

# **Fertility Decline in the Arab Region: A Global Perspective**

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# Objectives

1. Sources of fertility decline: how do Arab declines compare with declines in other regions?
2. Obstacles to decline to replacement level
3. Low fertility and kinship structures

# 1. Sources of Fertility Decline

Long-standing debate: principal source of fertility decline in developing countries has been:

- *Decline in the desired number of children*

OR

- *Greater success in avoiding unwanted births*

*If the former.* driver is economic and social change

*If the latter.* driver is more effective birth control

# 1. Sources of Decline (cont)

One can perform a simple decomposition using identity:

$$\text{TFR} = \text{wTFR} + \text{uTFR}$$

where  $\text{wTFR}$  is Wanted TFR

$\text{uTFR}$  is Unwanted TFR

Results for 51 countries and 102 inter-survey periods:

<u>Due to</u>	<u>Median</u>	<u>25<sup>th</sup></u>	<u>75<sup>th</sup></u>
wTFR	57%	35%	86%

# 1. Sources of Decline (cont)

This is revealing, but not without serious shortcomings.  
Consider these rates:

$$\text{TFR} = \text{wTFR} + \text{uTFR} \quad \text{where} \quad \begin{array}{l} \text{wTFR} \text{ is Wanted TFR} \\ \text{uTFR} \text{ is Unwanted TFR} \end{array}$$

*Denominator:* wTFR & uTFR: all women

*Numerators:* wTFR: wanted births  
uTFR: unwanted births

**Problem:** all women not at risk of wanted (or unwanted) births

====> wTFR and uTFR will change as the preference composition changes

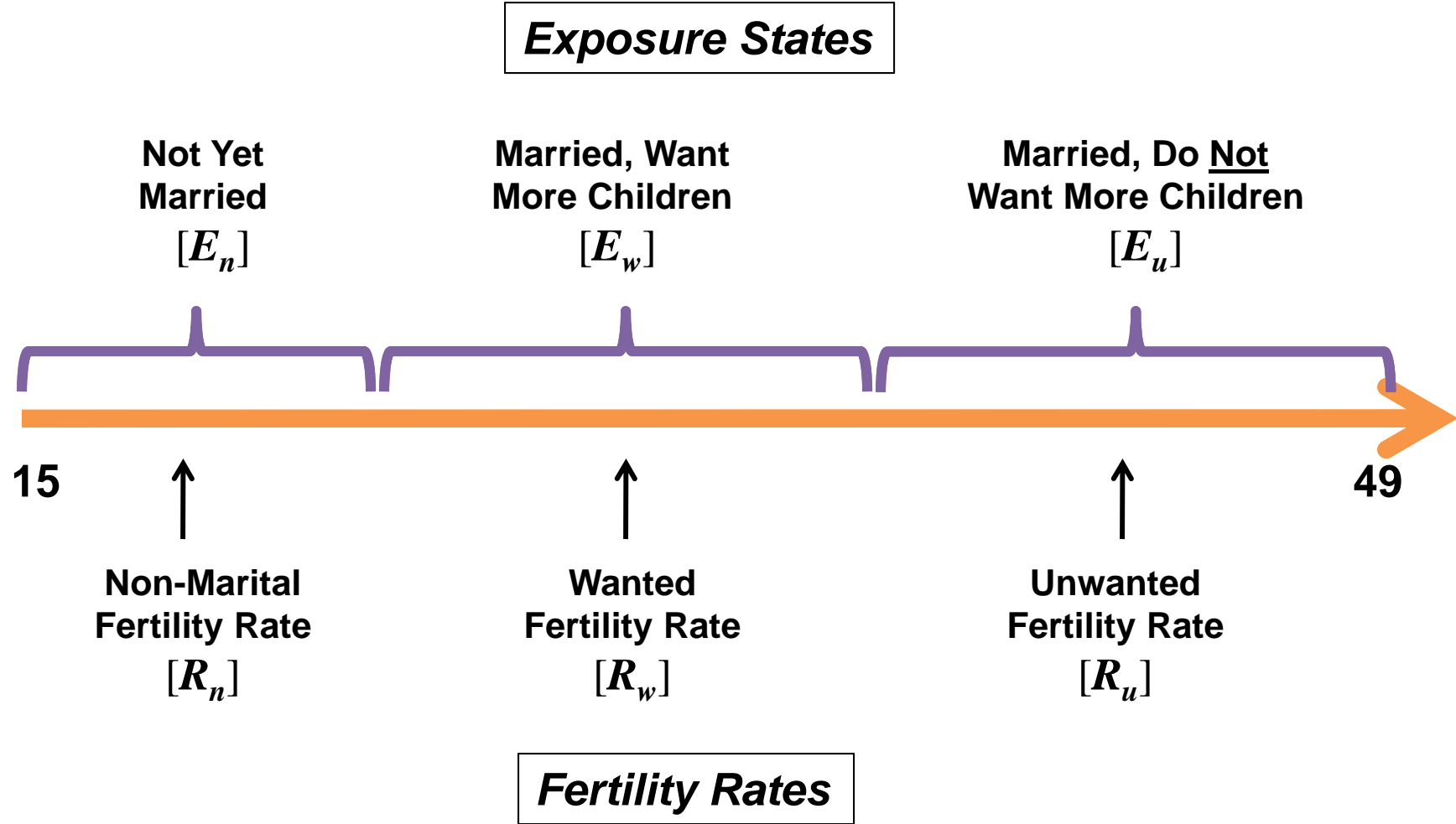
# 1. Sources of Decline (cont)

