

**Testing the “Organized Hypocrisy” Hypothesis:  
The Mixed Effects of the World Bank’s Safe Motherhood Investments on Maternal  
Mortality in sub-Saharan Africa**

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**Abstract:**

Despite the nearly 30-year old global Safe Motherhood Initiative, maternal mortality remains quite high, especially in sub-Saharan Africa. There have been important reductions in maternal mortality ratios (MMRs), but although much is known about how to prevent maternal deaths, MMRs remain stubbornly high in most sub-Saharan African nations. The World Bank is major funder of Safe Motherhood investments in the region, but the Bank’s financing methods for these programs are loans coupled with structural adjustment programs, rather than grants or loans with no strings attached. We examine the impact of World Bank Safe Motherhood programs and structural adjustment loans on maternal mortality in 33 sub-Saharan African countries between 1995 and 2005 using two-way fixed effects models. We find that although Safe Motherhood loans are associated with reduced maternal mortality, there is an opposite effect for structural adjustment policies; this “organized hypocrisy” may be eroding any gains in maternal mortality.

**Introduction**

The Safe Motherhood Initiative, launched by a consortium of international agencies in 1987, has had significant success in reducing maternal mortality, yet maternal death rates still remain high in many poor and even middle-income countries. One-third of global maternal deaths occur in just two countries: Nigeria (40,000 deaths in 2013) and India (50,000 deaths in 2013). (WHO 2014) Women in sub-Saharan Africa have a 1 in 40 lifetime risk of dying during pregnancy and childbirth, compared to a 1 in 3,300 risk for women in Europe (WHO 2014).

The Millennium Development Goal (MDG) 5 is to “improve maternal health.” It has two components: 1) to reduce the maternal mortality ratio (MMR) by three quarters, between 1990 and 2015; and 2) By 2015, to achieve universal access to reproductive health. The MMR did decline by 45 percent between 1990 and 2013, and all regions have made some progress, but the target will not be met. Due to poor quality data, measuring maternal mortality (let alone maternal morbidity) is a difficult undertaking (Wilmoth et al. 2014). Yet the international community has celebrated the fact that, although MDG 5 may not have been met, good progress has been made in the right direction. In 1990, there were an estimated 523,000 maternal deaths globally; by 2013, this number was reduced to 289,000 (WHO 2014).

East Asia, North Africa, and South Asia have seen a decline in the MMR of about two-thirds, but sub-Saharan Africa’s decline has been far slower. The MMR for sub-Saharan Africa is 510 per 100,000, down from 870 per 100,000 in 1990 (Wilmoth et al. 2014). The MMR for all developing regions is still 14 times higher than in developed regions. Nevertheless, the proportion of deliveries attended by skilled health personnel rose from 56 percent in 1990 to 68 percent in 2012, and the rural-urban gap in skilled care has shrunk (Millennium Development Goals 2015).

The Sustainable Development Goals (SDGs, or the United Nations’ post-2015 development agenda), has an even more ambitious goal: to reduce the global maternal mortality ratio (MMR) to fewer than 70 per 100,000 live births. This goal is embedded in the 3<sup>rd</sup> SDG: “Ensure healthy lives and promote well-being for all at all ages.” (Sustainable Development Goals 2015).

The World Bank has been a main partner and significant funder of projects in the Safe Motherhood Initiative from the beginning. Bank health-focused projects have increasingly focused on family planning, reproductive health, and maternal and child health, since these investments have clear advantages for the overall health, well-being, and development of society over the long-run. Research has shown that mother's health and children's health is strongly linked and that investment in reproductive and maternal health can have large development payoffs (Gill et al. 2007; Greene and Merrick 2005; Reed et al. 2000; Strong 1992)

However, there is much criticism of the Bank's particular strategies for health programs, which often use loan mechanisms, coupled with stringent rules for spending these funds and which increase the debt burden for already-indebted low-income countries, making it harder for them to qualify for debt relief programs. Weaver (2008) and others argue that the World Bank does not pursue a coherent agenda but rather different and contradictory agendas when it implements reforms in response to various external pressures that threaten its legitimacy and resources. In this paper, we test this hypothesis of "organized hypocrisy" in the realm of maternal health by investigating the effects of the World Bank's policies and programs on reducing maternal mortality in sub-Saharan Africa.

