# The Comparative Economics of Financial Access in Gender Economic Inclusion

*Simplice A. Asongu*
*&*
*Rexon T. Nting*

# Association for Promoting Women in Research and Development in Africa

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**Simplice A. Asongu**
African Governance and Development Institute,
P.O. Box 8413, Yaoundé, Cameroon.
E-mails: asongusimplice@yahoo.com / asongus@afridev.org


**Rexon T. Nting**
The Business School, University of Wales, Trinity Saint David,
Winchester House, 11 Cranmer Road, London, UK, SW9 6E J.
Emails: rexon.nting@uwtsd.ac.uk / rexonting@hotmail.com

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## Abstract

The study has investigated the comparative importance of financial access in promoting gender inclusion in African countries. Gender inclusion is proxied by the female labour participation rate while financial channels include: financial system deposits and private domestic credit. The empirical evidence is based on non-contemporary Fixed Effects regressions. In order to provide more implications on comparative relevance, the dataset is categorised into income levels (middle income versus (vs.) low income); legal origins (French civil law vs. English common law); religious domination (Islam vs. Christianity); openness to sea (coastal vs. landlocked); resource-wealth (oil-poor vs. oil-rich) and political stability (stable vs. unstable). Six main hypotheses are tested, notably, that middle income, English common law, Christianity, coastal, oil-rich and stable countries enjoy better levels of "financial access"-induced gender inclusion compared to respectively, low income, French civil law, Islam, landlocked, oil-poor and unstable countries. All six tested hypothesis are validated. This is the first study on the comparative importance of financial access in gender economic participation.

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**1. Introduction**

Engaging women in the formal economic sector could add about 28 trillion USD to global gross domestic product (GDP) by 2025 (Abney & Laya, 2018). According to the narrative, greater gender equality offers a multitude of socio-economic benefits for women in particular and the society in general. Accordingly, such benefits also include, *inter alia*: environmental sustainability, poverty reduction, innovation and consumer choice. In Africa, gender inclusion in the formal economic sector is particularly relevant because compared to other continents, it is the continent with the lowest participation of females in the formal economic sector (Efobi, Tanankem & Asongu, 2018).

The positioning of this study on the relevance of financial access in female economic participation[1] in Africa is motivated by four main factors in the scholarly literature, notably: (i) the low gender inclusion in the formal economic sector; (ii) the relevance of inclusive development in the post-2015 development agenda; (iii) the importance of financial access in development outcomes and (iv) gaps in the literature. These factors are critically engaged in the following passages in the same order as they are highlighted.

First, as recently documented by Efobi *et al.* (2018), most women in Africa are accommodated in the informal economic sector with activities such as unpaid domestic activities, small holding farming and petty trading. This narrative is consistent with the attendant literature on the subject (Tandon & Wegerif, 2013; Asongu & Odhiambo, 2018). The underlying view from scholarly literature is in accordance with the perspective from multilateral development institutions such as the World Bank (2015) and the International Labour Organisation (2013) which maintain that more men are involved in the formal economic sector, compared to women who are relegated to household and peripheral economic activities. According to the narrative, the low welfare externalities resulting from economic growth are partly traceable to the low gender inclusion in formal economic projects. In essence, Africa has the highest female poverty rate in the world (Hazel, 2010) and policies that favour the promotion of female economic participation engender positive economic development externalities on a multitude of fronts, notably: poverty reduction, structural transformation in the labour market and enhanced welfare for the female gender (Efobi *et al.*, 2018; Osinubi & Asongu, 2021). The underlying concerns in Africa are even more relevant in

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[1] The terms "female economic participation", "gender inclusion" and "gender economic participation" are used interchangeably throughout the study.

view of challenges to contemporary development in the light of Sustainable Development Goals (SDGs).

