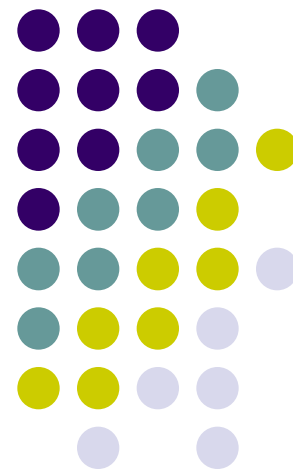
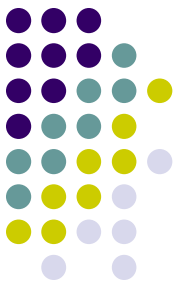


# Comments on Porter and King: “Fertility & Women’s Labor Force Participation in Developing Countries”

David Lam  
University of Michigan

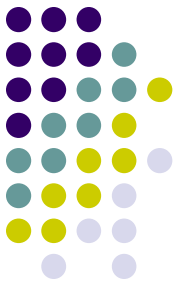
Pop/Pov Research Network Conference  
Cape Town, South Africa  
January 2010





# Questions

- What policy question are we trying to answer?
- To what extent does this analysis answer that question?
- What do the results imply for policy?
- Some details:
  - What is going on with child mortality?
  - Timing of fertility
- Why don't we see large effects of fertility on women's labor force participation?



# Potential policy questions

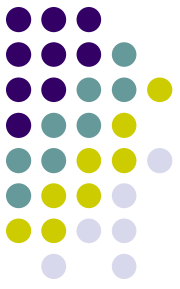
- What would happen if we could eliminate an unwanted birth for some given woman?
  - What would happen to her ultimate number of children ever born and children surviving?
  - What would happen to her labor force participation?
  - More grandly, how would this affect the economic growth or poverty level if we did this for many women.
- Specific details:
  - At what age and parity did we eliminate the unwanted birth?
  - When and how are we measuring labor force participation?

# Approach



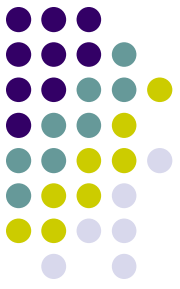
- Porter and King use two natural experiments that have been used in previous literature
  - 1. Twins on the first birth
  - 2. Sex composition of first two births
- Unlike most previous literature, they do not explicitly take an instrumental variables approach
- Estimates are reduced form regressions of children ever born, children surviving, and labor force participation on indicators of twins, same sex of first two births, etc.
- Doing this with all the DHS data is an excellent idea.

# Identification



- 1. Twins on the first birth
  - This probably comes closest to the idea of an unanticipated unwanted birth
- Issues
  - Twins are only about 1% of all births, but they have very large sample sizes
  - The extra birth comes at the same time as the birth in the control group (those with single births)
  - This could mitigate the costs of the extra birth to the extent there are economies of scale
  - It could exaggerate the cost if the burden of twins is greater than the burden of two normally spaced children
  - Having twins first speeds up fertility, potentially leading to faster return to labor force after childbearing is completed

# Approach



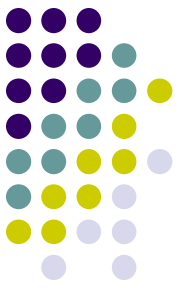
- 2. Sex composition of first two births
- Issues
  - Potentially less exogenous due to sex-selective abortion
  - Resulting change in fertility doesn't as clearly correspond to an unanticipated unplanned birth – question being answered is somewhat different.
    - What is impact on LFP of an extra birth that is induced by the sex composition of the first two births?
    - Different implications for timing than twins first
    - As authors note, sex of children may have direct effect on division of labor in household, violating exclusion restriction

# What do we learn?

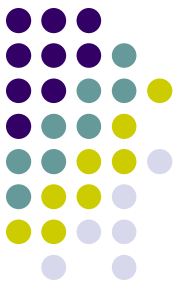


- Having twins first has a big impact on children ever born and children surviving
  - Having twins on first birth increases fertility by around 1 birth – presumably 1 is the theoretical maximum
  - This is true even for women age 35-44 – surprising lack of adjustment in later fertility (This would be clearer if results were shown for women who had first birth at a given age, say 15-24).
  - BUT the effect of twins first on surviving children is only about 0.4 births
- In spite of increase in fertility, there is little evidence of reduction in labor force participation.
- If you are looking for evidence that reducing unwanted births will increase women's labor force participation, there is very little support from this paper.

