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The Anatomy of the Financial Inclusion Gap in the Caucasus and Central Asia

Tigran Poghosyan

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WORKING PAPER

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Middle East and Central Asia Department

**The Anatomy of the Financial Inclusion Gap in the Caucasus and Central Asia
Prepared by Tigran Poghosyan**Authorized for distribution by Nicolas Blancher
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ABSTRACT: This paper analyses how financial inclusion in the Caucasus and Central Asia (CCA) compares to peers in Central and Eastern Europe (CEE). Using individual-level survey data, it shows that the probability of being financially included, as proxied by account ownership in financial institutions, is substantially lower across gender, income groups, and education levels in all CCA countries relative to CEE comparators. Key determinants of this financial inclusion gap are lower financial and human development indices, weak rule of law, and physical access to bank branches or ATMs. This suggests that targeted policies aimed at boosting financial and human development, strengthening the rule of law, and supporting fintech solutions can broaden financial inclusion in the CCA.

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WORKING PAPERS

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I. Introduction

The Caucasus and Central Asia (CCA) countries have strived to broaden access to finance over the last three decades following their independence in the early 1990s. Financial inclusion, broadly defined as the ability of economic agents to use financial services, is increasingly recognized as crucial for economic development and poverty reduction (Sahay and others, 2015a; Sahay and Cihak, 2020).¹ In particular, access to financial services allows economic agents to move away from short-term decision making to inter-temporal allocation of resources. This encourages savings, reduces reliance on self-financing, improves incentives for productive investments, and expands markets for goods and services (Rojas-Suarez, 2014).

While the importance of financial inclusion is widely recognized, it is perceived as insufficient and constraining investment activity and consumption in the CCA.² According to the World Bank's Global Findex database, the share of adults having an account with a financial intermediary in 2021 ranges between 39.5 percent in Tajikistan and 81.1 percent in Kazakhstan, which is relatively low compared to over 95 percent in high-income countries and 88.4 percent average in the comparator Central and Eastern European (CEE) countries.³

This paper provides empirical evidence on financial inclusion in the CCA and compares it with CEE peers. Using individual-level survey data, it shows that the probability of being financially included, as proxied by account ownership in financial institutions, is substantially lower across gender, income groups, and education levels in all CCA countries compared to CEE peers. Country-level data are then used to explore the determinants of this financial inclusion gap in the CCA. The analysis shows that lower financial and human development indices, weak rule of law, and lower geographical outreach (proxied by the number of ATMs per adult) in CCA countries compared to CEE peers are the main factors associated with the financial inclusion gap. This suggests that targeted policies aimed at boosting financial and human development, strengthening the rule of law, and supporting fintech solutions can broaden financial inclusion in the CCA.

The remainder of the paper is structured as follows. Section II presents stylized facts on financial inclusion in the CCA and benchmarks it against comparator CEE countries and other groups of countries. Section III provides empirical evidence on the probability of being financially included depending on individual characteristics. Section IV provides empirical evidence on determinants of financial inclusion gap in the CCA relative to CEE comparators. Section V discusses how digital technology can help enhance financial inclusion in the CCA. The last section concludes.

II. Financial Inclusion in the CCA: Stylized Facts

A. The World Bank's Global Findex database

Since 2011, the World Bank in cooperation with Gallup has conducted individual-level surveys on the ways in which adults around the world use financial services, from payments to savings and borrowing, and manage

¹ Financial inclusion and financial access are closely related concepts that are often used interchangeably. In practice, financial access is the set of conditions that makes financial inclusion possible. In this paper, we will use the term financial inclusion since our focus is on the ownership of a financial account by individuals.

² Our analysis focuses on financial inclusion of individuals, while investment activity is also influenced by the lack of financial access by small- and medium-sized enterprises. Blancher and others (2019) provide a comprehensive analysis of financial inclusion of small- and medium-sized enterprises in the Middle East and Central Asia.

³ Comparator CEE countries include: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Montenegro, North Macedonia, Poland, Romania, Serbia, the Slovak Republic, and Slovenia.

financial events such as a major expense or a loss of income (Demirguc-Kunt and others, 2021). The first survey was conducted in 2011, followed by surveys in 2014, 2017, and 2021.

Each survey covers around 1000 nationally representative respondents per country, with some exceptions, and reflects a snapshot in time based on questions that respondents answer about their habits and experiences of the previous year (Demirguc-Kunt and Klapper, 2013). The first set of indicators focuses on the ownership and use of an account at a formal financial institution, such as mechanics of their use (frequency, mode of access), their purpose (receipt of payments from work government, or family), barriers to their use, and alternatives to formal accounts (mobile money). The main indicator reflecting financial inclusion is the percentage of adults who have individual or joint ownership of a formal account, defined as an account at a formal financial institution such as a bank, credit union, cooperative, post office, or microfinance institution.

The second set of indicators focuses on saving behavior. The concept of saving is more subjective than those of account ownership and use. The survey focuses on the purposeful action of saving, surveyed by asking individuals whether they have “saved or put aside any money” in the past year.

The third set of indicators focuses on borrowing. The survey gathers data on the sources of borrowing (formal and informal), the purposes of borrowing (mortgage, emergency or health purposes, and the like), and the use of credit cards.

Finally, the survey contains information on individual characteristics, such as the age of respondents, their gender, income level (five quintiles) and education (primary, secondary, and tertiary). Each respondent carries a weight that reflects individual’s representation at the national level.

B. Financial inclusion in the CCA and comparators

Following the previous literature, we use the percentage of adults having a financial account as a proxy for financial inclusion. Figure 1 presents the evolution of financial inclusion in eight CCA countries over time (2011, 2014, 2017, and 2021). There is a clear upward dynamics, with financial inclusion expanding over time in all CCA countries. We can also observe sizeable variation across CCA countries, with financial inclusion in the last year of the sample ranging between 39.5 percent in Tajikistan and 81.1 percent in Kazakhstan.⁴

How does financial inclusion in the CCA compare at the global level? Figure 2 presents the measure of financial inclusion around the world for 2021 or the latest year for which a survey is available for the particular country. The coloring differentiates three groups of countries: CCA (8 countries), CEE (16 countries), and other countries (131 countries). As shown in the chart, financial inclusion varies widely around the world. In some countries financial inclusion reaches 100 percent, while in others it is in single digit levels. Financial inclusion in the CCA is on average lower compared to the CEE peers, suggesting that there is a gap between the two country groups.

Figure 3 shows distribution of financial inclusion across four country income groups. The median financial inclusion is the highest in high income countries, followed by upper middle income, lower middle income, and low-income countries. In addition, financial inclusion varies within income groups, suggesting that there are other country-specific factors affecting financial inclusion. We will turn to these country-specific characteristics next.

⁴ Data is missing for 2021 in Azerbaijan, and for 2014 and 2021 in Turkmenistan.

C. Financial inclusion and country-specific characteristics

Following Rojas-Suarez and Gonzales (2010), Rojas-Suarez and Amado (2014) and Rojas-Suarez (2016), we present the association between financial inclusion and several country-specific constraints impairing financial inclusion.⁵

The first factor is *financial development*. The level of financial development is a complex measure that can be proxied by a multidimensional index, focusing on various aspects of financial development, such as debt access, and efficiency of financial institutions and financial markets (Sahay and others, 2015b; Sviryzdenka, 2016). Greater financial development is conducive to greater financial inclusion and can contribute to higher growth in the CCA (Poghosyan, 2022). Figure 4 presents the association between financial inclusion and financial development proxied by IMF's multidimensional index. As expected, the association is positive. The level of financial development in the CCA lags that of CEE comparators, suggesting that this determinant may play an important role in explaining the financial inclusion gap.

The second factor is *socio-economic development*. Low levels of social development are often associated with lower demand for and supply of financial services, since financial exclusion of people is often part of a wider social exclusion, which involves living standards, level of education, life expectancy, etc. Figure 5 presents the correlation between financial inclusion and human development index developed by UNDP that summarizes the level of social development along three dimensions: (i) long and healthy life (life expectancy at birth), (ii) knowledge (expected years of schooling, mean years of schooling), and (iii) standards of living (GNI per capita measured in PPP USD). The figure displays a positive association between the two variables. The level of human development in the CCA generally lags that of CEE comparators, suggesting that this determinant may hamper financial inclusion in the CCA.

Another proxy for socio-economic development is income inequality. In countries with highly skewed income distribution, powerful interests are likely to block financial sector reforms that can support financial inclusion. Figure 6 presents the correlation between financial inclusion and income inequality as measured by the Gini coefficient. As shown in the figure, there is a negative association between the two variables. It is also interesting to note that the level of income inequality in the CCA is comparable to that of CEE comparators, but CEE comparators have larger level of account ownership.

The third factor is the *quality of institutions* conducive to the usage of financial services. We proxy the country's quality of institutions by the indicator of the rule of law from the World Bank Governance Indicators, which measures agents' confidence in and commitment to abiding by the rules of society, the quality of contract enforcement, the police, the courts and the likelihood of crime and violence. When law enforcement is strong, contracts between creditors and debtors are observed, giving depositors incentives to entrust their savings to the formal financial sector and increases bankers' willingness to lend to smaller and (relatively) riskier borrowers. Figure 7 presents the correlation between financial inclusion and (inverse) measure of the rule of law termed as weak rule of law (with higher numbers indicating weaker institutional quality). As shown in the figure, there is a negative association between the two variables and CCA countries tend to be characterized by a weaker rule of law compared to their CEE peers.

The fourth factor is *macro-financial stability*. Macroeconomic instability leading to financial crises can lead to reduction in financial services provision as banks strive to restore their capitalization through reduction in credit supply. Similarly, macroeconomic instability can discourage economic agents from entrusting their savings to the formal financial sector. Severe macro-financial problems can result in large losses for depositors and memories from these losses can linger for a long period of time. Figure 8 presents the correlation between financial inclusion and output growth volatility (approximated by the standard deviation over the period 2000-

⁵ The association should be interpreted with caution given the small number of observations in the cross-section.

2021). As shown in the figure, there is a negative association between the two variables. However, output growth volatility in the CCA countries is comparable to that of their CEE peers, which suggests that this factor may not play a big role in hampering financial inclusion in the CCA.

The fifth factor is the *inefficiency of the financial sector*. More inefficient financial sectors are characterized by higher costs of financial access. Indeed, many survey respondents report costs of opening and maintaining financial accounts as prohibitive. The operational inefficiency of the financial sector can be proxied by the ratio of overhead costs to total assets. Figure 9 presents the association between financial inclusion and overhead costs. As shown in the figure, the association between the two variables is negative. However, the level of overhead costs varies widely across CCA countries and tends to be on average comparable to that of CEE peers.

Another variable that can be conducive to inefficiency in the banking sector is its level of concentration. Figure 10 presents the association between financial inclusion and banking sector concentration. The association is not that strong; and banking sector concentration varies across CCA countries. Similar to overhead costs, concentration in the CCA countries tends to be on average comparable to that of CEE peers, suggesting that this factor may not play a big role in hampering financial inclusion in the CCA.