Second, a key theme in the post-2015 SDGs agenda is gender inclusion. In Africa particularly, close of half of countries did not achieve the Millennium Development Goal (MDG) extreme poverty target of reducing poverty by half (Asongu & Kodila-Tedika, 2017). Moreover, a common global agenda in the post-2015 development era is to reduce extreme poverty to a threshold of below 3% (Asongu & Odhiambo, 2019a). The concern of gender exclusion can further reduce the negative responsiveness of poverty to economic growth in Africa because the inequality elasticity of poverty is higher than the growth elasticity of poverty (Asongu & Kodila-Tedika, 2018; Asongu & le Roux, 2019). Hence, the responsiveness of poverty to growth is a negative function of inequality (i.e. including gender exclusion). In the light of the 2030 challenges, the issues of extreme poverty and inequality are clearly supported by the conclusions of Bicaba, Brixiova and Ncube (2017): "*This paper examines its feasibility for Sub-Saharan Africa (SSA), the world's poorest but growing region. It finds that under plausible assumptions extreme poverty will not be eradicated in SSA by 2030, but it can be reduced to low levels through high growth and income redistribution towards the poor segments of the society*" (p. 93). These conclusions for SSA are also broadly consistent with the issues surrounding nexuses between economic growth, inequality and poverty reduction in North Africa (Ncube, Anyanwu & Hausken, 2014). While the common concern of extreme poverty can be heightened by gender exclusion, a channel by which both poverty and gender exclusion can be reduced is financial access or financial empowerment.

Third, financial access in Africa has been documented to improve socio-economic development as well as increase investment opportunities for households and businesses, which by extension, leads to economic growth, social mobility, employment and higher standards of living (Chapoto & Aboagye, 2017; Obeng & Sakyi, 2017; Tchamyou, 2019, 2020; Tchamyou et al., 2019). While there is a broad consensus in the theoretical and empirical literature on the relevance of financial access is reducing inequality, unfortunately, the extant literature focusing on Africa has failed to engage the importance of financial access in gender equality within the framework of female economic participation.

Fourth, as far as we have reviewed, the extant contemporary inclusive development literature on Africa has focused on *inter alia*: linkages between information technology and inclusive development (Asongu & Odhiambo, 2018; Asongu & Nwachukwu, 2018; Gosavi, 2018; Uduji & Okolo-Obasi, 2018, 2019b); nexuses between foreign capital flows and

inequality (Kaulihowa & Adjasi, 2018); relationships between income levels, consumption and the wealth of the poorest fractions among the population (De Magalhães & Santaeulàlia-Llopis, 2018); nexuses between inequality and corruption (Sulemana & Kpienbaareh, 2018); concerns about gender inclusion (Bayraktar & Fofack, 2018); linkages between environmental degradation and inclusive development (Asongu & Odhiambo, 2018c) and connections between information asymmetry, financial access, education and inequality (Tchamyou, 2019, 2020; Meniago & Asongu, 2018).

The studies in the literature closest to the positioning of this study are Efobi et al. (2018) and Asongu and Odhiambo (2018). The former has investigated the effect of information and communication technology (ICT) on female economic participation while the latter has investigated linkages between financial access, ICT and female economic participation. This study departs from the studies on two fronts. On the one hand, the direct effect of financial access on female economic participation is investigated. On the other, a different estimation technique to the GMM is employed in order to provide comparative evidence on the relationship between finance and gender inclusion. It is relevant to emphasise that the Generalised Method of Moments employed by the latter cannot be used to assess comparative evidence because the empirical strategy is designed for a data structure that has considerably more cross sections (i.e. N) than the number of periods in each cross section (i.e. T). Accordingly, categorisation for comparative purposes substantially reduces N and hence the N>T condition for the employment of GMM is not met for all sub-samples.

Consistent with Asongu and Nwachukwu (2017a), in order to provide room for more policy implications, the study is consistent with recent literature in categorising the sampled countries into fundamental features of comparative development based on: income levels (low income and middle income); legal origins (English common law and French civil law); religious domination (Christianity and Islam); openness to sea (landlocked and coastal); resource-wealth (oil-rich and oil-poor) and political stability (stable and unstable).

The positioning of the study is also partly motivated by the evolving strand of financial development literature which has not focused the effect of financial access on gender economic participation (Dafe, Essers & Volz, 2018; Asongu, Batuo, Nwachukwu & Tchamyou, 2018a; Asongu, Raheem & Tchamyou, 2018b; Bokpin, Ackah & Kunawotor, 2018; Gyeke-Dako, Agbloyor, Turkson & Baffour, 2018). The rest of the study is structured as follows. The intuition for the comparative development is covered in section 2 while the

data and methodology are discussed in section 3. Section 4 presents the empirical results whereas the research concludes in section 5 with future research directions.

