HOW REGULATORS USE SEX-DISAGGREGATED DATA AND REGTECH TO ENHANCE FINANCIAL INCLUSION

USAID FROM THE AMERICAN PEOPLE

TORONTOCENTRE Global Leadership in Financial Supervision

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Executive summary

Financial inclusion of women brings disproportionate benefits to their families and to economic development, yet in many countries an access-to-finance gender gap remains. Sex-disaggregated data (SDD) is key to monitoring and addressing this problem.

This study examines the role that financial services regulators can play in efforts to address financial inclusion of women: how they are using, or could use, SDD to enhance women's access to and use of financial products and services of the right quality that meet their needs; and how new technologies could help.

We worked with supervisory authorities in pilot countries in Africa (Kenya, Zambia)[1] and South America (Colombia, Peru)[2] to understand their experience to date and the key barriers and enablers of enhanced use of SDD to improve women's financial inclusion.

We explored how the authorities in each country were collecting, analyzing, and using sex-disaggregated data. We also considered how that data related to both their regulatory mandates and activities and to the wider national effort to enhance financial inclusion of women to assess the extent to which regulators were, or could be, agents for change.

We used a causal chain (see diagram on page 16) to help us pinpoint where interventions could be made to enhance the collection, analysis, and use of SDD. We developed a maturity model drawing on six dimensions that interact to create the conditions for the optimal use of SDD: regulatory remit and capabilities, technological capabilities, financial inclusion focus, gender equality focus, market maturity, and infrastructure (physical, legal, and institutional).

In each of our pilot jurisdictions, we found areas of strength in some of these dimensions and areas that were less developed, or that needed to move to a next level of maturity as the market evolved and the financial inclusion challenge shifted from an entry-level goal to a next level of maturity. This may have been shifting from access to informal products to formal products, access to a single gateway product to a suite of products, or from access alone to use and quality.

Regulators often play a critical role in sourcing or collecting data to monitor the state of financial inclusion in their country. In our studies, they often did not collect or made less use of SDD in their core supervisory activities and were less clear on how a gender-sensitive approach would help them in regulatory activities, what SDD they would need to do so, and how they would use it.

Without clarity on how to use the data, improvements in technological and analytics capabilities are unlikely to be channeled towards using SDD in ways that effectively promote financial inclusion of women. We identified fertile areas for further development. Some relate to removing barriers to access, while others help with the usage and quality aspects of financial inclusion and consumer protection at a next level of market maturity.

Regulators operate in a larger ecosystem with multiple stakeholders with different degrees of contribution and influence. We recommend the following course of action to enhance regulators' potential as agents of change for women's financial inclusion as enabled by SDD and RegTech:

[1] Central Bank of Kenya, Bank of Zambia, and Securities and Exchange Commission Zambia
[2] Superintendencia Financiera de Colombia and Superintendencia de Banca, Seguros y AFPs

International standard setters and regulatory capacity builders need to show more clearly how gender is relevant to financial regulation or is a policy priority for consumer protection and financial inclusion, or even financial stability, and why SDD is important and how it can be used in practical supervision of international standards.

Donors, capacity builders, and civil society need to help regulators to access funding and expertise on gender equality and RegTech,[3] to understand the real drivers of difficulties experienced by women, and to help governments enhance the non-financial infrastructure that supports digital delivery and use of financial services and RegTech.

National ministries need to ensure that regulators have the right statutory mandates to act as change agents for financial inclusion. This means giving them explicit consumer protection objectives, a broad regulatory perimeter, and shared responsibility for gender equality. Ministries also need to put in place cross-sectoral strategies and governance to tackle underlying barriers to financial inclusion, including infrastructure, cultural barriers, and access to technology, as regulators cannot solve these issues alone.

Regulators[4] need to lead by example on gender equality and set expectations in regulated firms that explicit consideration of women is needed to ensure sound management of the firms, and sound provision of financial services to customers. They need to demonstrate that the marketplaces they supervise are treating women (as well as men) customers fairly and meeting the needs of both in spite of the existence of traditional barriers. They can leverage broader digital transformation programs and engagement with innovators to identify and build capacity for use of SDD in supervision, particularly in relation to core aspects of consumer protection supervision that benefit women as well as men.

Financial Service Providers (FSPs), whether they are incumbents or new entrants, need to consider the commercial opportunity of enlarging their customer base by including more women; how they will demonstrate to regulators that they are treating women (as well as men) customers fairly and meeting the needs of both; and how increasing the representation of women in their own staff can support these aims. Leveraging available tools and the wider tech ecosystem will help FSPs to optimize data and technology to meet these goals. FSPs must notify regulators and ministries about pain points that make it harder for them to provide women with the services they want. They can do this by providing viable use cases supported by SDD.

Technology providers need to show FSPs how digital service delivery can change the economics of providing services to women and other underserved groups and enable easier collection, analysis, and use of SDD to enhance customer service and demonstrate to regulators that women are being given access to financial services and are being treated fairly. They also need to ensure regulators know what solutions are available to address key pain points and to ensure that security and reliability are sufficient to maintain confidence in the solutions used.

[3] The use of technology to deliver regulatory outcomes by regulators and/or regulated entities and including technology used by regulators for supervision (sometimes referred to as SupTech).
[4] In this document, the term "regulators" encompasses both financial services supervisory and regulatory agencies or authorities unless indicated otherwise.

