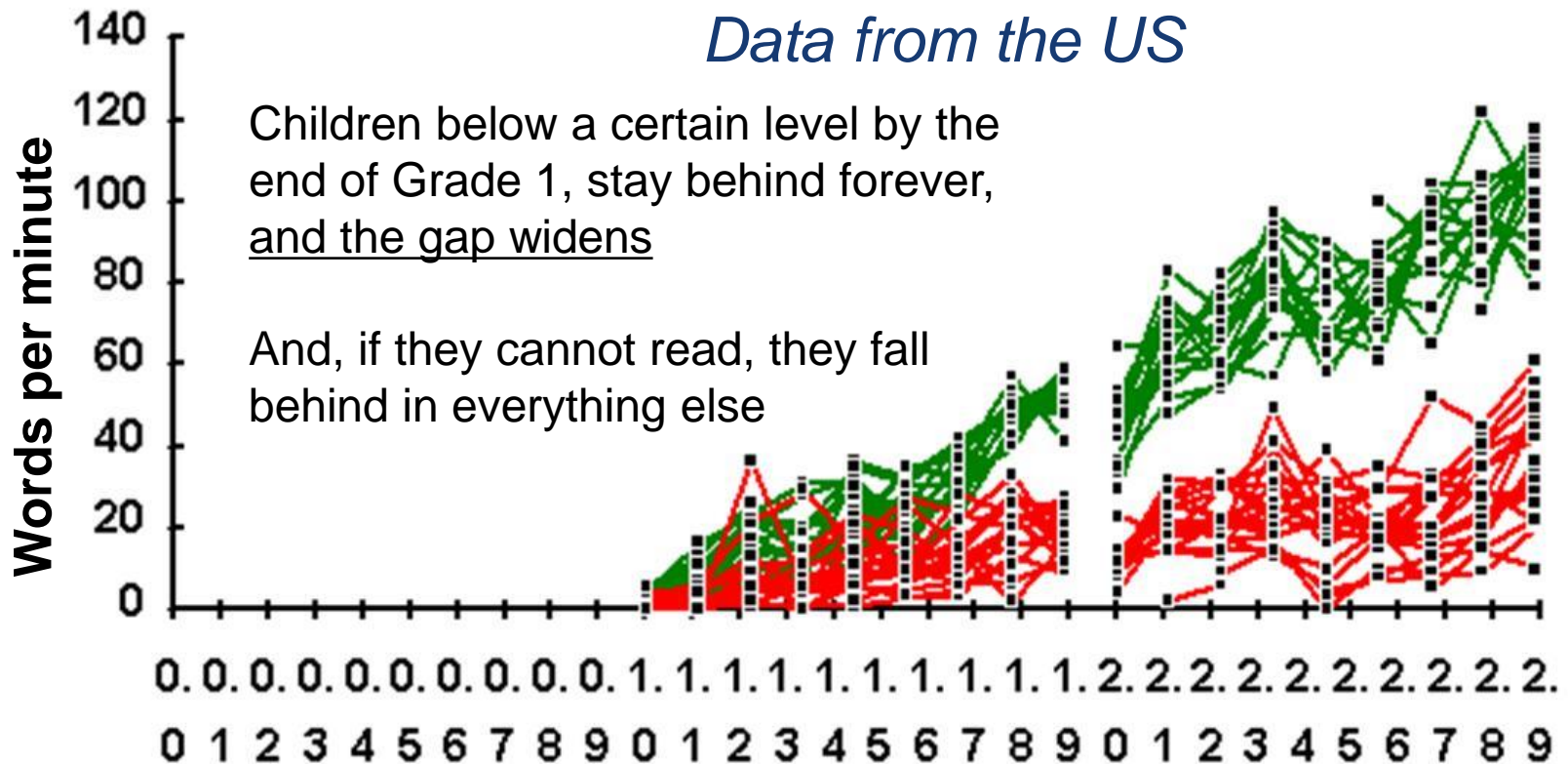
# Why early?

