The Demand for Birth Control: Trends and Regional Patterns

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ABSTRACT

The desire to avoid pregnancy – "demand for birth control" [DBC] – is an integral component of standard diagnostic measures of reproductive success, namely "unmet need for contraception" and "percent demand satisfied". DBC is simply fertility preferences (desire to have another child soon, later, or not at all) and is not tantamount to a demand for contraception. This paper provides a comprehensive portrait of trends in DBC over the course of fertility decline via analysis of national demographic survey data collected in Latin America, Asia, and Africa from 1975 - 2018 (350 surveys, 78 countries, 3.2M women). We construct two dichotomous indicators of DBC: "stop" (not wanting another child), and "avoid" ("stop" plus wanting to delay next birth 24+ months). Region-specific trend lines are fit via regression, with adjustment for woman's age and fixed effects for country. Major findings: (1) DBC changes surprisingly little during fertility decline – in general, no more than fifteen percentage points on average as TFR declines from 6.0 to 3.0. (2) Two African sub-regions – East & Southern and Middle & West – show markedly lower levels of DBC, conditional on TFR. (3) To this point, East & Southern Africa is distinctive from a global standpoint in the magnitude of change in DBC. Finding (1) challenges widely held views of the nature of contemporary fertility declines. Finding (2) reinforces the established understanding that pre-transition African reproductive regimes were relatively pronatalist. Finding (3) means that African fertility declines are more consistent with classic demographic transition theory than fertility declines in other regions; this makes African declines "exceptional" because they conform to long-standing theory!

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Background

Beginning with ICDP in 1994, the main diagnostic indicators of reproductive success have hinged on individuals' fertility preferences. The standard measures of both "unmet need for contraception" and "percent of demand satisfied" are with reference to fertility preferences: *unmet need* is the fraction of women who wish to avoid pregnancy (in the short term or indefinitely) but are not using contraception, and *demand satisfied* is the fraction of women who wish to avoid pregnancy who are using contraception. The latter has a more restricted denominator than the former – women who wish to avoid pregnancy rather than all women. For this research, the important point is that fertility desires – whether or not women at the time of the survey state a preference to postpone the next birth or have no further births -- are integral to both these fundamental and crucial measures.

This in turn reflects an important, if sometimes unstated, assumption: fertility preferences are expressions, implicitly at least, of the *demand for birth control* [DBC]. By "demand for birth control", we mean simply that women/couples would avoid another birth (in the short term, or indefinitely) by some means if birth control were costless. "by some means" encompasses not only contraception but also induced abortion and deliberate reduction in sexual exposure. It is the qualifier "if birth control were costless" that distinguishes the *demand for birth control* from the *demand for contraception* (or the demand for induced abortion). Some women/couples who wish to avoid pregnancy nevertheless do not want to practice contraception because they regard it as too costly (in financial terms, for social reasons, or because of perceived health risks). Because of the distance between demand for birth control and conscious demand for contraception, the term "latent demand for contraception" has sometimes been applied to what we are here terming "demand for birth control".

Given that demand for birth control is an essential ingredient in the most influential diagnostic measures of reproductive success, it is surprising that there has been no systematic and rigorous analysis of trends in the demand for birth control, i.e. trends in fertility preferences. Indeed, some influential pieces on the nature of contemporary fertility declines – most notably pieces by John Bongaarts (e.g. Bongaarts 1992, Bongaarts 1997) – have assumed that the percentage of reproductive age women who want to terminate childbearing (i.e. express a preference for no more children) is low in high-fertility societies and rises to a very high prevalence as fertility falls to replacement level (and below). As the analysis in this paper reveals, this is an erroneous depiction of contemporary fertility declines.

Moreover, it is likely that the extent to which this depiction is false varies regionally. In particular, we expect the experience of sub-Saharan Africa to differ from the other major regions due mainly to the fact that fertility desires were relatively high in pre-transition reproductive regimes in sub-Saharan Africa. Regional comparison and addressing the question "Are African fertility declines different?" is a goal of this paper.

Our primary objective in this paper, then, is to construct a comprehensive yet parsimonious description of trends in the demand for birth control as fertility rates decline from high to low. A secondary objective is to ascertain whether there is regional variation in this particular facet of fertility decline (i.e. trend in DBC).

Data and Analytic Strategy

This is an analysis of national demographic survey data. We take surveys from five major international survey programs – WFS, DHS, RHS, MICS, and PAP (Pan-Arab). We also include a few national demographic surveys conducted apart from these survey programs (e.g. three surveys in Mexico). While DHS surveys predominate (about three-quarters of the surveys), the inclusion of DHS and PAP surveys makes this analysis more regionally balanced than many recent analyses that rely on DHS alone (or DHS+WFS, or DHS+MICS). The earliest surveys were conducted in 1975 and the latest in 2018.

In selecting countries and surveys for the analysis, the following rules are applied:

- Because this is an analysis of trends, we require at least two surveys per country
- Surveys after low fertility (TFR < 2.2) has been attained are excluded
- Small countries are excluded – minimum total population of 500,000 in 2000
- Surveys with very small sample size (under 2000 women) are excluded
- Surveys in which measurement of fertility preferences is transparently defective are excluded (e.g. Bangladesh 1975, Nigeria 1999 – list available on request)

The Appendix table provides a full list of the surveys in this analysis. Table 1 gives a summary of surveys and countries by major region, with region consisting of five categories (in Table 1 and throughout our analysis):

- two African sub-regions: East & Southern Africa, Middle & West Africa
- Latin America
- Asia, except for West Asia
- North Africa & West Asia (mainly Arab countries, but also Turkey).

