SOURCES OF INEQUALITY WITHIN THE CAMEROONIAN LABOR MARKET: SOCIODEMOGRAPHIC VERSUS NATIONAL ECONOMIC CONTEXTS

Abstract

Like other developing regions, African countries have witnessed a global transformation in progress in women's schooling, delayed marriage, and reduced fertility in the last three decades. Theoretically, these three trends could improve employment prospects for women and reduce gender inequalities at the level of the family, labor market, and society. Yet, the evidence has been spotty and weak. Combining discrete event history analysis and qualitative information in Cameroon, we assess how the employment gender inequality has changed and the relative contribution of schooling, marriage, and fertility to the observed changes. Findings suggest that the inequality in employment has persisted within both the overall and formal economic sectors. While periods of economic growth mostly favor women's than men's formal sector prospects, Cameroonian women have not reaped the anticipated economic benefits to their education. And with respect to schooling, marriage, and fertility, discrimination and lower employment opportunities explain a sizeable portion of the inequality.

INTRODUCTION AND RESEARCH QUESTIONS

The last three decades of heightened commitment of the internal community have resulted in a global transformation in socio-demographic indicators (specifically progress in women's schooling, delayed marriage, and reduced fertility) across the developing world (NAS 2005; UN 2003; UNICEF 2003; Westoff 2003; World Bank 2007; World Population Prospects 2006). Africa is no exception to these social transformations. Beginning with schooling, the secondary school enrolment rate for African women rose from below 5 percent in 1970 to above 14 percent in 1985 and to 30 percent by 2005 (World Bank 2007; Hewett and. Lloyd 2003; UNICEF 2003). Similar achievements have been noted relative to the African male, with the female/male ratio in secondary

educational attainment rising from an average of 0.67 in 1970 to about 0.80 in 1985, then to 0.90 in 2005.

This progress in women's schooling was accompanied by rising ages at marriage for women. For developing countries as a whole, the proportion married in the 15 to 19 years age group declined from 27 percent in 1970-1989 to 21 percent in 1990-2000 (NAS 2005). Despite cross-country variation, this decline was especially dramatic in the Western/Central African region, where the percentages fell from 53 to 38 percent (NAS 2005), confirming earlier reports of delayed marriages in the 1990s (Westoff 1992). Changes are also evident in non-marriage rates. In most of the 16 of the 24 African countries with repeat DHS surveys[1] (DHS 2007), the proportion of never-married women among the 45-49 year olds has steadily increased, suggesting s continual retreat from marriage. With respect to fertility, the total fertility rate declined from a high of 6.7 in 1980 to 5.48 between 2000 and 2005 (World Population Prospects 2006). Despite cross country variation, this decline suggests a transition is underway.

In theory, these three trends -- growth in women's education, delay in marriage, and decline in fertility -- could improve employment prospects for women and reduce gender inequalities at the level of the family, labor market, and society (UNICEF 2003; UN 1987; 2000; 2003; 2005; UNFPA 2002; King and Mason 2001). Yet, the impacts of these demographic trends remain to be studied in detail. Among demographers, questions about the impacts of women's human capital, marriage, and fertility on their labor force participation remain difficult and understudied in developing countries. Despite a variety of cogent arguments about why African countries could possibly reap socioeconomic dividends from the current demographic transformations, the evidence has been spotty and weak.

The purpose of this paper is to address some of the above limitations. I take advantage of a longitudinal data collected in Cameroon with detailed schooling, marriage and employment histories to provide an assessment of the effects of progress in women's schooling, delayed marriage, and reduced fertility on the gender gap in employment in this country. The analysis is large-scale and builds on both the diversity of national

[1] Benin, Ethiopia, Ghana, Guinea, Kenya, Madagascar, Malawi, Namibia, Niger, Nigeria, Rwanda, Senegal, Tanzania, Togo, Uganda, and Zimbabwe.

experiences and on recent changes within 21 countries to investigate three broad questions:

1) How has women and men's labor force participation changed in Cameroon in the last four decades?

2) Has the gap narrowed? And if so what are the main sources of these changes? Specifically, what have been the relative contributions of changes in schooling, marriage, and fertility (versus other generalized social changes) to the observed changes in the gender gap?

3) How have these relationships changed over time, and depending on economic context?

The second section that follows discusses the setting of the study. The third section reviews relevant theoretical perspectives, past evidence, and empirical issues and strategy. The fourth section lays out the study's methodology. The fifth section presents and discusses the paper's findings. The final section concludes the paper and draws implications for policy, and future research.

THE SETTING

Has women's progress in schooling, delayed transition to marriage, and declining fertility benefited them in African labor markets, in light of the fact that African countries have just recovered and others are still reeling in economic crises? I examine this interesting puzzle with the retrospective event-history data from Cameroon. This setting is interesting because the country has median values on key variables, experienced economic recession between the early 1980s and mid 1990s, and implemented a series of economic policy reforms that all affected employment prospects of the labor force. Economic liberalization strategies led to the trimming of the civil service, salary and benefit reductions, hiring freezes, and reduced public spending in the economic and educational sectors (Eloundou-Enyegue 1997; Noumba 2002), all of which heightened employment privatization. The implications for equity across different marital and fertility groups as well as genders and development will in part depend on the shock absorbing capacity of the private labor market (Appleton et al. 1990; Glick and Sahn

1997). The tempo and magnitude of Cameroon's economic downturn facilitate investigation of the impact of structural adjustments programs on the relationship between changes in schooling, marriage, and fertility and labor market prospects. The retrospective dataset, containing rich histories of key measures as well as background characteristics and spanning several decades, lend itself to a simultaneous analysis not previously possible.

Answers to this question are timely in light of delayed or stalling fertility declines in the region (Bongaarts 2005; World Population Prospects 2006) and against the backdrop the Africa's recent history of economic crisis, increasing urbanization, and slow growth in the formal labor market. Under such environments, the need for both married women and mothers to work is intensified at a time of a labor market squeeze. On the international scene, the 20th century saw radical shifts in the global fight for gender equality. This global commitment has been reaffirmed in several world conferences, the latest being the 2000 United Nations Millennium Summit. However, the progress report in 2005 showed limited progress in meeting the MDGs. It highlights many governments' inaction on their promises, deepening inequality and the gap between the haves and the have-nots (UN 2005). Given such apparent growing inequality, an update on how contemporary social changes have impacted women's employment prospects is needed.

THEORETICAL FRAMEWORK

Several theoretical perspectives exist to explain the relationship between education, marriage, and fertility and labor market prospects. The perspectives relevant to this research can be grouped into: 1) Pro-effects – those that facilitate participation and 2) Cons-effects – those that hinder participation. Perspectives based on facilitatory assumptions include the human capital; "*modernization capital*"; "*marital autonomy*" (changes in marriage); and "*fertility dividend*" (fertility declines).

The human capital theory underlines the primacy of individual ability, education, and experience/training for labor market outcomes. It has been invoked to explain labor market outcomes (Becker 1981; Mincer 1974). Within that framework, women's advances in schooling should facilitate their entry into the labor market[2]. These predictions have been buttressed by cross-country evidence (King and Hill 1993; Schultz 1990)[3]. The modernization capital perspective posits greater employment opportunities to occur with modernization or industrialization[4]. These theorists anticipate

anticipate this greater economic activity stemming from economic progress and industrialization to reduce gender inequality in all spheres of society thereby lifting women's social status (Goldin 1990).

Economic theorists, with Becker (1981; 1991) as the main proponent, have also made predictions about economic dividends accruing from marriage and fertility transitions. Assumptions relative to marriage are founded on gendered role orientations. Marriage delay/abandonment is presumed to enhance employment prospects, quantitatively and qualitatively and diffuse differentiated gender roles, ultimately

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[2] Three other important conclusions are implied by the perspective. First, educated women are more likely to be employed than their non-schooled counterparts. Second, as the education gap between males and females narrows, so should the labor market gap (Becker 1981; Mincer 1974). Third, as the occupational gender gap narrows, women's economic security and social status should improve (Goldin 1990).

[3] Cross-country evidence shows a consistent association between women's education and the labor market returns to education (King and Hill 1993; Schultz 1990). As a result, female education has become central in both national and international strategies addressing women's status and development (UNFPA 2002; UNICEF 2003; United Nations 2000).

[4] Extending the predictions from human capital theory, modernization theorists regard expansion in the labor market and increased labor supply as by-products of the modernization process (see Chant 1991). This expansion, in turn, enhances employment opportunities for women who then make further investments in their education to take advantage of the increased demand for labor.

yielding socio-economic autonomy[5]. Thus, by inference, in all contexts where marriage is prevalent, a negative association between marriage and employment should be expected. Extending this economic emphasis to fertility, Becker (1991) and other proponents argue that women's rising economic activity increases the relative cost of children which in turn reduces the demand for children. Within this framework, a fertility dividend in the labor market is predicted to accrue from fertility declines[6].

