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Article

The impact of foreign aid on gender inequality in developing countries: Does it really work?

Global Business & Finance Review (GBFR)

Provided in Cooperation with: People & Global Business Association (P&GBA), Seoul

Suggested Citation: Jaya, Vimala Asty F.T.; Jung, Jaehyun; Oh, Jinhwan (2024) : The impact of foreign aid on gender inequality in developing countries: Does it really work?, Global Business & Finance Review (GBFR), ISSN 2384-1648, People & Global Business Association (P&GBA), Seoul, Vol. 29, Iss. 4, pp. 168-178,

https://doi.org/10.17549/gbfr.2024.29.4.169

This Version is available at: https://hdl.handle.net/10419/305992

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GLOBAL BUSINESS & FINANCE REVIEW, Volume. 29 Issue. 4 (MAY 2024), 169-178 pISSN 1088-6931 / eISSN 2384-1648 | Https://doi.org/10.17549/gbfr.2024.29.4.169 © 2024 People and Global Business Association

GLOBAL BUSINESS & FINANCE REVIEW

www.gbfrjournal.org for financial sustainability and people-centered global business

The Impact of Foreign Aid on Gender Inequality in Developing Countries: Does It Really Work?

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ABSTRACT

Purpose: This study examines how foreign aid affects gender inequality in developing countries, both at macro (overall) and micro (sectoral) levels.

Design/methodology/approach: This study uses comprehensive panel data between 2010 and 2019.

Findings: The major findings are: (1) foreign aid, particularly aid targeting women empowerment and gender equality, has significantly contributed to the improvement of gender equality at the macro level except for the least developed countries, (2) at the micro level, gender-targeted aid has significantly improved the share of women in parliament and female secondary education, and (3) the availability of gender mainstreaming policies and national mechanisms for gender equality have not significantly contributed in improving gender equality.

Research limitations/implications: These findings suggest that, while donor countries should keep expanding gender-targeted foreign aid in developing countries, it would be crucial to improve the performance of national mechanisms for gender equality as well as gender mainstreaming policies in developing countries.

Originality/value: Studies have examined how foreign aid impacted gender inequality, but none of them has used gender-specific aid for an empirical approach, which is a main contribution of this study.

Keywords: Foreign aid, Gender inequality, Women empowerment, Gender mainstreaming

I. Introduction

Gender inequality is still one of the major problems in the world's development today. Overall, World Economic Forum (2022) asserts that it may take over 130 years to narrow the gender gap. About 2.4 billion women worldwide lack access and rights to economic opportunities compared to men, legal barriers to economic participation of persist in 178 countries

† Corresponding author: Jinhwan Oh E-mail: joh@ewha.ac.kr (World Bank, 2022), and 60% of women are in the poorest group of people (UN Women, 2022). Given this, the member countries of OECD-DAC (Organisation for Economic Co-operation and Development Development Assistance Committee) have been committed to increasing financial resources through aid to close the gender gap in developing countries. Between 2019 and 2020, the OECD-DAC countries allocated USD 56.5 billion of bilateral assistance commitments on gender, which accounted for 45% of their annual official development assistance (ODA) (OECD, 2021).

Despite the substantial allocation of aid toward addressing gender-related inequality and fostering

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Received: Jan. 23, 2024; Revised: Feb. 29, 2024; Accepted: Mar. 1, 2024

empowerment of women, the impact of development aid on reducing gender inequality remains uncertain (Clemens et al., 2004; Grown et al., 2016). In particular, there is a pressing need to investigate whether gender aid is susceptible to a micro-macro paradox that is consistently found in the association between foreign aid and the development of recipient countries (Ndikumana, 2012; Pickbourn & Ndikumana, 2016; Swain et al., 2020). This paradox implies a lack of consensus regarding the overall impact at macro-level of development assistance, notwithstanding various evidence attesting to the positive effects of sectoral or micro-level development aid on specific domains such as education and health (Dreher et al., 2008; Gyimah-Brempong, 2015; Michalowa & Weber, 2006; Mishra & Newhouse, 2009).