The paper is organized as follows. First, we define maternal mortality and briefly discuss some factors that are known to impact it. Then, we discuss the history of the safe motherhood initiative to provide context for the analysis of the World Bank Safe Motherhood program impacts. In the next section, we describe the data, variables, and methodology for the analysis. This is followed by a presentation of the results and finally,

the concluding section discusses the significance of the results and proposes some future policy directions. (Note: The paper is currently an incomplete draft, but it will be completed by the time of the African Population Conference.)

### **What is Maternal Mortality?**

Maternal death is officially defined as, “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (WHO 1992). Direct obstetric deaths are those deaths resulting from obstetric complications of the pregnant state (pregnancy, labor, and puerperium or postpartum), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above (e.g., eclampsia, hemorrhage). Indirect obstetric deaths are those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but which was aggravated by physiologic effects of pregnancy (e.g., anemia, malaria) (WHO 1992).

Although there is much agreement about the factors that affect maternal mortality among the medical and public health communities, these factors are numerous and complex. Of course, lack of antenatal care for pregnancy women and delay in accessing quality obstetric care during delivery are major proximate determinants of maternal mortality. However, in recent years the Safe Motherhood movement has expanded its focus to include a range of other direct and indirect factors, including: lack of education for girls, early marriage, lack of access to contraception (and hence, close spacing of

births and high fertility), HIV/AIDS, poor nutrition, and women's poor social, economic, and legal status (Starrs 2006).

### **History of Safe Motherhood initiative**

Although officially founded in 1987, the Safe Motherhood Initiative truly began in 1985 when Rosenfield and Maine published their seminal article entitled, "Maternal mortality—a neglected tragedy. Where is the M in MCH?" which pointed out the lack of focus on maternal health in maternal and child health (MCH) programs (Rosenfield and Maine 1985). Also in that year the UN held the conference to mark the end of the UN's Decade for Women and at that conference, the WHO announced that 500,000 women per year died of obstetric complications (Starrs 2006). These two events led the women's health community to launch a global campaign to reduce maternal mortality at the Safe Motherhood Conference in Nairobi, Kenya in 1987. The conference was sponsored by UNFPA, WHO, and the World Bank (Starrs 2006).

Out of this conference, the Safe Motherhood Inter-Agency Group was founded to spearhead the global Safe Motherhood Initiative; the IAG included UNFPA, WHO, World Bank, UNICEF, UNDP, IPPF, and the Population Council. By 1994, at the International Conference on Population Development (ICPD), safe motherhood had become a well-accepted and key component of reproductive health and maternal health was promoted as a human right (AbouZahr 2003). In 1998, the WHO devoted World Health Day to safe motherhood and by 2000, improving maternal survival was included as one of the eight MDGs (Starrs 2006).

This is not to say that the Safe Motherhood Initiative has been without controversy, however. Although there is a great deal of consensus around the need to reduce maternal mortality and the research community generally agrees about the mechanisms required to achieve such reductions, the content and implementation of maternal health programs varies greatly and there is still far greater political will behind the child health and survival movement than there is behind the safe motherhood movement. The links between HIV/AIDS, abortion, and contraceptive use and maternal health have been used as reasons for some politically conservative governments and funders to avoid or undercut maternal health programs. The increasing activism of the medical community on the issue of safe motherhood has also been met with some skepticism by the women's rights movement who voice concerns about the overmedicalization of pregnancy and the rising rates of C-sections globally (AbouZahr 2003).

Two of the biggest challenges facing the safe motherhood movement are the relatively low levels of funding and the lack of well-developed maternal health systems (which cannot simply be extensions or add-ons to the existing health delivery systems, but require specialized knowledge, personnel, equipment, and resources and true investment in these specific maternal health sectors and systems (AbouZahr 2003). Although the World Bank's Safe Motherhood Investment program is now the largest source of funding for maternal health programs and is well-analyzed and documented, there is no cross-national research that tests the effectiveness of World Bank safe motherhood initiative lending. In this paper, we use cross-national data for a sample of thirty-three sub-Saharan African nations to examine the impact of these loans on

maternal mortality and to also test the effects of simultaneous structural adjustment criteria for such loans to test the so-called “organized hypocrisy” hypothesis.