Regarding, the cons-effects, the incompatibility theory draws from demographic transition theory and is premised on the existence of competition between fertility and employment (Mason and Palan 1981; Stycos and Weller 1967)[7]. Conversely, occupational segregation theorists suggest that women are concentrated in less rewarding or prestigious jobs because of employer discrimination but also but also because of women's lower human capital and occupational aspirations, stemming from socialization[8]. Finally, a common explanation for women's limited participation in the labor market, especially in the formal sector, is rooted in patriarchy and ingrained socio-cultural norms and values operating at different levels: societal, educational and employment institutions, and family (Assie-Lumumba 2000; Birdsall and Sabot 1991; Stromquist 1990).

In synthesis, the theoretical explanations about women's labor force participation, both the pro- and cons-effects have drawbacks when applied to African settings. The human capital theory assumes a linear relationship between productivity and human capital, similar across all schooling levels, contexts, and occupational sectors. Similarly, the economic specialization of the family that references the links between marriage, fertility, and labor force participation does not differentiate the effects of marriage delays, declines, and abandonment (Oppenheimer 1988) rendering its validity in explaining

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5 See Becker 1991; Blossfeld 1995; Espenshade 1985; Goldscheider and Waite 1986).

6 See Becker 1991; Collver and Langlois 1962; Youssef 1972).

7 Because childrearing remains primarily the responsibility of women, some scholars predict that women are less likely to continue employment following childbearing (Collver and Langlois 1962; Youssef 1972) with frequent labor market withdrawals resulting in high opportunity costs of children (Becker 1991). Demographers have qualified the thesis, suggesting that it only holds in occupations where conflict between time demands of working and mothering arises (Stycos and Weller 1967) or where the organization of economic opportunities does not facilitate women's work outside the home (Mason and Palan 1981). These qualifications are important for this study because the time costs of additional children may not rest squarely on mothers but spread across family members and networks.

8 See Anker's (1997) review for a detailed discussion.

marital transitions in the region questionable[9]. With respect to the opportunity cost of fertility, substantial evidence exists in the developing country socio-demographic literature (Blake 1981; Eloundou-Enyegue 1994) backed by the qualitative evidence from this research that emphasize parents' preference for quality relative to women's expanded economic role as the main factor in family size reduction. The contradictory perspectives also warrant qualification. For instance, the presumed "*fertility burden*" to African women may be negligible[10]. Finally, whether and how the resilience of the patriarchal institutions has weakened historically remains an empirical question[11].

HYPOTHESES

Against the general context of socio-demographic and economic duress and limited policy resources, four hypotheses are formulated for the Cameroonian context:

- H1: Gains in women's schooling have had little influence on the gender inequality in employment.
- H2: Delayed marriage has had little influence on the gender inequality in employment.
- H3: The fertility transition has had little influence on the gender inequality in employment.
- H4: Any changes in gender inequality will be associated more with changes in macro-economic conditions than with changes in schooling, marriage, or fertility.

REVIEW OF EMPIRICAL LITERATURE

[9] Further threatening the theory are three issues: 1) Educated women's increasing tendency to seek employment may well stem from a shortage of potential spouses and a shrunken marriage market given the tendency for men to marry down with respect to age (Goldman, Westoff and Hammerslough 1984). 2) Marriage confers economic premium to women, both employed and unemployed, especially in contexts where household incomes are not pooled. 3) Beyond the processual nature of marriage in the region, informal unions are on the rise, and the practice of polygyny, contrary to predictions, has persisted in some West African cities (Antoine and Nanitelamio 1991).

[10] However, women may be penalized indirectly for repeated birth events through lower chances of job promotions.

[11] If the arguments of cultural theorists hold, women's employment behavior socio-economic will continue to be tied to their marital and reproductive roles, and not their education.

PREVIOUS STUDIES

The interrelationships between educational and demographic transitions and employment have long been central issues in socio-demographic research. Yet, the precise nature of each of the associations is complex and continues to elude researchers. In the sections that follow, I review past studies on how women's labor force participation hinge on schooling, marriage, and fertility in three successive sub-sections. Although the main focus is on Africa, I survey studies from developing and developed nations to capture cultural variations in the relationships. And then tie the surveyed literature on Africa, assessing how studies in the region have approached the questions under study, especially with respect to contextual changes in the relationships.

SCHOOLING AND LABOR FORCE PARTICIPATION

Evidence on the relationship in developing countries comes from mostly micro studies and they have focused on Asia (Cameron, Dowling, and Worswick 2001; Deolalikar 1993; Duraisamy 2002; Khan, Kingdon 1998; Malhotra and DeGraff 1997; Tiefenthaler 1997). This evidence is summarized in a recent review by Pande, Malhotra, and Crown (2006). The review indicates that the effect of education is mediated through several factors, including schooling level and occupation sector. They conclude that education is [] "*a necessary, but not sufficient investment for achieving gender equality or improving women's wellbeing*" and point to patriarchy as a factor. Consistent with this explanation, (Govindasamy and Malhotra 1996) find in Egypt that more schooling is not associated with more work because of normative prescriptions. Thus, patriarchy as an institution can override the effects of gains in women's education[12]. Women could continue to be disadvantaged in the labor market despite contemporary improvements in their human capital.

Turning to Africa, micro-studies on the schooling-employment relationship is growing. These studies have shown a persistently low labor force attachment for women (Appleton, Collier, and Horsnell 1990; Glick and Sahn 1997; Krishnan 1996; Siphambe 2000; Naude and Serumaga-Zake 2001; Ntuli 2007; Vijverberg 1993) but the reasons for

[12] For a contrasting viewpoint on the Middle East, see Moghadam 2004.

this are inconsistent, with some supporting (Appleton et al. 1990; Glick and Sahn 1997) and others refuting (Siphambe 2000; Vijverberg 1993) the theory of human capital. The studies by Siphambe (2000) in Botswana and Vijverberg (1993) in Cote d'Ivoire assert that women are disadvantaged in the labor market; and according to the former study, this is despite their greater amounts of education relative to men (Siphambe 2000). This statement, which ties with the hypothesis of discrimination (Birdsall and Sabot 1991; SchultzKKK), has been roundly disputed by other authors (Appleton, Collier, and Horsnell 1990; Glick and Sahn 1997). These latter authors contend that African labor markets are the "least discriminatory in the world (Appleton et al. 1990; Glick and Sahn 1997)," and instead, point to women's lower education (Appleton et al. 1990; Glick and Sahn 1997; Naude and Serumaga-Zake 2001; Ntuli 2007). Whatever, the reason, lower economic benefits to women's education can ultimately lead them to be less motivated than men to acquire schooling and seek employment.

MARRIAGE AND LABOR FORCE PARTICIPATION

The relationship between marriage and employment has received much attention in developed countries yielding a vast literature (Blau and Kahn 2006; Davis 1984; Desai and Waite 1991; Godwin, Draughn, Little, and Marlowe 1991; Leibowitz and Klerman 1995; Oppenheimer 1994; Oppenheimer and Lew 1995; Rosenfeld 1996; Santow and Bracher 1994; Smock and Manning 1997; Thornton, Axinn and Teachman 1995; Vannoy and Philliber 1992). Similarly, there is increasing focus on developing countries (Brinton, Lee and Parish 1995; Cunningham 2001; Dauffenbach and El-Huni 1973; Khandker 1988; Edwards, Fuller, Vorakitphokatorn, and Sermsri 1992; Malhotra and DEGraff 1997; Ono 2003; Raymo XX; Retherford, Ogawa and Matsukura 2001; Xie, Raymo, Goyette, and Thornton 2003; Yu 2005). This developed country evidence suggests that marriage may not be as antithetical for women as the economic specialization perspective posits. Indeed, several of these studies () have attributed the rise in women's employment mostly to increasing labor market participation of wives, not least those with young children. The developing country

evidence, however, is conflicting. For instance, the relationship between marriage and employment is reported to be negative in () but positive in ().