In total the sample is 350 surveys in 78 countries. This is the sample of surveys for the analysis of the desire to have no further children ("stop"). The sample of surveys for the analysis of the desire to have no further children or delay the next birth ("avoid") is slightly smaller, because some surveys in the past (e.g. almost all surveys in the WFS program of the late 1970s and early 1980s) did not ask for the preferred timing of the next birth. The sample for this second portion of the analysis is 298 surveys and 72 countries.

Table 1

Number of countries, surveys, and women, by region

	Number countries	Number surveys	Number women
East & Southern Africa	16	70	376,679
Middle & West Africa	19	82	535,748
Latin America	17	86	667,256
Asia	15	61	1,297,426
North Africa & West Asia	11	51	370,443
Total	78	350	3,247,543

The key survey item for this analysis is commonly termed "fertility preferences". The usual wording of this item is:

> "Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?"

For women currently pregnant, a slight variation in wording asks for their preferences after the birth of the child *in utero*. Based on this item, we construct a 1,0 variable "stop" that identifies those women who state a desire to have no more children. (Note that sterilized women are classified as not wanting another child.) Following this item, those women who have indicated a desire to have another child are asked a further question about their preferred timing of the next birth:

> "How long would you like to wait from now before the birth of (a/another) child?"

Using both items, we construct a 1,0 variable "avoid" that identifies those women who prefer to have no more children or prefer to have the next child at least two years in the future. Note that twenty-four months is the conventional cut-off for identifying those women who wish to delay the next birth, for example in the standard algorithm for unmet need (Bradley *et al*. 2012).

Some surveys do not ask the fertility preference item to women who have never entered a marital-type union and/or women not currently in such a union. Therefore for comparability we limit the sample in all surveys to women currently in union at the survey interview. We also exclude women who do not state a fertility preference, instead indicate that they are infecund ("cannot get pregnant"). The fraction of women self-reported infecund varies considerably among surveys, suggesting uneven measurement, and this alone will induce variation among surveys in the fraction of women who want to stop or space. To eliminate this nuisance source of variation in our preference indicators "stop" and "avoid", we drop the infecund women. This is tantamount to assuming that the reporting of infecundity is random with respect to fertility preferences -- a strong assumption that is unlikely to be met perfectly but, we believe, the best option among straightforward solutions. Finally, women who provide "uncertain" or "don't know" responses are placed in the "0" category (i.e. do not want to stop or space).

These selections yield the sample of women shown in the right-hand column of Table 1. The total sample for "stop" is about 3.2M women. The total sample for "avoid" is slightly smaller, about 3.0M women (not shown in Table 1).

For this analysis of trends, the temporal variable is TFR (UN2017) rather than historical year (i.e. calendar year). Our research questions concern the nature of fertility transition and indexing by the level of fertility rather than historical time addresses these questions more directly. That is, we provide explicit portrait of how fertility preferences change over the course of fertility decline. The practical implementation of this analytical approach is regression analysis (as a means of obtaining fitted trend lines) in which fertility preferences is the dependent variable and the TFR is the predictor. On the face of it, this is contrary to the common practice of viewing country-level fertility as the result of cumulated individual-level fertility desires. But our regression analysis is not intended to represent a behavioral model, rather it is a tool for obtaining estimates of trends in preferences from the survey data.

We pool the data across surveys and countries, forming one large pooled data-file of women. With this file we estimate regressions with interactions between TFR and region so that region-specific trend lines can be obtained. The regressions treat country as a fixed effect; hence the regional trend lines can be viewed as summaries of within-country trends region-by-region. The estimation of trend controls for one confounding variable, age of the woman at the survey; our regression specification allows for the effects of age to vary by region. Sampling weights are applied (normalized so that unweighted and weighted numbers of women per survey are equal).

An important analytical decision is whether to specify the trend in preferences across levels of TFR as linear or to allow for curvilinear trend. For example, one might speculate that preferences change more rapidly when fertility transition is mid-course. We have conducted a formal examination of the possibility that the trend in preferences is curvilinear: we calculated country-by-country the between-survey rate of change in "stop" and "avoid" according to level of TFR at the first survey. We find no pattern – there is no evidence that the rate of change in preferences varies systematically by level of TFR. From this we conclude that a specification of linear trend is appropriate.

We estimate linear regressions (i.e. "linear probability model"), mindful of concerns about the statistical properties of non-linear models (e.g. logit) for dichotomous outcomes (Breen *et al.* 2018). In any case, we do not conduct statistical tests (although confidence intervals are displayed), instead focus on fitted lines, and for this purpose linear and non-linear models produce indistinguishable portraits.

Results

Distributions of the two constructed dichotomous outcomes – "stop" and "avoid" – are shown in Table 2. Overall, about one-half of the women want to "stop" (55.3%) and more than eighty percent want to "avoid" (82.8%). Considerable across-region variation is evident, especially in "stop" – markedly lower fractions in the two Sub-Saharan African sub-regions as compared to Latin America and Asia. The same regional pattern applies to "avoid", although the regional differences are smaller in absolute terms -- "avoid" is high on average in all regions. Little should be made of the regional differences in Table 2 because the distribution of surveys according to stage of fertility transition varies between regions -- the African surveys on average are at earlier stages (i.e. higher TFR). It is the fitted regional trend lines in subsequent tables and figures that are the basis for our conclusions about regional differences.