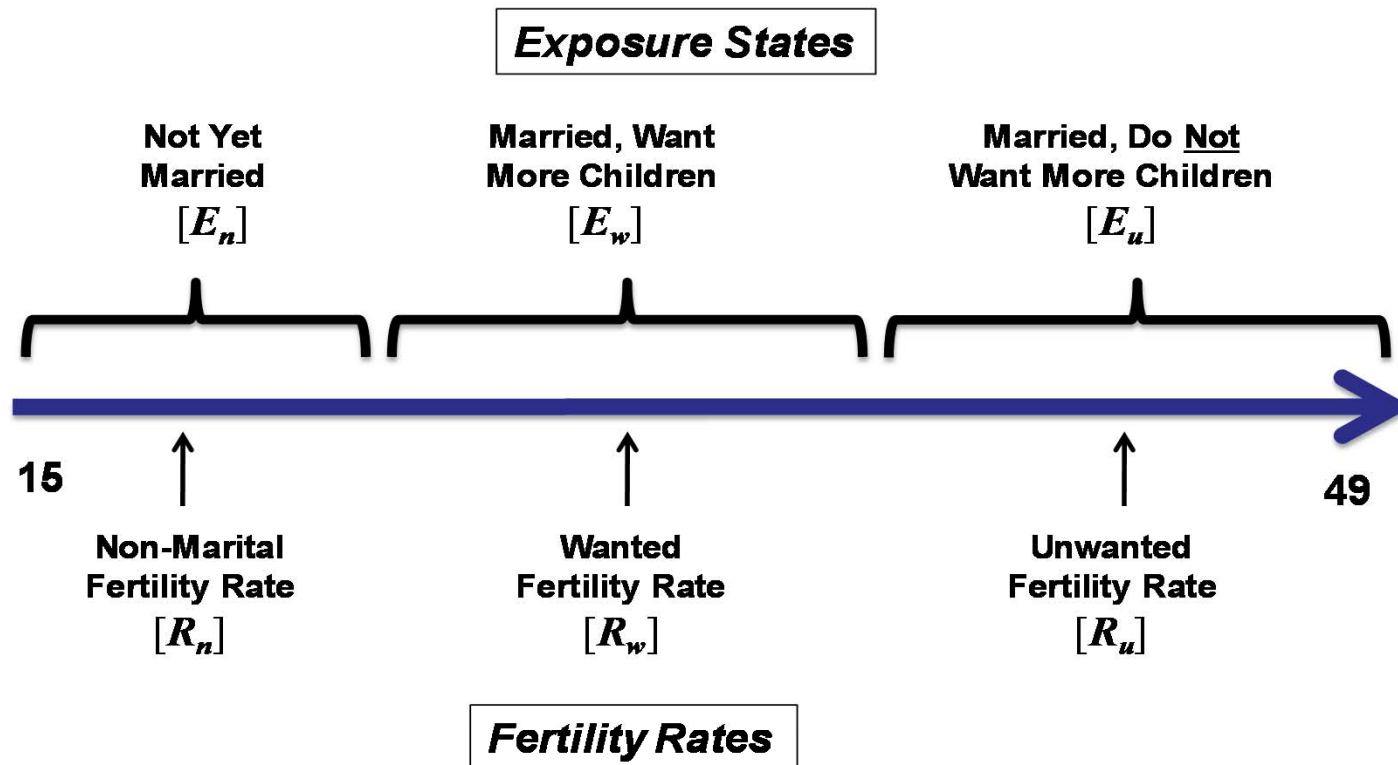
Consider simplified model of the reproductive career

Assume that women:

- are capable of conceiving from ages 15 – 49
- first experience a pre-marriage period of low risk of conceiving
- after marriage: first want children, then want to stop childbearing
- have rates of childbearing in all of these states

# The Reproductive Career:

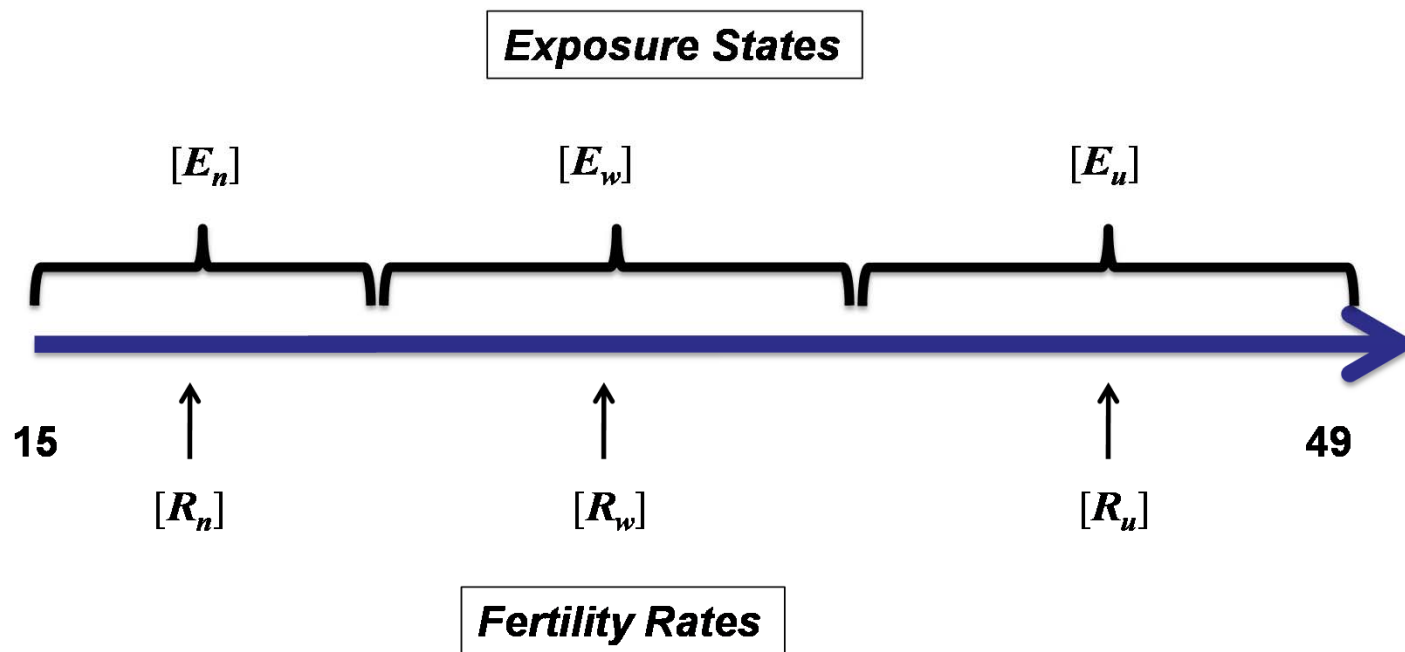




And therefore fertility will decline when:

- $E_n$  and  $E_u$  increase (assuming  $R_w > R_u$ )
- $R_w$  and  $R_u$  decrease





That is, fertility declines when:

- women spend more time single and/or wanting to stop childbearing
- rates of wanted and/or unwanted childbearing decline

## 1. Sources of Decline (cont)

This leads to a simple (nested) formulation for age-specific fertility rates [f]:

$$f = r^n * e^n + r^w * e^w * (1 - e^n) + r^u * (1 - e^w) * (1 - e^n)$$

Treating  $r^n * e^n$  as the “nuptiality” component, this is four-element expression for f:

$r^n * e^n$	nuptiality
$e^w$	preference composition (more vs. no more)
$r^w$	<u>conditional</u> wanted fertility rate
$r^u$	<u>conditional</u> unwanted fertility rate

# 1. Sources of Decline (cont)

Hence there are four sources of fertility decline:

1. More adult years spent single (*marriage change*)
2. More married *years spent not wanting another child* (vs. wanting a child)
3. Decline in rate of childbearing among those wanting another child (*wanted fertility rate*)
4. Decline in rate of childbearing among those not wanting another child (*unwanted fertility rate*)

#2 reflects changes in the desired number of children

#3 and #4 reflect more effective birth control

# 1. Sources of Decline: Empirical Results

Decomposition of fertility change (TFR decline):