In sharp contrast to the attention devoted to the subject in both developed and developing countries, empirical evidence on the relationship between marriage and work is thin in the African demographic literature. This is surprising given the importance of marriage in mediating the relationship between schooling, fertility behavior, and employment status as well as women's socio-economic position. It is equally surprising in view of the long suspected association between paid employment and marital instability (Becker 1991; X;X;X) emanating from the re-alignment of marital roles and, subsequently, role strain (Becker 1991; X;X;X). The gap in the African literature partly results from data limitations. Until recently, both comparable marital and employment histories have rarely been collected in the same surveys. Most importantly, the definition of marriage is very variable across settings. Thus, the same concept is measured differently in studies making results very difficult to interpret and compare (Kauffman and Meekers 1998). Furthermore, rather than discrete, the marriage process is multi-dimensional, sometimes occurring over a long period of time with boundaries between stages very blurred,

However, with data becoming increasingly available, marriage is gradually featuring in the individual-level analyses of women's employment status in a few countries: Cote d'Ivoire (Appleton et al. 1990); Guinea (Glick and Sahn 1997); Ethiopia (Krishnan 1996); and South Africa (Mlatsheni and Leibbrandt 2001; Naude and Serumaga-Zake 2001; and Ntuli 2007). Yet, in all these analyses, sometimes bivariate (e.g. Mlatsheni and Leibbrandt 2001; Ntuli 2007), marriage is included only as a control variable rather than a topic deserving individual attention. The information gleaned from them is mixed. In West African contexts, the relationship between marriage and women's employment is positive (Glick and Sahn 1997 for Guinea; Appleton et al. 1990 for Cote d'Ivoire). Conversely, a negative relationship is observed in East Africa (Krishnan 1996 for Ethiopia[13]) and in South Africa (Naude and Serumaga-Zake 2001; Ntuli 2007). If

[13] Krishnan (1996) finds a large proportion of non-participating housewives and concludes that marriage is negatively associated with women's employment.

these findings hold for the rest of the region, the marriage-employment relationship appears to be conditioned by geography. Marriage increases the likelihood of women's employment in West Africa but impedes it in the Eastern (Ethiopia) South African sub-regions. This sub-regional effect, in turn, can be tied to cultural differences, especially in family systems (Caldwell 1996).

FERTILITY AND LABOR FORCE PARTICIPATION

The relationship between fertility and women's labor force participation is a subject of interest in developed as well as developing regions. While the fertility-employment relationship in the West has been largely negative albeit evidence of a gradual reversal in the direction from macro studies, findings from micro studies examining the relationship in developing countries have produced mixed findings. Some studies report negative findings (e.g., Connelly, DeGraff and Levison 1996 for Brazil; Rosenzweig 1976 for the Philippines; Torres and Mendez 2003 for Colombia) and are consistent with the developed country evidence. Others, on the other hand, find no relationship (Stokes and Hsiah 1984 for Taiwan) while Gurak and Kritz (1982) find no relationship in the short but find a positive link over the long term).

Against this background, literature on the work-fertility relationship has been sparse in Africa, partly due to a perceived weak link between the two variables. Thus, in the past three decades, existing knowledge on the relationship is provided by few micro studies (Delancey 1980; Glick and Sahn 2001; Lokshin, Glinskaya, and Garcia 2000; Shapiro and Tambashe 1997). The first two studies examine, beyond other factors, the connection between employment and cost of child care while Shapiro and Tambashe (1997) assess the relationship between schooling, fertility/its proximate determinants, and employment in Kinshasa. Mirroring contemporary focus in developed countries, Lokshin et al. (2000) use Kenyan data to examine how institutionalized childcare costs affect employment. Unsurprisingly, they find that mothers' paid work is depressed by increases in childcare costs, suggesting a conflict work fertility conflict. Yet, they report another finding that is inconsistent with expectations and challenges strategies directed at gender parity in education. Within the same household, they report that mothers' paid employment increases enrolment for boys but decreases that for girls.

On the other hand, in a dissertation research on the association between fertility and employment in Cameroon, Delancey (1980) report conflicting results on the child care expenses, fertility, and employment linkage two decades earlier. The author finds a positive relationship between lifetime wage employment and number of children ever born and contends that children do not interfere with a woman's work. The study by Shapiro and Tambashe (1997) is notable in differentiating modern from informal work. It examines the linkages between women's education, employment, and lifetime fertility differentials in Zaire, now the Democratic Republic of Congo. Supporting theory (Stycos and Weller 1967) and differing from Delaney (1980), Shapiro and Tambashe (1997) observe modern sector workers to significantly display lower fertility than informal sector ones. However, they explain the fertility differential by delayed marriage, operating through prolonged schooling rather than employment per se. Yet, because higher educated women are both more likely to plan and have fewer children as well as to work in the modern sector relative to the less educated women, they conclude that both education and employment status will be critical to a sustained fertility decline. That Shapiro and Tambashe (1997) distinguished between occupation sectors can partly explain the differences in their results from those reported for Cameroon (Delaney 1980) and partly due to differences in study times. But, beyond methodological differences, the divergent results may well lie on contextual variation. In the ensuing sections, I discuss the empirical issues as they relate to this research and mostly confined to the African literature.

EMPIRICAL ISSUES

The foregoing review of micro-and macro-studies has provided valuable insights on the relations between the three independent variables (schooling, marriage, and fertility) and women's work lives. Together, these two types of evidence enhance our understanding of the relationships operating through individual behavior and through broad processes. Nonetheless, they present important limitations that must be borne in mind in such analyses. These limitations are acknowledged and how this research addresses some of them are discussed below, concentrating mostly on the evidence pertaining to Africa. The

discussion proceeds in four sub-sections focusing on concerns relating to: 1) Small sample; 2) Design; 3) Causal inference; and 4) Contextual variation.

SMALL SAMPLE

Part of the inconsistency in the African evidence stems from past data scarcity restricting previous studies to rural (Naude and Serumaga-Zake 2001) or urban data (APPLETONTON ET AL. 1990; Glick and Sahn 1997; Krishnan 1996) or a particular subgroup (Krishnan 1996). Existing micro-evidence on all three independent variables is insightful, particularly with reference to the pointers regarding age at marriage (Shapiro and Tambashe 1997) and marital relations (Delaney 1980) and provides a useful starting point for this research. Notwithstanding, with few exceptions, the findings are based on small sample sizes with each study focusing on a different aspect of the relationship. Thus, much of the available evidence is based on data, non-representative of the entire population of labor force participants. I address the issue of sample size by using nationally representative data on each of the study countries.

DESIGN

The inconsistencies in the African literature can also be tied to differences in research design, specifically, statistical method employed, study focus, conceptualization of the dependent variable, and nature of data analyzed. First, differences in statistical methods can lead to inconsistency in results. For instance, while some researchers (Glick and sahn 1997; Appleton et al. 1990 on the education-employment studies; Shapiro and Tambashe 1997 on the fertility-employment studies) use more rigorous techniques that control for background variables (), others rely on bivariate associations (in the education-employment studies; xxxx in fertility-employment studies) and run the risk of over-estimating the effects. Regarding study focus, some authors have emphasized earning differentials (Appleton et al. 1990; Glick and Sahn 1997; Vijverberg 1993) while others have focused on differences in employment (Krishnan 1996; Naude and Serumaga-Zake 2001; Siphambe 2000). Relating to conceptualization, few studies (Glick and Sahn 1997; Shapiro and Tambashe 1997; Siphambe 2000) have distinguished between occupation sectors. Failure to consider the informal sector, where women are highly represented

(Greenhalgh 1991) can obscure the reality of African women's labor force behavior. Schultz (1990) states that the labor force is far from static and changes from primarily informal to largely formal but African economies have not followed this path. A plausible explanation is that contemporary African transitions are occurring under economic duress due Governments' policy responses to the surge of economic crises of the 1980s and 1990s. Thus labor markets have become increasingly informalized and privatized (African Labor Research Network 2004). Given that the public more than the private segment of the labor market may be less discriminatory (Appleton et al. 1990; Glick and Sahn 1997) the expansion of the private sector may disadvantage women by channeling them into insecure self-employment and less profitable informal work. Yet, to my knowledge, no studies in sub-Saharan Africa have adequately explored women's employment benefits from recent gains in human capital and the ongoing demographic transition in a historical perspective.

This study improves on the above limitations by controlling for several individual and household characteristics that bear on women's economic activity; focusing on employment, distinguishing between the overall and skilled sector; and by adopting a historical perspective.

CAUSAL INFERENCE

Quantifying the gains from social interventions has been particularly difficult due to unavailability of data needed to establish causality and the possibility of reverse causation (Greene and Merrick 2005; Schultz 2005). While concern over causality (specifically reverse causation) is limited in analyses of employment and education, and to some extent, marriage, it is an endemic problem in fertility analyses. This is because how fertility relates to employment is complex and the relationship *elusive* (Cleland 1985) and *ambiguous* (Singh and Casterline 1985). This ambiguity, partly due to the sequencing of events, is best demonstrated by the variety of ways in which the relationship is conceptualized. One conceptualization is that fertility drives employment (Sweet 1973); another is that employment drives fertility (Bumpass and Westoff 1970; Ryder and Westoff 1971); a third is whereby the relationship is reciprocal (Easterlin 1978); and finally the relationship is hypothesized to be driven by other exogenous factor(s). It is

therefore unsurprising that the question of the direction of causality remains contestable long after Spitze (1988) states, based on reviewed work, that "fertility affects employment in the short run while employment affects fertility in the long run".