A good bit of evidence of various sorts of “Matthew effects”

Namely, cumulative effects of learning

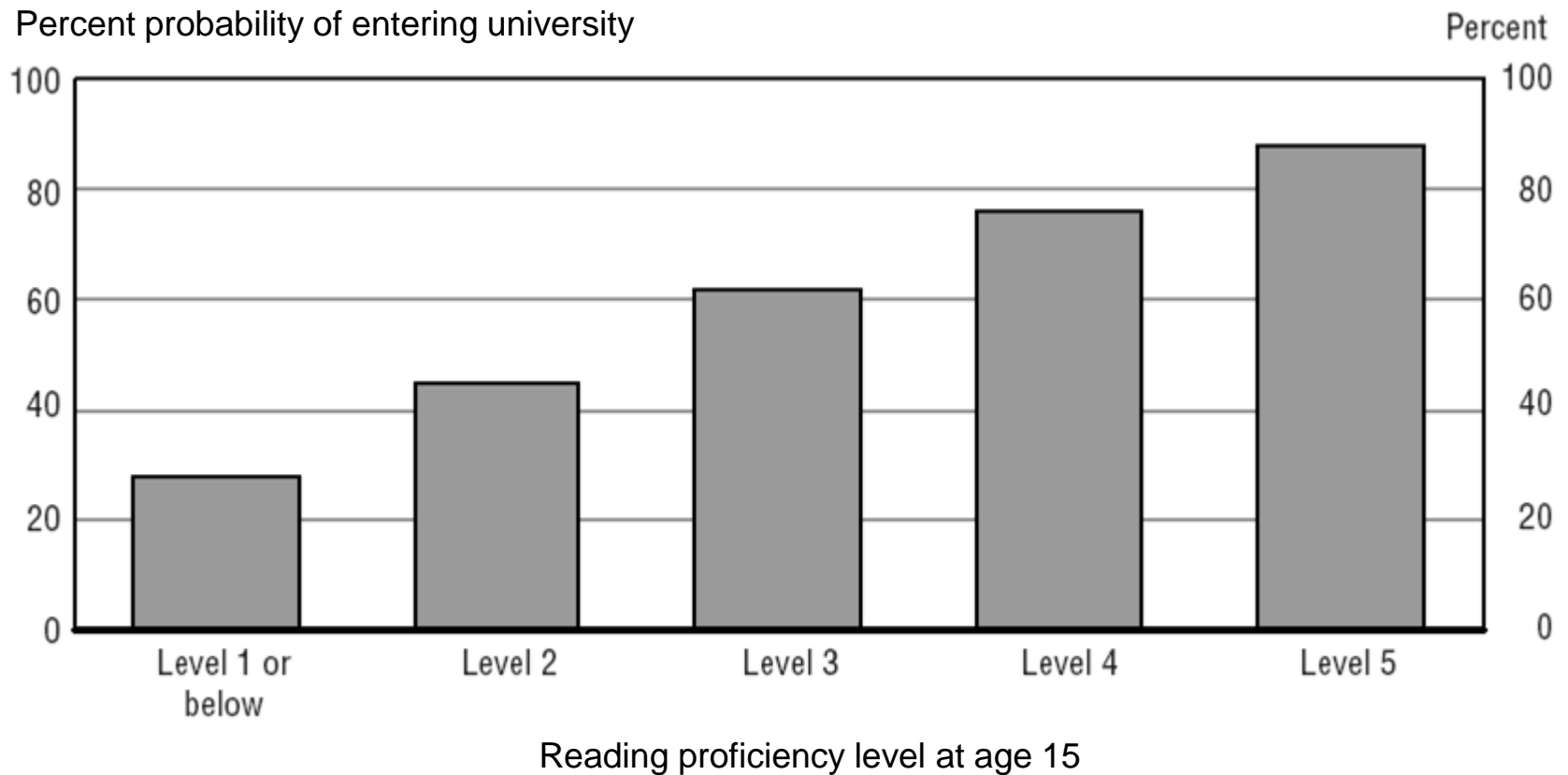
There are many such studies and graphs

# Why early? Matthew Effect in reading



Grade in years and months  
(thus 1. is 6 months into Grade 1)