## 2. Intuition for comparative economic development

This section covers the intuition motivating the categorisation of countries in Africa into fundamental characteristics of economic development. The categorisation has been employed in contemporary comparative economic and inclusive development literature (Narayan, Mishra & Narayan, 2011; Mlachila, Tapsoba & Tapsoba, 2017; Asongu & le Roux, 2017; Asongu, Nwachukwu & Pyke, 2019). The corresponding comparative fundamental features are based on political stability, openness to sea, natural resources, legal origins, religious domination and income levels. In the following passages, the linkage between the fundamental features and gender inclusion are articulated.

First, it has been documented in the literature that compared to low income countries, higher income countries are associated with better institutions that enable more equitable distribution of the fruits of economic prosperity among the population (Asongu & Nwachukwu, 2017a). The nexus between income inequality and income of countries can further be clarified with the Kuznets hypothesis with states that as an economy develops, there is increase in market forces and then a reduction in economic inequality (Vanitcharoentham, 2017; Blanco & Ram, 2019). Hence, higher income countries are more associated with lower levels of inequality and by extension gender inclusion. This is essentially because gender inequality is a component of economic inequality in the light of the Kuznets hypothesis. The nexus between income levels and inclusive development policies is consistent with a broad strand of the literature, notably: Fosu (2013a, 2013b), Anyanwu and Erhijakpor (2014) and Efobi (2015).

*Hypothesis 1*: Compared to low income countries, higher income countries are more associated with a positive finance-"gender inclusion" relationship.

Second, the foundations of legal origins in comparative economic development are consistent with both broader (La Porta, Lopez-de-Silanes, Shleifer & Vishny, 1998, 1999) and African-centric (Asongu, 2012a, 2012b; Agbor, 2015) literature. Building on the attendant literature, French civil law countries are linked with institutions that are less effective when compared to their English common law countries. According to Beck,

Demirgüç-Kunt and Levine (2003), the relative dominance of English common law countries is traceable to political and adaptability channels. The political channel posits that English common law countries put emphasis on private property rights compared to the rights of the State. Hence, such emphasis on private property rights is more likely to promote gender inclusion. Concerning the adaptability channel, English common law countries are designed to quickly adapt to evolving socio-economic conditions. By extension, these countries can more quickly accommodate the evolving and contemporary policy challenges to and needs for gender inclusion. In summary, the institutional web of formal norms, informal rules and enforcement characteristics underlying the legal tradition influence the policies that are designed to promote gender inclusion.

*Hypothesis 2*: Compared to French civil countries, English common law countries are more linked with a positive finance-"gender inclusion" nexus.

Third, the intuition for income levels or the wealth of nations also extends to the narrative on resource-wealth. This extension is premised on the fact that income levels and resource-wealth are positively correlated. It is also important to be cautious in articulating that countries that have acknowledged the scarcity of natural resources have also improved their governance standards to increase the wealth of citizens and gender inclusion (Fosu, 2013b; America, 2013; Amavilah, 2016). As recently argued by Asongu, Tchamyou, Asongu and Tchamyou (2018c), examples of such countries in Africa are Rwanda and Mauritius. Moreover, these countries are associated with comparatively higher levels of gender inclusion in economic and governance activities.

*Hypothesis 3*: Resource-wealthy countries offer more opportunities for gender inclusion via the financial channel compared to their resource-poor counterparts.

Fourth, as posited by Arvis, Marteau and Raballand (2007), countries that are landlocked are associated with higher economic and institutional costs when compared with coastal countries. Such costs can also be extended to access of opportunities by women and the weaker fractions of the population. We have already established that higher development levels are associated with more economic inclusion and by extension, gender inclusion (Vanitcharoentham, 2017; Blanco & Ram, 2019). By analogy, given that landlockedness is

linked to less economic development (Begashaw, 2013), it is also reasonable to hypothesise that landlockness is associated with low levels of gender economic inclusion.

*Hypothesis 4*: Compared to landlocked countries, coastal countries are more likely to experience more gender inclusion resulting from financial access.

