

The Effects of IMF Programs on Women

Despite a large body of literature on the adverse effects of IMF conditionality policies on women, there are no empirically sound, large studies that evaluate the claim that Fund programs are more negative for women than for men. Part of the difficulties in evaluating IMF program effects lies in the nonrandom selection of countries into IMF agreements. This study uses Heckman selection models to evaluate the effects of IMF program on several indicators of women's welfare and status, finding that IMF programs adversely affect women more than men in health and education, but raise women's participation in the workforce.

Annette Mullaney
Politics Honors Thesis
New York University
Spring 2007

International Monetary Fund programs are controversial, sometimes met with demonstrations and even riots. Among the criticisms directed at the conditionality accompanying loans is that they disadvantage women. Considering the cultural norms that govern female and male economic activities, it certainly seems intuitive that macroeconomic forces are going to affect women and men differently. While some believe that conditionality policies will interact with existing gender structures to women's detriment, others hypothesize that these policies actually confront existing gender roles and thus can aid in women's development. Despite much theory and many case studies weighing in on either side of the argument, there is no large empirically sound study. The cross-country work that has been done does not control for nonrandom selection into IMF programs. This study aims to analyze the idea that conditionality affects women more negatively than men using Heckman selection models to control for that nonrandom selection.

DISCUSSION

The IMF and Conditionality

This paper focuses on the effects of International Monetary Fund conditionality on women. There is often confusion about the differences between World Bank and IMF purposes and activities, especially as the IMF has experienced "mission creep".¹ Founded in Bretton Woods, the IMF was initially a currency regulating institution primarily, while the World Bank focused on long term growth. IMF loans were meant to address short term balance of payment problems, and the Fund attached conditions to these loans, intended to improve borrower countries' stability and ability to repay. Conditionality during early IMF activities tended to be broad suggestions, with borrowing countries free to decide how to achieve specified goals such

¹ Bird 2004

as reducing account deficits.² But the IMF has evolved considerably, particularly after the United States dropped the gold standard and the general dissolution of the Bretton Woods system in the 1970s. Conditions became more detailed as did insistence of specific methods to reach targets.³ The amount of conditions attached to World Bank and IMF loans increased dramatically in the 1980s with the introduction of structural adjustment loans at the Bank and structural adjustment facilities soon after at the Fund, focusing on long term policy reforms instead of quick economic crises.⁴ Despite the Fund's and the Bank's ostensibly different purposes, monetary stability versus economic development and growth, their activities often overlap. A former IMF managing director has explicitly stated that "our primary objective is growth"⁵ and in 1999 the Fund introduced the poverty reduction and growth facility, making clear aims broader than financial stability. Furthermore, World Bank and IMF activities are often contemporaneous, even working together to create conditions.⁶ Completion of the conditions in an IMF arrangement are also often a precondition for World Bank lending, as Fund loan conditionality intends to create financial stability, and macroeconomic stability is considered a condition for development.⁷

IMF loan conditionality today thus heavily involves the Fund in many third world countries' national policies.⁸ These conditions usually included currency devaluations, encouraging exports, lowering tariffs, tight monetary policies, and austerity through raising taxes and cutting government expenditures. Many of the specific recommendations are based on the "Washington Consensus," a model that views excessive state involvement as an impediment to

² Dreher 2001

³ Ibid

⁴ Ibid

⁵ Michel Camdessus, IMF Managing Director, on July 11, 1990, quoted in Przeworski and Vreeland 2000

⁶ Dreher 2001

⁷ Bird 2004.

⁸ Dreher 2001, Przeworski and Vreeland 2000

growth, and are intended to liberalize the economy with policies such as privatization.⁹

According to the IMF, conditionality policies are designed to “lay the basis for sustainability and economic growth over the longer term by achieving broader economic stability... [and] address structural impediments to healthy growth”.¹⁰

However, conditionality has been very controversial, from claims that it undermines third world nations’ sovereignty to questions about the efficacy of IMF programs in achieving their stated aims. Bird (1996) found that IMF programs improved balance of payments, but had no effect on inflation. IMF programs have also been found to lower growth rates for countries while under agreement and not to improve long term growth.¹¹ Another area of concern is the unintended effects of IMF conditions, which may hinder the achievement of their purposes, and actually hurt borrowers’ economic futures. Deforestation has been found to increase under agreements,¹² and some have raised concerns that they hinder human resource development¹³ and hurt social unity.¹⁴ All of these factors would encumber any future economic success through conflict or the misuse of human and natural resources. The poor are thought to be especially vulnerable to the effects of rising costs and shrinking safety nets, exacerbating income inequalities. Garuda (2000) and Vreeland (2002) have found that IMF programs negatively affect income distribution, with deepening poverty’s dire implications for economic success.

Women and Conditionality

Another unintended consequence of IMF programs may be decreasing women’s welfare absolutely and relative to men. Within gendered studies of development, there is a large

⁹ Gibbon 1992

¹⁰ IMF “IMF Conditionality”

¹¹ Przeworski and Vreeland 2000

¹² Durbin, Sturm and Vreeland 2001

¹³ Macleans and Mangum 2001

¹⁴ Kaiser 1996

literature of theory and case studies that purport conditionality's negative effect on women. This relationship has been accepted and propagated by many on the anti-globalization left¹⁵ as another evil of the IMF.

This idea stems from the different roles that men and women play in economies worldwide. Gender is considered an important determinant in both economic and social roles, and in the ability of individuals to adjust to macroeconomic changes.¹⁶ In most of the world, men are in an advantaged position relative to women; structural adjustment policies may then interact with that initial gender structure to disadvantage women further. Adjustment policies ignore women's productive role in the "unrecognized" economy, activities that include managing the household, reproduction, and raising children, which limit women's responses to structural adjustment.¹⁷ Thus according to these critics the gender-neutral presentation of IMF policies actually embody a bias against women.¹⁸

I. Social Services

Among the policy changes usually mandated by conditionality is cutting government expenditures in the form of employment, subsidies, and social services, or introducing user fees for those services. Budget cuts in health services in particular have been identified as a reason why women are worse off under conditionality. Women have greater health care needs than men because of their childbearing role, and are more vulnerable to reductions in health services.¹⁹ After the introduction of user fees for health services under conditionality in Tanzania, the

¹⁵ for example "Bailouts for Bankers, Burdens for Women" www.50years.org/factsheets/bailouts.html and "Privatization Mandated by World Bank/IMF Devastates Women" *Women's International Network* http://findarticles.com/p/articles/mi_m2872/is_1_27/ai_71563329

¹⁶ Brown et al 1995

¹⁷ Ibid.