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List of abbreviations, acronyms, and terminology

Acronym or abbreviation	Term	Explanation
AML	Anti-money laundering	Refers to the laws, regulations, and procedures intended to prevent criminals from disguising illegally obtained funds as legitimate income
BoZ	Bank of Zambia	Zambian banking services regulator
CBK	Central Bank of Kenya	Kenyan banking services regulator
CDD	Customer due diligence	Assessments a financial services provider (FSP) may carry out or be required to carry out on its customers, such as verification of identity or source of funds, for regulatory or risk management purposes
EMDCs	Emerging markets and developing countries	Country classification term used by the International Monetary Fund
FAMOS	Female- and male-owned small enterprises	The FAMOS Check is a tool for businesses to assess their readiness to provide services to female- and male-owned small enterprises (FAMOS). Developed by the International Labour Organization
FATF	Financial Action Task Force	Global standard setter for anti-money laundering and counter-terrorist financing measures, which also carries out mutual evaluations of member jurisdictions
	Financial inclusion	Access to and use of financial products and services of appropriate quality under reasonable conditions by all members of society, including disadvantaged groups
FII	Financial inclusion indicator	A measure of the percentage of adults with a financial product of some sort with a credit institution, financial co-operative, or specialized micro-credit non-governmental organization (NGO)
FSPs	Financial services providers	For the purposes of this guide, financial services providers are intended to include regulated or supervised financial institutions, their intermediaries, FinTech, or financial services firms
Gateway products/ services	Gateway financial services or products	Products and services that consumers/micro-, small-, and medium-sized enterprises (MSMEs) are likely to use in their first contacts with formal financial services: payments, credit, deposit facilities, and relevant insurance products
	Gender mainstreaming	Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies, or programs, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring, and evaluation of policies and programs in all

		political, economic, and societal spheres so that women and men benefit equally, and inequality is not perpetuated. The ultimate goal is to achieve gender equality. (United Nations, Report of the Economic and Social Council for 1997)
GFIN	Global Financial Innovation Network	Network of financial services regulators and associated observers for collaboration on innovation
ILO	International Labour Organization	A United Nations agency whose mandate is to advance social and economic justice through setting international labour standards
KYC	Know your customer	Requirements often placed on financial services providers for anti-money laundering reasons and sometimes for business conduct or consumer protection to ascertain information about their customer's identity and circumstances
MFIs	Microfinance institutions	Entities that provide formal financial services to poor, low-income, and other people who are systematically excluded from the financial system, typically in smaller amounts than provided for by other financial institutions
MSMEs	Micro-, small-, and medium-sized enterprises	According to the International Council for Small Business (ICSB), formal and informal MSMEs make up over 90 percent of all firms and account, on average, for 70 percent of total employment and 50 percent of GDP
	Mystery shopping	A technique commonly used by retailers, market research, and consumer watchdogs to measure the quality of customer service in brick-and-mortar environments and to collect information about products and service delivery
NBFI	Non-bank financial intermediaries	Non-bank financial intermediaries comprise a mixed bag of institutions. NBFIs have come to mainly include leasing, factoring, and venture capital companies as well as various types of contractual savings and institutional investors (pension funds, insurance companies, and mutual funds). The common characteristic of these institutions is that they mobilize savings and facilitate the financing of different activities, but do not accept deposits from the public at large
NLP	Natural language processing	A technology enabling the automated analysis of unstructured data such as speech
OECD	Organisation for Economic Co-operation and Development	An intergovernmental economic organization with 37 member countries, founded in 1961 to stimulate economic progress and world trade
	Prudential regulation	A type of financial regulation that requires financial firms to control risks and hold adequate capital as defined by capital requirements, liquidity requirements, by the imposition of concentration risk (or large exposures) limits, and by related reporting and public disclosure requirements and supervisory controls and processes. Also known as solvency regulation

RegTech	Regulatory technology	The use of technology to deliver regulatory outcomes by regulators and/or regulated entities and including technology used by regulators for supervision (sometimes referred to as SupTech)
	Regulators	For the purposes of this report, the term "regulator" is used to mean financial services regulatory and supervisory agencies and authorities
RBS	Risk-based supervision	RBS is gradually becoming the dominant approach to regulatory supervision of financial institutions and intermediaries around the world. It is a comprehensive, formally structured system that assesses risks within the financial system, giving priority to the resolution of those risks. RBS has a regulatory emphasis of focusing on what matters – assessing the degree of risk in the regulated entity's business operations and determining how to reduce the risk as required
SBS	Superintendencia de Banca, Seguros y Administradoras Privadas de Fondos de Pensiones del Peru	Peruvian financial services regulator
SDD	Sex-disaggregated data	Data that is stratified to distinguish between females and males
SECZ	Securities and Exchange Commission Zambia	Zambian capital markets and securities regulator
SFC	Superintendencia Financiera de Colombia	Colombian financial services regulator
UN SDGs	United Nations Sustainable Development Goals	In 2015, the United Nations Member States agreed on 17 goals to be achieved by 2030, with an accompanying 15-year plan
UNSDG5	The UN's 5th Sustainable Development Goal: Gender Equality	The fifth UN Sustainable Development Goal is Gender Equality. The specific equality target set includes the following: 5.1 End all forms of discrimination against all women and girls everywhere 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life 5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance, and natural resources, in accordance with national laws

		5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women 5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of women