Fifth, the premise of religion in gender inclusion can be articulated by the relevance of women in the scriptures and adaptation of religion to evolving challenges of society. While Christianity and Islam are both patriarchal religions, Christian-dominated countries are more liberal and flexible in offering opportunities for the emancipation of women both at economic and political circles. In essence, institutions that promote liberal (vis-à-vis conservative) cultures influence cross-country variations in socio-economic development (Roudometof, 2014), including inclusive human development (Asongu *et al*., 2019).

*Hypothesis 5*: Christian-dominated countries are likely to experience higher levels of "financial access"-driven gender inclusion, compared to their Islam-oriented counterparts.

Sixth, from intuition, countries that are politically-stable are more likely to provide more enabling conditions for investment, economic prosperity, inclusive human development and the emancipation of woman. This narrative is supported by Asongu and Nwachukwu (2017a) and Beegle, Christiaensen, Dabalen and Gaddis (2016). These authors have shown that politically-unstable countries are associated with comparatively less standards of economic development.

*Hypothesis 6*: Politically-unstable countries are associated with less gender inclusion related to financial access, compared to their politically-stable counterparts.

## 3. Data and methodology
### 3.1 Data
The focus of this study is on 48 countries in Africa with data annual data for the period 2004-2014[2]. The sampled countries and corresponding periodicity are contingent on constraints in

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[2]The 48 countries include: "Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire,

data availability at the time of the study. These justifications have been employed by the attendant literature motivating the study (Tchamyou, 2019, 2020; Asongu & Odhiambo, 2019a). The data is obtained from four principal sources, notably, the: (i) International Labour Organisation for the female economic participation variable (i.e. female labour force participation); (ii) World Development Indicators of the World Bank for two control variables (i.e. remittances and primary school enrolment); (iii) World Governance Indicators of the World Bank for another control variable (i.e. political stability) and (iv) Financial Development and Structure Database (FDSD) of the World Bank for financial access indicators (i.e. financial system deposits and private domestic credit) and another control variable (i.e. financial stability).

The three outcome variables of gender inclusion are motivated by recent literature on female economic participation (Efobi *et al.*, 2018; Asongu & Odhiambo, 2019c) and the deposit and credit financial access channels are also motivated by contemporary financial development literature (Tchamyou & Asongu, 2017). The adopted control variables build on contemporary inclusive development literature (Anyanwu, 2011; Meniago & Asongu, 2018; Tchamyou, 2019, 2020; Asongu & Odhiambo, 2019a).

(i) The relevance of primary school enrolment in inclusive development is motivated by the fact that it has been documented to be more associated with socio-economic development when countries are at initial stages of industrialisation (Asiedu, 2014). Hence, given that the sampled countries are at their initial stages of industrialisation, a positive effect of primary education on the outcome variable is expected. (ii) The importance of political stability is contingent on whether it is negatively or positively skewed. Accordingly it is very likely to influence inclusive development unfavorably if it is negatively skewed. In essence, a negative skewed political stability indicator is indicative of the fact that it could be assimilated to political instability (i.e. instead of political stability), because the indicator has more negative values than positive values. The negative skewness of the indicator is apparent in the light of information in the summary statistics because its mean value is negative on the one hand and on the other, its extreme minimum value is higher compared to its extreme maximum value. (iii) Remittances are anticipated to promote gender economic inclusion because they have been documented to be used both for production and consumption purposes

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Djibouti, Egypt, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda and Zambia".

(Asongu et al., 2019; Efobi et al., 2019). Moreover, the greater feminisation of international migration is associated with discrimination women face in domestic labour markets and the comparatively higher volume of remittances from female migrants is also destined to help fight such discrimination in home countries (Le Goff, 2016). (iv) Financial stability is logically expected to promote inclusive development and by extension, gender economic inclusion because just like political stability, it provides enabling conditions for economic activities which are linked to employment and social mobility opportunities for both males and females.

It is important to devote space to clarifying the choice of fundamental characteristics covered in Section 2[3]. The categorisation of nations in terms of legal origins is in accordance with La Porta, Lopez-de-Silanes and Shleifer (2008, p. 289) whereas the income decomposition is in line with the World Bank's decomposition of income levels[4]. Categorisation of nations in terms of resource-wealth is based on a criterion that at least 30% of the nation's GDP is dominated by oil-production by at least a decade of the sampled periodicity. Information on religious domination is sourced from the Central Intelligence Agency (CIA) World Fact Book (CIA, 2011). Landlocked nations are directly apparent from an African map. Countries that are politically-unstable are those that have witnessed political instability and political strife for at least half of the investigated periodicity.