Besides data unavailability, many of the influential factors are not easily measured. And there is a growing literature indicating that failure to account for these confounding unmeasured influences can bias results due to selection issues (Axinn and Thornton 1992; Giroux 2006; Jah 2007). Un-measured influences can derive from both community and individual attributes, particularly the latter leading to selection issues. An individual attribute critical to labor market success includes work experience (Mincer 1974) but this has not been commonly measured. Work duration as well as quality and relevance of acquired human capital to existing labor market requirements have not been measured in African surveys. The same applies to economic aspirations and how these affect propensity toward work regardless of one's human capital. Circumstances where women balance unpaid care work in the wake of AIDS-related mortalities in Africa and paid work have begun to emerge in the recent literature from the region (Oburu 2004; Phaswana-Mafuya and Peltzer 2005). Such elevated workloads can jeopardize women's career growth and development but may be hard to measure and compare accurately under weak data collection environments. Unmeasured community attributes can include variation in economic opportunities arising from broader national policies and earnings differentials across heterogeneous occupation sectors, all of which are hard to measure. Employer discrimination, norms, and societies' changing attitude toward women's evolving, household and economic roles are equally hard to gauge. These empirical concerns can complicate analyses, with failure to account for their influences leading to different interpretations/conclusions.

In assessing the African micro-evidence concerning causality between employment and the three independent variables, the reviewed literature all utilize cross-sectional as opposed to longitudinal data. If Spitze's (1988) argument that "fertility affects employment in the short run while employment affects fertility in the long run" holds, then cross-sectional evidence that relates variables at a given moment is limited in establishing causality. This limitation is illustrated in a study by Gurak and Kritz (1982) who use longitudinal data in examining the fertility-employment relationship in the

Dominican Republic. While they find no relationship between fertility and employment in the short term, they report that the number of living children negatively impacts married women's employment.

This research makes three methodological attempts to address the issues of causal inference through: 1) Data used; 2) Analytical approach; and 3) Level of analyses. Regarding data, multiple sources of large quantitative datasets - historical (DHS)[14], event history (CFS)[15] - and qualitative data are employed. The DHS data contains over 404,000 cases to provide rigor and enhance interpretations. The CFS event history data contain detailed histories on schooling, marriage, and fertility, and employment. The annual recording of events allow the examination of the relationships as they occur and therefore resolves sequencing concerns and further provides a partial solution to the problem of establishing the direction of causality between women's employment and the explanatory variables (Allison 19XXX; Ní Bhrolcháin, 1980). This annual timing of events also adequately handles concerns over selection into employment by the more career-oriented who pursue more education and delay marriage and childbearing. The qualitative data includes both focus group and individual interviews with participants of various age groups, demographic, and socio-economic backgrounds to provide a broader perspective on the changes in the issues in question.

With respect to analytical approach, multiple techniques are utilized: ordinary logistic regression to estimate the main effects; fixed effects modeling to account for variation in unmeasured fixed effects of individuals, households, and communities; and regression decomposition. This last decomposition technique serves to both quantify the relative contribution of each of the explanatory variable as opposed to the general social change and to identify the most critical determinant of contemporary changes in employment. And finally, because, macro-level analyses assume compositional homogeneity across individuals; say in employment aspirations among women, and changes in these over time, a micro-macro approach is adopted. Importantly, this dual approach minimizes concern over ecological fallacy (Kohler and Kohler 2002; Robinson 1950) but also addresses variation across different contexts as elaborated below.

[14]
[15]

CONTEXTUAL VARIATION

Beyond the above individual level mediating factors on the association between education, marriage and fertility and employment, the macro economic context of countries has increasingly defined labor markets. For instance, African nations differ widely in their educational development, particularly in the quality and content of education received (Glewwe 1998; 1999; Lloyd and Mensch 1999), strength of fertility regulation programs (Mauldin and Ross 1991), paid employment opportunities (Glewwe 1999) and socio-cultural features and gender roles. While remedial economic policies adopted by national governments have been reported to foster economic recoveries in some instances (World Bank, 1996), these policies resulted in a thinning of the civil service and privatization of the labor market, with women bearing the brunt of the duress (Eloundou-Enyegue 1997; Commonwealth Secretariat, London, 1989). Further, substantial country variation in these policy adjustments and responses to them are likely to exist. Failure to consider such contextual diversity through large-scale studies can limit generalizability and policy making. Yet, in addition to the proliferation of studies that provide just a snapshot of the relationships, unavailability of comparable data on many countries in the past had confined most studies to a single country. This single-country focus of the African micro-evidence, especially on marriage and fertility, scattered across the region and conducted over different time periods limits both comparison and generalizability of findings. In the same vein, existing large-scale research on the three relationships being examined has not focused specifically on Africa. For instance, a 1990 comparative macro-study (Schultz 1990) examines changes in women's labor force participation in developed and developing countries. However, its findings are rather dated and it included only Cameroon, probably due to data inadequacy at the time. With respect to demographic variables, the two studies by the UN (1987) and Bloom et al. (2007) are exceptions. Yet, important as they are, they have their limits. The UN (1987) study is now dated. Being a macro study, the Bloom et al. (2007) study only provides aggregate level evidence. Thus, even as it considers country fixed effects, it does not address within country processes and one runs the risk of concluding to individual

behavior from macro-level findings. Another concern regarding existing macro literature is the reliance on various sources of data limiting comparability. Thus, how the schooling, marriage, fertility, and employment relationships vary across African labor markets remains an empirical issue.

The issues of contextual variation, comparability, and generalizability is addressed here in four ways: 1) using nationally representative individual level data from the *same source* and collected around the same time on 21 culturally different African countries; 2) by classifying these countries in to employment regimes on the basis of their employment and independent variable profiles; 3) in the event history analyses, by interacting trend and GNP variables with the explanatory variables to determine the sensitivity of the relationships to historical and economic contexts; and 4) marrying the macro with the micro approach by using individual level data to examine the relationships for two different time periods within each country and regime, and collectively, for the African region. This is in recognition that the relationships between schooling, marriage and fertility and women's employment are governed by both individual behavior/characteristics as well as the institutional context. Thus, generalization without loss of contextual processes is achieved.

METHODOLOGY

DATA

The longitudinal data source was a Cameroon fertility and schooling survey (CFS) conducted in 1998/99 that generated event-history data on a nationally representative sample of households[16]. A stepwise stratified random sampling approach was adopted wherein divisions within province, villages within the divisions, and households within villages were selected. In the case of large urban centers, further stratification by low-income, middle-income, and high-income neighborhoods was conducted. The total sample constituted 3,330 female respondents aged 15 years and over, their spouses, as

[16] I gratefully acknowledge the generosity of P.M. Eloundou-Enyegue for making available the schooling and employment datasets derived from this survey for use in this research.

well as their 11,590 children. Of these children, 6,943 had received schooling. For each child, detailed information on schooling, marriage, fertility, and employment records, plus records on other background information relevant to this study were collected with the aid of life history calendars. The resulting "child" dataset yielding 50475 and 23451 schooling and employment records, respectively and not the "mother's" file was analyzed. Each "child" contributes multiple records to the respective datasets provided s/he is not censored. Censoring involves being dropped from the risk set, which comprises all enrolled children in the schooling dataset or all children who had exited from school in the employment dataset during the previous year. Accordingly, in the schooling dataset, a child is observed from school entry and becomes censored at death, school exit, or survey year, whichever occurred earliest. Similarly, in the employment dataset, a "child" is observed from school exit until survey year or death, whichever came first.

Yet, the CFS dataset is not without limitation. We had data on children fostered out at the time of survey. The problem here was rather the selective mortality of mothers and therefore (from a historical perspective) the under-representation of children born to women who died early). Another limitation is the problem of recall bias common in retrospective surveys, rendering the histories less reliable, especially as one moves further back in time. However, bias arising from this source was minimized through collaboration with the national University, particularly in the careful recruitment and extensive training of university students as interviewers and supervision of the interview process and through interviewer active participation in the survey instrument design and internal checks for consistency during the interviews. This was facilitated by the use of life history calendars to facilitate recall but also to allow triangulation across responses and responses against other family and local events.

This notwithstanding, the generated histories, providing updated annual life transitions of men and women covering four decades (1959 to 1999, the baseline to the survey year) permit linking explanatory variables with employment outcomes annually over 40 years.

The qualitative data come from three focus groups discussions, each involving a minimum of six women of differing backgrounds were conducted. The first group

consists of young women with different educational backgrounds and work status, to provide a range of perspectives on the issues being discussed. The main themes focus on, but not limited to, current perceptions on women's employment and issues that hinder as well as facilitate current their employment prospects. The second group was more homogeneous in the sense that the women were middle aged and older. This makes it possible to explore individual perspectives on historical trends as well as the current employment situation of women in general. Additionally, two individual interviews were held with two female executives in relevant development institutions. The focus groups generally lasted three hours while the two interviews lasted an hour each. Both focus group discussions and interviews were all recorded. While opinions different from these arose and were pursued, the broad themes include:

1. How hard is it for women to obtain employment?
    a. That is the extent to which women get jobs
2. How hard is it for women compared to men to obtain employment?
    a. Probes:
        i. Stable and secure jobs
        ii. Earn as much as men
3. Why is it more difficult OR easier women than men to obtain employment?
    a. Probes:
        i. Education
        ii. Marriage/gender roles
        iii. Childbearing and rearing
        iv. Discrimination (labor market, society)
4. How hard is it to get employment now compared to your mother's time? Why?
    a. Probes:
        i. National economic conditions?
        ii. More educated people?

iii. Eroding kin buffer against household and childrearing role conflicts
iv. Low job growth/saturated labor market?
v. Value of education – declining or improving?