### **Data, Variables, and Methodology**

All data are available for 1995, 2000, 2005, and 2010. We obtain the maternal mortality data online from the United Nation’s *Millennium Development Goals* portal. All other data may be obtained online from the World Bank’s World Development Indicators (unless otherwise noted) and are lagged by five years. The descriptive statistics for the variables used in this analysis are contained in Table 1.

(Table 1—to be completed—goes about here.)

#### Dependent Variable—Maternal Mortality Ratio:

The dependent variable in our study is the maternal mortality ratio for a sub-Saharan African nation. This variable measures the annual number of deaths from pregnancy-related causes per 100,000 live births. A maternal death is defined as the death of a woman while pregnant or within 42 days of the termination of a pregnancy from any cause related to or aggravated by pregnancy (World Health Organization 2012). We take the square root of the variable to correct for its skewed distribution.

It can be difficult to obtain comparable estimates of maternal mortality across nations due to issues with underreporting and misclassification (World Health Organization 2012). This may occur for several reasons. For instance, deaths of reproductive aged women might not be recorded at all because governments do not

require such reporting by law. Even if such deaths are recorded, the pregnancy status or cause of death may not be known and the deaths would, therefore, not have been reported as maternal deaths. Further, in most sub-Saharan Africa nations where medical certification of cause of death does not exist, accurate attribution of a female death as a maternal death is difficult (World Health Organization 2012). These issues may be complicated by inadequate understanding of reporting rules for maternal deaths, the desire to avoid litigation, and the desire to suppress information, especially regarding abortion-related deaths (World Health Organization 2012). At the same time, there are complications with measuring adjusted maternal mortality over time. This is because different adjustment protocols are often used by different nations to estimate the maternal mortality ratio in different years, thereby rendering the data unsuitable for analysis across years (World Health Organization 2012).

Thus, we use the newly available data on maternal mortality from the United Nations Maternal Mortality Estimation Inter-Agency Group (i.e., World Health Organization, United Nations Children's Fund, United Nations Population Fund, and World Bank) as our dependent variable. This group has developed adjusted estimates of maternal mortality that are comparable across nations and time (World Health Organization 2012). The estimates have been developed to monitor a country's progress toward meeting Millennium Development Goal Five, reducing maternal deaths by three-quarters between 1990 and 2015.

The adjusted maternal mortality estimates are derived using the following procedure (World Health Organization 2012). First, the consortium obtains data on maternal deaths for each nation for an available time point during the period of



investigation (i.e., 1990 to 2005). Second, it classifies the source of the data (e.g., civil registrations, household survey, censuses, reproductive age mortality study, or verbal autopsy) for each country and year. Third, it adjusts the estimates for underreporting and misclassification depending on the data source. The adjustment factors are derived from meta-analysis of the scholarly literature and weighting suggested by governments. Fourth, using the adjusted data, estimates are derived for remaining years using information on a country's total fertility rate and percentage of births attended to by a skilled attendant. Please see the World Health Organization (2010) for a more detailed discussion of the methodology used to calculate the estimates.

### Independent Variables

#### *World Bank Safe Motherhood Initiative Investment Recipient:*

The main independent variable that measures the impact of World Bank investment lending for safe motherhood projects. This is a dummy variable where sub-Saharan African nations that received a loan for safe motherhood projects in 1990, 1995, 2000, or 2005, are coded with a value of one. All other sub-Saharan African nations serve as the reference category. These data come from the World Bank's Projects and Operations database. We supplement these data with information from AidData. We identify safe motherhood projects by first search for investment loans in the reproductive health sector and using a key word search for "safe motherhood."