- Limited to inter-survey periods with  $>0.4$  decline
- 51 countries, 102 inter-survey periods, 1975 – 2011
- WFS, DHS, PAP, RHS

Casterline – el-Zeini (2007) estimates of unwanted fertility

Decomposition via standardization

Metric: per decade effect on TFR (of each component)

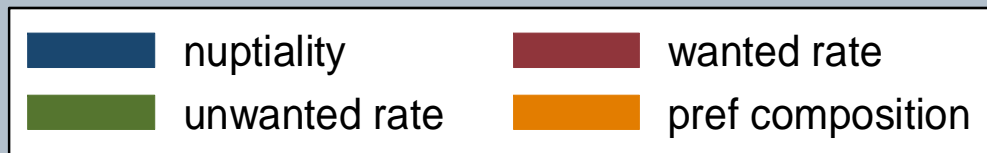
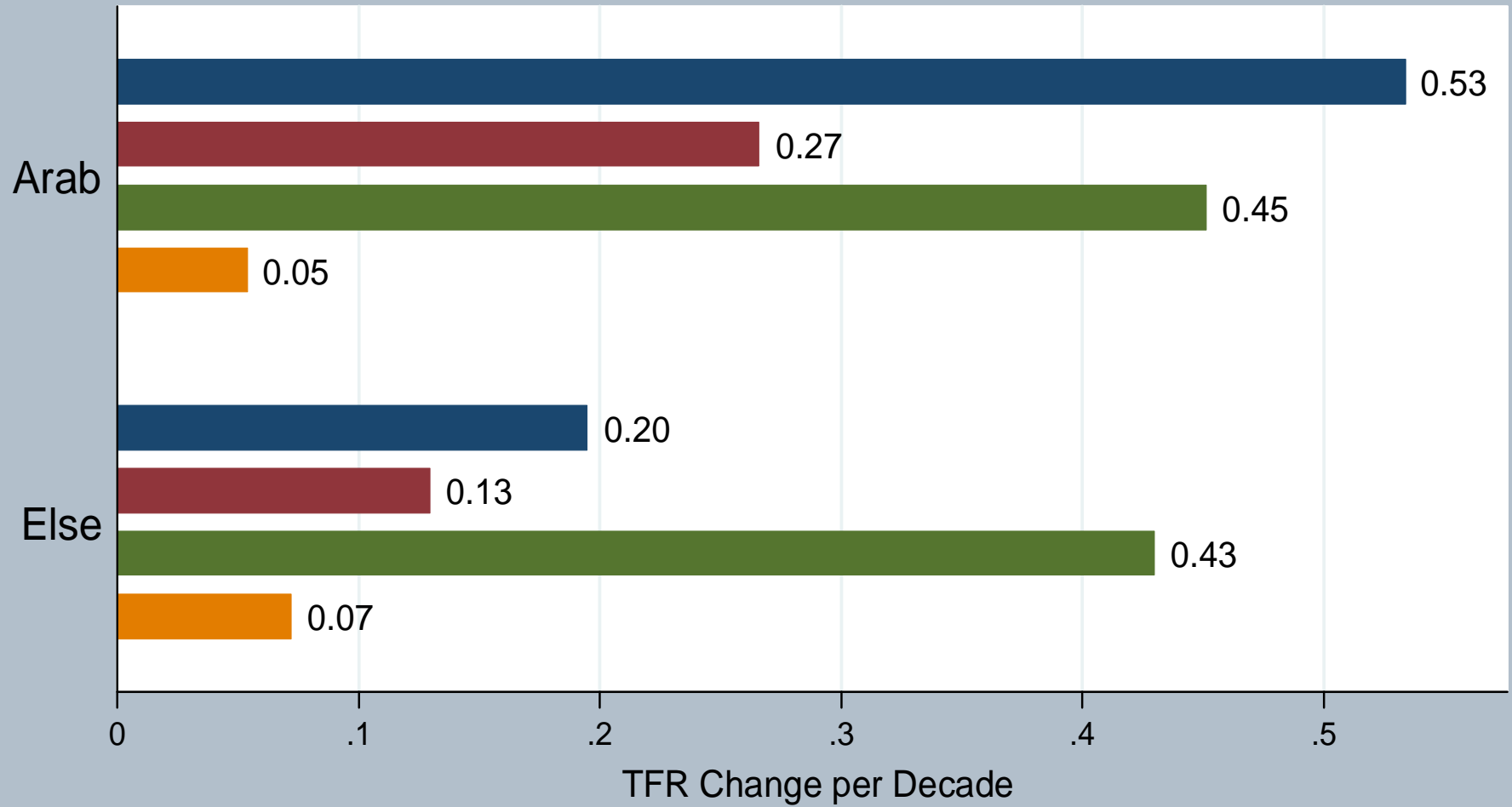
# 1. Sources of Decline: Empirical Results (cont)

Median values [births per decade decline in TFR]

Component	Arab	Africa	Asia	Latin America
<b>Nuptiality</b>	0.53	0.37	0.20	0.02
<b>Wanted Rate</b>	0.27	0.01	0.08	0.29
<b>Unwanted Rate</b>	0.45	0.23	0.41	0.56
<b>Pref Composition</b>	0.05	0.15	0.09	0.00
<b>Rate of Decline (births per decade)</b>	1.34	0.84	0.73	0.94
<b>N countries / N inter-survey periods</b>	8 / 19	19 / 31	10 / 18	14 / 34