¹⁸ Elson 1995

¹⁹ Tanski 1994

number of pregnant women receiving antenatal care and supervised deliveries decreased, while maternal death rates and malnourishment among pregnant women increased.²⁰

These cuts also interact with the patriarchal hierarchies within households. Clement Tisdell (2002) theorizes that the distribution of food and other resources is a result of household power relationships, in which men who “provide for the family” are advantaged. When household budgets are stretch by higher prices and fewer social services, women are vulnerable to malnourishment and undereducation.²¹ In a study on structural adjustments’ effects in Nigeria, women ate last and took smaller portions as part of households’ response to higher prices.²² Just as in health services, state austerity measures may introduce user fees for education, increasing the costs beyond poor families’ means. While this can hurt both male and female education, several case studies have found that when education costs rise, daughters are more likely to be withdrawn in favor of sons’ education.²³ Daughters are also taken out of school in order to help their mothers with increased household duties due to fewer public services.²⁴

Yet this interaction between households and conditionality measures may be overstated. In an empirical work on World Bank-supported adjustment programs, Pauline Rose found that the gap between male and female enrollment rates narrowed, though both decreased.²⁵ In nonadjusting counties, she also found a narrowing of the gap, but this was due to increases in both male and female enrollment levels.

²⁰ Mlay et al 1996

²¹ Tisdell 2002.

²² Owah 1993

²³ Korayem 1996; Elson 1995.

²⁴ Elson 1995.

²⁵ Rose 1995.

II. Employment

Several studies indicate that IMF programs reduce women's employment. According to this theory the state can loosen constraints on women's entrance into the workforce.

Government services provide the care giving and education that would otherwise be the responsibility of women,²⁶ freeing women to pursue outside work. This was seen in several socialist states, where the state's provision of social services increased women's employment.²⁷ The public sector is also one of the main employers of women in developing nations, where women enjoy more security, equality regulations, and better working hours than in private.²⁸

But many IMF programs require a reduction in state budgets, often achieved through decreasing employment. Within state employment, women are concentrated in the clerical and lower administrative positions, and these lower-skilled jobs are among the first eliminated when the state must reduce payroll.²⁹ Even within only these lower positions, women are laid off more than their male colleagues because female incomes are seen as secondary. The negative effects of state contraction from employment have been observed in the former centrally planned economies of Europe, where women no longer have assured employment.³⁰ In addition, reductions in state spending on social services cut teaching and nursing positions, which are predominantly female due to societal notions of acceptable "women's work".³¹

This viewpoint also extends the adverse effects of IMF programs on female employment beyond the public sector. The reduction of state budgets through the elimination or reduction of

²⁶ Mills 2003; Tanski 1994; Nasser 2003; Osirim 2003

²⁷ Tisdell 2002

²⁸ Nasser 2003.

²⁹ Murphy 2003.

³⁰ Tisdell 2002

³¹ Nasser 2003

social services means women are expected to absorb the increased responsibility of care giving and educating formerly provided by the state.³² The added time constraints limit their access to the job market and school (affecting future employability).³³ In Ecuador, Moser found that women's domestic obligations increased with declining state services during IMF programs.³⁴ Tanski finds that during Peru's 1990 structural adjustment program, poverty growth rates for female-headed households were higher than male-headed one, though female heads were working on average 58 more hours per month than male heads, suggesting that women are unable to find employment at parity wages during adjustment.³⁵

Yet conditionality may actually increase female employment. Men also lose jobs in the public sector, in addition to private, which combined with higher costs of living, require more women to enter the workforce.³⁶ This can improve women's welfare by confronting the existing gender hierarchies in society, upset by the failure of the men to be the sole provider. Women who contribute to family income earn more status, independence, and bargaining power in the household.³⁷

The liberalization of the market, a goal of many adjustment programs, in addition to creating the necessity for women's paid work, may also broaden women's economic opportunities.³⁸ Encouraging exports is a goal of IMF programs, and many export-oriented manufacturers prefer female employees, who are cheaper and considered more docile and

³² Mills 2003; Tanski 1994; Nasser 2003; Murphy 2003; Osirim 2003

³³ Brown et al 1995; Haddad 1991; Juster and Stafford 1991

³⁴ Moser 1992.

³⁵ Tanski 1994

³⁶ Osirim 2003.

³⁷ Elson 1995; Mills 2003; Murphy 2003; Lantican et al 1996)

³⁸ Lantican et al 1996.

industrious than men.³⁹ Outside work also enhances women's mobility and visibility, further expanding definitions of acceptable professions.⁴⁰

Some empirical work supports this theory of higher female employment during IMF programs. The gender gap in Egypt's labor market decreased between 1988 and 1998, when Egypt was under IMF agreements for all but one year.⁴¹ Tanski also found that in some Latin American countries women's rates of employment increased during the 1980s crisis years while men's declined.⁴²

Selection

Much of the support for the negative effects of IMF conditionality on women comes from theory; most evidence relies on case studies, from which it is difficult to draw larger conclusions. There are several methodological difficulties in determining the effects of IMF programs, foremost not knowing what would have happened without the Fund.⁴³ Pauline Rose (1995) in her study of the effect of World Bank-supported adjustment on female enrollment, matched pairs of countries to calculate for "adjusting" and "nonadjusting" countries in three years: 1970, 1980, and 1990, to approximate treatment and control groups. But countries do not enter into IMF (or World Bank) agreements randomly. As in evaluating many programs, we have to account for nonrandom selection into Fund programs. Thus it is important that the methodology distinguish the effects of IMF programs from the conditions that led to selection into an IMF agreement.

Countries turn to the Fund to address of balance of payment problems or debt, but financial reasons alone are not sufficient to explain selection into the Fund.⁴⁴ Przeworski and

³⁹ Mills 2003; Murphy 2003

⁴⁰ Mills 2003

⁴¹ El-Kogali 2002

⁴² Tanski 1994.

⁴³ Bird 2004.