#### *World Bank Structural Adjustment Loan Recipient:*

This is a dummy variable where we code a sub-Saharan African nation that

received a World Bank structural adjustment loan in 1990, 1995, 2000, or 2005 with a value of one. All other nations serve as the reference category and are coded with a value of zero. These data may be obtained from World Bank's online Projects and Operations database. We hypothesize that when a sub-Saharan Africa nation receives a World Bank structural adjustment loan, it should have higher levels of maternal mortality than when the country does not receive such a loan. This is because the World Bank often requires governments to cut spending for health and sell off public hospitals and clinics (Marpathia 2010). It may also require governments to implement cost recovery mechanisms like user fees that limit access to health services (Ismi 2004)

*Debt Service Ratio:*

In addition to the pressure to adopt macro-economic policy reforms under structural adjustment, nations must continually service their foreign debts. It is also important to control for debt service as well as structural adjustment (Bradshaw and Schafer 2000). Thus, we include the repayment of all long-term public debt. The data are measured as a percentage of exports of goods and services. This variable is logged to correct its skewed distribution. We hypothesize that higher levels of debt service should be associated with increased maternal mortality within sub-Saharan African nations because it reduces resources available for governmental investment in health, family planning, and reproductive services.

*Multinational Corporate Investment:*

We include the stock measure of multinational corporate investment in the models

because World Bank structural adjustment loans often require that indebted nations liberalize trade for foreign investors (Jorgenson, Dick, and Mahutga 2008). These data may be obtained online from the United Nations Conference on Trade and Development statistical portal. We log this variable to correct for its skewed distribution. We expect that higher levels of multinational corporate investment should be associated with increased maternal mortality within a sub-Saharan African nation. This is largely because multinational corporations monopolize access to capital, displace local business, slow economic growth, promote income inequality, exacerbate poverty, and deprive governments of tax revenue (Wimberley 1990).

*Gross Domestic Product:*

We employ a measure of gross domestic product per capita at purchasing power parity to take into account the level of wealth in a nation. We log this variable because of its highly skewed distribution. We expect that higher levels of gross domestic product per capita should correspond with decreased maternal mortality in sub-Saharan Africa. This is because higher levels of wealth tend to bring higher standards of living, advanced medical technology, and demographic changes that lower maternal mortality (Shen and Williamson 1999). Buor and Bream (2004) find support for this line of reasoning in their cross-national research.

*Domestic Investment:*

We also include a measure of domestic investment, known as gross capital formation, as a percentage of gross domestic product. It is standard to control for this

variable when considering the impact of foreign investment. We log domestic investment to deal with its skewed distribution. We hypothesize that higher levels of domestic investment should be associated with increased maternal mortality within a sub-Saharan African nation. This is most likely the case due to domestic investment increasing capital available for investment by governments for health (Rice 2008).

*Total Secondary School Enrollment:*

This variable measures the total secondary school enrollments within a sub-Saharan African nation. We take the log of this variable because it is skewed. We argue that higher secondary school enrollments should correspond with lower maternal mortality because education increases economic growth and reduces poverty (London and Lena 1993).

*Female Secondary School Enrollment:*

We use the number of female students enrolled in secondary school per capita as a measure of educational attainment. We take the square root of this variable because it is skewed. We hypothesize that higher levels of female secondary school enrollment should be related to decreased maternal mortality within sub-Saharan African nations. This may well be because female education is not only associated with more economic growth and less poverty but also with wider use of health services (i.e., family planning, pre-natal care, post-natal care, etc.). It also tends to improve access to information about nutrition, birth spacing, reproductive health, and immunizations (Filmer and Pritchett 1999).

### *Democracy:*

We use the average of Freedom House's political rights and civil liberties scales to measure the level of democracy within a nation. The data may be obtained online. According to Freedom House (2005), political rights refer to the degree to which a nation is governed by democratically elected representatives and has fair, open, and inclusive elections. The civil liberties scale measures the level of freedom of press, freedom of assembly, general personal freedom, freedom of private organizations, and freedom of private property within a nation (Freedom House 2005). The variables have the following coding: free (1-2), partially free (3-5), and not free (6-7). We multiply this index by negative one so that high values correspond with democracy. We hypothesize that higher levels of democracy should correspond with decreased maternal mortality within sub-Saharan Africa. This is most likely the case because freely elected and open governments respond to popular demands for health services due to political activism and electoral accountability (Wickrama and Mulford 1996).