# Contributions to Decline: Arab vs. Other Regions

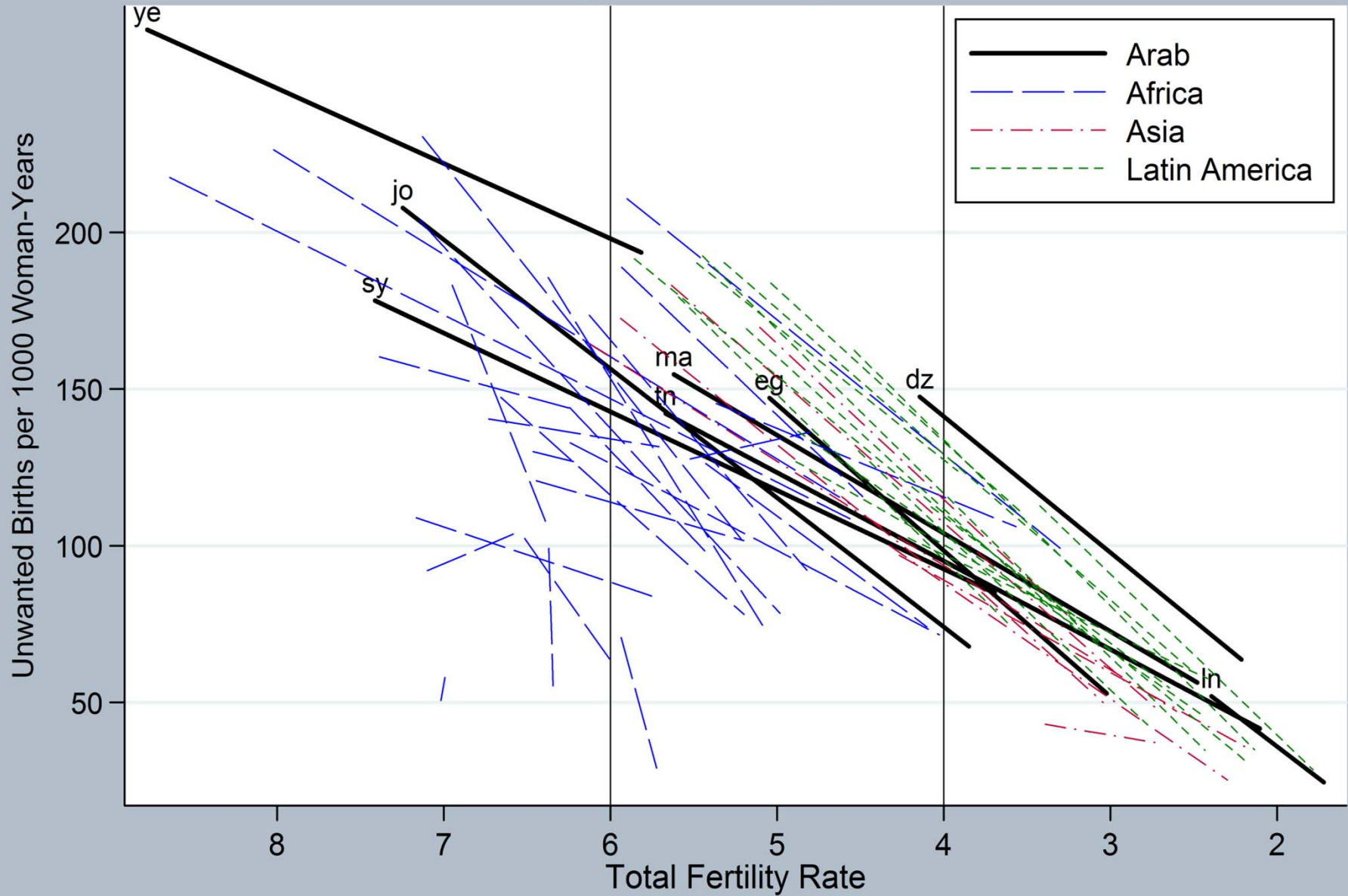
## Four Component Decomposition



## **1. Sources of Decline: Empirical Results (cont)**

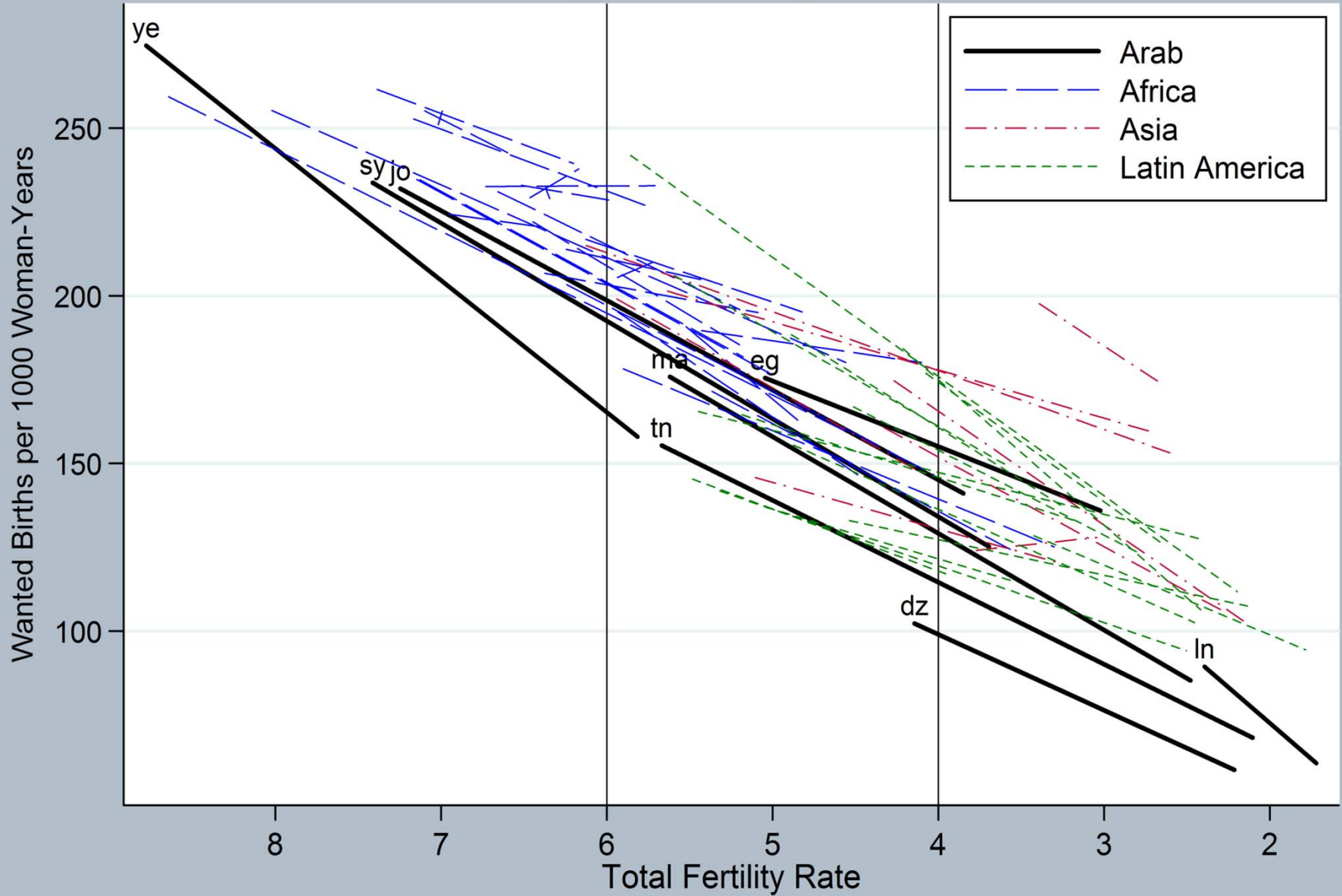
In previous two slides, note large contributions of declines in unwanted fertility rate and wanted fertility rate. These declines are portrayed in next two slides, with Arab region highlighted.