⁴⁴ Bird 1996

Vreeland (2000) found that 32% of countries entering into agreements with the IMF actually had a balance of payments surplus the year prior to the agreement, and 20% had surpluses the year prior to and the year of entering into the agreement. Again, while the majority of countries entering into agreements have low reserves, many countries choose to sign agreements despite having reserves larger than the average of countries choosing not to enter into agreements.⁴⁵ Thus there are also factors which are not observable at work. For example, governments can enter into an IMF program because they want conditions to be imposed, rather than for the loan.⁴⁶ By not accounting for these unobservables and only controlling for those we can observe we may actually increase selection bias.⁴⁷ Thus the study must make sure to distinguish the effects of IMF programs from inherent country conditions on indicators of women's welfare.

RESEARCH DESIGN

Model

The consensus of much of the literature is that IMF conditionality disproportionately affects women, largely through the mandated reduction in state budgets. The clearest link is between women's welfare and the government provision of social services. Women are assumed to be more reliant on health services because of their greater needs in pregnancy and childbirth. State services are also thought to help women in the allocation of household resources. When the costs of education, food, or health care are lower through state involvement, the family can provide the necessary resources to more members, male and female. However, when these costs rise, women are disadvantaged due to their lower priority in the distribution of resources.

From this theory are several testable hypotheses:

⁴⁵ Przeworski and Vreeland 2000

⁴⁶ Vreeland 1999

⁴⁷ Przeworski and Vreeland 2000

- Hypothesis I Women's health is more adversely affected by IMF programs than men's
- Null Hypothesis I IMF programs have no effect on the availability or cost of medical services or do not adversely affect women more than men.
- Hypothesis II Women's access to education is more adversely affected by IMF programs than men's
- Null Hypothesis II IMF programs have no effect on the availability or cost of education or do not adversely affect women more than men.

This reduction in social services is also purported to negatively affect women's ability to join in the labor market. Combined with state workforce cuts that are more likely to layoff women than men, and women's disadvantages in the public sector, women's share of the labor force is expected to decline. However, others believe that higher prices and men's layoffs push women into outside work, the necessity of another income expanding notions of acceptable activities. The liberalized market following IMF reforms might also have more opportunities for women. Thus there are two opposing views of the effect IMF programs should have on women's participation in the labor market:

- Hypothesis III IMF programs decrease the female share of the labor force.
- Alternate Hypothesis III IMF programs increase the female share of the labor force.
- Null Hypothesis III IMF programs have no effect on female share of the labor force.

Data Description

This study covers 189 countries from 1960-2002. Given the sporadic reporting and sparseness of many variables fewer than the 6,540 country-year observations are in the regressions. Participation in an IMF program is represented by a dummy variable, 1 if a country

is under an IMF agreement in a given year and 0 if it is not. 28.1% of observations are under IMF agreements. There are five types of agreements, the stand-by arrangement (SBA), the extended fund facility (EFF), the structural adjustment facility (SAF), the enhanced structural adjustment facility (ESAF), and beginning in 1999, the poverty reduction and growth facility (PRGF). There is no differentiation between these in the data as the differences are in the type of conditions, the timing, and the size of the loan, but the “fundamental objectives” do not change.⁴⁸ I have not differentiated the PRGF, which is supposed to be more sensitive to conditionality policies’ repercussions for the poor and economic growth, because it is only possible for three of forty-two years in the dataset. This information is from Przeworski and Vreeland (2000) and IMF country information pages on its website.

I use several different dependent variables to measure the effects of IMF programs on women. To test Hypothesis I, that women’s health is more adversely affected by conditionality than men’s, I am using two measures: infant mortality and the difference between male and female life expectancies. Infant mortality (from World Bank Development Indicators -WDI) has been used in other studies as a measure of women’s health,⁴⁹ and indicates the level of antenatal and delivery care women receive. Though this measure obviously does not allow for comparison with men, I use it because reproductive care is specifically identified as a reason why women are more adversely affected by user fees and service cuts. I expect infant mortality to be higher under IMF programs. To compare the effects on women’s health with those on men’s, I also use the difference between female and male life expectancies (from WDI). The gap is expected to be narrower under IMF programs (female life expectancy is generally higher than male) indicating that austerity measures are hurting women more than men. To test Hypothesis II, on education, I

⁴⁸ Polak 1991, describing the first four types, cited in Przeworski and Vreeland 2000

⁴⁹ Lorenz and Wickrama 2002.

employ female secondary school enrollment as percentage of gross (FemSec) and the gap between young male and young female literacy rates. FemSec, taken from the updated Democracy and Development dataset (D&D), reflects immediate changes in enrollment, but does not account for students who drop out or are taken out during the school year. I predict that FemSec will decline under IMF programs. To gauge the impacts on lower-level education, I am also using the literacy gap between young men and women ages 15-24 (from WDI). I chose data for this age range rather for the general population as I expect the former to be more reflective of shorter-term changes in education availability. To test the effect of IMF programs on women's labor, Hypothesis III, I am using the percent of the workforce that is female (LFPW) from D&D. The hypothesis predicts that this will decline during IMF programs, while the alternate hypothesis predicts that it will rise.

Level of development is supposed to affect all of these indicators, which I measure with per capita GDP ("Level" from D&D). Regime (D&D) is also expected to have an impact, as democracies provide more public services than non-democracies.⁵⁰ Fertility (D&D), in births per woman, affects infant mortality, female life expectancy, female school enrollment, and ability to participate in the job market. War is expected to disrupt the provision of social services and affect life expectancies, and is taken from the UCDP/PRIO Armed Conflict Dataset. In that dataset, armed conflict is defined as the use of armed force between two parties, at least one of which is the government of a state, and is categorized as either minor conflicts or war, the later characterized by over 1,000 battle deaths a year. For this study, I only included wars. I have also included several measures of culture. Religion can have a large impact on ideas of correct gender norms, however, different religions also coincides with regions of the world that are more or less developed due to historical reasons. To operationalize religion I have created

⁵⁰ Bueno De Mesquita et al 2003

dichotomous variables where over 60% of the population identifies as a member of Catholicism (including Eastern Orthodox), Islam, or various strands of Protestantism,⁵¹ created from the D&D variables CATH, MOSLEM, and PROT. Also following Gray et al, I have included ratification of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) from United Nations Division for the Advancement of Women and the natural log of years since the first year women could vote in national elections (lnSuffrage) from the International Parliamentary Union and UNDP to control for societal differences, government commitment to equality, and the entrenchment of women influencing government (2006). Ratification of CEDAW and increasing time since female suffrage was granted are expected to improve indicators in favor of women.