Table 2

Percent women "stop" and "avoid", by region and total

	Percent stop	Percent avoid
East & Southern Africa	41.9	80.9
Middle & West Africa	22.8	70.0
Latin America	66.9	88.6
Asia	66.4	86.0
North Africa & West Asia	55.9	82.0
Total	55.3	82.8

Regional trends for "stop" are displayed in Figure 1 and summarized in Table 3. Both *level* and *trend* are both of interest. Regional differences in *level* are differences in fertility preferences at specified levels of fertility. One might regard these as "fertility returns on preferences", i.e. how preferences translate to the level of fertility. This translation is a function in part of the amount of unintended and unrealized fertility (other reproductive factors, e.g. sexual activity and post-partum behaviors, also figure in). Regional differences in *trend* reveal how regions differ in the trajectory of fertility preferences as fertility declines.

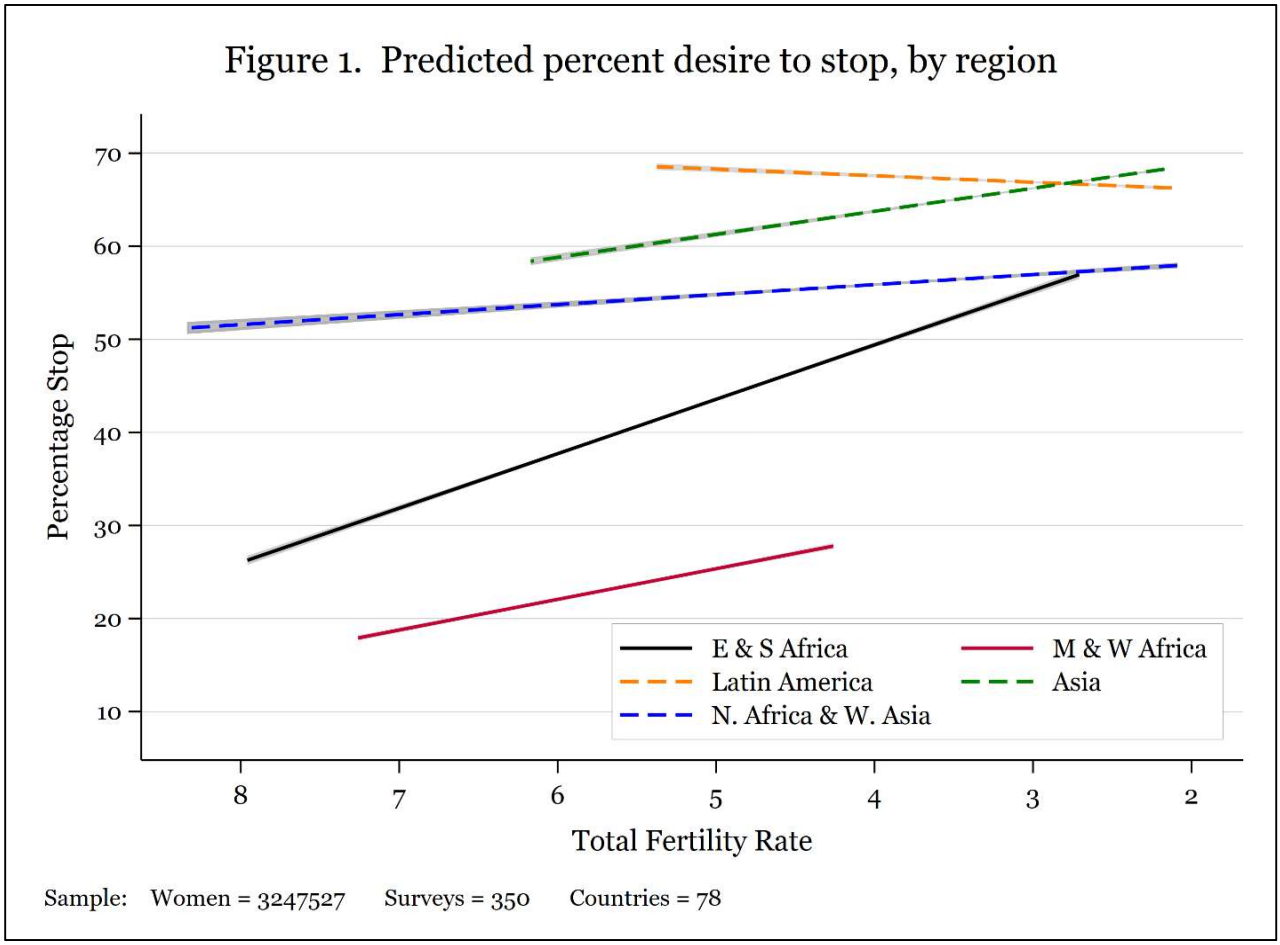


Table 3

Trend in percent "stop", by region

	Slope [a]	Predicted percent "stop"			N countries
		TFR=6	TFR=4.5	TFR=3	
East & Southern Africa	5.8	38	46	55	16
Middle & West Africa	3.3	22	27	-	18
Latin America	-0.7	-	68	67	16
Asia	2.5	59	62	66	15
North Africa & West Asia	1.1	54	55	57	11

Slopes estimated by linear regression, with control for age (region-specific effects) and fixed effects for country.

a, Percentage point change in "stop" for each one birth decline in TFR.

Striking regional differences are apparent in Figure 1 and Table 3. Considering first levels, the fraction of women who state a desire to stop childbearing is markedly lower in the two sub-Saharan Africa sub-regions, controlling for level of TFR. This is especially so for Middle & West Africa. This differential is clear from the fitted values in Table 3: at TFR=4.5, for example, "stop" is 27% in Middle & West Africa and exceeds 50% in Asia, West Asia & North Africa, and Latin America (indeed, is nearly 70% in Latin America). It is amazing to observe how the same aggregate-level fertility rate is produced despite enormous difference in this facet of fertility desires (i.e. the desire to terminate childbearing). This pattern of regional differences is also consistent with other evidence that pre-transition reproductive regimes in sub-Saharan Africa were more pronatalist than regimes in other regions (Caldwell & Caldwell 1987, Caldwell *et al.* 1992, Bongaarts & Casterline 2013). East & Southern Africa is a more complicated story, as its level of "stop" is decidedly low when fertility is high (TFR>6) but converges with the level observed in non-African regions as fertility falls to low levels. We will return to this finding.