# Trends in Conditional Unwanted Fertility Rate By Total Fertility Rate





# Trends in Conditional Wanted Fertility Rate By Total Fertility Rate



## 1. Sources of Decline: Sum-Up

Considering the four components

- nuptiality
- wanted fertility rates
- unwanted fertility rates
- fertility desires

Arab declines are distinctive:

- Large contribution of *nuptiality*
- (Moderately) large contribution of *wanted fertility*

Not distinctive:

- Small contribution of changes in fertility desires

## 2. Obstacles to Decline to Replacement Level

Two classes of constraints:

- Fertility desires [*Motives*]
- Birth control options [*Means*]

## 2. Obstacles to Decline (cont.)

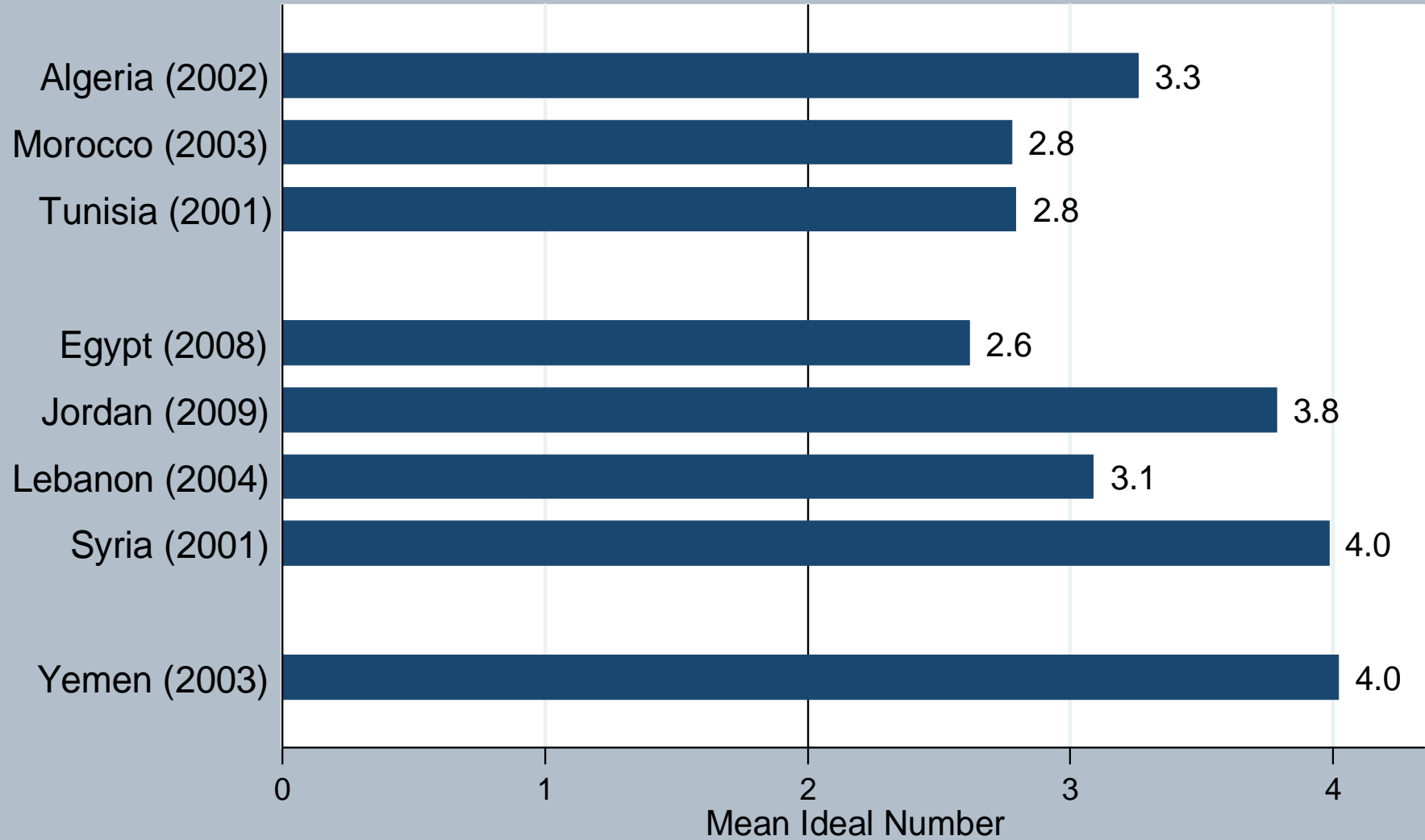
### Fertility desires [*Motives*]

Lack of firm attachment to two-child family

*See next three slides:*

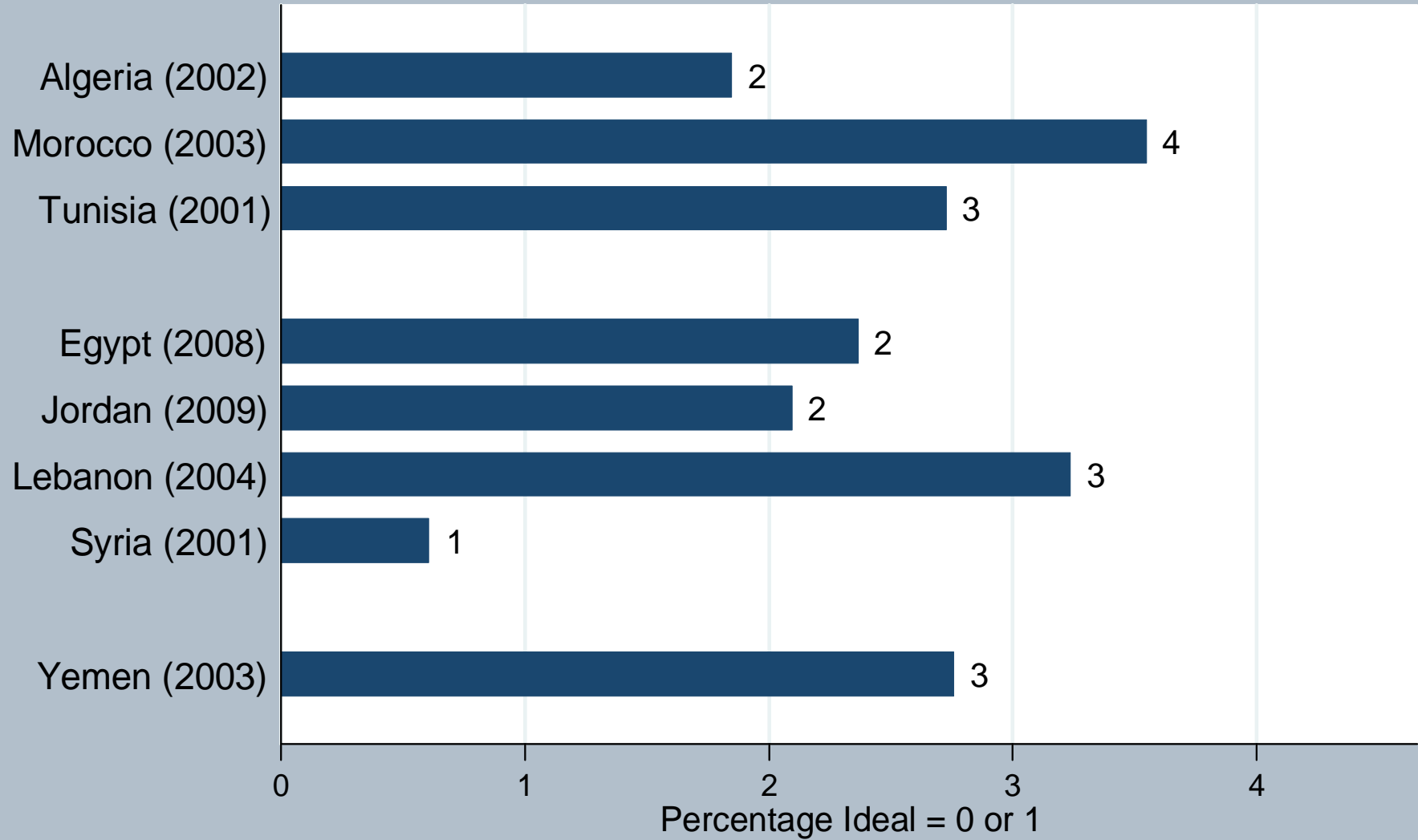
- mean ideal number of children among recently married >2.5 in most countries and >3.0 in many
- <5% have ideal of 0 or 1 child
- >50% have ideal of 3+ in most countries