Table I: Descriptive Statistics – Performance Equations

Variable	Definition	#obs	Mean	Std Dev	Min	Max
Infant Mortality	Infant mortality per 1,000 live births	2137	45.36	48.93	2.2	285
Life Expectancy Gap	Difference b/t female and male life expectancies (f – m)	3149	4.79	2.32	-2.67	14.25
FemSec	secondary school enrollment, % female	2156	56.38	36.73	0	180.25
Literacy Gap	Diff between male and female literacy rates ages 15-24 (m – f)	108	9.17	12.14	-19.89	48.49
LFPW	% labor force that is female	5884	35.93	10.38	3.6	55.4
Level	Real GDP per capita, 1985 prices	5056	4178.53	4848.54	197.1	55147.7
Fertility	Fertility rate, total births per woman	3509	3.88	2.03	1.07	10.13
War	1 if war, 0 if not	6540	.07	.25	0	1
Catholic	1 if >60% Catholic or Orthodox Christian	6540	.29	.45	0	1
Muslim	1 if > 60% Muslim (all sects)	6540	.23	.42	0	1
Protestant	1 if > 60% Protestant (all denominations)	6540	.11	.31	0	1
CEDAW	1 beginning year country ratifies	6537	.38	.49	0	1

⁵¹ Gray et al 2006

	CEDAW					
LnSuffrage	Natural log of years since female suffrage	6189	3.41	.74	0	4.70

I take the equation for determining selection into an IMF agreement from Przeworski and Vreeland (2000). Participation in an IMF program requires both the consent of the government and the IMF; their decisions are assumed to be independent, and these variables are meant to reflect both factors influencing government and IMF decisions. Graham Bird identifies level of economic development (again represented by per capita GDP), economic growth, existence of previous agreements with the IMF, exchange rate overvaluation, reserves and balance of payments as factors upon which the literature on IMF participation has reached consensus.⁵² Growth is measured as the annual rate of growth of Level, and also comes from D&D. Previous agreements (Cumulative) with the fund is the number of years a country has been under IMF agreement in its history and comes from Przeworski and Vreeland 2000 and IMF country information from its website. Exchange rate, reserves in months of imports, and balance of payment as a percent of GDP (BOP) are all from WDI.

In addition to these factors Przeworski and Vreeland (2000) find government deficit, debt service, investment, the number of countries concurrently participating in IMF programs, whether elections were held the previous year, and a country's regime predict IMF participation.⁵³ Government deficit is measured as surplus as a percent of GDP, debt service as a percent of GNI and both are from WDI. Investment is all public and private domestic investment as a percent of GDP from Penn World Tables. The number of countries concurrently

⁵² Bird, 1996.

⁵³ Przeworski and Vreeland, 2000.

under IMF agreements (Total Other) also comes from Przeworski and Vreeland 2000 and IMF country information. Lagged Election is a dummy variable that is 1 if there was a legislative election in the lower chamber the pervious year, created from an updated version of ACLP's "LEGELEC".

Table II: Descriptive Statistics – Selection Equation

Variable	Definition	#obs	Mean	Std Dev	Min	Max
IMF	1 if under IMF agreement, 0 if not	6508	.28	.45	0	1
Level	Real GDP per capita, 1985 prices	5056	4178.53	4848.54	197.1	55147.7
Growth	Annual rate of growth of per capita income	4960	1.92	7.08	-47.40	189.74
Cumulative	cumulative years country has been under IMF agreements	6508	5.02	7.22	0	43
Total Other	Total countries in the world currently under IMF agreements	6537	41.96	20.34	0	75
Lagged Election	1 if legislative elections held the previous year	6539	.11	.31	0	1
Regime	1 for dictatorship, 0 for democracy	6540	.59	.49	0	1
Exchange Rate	National currency relative to US dollar	6176	936.38	26833.95	6.80e-14	1507226
Investment	Domestic investment as % of GDP	5929	14.65	9.25	.14	103.16
Deficit	Government surplus as % of GDP	840	-2.13	8.99	-203.72	21.25
Debt Service	Total debt service as % of GNI	3315	5.13	5.04	.004	107.36
Reserves	Total reserves in months of imports	3782	3.40	2.92	-.09	27.08
BOP	Balance of payments, % of GDP	3823	-3.78	10.04	-240.50	56.70

Method

I first run OLS regression on the dependent variables of women's welfare and the explanatory variables, using robust country cluster standard errors. IMF participation is included as an explanatory variable, but this does not control for nonrandom selection.

To control for nonrandom selection into IMF programs, I use Heckman selection models with the selection equation from Przeworski and Vreeland (2000). For each dependent variable, I run two models, one selecting for participation in IMF programs, and the other selecting for nonparticipation, using robust country cluster standard errors. From the coefficient estimates I calculate predicted values of the dependent variable for all observations as though under an IMF agreement, and again as though not under one. Thus each observation has an estimated value of the dependent variable if it were under an IMF program and if it weren't for comparison. I then take the means of these two estimated samples and run a t-test to test for significance. The difference between these means is the average effect of IMF programs on the dependent variable.

RESULTS**Table III: Without Controlling for Selection**

	Infant Mortality	Life Expectancy Gap	FemSec	Literacy Gap	LFPW
IMF	1.51 (2.41)	.37 (.14)***	-1.024 (1.62)	3.86 (2.00)**	-.19 (.69)
Level	-.00091 (.00034)***	.000082 (.000032)**	.0027 (.00048)***	-.00016 (.00050)	-.000016 (.00019)
Regime	6.79 (3.76)*	.15 (.23)	2.36 (2.99)	.86 (1.95)	3.23 (1.40)**
Fertility	17.94 (1.25)***	-.54 (.074)***	-10.53 (.90)***	2.88 (.99)***	-.013 (.53)
War	1.25 (5.35)	.65 (.24)***	-1.61 (2.49)	5.68 (5)	
Catholic		.53 (.24)**	1.90 (3.04)	-4.69 (2.00)**	-6.88 (1.51)***
Muslim		-1.26 (.26)***	-1.34 (3.63)	5.36 (2.99)**	-6.44 (2.31)***
Protestant		-.22 (.38)	11.52 (3.93)***	-1.52 (2.91)	2.32 (1.38)*
CEDAW	2.34 (1.87)	-.084 (.14)	5.07 (1.66)***	-.20 (2.99)	5.91 (.68)***
Lnsuffrage	-6.14 (2.61)**	.11 (.13)	3.13 (2.28)	.87 (2.99)	.44 (.83)
Constant	8.82 (11.27)	5.82 (.67)***	66.22 (10.63)***	-10.08 (12.11)	34.26 (4.18)***
R ²	.81	.59	.85	.50	.26
N	1559	2191	1056	90	2529