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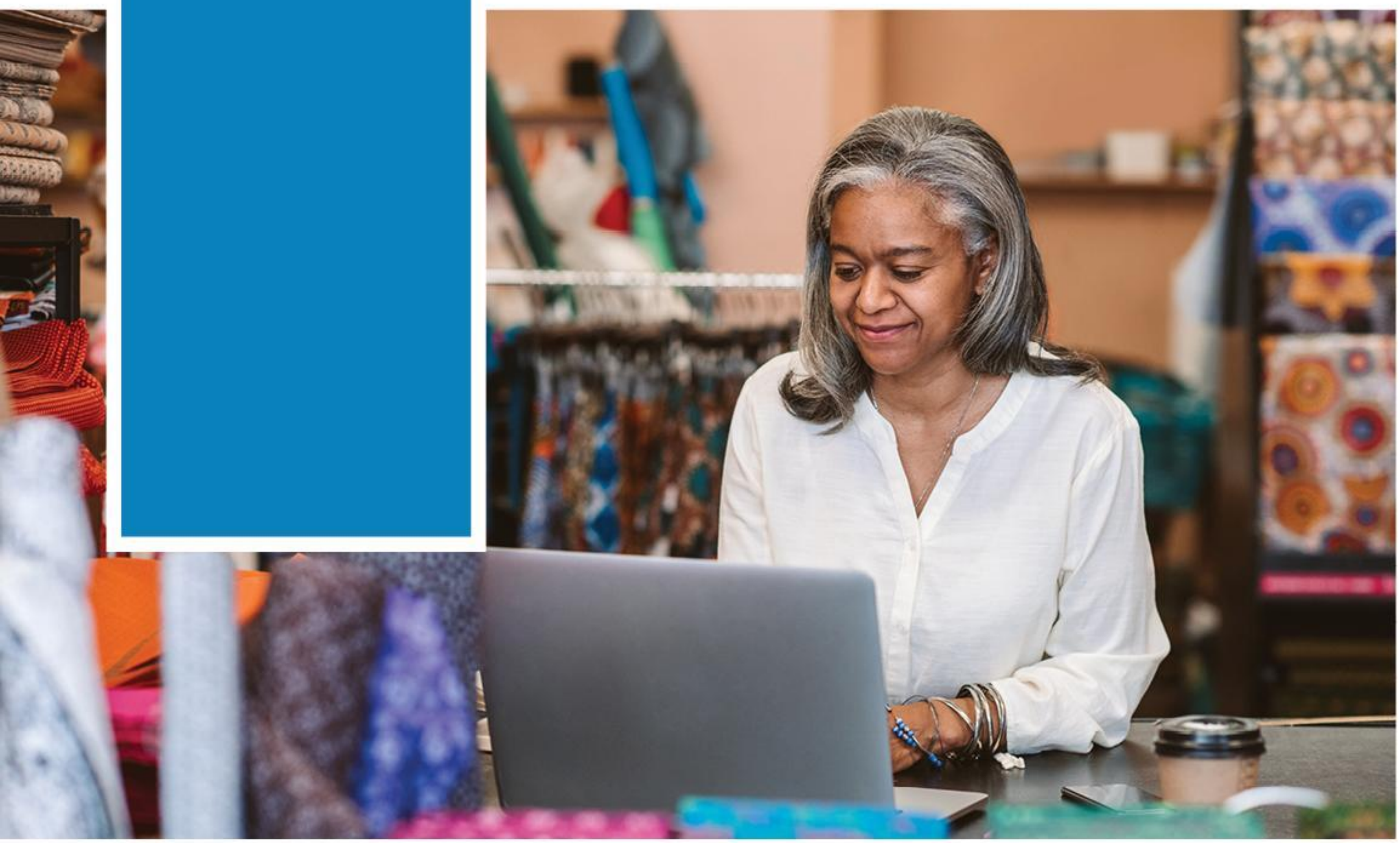
Introduction and objectives



"While activity to raise financial inclusion generally may bring benefits for women, unless women are specifically considered, it is entirely possible that the barriers they specifically face will not be identified or addressed."

Introduction and objectives[5]

Overview of the study

The aim of this study was to understand the collection, analysis, and use of SDD by financial regulators for improving financial inclusion of women, and the current and potential use of RegTech to support that activity. We developed a hypothesized causal chain and maturity framework and tested this with the assistance of authorities in four pilot countries.

Why focus on financial inclusion of women?

Many studies have shown that improving the financial inclusion of women has a disproportionate benefit on household wealth and broader economic development. Yet in many countries there remains an access gap, with women having lower access to financial services than men. While activity to raise financial inclusion generally may bring benefits for women, unless women are specifically considered, it is probable that the barriers they specifically face will not be identified or addressed, and the access gap will remain.

> *"Approximately one billion women do not have formal financial services, due to persistent barriers in access to identification documents, mobile phones, digital skills, financial capability, as well as inappropriate products and more."*[6]

In 2015, the United Nations Member States agreed on 17 Sustainable Development Goals to be achieved by 2030, with an accompanying 15-year plan. Among the SDGs, the UN's fifth goal is Gender Equality. Female financial empowerment is a means of supporting this goal.

What is sex-disaggregated data?

We use the term sex-disaggregated data to describe data that is stratified in such a way as to identify women specifically and, where data is also gathered about men, to distinguish differences and gaps between women and men when the data is analyzed and used. Previous studies have shown that, while access to SDD is an important tool for authorities and other stakeholders to understand and enhance the financial inclusion of women specifically, its importance may not be fully understood by all partners involved in promoting financial inclusion.

What is RegTech?

RegTech (regulatory technology) is a shorthand term for the deployment of technology to meet regulatory objectives, including blockchain, application programming interface (API), and artificial intelligence. In this study, we include within the term RegTech the use of technology by regulatory authorities themselves (sometimes referred to as SupTech, or supervisory technology) for monitoring, oversight, or other purposes, as well as by financial services providers and other

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[5] This Paper was prepared by Jennifer Long, Ernesto Brodersohn, and Petronella Chigara-Dhitima, and edited by Anatol Monid, Senior Program Director, Toronto Centre.

[6] World Bank Group, Demirguc-Kunt et. al. (2018).

stakeholders. Our primary focus is on RegTech as a potential enabler of the collection, analysis, and use of SDD for promoting financial inclusion.

Objectives

We wanted to understand the role of financial services regulators in enhancing financial inclusion in the pilot countries and the extent to which they had a specific focus on the inclusion of women. We then wanted to examine to what extent and through what means they collected, analyzed, and used SDD in those activities. We wanted to map the extent to which they already deploy RegTech to do so, what a next level of maturity might involve, and the barriers and enablers to moving to this next level. We also considered areas where stakeholders might intervene. This was both to understand the pilot countries themselves and to identify elements of a maturity framework that could have broader application.