## Ideal Number of Children Women <10 Years Married



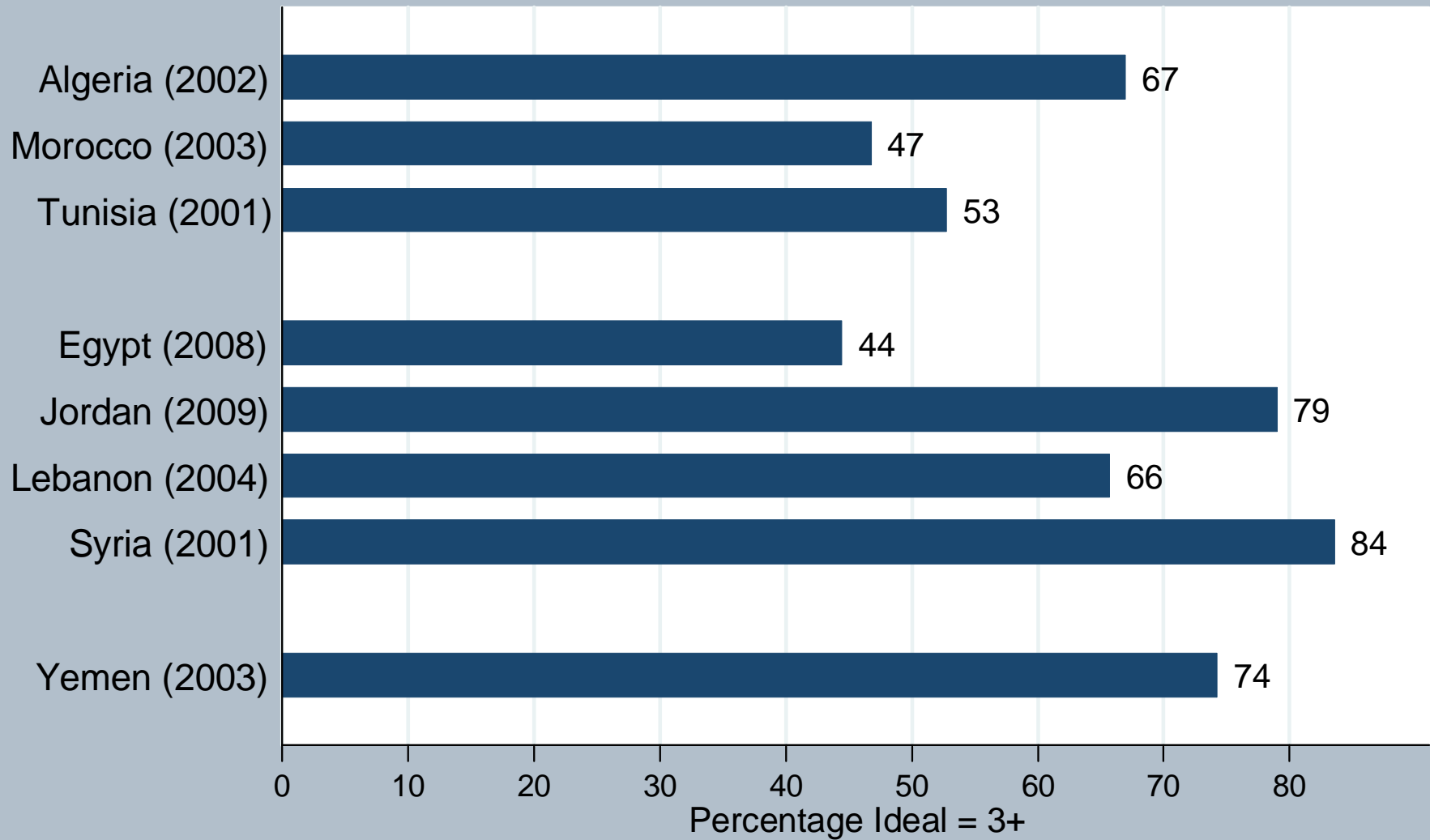
Note: among women who provide a numeric ideal