Hence, this paper aims to scrutinize the efficacy of "gender-targeted" aid in diminishing gender inequality at both macro and micro levels. Initially, we assess the influence of gender-targeted aid on the composite measure of gender inequality. Subsequently, we delve into the micro-level ramifications of aid with a specific focus on pivotal sectoral indicators, including but not limited to maternal mortality and female secondary education. Studies have examined how foreign aid impacted gender inequality, but none of them has used gender-specific aid for an empirical approach, which is a main contribution of this study.

Our paper is structured in the subsequent manner. In Section II, we present an overview of relevant literature. Section III outlines the modeling, methodology, and data. The findings are deliberated in Section IV, along with their implications. Section V concludes with suggestions.

II. Studies on Aid, Development and Gender Inequality

Existing research affirms the efficacy of overall foreign aid, particularly at the sectoral or micro-level, e.g. a positive associationf between foreign aid and enrolment in a primary school. (Dreher et al., 2008; Gyimah-Brempong & Asiedu, 2008; Michalowa & Weber, 2006). Similarly, targeted aid allocated to the health sector demonstrates significantly positive impacts by effectively reducing infant mortality (Gyimah-Brempong & Asiedu, 2008; Mishra & Newhouse, 2009; Bang & Oh, 2020) and maternal mortality (Pickbourn & Ndikumana, 2016). Furthermore, such aid contributes to enhancing the allocation of domestic health expenditure (Gyimah-Brempong, 2015).

However, at a macro level, the effectiveness of foreign aid remains controversial, yielding mixed findings in the previous literature (Clemens et al., 2004; Grown et al., 2016; Ndikumana, 2012; Pickbourn & Ndikumana, 2016; Swain et al., 2020; Bokhari and Oh, 2022). Numerous research suggests a favorable correlation between foreign aid and economic growth (Arndt et al., 2011; Gormanee et al., 2005; Hansen & Tarp, 2000, 2001), while other studies contend that effectiveness is contingent upon the institutional and policy framework (Burnside & Dollar, 2000; Collier & Dollar, 2004; Oh & Kim, 2015). Moreover, discussions have arisen regarding the adverse impacts of aid on growth, with some scholars suggesting that aid has not succeeded in fostering economic growth (Boone, 1996; Easterly, 2006; Han & Oh, 2019; Rajan & Subramanian, 2005).

This micro-macro paradox can be particularly pronounced when investigating the influence of development foreign aid on gender inequality owing to the multidimensional and intersectional nature of gender equality. This complexity may contribute to the relative scarcity of literature examining the foreign aid and gender equality, despite the extensive studies addressing the broader effects of foreign aid. Notably, Pickbourn and Ndikumana (2016) discern a conditionally positive effect of foreign aid on gender equality, contingent upon the initial development levels of countries. Their analysis exploits the GDI (Gender Equality Index) and GII (Gender Inequality Index) for 141 countries from 1975 to 2010, widely acknowledged metrics for gender inequality established by the United Nations Development Program (UNDP). Conversely, others found that foreign aid is unlikely to alleviate systemic gender inequalities (Swain et al., 2020). Additionally, Richey (2000) contends that aid may exacerbate gender disparities by further amplifying the existing resource gap allocated between men and women.

This mixed findings can stem from an incomplete comprehension of the multifaceted concept of gender equality, attributed to a failure to adequately incorporate macro factors into the analysis. These factors encompass the government's expenditure on health and education, its investments in women, and the institutional and policy environment of the recipient country, including good governance, control of corruption, the rule of law, and gender mainstreaming policies. The interactions of these aforementioned factors can exhibit diverse impacts on the various components of gender equality. For instance, Borrowman and Klasen (2017) discovered that economic development vielded no statistically significant effect on female labor participation, while Enchautegui (2018) found that the growth of the agricultural sector and other natural resource sectors correlated with a declining of disparities between gender.

Concerning government expenditure in the health and education sector, it plays a pivotal role in contributing to women's empowerment and fostering gender equality. Reductions in the government's allocation of funds for social services, including health and education, may result in an increased burden of unpaid work for women, as documented by Deere et al. (1990), Floro (1995), and Elson and Catagay (2000). Notably, Pickbourn and Ndikumana (2016) argue that augmenting government spending on health and education resulted in a decrease of gender inequality. Furthermore, the government's investment in women, particularly in infrastructure enhancing the access of women to sanitation and water, holds the potential to alleviate women's unpaid care responsibilities, thereby affording them more opportunities for paid employment. This, in turn, contributes to empowering women and augmenting their roles within the household (Agenor et al., 2014; Seguino, 2008; Swain et al., 2020).