Method

We considered a simplified model of a regulatory system to examine the factors that affect regulators' ability to act as agents of change for financial inclusion of women. We identified a hypothesized applied theory of change and causal chain of the steps that would be necessary to, or likely to enable or form a barrier to, the use of SDD to enhance financial inclusion of women, supported by RegTech. We used this to design a hypothesized maturity model for identifying priority pain points, which could be addressed to promote further progress, and a questionnaire to elicit structured data on the relevant areas from authorities in the pilot countries. This was supplemented by online interviews with the authorities, financial services providers, and other key stakeholders in the pilot countries to contextualize the survey responses and support the application and refinement of our hypothesis. The work with regulators was carried out in July and August 2020 through videoconferencing. Due to the COVID-19 pandemic, interviews were carried out by videoconference rather than face-to-face. We supplemented the consultations with regional webinars attended by representatives from our pilot authorities, peer regulators, and USAID representatives from Africa and South/Central America in September 2020. In October 2020, we held a virtual executive panel on the margins of the International Monetary Fund (IMF) and World Bank Annual Meetings that included regulators and a civil society representative to present and discuss the initial findings of this research. It was attended by standard setters, ministries, donors, other regulators, FSPs, and civil society from over thirty countries.

Pilot countries

We could not have completed this project without the voluntary co-operation and time given by many members of the Bank of Zambia (BoZ), the Central Bank of Kenya (CBK), the Superintendencia de Banca, Seguros y Administradoras Privadas de Fondos de Pensiones del Perú (SBS), the Securities and Exchange Commission Zambia (SECZ), and the Superintendencia Financiera de Colombia (SFC) despite the COVID-19 pandemic. Their collaboration is much appreciated. These agencies were requested to participate in our pilot study due to strong and existing working relationships with Toronto Centre (TC).

Funding

The project was made possible by funding from the United States Agency for International Development's (USAID) Office of Gender Equality and Women's Empowerment on behalf of the American people, working in partnership with the USAID INVEST program.

The USAID is an independent agency of the United States federal government that is primarily responsible for administering civilian foreign aid and development assistance.

About Toronto Centre

TC's objective is to promote financial stability and access globally by providing high-quality, practical capacity building programs for financial sector regulators and supervisors, particularly in emerging markets and low-income countries. Stable economies create an environment for economic growth and job creation, while increased accessibility to financial services is an effective means to break the cycle of poverty. Since it was established as a non-profit organization in 1998, TC has trained more than 13,000 officials in the banking, insurance, pensions, and securities supervision sectors from 190 jurisdictions worldwide.

2 Why SDD matters: a conceptual framework and applied theory of change

"Developments and opportunities do not necessarily lead to an increase in access to or use of financial services."

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Why SDD matters: a conceptual framework and applied theory of change

Overview of hypothesized applied theory of change

Our starting point for this study was the hypothesis that developments in financial services and technology over the last 15 years have provided opportunities to enhance financial inclusion of women. These developments include the availability of mobile platforms for the delivery of digital financial services, and the potential for new providers to enter the market alongside incumbents offering innovative products and services.

However, a range of authoritative data sources show that internationally these developments and opportunities do not necessarily lead to an increase in access to or use of financial services, which is in turn an enabler of economic development. Even where such increases in access do occur, lower rates of access by women than men may persist. Therefore, our theory of change is that unless SDD is collected, analyzed, and used to address financial inclusion of women specifically, it will be very challenging for the authorities to know the extent to which women are benefitting from these advances, where interventions might be effective, what interventions to make, or whether any intervention to support women's financial inclusion is having a positive impact.

The collection, analysis, and use of data can be cost- and time-intensive if done manually, particularly on a large scale. Drawing on literature about what has been achieved and attempted in other areas of financial regulation and in some cases financial inclusion specifically, we hypothesized that the use of RegTech provided opportunities to enhance the availability, quality, timeliness, and effective deployment of SDD relative to what was possible manually. However, this would require both FSPs and regulators to have the necessary capabilities in terms of infrastructure, systems, staff, and processes, and to deploy those capabilities in areas that would enhance the financial inclusion of women, informed by SDD.

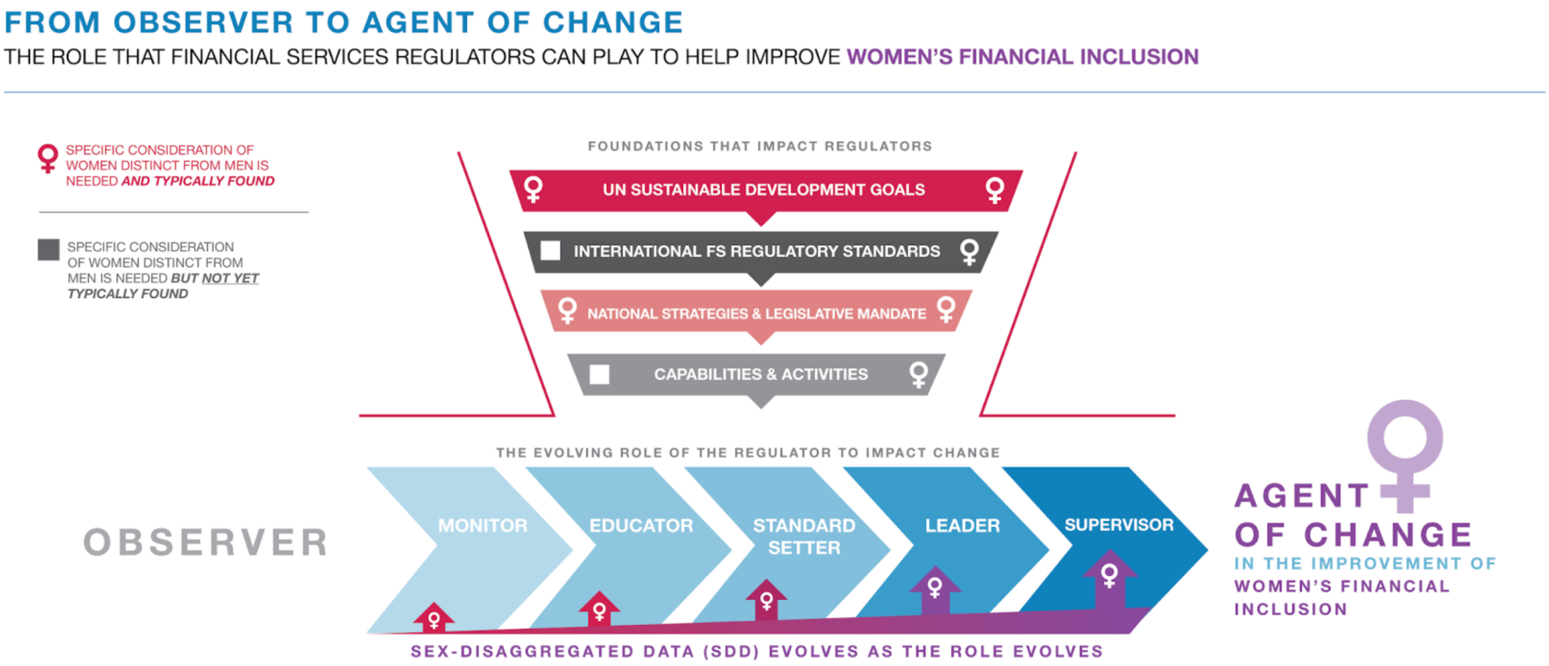
Triangulation: three lenses to gauge readiness and maturity for using SDD