### *Domestic Conflict:*

This variable measures the extent from which a sub-Saharan African nation experiences conflict within its borders. The data may be obtained from Harbon and Wallenstein (2007). The variable has the following coding: 0 equals no conflict, 1 equals less than 25 battle deaths in a given year, 2 equals more than 25 battle deaths but less than 1,000 in a given year, and 3 equals more than 1,000 battle deaths in the specified year. We expect that sub-Saharan African nations with higher levels of domestic conflict should have

increased maternal mortality. This is because conflict disrupts the ability of a government to deliver health services while diverting investment away from this sector toward military spending (Buchmann 1996).

*Public Health Expenditures:*

It is also important to control for a number of public health variables in a cross-national study of maternal mortality (Shen and Williamson 1999). In this regard, we begin by measuring the fiscal capacity of a nation by including public health expenditures as a percentage of gross national product in the models. We log this variable to deal with its skewed distribution. We expect higher levels of public health expenditures to be associated with decreased maternal mortality within sub-Saharan African nations. This is because government investment in hospitals and primary care (e.g., immunizations, family planning, prenatal care, postnatal care, and nutrition counseling) should improve maternal mortality (Moon and Dixon 1985).

*Access to an Improved Water Source:*

This variable measures the percentage of the country's population who has access to an improved water source. This variable is logged to correct for skew. According to the United Nations (2010), an improved water source includes any of the following types of water sources: household connections, public standpipes, boreholes, protected dug wells, protected springs, and rainwater collection. An unimproved water source may include an unprotected well, surface water, vendor provided water, tanker provided water, and bottled water. We hypothesize that higher levels of access to an improved drinking

water source should be related to lowered maternal mortality because diarrheal diseases that often complicate pregnancies can lead to more maternal deaths (Rice 2008).

*Access to an Improved Sanitation Source:*

As an alternative indicator that considers the impact of the environment on maternal mortality, we include the percentage of a population who has access to an improved sanitation facility. This variable is logged to correct for skew. The United Nations (2010) considers an improved sanitation facility to be a connection to a public sewer, connection to a septic tank, pour flush latrine, simple pit latrine, ventilated pit latrine, pit latrine with slab, and composting toilet. An unimproved sanitation facility includes an open pit latrine, public latrines, buckets, latrines, hanging latrines, flush to elsewhere (e.g., street, yard, river, ditch, etc.), and no facility (United Nations 2010). We expect that higher levels of access to an improved sanitation facility should correspond to decreased maternal mortality within a sub-Saharan African nation. This is because a poor sanitation system can lead to a number of diseases in women including diarrhea, intestinal worms, and cholera among many others (Rice 2008).

*Calorie Intake:*

We take into account the level of food availability in a country. This is the average number of kilocalories consumed by an individual daily. We log this variable to control for its skewed distribution. We expect that higher calorie intake corresponds with lower maternal mortality. This is because women, who do not eat a proper diet, are more likely to suffer complications during pregnancy that can ultimately lead to death (Shen and

Williamson 1999).

#### *Human Immunodeficiency Virus Prevalence:*

We also include the prevalence of the human immunodeficiency virus for each sub-Saharan African nation. This variable measures the percentage of a country's population ages fifteen to forty-nine that are infected with HIV, whether or not they have developed symptoms of Acquired Immune Deficiency Syndrome (AIDS), or are alive at the end of the year specified. We take the square root of this variable because it is skewed. We hypothesize that higher levels of HIV prevalence should be associated with increased maternal mortality. This is because mothers may experience complications during pregnancy or birth as a result of opportunistic infections (e.g., tuberculosis, pneumonia, and malaria) due to a weakened immune system (Foster and Williamson 2000). There are also indirect effects. When mothers fall sick from the disease or die from associated illnesses, children assume the burden of earning money. In general, there are fewer resources (e.g., food, water) available for the family because children tend to earn less than adults (Scanlan 2010). This also removes children, especially girls, from school, thereby eroding any potential gains in lowering maternal mortality via educational attainment (Scanlan 2010).