A related variable is the geographical outreach of the financial sector. This includes the number of bank branches and ATMs per adult population. Both variables proxy access to financial services, which enables financial inclusion. Figure 11 shows the association between financial inclusion and bank branches per 100,000 adults, while Figure 12 shows the association between financial inclusion and ATMs per 100,000 adults. In both cases, the association is positive, confirming that higher financial access proxied by availability of bank branches and ATMs is association with greater financial inclusion. The level of financial access varies across CCA countries but tends to be on average lower compared to that of CEE, suggesting that this factor may play a role in hampering financial inclusion.

III. Financial Inclusion and Individual Characteristics: Empirical Analysis

A. Empirical Specification

Drawing on stylized facts above, this section quantifies how individual characteristics are associated with the probability of financial inclusion (Allen and others, 2012; Rojas-Suarez and Amado, 2014). The analysis is performed using individual-level survey data from the Global Findex database for periods 2011, 2014, 2017, and 2021.

The empirical specification takes the following form:

$$y_{ijt}^* = \beta_0 + \sum_{k=1}^n \beta_k * x_{ijt}^k + \rho_t' + \varepsilon_{ijt}, \quad (1)$$

$$y_{it} = 1 \quad \text{if } y_{it}^* > 0,$$

$$y_{it} = 0 \quad \text{if } y_{it}^* \leq 0.$$

where individuals, countries, and years are indexed by i , j , and t , respectively; y_{ijt}^* is a latent variable, x is a vector of k individual level characteristics (age, gender, income quintile, education level), ρ_t' are time dummies

for 2011, 2014, 2017, and 2021, and ε is a normally distributed error term with zero mean and variance of equal to 1. We estimate (1) as a weighted probit model with maximum likelihood and robust standard errors. The dependent variable is a dummy taking a value of 1 if the individual has a financial account. Each observation enters the equation with a weight that reflects individual's representation at the national level.

B. Estimation Results

Table 1 presents estimation results for individual CCA countries (to control for country specific characteristics) and a panel of CEE comparators. Coefficients on individual characteristics have expected signs in most regressions.

- Age has a hump-shaped relationship, as shown by a positive linear coefficient and negative quadratic coefficient. The probability of being financially included is rising with age until a certain point (except Azerbaijan, Georgia, and Tajikistan).
- There is mixed evidence on gender bias in financial inclusion (Figure 13). Being a female is an obstacle to financial inclusion in five CCA countries (Turkmenistan, Tajikistan, Azerbaijan, Armenia, and Uzbekistan). In these countries, women are 2-5 percent less likely to have a financial account relative to men. Overall, the probability of having a financial account for both men and women is much lower in the CCA compared to the CEE peers.
- Richer individuals are more likely to have a financial account (Figure 14). The probability of being financially included in the poorest quintile is ranging between 14 percent (Turkmenistan) and 53 percent (Kazakhstan), while the probability of being financially included in the richest quintile is ranging between 19 percent (Turkmenistan) and 64 percent (Kazakhstan). In all CCA countries, the probability of being financially included in poorest and richest income group is lower compared to CEE peers.
- More educated individuals are more likely to have a financial account (Figure 15). The probability of being financially included is ranging between 14 – 53 percent for individuals with primary education, 13 – 56 percent for individuals with secondary education, and 12 – 58 percent for individuals with tertiary education. Across all levels of education, the probability of being financially included is lower compared to CEE peers.
- Finally, most CCA countries have experienced an increase in the probability of financial inclusion between 2011-2021 (Figure 16). This increase has ranged between 1 – 14 percentage points for individual CCA countries. CEE peers have recorded a larger average increase of 20 percentage points over the same period.

In sum, the above analysis provides evidence of a financial inclusion gap between CCA countries and CEE comparators across individual characteristics. In addition, while financial inclusion in the CCA has increased over time, the pace of this increase was slower compared to the increase observed in the CEE peers. In the next section, we analyze the drivers of the financial inclusion gap between CCA and CEE.

IV. Determinants of the Financial Inclusion Gap in the CCA

A. Empirical Specification

This section quantifies how country-specific determinants affect the financial inclusion gap in the CCA. Following Rojas-Suarez (2014) and Rojas-Suarez and Amado (2016), we use the following empirical specification:

$$f_j = \beta_0 + \beta_1 * CCA + \beta_2 * Other_countries + \sum_{m=1}^n \gamma_m * x_j^m + \varepsilon_j \quad (2)$$

where j denotes a country, f is the percentage of adult population that holds an account at a formal financial institution, x is a vector of m country-specific determinants of financial inclusion, CCA is a dummy variable for CCA countries, $Other_countries$ is a dummy variable for countries other than CCA countries and CEE comparators, and ε is the i.i.d. error term.

B. Estimation Results

Table 2 presents estimation results. The first column shows results with two dummy variables and no country-specific controls. Columns [2] – [10] incrementally add one control per column. Adjusted R-squared is reasonably high in the last column, suggesting that country-specific controls have relatively strong explanatory power.

The coefficient on the CCA dummy in column (1) measures the difference between the average financial inclusion in the CCA and CEE, which reflects the financial inclusion gap (36.3 percentage points).⁶ This coefficient gradually declines in absolute terms with the inclusion of country-specific controls in columns (2) – (10) and reaches 20.4 percentage points in the last column, suggesting that country-specific controls help explain a large part of the financial inclusion gap.

Figure 17 presents the decomposition of financial inclusion gap into its country-specific determinants and residual gap.⁷ The decomposition suggests that the financial development index, the human development index, the weak rule of law, and geographical outreach proxied by the ATMs per 100,000 adults are the most important factors associated with the financial inclusion gap. Together, they explain slightly less than half of the financial inclusion gap. As expected, the other country-specific factors (income inequality, growth volatility, bank concentration, overhead costs) have insignificant impact, since their correlations with account ownership tend to be weaker and their levels in the CCA are broadly comparable to those of CEE peers. The residual gap is relatively large, suggesting that there are additional factors associated with the financial inclusion gap on top of the ones included in the model.

V. Can Digital Technology Help Enhance Financial Inclusion in the CCA?

Revolutionary developments in digital technology can help enhance financial inclusion in the CCA through the use of digital financial services, such as electronic payments and services (Demirguc-Kunt and others, 2019). This requires development of an appropriate payment system, good physical infrastructure, appropriate regulations, and consumer protection safeguards. Lessons from advanced economies can be useful here, but some emerging and developing economies have also made progress recently. For example, mobile phone carriers providing financial services and mobile money accounts have been widely used in Africa and Asia.

World Bank (2020) finds that fintech has tremendous potential for financial inclusion gains in the region. Drivers propelling fintech adoption include mobile and internet access, as well as low costs of computing, fast

⁶ The financial inclusion gap in the CCA countries is much larger compared to the financial inclusion gap of 13.7 percentage points estimated for Latin American countries by Rojas-Suarez (2016).

⁷ Estimations are performed using coefficients from specification (2) and the following formula: $Gap = \sum_{m=1}^n \hat{\gamma}_m * \bar{x}^m + \hat{\beta}_1$, where $\hat{\gamma}_m$ is the coefficient estimate for country-specific control m , \bar{x}^m is the average value of country-specific control m , and $\hat{\beta}_1$ is the coefficient estimate of the CCA dummy (residual gap).

connectivity, mass data storage, and advancements in cloud computing. According to the report, lack of competition in the payments has not provided incentives to lower costs for electronic payments and offer more customized products, while lack of trust in financial institutions remains a barrier for innovation on the supply side. Fintech offers an opportunity to address unmet needs for financial services, particularly related to high costs of international remittances, inefficiencies in the provision of domestic payments, and lack of financial access by small- and medium-sized enterprises. Fintech can reduce the costs associated with electronic payments and adapt platforms to user preferences, encouraging the digitalization of payments.

Figure 18 presents the share of adults owning a mobile phone in the CCA and using it for digital transactions. The mobile phone ownership rate in the CCA is ranging between 75 percent in Uzbekistan and 94 percent in Armenia. It is much larger than the rate of financial account ownership, which provides opportunities to expand financial inclusion, including through fintech, and reduce reliance on cash payments. However, the use of mobile phones for digital transactions lags behind phone ownership. For instance, the share of adults that have made or received a digital payment is ranging between 20 and 78 percent, the share of adults that have used mobile phone to pay bills on internet is ranging between 9 and 51 percent, and the share of adults that have used mobile phone to make a utility payment is ranging between 2 and 41 percent, across CCA countries. Therefore, there is scope to expand financial inclusion through a more widespread use of mobile phones for financial transactions by providing unbanked mobile phone users with Internet access and digital financial services. The rise of the Kaspi bank – an Almaty-based service provider that had a successful IPO in 2020 – offers a great case study on how fintech can contribute to expanding financial access and literacy in the CCA.

Despite numerous opportunities, fintech solutions can also exacerbate risks. Examples include vulnerability to cyber-attacks, money laundering and terrorist financing, and threats to data privacy and consumer protection. Also, fintech requires strong regulatory and supervisory framework and can create an uneven playing field between established financial institutions and fintech companies. Regulators in the CCA may be ill-equipped to address these challenges; and regulatory and supervisory risks can translate into increased financial stability risks.

VI. Conclusions

Financial inclusion plays important role in economic growth and development and poverty reduction. This paper builds on the existing literature to analyze financial inclusion in the CCA. It quantifies financial inclusion in the region, proxied by the percentage of adults holding a financial account, using the World Bank's Global Findex database, and compares it with CEE peers. The analysis is performed using individual-level surveys and country-level aggregated data.

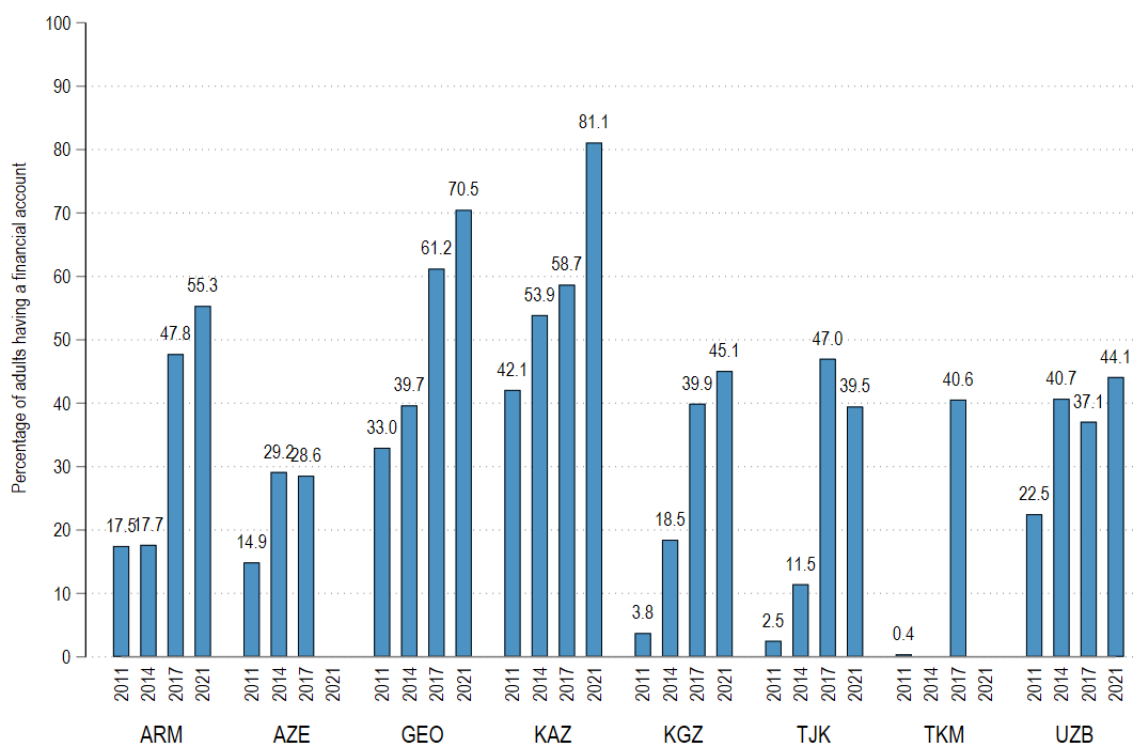
The analysis shows that CCA countries suffer from a financial inclusion gap when compared to CEE peers. At the individual level, the probability of holding a financial account across gender and income groups, and education levels, is lower in CCA countries compared to CEE peers. While financial inclusion in the CCA has increased over the sample period under consideration (2011-2021), this increase has been slower compared to that of CEE comparators.