MEASURES

The study's main goal is to estimate the contribution of educational and demographic transitions versus general processes of modernization to the changes in women's employment and to assess the status of the gender inequality in the country. In estimating the role of educational transitions, schooling is used as the main independent variable. With respect to the contribution of demographic transitions, marriage and fertility are estimated. Measures reflect time varying characteristics of the "children" borne by the original female respondents (the "mothers"). These outcome measures are discussed further below.

DEPENDENT VARIABLE

The dependent variable in all the analyses is labor force participation in the (1) overall and (2) formal employment sector. Overall employment is measured dichotomously by paid employment in any sector with unemployment or engagement in agricultural activity or unpaid family-work as the reference category. Formal employment is also measured dichotomously by the proportion of employed individuals in professional, technical, and managerial as well as in skilled manual work. Thus, conditional on being employed, this outcome models formal economic activity against all other non-agricultural paid participation, the reference. Given that overall employment includes all non-agricultural paid work outside the home and makes no distinction between occupation sectors, it should have lower human capital requirements for access and success. And since the African public sector, more than the informal sector, is dwindling, overall employment should closely resemble informal work. On the other hand, formal employment denotes more regulated occupation types with greater human capital prerequisites; it should therefore provide a closer measure of formal work.

MAIN INDEPENDENT VARIABLES

SCHOOLING

To test the relative contribution of educational transitions, schooling is used as the main independent variable, and is measured by number of years of schooling attained. To account for possible curvilinearity, models include both linear and quadratic terms. The study attempted differentiating schooling levels but the estimates obtained were unstable because of the smaller distributions of women at secondary and higher levels of schooling.

MARRIAGE

To evaluate the demographic impact on changes in women's labor force activity with precision, the influence of delayed marriage is separately estimated from that of fertility transitions. The study focuses on young married women because this is the stage in the life course when they transition into adult roles, including labor market participation. Thus, any conflict between these roles is likely to emerge at this stage. Marriage is measured dichotomously. It is coded as "1" if a woman is married or in a stable union at age 25 or younger and "0" if she is in this age interval and single, divorced, or widowed, with the latter category as the reference. This measure is not without drawbacks. Beyond the procedural and therefore elusiveness of the concept of marriage in African settings (Kauffman and Meekers 1998), the measure can be further complicated by the growing prevalence of cohabitation (DHS 2007). However, where unions are unstable this inclusion can over-estimate the prevalence of marriage. This limitation can be considered trivial in the data, because of its time-varying nature as well as the fact that the interviews differentiated between various forms of marriage (civil, religious, tradition, cohabitation).

FERTILITY

Like marriage, fertility is measured dichotomously according to whether the individual (male or female) had a child in each year from the index year, coded as ("1") or otherwise ("0") and the reference.

CONTROL AND INTERACTION VARIABLES

Based on the theoretical review, the study controls for several correlates of employment, These include four sets of influences to capture basic demographic; family compositional; economic need; and cultural factors. In addition, two critical pieces of information not readily available in employment analyses: duration of unemployment and ability or school performance are adjusted for[17]. Also, the annually recorded variables account for time variation in effect of the variables, overcoming many of the limitations of the DHS data. One exception is the socio-economic status (SES) variable, which is time-invariant, because of the difficulty of establishing annual information on socio-economic status (Eloundou-Enyegue 1997). To estimate the influence of historical changes on the relationships, a trend variable, measured by the number of decades since 1959 (the baseline year) and its interaction with the dependent variables was included in the analyses. The influence of economic context on the relationships was estimated by incorporating the log of GNP per capita and its interaction with the dependent variables.

METHODS OF ANALYSIS

I use logistic regression with generalized estimating equations (GEE) in the first estimation procedure. One concern about event history data is the lack of independence among the observations. This arises from the clustered nature of these data in that observations are repeated for each individual. Estimating such interdependent data by ordinary logistic regressions can bias the tests of significance. The GEE, which under the

[17] Basic correlates here include, in addition to age, the duration of unemployment and its quadratic term and ability. Duration of unemployment is measured by the number of years between school exit and employment while ability is measured by the mean grade repetition during an individual's schooling career.

Family characteristics include the SES of the family of origin(measured as family of origin's ownership of household durables); and mother's marital status, co-residence, and rural background. They are all measured dichotomously, coded ("1") if yes and ("0") if not. The first two are expected to be positively related to skilled sector work but unrelated or negatively related to overall employment while the reverse is expected in the case of the latter two.

Childhood economic constraints are captured by child's number of siblings measured continuously; whether child assisted in the schooling of his/her sibling; and his/her birth order rank, both of which were dichotomous and coded ("1") if yes and ("0") if not. Both are expected to induce an individual's propensity to work for pay, regardless of sector.

Aspirations/intergenerational attributes are captured by two variables. The first reflects aspirations and is measured by whether the individual has at least one sibling working in the skilled sector while the second is intergenerational and controls for whether his/her mother is employed outside the home. These are also categorical, coded ("1") if yes, otherwise ("0"). Unlike the correlates of childhood economic constraints, these two should encourage economic activity, particularly skilled work.

SAS framework specifically employs the GENMOD, can address these concerns by correcting for clustering. Thus, the GEE is used to estimate a series of four nested models that sequentially incorporate the four groups of correlates outlined above under methods section. This similarly yields four models: Model I being the gross estimates where only basic correlates are adjusted for while Models II through IV adjusts for family, economic, and aspirational/intergenerational influences, respectively[18]. In a final procedure, two additional models are estimated using the PHREG procedure to examine how historical and different economic trends have influenced individual employment outcomes.

One goal of the Cameroon analyses is to run separate models for men and women. While having gender-specific estimates is important in its own right, an added advantage of having separate estimates for men and women is to quantify the gender differentials in labor force participation. In turn, comparing the two sets of estimates allows one to establish the presence or absence of labor market discrimination as a function of each of the independent variables. If differences persist even after controls are made for unobserved fixed effects of family, the disparity can signal discrimination. With this in mind, regression decompositions were used, but this time to assess the source of any gender inequality in employment. Again, the source of any difference is differentiated into three components: baseline, average level of the predictor, and employment returns to the predictor. While differences in the average levels of predictor is quite straightforward, differences in employment returns reflect disadvantage within the labor market or discrimination on the basis of the predictor in question. Likewise, differences in baseline effects reflect gender differences in employment opportunities, which can stem from socio-cultural and or structural factors.

[18] Although GEE does address bias arising from within family clustering, it cannot address the unobserved fixed effects of family. Fittingly, in a second procedure, the full models generated under GEE (i.e. Model IV) are re-estimated under Model V using the PHREG procedure. Like the DHS analyses, the GEE estimates are compared with the PHREG estimates to establish the extent to which failure to adjust for unobserved family effects can influence interpretations. However, the comparison suggests that omitting the latter statistical approach does nt change the substantive conclusions of the findings.

GENDER, SCHOOLING AND EMPLOYMENT IN CAMEROON

The analyses concentrate on the net effect of education on labor force participation and its relative contribution to gender differences in participation. They also used fixed-effects estimations to explore how the education effect responds to historical and economic trends.

TABLE 1

NET EFFECT OF EDUCATION

Before discussing the results, I briefly describe summary statistics for the main variables used in the analyses. Men generally have more years of schooling (7.5 years on average) than women (6.5 years). Sampled men are also older (24.9 on average) than women (24.1). However, women are more likely to be married than men (41.8 percent against 22.9 percent) and almost twice as likely to have one or more children (14 percent of women against 7.4 percent of men).

Turning to the regression analyses, the discussion focuses on the final, fixed-effects results (table 1). Results show the net effect of education on overall employment to be in the expected direction for men but not women. On average, education hinders women's total employment opportunities by 28 percent. The effect among men (HR=1.45***) shows that education enhances their employment prospects by 45 percent. The event history dataset here can go beyond the DHS results and examine the role of ability. The results are in the expected direction and indicate that prior school performance facilitates labor market access for women (HR = 12.16**) and even more importantly for men (HR = 57.86***). In the skilled sector however, the net education effect is statistically non-significant for both women (HR = 1.41, ns) and men (HR = 0.19, ns).