This directs our attention to the second dimension of Figure 1 and Table 3, namely the regional slopes. Note that the values for the slope presented in Table 3 (and subsequent tables) are the percentage point change in preferences ("stop" or "avoid") for each one

birth decline in the TFR. A first point is that "stop" increases as fertility declines, as would be expected. Interestingly, Latin America is an exception to this rule – "stop" is essentially unchanging over the range of TFRs represented by the available Latin American surveys. Underlying this finding is the fact that unintended fertility was at very high levels in Latin America when the first national demographic surveys were conducted in the 1960s and 1970s (Casterline & Mendoza 2010). The upward slopes for Asia and North Africa & West Asia are also slight; in these two regions, the amount of change in "stop" across substantial decline in the TFR is far less than suggested by previous scholarship (e.g. Bongaarts 1992, Bongaarts 1997). This is more dramatically the case for North Africa & West Asia.

Figures 2 and 3 and Tables 4 and 5 present trends specific to parity 2 and parity 4, respectively. One expects levels of "stop" to be higher at higher parities, and this is the case, at all values of TFR in all five regions. Rather subtle regional differences in the fertility declines are also evident in these figures and tables: the slopes in the two African

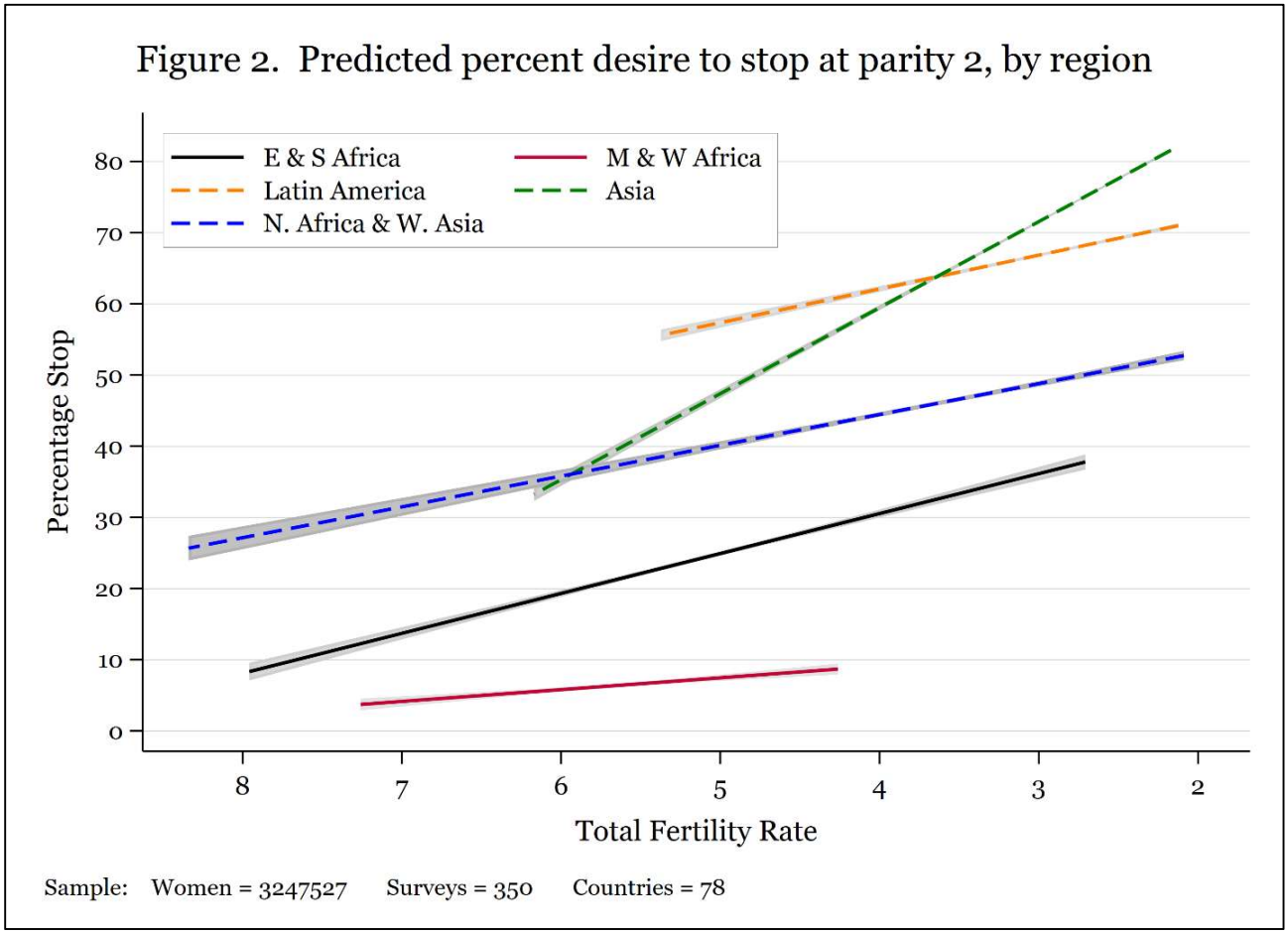


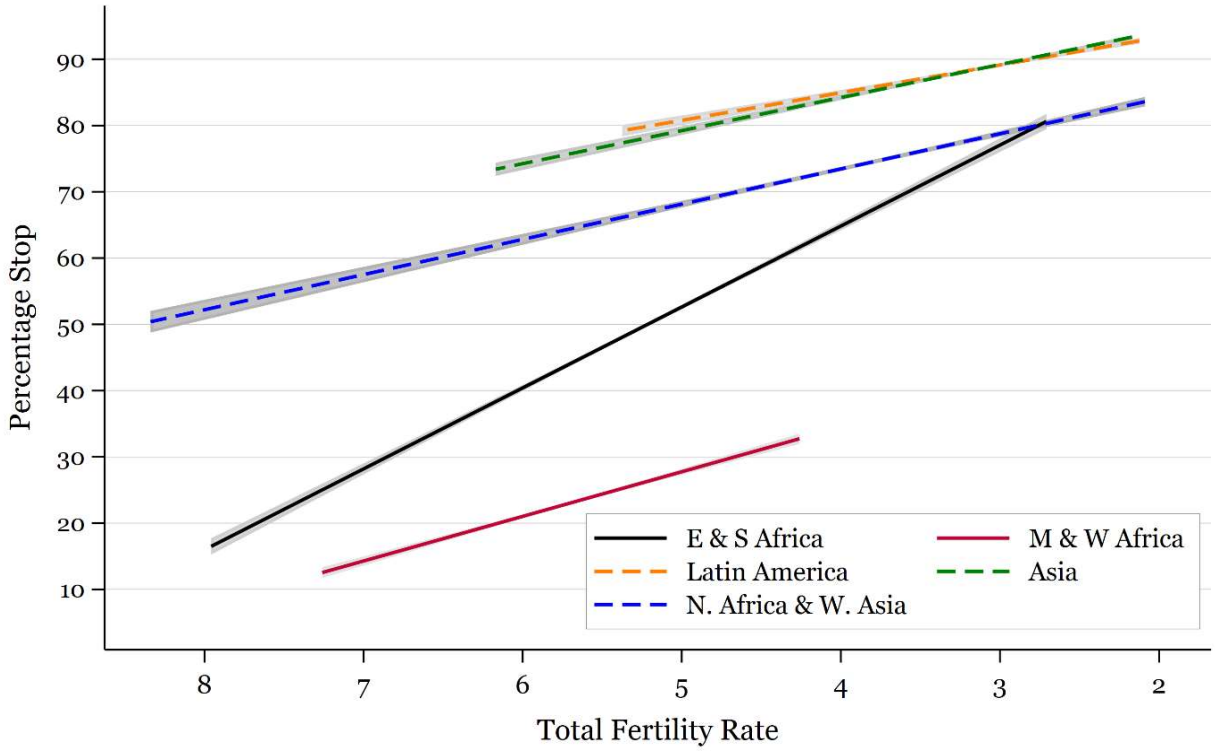
Table 4

Trend in percent "stop" at parity 2, by region

	Slope [a]	Predicted percent "stop"			N countries
		TFR=6	TFR=4.5	TFR=3	
East & Southern Africa	5.6	19	28	36	16
Middle & West Africa	1.7	6	8	-	18
Latin America	4.7	-	60	67	16
Asia	12.1	35	53	72	15
West Asia & North Africa	4.3	36	42	49	11

See notes for Table 3.

Figure 3. Predicted percent desire to stop at parity 4, by region



Sample: Women = 3247527 Surveys = 350 Countries = 78