#### Methodology

We estimate a two-way fixed effects regression model with robust standard errors clustered by country to examine the effect of World Bank safe motherhood lending on maternal mortality within sub-Saharan African nations. This is one of the most commonly



used models by social scientists to deal with potential problems of heterogeneity bias (Hsiao 2003). The issue of heterogeneity bias refers to the impact of unmeasured time-invariant variables that are omitted from a regression model. To deal with heterogeneity bias, fixed-effects models control for omitted variables that are time invariant but do not vary across cases. This is done by estimating unit-specific intercepts, which are the fixed effects for each case. This approach is appropriate for cross-national analysis because time-invariant unmeasured factors (e.g., climate, geography, etc.) can affect maternal mortality in sub-Saharan Africa. Thus, a fixed-effects approach should provide a stringent assessment of the relationship between World Bank safe motherhood lending and maternal mortality because the associations between the variables are estimated net of unmeasured between-country effects (Brady, Kaya, and Beckfield 2007). Generally, this modeling strategy is robust against missing control variables (Hsiao 2003).

The notation for the two-way fixed-effects model is as follows:

$$y_{it} = a + B_1x_{it1} + B_2x_{it2} + \dots + B_kx_{itk} + u_i + w_t + e_{it},$$

where

$i$  = each country in the analysis,

$t$  = each time period in the analysis,

$y_{it}$  = dependent variable for each country at each time period,

$a$  = the constant,

$B_1$  to  $B_k$  = coefficients for each independent variables,

$x_{itk}$  = independent variables for each country at each time point,

$u_i$  = country-specific disturbance terms that are constant over time,

$w_t$  = period-specific disturbance terms that are constant across all countries,

and

$e_{it}$  = disturbance terms specific to each country at each time point.

To determine if the two-way fixed effects model is more appropriate than the random effects estimator, we calculate Sargan-Hansen test statistics for each model. The null hypothesis of the test follows a  $\chi^2$  distribution if the random effects estimator is more efficient. In our models, the test statistic reaches a level of statistical significance for every model, indicating that the fixed effects estimator is more efficient than the random effects estimator because the country-specific error terms are correlated with the independent variables included in the models (Baum 2006). We calculate a Woolridge (2010) test for each model to determine if the models are affected by first order

autocorrelation. The coefficients for the F-test failed to reach a level of statistical significance. Therefore, we fail to reject the null hypothesis and conclude we have no potential problems with first order autocorrelation.

## **Findings**

In Table 2, we present the two-way fixed effects regression estimates of maternal mortality in sub-Saharan Africa. In every equation, we include World Bank safe motherhood initiative lending, World Bank structural adjustment lending, debt service, multinational corporate investment, domestic investment, gross domestic product per capita, democracy, internal conflict, public health expenditures, calorie intake, and HIV prevalence. In equations (2.1) and (2.2), we include access to an improved water source. In equations (2.3) and (2.3), we include access to an improved sanitation facility. In odd-numbered equations, we include total secondary school enrollments. In even-numbered equations, we examine the impact of female secondary school enrollments.

(Table 2 goes about here.)

Let us begin with a discussion of the World Bank lending variables. In every equation, we find that World Bank safe motherhood lending is related to lower maternal mortality. The coefficients for this variable are negative and significant in all four models. However, we find that World Bank structural adjustment is associated with increased maternal mortality in sub-Saharan Africa. The coefficients for this variable are positive and significant in all four equations. Taken together, the findings indicate that the World

Bank is engaging in contradictory lending practices with its safe motherhood projects helping to decrease maternal mortality while its structural adjustment increase it.

It is important to note that there are other factors that explain maternal mortality among sub-Saharan African nations. First, we find that other, we find that higher levels of total and female secondary school enrollments are associated lower maternal mortality. The coefficients for these variable are negative and significant in Table 2. Second, we find that higher public health expenditures correspond with lower maternal mortality. The coefficients for this measure are negative and significant in three or four models. Third, we find higher levels of calorie intake correspond with lower maternal mortality within a sub-Saharan African nation. The coefficients for this variable are negative and significant in all equations. Fourth, we find that higher levels of HIV prevalence are related to increased maternal mortality in sub-Saharan Africa. The coefficients are positive and significant in all models.