RELATIVE CONTRIBUTION OF EDUCATION

What are the sources of gender differences in employment? The analyses in table 2 address this question. Within the overall sector, the gender differences in occupation (0.45 logits) are driven largely by returns to education (135 percent), as opposed to average education or prevailing employment opportunities (-81 percent). This implies that women's lower access to overall employment stems largely from discrimination in

the labor market rather than their lower human capital, which explains only 45 percent of the differential. The findings differ from Appleton et al.'s (1991) who find the observed occupational gender differential in Cote d'Ivoire to be mainly due to women's lower human capital. Instead, these results support a cultural perspective () where labor market differences in this less rigid sector can persist even with gender parity in education, because of discrimination ().

Within the formal sector, the roots of gender inequality in employment are markedly different. Surprisingly, the baseline (83 percent) is the major source of the differential rather than education (-12 percent) or returns to education (29 percent). Thus, while women's overall employment disadvantage mainly stems from discrimination, their disadvantage in the formal sector emanates from segregated employment opportunities. But discrimination is also implicated by accounting for 29 percent of the gender gap. It is noteworthy that differences in human capital have little to do with the gender inequality in access to the formal sector.

Thus, Cameroonian women relative to men, for the most part, have not reaped the anticipated economic benefits to their education. The net effect of education on employment from the event history analyses is consistent with the decomposition exercise in that education is not the most critical factor in the gender gap, particularly with respect to the formal sector where it is presumed to matter more. While the finding invalidates both the human capital and modernization perspectives, it indirectly supports the cultural hypothesis.

INFLUENCE OF ECONOMIC CONTEXT

Next, I examine the influence of historical trends and economic conditions on the observed gender differences above (table 1, last panel models VI and VII). Historical time does indeed impact men and women's employment options differently. Based on the interaction terms between schooling and the trend variable, the relationship within the overall sector is weakened in the case of men (main effect: HR= 1.76***; interaction term: HR=0.94***) while it is unaffected for women (main effect HR= 1.30*; interaction

term: HR= 1.02, ns). This differential impact of time has resulted in a convergence in total labor market participation of both genders.

Under a booming economy, women's overall labor market disadvantage, net of time, is significantly reduced (main effect: HR=0.42**; interaction term: HR=1.19***) but is expected to ease. On the other hand, the combined effect of a buoyant economy and education, net of all factors including historical time, continues to foster men's advantage (an initially strong and large effect of HR=1.45***) over women within this overall sector (main effect: HR=0.89, ns; interaction term: HR=1.12**).

Historical time and economic context also condition the relationship between education and skilled employment. Over time, the net effect of women's education in the formal sector continues to be nil (main effect: HR=1.72, ns; interaction term: HR=1.04, ns). However, the effect of historical time on men's employment is not favorable (main effect: HR=1.39, ns; interaction term: HR=0.83**); any advantage they may have had over women tends to decline. Large differences emerge when changes in national economy is considered. While economic context is unrelated to men's skilled employment activity, in the case of women, the main effect of education is massive (main effect: HR=224.6*; interaction term: HR=0.49*) but it is likely to decline with prosperity.

Thus, the large impact of schooling in prosperous times can be linked to a general growth in employment opportunities; yet these same prosperous times lead women to withdraw from the formal labor market. This contrasts with findings from past research in Africa (Glick and Sahn 1997; Naude and Serumaga). This withdrawal can be explained by Cameroonian women's greater participation reservation or opportunity costs, a point that surfaced in the qualitative results. This explanation further provides context to the plausible causes forwarded in the DHS discussion of women's labor market retreat in later transition stages. Contrastingly, for men, periods of economic prosperity bears no relation to their skilled employment behavior (main effect: HR=0.72, ns; interaction term: HR=0.82, ns). One plausible reason for this lack of association is that men, as main household income earners, tend to work irrespective of variation in the nation's economy.

In brief, the large gender differentials in the Cameroonian labor market are partly explained by context. Periods of economic growth depresses women's overall employment but significantly enhances their skilled sector prospects compared with men.

While intuitively, economic growth appears to yield economic dividends to women, it can also be interpreted as credentialism operating for women but not for men. These economic forces can be seen as part of the baseline component that drives much of the gender inequality in employment. Faced with irregular or delayed salaries during periods of national economic downturns and when confronted with discriminatory labor markets, women may be inclined to trade economic rewards and the status associated with a career with child and family well being. The next set of analyses will examine recent changes in these variables as well.

GENDER, MARRIAGE AND EMPLOYMENT IN CAMEROON

Table 3 presents the estimates of the event history analyses of the role of marriage in men and women's participation in the Cameroonian labor market, including the influence of contextual, specifically historical and broad economic trends. Table 4 reports the regression decomposition results.

[TABLE 3]

NET EFFECT OF MARRIAGE

This section discusses the net estimates of the effect of marriage on men and women's labor force participation (table 3). In theory, marriage should be inversely related to women's labor force participation (Becker 1981; 1991) but positively related to men's (Oppenheimer 199XX; 19XX). Further, the relationship should be stronger within the skilled than overall sector. In examining the results within the overall labor market, the net effect of marriage on women's employment (HR=1.22, ns) is zero rather than the expected negative association. Similarly, in the case of men, no relationship whatsoever between marriage and their overall participation is obvious (HR=1.01, ns).

Within the skilled sector, a different scenario emerges: the risk of accessing this sector becomes markedly different for men and women. For women, the net effect of marriage (HR=0.03***) is negative, large, and highly significant, providing strong support for the specialization theory (Becker 1981; 1991). Judging by the estimate, married women are 97 percent less likely than their unmarried counterparts to be skilled sector employees. Conversely, married men's prospects for skilled sector work are increased by 186 percent (HR = 2.86***) relative to their unmarried peers, implying a

disequalizing effect of marriage within as well as among genders. But these results are so far absolute.

To assess the relative importance of marriage as opposed to other factors on individual employment, I examine the decomposition results. If the gap stems mostly from the returns to marriage component, then labor market discrimination based on marital grounds is implicated, with employers giving preferential treatment to married men and not women, validating the cultural perspective. On the other hand, where the gap stems from baseline effects, the specialization hypothesis receives support but the cultural explanation is plausible too in so far as role segregation is contributory factor to the underlying baseline opportunities.

[TABLE 4]

RELATIVE CONTRIBUTION OF MARRIAGE

The contribution of marriage to change in women's employment is presented in table 4. The results confirm the net findings showing that marriage does favor men only partially. While the likelihood of accessing the overall sector is greater for men than for women, the gap stems mostly from the baseline, which explains 86 percent of the differential while returns to marriage explains only 33 percent of it. Average marriage levels have little effect on the difference. The gender differences in participation are even more marked within the formal sector, with employment prospects being positive for men (0.71 logits. This gives a probability of 67%, which seems more reasonable) and negative for women (-2.20) implying that men's odds of being formally employed by far surpasses that of women. The source of this large employment disparity is mainly tied to the baseline (84 percent) as opposed to the returns to marriage (14 percent). Thus, while women face greater difficulty than men in accessing the labor market, the impediment is attributed more to gender differences in employment opportunities and less to differences in the returns to marriage. The finding that returns to marriage (employer discriminatory practices tied to marriage) explain a smaller portion of the gap (i.e., 14 percent) compared with the baseline validates the specialization thesis only partially.

In attempts to further understand the reasons for or nature of the disequalizing impact of marriage in the Cameroonian labor market, an important question is what

constitutes the baseline. To answer the question, I critically examine the influence of the controls, including contextual factors.

CRITICAL EXAMINATION OF BASELINE EFFECTS

A perceptible portion of the gender gap in employment stems from differences in returns to marriage (overall sector: 33 percent; skilled sector: 14 percent), especially in the overall labor market. This differential points to labor market discrimination, a fact that emerged occasionally from the focus group discussions. However, the main source of the gender gap in employment is the baseline effect. Below, I discuss some of the substantive influences that are included in this baseline effect. These can include family influences, contextual influences, historical trends, and macro-economic changes. These various influences are discussed in turn.

Regarding family influences, husband reluctance and the women's reservation wage are important considerations. Indirect evidence on husband's disinclinations to wife's employment comes from a comparison of the schooling and marriage results. The schooling results without the marriage variable indicate that women's education is unrelated to their labor force participation. However, a strong and positive effect of education emerges in both sectors once marriage is considered in the analyses even if marriage itself is unrelated or negative. This insinuates that subtle processes within marriage bear on women's labor market behavior. Further indirect evidence can be gleaned from a similar study using Cameroon DHS Historical data (Jah 2009). These results show that beyond age and urban residence, husband's work status and co-residence bear on women's employment behavior within the overall sector. The potential influence of women's reservation wages also surfaced from the qualitative analyses. Women are generally family oriented and are more sensitive to structural labor market and macro economic changes. In an economic environment characterized by layoffs and hiring freezes in the country during the recession years of the late 1980s and early 1990s (Eloundou-Enyegue 1997), the retreat of married women from the labor market was to be expected, perhaps because of employer discrimination and poor and unpaid salaries (qualitative evidence) or increasing privatization and job insecurity (Beneria and).