At the country level, measures of socio-economic development, quality of institutions, macro-financial stability, and financial sector efficiency play a role in driving the financial inclusion gap. The empirical decomposition suggests that the lower financial and human development indices, the weaker rule of law, and lower geographical outreach proxied by the ATMs per 100,000 adults in the CCA countries compared to CEE peers are the main factors associated with the financial inclusion gap.

The above suggests that targeted policies aimed at boosting financial and human development, strengthening the rule of law and supporting fintech solutions can broaden financial inclusion in the CCA. Indeed, the relatively high ratio of mobile phone ownership (exceeding that of financial account ownership by a large

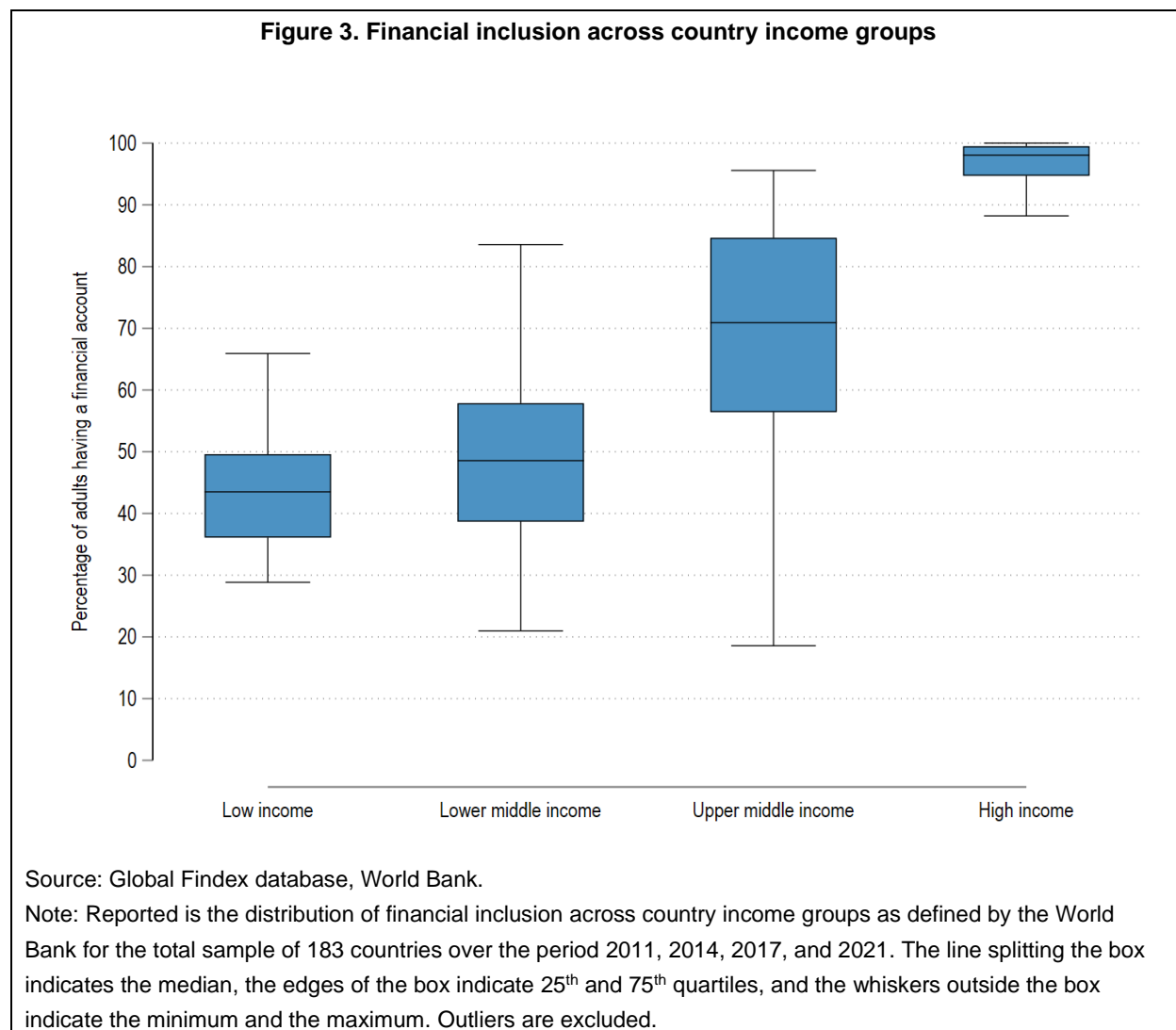
margin) provides an opportunity to deepen financial inclusion through a more widespread use of digital payments by unbanked users. However, fintech's benefits should be weighed against regulatory and supervisory challenges that may heighten financial stability risks. Therefore, the development of appropriate payment systems, physical infrastructure, and regulatory frameworks, including as regards consumer protection safeguards, are important priorities in many CCA countries.

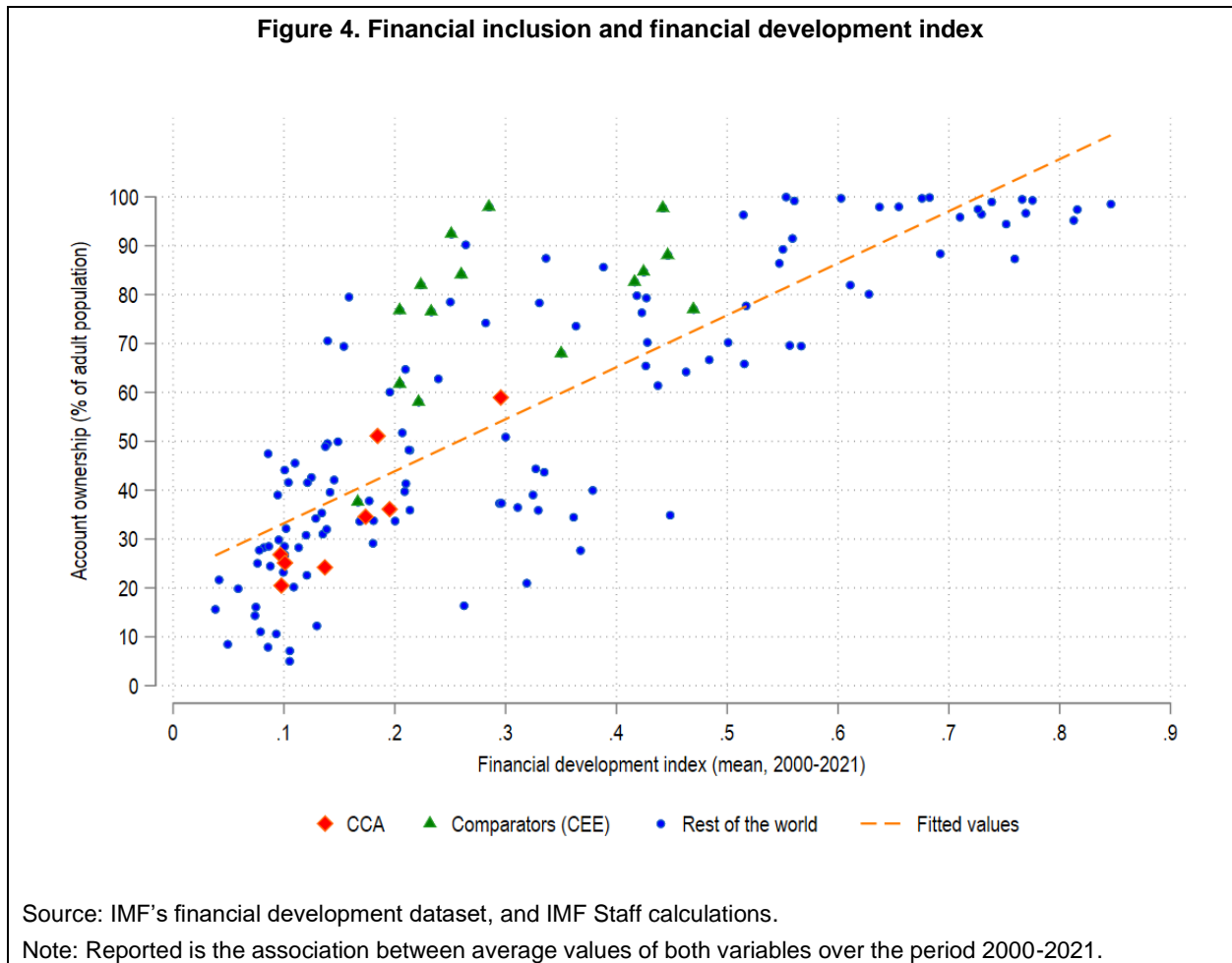
Figure 1. CCA: Financial inclusion over time