The definitions of variables are provided in Appendix 1, Appendix 2 discloses the summary statistics while Appendix 3 is concerned with the correlation matrix. In accordance with Tchamyou (2019), two main objectives are apparent from the descriptive statistics. On the one hand, the mean values of the variables are comparable[5] and on the other, the substantial variations reflected in the standard deviations are evidence to the fact that reasonable estimated nexuses can be obtained from the corresponding regressions. The purpose of the correlation matrix in Appendix 3 is to limit concerns about instrument proliferation that are likely to bias the estimation output by producing results with unexpected signs. It is apparent that the correlation between the two financial access proxies which is 0.777 exceeds all documented thresholds for establishing the concern of multicollinearity,

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[3] While the intuition motivating the choice of fundamental characteristics has been discussed in Section 2, the information criteria used in the selection of fundamental features are discussed in this section.

[4] There are four main World Bank income groups: (i) high income, $12,276 or more; (ii) upper middle income, $3,976-$12,275; (iii) lower middle income, $1,006-$3,975 and (iv) low income, $1,005 or less.

[5] This is the reason some of the variables are not converted into their natural logarithms, given that such conversion into their natural logarithms is to facilitate comparison among variables.

notably: (i) 0.500 as suggested by Wichers (1975) and O'brien (2007); (ii) 0.700 by Kennedy (2008) and (ii) an average (or 0.600) of the two contending values as employed by Asongu et al. (2020). Consistent with Tchamyou (2019), the underlying concern of multicollinearity is addressed by employing the financial access variables in distinct specifications.

### 3.2 Methodology

The Fixed Effects (FE) estimation approach is adopted in this study essentially for the reasons provided in the motivation of this study, notably: the need to engaged fundamental characteristics of African development within a comparative framework (Asongu & Odhiambo, 2018). Moreover, in the light of recent literature on FE regressions (Asongu & Nwachukwu, 2018), when a panel consists of a fixed and relatively small number of cross section units (such as fundamental characteristics as it is the case with the present study), there is presumption in favour of FE regressions.

The panel FE model is presented as follows:

$$FEP_{i,t} = \partial_0 + \partial_1 F_{i,t-1} + \sum_{h=1}^{4} \omega_h W_{h,i,t-\tau} + \eta_i + \varepsilon_{i,t} \ , \qquad (1)$$

where, $FEP_{i,t}$ is female economic participation for country $i$ in period $t$; $\partial_0$ is a constant; $F_{i,t-1}$ is a financial access indicator (i.e. financial system deposits and private domestic credit) for country $i$ in period $t-1$; $W$ is the vector of control variables (education, political stability, remittances and financial stability); $h$ is the number of control variables; $\eta_i$ is the country-specific effect and $\varepsilon_{i,t}$ the error term. The purpose of retarding or lagging the independent variable of interest and control variables by one year is to account for potential endogeneity bias (see Asongu, Anyanwu & Tchamyou, 2019).

### 4. Empirical results

The empirical results are disclosed in this section. Table 1 presents the baseline regressions whereas Table 2 provides findings that are informed by fundamental characteristics of African development. From the baseline regressions, it is apparent that financial access positively affects female economic participation. The magnitude is higher from private domestic credit than from financial system deposits. It is important to clarify that the magnitudes of estimated coefficients from the independent variables of interest are "comparable pairs of specifications" with the same conditioning information set (or control variables) involved in

the modeling exercise (see Andrés & Asongu, 2013; Asongu & Kodila-Tedika, 2016). Most of the significant control variables have the expected signs.