sub-regions are steeper at parity 4 than at parity 2, whereas the opposite is the case in the

Table 5

Trend in percent "stop" at parity 4, by region

	Slope [a]	Predicted percent "stop"			N countries
		TFR=6	TFR=4.5	TFR=3	
East & Southern Africa	12.2	40	59	77	16
Middle & West Africa	6.7	21	31	-	18
Latin America	4.2	-	83	89	16
Asia	5.0	74	82	89	15
West Asia & North Africa	5.3	63	71	79	11

See notes for Table 3.

three other regions. This follows from the pronatalism of the pre-transition regimes in African societies: little desire to stop at a moderate family size (parity = 4) existed, instead this desire takes root as fertility transition gets underway (note large slope of 12.2 in Table 5). By contrast a desire to stop at a moderate family size was already well established in the other regions in the early stages of fertility transition. In these other regions, the more dramatic shift in fertility desires is from moderate-family-size aspirations to small-family-size aspirations, as reflected in the relatively steep increase in the percent "stop" at parity 2. This shift has been especially characteristic of fertility declines in Asia (note large slope of 12.1 in Table 4).

We conduct the same analysis for the more encompassing desire to have no further births or delay the next birth at least two years (Figure 4, Table 6). A first observation is the high prevalence of "avoid" in all regions at all levels of fertility. Even in the two African sub-regions when fertility is as high as TFR=7, the percent "avoid" is at least 70%. A second observation is that "avoid" hardly changes over the course of fertility decline in all regions except East & Southern Africa. The slopes in Table 6 make this explicit – less than 1.0 in absolute value in all regions except East and Southern Africa. This means that "avoid" changes by less than one percentage point for each one birth decline in TFR, a trajectory that is best described simply as flat. Moreover, if anything "avoid" slightly