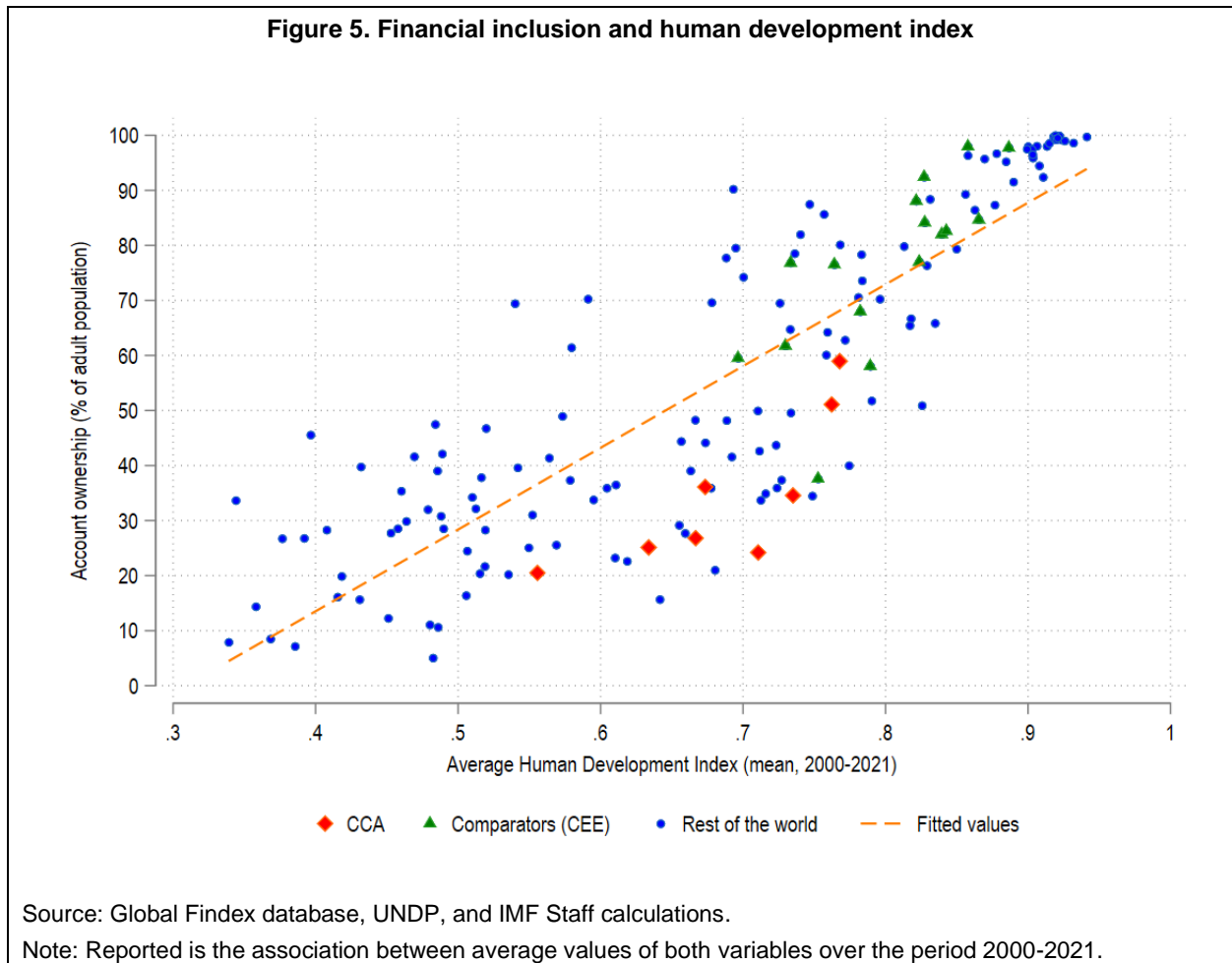


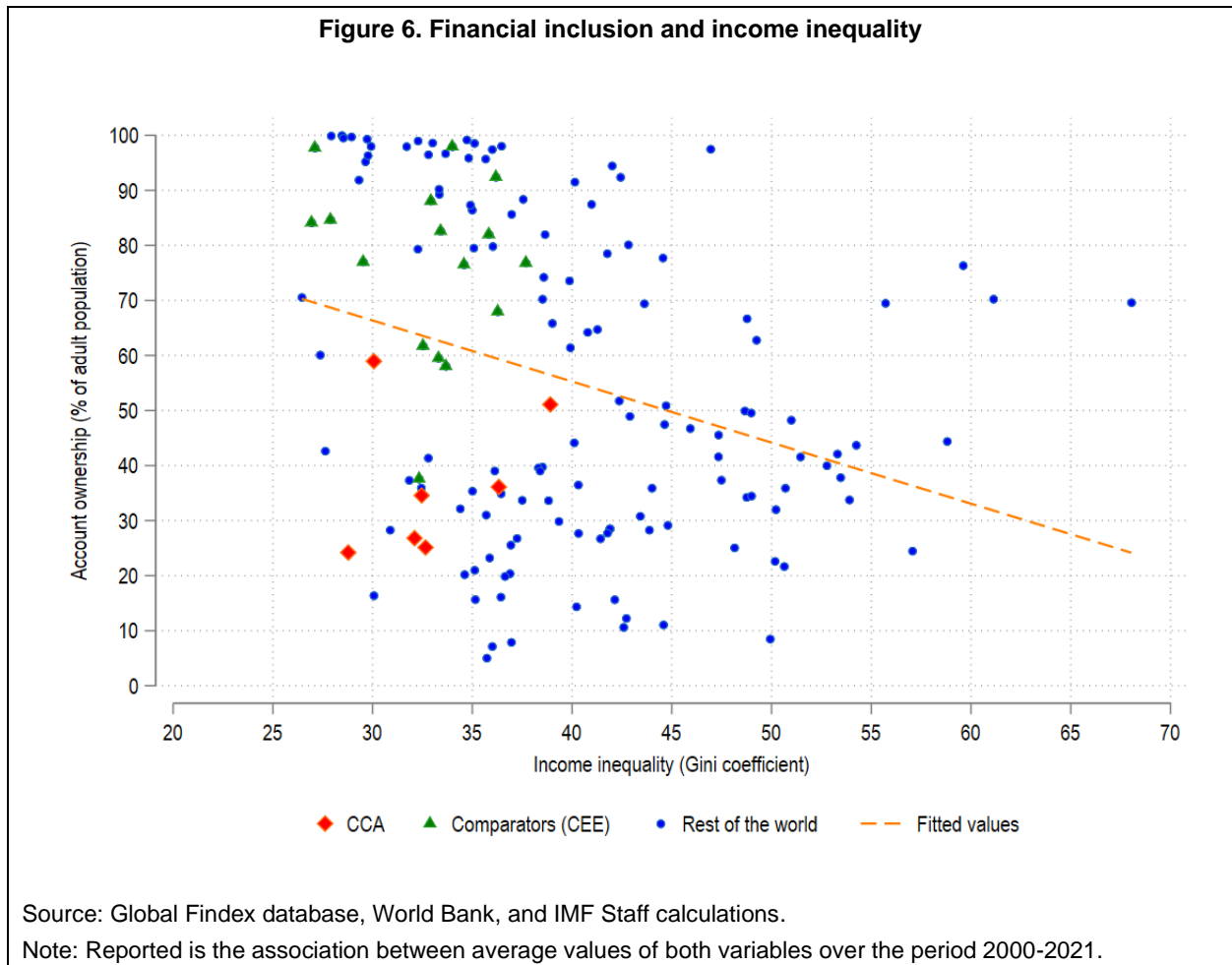
Source: Global Findex database, World Bank.

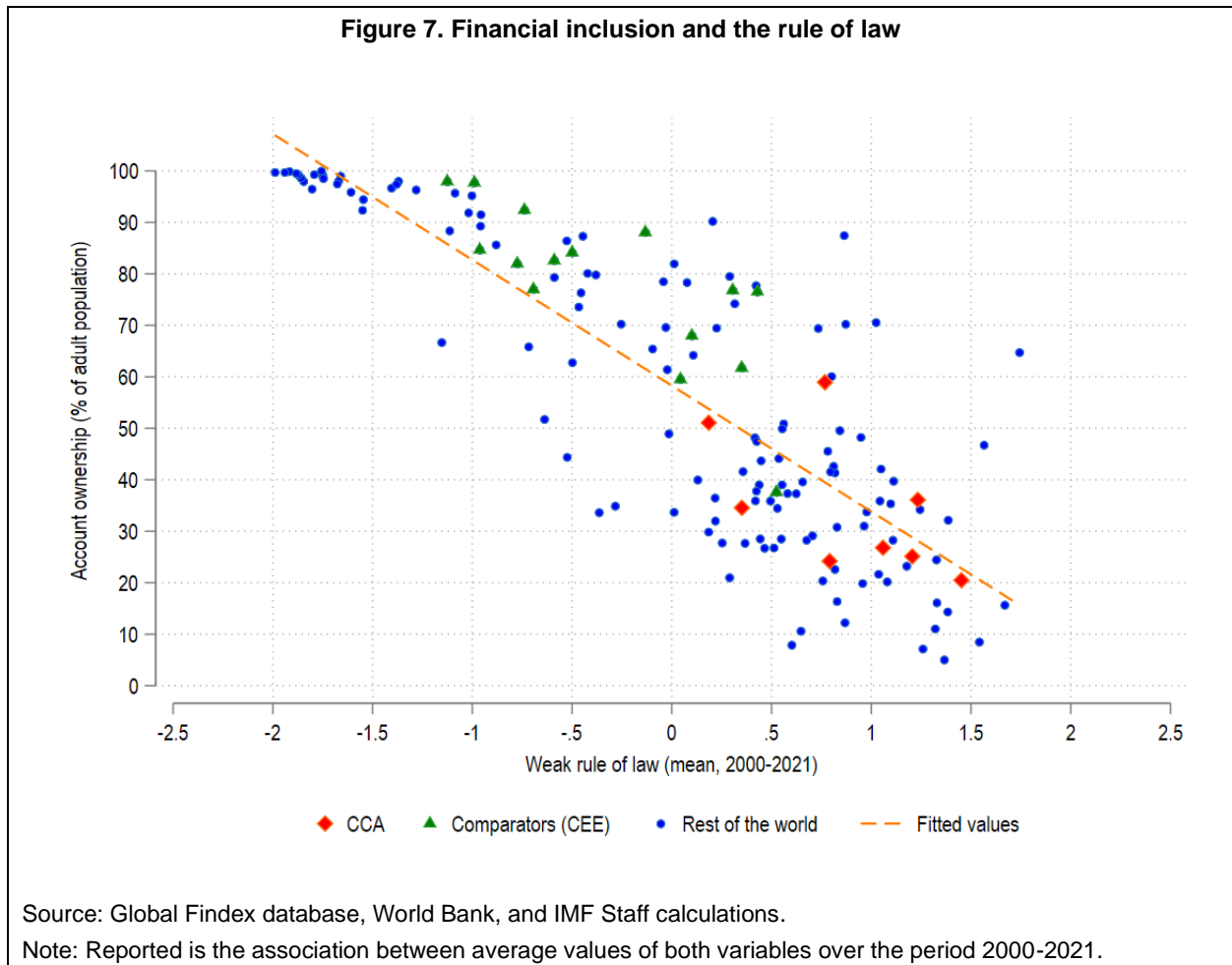
Note: Reported is the percentage of adults who have individual or joint ownership of a formal account, defined as an account at a formal financial institution such as a bank, credit union, cooperative, post office, or microfinance institution.