We used three lenses to explore the current maturity and future potential of regulators' use of RegTech-enabled SDD collection, analysis, and use for enhanced financial inclusion of women. In combination, these tools enabled us to identify key barriers and enablers, existing areas of strength, and where efforts to increase maturity could most effectively be targeted at both an aggregate level and adapted to the specificities of each country's particular readiness.

Lens 1: Roles regulators can play with respect to financial inclusion of women

We used a simplified model of the international regulatory system and different aspects of national financial systems. This continuum helps to examine where and how financial inclusion generally, and specifically women's financial inclusion, fits within regulators' overall responsibilities, activities, and capabilities and to consider the potential to capitalize on synergies and diminish the impact of potential barriers.

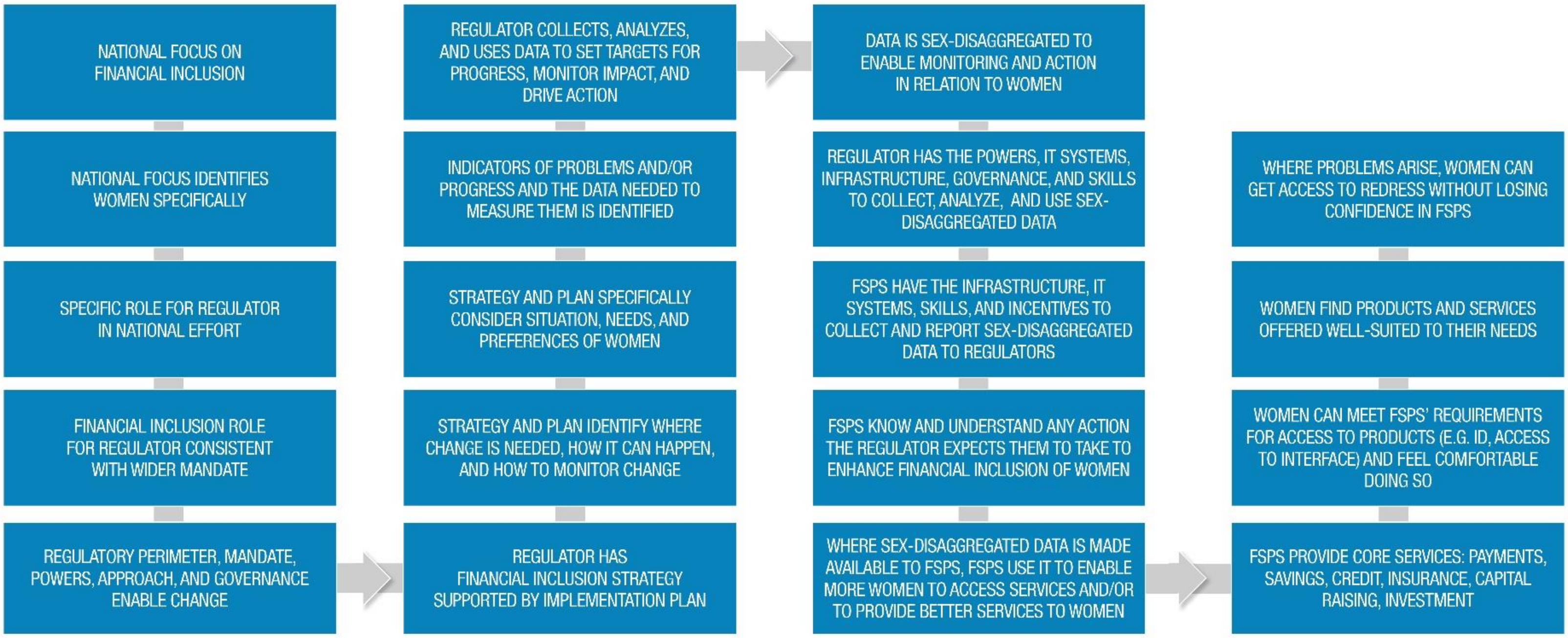
Figure 1: Financial inclusion of women in a simplified financial regulatory system



Lens 2: Hypothesized causal chain for use of SDD by regulators

We developed a hypothesized causal chain that showed how different elements in the RegTech-enabled collection, analysis, and use of SDD by regulators might fit together within a country to enhance financial inclusion of women. This causal chain does not represent a chronological sequence – there is no need to start at the beginning and work through to the end. Instead, it shows interdependencies between potential barriers and enablers to help pinpoint particular elements that might already be enabling, or could be enhanced to enable, greater maturity.