Additionally, it is crucial to take into account that the incorporation of gender mainstreaming policy in recipient nations as pivotal determinants in advancing gender equality. Gender mainstreaming entails a strategic approach that integrates gender considerations into all facets of developmental plans or projects, acknowledging the distinct needs and concerns of gender as an integral dimensions across the stages of designing, implementing, monitoring, and evaluating policies and programs. This holistic approach aims to guarantee equal benefits for both women and men, thereby preventing the perpetuation of gender inequality (ECOSOC, 1997). A number of nations formalize gender mainstreaming policies by enacting gender-responsive planning and budgeting policies or implementing a national gender action plan (Budlender et al., 2006; Sodani & Sharma, 2008; UNIFEM, 2001). Such gender-responsive planning and budgeting initiatives assume a pivotal role in acknowledging the contributions of women in reproductive spheres, fostering women's leadership in public spheres, and enhancing advocacy capacity among women's organizations (Blackden & Bhanu, 1999).

Lastly, the availability of national mechanisms in a country that coordinate and promote gender issues holds potential for contributing to the enhancement of gender equality. National mechanisms for gender equality, which take many forms, such as ministries, councils, commissions, or government bodies, are mandated to promote gender equality and integrate it into general policies across all sectors. These national mechanisms could offer counsel and direction to the government and various ministries, as well as oversee advancements in relation to gender equality. They could also coordinate gender mainstreaming policies across sectoral levels to finally contribute to establishing a national plan on women's empowerment and gender equality (Fernos, 2010; Jahan, 2010).

III. Model, Methodology, and Data

Figure 1 illustrates the theoretical framework of assessing gender-targeted assistance and its impact on gender inequality. This conceptual framework delineates the factors that can determine the effectiveness of aid in mitigating gender inequality, including macro outcomes, governmental investments in women, levels of governance, and the adoption of inlcusive gender policies.

We first measure gender inequality using the GII, "a composite index that measures welfare losses because of gender inequalities in reproductive health, parliamentary representation, educational attainment, and labour market participation" by UNDP. This paper additionally uses the following sector-specific dependent variables that are acquired from the World Development Indicators (WDI) provided by the World Bank. They include maternal mortality rate, female labor participation, number of women in parliament, and female secondary education. We regressed these variables on several explanatory variables, as shown in Equation (1).

$$Y_{it} = \beta_0 + \beta_1 Gender Aid_{it} + \beta_2 Macroeconomics + \beta_3 Invest Women_{it} + \beta_4 Good Governance_{it} + \beta_4 Gender Policies_{it} + \epsilon_{it}$$
(1)

For the main variable of our interest, we collected gender aid(GenderAid) data from the database of Credit Reporting System (CRS) provided by OECD. Regarding the other control variables, Gender Aid is the amount of ODA specifically allocated to tackle gender inequality and promote empowerment of women and girls. Macroeconomics refers to the macroeconomic indicators illustrated in Figure 1 (per capita gross domestic product (GDP), government's expenditure on education and health, etc.). InvestWomen pertains to an investment in women, encompassing access to basic sanitation services and access to water services, as depicted in Figure 1. GoodGovernance refers to a governance framework characterized by adherence to the rule of law, government effectiveness, and control of corruption. GenderPolicies constitute a set of dummy variables that include indicators such as the availability of gender mainstreaming policies



Figure 1. The analytical framework of the impact of foreign aid on gender inequality

(coded as 1 if a country has gender mainstreaming policies and 0 otherwise) and the availability of national mechanisms for promoting gender equality (coded as 1 if the country has such national mechanisms and 0 otherwise). Governance-related data were acquired from the World Governance Indicators (WGI), while information regarding gender policies was extracted from UN WOMEN (2022). All other data were acquired from the WDI provided by the World Bank. The study utilizes panel regression analyses, encompassing data for 113 developing countries, covering a period of ten years from 2010 to 2019, based on data availability. Descriptive statistics are presented in Table 1, with a more comprehensive dataset provided in Appendix A for detailed reference.