## Ideal Number of Children = 0 or 1 Women <10 Years Married



Note: among women who provide a numeric ideal

## Ideal Number of Children = 3+ Women <10 Years Married



Note: among women who provide a numeric ideal

## 2. Obstacles to Decline (cont.)

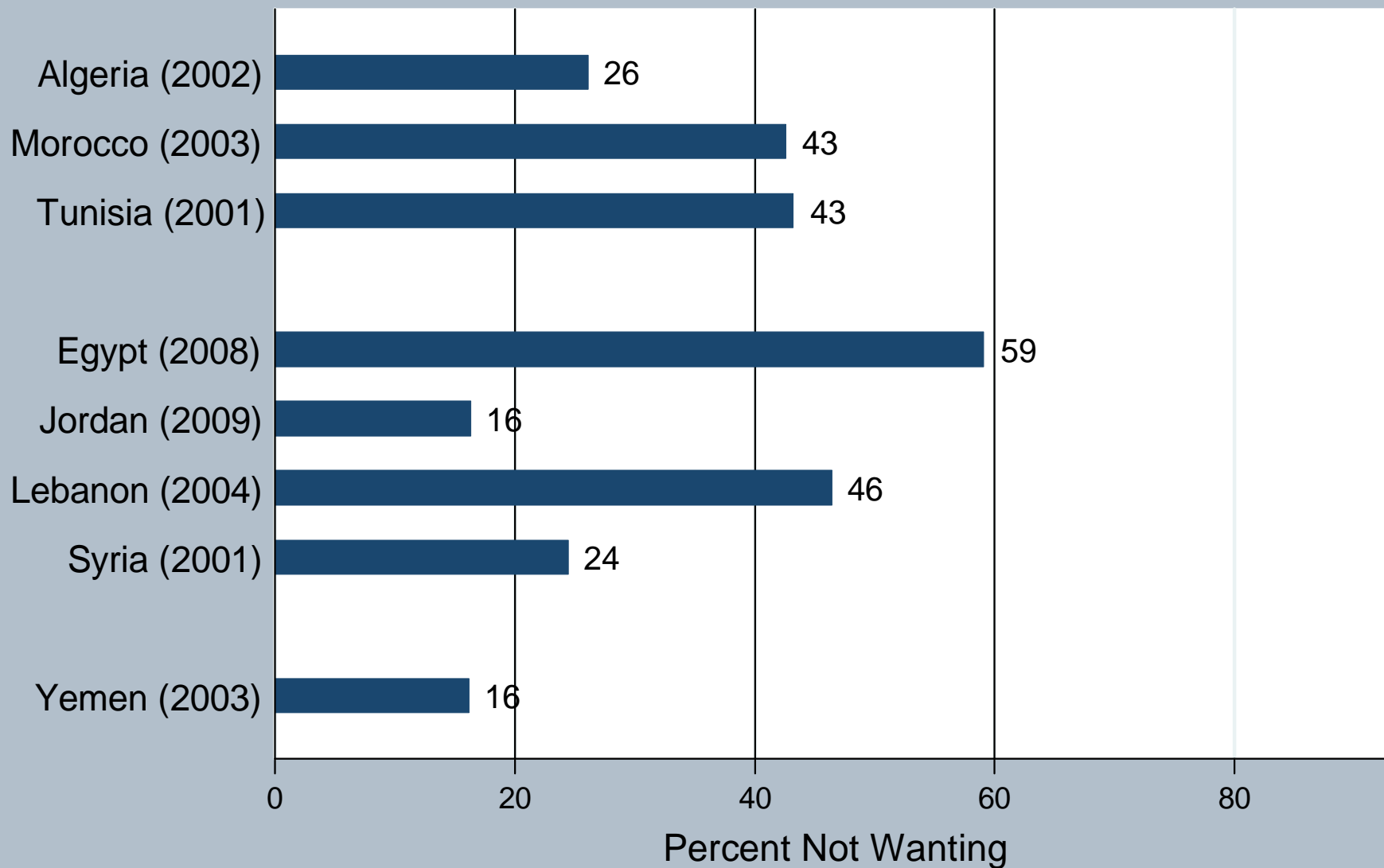
### Fertility desires [*Motives*]

*See next two slides:*

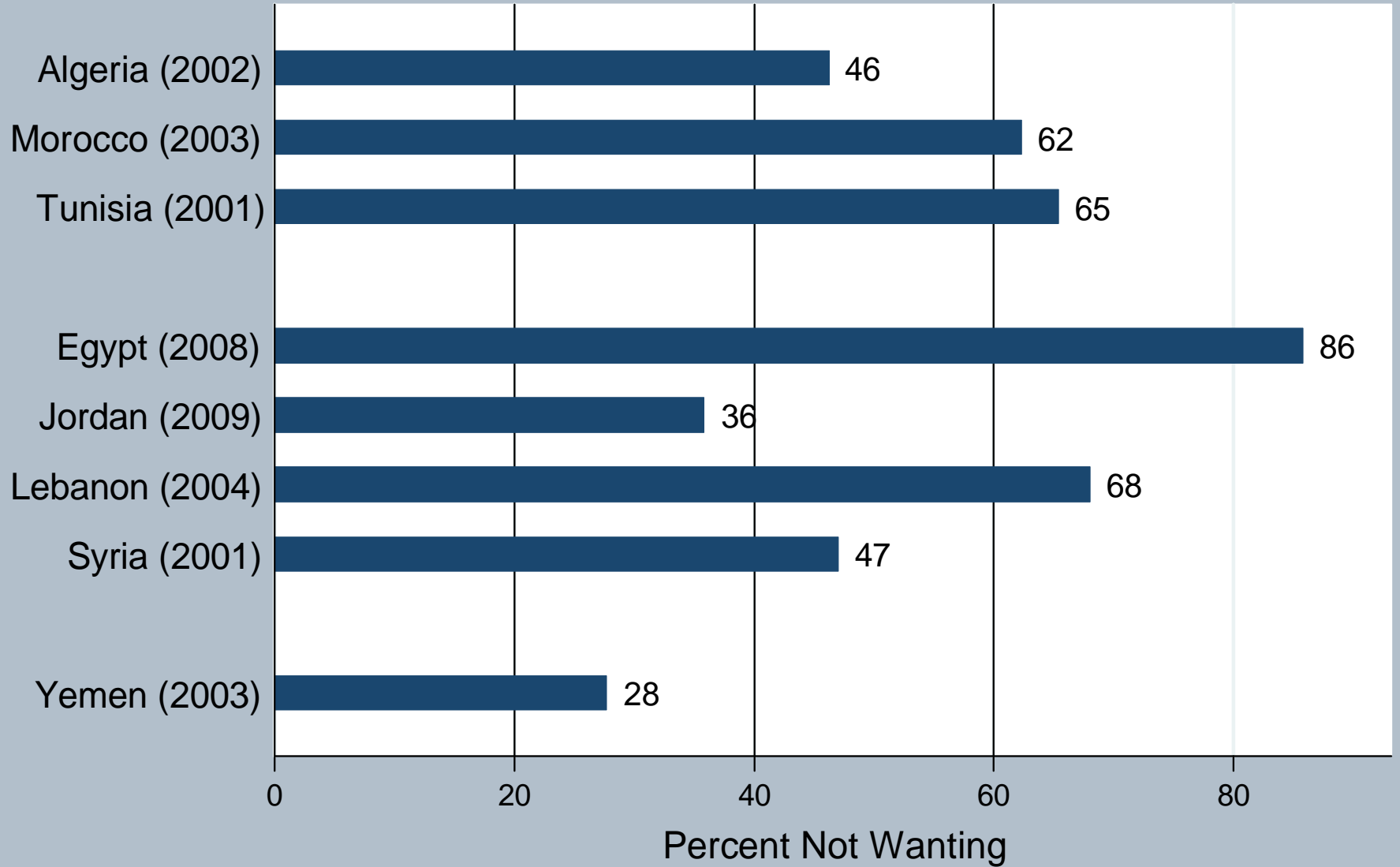
- <50% want to stop at parity 2 in most countries
- <70% want to stop at parity 3 in most countries