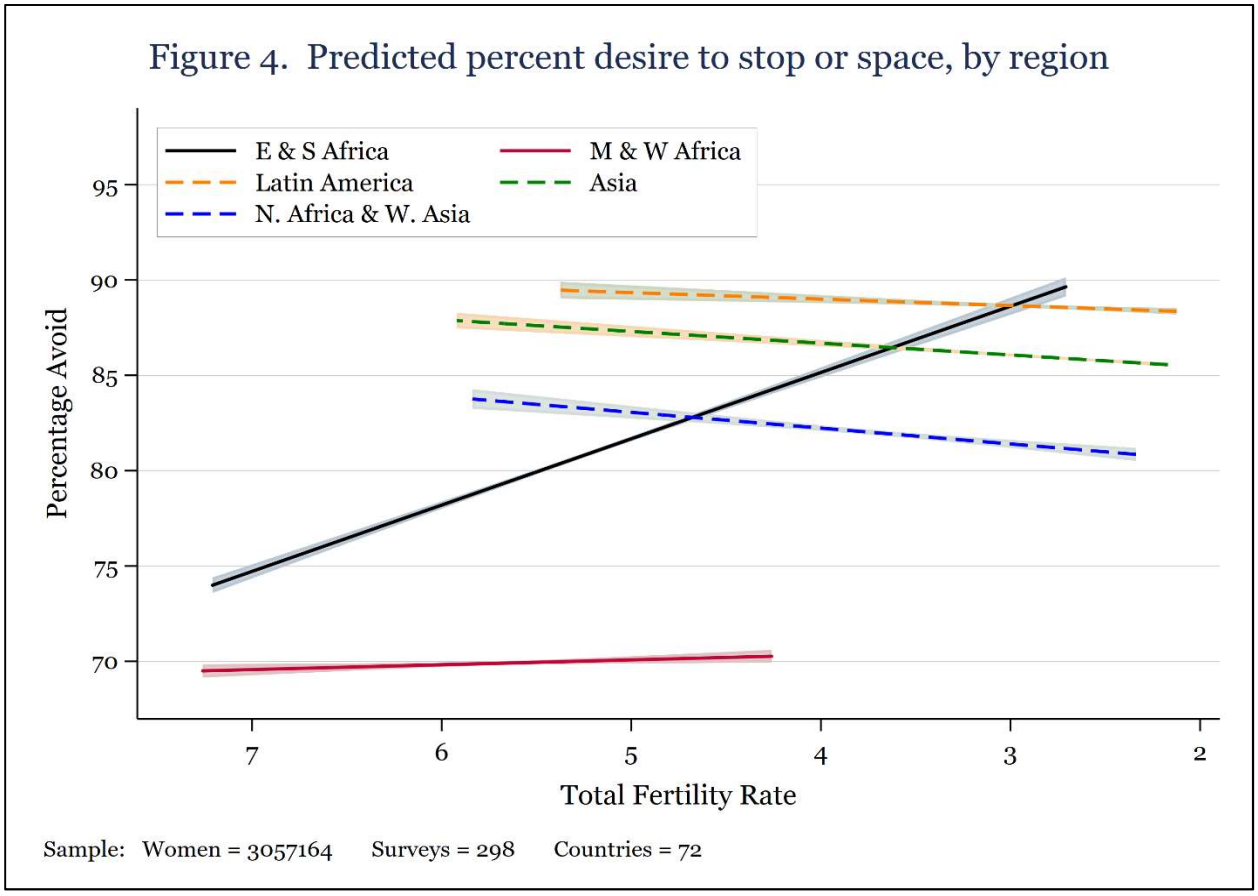


Table 6

Trend in percent "avoid", by region

	Slope [a]	Predicted percent "avoid"			N countries
		TFR=6	TFR=4.5	TFR=3	
East & Southern Africa	3.5	78.2	83.4	88.6	16
Middle & West Africa	0.2	69.8	70.2	-	18
Latin America	-0.3	-	89.2	88.7	15
Asia	-0.6	87.9	87.0	86.1	13
West Asia & North Africa	-0.8	83.9	82.6	81.4	9

See notes for Table 3.

declines as fertility declines in the non-African regions, a result that runs contrary to intuition. Understanding this surprising result requires, we believe, a formal demographic model that takes into account factors such as timing of first birth, inter-birth intervals, and

target number of children. Only in East & Southern African does "avoid" show meaningful increase as fertility declines. But even in this region, the increase is merely fifteen percentage points during a four-birth decline in the TFR (from TFR=7 to TFR=3).

As with "stop", we have examined parity-specific trends in "avoid". These add nothing to the story in Figure 4 and Table 6 and hence we do not present these results.

Because it is more encompassing, "avoid" is a more defensible indicator of the Demand for Birth Control than "stop". And the stunning result in Figure 4 and Table 6 is that this demand, from the standpoint of prevalence among reproductive age women in union, hardly changes over broad stretches of fertility declines. It is a result that, we believe, contradicts widely held assumptions about the nature of fertility declines during the past five decades.

Summary and Concluding Comments

Two major conclusions emerge from the empirical results. First, in general the change in the Demand for Birth Control over the course of fertility decline is small. This conclusions holds for the desire to terminate childbearing; to be sure, there is some increase in "stop" but far less than assumed in influential existing scholarship (e.g. Bongaarts 1992, Bongaarts 1997). The region-specific increase in "stop" as TFR declines from 6.0 to 3.0 is on the order of 5-10 percentage points except in East & Southern Africa. With the more encompassing DBC indicator "avoid", there is no increase to speak of, a striking and surprising finding.

These are within-region trends. If one pools the data across regions, as in Bongaarts' analysis, then far larger change in preferences will be perceived, on the order of forty or fifty percentage points in "stop". But a trend obtained in this manner would be in effect an amalgam in which the high-fertility surveys are predominantly African and the lower fertility surveys predominantly Asian or Latin American. We believe it is essential to allow for regional differences in reproductive regimes and fertility declines. Pooling across regions does not respect these regional differences, while region-specific estimate of trends does.