**Table 1: Financial and female economic participation**

| | The Deposit Channel (Financial System Deposits) | | | | The Credit Channel (Private Domestic Credit) | | | |
|---|---|---|---|---|---|---|---|---|
| Constant | 52.692*** | 52.537*** | 52.331*** | 53.722*** | 53.943*** | 53.704*** | 53.617*** | 54.785*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Deposits (-1) | 0.029* | 0.030* | 0.029* | 0.024 | --- | --- | --- | --- |
| | (0.099) | (0.072) | (0.089) | (0.193) | | | | |
| Credit (-1) | --- | --- | --- | --- | 0.050*** | 0.047*** | 0.050*** | 0.038** |
| | | | | | (0.003) | (0.004) | (0.002) | (0.035) |
| Primary School (-1) | 9.283*** | 8.850*** | 8.462*** | 8.324*** | 7.655*** | 7.442*** | 6.782** | 7.046** |
| | (0.001) | (0.001) | (0.000) | (0.000) | (0.000) | (0.002) | (0.011) | (0.011) |
| Political Stability (-1) | --- | -1.187*** | -1.100*** | -1.024*** | --- | -1.142*** | -1.048*** | -1.015*** |
| | | (0.000) | (0.000) | (0.001) | | (0.000) | (0.000) | (0.001) |
| Remittances (-1) | --- | --- | 0.085*** | 0.102*** | --- | --- | 0.095*** | 0.107*** |
| | | | (0.000) | (0.001) | | | (0.002) | (0.001) |
| Financial Stability (-1) | --- | --- | --- | -0.048 | --- | --- | --- | -0.052 |
| | | | | (0.149) | | | | (0.108) |
| R²(Within) | 0.081 | 0.143 | 0.166 | 0.183 | | 0.163 | 0.192 | 0.195 |
| Fisher | 9.94*** | 12.48*** | 10.46*** | 8.92*** | 13.29*** | 14.54*** | 12.48*** | 9.60*** |
| Countries | 38 | 38 | 36 | 34 | 38 | 38 | 36 | 34 |
| Observations | 264 | 264 | 249 | 237 | 264 | 264 | 249 | 237 |

\*,\*\*,\*\*\*: significance levels of 10%, 5% and 1% respectively.

Panel A of Table 2 is focused on deposit-oriented regressions whereas Panel B is concerned with credit-related estimations. The following are apparent from Table 2. (i) In Panel A, in line with the hypotheses motivating the study discussed in Section 2, oil-rich, Christian-dominated and coastal countries experience higher levels of female economic participation from the deposit channel compared respectively, to their oil-poor, Islam-oriented and landlocked counterparts where the effect of the deposit channel is not significant. (ii) The comparative relevance of the findings in Panel A is confirmed in Panel B from the credit-oriented channel. In Panel B, the hypotheses in Section 2 on the comparative relevance of fundamental characteristics are further confirmed with respect to income levels, legal origins and political stability. (iii) The slight exception is that, contrary to the stated hypothesis on the comparative importance of political stability, in Panel A the deposit channel is significantly positive for politically-unstable countries, but not for their politically-stable counterparts.

## Table 2: Comparative analysis (Finance and female economic participation)

**Dependent variable: Female Labour Force Participation**

**Panel A: Deposit-oriented regressions**

| | Income Levels | | Legal Origins | | Resources | | Religion | | Openness to Sea | | Political Stability | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L.I | M.I | Eng. | Frch. | Oil-rich | Oil-poor | Christi | Islam | Landlocked | Coastal | Stable | Unstable |
| Constant | 60.279*** | 43.287*** | 60.749*** | 54.494*** | 42.164*** | 53.952*** | 67.722*** | 24.199*** | 52.375*** | 54.842*** | 50.289***** | 57.490*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Deposit (-1) | 0.008 | 0.030 | 0.023 | 0.038 | 0.053*** | 0.019 | 0.050*** | 0.010 | 0.045 | 0.025* | 0.021 | 0.032*** |
| | (0.820) | (0.138) | (0.288) | (0.171) | (0.000) | (0.362) | (0.004) | (0.821) | (0.425) | (0.099) | (0.334) | (0.004) |
| Control V. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| $R^2$(Within) | 0.211 | 0.206 | 0.148 | 0.318 | 0.510 | 0.214 | 0.213 | 0.311 | 0.264 | 0.144 | 0.227 | 0.434 |
| Fisher | 6.32*** | 3.90*** | 3.39*** | 8.98*** | 3.75** | 9.57** | 8.03*** | 4.07*** | 4.67*** | 4.32*** | 9.67*** | 4.46*** |
| Countries | 21 | 13 | 17 | 17 | 4 | 30 | 25 | 9 | 11 | 23 | 27 | 7 |
| Observations | 144 | 93 | 119 | 118 | 27 | 210 | 178 | 59 | 81 | 156 | 196 | 41 |