# What's going on with child mortality (e.g. Table 1)?



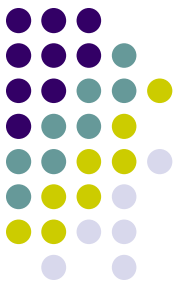
- Effect of twins first on children ever born is about 1, but effect on children surviving is about 0.4 (rarely reaches 50% of the difference in children ever born)
- One interpretation of this is that the “extra” child has a mortality rate of over 50%. But child mortality rates for these countries are around 10%, with a maximum of around 20% in Africa.
- Suppose we spread the effect over all children:
  - Suppose non-twin mothers have 4 births, 3.6 survive
  - Twin mothers have 5 births. At a 10% death rate they would have 4.5 surviving. But they actually have only 4 surviving, for a death rate of 20%
  - This implies that having twins on the first birth doubles the child mortality rate for all births. This seems hard to believe.
- Paper sometimes suggests that lower gap in surviving births reflects adjustment to twins births. But adjustment has to also show up in the number of children ever born.



# Effect of Twins at 1<sup>st</sup> Birth on Fertility in Sub-Saharan Africa & South Asia

Age:	<u>Number of Children Ever Born</u>				<u>Number of Surviving Children</u>			
	15-44	15-24	25-34	35-44	15-44	15-24	25-34	35-44
<b>URBAN WOMEN</b>								
<b>Sub-Saharan Africa</b>	1.028*** (0.031)	1.040*** (0.023)	0.993*** (0.040)	1.064*** (0.078)	0.421*** (0.031)	0.445*** (0.030)	0.440*** (0.040)	0.377*** (0.076)
<b>South Asia</b>	0.985*** (0.043)	0.992*** (0.047)	0.970*** (0.054)	1.013*** (0.088)	0.385*** (0.041)	0.459*** (0.054)	0.404*** (0.053)	0.340*** (0.083)
<b>RURAL WOMEN</b>								
<b>Sub-Saharan Africa</b>	1.081*** (0.024)	1.053*** (0.018)	1.067*** (0.031)	1.136*** (0.059)	0.232*** (0.025)	0.252*** (0.025)	0.228*** (0.033)	0.214*** (0.060)
<b>South Asia</b>	1.057*** (0.036)	1.061*** (0.030)	1.085*** (0.051)	1.025*** (0.088)	0.119*** (0.036)	0.317*** (0.036)	0.150*** (0.050)	-0.077 (0.085)

# What is the impact of an extra birth on women's labor force participation?



- “Overall, participation rates for urban women are negatively impacted by having an additional unexpected child. This is similar to findings in industrialized countries such as the U.S.
- “However, in rural areas, the likelihood of women's labor force participation increases with an unexpected additional child.”
- Both statements are generous interpretations of the results.