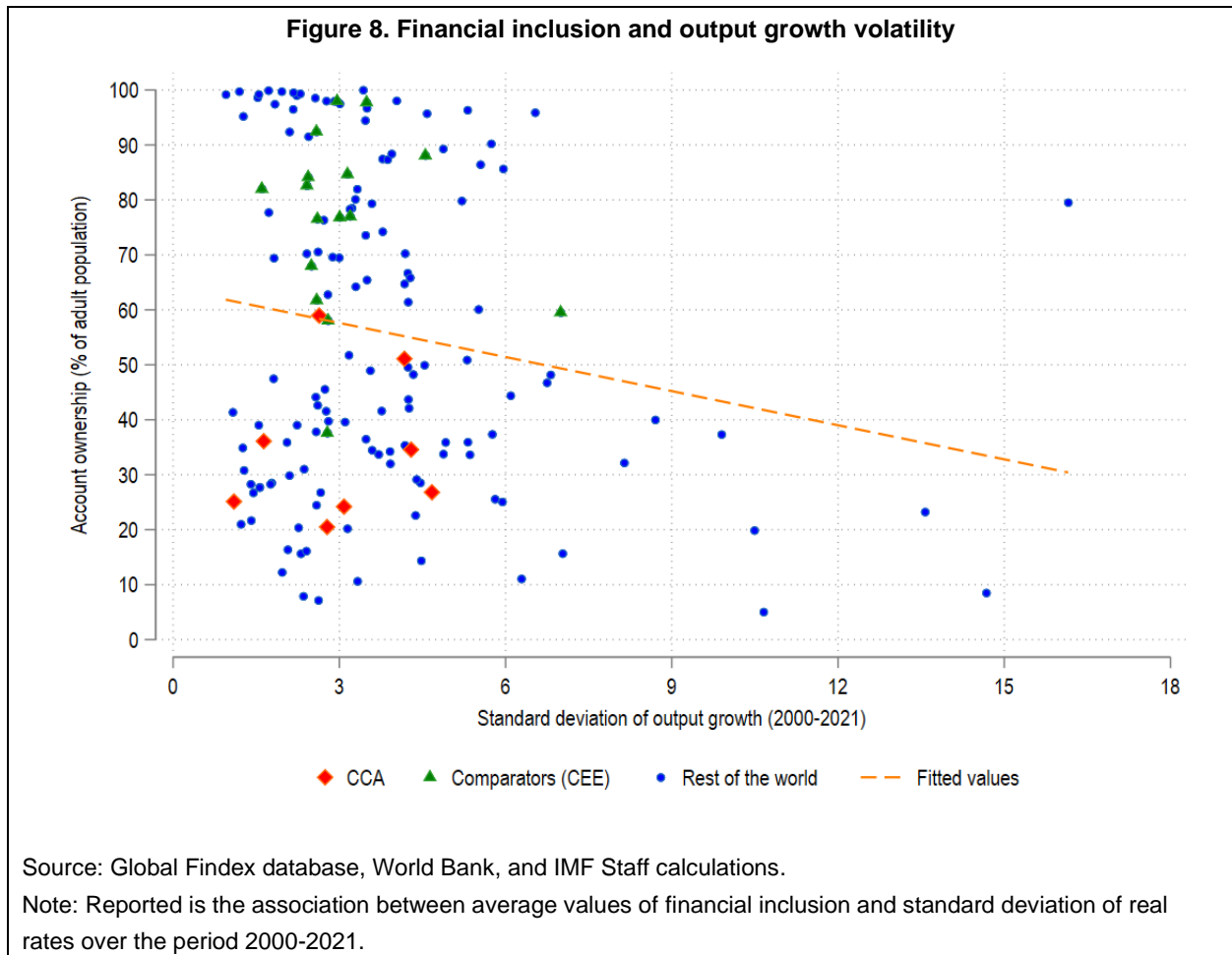


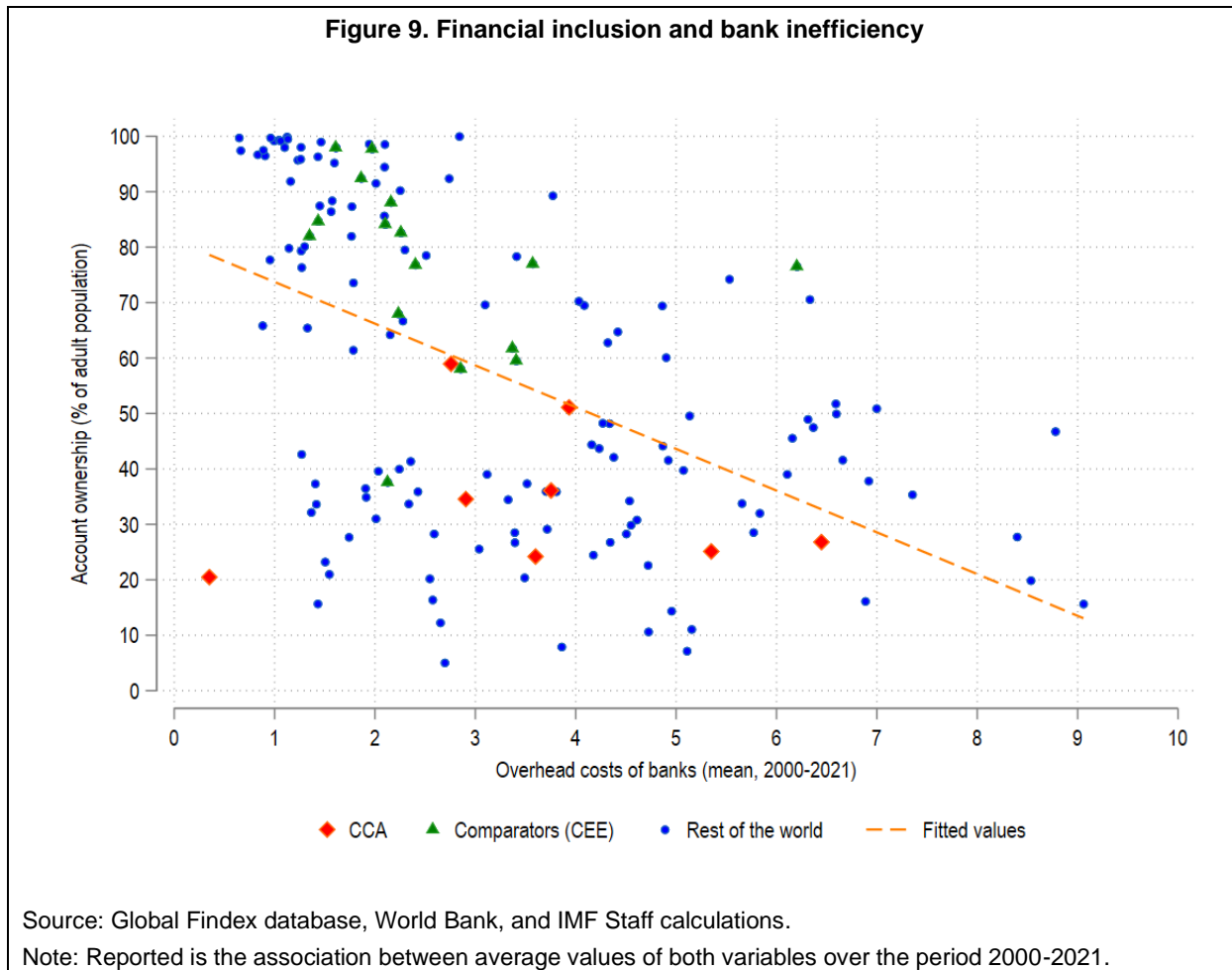


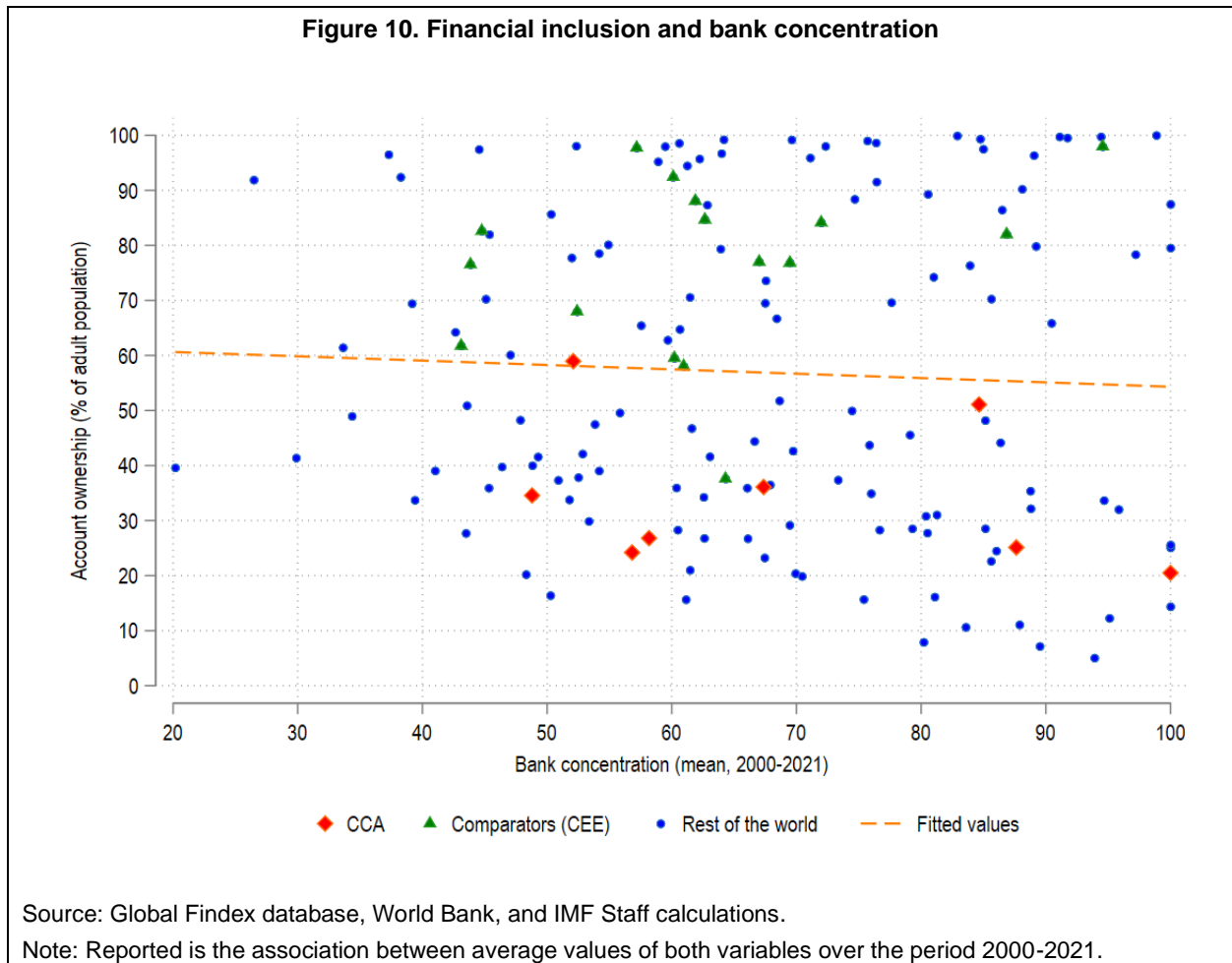


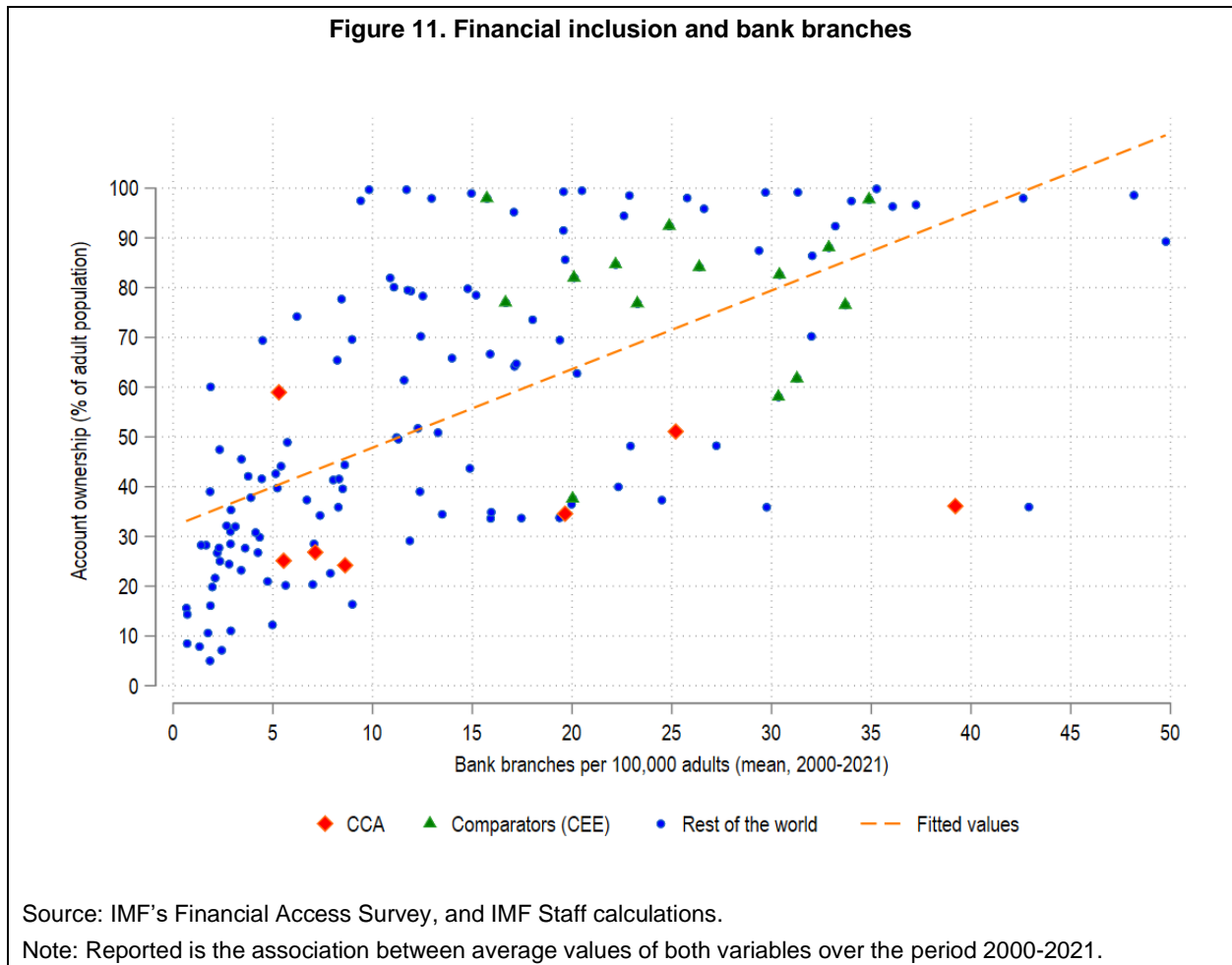