The historical trend in women's employment is also a potential factor. It was

examined by including in the final model, an interaction term for the marriage and trend variables (table 3). Results show that the main effect of marriage is unrelated women's overall employment (main effect: HR = 0.89, ns; interaction between marriage and the trend variable: HR=1.09, ns), with trends in the effect remaining unchanged over time. The same is observed for men (main effect of marriage: HR=2.12, ns; interaction term: HR=0.81, ns). Because the interaction effects are not statistically significant, one can say that women's current labor force status has not changed as a result of passage of time per se. Unless policies or economic conditions change, calendar time does not significantly affect employment prospects for men or women. In the formal labor market, the effects of marriage on women's employment also remained steady over time (interaction term: HR=2.43, ns). Among men however, the employment premium associated with marriage has declined with time (HR=0.43*). In essence, the gender gap in marital advantage has been narrowing. To understand some of these historical trends, it is useful to examine the influence of changes in national economic condition.

Results for overall employment show that economic conditions have a positive but non-significant impact on the effects of marriage among both women (interaction term: HR=1.39, ns) and men (interaction term: HR=1.52, ns). Results for the formal sector also indicate little influence of economic conditions on the marriage effect among both women (interaction term: HR=15.27, ns) and men (interaction term: HR=0.64, ns). In sum, much as calendar time, changes in macro-economic conditions often have little impact on the relation between marriage and overall employment for either gender. The section that follows examines the fertility results.

GENDER, FERTILITY AND EMPLOYMENT IN CAMEROON

Table 5 presents the event history estimates of the relationship between gender, fertility, and employment in Cameroon, net of correlates while table16 gives the contribution of fertility to the gender differences in employment.

[TABLE 5]

NET EFFECT OF FERTILITY

The net fertility effects are drawn from the final model, which controls for both measured and unmeasured influences. From the "incompatibility" perspective, fertility should have

an inverse relationship with skilled employment and for women (Stycos and Weller 1967) but a positive relation for men (Oppenheimer 199XX; 19XX). Beginning with overall employment, fertility is unrelated to men's (HR = 1.01, ns) and to some extent women's (HR = 1.11, ns) employment. In both cases however the effect is non-significant. Within the skilled labor market, the fertility-employment relationship is non significant for both women (HR = 1.04, ns) and men (HR = 0.82, ns).

In sum, there is little association between fertility and labor market outcomes for men and women. However, the fertility analyses permit comparing the effects of all three demographic variables in this study (education, marriage and fertility). With respect to marriage, women benefit marginally in overall employment but marriage becomes a deterrent of skilled-sector work. This further supports the hypothesis of husband reluctance. While it does not affect male overall employment behavior, marriage fosters men's formal-sector employment, although this link becomes weaker in booming economies.. These fertility results tie with both the event history and DHS regarding the limited role of education on skilled labor market outcomes as opposed to overall employment outcomes for individuals.

[TABLE 6]

RELATIVE CONTRIBUTION OF FERTILITY

Table 6 reports the sources of gender differences in employment. Data show that males are 18 percent more likely to be employed in this sector than females. Yet, the sources of this female disadvantage are tied neither to differences in fertility (i.e. their higher parities relative to men) nor to gender differences in labor market returns based on discrimination against mothers or conflict between the roles of mother and employee. Rather, women's lower overall labor force participation arises exclusively from baseline effects that prevent mothers but not fathers from working (i.e., general improvements in work opportunities for men but not for women). Drawing from the literature, these effects can include norms but can also stem from economic difficulties faced by many African economies at the time.

The more interesting differences are found within the formal sector. Here, fathers are 32.5 percent more likely to work than mothers. While the baseline is the major source (70 percent) of this differential, 22.5 percent of the remaining disparity comes from

returns to fertility within the labor market. Said differently, mothers rather than fathers are more likely to be hired all else being equal which essentially amounts to discriminatory practices, whether direct or indirectly. These two findings --taken together or separately-- do not support the incompatibility thesis within Cameroonian labor markets. Further, they are consistent with the DHS results where baseline processes are the major source of differences in labor force participation between mothers and non-mothers. On the other hand, the socio-cultural explanation receives support insofar as the hindering baseline processes are predominantly normative. The entire results from the decomposition exercise visibly indicate the overriding importance of marriage as opposed to education or fertility as the overriding source of labor market differences between women. Thus, one will not be mistaken in considering marriage as a critical contributor to the baseline processes that account for gender differences in employment. Broad contextual influences may also be a factor in the labor force status of mothers and fathers.

CONTEXTUAL INFLUENCES ON THE NET EFFECT OF FERTILITY

The impact of contextual factors on the net effect of marriage is examined by monitoring the sensitivity of the main marriage effect to the inclusion of measures of: historical trends in the relationship; changing economic conditions; and the interaction of the fertility variable with each these measures. The results for historical and economic trends relationship are also shown in table 5 under models 3 and 4, respectively.

Over time, the influence of fertility has changed neither for women (interaction HR=1.02, ns) nor for me (interaction HR=0.78, ns). Likewise, this effect has also remained stable in the skilled labor market for women (interaction (HR=1.56, ns) or for men (interaction HR=0.46, ns). To further probe these findings, I investigate the specific influence of changing economic conditions. Within the overall sector, the response of the fertility effect to economic progress is non-significant for men (interaction effect: HR=1.68, ns) and women (interaction effect: HR=1.68, ns) alike. The same is true with respect to the formal sector, where the interaction terms for women (HR=0.02, ns) and men (HR=1.02, ns) are non-significant.

Thus, fathers' greater formal labor market activity as opposed to that of mothers is partly explained by the fact that, historically, marriage and marital relations have all

facilitated their access to this regulated sector while impeding that of mothers'. Some of these marriage-related impediments faced by mothers may stem from, but not limited to, reservation wage, husband reluctance, and unfavorable work conditions stemming from economic downturns. Improvements in the nation's economy invariably reduce mothers' reservation wage, labor market discrimination, and encourage husbands support for wives' outside work leading to their increased entry into the formal sector. These findings suggest that marital transitions, particularly marital relations and how they impact wives' employment status, occupy a central role in understanding the future course of the fertility transition.

CONCLUSION AND IMPLICATIONS

REFERENCES

Table 1. Net effect of schooling on individual labor force particiption, Cameroon 1959-1999

	Fixed Effects								
	Overall estimates			Historical Context					
	Main effect			Historical change			Economic context		
	Model V			Model VI			Model VII		
	B	HR	Sig	B	HR	Sig	B	HR	Sig
Overall employment: Women									
Maximum grade	-0.32	0.72	**	0.26	1.30	*	-0.87	0.42	**
Maximun grade, squared	-0.02	0.98	***	-0.02	0.98	***	-0.02	0.98	***
Ability	2.50	12.16	**	2.56	12.96	**	2.74	15.49	**
Historical trend									
Log of time				0.16	1.17		0.33	1.39	
Maximum grade*log of time				0.02	1.02		0.00	1.00	
Economic conditions									
Log of GNP							-1.13	0.32	***
Maximum grade*log of gnp							0.18	1.19	***
Overall employment: Men									
Maximum grade	0.37	1.45	***	0.56	1.76	***	-0.11	0.89	
Maximun grade, squared	-0.02	0.98	***	-0.02	0.98	***	-0.02	0.98	***
Ability	4.06	57.86	***	3.95	52.11	***	3.95	51.91	***
Historical trend									
Log of time				0.07	1.07		0.16	1.18	
Maximum grade*log of time				-0.06	0.94	***	-0.08	0.92	***
Economic conditions									
Log of GNP							-0.57	0.57	*
Maximum grade*log of gnp							0.11	1.12	**
Formal employment: Women									
Maximum grade	0.34	1.41		0.55	1.72		5.41	224.62	*
Maximun grade, squared	0.05	1.05	**	0.05	1.06		0.06	1.06	
Ability	-7.83	0.00		-13.54	0.00		-14.27	0.00	*
Historical trend									
Log of time				-9.52	0.00	***	-8.77	0.00	***
Maximum grade*log of time				0.04	1.04		-0.01	0.99	
Economic conditions									
Log of GNP							5.89	359.61	*
Maximum grade*log of gnp							-0.71	0.49	*
Formal employment: Men									
Maximum grade	-0.19	0.83		0.33	1.39		-0.33	0.72	
Maximun grade, squared	0.04	1.04	***	0.04	1.05	***	-0.04	0.96	***
Ability	-2.24	0.11		-1.68	0.19		1.68	5.39	
Historical trend									
Log of time				1.53	4.61	**	-1.53	0.22	*
Maximum grade*log of time				-0.19	0.83	**	0.19	1.20	*
Economic conditions									
Log of GNP							1.59	4.89	
Maximum grade*log of gnp							-0.20	0.82	

***, **, *, and # indicate significance at the <0.001, 0.01, 0.05, and 0.10 levels, respectively.

[a] Respondent's mother is single variable did not converge in the fixed effects model

The mother was employed in the formal sector variable was incorporated in the model but was eliminated because it did not converge

[b] All the estimates are net of all the correlates. However, I show only the estimates from the basic models to be brief.