We log-transformed most variables to unify to standardize their units. In addition, explanatory variables are lagged by one year to address reverse causality issues. The Variance Inflation Factor (VIF) test results affirm that multicollinearity concerns are negligible and the Hausman Test results indicates no systematic differences between the fixed effect (FE) and random effect (RE). Since FE is theoretically superior to RE in terms of tackling endogeneity issues, this study prioritizes the former (the first five columns in Table 2). However, we also present results using the RE models as supplementary information. The White heteroskedasticity-consistent standard errors are provided in parentheses. Finally, all the analyses have been conducted using STATA Version 17.

IV. Result and Discussion

Table 2 provides the main results, showing how gender aid and relevant relevant factors interact with the composite index of gender inequality (GII). Our results are generally consistent with the findings from previous studies including Pickbourn and Ndikumana (2016) and Swains et al. (2020). Specifically, our results corroborate the findings that aid specifically targeted at addressing gender-related issues significantly contributes to the enhancement of gender equality.

This finding aligns consistently with prior research, as evidenced by the studies conducted by Dolan et al. (2013), IFAD (2001), and Swain et al. (2020). However, the availability of gender mainstreaming

Table 1. Descriptive statistics of the observed variables used in regression analysis

Variable	Obs	Mean	Std.Dev	Min	Max
Gender Inequality Index	1,029	0.4607036	0.139705	0.109	0.819
Maternal Mortality Rate	912	245.4879	272.5579	2	1360
Female Labor Participation	1,140	35.72486	16.40517	4.914	78.457
Share of Women in Parliament	1,108	20.00283	11.94385	0	63.75
Female Secondary Education	1,049	47.01006	28.05304	1.662	99.879
Gender Aid (Log, Lag)	1,139	230.3729	374.271	0.047804	6527.359
GDP per capita (constant 2015 US\$) (Log, Lag)	1,135	3650.144	3045.796	278.3194	15073
Current health expenditure (% of GDP) (Lag)	1,112	5.753393	2.300339	1.752373	20.41341
Government expenditure on education, total (% of GDP) (Lag)	869	4.223818	1.707543	0.78744	12.83731
Access to Water (Lag)	600	50.68135	26.62054	5.564839	94.58659
Access to Sanitation (Lag)	1,132	63.42419	29.5197	5.970178	100
Rule of Law (Lag)	1,139	-0.5858972	0.5573516	-2.092132	1.079298
Government Effectiveness (Lag)	1,129	-0.5323673	0.6079737	-2.475142	1.120302
Control of Corruption (Lag)	1,140	-0.5768065	0.558979	-1.773469	1.640953

Notes: Variables marked with (Log) are log-transformed. We deliberately lagged variables marked with (Lag) by one year in empirical analysis.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gender Aid (Log) (Log)	-0.005***	-0.004***	-0.004**	-0.004**	-0.003*	-0.004***	-0.004***
Gender Ald (Log) (Lag)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
CDP per conita (Log) (Log)	-0.084***	-0.096***	-0.075***	-0.061***	-0.084***	-0.044***	-0.044***
ODF per capita (Log) (Lag)	(0.016)	(0.018)	(0.019)	(0.021)	(0.018)	(0.010)	(0.010)
Government Health Expenditure		-0.005***	-0.003**	-0.003*	0.022**	-0.002**	-0.002**
(% of GDP) (Lag)		(0.002)	(0.002)	(0.001)	(0.010)	(0.001)	(0.001)
Access to Water (Lag)		-0.002***	-0.002***	-0.002***		-0.002***	-0.002***
Access to water (Lag)		(0.001)	(0.001)	(0.001)		(0.000)	(0.000)
Government Education			-0.002	-0.002		-0.002	-0.002
Expenditure (% of GDP) (Lag)			(0.001)	(0.001)		(0.001)	(0.001)
Access to Sanitation (Lag)			-0.001*	-0.001*		-0.001***	-0.001***
Access to Sanitation (Lag)			(0.001)	(0.001)		(0.000)	(0.000)
Pule of Law (Lag)				-0.017		-0.022***	-0.023***
Kuie of Law (Lag)				(0.011)		(0.008)	(0.008)
Government Effectiveness (Lag)				-0.013		-0.014**	-0.014**
Government Effectiveness (Lag)				(0.011)		(0.006)	(0.006)
Control of Corruption (Lag)				0.006	-0.020	0.006	0.006
Control of Controption (Lag)				(0.011)	(0.014)	(0.006)	(0.006)
cI in adaid#cI control					0.002		
					(0.002)		
cI in capita#cI health					-0.004**		
					(0.001)		
Availability of Gender						0.027	0.019
Mainstreaming Policy						(0.026)	(0.027)
Availability of National							0.028
Mechanisms for Gender Equality							(0.027)
Constant	1.138***	1.349***	1.252***	1.118***	1.158***	0.961***	0.944***
Constant	(0.124)	(0.125)	(0.122)	(0.140)	(0.136)	(0.071)	(0.074)