Figure 2: Causal chain for RegTech-enabled collection, analysis, and use of SDD by regulators for financial inclusion of women

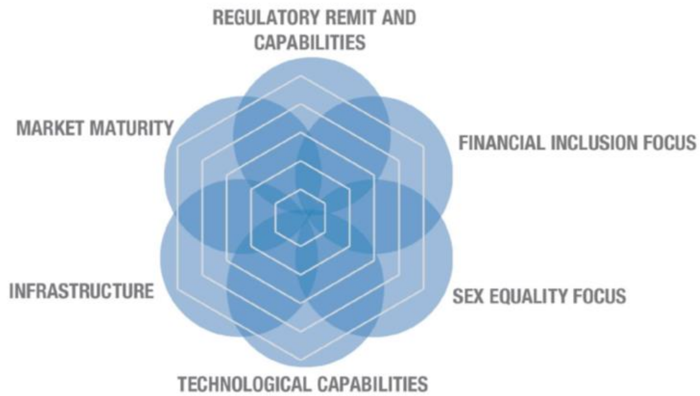


Lens 3: Maturity dimensions for regulatory use of RegTech-enabled SDD

We identified six dimensions that would contribute to the effective use of RegTech-enabled SDD by regulators for financial inclusion. This enabled us to diagnose areas of existing maturity and areas where greater focus could be beneficial by developing a visual maturity map for each pilot country. It also gave us a means to explore whether and how different elements were keeping pace with different cycles of maturity that jurisdictions could experience. For example, country inclusion goals may shift from informal services to formal financial system access, then from formal access to using gateway products and even further to accessing a wider range of products, and finally from access to full usage and higher quality. An important assumption underpinning the framework is that deposits and savings, payment services, credit, and insurance are core gateway services that would typically be fundamental in a consumer’s hierarchy of needs, with longer-term investment, pensions, and access to capital markets as a next level of requirement.

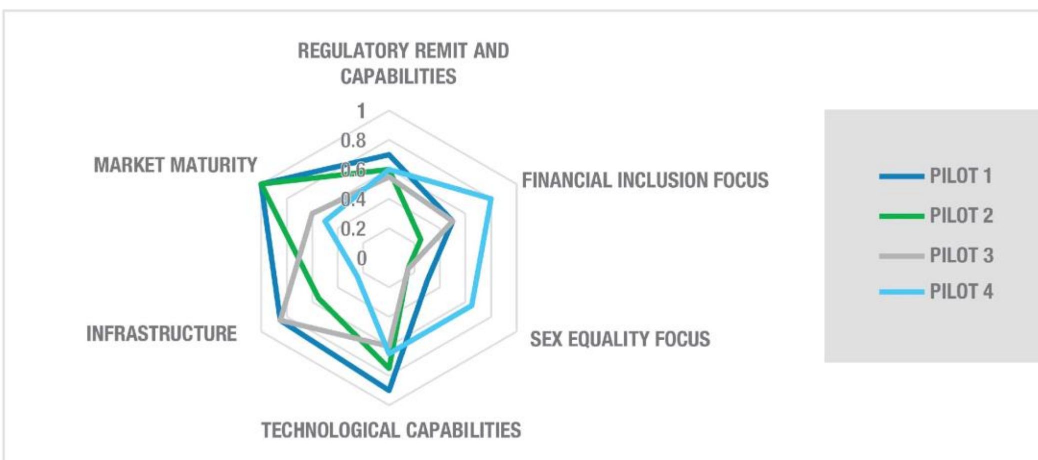
The maturity model is not just simply applicable at a national level, but also can be used on a much more granular or institutional basis.

Figure 3: Maturity model for SDD – six dimensions for using SDD effectively



The maturity profiles below show areas of relative maturity in the four pilot countries, using data received through our surveys, and is based on criteria relevant for EMDCs with a particular focus on gateway products and services including payments and deposit, credit, and insurance for consumers and MSMEs, with correspondingly less focus on securities, derivatives, investments, and pension markets and regulation.

Figure 4: Overview maturity profile of four pilot countries



These maturity profiles show existing areas of relative strength and where potential opportunities can be further enhanced in each jurisdiction to further develop the regulators' role in using RegTech and SDD to increase financial inclusion of women. The suggestions we make on how to do this are intended as tools for the authorities in our pilot countries and as an insight to our collaborators and the project funder of how the tools we have developed can be used in practice.

3 SDD enables regulators to act as agents of change for women's financial inclusion

"Research has shown that increased participation of women in senior decision-making roles increases the focus on gender, and that diversity brings benefits to financial institutions in terms of enhanced governance and risk management."

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SDD enables regulators to act as agents of change for women's financial inclusion

By increasing the use of SDD, regulators can more effectively apply a risk-based approach.

RBS is a supervisory approach that has either been implemented or is in the process of being implemented by many supervisory authorities. RBS concepts include forward-looking, informed, judgement-based supervision, consistent with international standards and are part of the IMF and the World Bank's Financial Sector Assessment Programs (FSAPs) of countries. Properly designed and implemented, RBS can facilitate more efficient, targeted supervision, early detection of emerging problems, and can allow for measured and proportional intervention action, financial inclusion, and responsible market development. Financial services supervision deals with two aspects of oversight. First is the safety and soundness of a regulated entity, referred to as prudential or solvency supervision. More relevant to this report is consumer protection supervision, which deals with the conduct of the regulated entities business(es), the fair treatment of customers, and financial inclusion.

Regulators in EMDCs, as elsewhere, are typically turning to risk-based supervisory approaches to help them focus resources on the most significant challenges and to anticipate and pre-empt as well as sanction and remediate harms. There is increasing consensus around the importance of the core concepts of a risk-based approach as applicable to prudential and conduct supervision, and in widely differing markets and institutional contexts.

However, a key feature of risk-based approaches is that they typically seek to harness data to assess risk and prioritize areas of focus, and that the nature of the risks addressed stems from the legislative mandate and regulatory objectives each regulator is given in statute, like any bank or other financial services legislation. This approach provides the clarity of purpose needed to make difficult choices, and a framework for public accountability in the exercise of judgement to do so.