**Panel B: Credit-oriented regressions**

| | Income Levels | | Legal Origins | | Resources | | Religion | | Openness to Sea | | Political Stability | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L.I | M.I | Eng. | Frch. | Oil-rich | Oil-poor | Christi | Islam | Landlocked | Coastal | Stable | Unstable |
| Constant | 57.677*** | 45.543*** | 65.627*** | 55.273*** | 42.747*** | 55.407*** | 69.772*** | 22.189*** | 52.849*** | 56.976*** | 52.462***** | 57.424*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.001) | (0.000) | (0.000) | (0.000) | (0.000) |
| Credit (-1) | -0.051 | 0.073*** | 0.058*** | 0.030 | 0.052*** | 0.041* | 0.073*** | -0.100 | 0.027 | 0.056*** | 0.043* | 0.024** |
| | (0.184) | (0.000) | (0.000) | (0.409) | (0.000) | (0.059) | (0.000) | (0.150) | (0.643) | (0.000) | (0.056) | (0.043) |
| Control V. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| $R^2$(Within) | 0.222 | 0.364 | 0.246 | 0.310 | 0.543 | 0.226 | 0.313 | 0.341 | 0.259 | 0.216 | 0.240 | 0.348 |
| Fisher | 6.76*** | 8.60*** | 6.35*** | 8.63*** | 4.29*** | 10.27*** | 13.52*** | 4.67*** | 4.55*** | 7.06*** | 10.38*** | 3.10** |
| Countries | 21 | 13 | 17 | 17 | 4 | 30 | 25 | 9 | 11 | 23 | 27 | 7 |
| Observations | 144 | 93 | 119 | 118 | 27 | 210 | 178 | 59 | 81 | 156 | 196 | 41 |

LI: Low Income countries. MI: Middle Income countries. Eng: English Common law countries. Frch: French Civil law countries. Oil-rich: oil-exporting countries. Oil-poor: Nonoil exporting countries. Christ: Christian-dominated countries. Islam: Islam-dominated countries. Landlocked: Landlocked countries. Coastal: Coastal countries. Stable: Politically stable countries. Unstable: Politically unstable countries. *,**,***: significance levels of 10%, 5% and 1% respectively. Control V.: Control Variables.

Before the study concludes, it is important to articulate that in the baseline regressions, the magnitude of the credit channel is higher than that of the deposit mechanism because from intuition the credit channel is more related to financial access. Accordingly, deposits have to be transformed into credit before women are endowed with the financial resources needed to engage in formal economic activities. The relevance of the credit channel vis-à-vis the deposit mechanism  is confirmed in Panel B of  Table 2: (i) partly because answers to all investigated hypotheses are provided and (ii) partly because the magnitude of estimated coefficients are higher compared to corresponding magnitudes in Panel A of the same table.

## 5. Conclusion and future research directions

The study has investigated the comparative importance of financial access in promoting gender inclusion in a sample of forty-eight African countries for the period 2004-2014. Gender inclusion is proxied by the female labour participation rate while financial channels include: financial system deposits and private domestic credit. The empirical evidence is based on non-contemporary Fixed Effects regressions. In order to provide more implications on comparative relevance, the dataset is categorised into income levels (low

income versus (vs.) middle income); legal origins (English common law vs. French civil law); religious domination (Christianity vs. Islam); openness to sea (landlocked vs. coastal); resource-wealth (oil-rich vs. oil-poor) and political stability (stable vs. unstable). Six main hypotheses are tested, notably, that middle income, English common law, Christian-dominated, coastal, oil-rich and stable countries enjoy better levels of "financial access"-induced gender inclusion compared to respectively, low income, French civil law, Islam-oriented, landlocked, oil-poor and unstable countries. All six tested hypotheses are validated. Moreover, the magnitude and relevance of financial access in the investigated hypotheses are higher from private domestic credit than from financial system deposits.