This leads to the second major conclusion from the empirical results, namely the large regional differences. The regional differences are apparent in both levels and trends. In levels, DBC is markedly lower in sub-Saharan Africa at all levels of fertility. This generalization holds for both "stop" and "avoid", but especially the former. At TFR=4.5, the percent "stop" is thirty percentage points lower in Middle & West Africa than in any of the three non-African regions, a remarkable differential that adds to the abundant evidence of major regional differences in reproductive regimes. The lesser regional differential in "avoid" – the combination of the desire to stop or to space -- no doubt reflects the attachment in African societies to the spacing of births (as documented in previous scholarship).

As for regional differences in trends, the key difference is East & Southern Africa versus the other four regions. As it happens, the fitted lines for Middle & West Africa have slopes that do not diverge meaningfully from the three non-African regions. However, it is too soon to draw firm conclusions about the eventual completed trajectory in Middle & West Africa because to this point these countries have only progressed at most to moderate levels of fertility. Will countries in this sub-region follow the path of East & Southern countries and experience marked increase in the DBC? Or can relatively low fertility be attained without marked increase in the DBC? From a global perspective, the latter would be a remarkable outcome. Perhaps this is feasible via some combination of intentional birth-spacing and other reproductive practices that are not deliberate efforts at fertility regulation. (An assessment via formal demographic modeling could be revealing.) More likely, decline to replacement-level fertility in Middle & West Africa will require substantial increase in DBC. If/when this occurs, Middle & West African countries will join East & Southern countries in experiencing declines that are more "demand driven" than apparently has been the case in non-African regions.

East & Southern Africa is another matter: fertility declines have progressed further than in Middle & West Africa, and they have been characterized by distinctly sharper increases in both "stop" and "avoid" than is observed in any other region. The upshot is that fertility decline in this sub-region of Africa has consisted far more of transition in childbearing desires than has been the case in other parts of the globe. In this respect,

these African fertility declines are more consistent with expectations derived from classic demographic transition theory, which in its various expressions (ranging from Notestein to Becker) has assumed substantial decline in desired family size (accompanied by various explanations for why such decline in the demand for children should occur). There is much irony here: what makes the African declines "exceptional" is their closer conformity to classic demographic transition theory than the declines in Asia and Latin America!

An implication is that success in reducing fertility in sub-Saharan Africa -- the explicit goal of many international agencies and most countries in the region – depends on change in fertility desires. In terms of policies or programs, easier access to low-cost and high-quality contraception may not be sufficient. Instead, policies and programs that reduce the demand for children are also required. But of course this may also occur naturally, as a response to various facets of social and economic developments.

Set against the substantial increase in the DBC in East & Southern Africa, the flat slopes in the non-African regions reinforce a recognized feature of these declines: Asian and Latin American fertility declines have consisted heavily of satisfying existing desires to avoid pregnancy, i.e. decline in unintended pregnancy (Feyisetan and Casterline 2000).

A final smaller point is the importance of distinguishing sub-regions within sub-Saharan Africa. At least when it comes to this aspect of fertility decline – trend in the demand for birth control -- to date the experience of Middle & West Africa has been quite different from East & Southern Africa.

We conclude by conceding two limitations of this research and with a sketch of next steps.

The first limitation is the reliance on the standard demographic survey measurement of fertility preferences. This is a sequence of two rather simple survey items. The research presented in this paper assumes that these items yield a valid, albeit basic, portrait of women's fertility preferences at the time of the survey. In all settings these survey items have been criticized by some scholars as too crude. Possibly their inadequacy is even more severe, and of a different nature, in sub-Saharan African societies; one could posit that the small percentage of women who desire to avoid pregnancy in the survey data from this

region is itself a symptom of the inadequacy of these few items. Qualitative investigation would be in order.

A second limitation is the restriction of this analysis to women in union at the time of the survey. Bringing out-of-union women into the analysis, especially young never married women, would complete the portrait of women in the reproductive ages. As already noted, an obstacle to including these sub-sets of women is the failure in some surveys to ask them the fertility preference items. Possibly defensible simple assumptions can be made about their (unmeasured) fertility preferences. For example, one might assume that the vast majority of never-in-union women do not want a child at the moment but want children eventually; with this reasoning, all of them might be classified as desiring to delay (i.e. "spacers"). This would place them in the encompassing "avoid" category, i.e. a subgroup with Demand for Birth Control. But this seems too sweeping: some never-in-union women are sexually active, some are not, and clearly this bears directly on their DBC. Some but not all demographic surveys contain measurement of sexual activity among the never-in-union. Taking advantage of this information where it is available, one could develop a more refined approach that would permit an enlargement of this research to include the never-in-union women.

As for next steps, as already intimated at several places in the text above, we feel our empirical results, some of which are quite surprising, beg for formal demographic modeling. How is it that the TFR can decline by 3-4 births with minimal change in the overall percentage of women who want to "stop" or "avoid"? Perhaps this is explained by the fact that there has been minimal change in the desired number of children, contrary to common belief? Or can a formal demographic model demonstrate that rather limited change in "stop" and "avoid" is entirely consistent with substantial decline in the desired number of children? We envision a simple model that contains number of children desired, desired inter-birth spacing, age at first birth or sexual activity, actual interval between births, and onset of infecundity. Exposure during the reproductive years can be apportioned to a set of discrete states that are determined by these attitudes and behaviors. Inclusion in this model of never-in-union women – time spent pre-union (or pre-sex) -- should be straightforward.