## Percentage Not Wanting Another Birth, Parity 2



## Percentage Not Wanting Another Birth, Parity 3



## 2. Obstacles to Decline (cont.)

### Fertility desires [*Motives*]

*Ideals:* lack of attachment to two-child family

*Preferences:* <50% wish to stop at two children

## 2. Obstacles to Decline (cont.)

### Birth control options [*Means*]

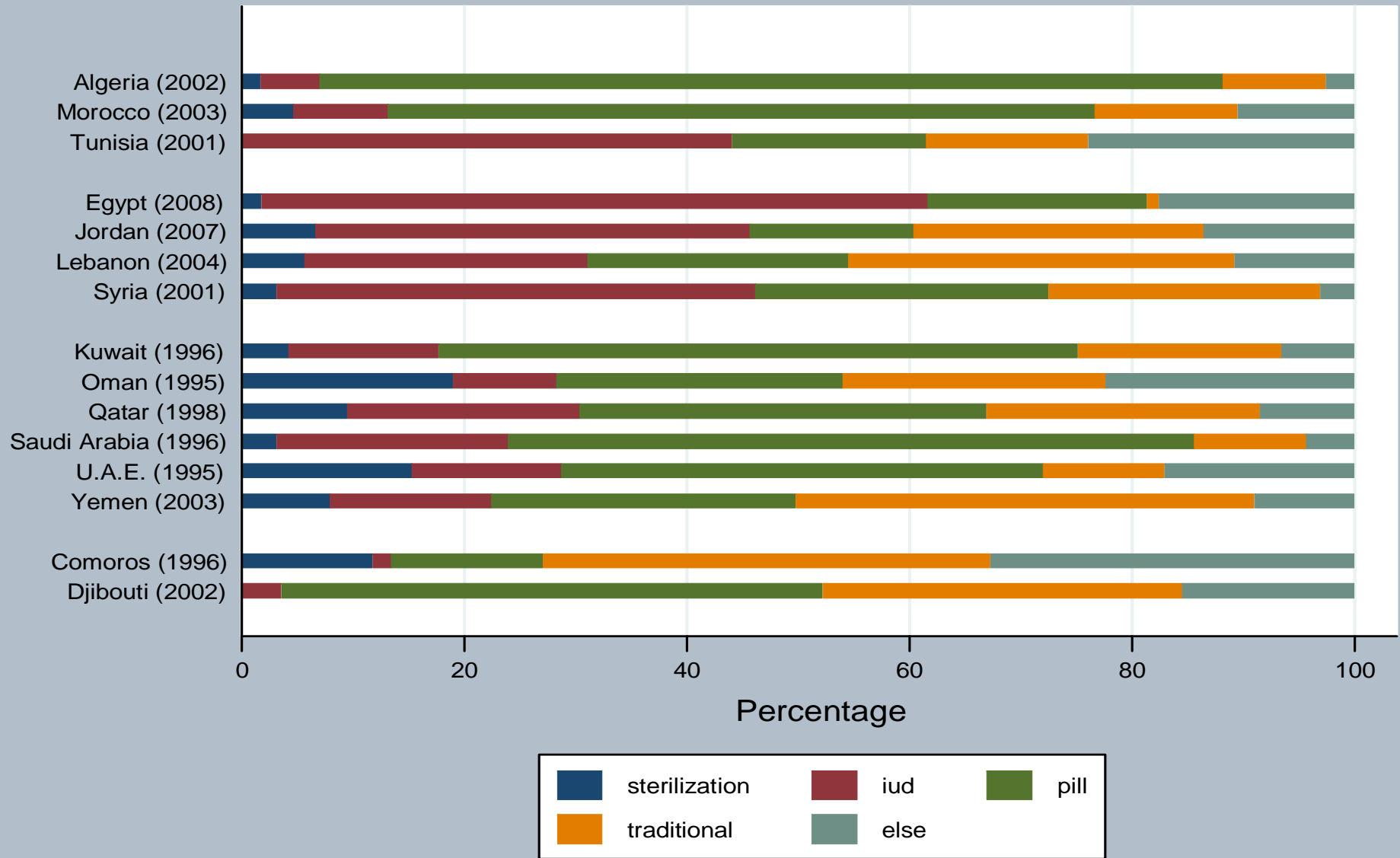
At issue is acceptability of means for very effective termination of childbearing after a small number of children (e.g. two children)

- Sterilization
- Induced abortion

Neither method of birth control is commonly employed at present in Arab region (with few exceptions)

And many reasons to assume this will continue . . .

# Contraceptive Method Distribution



Source: DHS, PAPFAM, and Gulf Family Health surveys

## 2. Obstacles to Decline: Sum-Up

Significant, and possibly robust, factors acting against the achievement of low fertility in the short-term

- Two-child norm is not firmly and widely established
- Neither sterilization nor induced abortion are generally available as methods of birth control

Arguing to the contrary – sharp changes in nuptiality, and the potential for further such change

Should not assume that most countries in the region will follow the pathways of Lebanon and Tunisia . . .

### 3. Low Fertility and Kinship Structures

Arab declines to date unusual in reliance on nuptiality

High fraction not marrying

+

Relatively high levels of marital fertility

This model of low fertility has implications for kinship configurations

### 3. Low Fertility and Kinship (cont.)

	<b><u>Parity Progression</u></b>		
	<u>Brazil</u>	<u>India</u>	<u>Tunisia</u>
0--->1	0.91	0.90	0.66
1--->2	0.63	0.88	0.92
2--->3	0.39	0.39	0.74
3--->4	0.27	0.33	0.58
4--->5	0.10	0.10	0.20

<b><u>Completed</u></b>			
<u>Parity</u>	<u>Brazil</u>	<u>India</u>	<u>Tunisia</u>
0	0.09	0.10	0.34
1	0.34	0.11	0.05
2	0.35	0.48	0.16
3	0.16	0.21	0.19
4	0.05	0.09	0.21
5	0.01	0.01	0.05
Total	1.00	1.00	1.00
Mean Parity	1.77	2.11	2.03

Period parity–progression: months 1–60 preceding survey



### 3. Low Fertility and Kinship (cont)

Kinship micro-simulation results: mean number of specified kin

Type of Kin	Age	Brazil	India	Tunisia
Siblings	10	1.2	1.4	2.0
	35	1.2	1.5	2.1
	60	1.1	1.3	1.9
1 <sup>st</sup> Cousins	10	3.5	4.6	5.7
	35	3.5	4.6	5.7
Uncles	10	2.7	3.0	4.1
	35	2.2	2.5	3.3

### 3. Low Fertility and Kinship (cont)

Low fertility is compatible with maintenance of moderately rich kin network

Especially when low fertility is achieved via large fractions of women having 0 children

Arab pathway to low fertility has not, to date, threatened existence of valued kin relations to the extent one might imagine . . .

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