* p < .10 ** p < .05 *** p < .01

() robust country cluster standard errors within parentheses

Ordinary least-squares regression on the performance equations, seen in **Table I**, gives an indication of the relationships between the dependent and explanatory variables, although with the caveat that these regressions do not account for underlying reasons for selection into IMF agreements. Level of development, regime, fertility rate, and suffrage all significantly affect the expected **infant mortality** rate. As expected, infant mortality increases with lower per capita incomes, under dictatorships, and with higher fertility rates, and decreases as time since female suffrage was granted increases. The latter is interesting, as it suggests that reproductive care is

better as women's political participation become more entrenched. Participation in IMF programs is not significant, but the direction of the coefficient is as expected. I have dropped the religions from the regression so as to compare with later results when selection is accounted for, which dropped several variables with the religions left in. Running the regression with the religions does not change significance or sign on the coefficients.

IMF programs do have a significant effect on the expected **gap between female and male life expectancies**, actually increasing women's life expectancy advantage by .37 years, the opposite direction than was predicted. Also significant are level and fertility in the expected directions. War appears to affect male life expectancy more than female, raising the expected female life expectancy by more than half a year over male life expectancy. Women's life expectancy is also higher relative to men's in Catholic countries and lower in Muslim ones.

For education, the results are mixed. **Female enrollment in secondary school** as a proportion of the gross is significantly and directly related to level, Protestant countries, and ratification of CEDAW, and significantly and indirectly related to fertility, none of which is surprising. While IMF participation is not significant, the coefficient is again in the expected direction. IMF programs do significantly increase the expected **gap between young male and female literacy rates** in the fourth regression, by 3.86 percentage points. Fertility and Muslim countries are also significantly and directly correlated with literacy gaps, while the gap is smaller in Catholic countries.

IMF programs again do not have a significant effect on expected **female participation in the labor force**, though the coefficient direction suggests that female participation declines. Regime, Protestantism, and CEDAW are significantly and directly related to LFPW, interesting

that female share of the workforce is expected to increase under dictatorships. Catholic and Muslim countries are significantly correlated to lower female workforce participation.

Thus the impact of IMF programs on women is unclear from these results. Though significantly correlated with increasing the gap between young male and female literacy rates, IMF is also significantly correlated with increasing the advantage women enjoy over men in life expectancy, and is not significant in the other models. However, these results do not account for the nonrandom selection of countries into IMF programs.

Table IV: Controlling for Selection

	Variable	Infant Mortality		Life Expectancy Gap		FemSec	
		IMF	Not	IMF	Not	IMF	Not
Performance Equation	Level	-.0021 (.0015)	-.0054 (.0031)*	-.00012 (.00014)	.0011 (.00026)***	-.0014 (.0016)	.0011 (.0017)
	Regime	-2.84 (7.20)	-4.08 (5.27)	-.83 (.52)	.012 (.65)	10.54 (8.80)	14.06 (3.54)***
	Fertility	14.08 (2.74)***	9.50 (4.23)**	-.47 (.064)***	.17 (.56)	-14.69 (2.54)***	-8.46 (2.43)***
	War	3.02 (7.54)	19.55 (8.83)**	-3.60 (.71)***	1.06 (.57)*	.66 (6.15)	-1.29 (4.75)
	Catholic			-2.07 (.22)***	.51 (.93)	-6.74 (9.72)	-1.35 (6.07)
	Muslim			-2.88 (.44)***	-.71 (1.20)	-6.68 (6.70)	-12.98 (6.52)**
	Protestant			-2.39 (.52)***	.43 (1.26)	-20.18 (8.44)**	-15.78 (5.68)***
	CEDAW	-21.57 (5.51)***	.65 (7.61)	1.97 (.85)**	.88 (.79)	10.24 (8.12)	-2.71 (3.50)
	LnSuffrage	19.79 (10.78)*	22.91 (6.28)***	1.14 (.18)***	-2.74 (1.45)*	-1.52 (11.79)	16.43 (8.10)**
	Constant	-65.86 (51.86)	-66.90 (46.48)	1.55 -	6.79 (7.35)	113.96 (52.93)**	19.85 (33.62)
Selection Equation	Level	-.00015 (.00011)	.00014 (.00010)	-.00012 (.000060)**	.000055 (.000063)	-.00011 (.000089)	.00012 (.000081)
	Growth	-.064 (.025)***	.015 (.045)	-.028 (.0064)***	.0097 (.016)	-.047 (.035)	.033 (.029)
	Cumulative	.0068 (.018)	-.039 (.035)	.011 (.0048)**	-.052 (.016)***	.037 (.017)**	-.039 (.014)***
	Total Other	-.028 (.018)	-.0061 (.018)	.0088 (.011)	.035 (.16)**	-.015 (.016)	.0093 (.021)
	Lagged Election	.40 (.19)**	.82 (.44)*	.23 (.13)*	.43 (.26)*	-.0016 (.18)	.48 (.26)*
	Regime	-.67 (.26)**	.46 (.39)	-.35 (.23)	.25 (.22)	-.46 (.32)	.55 (.28)**
	Exchange Rate	-1.63e-06 (9.03e-06)	-.000020 (9.84e-06)**	-.000017 (.000045)	-4.65e-06 (2.58e-06)*	-3.56e-06 (.000013)	3.57e-06 (2.62e-06)
	Investment	-.011 (.042)	.027 (.020)	-.028 (.011)**	.034 (.023)	-.0017 (.031)	.023 (.20)
	Deficit	.013 (.027)	-.038 (.045)	.015 (.017)	-.068 (.026)***	.020 (.024)	-.056 (.029)**
	Debt Service	.11 (.031)***	-.11 (.039)***	.066 (.015)***	-.071 (.038)*	.11 (.027)***	-.081 (.031)***
	Reserves	.00031 (.033)	-.0082 (.067)	-.048 (.025)**	-.027 (.045)	.017 (.042)	.00031 (.054)
	BOP	-.020 (.021)	.012 (.017)	-.025 (.0068)***	.017 (.013)	-.024 (.020)	.030 (.013)**
	Constant	1.17 (1.16)	-.46 (1.22)	-.43 (.60)	-2.57 (.64)***	.025 (1.06)	-1.26 (1.34)
	N	200	209	245	241	237	234
Predicted Dependent Variable	Estimated Means	38.25 (.62)	21.62 (.66)	1.74 (.050)	4.30 (.088)	46.67 (.47)	50.26 (.53)
	Difference	16.63***		3.02***		-3.59***	