Table 2. The impact of gender-targeted aid on gender inequality

Notes: The dependent variable is the Gender Inequality Index. ***, ** indicates the significance levels are 1%, 5% and 10%, respectively. Models (1) to (5) rely on the fixed effect analysis and the rest on the random effect analysis. The Hausman Test confirmed no systematic difference between the fixed and the random effects. The White heteroskedasticity-consistent standard errors are in parenthesis. Variables marked with (Log) are log-transformed. We deliberately lagged variables marked with (Lag) by one year in empirical analysis to avoid endogeneity issues.

policies and national mechanisms for gender equality in developing countries do not appear to have significant contributions to enhancing gender equality. This observation concurs with non-significant effects reported in studies by Lamprell et al. (2014), Meier and Celis (2011), and Smyth (2007), resulting from to the challenges associated with implementing relevant policies, including constraints such as inadequate budgetary allocations, a dearth of expertise, officials' limited knowledge of gender mainstreaming, and complexities in broadening the scope of gender policies.

Column (5) demonstrate the result after including

the interaction term between per capit GDP and the government expenditure on health. While GDP per capita constantly hold positive impacts on reducing gender inequality, the coefficient becomes negative when it is interacted with government expenditure on health. This means that in a country with a higher GDP, the government expenditure on health tends to have diminising returns in reducing gender inequality than in a country with a lower GDP. We further provide a visual representation of this outcome in Figure 2, where the marginal effect (the partial derivative of GII concerning government expenditure on health) turns negative after a certain threshold of GDP per capita, 6.3 or approximately USD 545.¹⁾ This alerts those lower-income countries to pay extra attention to reducing gender inequality.



Figure 2. Marginal effects of government expenditure (Lag) on GDP per capita

Finally, Table 3 provides the results examining the correlation between gender-targeted aid and sector-specific variables, such as maternal mortality rate, female secondary education, and the number of women in parliament. We find that, except for the maternal mortality rate, gender-targeted aid are significantly and positively associated with female secondary education and the number of women in parliament. For example, a 10% increase in aid explains approximately 5% and 6% increase in females in secondary education and parliament, respectively, resonating with Baliamoune-Lutz's (2016) findings. Other variables, such as access to water and sanitation, exert a significantly positive influence on reducing maternal mortality rates, consistent with Pickbourn and Ndikumana (2016).

Table	3.	The	impact	of	gender-targeted	aid	on	various	gender-related	variables
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	Maternal Mortality Rate	Female Secondary Education	Share of Women in Parliament
	RE	RE	RE
Gender Aid (Log) (Lag)	-2.999	0.553***	0.651***
	(2.378)	(0.170)	(0.183)
GDP per capita (Log) (Lag)	16.508	18.047***	3.454***
	(41.461)	(2.105)	(1.270)
L.edu		0.321 (0.219)	0.417 (0.288)
L.rule	-48.151*	0.056	2.420*
	(24.985)	(1.393)	(1.318)
Availability of Gender	-85.381	2.082	-0.542
Mainstreaming Policy	(70.168)	(6.345)	(2.830)
Availability of National Mechanism	106.315***	-13.961*	-0.779
for Gender Equality	(34.655)	(7.650)	(2.867)
L.health	0.100 (5.086)		
L.snts	-4.048*** (0.958)		
L.water	-1.799** (0.905)		
_cons	420.011**	-88.248***	-8.700
	(212.505)	(21.116)	(10.848)