There are also some non-significant findings that merit comment. First, we find that several economic factors do not predict significant variation in maternal mortality. The coefficients for debt service, multinational corporate investment, domestic investment, and gross domestic product per capita, do not reach a level of statistical significance. Second, political factors also do not explain maternal mortality. The coefficients for democracy and domestic conflict do not reach a level of significance. Third, the environmental factors also do not appear to affect maternal mortality in sub-Saharan Africa. The coefficients for access to an improved water source and improved sanitation facility are not statistically significant.

## Discussion and Conclusion

We began this study by noting that World Bank lending for safe motherhood projects should be associated with less maternal mortality. Nevertheless, there has been no cross-national research that tests this hypothesis. We address the gap in the cross-national literature here and test the effectiveness of World Bank safe motherhood initiative lending. We did so by using cross-national data for a sample of thirty-three sub-Saharan Africa nations to examine the impact these loans on maternal mortality. We found support for the hypothesis that World Bank lending for such projects is associated with decreased maternal mortality. The coefficients for this variable are negative and significant in Table 2.

However, one criticism remains particularly salient. The coefficients for the World Bank structural adjustment variable are positive and significant. This suggests that the World Bank may be eroding any gains in maternal mortality as a result of its safe motherhood initiative lending. Thus, we argue the World Bank should still be criticized for promoting "reformist" solutions to reproductive health because it does not fundamentally address the causes of maternal mortality (i.e., structural adjustment) (Bryant and Bailey 1997). The findings lead us to concur with conclusions reached by Oxfam that the World Bank's safe motherhood initiative programs is "probably serving more of a political purpose in giving adjustment the appearance of a human face rather than a genuine compensatory purpose" (1993: 25).

What may account for the contradictory lending patterns? The results embody ideas of Catherine Weaver (2008) in *Hypocrisy Trap: The World Bank and the Poverty of Reform*. The author draws on the sociology of organization literature to argue that the

World Bank does not pursue a coherent agenda but rather different and contradictory agendas when it implements reforms in response to various external pressures that threaten its legitimacy and resources.

On the one hand, the United States Treasury and private capital markets, which the World Bank depends upon for funding during periods of recapitalization, leads it to adopt a “finance ministry” agenda (Weaver 2008). This involves the World Bank implementing lending programs that conceptualize improving health as best achieved via market-oriented principles associated with structural adjustment. It serves the interests of the United States Treasury and capital markets by opening the economies of sub-Saharan African nations that receive AfDB structural adjustment loans to trade and financial flows from rich donor nations (Weaver 2008).

On the other hand, the World Bank must also be deferential to issues being raised by United Nations agencies, non-governmental organizations, and lawmakers in donor governments especially the United States Congress (Weaver 2008). These groups are pushing the World Bank to adopt a “civil society” agenda based upon more socially oriented lending (e.g., health, education, environment, etc.) that are often at odds with the “finance ministry” agenda (Weaver 2008). As a result, Weaver argues that the “World Bank, faced with the necessity of appearing responsive to both sets of demands, reacts by embracing both sets of agendas in its broad policy paradigms, leaving the inconsistencies and contradictions to be worked out in its daily operations.” (2008: 32).

There are policy implications that follow from the findings concerning the contradictory nature of World Bank lending. At the most radical, non-governmental organizations, social movements, and concerned citizens should lobby World Bank

officials to abandon structural adjustment loans altogether. Given that the World Bank receives a large portion of its money from the United States, attention should be given to lawmakers in the Congress. At the more practical level, there should be debt forgiveness and a move toward grants rather than loans to fund reproductive health in sub-Saharan Africa. This could allow sub-Saharan Africa nations to avoid accumulating large debt burdens, which bring about the need to enter into structural adjustment agreements in the first place. This may be best accomplished by expanding eligibility for the World Bank's Enhanced Highly Indebted Poor Countries and Multilateral Debt Relief Initiatives. These programs offer debt forgiveness and grants to reduce repayment amounts to "sustainable" levels.

The debt forgiveness should be coupled with increased investment in safe motherhood projects.