*p < .1

**p < .05

***p < .01

() robust country cluster standard errors within parentheses

Table V: Controlling for Selection

	Variable	Literacy Gap		Labor Force Percentage Women	
		IMF	Not	IMF	Not
Performance Equation	Level	2.55e-08 (.0025)	-.00039 (.00068)	-.00034 (.00061)	.00089 (.00059)
	Regime	.97 (4.45)	-1.15 (2.01)	3.03 (2.93)	9.33 (2.65)***
	Fertility	3.64 (2.75)	1.83 (.97)*	-.031 (1.31)	2.37 (.63)***
	War	4.16 (5.54)	7.22 (2.95)**		
	Catholic	-5.01 (2.45)**	-2.34 (2.40)	-11.23 (2.81)***	-8.44 (.98)***
	Muslim	5.88 (5.23)	6.88 (2.88)**	-11.23 (3.11)***	-5.85 (1.80)***
	Protestant	-2.53 (6.59)	.0028 (1.33)	4.59 (3.50)	13.76 (4.56)***
	CEDAW	-1.85 (5.19)	1.54 (2.02)	2.64 (2.99)	5.37 (1.57)***
	LnSuffrage	-.64 (4.38)	.039 (5.20)	8.10 (4.61)*	21.37 (4.08)***
	Constant	-2.25 (19.90)	-.81 (20.71)	8.79 (21.08)	-70.14 (15.07)***
	Selection Equation	Level	-.000081 (.000029)***	.00014 (.000035)***	-.00010 (.000094)
Growth		-.022 (.0088)**	.0015 (.013)	-.051 (.034)	.027 (.019)
Cumulative		.047 (.0061)***	-.053 (.015)***	.038 (.021)*	-.0092 (.0093)
Total Other		.027 (.0022)***	.033 (.0038)***	-.0063 (.019)	.012 (.010)
Lagged Election		.069 (.27)	-.12 (.39)	-.11 (.20)	.049 (.22)
Regime		.25 (.15)	.22 (.20)	-.41 (.27)	.60 (.24)**
Exchange Rate		-.00018 (.00011)*	-.000061 (.00097)	8.29e-07 (8.94e-06)	-2.04e-06 (1.54e-06)
Investment		-.018 (.012)	.0042 (.0089)	-.013 (.048)	-.016 (.0071)**
Deficit				.022 (.021)	-.0063 (.026)
Debt Service				.11 (.033)****	-.13 (.028)***
Reserves				.0074 (.037)	-.12 (.052)**
BOP				-.030 (.015)*	.027 (.015)*
Constant		-3.43 (.22)***	-3.78 (.30)***	-.29 (1.23)	-.51 (.62)
N		3233	1463	250	241
Predicted Dependent Variable		Estimated Means	8.49 (.20)	4.96 (.13)	32.35 (.16)
	Difference	3.53***		10.37***	

*p < .1

**p < .05

***p < .01

() robust country cluster standard errors within parentheses

In **Table VI** and **Table V** the equations for the various dependent variables are used to estimate the predicted dependent variable values for each observation if it was under an IMF program and again as if it wasn't; then the means of those two are compared via a t-test.

Fertility rates, CEDAW, and suffrage are significant in the predicted directions for **infant mortality** when selecting for inclusion in an IMF program, and fertility rates, war, and suffrage are significant and in predicted directions when selecting for noninclusion in Fund programs. The predicted mean of infant mortality rates if all observations were under IMF programs is 38.25 per 1,000 live births, compared to 21.95 if all observations were not under IMF programs. This difference is significant at the 1% level, indicating that being under IMF programs is expected to increase infant mortality rates by 16.63 per 1,000 live births.

IMF agreements also have the predicted affect on the **life expectancy gap**. Under IMF agreements, fertility, war, Catholic, Muslim, and Protestant all significantly affect the gap in favor of men, while CEDAW and suffrage are significantly correlated with increases in female life expectancy over male. Selecting for noninclusion, level, war, and suffrage are all significantly correlated with life expectancy different, though strangely with opposite coefficients than in the IMF equation. The predicted mean female life expectancy minus male life expectancy under IMF agreements is 1.74, and 4.30 not under IMF agreements, a significant difference. This suggests that women's health does decline relative to men's under IMF agreements, as female life expectancies are closer to men's. This is unsurprising given the results of IMF on infant mortality, an indicator of general availability and care available for pregnant women. Infant mortality is usually related to maternal mortality rates, which affects general life expectancies. In fact, in this data set the correlation coefficient between infant mortality and female life expectancy is an extremely strong $-.96$.

IMF agreements have a similar predicted effect on **female enrollment in secondary school** as a percent of the total, where it decreases female enrollment significantly. If not under IMF agreements, female enrollment is predicted to average 50.26% of gross, versus 46.67% under IMF agreements, a drop of 3.59 percentage points. Significantly correlated with decreasing female enrollment when selecting for either IMF participation or nonparticipation are fertility and Protestantism, to which Muslim countries are added under nonparticipation. Also when selecting for nonparticipation, dictatorships and suffrage significantly increase female enrollment.

Results on IMF effects on **literacy gaps** also are in accordance with the theory. Because of the relative dearth of data for this variable, I used a stripped model of the selection equation to increase the number of observations. This stripped selection model drops deficit, debt service, reserves, and balance of payment as these have the fewest number of observations and following Durbin, Sturm, and Vreeland's stripped selection equation (2001). In the performance equation, only Catholic is significantly correlated with the literacy gap between young men and young women in the IMF equation, and only Muslim and war significant in the non IMF equation. However, the predicted mean literacy gap under IMF programs has women's literacy 8.49 percentage points behind men's on average, as compared to behind by 4.96 percentage points when not under IMF programs. This difference, a decrease of 3.53 percentage points in young women's literacy rates compared to men's, is statistically significant at the 1% level.