# This persists into secondary and university

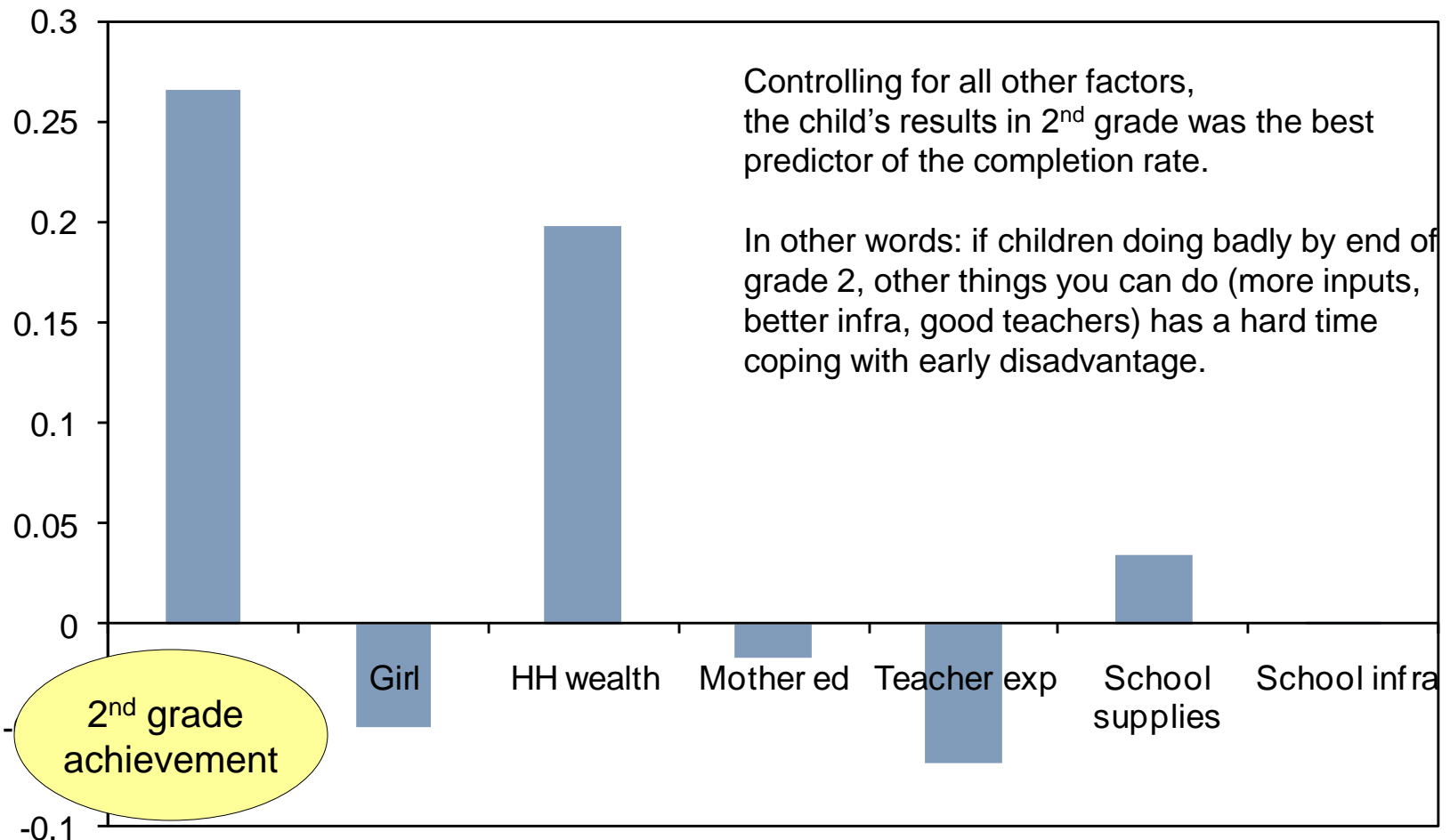


Data from Canada

Knighon and Bussiere, 2006, in McCracken and Murray (date?).

# Do these sorts of results hold in developing countries?

**Factors predicting permanence in school, in multivariate model (all factors controlling for each other – Senegal example)**



# Why early reading?

Not “the only thing that matters” but...

1. It is the most important “symbolic processing” skill – kids then learn that math is also a code to be cracked
2. Some evidence that reading is more “artificial” than math, so more important to teach it early and explicitly
3. It lays the foundation – no independent learning without reading
4. It can be improved now, “we” know how
5. It can be a “case in point” for overall management of learning outcomes
6. It is a simple indicator of accountability for learning that parents can understand

# Why early reading?

“It is a simpler indicator of accountability for learning accountability that parents can understand.”



Fluent



Non-fluent

John had a little dog. The little dog was fat.  
One day John and the dog went out to play.  
The little dog got lost.  
But after a while the dog came back.  
John took the dog home.  
When they got home John gave the dog a big meal.  
The little dog was happy so he slept.  
John also went to sleep

# What does it take to improve? – “Five T’s”

1. Teaching effectiveness, scripted lessons, direct instruction, supervision
2. Time (reduce absenteeism, claim specific reading time in week, etc.)
3. Texts: materials (cheaper, plentiful, massive, pedagogically more sound, in home language)\*
4. Tongue: teach reading in language children speak best
5. Testing: appropriate (varied) assessment

\*Even when the official language of instruction is not the home language



# If we have good practices, then...

This  
is  
how  
most  
3rd-grade kids  
in  
Uganda could  
read

# Some extra slides on the “how”

...Not shown...

...Following...