Different jurisdictions will allocate statutory responsibilities differently, for example, some financial services regulators have explicit fair competition responsibilities, while in other jurisdictions this role is assigned to a separate regulatory authority. However, it is very important that where a jurisdiction relies on regulators to have regard to or enhance the financial inclusion of women, its responsibility to do so can be clearly derived from its statutory objectives. If not, it will be extremely difficult for the regulator to be truly risk based (in the case of inclusion by applying proportionality to its practices), hampering its evolution as a supervisor, or to contribute to its jurisdiction's financial inclusion effort.

Enhancing financial inclusion often requires creative thinking about which entities can provide financial services, under what regulatory conditions, and to be open to considering non-traditional business models and methods of providing services. As regulators are often the gatekeeper to licensing or registration for formal financial services, this role can be supported by giving regulators statutory powers to support or take account of the impact on innovation, as well as on financial inclusion specifically. Regulatory or statutory powers might include the ability to issue modified licenses or to deploy a regulatory sandbox.

It is also important that regulators of gateway services, in particular, have an explicit consumer protection objective and powers that equip them to address harm to consumers. Regulators should be empowered to require consumer remediation, in all situations, whether or not there might be a prudential risk to the firm. Examples include a firm's sales agents treating female clients inappropriately or systematically overcharging customers. Given the need to make difficult choices in allocating resources and prioritizing areas of risk, it is not sufficient for the consumer protection mandate to be implicit and derived from financial stability objectives; it should be an explicit mandate.

Use of SDD can clarify and demonstrate linkages between gender and international standards

EMDCs, like other jurisdictions, typically seek to align their regulatory systems and standards to international norms by drawing on those articulated by international bodies, some of which also oversee formalized assessments of member jurisdictions' implementation of those standards. For example, the International Monetary Fund and World Bank carry out assessments under the Financial Sector Assessment Program (FSAP), while the Financial Action Task Force (FATF) and associated regional organizations carry out mutual evaluations of supervisory compliance with anti-money laundering standards. Alignment to international standards demonstrates a commitment to professional excellence, and in some cases failure to align can have significant implications for the jurisdiction concerned.

Even though UNSDG5 commits to achieving gender equality and empowering all women and girls, and despite the extensive literature and evidence on access gaps, international principles or standards for financial services regulators rarely reference gender, even in areas where it might be expected, such as consumer protection. Financial inclusion is typically not a core focus for standard setters.

The absence of references to explicit parameters for addressing financial inclusion and promoting gender equality in international standards is therefore often reflected in the legal mandates given to financial services regulators in national legislation. This absence can make it harder for regulators to see the relevance or benefit of activity specifically aimed at promoting financial inclusion of women or of considering the potentially different needs and experiences of men and women in carrying out activities in pursuit of other objectives.

Even where the benefits of focusing on financial inclusion of women are understood, the absence of explicit requirements in international standards can make it harder for ministries and regulators to justify allocating resources for this purpose, for example by collecting and using SDD to inform supervision. This difficulty is important given the many other explicit demands that EMDC regulators need to satisfy, from developing new infrastructure to support the functioning of the financial system, to demonstrating a robust approach to anti-money laundering practices.

Similarly, while international standard setters are establishing literature on paths to the effective deployment of RegTech, the use cases typically considered to date relate to prudential supervision and detection of money laundering. There are fewer examples so far of how to deploy RegTech to enhance financial inclusion or consumer protection generally, or inclusion and protection of women specifically. Nevertheless, it is clear that the path towards capability in using RegTech tools lies in putting in place the information technology components, and tools to securely receive, store, process, analyze, and operationalize insights from data. Furthermore, it requires that this infrastructure be supported by skilled and knowledgeable personnel to implement and use this technology. Including female technology staff is likely to enhance the sensitivity of women's issues in technology development and use.

Roles of regulators in national strategies, plans, and governance for development and financial inclusion

Like many other EMDCs, our pilot countries have national strategies within which regulators and other public authorities worked to deliver various public interest objectives. The scope and articulation of these different strategies varies between countries, but typically include a national development strategy, a financial inclusion strategy, plus in some cases a separate financial sector development strategy, and/or financial education strategy.

Regulators may have responsibilities under or be impacted by all these strategies. This can give rise to a wide range of competing priorities that are hard to reconcile into a coherent and manageable program of work. Ministries and other partners supporting the development of such strategies can help by streamlining the number of different strategies underway simultaneously – as well as the associated governance – while supporting regulators and other authorities to work collaboratively with other relevant ministries and agencies, such as gender, telecommunications, and competition. It is also important that attention is paid to developing and tracking the implementation of a clear plan of activities for delivering the outcomes sought in the strategy.

One pilot country recently published a major financial inclusion policy statement that appears to provide a clearer allocation of tasks and responsibilities than previous documents. The four main objectives of the new policy are to:

- Expand the supply of financial products and services
- Generate skills, knowledge, and confidence in the financial system, discourage the use of cash, and promote the use of formal financial services
- Strengthen the financial and digital infrastructure to increase access, use, and efficiency of formal financial services
- Propose institutional governance to improve articulation in the implementation of financial education and inclusion strategies.

In order for regulators to play their full role in enhancing financial inclusion of women, it is helpful for the national development or financial inclusion strategy to place explicit gender mainstreaming responsibilities on public authorities, including regulators, and to set explicit targets for increasing women's financial inclusion and/or reducing the gender gap, like Peru's National Gender Equality Policy, which includes an expected result that 38% of civil servants and directors will be women. Regulators can further support gender equality and focus on empowerment of women by setting targets for representation in senior management in their own senior management team and in FSPs.

For one agency, we could not determine whether goals other than a financial inclusion indicator (FII) were met, or what subsequent goals had been set in the future. Even so, the FII was only a measure of the percentage of adults with a financial product of some sort with a credit institution, financial co-operative, or specialized micro-credit NGO, as opposed to other gateway financial services or products across all FSPs.

Another country's development plan included specific goals for financial services, principally to increase saving so as to provide the funds for the investment needed to support economic growth. A range of measures to achieve this goal were identified, including increasing access to formal financial services.