The last measure of women's welfare has some interesting results. Under both selection for IMF programs and not IMF, Catholic and Muslim are significantly and indirectly related to **female share of the workforce**, while suffrage, as predicted, is significantly correlated with higher female proportions of labor. Also when selecting for non participation, dictatorship,

Protestant and CEDAW ratification are positively correlated with higher women's share of the job market. Counterintuitively, fertility rates actually significantly increase expected LFPW. This may indicate that larger families necessitate women's outside work. The results support the alternate hypothesis that female participation in outside work rises under IMF programs, as LFPW is predicted to rise by 10.37 percentage points under a Fund agreement, which is significant at the 1% level. Women are predicted to constitute 32.35% of the workforce on average under Fund programs, versus only 21.98% not under Fund programs.

Democracy was not significant with any measures that would indicate a greater provision of public goods, while dictatorships were correlated with higher female share of secondary school and the workforce. This may be because the data goes as far back as 1960, a time during which many dictatorships espoused communist or socialist rhetoric, emphasizing gender equality.

CONCLUSIONS

The majority of the evidence thus supports the conjecture that women are immediately more adversely affected by IMF conditionality. This study has mixed results, however, as to the possible long term outcomes of IMF conditionality. While the results on health services and education would suggest that the effects of Fund programs reverberate negatively for women long afterward, the results on women's participation in the labor force adds an interesting twist to possible long term effects.

When controlling for nonrandom selection, women clearly are more affected by cutbacks in social services: infant mortality rates, indicative of maternal care, are higher than they would have been if not under IMF programs. Unsurprisingly given the increase in infant mortality, the gap between female and male life expectancies narrows under IMF programs. Because of the

strong relationship between these infant mortality and female life expectancy, it can be inferred that much of this narrowing is caused by women's limited access to reproductive care. Strong evidence also supports this relationship between IMF conditionality and women's decreased access to education relative to men. This is reflected both in the smaller proportion of secondary school enrollment constituted of women under IMF programs, and glaringly in the wider gap between young male and female literacy rates. This suggests that families are allocating resources available for education at the expense of their girl children. These results are consistent with many country-specific case studies in the literature, and support the claims that families allocate less resources to female members and that social service reductions hurt women more than men.

These results have several negative implications. Worsening women's health as a result of inadequate reproductive care creates more children who will have to grow up without mothers, and women who are incapacitated by childbirth. Increasing gaps in secondary school enrollment and literacy rates between young men and women means that women will continue to be disadvantaged in society, the job market, and within the household. Without education, women will be less able to adapt to changing economic situations. Holding back women slows development of a country as a whole, jeopardizing the chance that IMF-supported policies will have an overall positive effect.

However, the evidence also supports the alternative hypothesis that IMF programs raise female participation in the workforce. Admittedly, this data has nothing to say about the quality of this work. Critics of IMF-endorsed attempts to increase exports point to the "exploitative" working conditions of export-oriented manufacturing, often derided as sweatshops.⁵⁴ Because of

⁵⁴ Mills 2003

traditionally less job training and perceived lesser value, women often have to work in the informal market where there is little or no job protection, or they receive lower wages.⁵⁵

However, some theorize that once a critical mass of women working changes the way in which they are treated. With increased representation in the workforce, women are expected to pressure their employers and the state for greater rights.⁵⁶ Paid work of any type also changes women's motivations, causing them to opt for smaller families.⁵⁷ Declining birth rates decrease the amount of health care women need over a lifetime and reduces the number of times they go through dangerous childbirth. Fewer children also means that, though budgets may be stretched by higher prices and fewer social services, all members will get more resources than in a larger family. The importance of birth rates is also evident in the data, where fertility is significantly correlated with worsening conditions for women measured in infant mortality, life expectancy levels, female enrollment in secondary school, and comparative literacy level. Thus if working actually does lead to declining birth rates, the overall effect of IMF programs on women will eventually improve women's welfare. These changes will only occur if women's labor force remains higher even after IMF programs have ended; an interesting follow-up would be to see whether female share of the labor force decreases after programs, or remains higher.

There are several drawbacks to this study. Gender-aggregated data is reported less often than general statistics, and as is often the case, data from poorer countries is sparser than that from richer countries. This is a source of selection bias in itself. For example, the mean per capita GDP from observations not reporting infant mortality is \$2,913.91 compared to \$4,200.23 for observations reporting it. Also, countries in which gender equality is not a priority are also not expected provide gendered data.

⁵⁵ Osirim 2003

⁵⁶ Lantican et al 1996

⁵⁷ Ibid

IMF programs are also only measured as a dichotomy, either under or not, instead of as a process. It would be interesting to further study the effect of IMF programs on those measures which were negatively affected over the course of IMF programs, to see whether conditions worsen or improve over time, though more negative absolutely than had there been no program at all. As mentioned, further study could also investigate how female participation in the labor force changes after IMF programs end.

This study is a beginning to understanding the indirect effects of IMF programs on women. The results underline the very complicated interactions of conditionality policies, however some results are clear. The evidence supports the theory that budget reductions, particularly reductions in social services, affect women more adversely than men; but does not support the idea that women are less able to adapt to changes as women's employment increases by over 10 percentage points under IMF programs. Thus while it may be a step to accuse the IMF of gender bias, it is clear that macroeconomic and structural changes are not gender neutral.