Table 2. Decomposition results for the relative contributions of schooling to changes in women and men's employment, Cameroon

	Predicted Employment Logits					
			Total difference in employment (logits)	% of difference associated with		
	Men	Women		Baseline	Education	Returns
Overall employment						
Logits	-1.59	-2.04	0.45	-0.36	0.20	0.61
Contribution, %				-81%	45%	135%
Formal employment						
Logits	-1.83	-4.746	2.92	2.43	-0.35	0.84
Contribution, %				83%	-12%	29%

Table 4. Relative contributions of marriage to differences in men and women's labor force participation (logits), Cameroon

	Predicted Employment Logits					
			Total difference	% of difference associated with		
	Men	Women		Baseline	Average Marriage	Returns to Marriage
Overall employment						
Logits	-2.96	-3.16	0.21	0.18	-0.04	0.07
Contribution, %				86%	-0.19	33%
Formal employment						
Logits	0.707	-2.204	2.91	2.45	0.07	0.40
Contribution, %				84%	0.02	14%

Table 3. Net estimates of the effect of marital status on employment, Cameroon 1959-1999

	Overall Estimates						Historical Context					
	General estimating equation			Fixed effects			Fixed effects			Fixed effects		
	Model 4			Model 5			Model 5			Model 6		
	B	O R	Sig	B	HR	Sig	B	HR	Sig	B	HR	Sig
Overall employment: Women												
Demographic transition												
Marital status	0.10	1.11		0.20	1.22		-0.11	0.89		-2.23	0.11	
Maximun grade	0.17	1.19		0.33	1.40	**	0.32	1.38	**	0.32	1.38	**
Maximun grade, squared	-0.01	0.99		-0.02	0.98	***	-0.02	0.98	***	-0.02	0.98	***
Ability	1.34	3.83		2.40	11.06	**	2.43	11.41	**	2.44	11.51	**
Historical trend												
Log of time							0.18	1.20		0.21	1.23	
Marital status*log of time							0.09	1.09		0.06	1.06	
Economic conditions												
Log of GNP										-0.07	0.93	
Marital status*log of gnp										0.33	1.39	
Overall employment: Men												
Demographic transition												
Marital status	0.31	1.37		0.01	1.01		0.75	2.12		-1.94	0.14	
Maximun grade	0.26	1.30		0.37	1.45	***	0.38	1.46	***	0.36	1.44	***
Maximun grade, squared	-0.01	0.99	*	-0.02	0.98	***	-0.02	0.98	***	-0.02	0.98	***
Ability	2.32	10.22		4.05	57.64	***	3.94	51.55	***	4.00	54.55	***
Historical trend												
Log of time							-0.32	0.72		-0.34	0.71	
Marital status*log of time							-0.21	0.81		-0.22	0.80	
Economic conditions												
Log of GNP										0.12	1.12	
Marital status*log of gnp										0.42	1.52	
Formal Employment: Women												
Demographic transition												
Marital status	-0.96	0.38	**	-3.55	0.03	***	-10.79	2.1E-05	**	-29.41	2.E-13	*
Maximun grade	-0.52	0.59		0.12	1.13		1.06	2.88		1.24	3.45	
Maximun grade, squared	0.03	1.03		0.07	1.08	*	0.17	1.19		1.07	2.92	*
Ability	6.96	1053.84	*	-8.94	0.00		-40.48	0.00	***	-0.01	0.99	**
Historical trend												
Log of time							-22.51	0.00	***	-22.22	0.00	***
Marital status*log of time							0.89	2.43		0.96	2.61	
Economic conditions												
Log of GNP										-2.51	0.08	*
Marital status*log of gnp										2.73	15.27	
Formal Employment: Men												
Demographic transition												
Marital status	0.27	1.31		1.05	2.86	***	4.29	73.22	**	7.44	1700	
Maximun grade	-0.34	0.71		-0.17	0.85		-0.20	0.82		-0.20	0.82	
Maximun grade, squared	0.03	1.03		0.04	1.04	***	0.04	1.04	***	0.21	1.23	**
Ability	-0.18	0.83		-2.81	0.06	*	-2.88	0.06	*	0.00	1.00	
Historical trend												
Log of time							0.39	1.48		0.41	1.51	
Marital status*log of time							-0.84	0.43	*	-0.89	0.41	*
Economic conditions												
log of GNP										0.31	1.36	
Marital status*log of gnp										-0.45	0.64	

[a] All the estimates are net of all the correlates. However, I show only the estimates from the basic and contextual models for brevity.

Table 5. Estimates of the effect of fertility on labor force participation, Cameroon 1959-1999

	Overall employment: Women											
	Overall Estimates						Historical Context					
	General estimating equations			Fixed effects			Fixed effects			Fixed effects		
	Model 4			Model 5			Model 6			Model 6		
	B	O R	Sig	B	HR	Sig	B	HR	Sig	B	HR	Sig
Demographic transition												
Fertility	0.039	1.039		0.101	1.107		0.048	1.049		-1.021	0.360	
Maximun grade attained	0.224	1.251		0.331	1.393	**	0.319	1.375	**	0.319	1.375	**
Maximun grade attained, squared	-0.009	0.991		-0.019	0.981	***	-0.019	0.982	***	-0.019	0.982	***
Achievement	1.076	2.932		2.405	11.083	**	2.456	11.662	**	2.453	11.620	**
Marital status	0.072	1.074		0.179	1.196		0.175	1.191		0.177	1.193	
Historical trend												
Log of time							0.226	1.254		0.231	1.259	
Fertility*log of time							0.016	1.016		-0.009	0.992	
Economic conditions												
Log of GNP										-0.001	0.999	
Fertility*log of gnp										0.173	1.189	
	Overall employment: Men											
Demographic transition												
Fertility	-0.010	0.990		0.007	1.007		0.898	2.455		-2.333	0.097	
Maximun grade attained	0.330	1.390		0.372	1.450	***	0.373	1.452	***	0.362	1.436	***
Maximun grade attained, squared	-0.019	0.981	*	-0.019	0.981	***	-0.019	0.981	***	-0.019	0.981	***
Achievement	2.735	2.E+01		4.054	57.641	***	3.971	53.016	***	4.019	55.660	***
Marital status	0.048	1.049		0.006	1.006		-0.002	0.998		0.010	1.010	
Historical trend												
Log of time							-0.345	0.708		-0.389	0.678	
Fertility*log of time							-0.246	0.782		-0.299	0.742	
Economic conditions												
Log of GNP										0.194	1.214	
Fertility*log of gnp										0.516	1.675	
	Formal Employment: Women											
Demographic transition												
Fertility				0.040	1.041		-1.586	0.205		23.976	3.E+10	
Maximun grade attained				0.119	1.127		0.928	2.530		0.751	2.118	
Maximun grade attained, squared				0.073	1.076	*	0.171	1.187		0.197	1.218	*
Achievement				-8.987	0.000		-4.E+01	0.000	***	-4.E+01	0.000	***
Marital status				-3.559	0.028	***	-7.361	0.001	***	-7.467	0.001	***
Historical trend												
Log of time							-2.E+01	0.000	***	-2.E+01	0.000	***
Fertility*log of time							0.446	1.562		0.754	2.125	
Economic conditions												
Log of GNP										-0.929	0.395	
Fertility*log of gnp										-4.002	0.018	
	Formal Employment: Men											
Demographic transition												
Fertility				-0.193	0.824		2.601	13.474		-2.718	0.066	
Maximun grade attained				-0.165	0.848		-0.184	0.832		0.179	1.196	
Maximun grade attained, squared				0.041	1.042	***	0.042	1.042	***	-0.041	0.959	***
Achievement				-2.808	0.060	*	-2.805	0.060	*	2.812	16.639	*
Marital status				1.093	2.983	***	1.112	3.041	***	-1.124	0.325	***
Historical trend												
Log of time							0.322	1.379		-0.337	0.714	
Fertility*log of time							-0.780	0.458		0.778	2.176	
Economic conditions												
Log of GNP										-0.193	0.824	
Fertility*log of gnp										0.019	1.019	

[a] All the estimates are net of all the correlates. However, I show only the estimates from the basic models for brevity.

Table 6. Decomposition results for the relative contributions of fertility to changes in women and men's employment, Cameroon 1959-1999

	Predicted Employment Logits					
	Men	Women	Total difference	% of difference associated with		
				Baseline	Average Fertility	Returns to Fertility
	Overall employment					
Logits			0.169	0.173	-0.002	-0.002
Contribution, %				102%	-1.35%	-1.04%
	Formal employment					
Logits			3.48	2.450	0.249	0.781
Contribution, %				70.40%	7.16%	22.45%

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