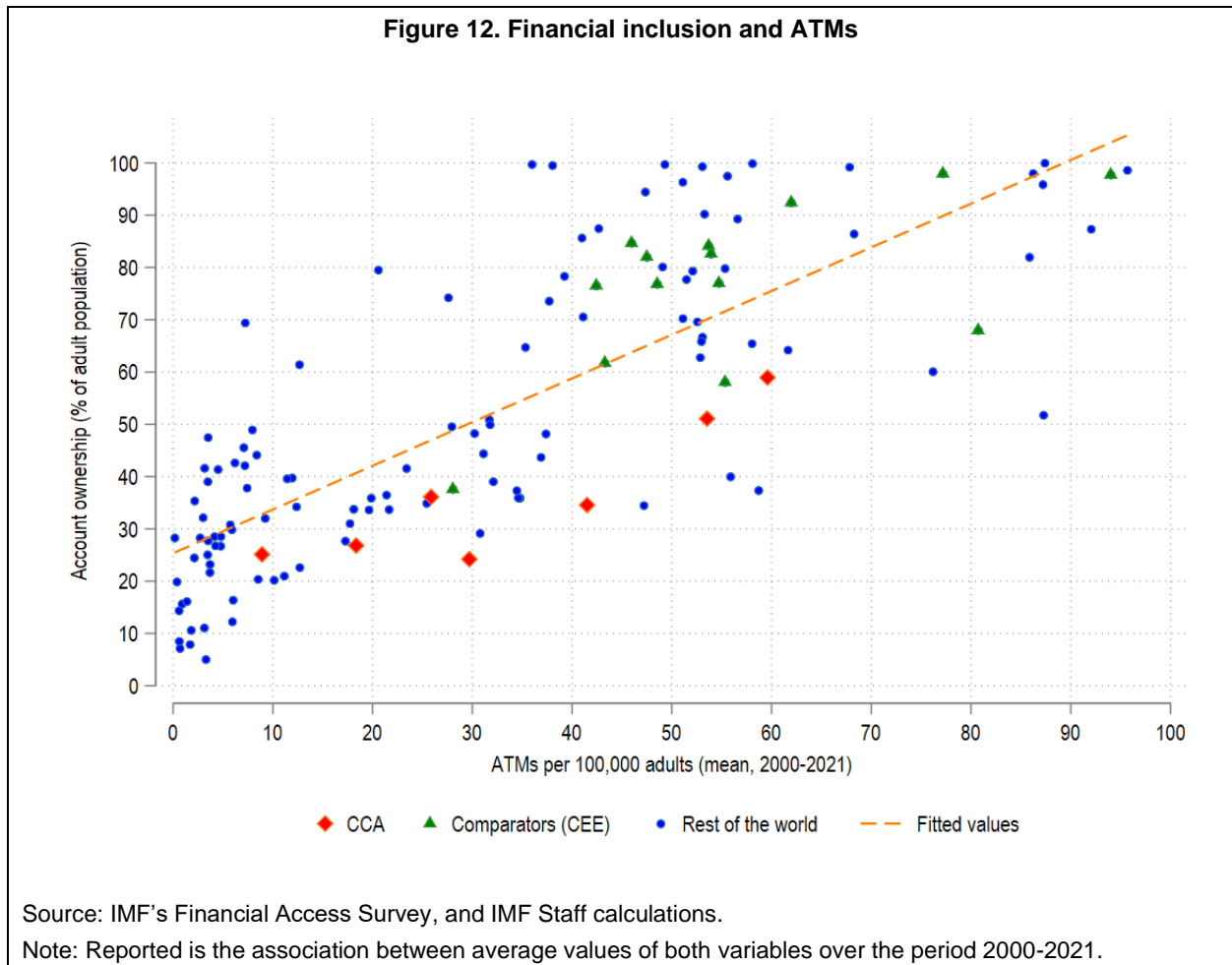












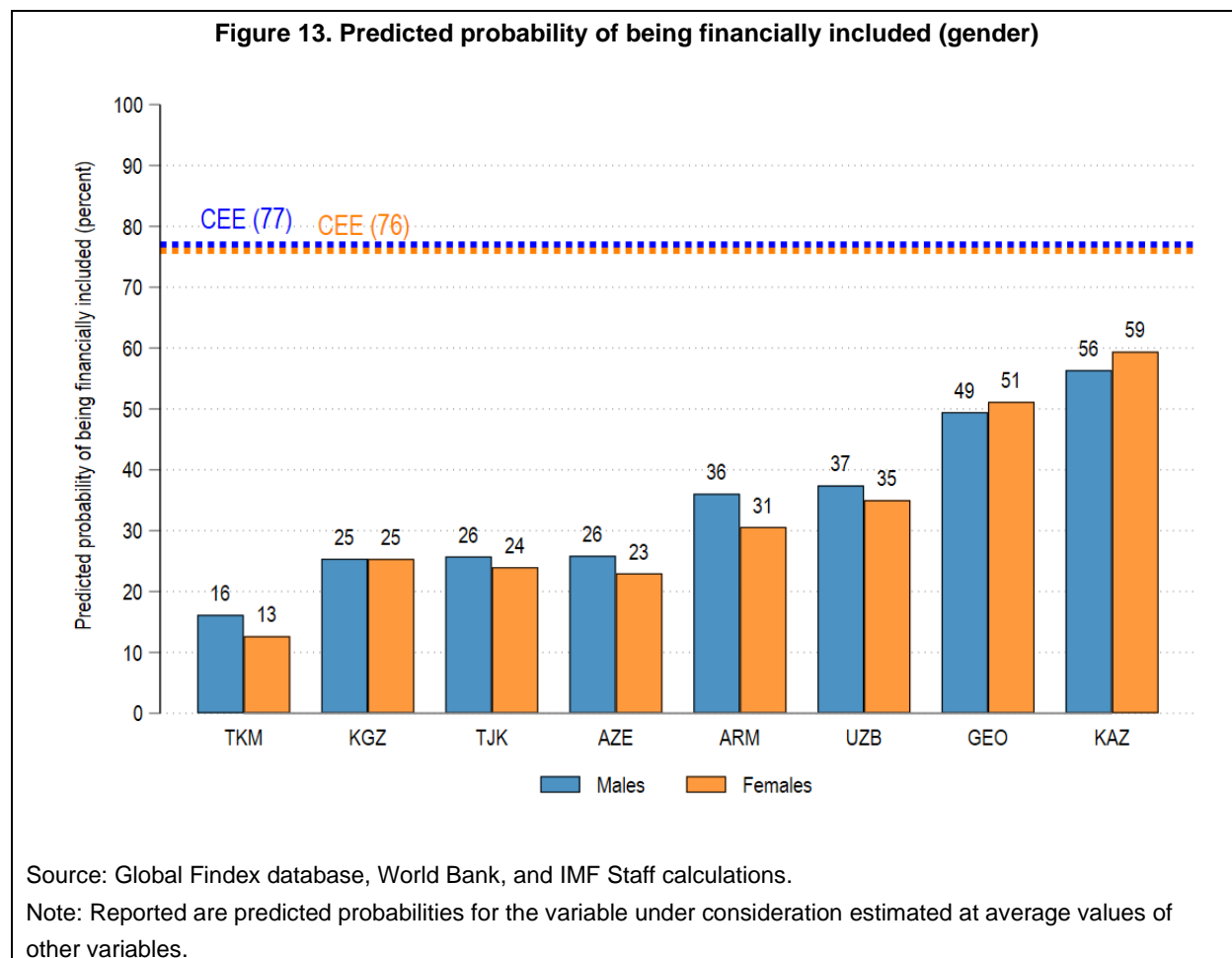
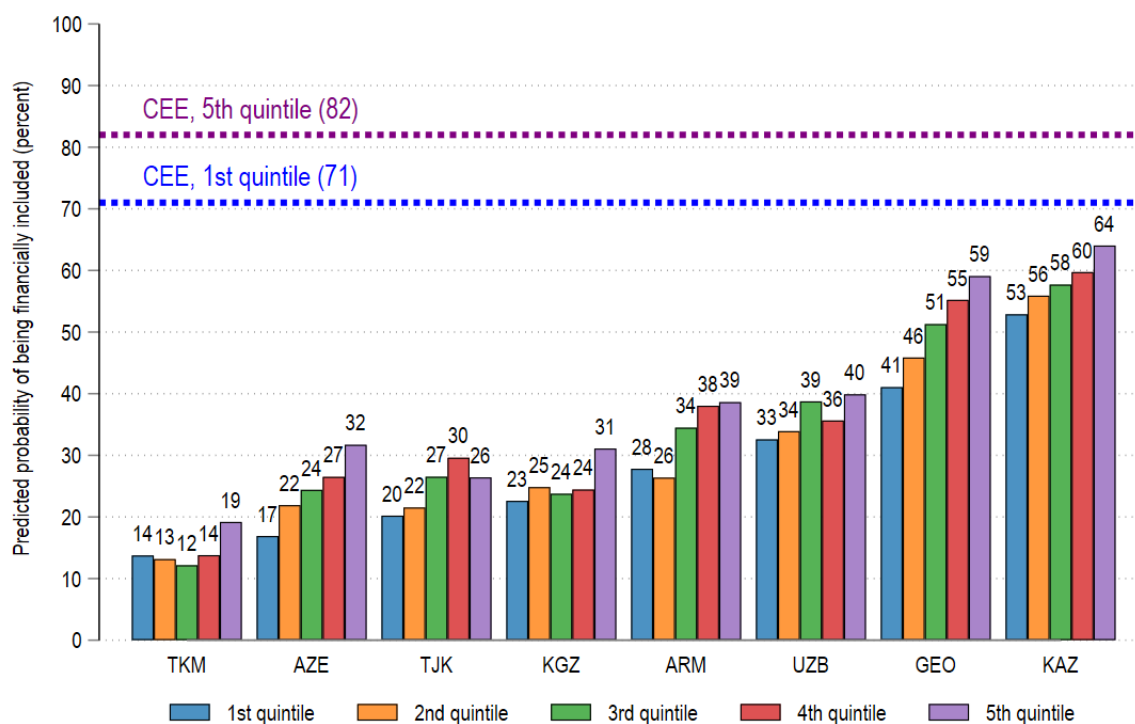