References

- Bird, Graham. "Borrowing from the IMF: the Policy Implications of Recent Empirical Research." *World Development*. Oxford: Nov. 1996, Vol. 24, No. 11: 1753
- . "Growth, Poverty and the IMF." *Journal of International Development*. Chichester: May 2004, Vol. 16 Iss. 4: 621
- Brown, Lynn, Lawrence Haddad, Andrea Richter, and Lisa Smith. "The Gender Dimensions of Economic Adjustment Policies: Potential Interactions and Evidence to Date." *World Development*. 1995. Vol. 23 No. 6: 881-896
- Bueno De Mesquita, Bruce, Alastair Smith, and R.M. Siverson, and J.D. Morrow. *The Logic of Political Survival*. Cambridge: MIT Press, 2003
- Dreher, Axel. "The Development and Implementation of IMF and World Bank Conditionality." HWWA Discussion Paper. *Hamburg Institute of International Economics*. 2002
- Durbin, Spencer William, Robynn Kimberly Sturm, and James Raymond Vreeland. "The Effect of IMF Programs on Deforestation". Working Paper, Yale University. 29 May 2001
- El-Kogali, Safaa. "Women and Work in Egypt: A Decade of Change." *The Egyptian Labor Market in an Era of Reform*. Cairo: The American University in Cairo Press, 2002.
- Elson, Diane. "Male Bias in Macro-Economics: the Case of Structural Adjustment." *Male Bias in the Development Process*. Manchester: Manchester University Press, 1995
- Garuda, Gopal. "The Distributional Effects of IMF Programs: A Cross-Country Analysis." *World Development*. Oxford: June 2000, Vol. 28, Iss. 6: 1031
- Gibbon, Peter. "The World Bank and African Poverty 1973 – 91." *Journal of Modern African Studies*. 1992. Vol. 30, No. 2: 193

- Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg and Håvard Strand, 2005. "Armed Conflicts 1946-2005." UCPD/PRIO Armed Conflict Dataset. Center for the Study of Civil War.
- Gray, Mark, Miki Caul Kittilson, and Wayne Sandholtz. "Women and Globalization: A Study of 180 Countries, 1975 – 2000." *International Organization*. Spring 2006, Iss 60: 293-333
- Haddad, L. "Gender and Poverty in Ghana: A Descriptive Analysis of Selected Outcomes and Processes." *IDS Bulletin*. 1991. Vol. 22, No. 1: 193
- Heston, Alan, Robert Summers and Bettina Aten. Penn World Table Version 6.2, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, September 2006
- International Monetary Fund. "Country Information." www.imf.org/external/country/index.htm
- . "IMF Conditionality." Sept 2005. www.imf.org/external/np/exr/facts/conditio.htm
- Inter-Parliamentary Union. "Women's Suffrage." www.ipu.org/wmn-e/suffrage.htm#Note3
- Juster, F.T. and F.P. Stafford. "The Allocation of Time: Empirical Findings, Behavioral Models, and Problems Measurement." *Journal of Economic Literature*. June 1991.XXIX: 471-522
- Kaiser, Paul J. "Structural Adjustment and the Fragile Nation: the Demise of Social Unity in Tanzania." *The Journal of Modern African Studies*. June 1996. Vol, 34. Iss. 2: 277
- Korayem, Karima. "Structural Adjustment, Stabilization Policies, and the Poor in Egypt." *Cairo Papers in Social ScienceI*. Vol. 18, No. 4, Winter 1996
- Lantican, Clarita P, Christina H. Gladwin, James L. Seale. "Income and Gender Inequalities in Asia: Testing Alternative Theories of Development." *Economic Development and Cultural Change*. Jan 1996. Vol. 44, No. 2: 235

- Lorenz, Frederick O, and KAS Wickrama. "Women's Status, Fertility Decline, and Women's Health in Developing Countries: Direct and Indirect Influences of Social Status on Health." *Rural Sociology*. College Station: June 2002, Vol. 67, Iss. 2: 255
- Macleans, A Geo-Jaja, and Garth Mangum. "Structural Adjustment as an Inadvertent Enemy of Human Development in Africa." *Journal of Black Studies*. Sept 2001 Vol. 32, No.1: 30
- Mills, Mary Beth. "Gender and Inequality in the Global Labor Force." *Annual Review of Anthropology*. 2003. Vol. 32: 41
- Mlay, Felix J, Kartik C. Roy, and Clement A. Tisdell. "Women and Development in Sub-Saharan Africa with Special Reference to Tanzania." *Economic Development and Women in the World Community*. Westport, CT: Praeger Publishers, 1996
- Moser, C. "Adjustment from Below: Low-Income Women, Time, and Triple Role in Guayaquil, Ecuador." *Women and Adjustment Policies in the Third World*. London: Macmillan Academic and Professional Ltd, 1992
- Murphy, Emma C. "Women in Tunisia: Between State Feminism and Economic Reform." *Women and Globalization in the Arab Middle East*. Boulder, CO: Lynne Rienner Publishers, 2003
- Nasser, Heba. "Egypt: Structural Adjustment and Women's Employment." *Women and Globalization in the Arab Middle East*. Boulder, CO: Lynne Rienner Publishers, 2003
- Osirim, Mary Johnson. "Carrying the Burdens of Adjustment and Globalization: Women and Microenterprise Development in Urban Zimbabwe." *International Sociology*. 2003. Vol. 18, No. 3: 535-558
- Owah, Kenna. "Gender and Health in Nigerian Structural Adjustment: What Does it Mean for Women?" *Canadian Woman Studies*. Downsview: Spring 1993. Vol. 13, Iss. 7: 71

- Polak, J.J. "The Changing Nature of IMF Conditionality." Princeton University, International Finance Section, Department of Economics, Princeton, 1991
- Przeworski, Adam, and James Raymond Vreeland. "The Effect of IMF Programs on Economic Growth." *Journal of Development Economics*. 2000, Vol. 62: 385-421
- Przeworski, Adam. "Updated Democracy and Development Dataset," downloaded from NYU Blackboard. 2004
- Rose, Pauline. "Female Education and Adjustment Programs: A Crosscountry Statistical Analysis." *World Development*. 1994. Vol. 23, Iss. 11: 1931-1949
- Tanski, Janet. "The Impact of Crisis, Stabilization, and Structural Adjustment on Women in Lima, Peru." *World Development*. 1994. Vol. 22, Iss. 11: 1627-1642
- Tisdell, Clement. "Poverty and economically-deprived women and children: Theories, emerging policy issues and development." *International Journal of Social Economics*. 2002. Vol. 29 (1/2): 73
- UNDP. "Year women received right to vote." Human Development Report. 2003.
http://hdr.undp.org/reports/global/2003/indicator/indic_234_3_2.html
- United Nations Division for the Advancement of Women. "Convention on the Elimination of All Forms of Discrimination against Women." 2005. www.un.org/womenwatch/daw/cedaw
- Vreeland, James Raymond. "The Effect of IMF Programs on Labor." *World Development*. 2002. Vol.1, Iss. 1: 121- 139
- "World Bank Development Indicators" from <http://web.worldbank.org>