The study has implications for understanding priorities in resource mobilisation for the promotion of gender inclusion in the post-2015 sustainable development goals (SGDs) agenda. Accordingly, SDG-5 (i.e. "*achieve gender equality and empower all women and girls*") for which, the implications of this study are most relevant, can be enhanced by allocating more resources for "financial access"-induced gender inclusion to: low income countries (compared to middle income countries); French civil law countries (relative to English common countries); landlocked countries (compared to coastal countries); resource-poor countries (relative to their resource-rich counterparts), Islam-oriented countries (compared to their Christianity-dominated counterparts) and politically-unstable countries (relative to political-stable countries). In summary, we have shown that in formulating and tailoring gender inclusive policies, policy makers should be aware of fundamental characteristics that are relevant in understanding cross-country differences in the role of financial access in driving gender economic participation.

Future research can employ relevant estimation techniques to assess whether the established findings withstand empirical scrutiny within country-specific frameworks. Such country-specific settings are relevant for more targeted policy implications. The suggested future research direction builds on the caveat that countries within a fundamental characteristic may still exhibit some cross-country differences in the factors that determine gender economic inclusion. Such differences are likely to be apparent because countries have different policies that explain gender economic inclusion. Accordingly, the evidence of cross-country disparities in factors that determine the outcome variable within a homogenous panel is the prime motivation for assessing convergence within such a homogenous panel. Hence, the appropriate estimation techniques could be considered to assess evidence of such convergence. Moreover, while lagged independent variables account for simultaneity to a

certain extent, it is worthwhile for future studies to identify relevant instruments in order to better account for simultaneity using an instrumental variable (IV) approach.

## Appendices

### Appendix 1: Definitions of variables

| Variables | Signs | Definitions of variables  (Measurements) | Sources |
|---|---|---|---|
| Female Economic Participation | FLFpart | Labour force participation rate, female (% of female population ages 15+) (modeled ILO estimate) | ILO |
| Financial Deposits | Deposits | Financial System Deposits (% of GDP) | FDSD |
| Financial  Credit | Credit | Privates Domestic Credits (% of GDP) | FDSD |
| Education | PSE | School enrolment, primary (% of gross) | WDI |
| Political Stability | PolS | "Political stability/no violence (estimate): measured as the perceptions of the likelihood that the government will be destabilised or overthrown by unconstitutional and violent means, including domestic violence and terrorism" | WGI |
| Remittances | Remit | Remittance inflows to GDP (%) | WDI |
| Financial Stability | Z-score | Prediction of the likelihood that a bank might survive and not go bankrupt. | FDSD |

WDI: World Bank Development Indicators of the World Bank. FDSD: Financial Development and Structure Database of the World Bank.  WGI: World Governance Indicators of the World. ILO: International Labour Organisation.

### Appendix 2: Summary statistics (2004-2014)

| | Mean | SD | Minimum | Maximum | Observations |
|---|---|---|---|---|---|
| Female Labour Force Participation | 62.515 | 15.685 | 30.00 | 88.80 | 451 |
| Financial System Deposits | 26.629 | 19.518 | 2.223 | 92.676 | 440 |
| Privates Domestic Credit | 20.913 | 24.628 | 0.873 | 150.209 | 440 |
| Primary School Enrolment | 0.919 | 0.111 | 0.600 | 1.105 | 307 |
| Political Stability | -0.471 | 0.905 | -2.687 | 1.182 | 462 |
| Remittances | 4.313 | 6.817 | 0.00003 | 50.818 | 416 |
| Financial Stability | 8.713 | 4.994 | -12.024 | 25.736 | 404 |

S.D: Standard Deviation.

### Appendix 3: Correlation matrix (uniform sample size: 249)

| FLFpart | Deposit | Credit | PSE | PolS | Remit | Z-score | |
|---|---|---|---|---|---|---|---|
| 1.000 | -0.147 | -0.142 | 0.273 | 0.016 | 0.016 | -0.206 | FLFpart |
| | 1.000 | 0.777 | 0.191 | 0.369 | 0.033 | 0.436 | Deposit |
| | | 1.000 | 0.185 | 0.261 | -0.085 | 0.397 | Credit |
| | | | 1.000 | 0.458 | 0.251 | 0.103 | PSE |
| | | | | 1.000 | 0.075 | 0.091 | PolS |
| | | | | | 1.000 | -0.081 | Remit |
| | | | | | | 1.000 | Z-score |

FLFpart: Female Labour Force participation. Deposit: Financial System Deposits. Credit: Private Domestic Credit. PSE: Primary School Enrolment. PolS: Political Stability. Remit: Remittances. Z-score: Financial Stability.

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