Figure 14. Predicted probability of being financially included (income group)



Source: Global Findex database, World Bank, and IMF Staff calculations.

Note: Reported are predicted probabilities for the variable under consideration estimated at average values of other variables.

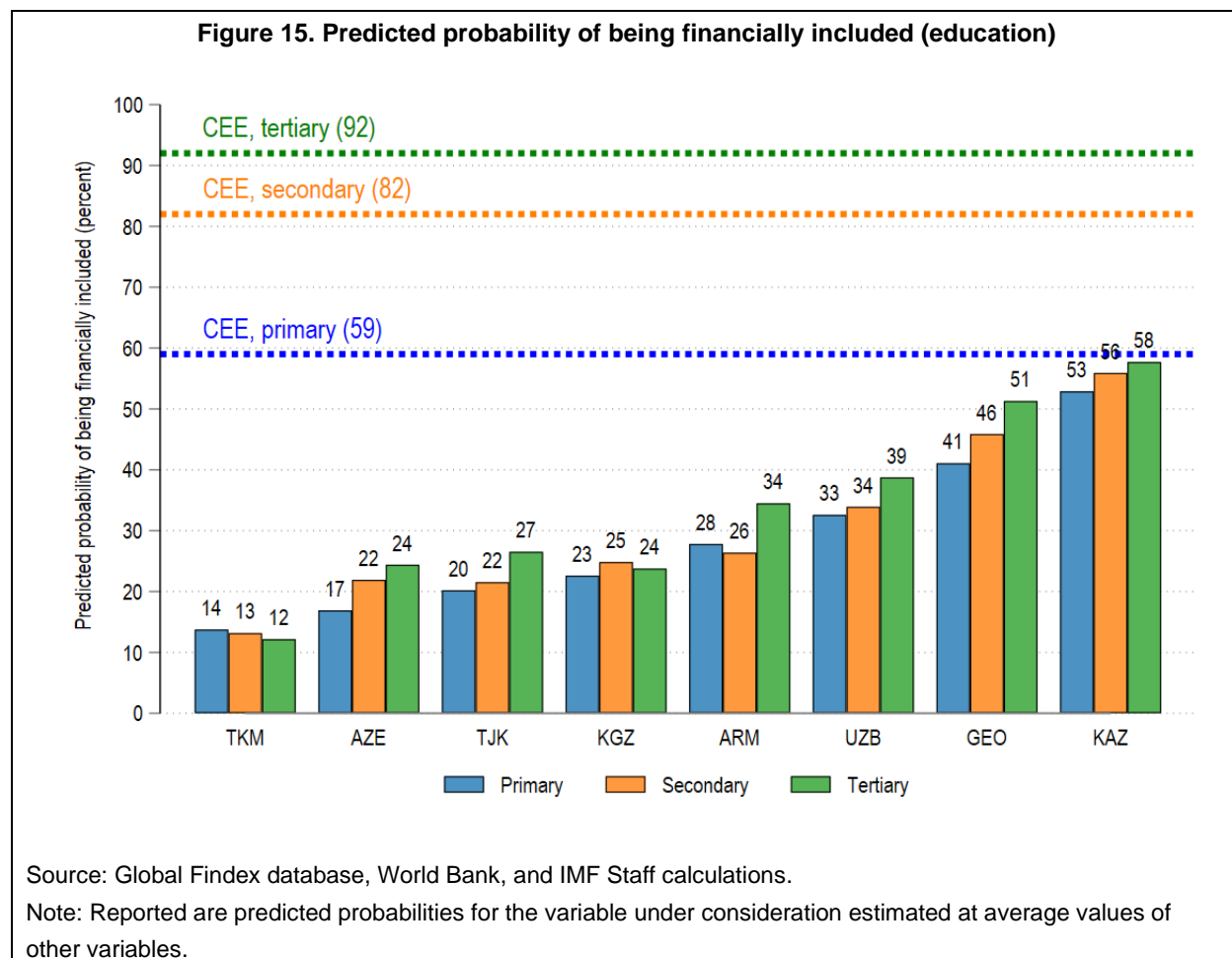
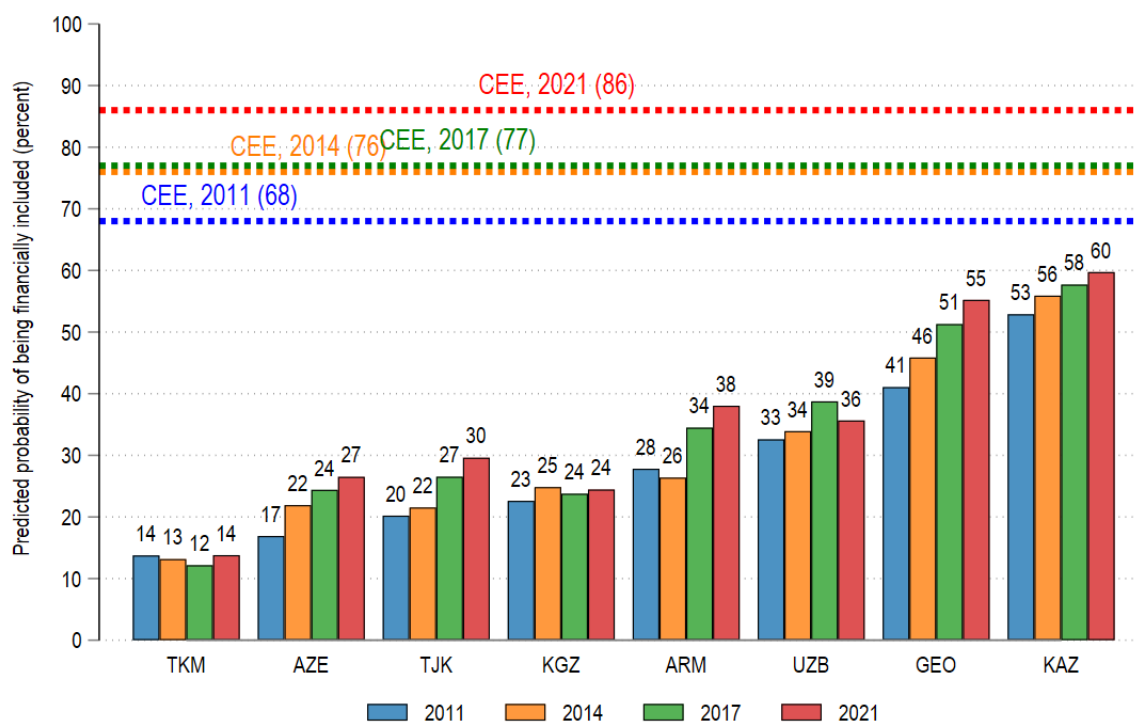


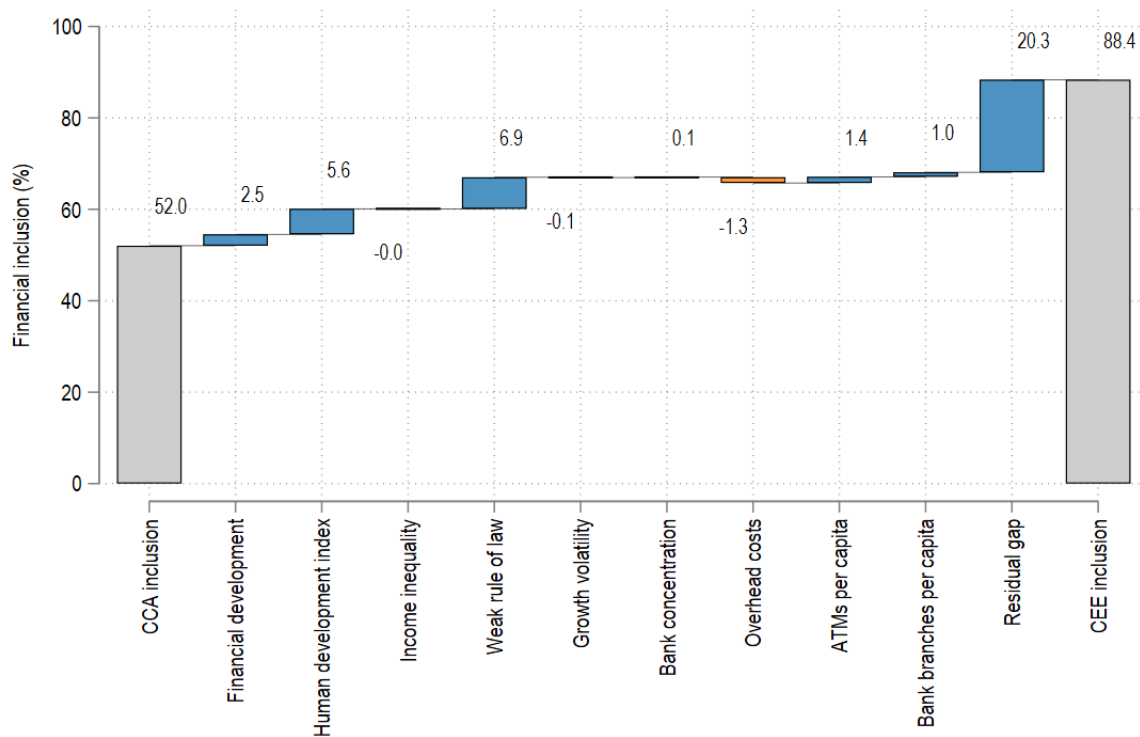
Figure 16. Predicted probability of being financially included (over time)



Source: Global Findex database, World Bank, and IMF Staff calculations.