# Effect of Twins at First Birth

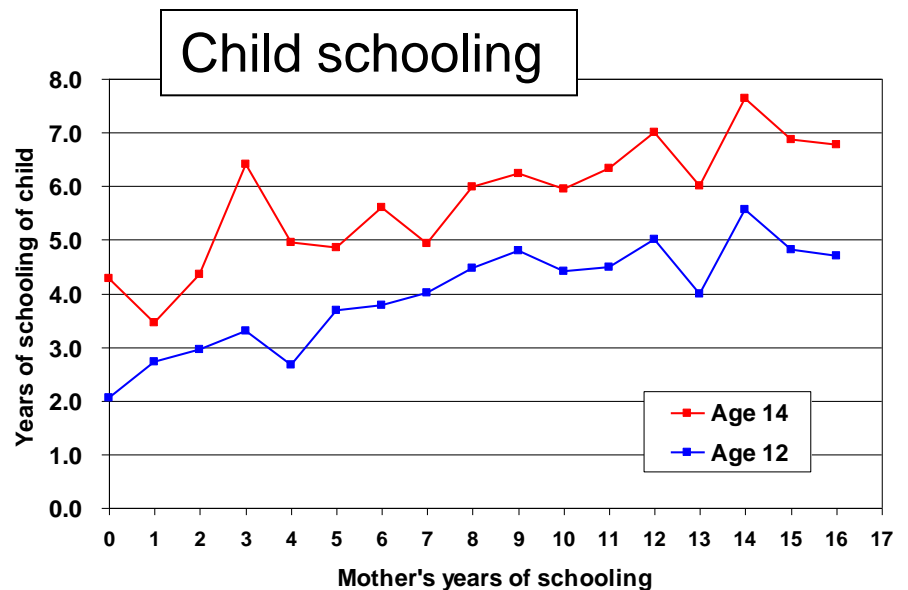
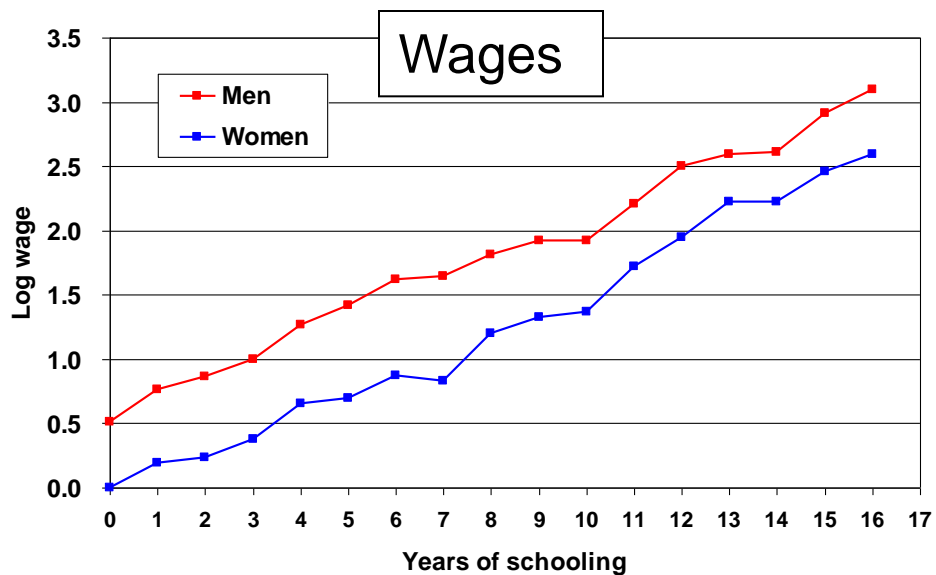
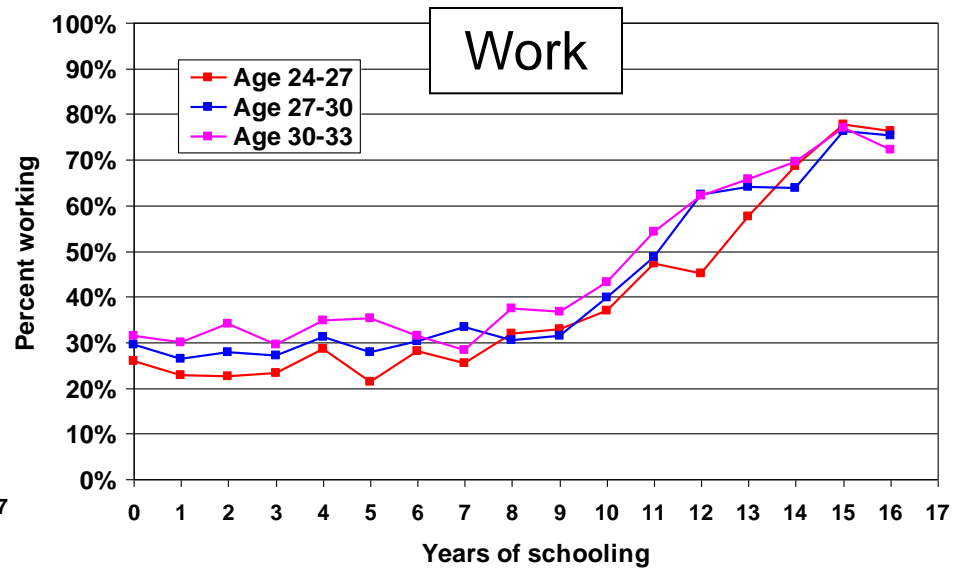
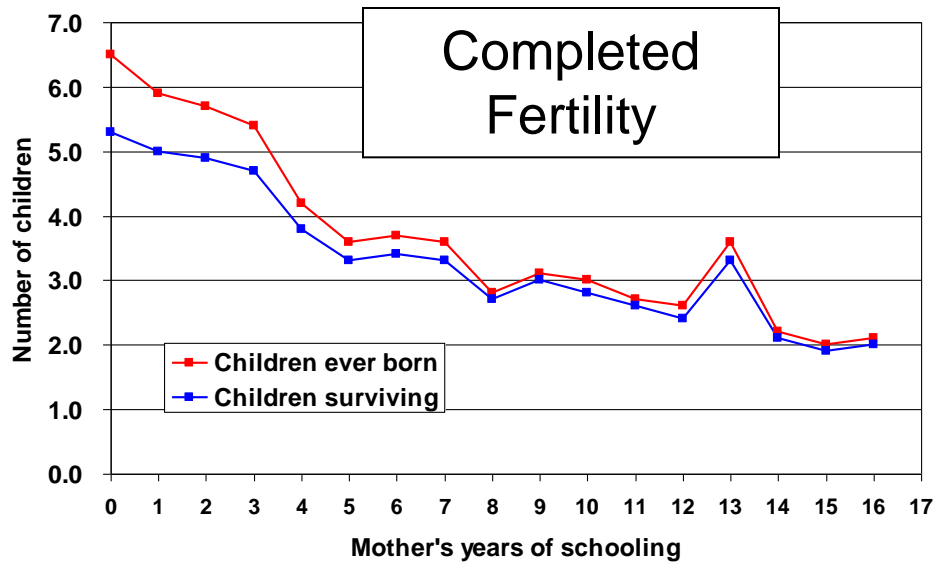
Age of Women:	<u>Labor Force Participation<sup>^</sup></u>			
	15-44	15-24	25-34	35-44
	(9)	(10)	(11)	(12)
Sub-Saharan Africa	0.051 (0.073)	-0.005 (0.148)	0.120 (0.107)	-0.021 (0.135)
South Asia	-0.025 (0.121)	-0.278 (0.404)	-0.194 (0.187)	0.181 (0.179)
East Asia	-0.046 (0.140)	0.546 (0.462)	-0.026 (0.195)	-0.196 (0.216)
Latin America & the Caribbean	-0.119 (0.084)	-0.095 (0.216)	-0.243** (0.123)	0.027 (0.137)
Sub-Saharan Africa	0.069 (0.059)	0.003 (0.119)	-0.029 (0.086)	0.256** (0.113)
South Asia	0.058 (0.095)	-0.331 (0.204)	0.116 (0.142)	0.262 (0.168)
East Asia	0.241** (0.118)	0.256 (0.300)	0.434** (0.173)	-0.010 (0.189)
Latin America & the Caribbean	0.012 (0.104)	-0.155 (0.252)	0.028 (0.164)	0.083 (0.163)

# What is the impact of an extra birth on women's labor force participation?

- Impact on labor force participation working through the sex composition of the first two births provides similar mixed evidence.
- Why don't we see a clearer negative relationship between fertility and labor force participation?
- Authors give a number of plausible arguments.
- Time allocation
  - How much time is freed up by reducing fertility?
  - What are the margins for alternative uses of that time?
- Consider impact of mother's education on fertility, work, and children's education in Brazil.

# Impact of women's schooling, Brazil 1984

(Lam and Duryea 1999)



# Fertility, labor force participation, and child quality

- In Brazil we found that negative link between fertility and LFP only appears when completed fertility has fallen to about 3 births.
- At low levels of education the extra time released by fertility reduction appears to be invested in producing higher quality children.
- Declines in completed fertility from 6 to 5 are unlikely to lead to large increases in women's employment or earnings (or GDP)
- But investments in children's human capital may be much more important as long-term source of economic development and poverty reduction.