We conclude with some possible ways forward for research from the policy recommendations and limitations of the study. First, we call for greater debt forgiveness via the World Bank's Highly Indebted Poor Countries and Multilateral Debt Relief Initiative as a way to reduce maternal mortality in sub-Saharan Africa. However, governments must meet a range of economic management and performance targets to qualify for the debt relief (Babb 2009). The economic management and performance targets usually involve liberalization of trade and fiscal policy (e.g., tax holidays, labor flexibility, and weakening of government regulations) that can be quite similar to structural adjustment loan reforms (Peet 2003). Thus, it would be interesting to see if the debt relief provided by the World Bank is associated with improved reproductive health, or if the economic management and performance targets that governments must meet in order to qualify for the relief

impede any improvements. Second, we use data for thirty-six nations for the period of 1990 to 2010. This is due to data availability for the maternal mortality variable, which is only available at five year increments (United Nations 2015). It is further complicated by data not being available for several independent variables at the earliest time point (i.e., public health expenditures, female education, access to an improved water source, and access to an improved sanitation source). This is most likely due to governments being unable to collect statistical data systematically across time due to factors like conflict, corruption, or money. Therefore, we urge caution when interpreting the results. When more data becomes available, this study should be updated and refined. In the meantime, cross-national research should be supplemented with case studies to determine how the patterns of results observed here either converge or diverge across space and time.

## **References**

(To be compiled later)



**Table 2. Two-way Fixed Effects Estimates of Maternal Mortality in Sub-Saharan Africa, 1990 to 2010**

	Equation (2.1)	Equation (2.2)	Equation (2.3)	Equation (2.4)
<b>Independent Variables</b>				
World Bank Safe Motherhood Investment Loan , (1 =Yes)	-2.009** (.622)	-1.792*** (.505)	-2.014** (.624)	-1.805*** (.457)
World Bank Structural Adjustment Loan, (1 = Yes)	.769* (.411)	.615* (.359)	.770* (.395)	.623* (.344)
Multilateral Debt Service	.397 (.247)	.343 (.245)	.403 (.251)	.300 (.252)
Multinational Corporate Investment	.230 (.324)	.200 (.277)	.225 (.312)	.242 (.271)
Domestic Investment	.041 (.894)	-.250 (.902)	.054 (.897)	-.308 (.926)
Gross Domestic Product	3.008 (1.886)	2.248 (1.815)	3.021 (1.991)	2.175 (1.923)
Total Secondary School Enrollment	-2.567* (1.431)		-2.5573* (1.414)	
Female Secondary School Enrollment		-3.405** (1.254)		-3.721** (1.173)
Domestic Conflict	-.454 (.611)	-.484 (.618)	-.450 (.573)	-.506 (.620)
Democracy	.065 (.611)	.117 (.202)	.062 (.172)	.135 (.200)
Public Health Expenditures	-.711* (.428)	-.611* (.381)	-.783* (.493)	-.576 (.418)
Improved Water Source	-.002 (.039)	.020 (.038)		
Improved Sanitation Facility			-.032 (1.485)	.305 (1.477)
Calorie Intake	-.005** (.001)	-.004** (.001)	-.003** (.001)	-.004** (.001)
Human Immunodeficiency Virus Prevalence	.216*** (.063)	.174** (.065)	.217*** (.062)	.175** (.066)
Year = 1995	-1.328** (.489)	-1.335** (.417)	-1.362** (.482)	-1.366*** (.418)
Year = 2000	-2.851** (1.025)	-2.367** (.867)	-2.854** (.976)	-2.401** (.879)
Year = 2005	-3.476* (1.666)	-2.661* (1.516)	-3.483* (1.616)	-2.715* (1.541)
Constant	24.351* (10.897)	29.946** (10.039)	24.253* (11.487)	29.976** (11.347)
R-Square	.880	.890	.880	.889
Number of Observations	90	90	90	90
Number of Countries	33	33	33	33
Sargan-Hansen Test Statistic	34.450**	39.959**	28.274**	35.693**

Notes:

a) \* indicates  $p < .05$ , \*\* indicates  $p < .01$ , and \*\*\* indicates  $p < .001$  for a one-tailed test.

b) The first number is the unstandardized coefficient and the second number is the robust standard error is in parentheses.

c) The null hypothesis for the Sargan-Hansen test is that the random effects estimator is more efficient than the fixed effects estimator.

d) The reference year for the dummy variables representing years is 1990.