Note: Reported are predicted probabilities for the variable under consideration estimated at average values of other variables.

Figure 17. Decomposition of the financial inclusion gap between the CCA and CEE comparators



Source: Global Findex database, World Bank, and IMF Staff calculations.

Note: The financial inclusion gap between the CCA and CEE comparators is 33.6 percent, which is the difference between the two grey bars (87 minus 53.4). It is decomposed into contributions from country-specific factors and residual gap (which is insignificant in the regression).

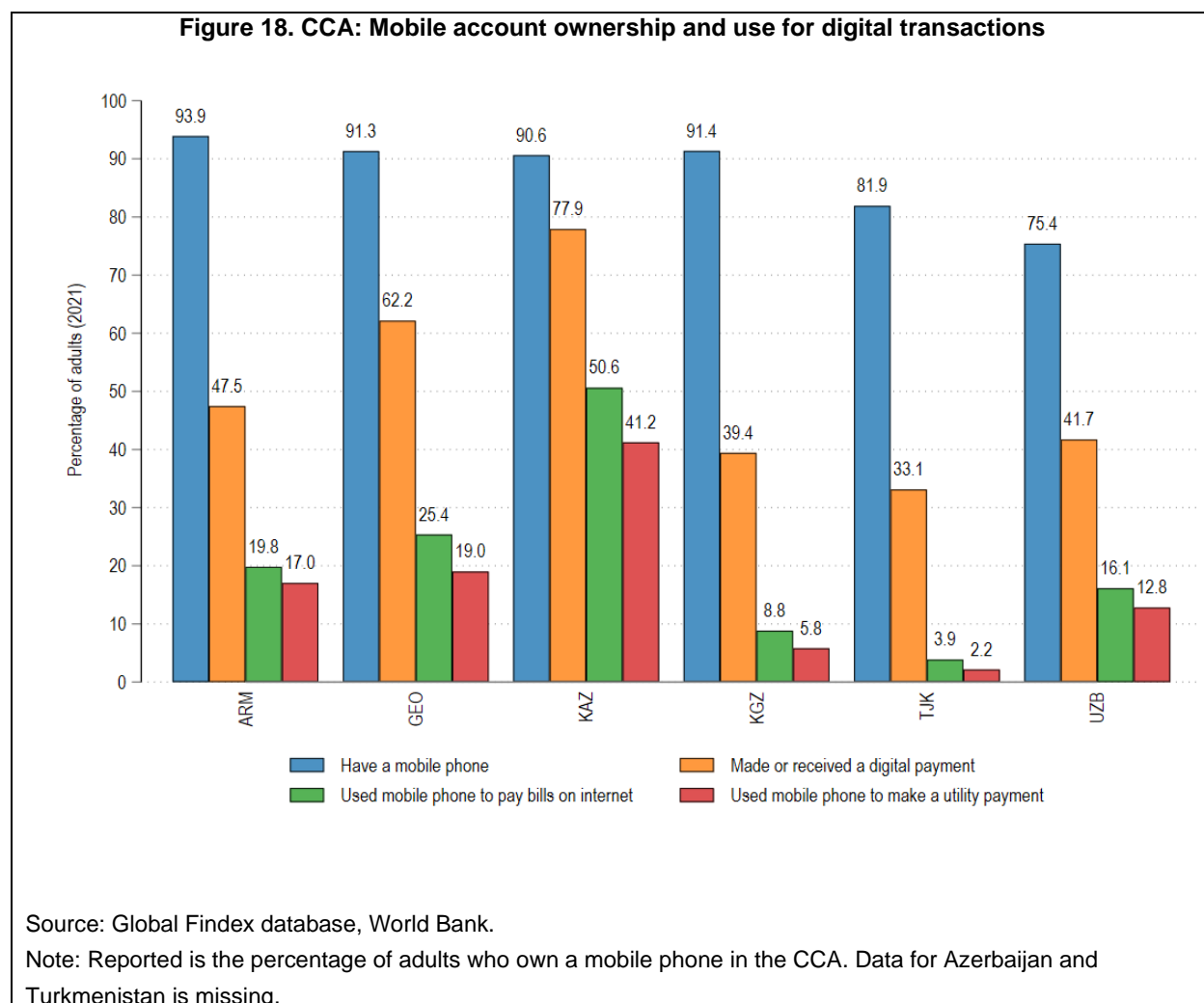


Table 1. Estimation results: Financial inclusion and individual characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	ARM	AZE	GEO	KAZ	KGZ	TJK	TKM	UZB	CEE
Age	0.050*** (0.008)	-0.002 (0.010)	-0.016* (0.009)	0.035*** (0.008)	0.027*** (0.009)	0.011 (0.009)	0.174*** (0.027)	0.048*** (0.008)	0.061*** (0.002)
Age squared	-0.001*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	-0.000*** (0.000)	-0.000** (0.000)	0.000 (0.000)	-0.002*** (0.000)	-0.000*** (0.000)	-0.001*** (0.000)
Female	-0.180*** (0.052)	-0.113* (0.060)	0.056 (0.050)	0.093* (0.050)	-0.001 (0.057)	-0.073 (0.060)	-0.291*** (0.087)	-0.074 (0.051)	-0.056*** (0.015)
2nd income quintile	-0.051 (0.088)	0.222** (0.103)	0.157* (0.085)	0.090 (0.080)	0.088 (0.094)	0.059 (0.101)	-0.050 (0.144)	0.042 (0.084)	0.117*** (0.024)
3rd income quintile	0.223*** (0.085)	0.320*** (0.104)	0.330*** (0.083)	0.145* (0.080)	0.046 (0.095)	0.269*** (0.097)	-0.137 (0.147)	0.189** (0.080)	0.208*** (0.024)
4th income quintile	0.335*** (0.082)	0.399*** (0.100)	0.456*** (0.082)	0.206*** (0.080)	0.072 (0.092)	0.389*** (0.097)	0.004 (0.144)	0.095 (0.080)	0.293*** (0.024)
5th income quintile	0.353*** (0.083)	0.581*** (0.100)	0.581*** (0.080)	0.340*** (0.080)	0.316*** (0.091)	0.265*** (0.095)	0.425*** (0.138)	0.223*** (0.079)	0.424*** (0.025)
Secondary education	0.097 (0.086)	0.291*** (0.096)	0.368*** (0.086)	0.587*** (0.091)	0.468*** (0.092)	0.111 (0.075)	1.029*** (0.270)	0.446*** (0.073)	0.731*** (0.018)
Tertiary education	0.671*** (0.096)	1.205*** (0.120)	0.935*** (0.095)	1.180*** (0.102)	1.006*** (0.105)	0.718*** (0.095)	2.001*** (0.279)	1.288*** (0.102)	1.243*** (0.027)
Year=2014	-0.001 (0.077)	0.610*** (0.080)	0.204*** (0.066)	0.423*** (0.065)	0.939*** (0.096)	0.731*** (0.106)	0.828*** (0.182)	0.556*** (0.073)	0.260*** (0.020)
Year=2017	0.858*** (0.072)	0.609*** (0.082)	0.797*** (0.069)	0.578*** (0.066)	1.575*** (0.092)	1.925*** (0.100)	2.911*** (0.164)	0.412*** (0.071)	0.326*** (0.020)
Year=2021	1.044*** (0.076)		1.078*** (0.074)	1.240*** (0.075)	1.659*** (0.091)	1.697*** (0.101)		0.592*** (0.074)	0.715*** (0.024)
Constant	-2.205*** (0.184)	-2.359*** (0.210)	-1.639*** (0.181)	-1.996*** (0.172)	-3.087*** (0.197)	-2.787*** (0.212)	-7.402*** (0.593)	-2.337*** (0.171)	-1.546*** (0.052)
Observations	3,986	2,966	3,998	3,924	3,992	3,983	3,000	3,982	60,632
Pseudo Rsq	0.159	0.180	0.229	0.155	0.180	0.236	0.483	0.120	0.162

Note: Estimations are performed using a probit estimator with weights reflecting individual's representation at the national level. Robust standard errors are in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Table 2. Estimation results: Financial inclusion gap and its determinants

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CCA countries (1/0)	-36.327*** (7.449)	-28.025*** (6.040)	-23.993*** (5.646)	-24.060*** (5.687)	-20.684*** (5.794)	-20.657*** (5.824)	-20.763*** (5.931)	-21.822*** (6.054)	-21.126*** (5.935)	-20.446*** (5.958)
Other countries (1/0)	-22.671*** (4.491)	-28.348*** (3.902)	-16.807*** (3.874)	-16.709*** (4.023)	-15.881*** (3.814)	-16.304*** (3.804)	-16.387*** (3.869)	-17.037*** (3.841)	-15.977*** (3.882)	-15.169*** (4.052)
Financial development index		87.837*** (4.895)	46.940*** (8.451)	47.029*** (8.418)	37.075*** (8.835)	37.857*** (8.662)	38.603*** (9.565)	43.006*** (9.803)	34.662*** (10.930)	32.503*** (11.602)
Human development index			77.681*** (14.962)	77.225*** (15.310)	63.076*** (19.056)	60.583*** (20.038)	60.310*** (20.025)	60.927*** (19.905)	55.957*** (19.883)	53.626*** (20.387)
Income inequality				-0.022 (0.163)	0.024 (0.166)	0.022 (0.168)	0.020 (0.168)	-0.062 (0.172)	-0.048 (0.169)	-0.032 (0.171)
Weak rule of law					-5.435* (3.108)	-5.688* (3.343)	-5.481 (3.596)	-5.563 (3.704)	-6.024 (3.709)	-6.231* (3.746)
Growth volatility						0.244 (0.849)	0.201 (0.870)	0.289 (0.870)	0.301 (0.866)	0.240 (0.879)
Bank concentration							0.026 (0.092)	0.026 (0.092)	0.024 (0.092)	0.027 (0.093)
Overhead costs								1.270 (1.051)	1.127 (1.021)	1.099 (1.029)
ATMs per 100,000 adults									0.058* (0.034)	0.054* (0.032)
Bank branches per 100,000 adults										0.090 (0.114)
Constant	88.361*** (3.655)	60.193*** (4.044)	7.408 (10.641)	8.476 (13.376)	19.768 (15.271)	20.909 (15.491)	19.505 (16.603)	17.333 (16.873)	20.144 (16.902)	19.988 (16.936)
Observations	127	127	127	127	127	127	127	127	127	127
Adjusted Rsq	0.0782	0.663	0.714	0.712	0.722	0.720	0.718	0.721	0.722	0.722

Note: The dependent variable is the share of adults having a financial account. Estimations are performed using the OLS estimator. Robust standard errors are in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

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