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Appendix

National demographic surveys, by region and country

Region	Country	Year of Survey
E & S Africa	Burundi	1987, 2010, 2016
	Ethiopia	2000, 2005, 2011, 2016
	Kenya	1978[W], 1989, 1993, 1998, 2003, 2008, 2014
	Comoros	1996, 2012
	Lesotho	1977[W], 2004, 2009, 2014
	Madagascar	1992, 1997, 2003, 2008
	Malawi	1992, 2000, 2004, 2010, 2015
	Mozambique	1997, 2003, 2011
	Namibia	1992, 2000, 2006, 2013
	Rwanda	1983[W], 1992, 2000, 2005, 2010, 2015
	Swaziland	2004, 2010[M], 2014[M]
	Tanzania	1991, 1996, 1999, 2004, 2010, 2015
	Uganda	1988, 1995, 2000, 2006, 2011, 2016
	South Africa	1998, 2016
	Zambia	1992, 1996, 2001, 2007, 2013
	Zimbabwe	1988, 1994, 1999, 2005, 2010, 2015
M & W Africa	Burkina Faso	1992, 1998, 2003, 2010
	Benin	1981[W], 1996, 2001, 2006, 2012, 2018
	Congo	2007, 2013
	Congo Brazzaville	2005, 2011, 2015[M]
	Cote d'Ivoire	1980[W], 1994, 1998 2012, 2016[M]
	Cameroon	1991, 1998, 2004, 2011, 2014[M]
	Gabon	2000, 2012
	Ghana	1979[W], 1988, 1993, 1998, 2003, 2008, 2014
	Gambia	2013, 2018[M]
	Guinea	1999, 2005, 2012, 2016[M], 2018
	Liberia	1986, 2007, 2013
	Mali	1987, 1995, 2001, 2006, 2012, 2015[M], 2018
	Mauritania	1981[W], 1990[P], 2000, 2011[M], 2015[M]
	Nigeria	1982[W], 1990, 2003, 2008, 2013, 2018
	Niger	1992, 1998, 2006, 2012
	Sierra Leone	2008, 2013, 2017[M]
	Senegal	1986, 1992, 1997, 2005, 2011, 2016, 2017
	Chad	1996, 2004, 2015
	Togo	1988, 1998, 2014

Latin America	Bolivia	1989, 1993, 1998, 2003, 2008
	Brazil	1986, 1996, 2006[O]
	Colombia	1976[W], 1986, 1990, 1995, 2000, 2005, 2010, 2015
	Costa Rica	1976[W], 1981[O], 1986[R], 1993[R], 2010[O]
	Dominican Republic	1975[W], 1980[W], 1986, 1991, 1996, 2002, 2007, 2013
	Ecuador	1979[W], 1987, 1994[R], 1999[R], 2004[R]
	El Salvador	1985, 1993[R], 1998[R], 2003[R], 2008[R], 2014[M]
	Guatemala	1987, 1995, 1998, 2002[R], 2008[R], 2015
	Guyana	1975[W], 2009, 2014[M]
	Honduras	1991[R], 1996[R], 2001[R], 2005, 2012
	Haiti	1977[W], 1994, 2000, 2005, 2012, 2017
	Mexico	1976[W], 1987, 1997[O], 2009[O], 2014[O]
	Nicaragua	1992[R], 1997, 2001, 2006[R]
	Panama	1975[W], 1985[R]
	Peru	1977[W], 1986, 1991, 1996, 2000, 2008, 2012
	Paraguay	1979[W], 1990, 1995[R], 2004[R], 2008[R], 2016[M]
	Trinidad	1977[W], 1987
Asia	Bangladesh	1994, 1997, 2000, 2004, 2007, 2011, 2014
	India	1993, 1999, 2006, 2015
	Indonesia	1976[W], 1987, 1991, 1994, 1997, 2002, 2007, 2012, 2017
	Cambodia	2000, 2005, 2010, 2014
	Laos	2012[M], 2017[M]
	Mongolia	2005[M], 2010[M], 2013[M], 2018[M]
	Sri Lanka	1975[W], 1987
	Nepal	1976[W], 1996, 2001, 2006, 2011, 2016
	Philippines	1978[W], 1993, 1998, 2003, 2008, 2013, 2017
	Pakistan	1975[W], 1991, 2006, 2012, 2018
	Thailand	1975[W], 1987
	Tajikistan	2012, 2017
	Timor Leste	2009, 2016
	Vietnam	1997, 2002
N. Africa & W. Asia	Algeria	1992[P], 2002[P], 2012[M]
	Egypt	1980[W], 1988, 1992, 1995, 2000, 2005, 2008, 2014
	Iraq	2006, 2011, 2018
	Jordan	1975[W], 1990, 1997, 2002, 2009, 2012, 2017
	Lebanon	1996, 2004
	Morocco	1980[W], 1987, 1992, 1997[P], 2003
	Sudan	1978[W], 1989, 1993[P], 2014[M]
	Syrian	1978[W], 1993[P], 2001[P]
	Tunisia	1978[W], 1988, 1994[P], 2001[P], 2011[M]. 2018[M]

	Turkey	1978[W], 1993, 1998, 2003, 2008, 2013
	Yemen	1979[W], 1991, 2003[P], 2013

All surveys are DHS unless otherwise indicated.

[W] World Fertility Surveys (WFS)

[P] Pan Arab Project for child development or family health (PAP)

[M] Multiple Indicator Cluster Surveys (MICS)

[R] Reproductive Health Surveys (RHS)

[O] Other national representative data sources