Notes: The dependent variables are Maternal Mortality Rate, Female Secondary Education, and Share of Women in Parliament. ***, **, * respectively note significance levels at 1%, 5% and 10%. The Hausman Test confirmed no systematic difference between the fixed and the random effects. However, we only used the random effect, considering time-invariant dummy variables. The White heteroskedasticity-consistent standard errors are in parenthesis. Variables marked with (Log) are log-transformed. We deliberately lagged variables marked with (Lag) by one year in empirical analysis to avoid endogeneity issues.

1) Exp (6.3) = \$545.

V. Conclusion

Gender equality and empowerment of women are crucial in human development because gender intersects with every sector of development, and, without achieving gender equality, it would be difficult to meet various development goals. This study's findings have important policy implications. We find that gender-targeted aid does improve gender inequality, although this may not be the case in the least developed countries with an average income below USD 545. Donor countries should, therefore, continue to expand gender-targeted aid to improve gender equality and achieve development goals, and in poorer countries should increase efforts to identify more effective ways to channel aid. In addition, our findings also suggest that the availability of gender mainstreaming policies and national mechanisms for gender equality in developing countries has been so far ineffective in improving gender equality. Thus, developing countries and donor communities should accelerate progress on improving the effectiveness of government-specific institutions for gender equality and better implement gender mainstreaming policies.

As per major caveats, this study could consider alternative indices other than the Gender Inequality Index (GII) as a robustness check. In addition, although this study ended up using dummy variables, due to data availability, for gender mainstreaming policies and national mechanisms for gender equality, it would make more sense to use continuous variables in analyses, which will be reserved for further studies.

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	Variables	Description	Sources					
Dependent Variable - Macro								
1	Gender Inequality Index	Measures welfare losses because of gender inequalities in reproductive health, parliamentary representation, educational attainment, and labor market participation	United Nations Development Programme (UNDP)					
2	Gender Development Index	Measures gender gaps in human development achievements by accounting for disparities between women and men in three dimensions: health, knowledge, and living standards	UNDP					
Depe	endent Variable - Mic	ro						
3	Maternal Mortality	Number of women who die during pregnancy and childbirth per $100,\!000$ live births	World Bank (WDI)					
4	Female Labor Participation	Labor force participation rate for ages 15-24, female (%) (modeled ILO estimate)	World Bank (WDI)					
5	Women in Parliament	The proportion of seats held by women in national parliaments $(\%)$	World Bank (WDI)					
6	Female Secondary Education	Population with at least some secondary education, female (% ages 25 and older)	World Bank (WDI)					
Fore	ign Aid							
7	Gender Aid	Aid targeting gender equality and women empowerment	Creditor Reporting System (CRS)					
Macı	roeconomic Outcomes							
8	GDP per capita	Gross Domestic Product (GDP) per capita (constant 2015 US\$)	World Bank (WDI)					
9	Expenditure on Health	Current health expenditure (% of GDP)	World Bank (WDI)					
10	Expenditure on Education	Government expenditure on education, total (% of GDP)	World Bank (WDI)					
Inves	stment on Women							
11	Access to Water	People using safely managed drinking water services (% of population)	World Bank (WDI)					
12	Access to Sanitation	People using at least basic sanitation services (% of population)	World Bank (WDI)					
Good	d Governance							
13	Rule of Law	Perceptions of the extent to which agents have confidence in and abide by the rules of society	World Governance Indicators (WGI)					
14	Government Effectiveness	Perception of the quality of public service and policy formulation and government commitment	World Governance Indicators (WGI)					
15	Control of Corruption		World Governance Indicators (WGI)					
Gend	ler Policies							
16	Mainstreaming Policy	Dummy: Gender Mainstreaming Policy (1 = w/ gender policy, 0 = w/o gender policy)	Various sources					
17	Gender Equality	Dummy: National Mechanism for Gender Equality (1= w/ mechanisms, 0= w/o them)	UN Women					

Appendix	A.	Description	of	the	observed	variables	used	in	regression	analysis