Market readiness: steps regulators can take so that use of SDD reflects market maturity

The distinctive contributions that regulators make to financial services markets are setting standards for the management of risk, authorizing access to markets, and deploying supervisory and enforcement tools to markets and FSPs within their regulatory remit in pursuit of better-functioning markets, with appropriately protected consumers and financial stability.

In the earlier stages of market maturity, where consumers have little access to formal, regulated FSPs, core supervisory tools may have limited impact in bringing about change. Typical financial inclusion activities at this stage include outreach to excluded consumers, or design of programs to incentivize inclusion. While regulators may play a role here, these are activities that other authorities can also carry out, so it will depend on the national context whether the regulators are best placed to take on this role or whether other bodies with specialist educational expertise or existing outreach infrastructure could do so more efficiently or effectively. In our pilot countries, there were different models in place, based on legislation and the National Financial Inclusion Strategies, that guided the roles each regulator played in their jurisdictions. One regulator told us that it planned a study on determinants of the gender gap as a result of its policy statement on financial inclusion and education.

Although markets in our pilot countries were different, they shared a national focus in recent years on increasing people's access to gateway products. The regulators' main role in the national financial inclusion effort had typically been leading or significantly contributing to the collection of data on the state of financial inclusion in the country to inform the broader national effort, and sometimes the design of new regulatory frameworks to bring FSPs within the regulatory perimeter in a way that facilitated service provision to underserved groups.

Kenya's FinAccess Survey

Central Bank of Kenya (CBK) has worked with partners to carry out an annual demand-side survey on information relevant to financial inclusion, building on an initial baseline survey in 2006. Much of the data collected is sex-disaggregated and shows the extent to which there are differences between men and women in access, usage, and some aspects of financial literacy.

The data has helped CBK and other stakeholders monitor progress towards Kenya's development and financial inclusion goals and has informed CBK's input to regulatory regimes for mobile money and other payment service providers and microcredit institutions, as well as simplified due diligence requirements.

The survey has recently been enhanced to provide additional data on usage and quality in light of the significant increase in access to gateway services such as mobile money since the survey began.

Two challenges can arise at this stage of market maturity in relation to the regulatory remits for key gateway products and services such as banking, payment services, and credit. These can arise because typically regulation of providers of such services emerges as the prudential regulation of banks, often by a central bank.

- The first challenge is that the regulator may not have an explicit consumer protection framework, and therefore may continue to focus on and use supervisory approaches tailored to financial stability.

- The second comes if there is not a specific regulatory framework enabling and setting standards for the provision of payment services and credit by non-bank financial intermediaries, or if there is a lack of clarity about which payments or credit activities are within the regulatory perimeter.

The lack of an appropriately tailored framework is likely to create significant barriers to entry and innovation. Differences or lack of clarity in regulatory treatment make it harder for regulators to have an overview of the market and to address challenges with the firms, products, and services outside their perimeter. This increases the risk of exclusion and poor treatment of consumers. Where responsibilities are divided between regulators, there may be challenges in aggregating different data (formats and compatibility) and regulators may have different interpretations of the same market data.

Typical areas of focus include the availability of appropriately tailored regulatory regimes for microfinance providers and other non-bank providers of payment services and credit, including mobile money or other digital providers, and co-operatives or credit unions. Regimes may be introduced for simplified CDD/KYC to reduce the likelihood that AML controls exclude those with less access to formal identification. Sometimes consideration is given to policy on acceptable forms of collateral, recognizing that women may less often have title to immovable property in particular, with provision made for the acceptance of movable property or alternative safeguards such as guarantees from other saving group members.

With these key building blocks in place, responsibilities and internal arrangements to promote competition and innovation play a role in enabling the testing and implementation of innovative products and services to better meet women's financial needs and preferences. This will inevitably require regulators to be prepared to assess risk and allow for risks to be taken and managed. Regulators who already use a risk-based approach will have capabilities and techniques that can be deployed to assist this, and there are also tools that have gained traction globally in recent years to facilitate market innovations, such as regulatory sandboxes to enable controlled experimentation. Several regulators in our pilot countries were involved in global dialogue on innovation with other regulators through the Global Financial Innovation Network (GFIN), with some also experimenting with enhanced bilateral collaboration.

A further development, which may be led by financial services regulators, competition authorities, or others, is the introduction of open banking or broader open data regimes. Such regimes can open up markets for gateway financial services to competition and innovation, including lower-cost service provision, and can potentially enable women and other underserved groups to capitalize on non-financial transactions to verify identity and build a payment history to inform credit assessments.

Innova SFC in Colombia

Colombia's SFC has formed a Financial and Technological Innovation Working Group, Innova SFC, which provides additional support to FSPs aspiring to provide new products/services or to provide products/services in non-traditional ways. This includes additional information and guidance, the possibility to experiment through a sandbox, and adaptation of specific regulatory requirements where needed to facilitate beneficial innovation. An important part of Innova SFC's work is dialogue with FSPs and tech providers about challenges in financial markets and regulation and in financial inclusion and where innovation can help address them.

As the market matures, more FSPs will be in the regulatory perimeter and more consumers will have access to formal financial services. The distinctive contribution of regulators becomes even more important in further enhancing financial inclusion. This is because regulatory standards and the expectations set through their supervision will have an important impact on how firms treat their customers, and hence the usage and quality components of financial inclusion. It will also continue to be important to ensure that the regulatory regime does not impose unnecessary barriers to access. An example of this would be relying on traditional KYC rules that have not kept pace with tools, measures, and initiatives now available to prove identity. There is, therefore, both a greater need and opportunity at this stage to influence inclusion through supervision, particularly in ensuring that both female and male customers are treated fairly. This in turn means that more granular, firm-specific data and analysis is likely to be needed at this stage to supplement understanding of women's experiences in relation to financial services, and that key data will need to be sex-disaggregated. In addition to supply-side data reported by FSPs, this could mean using techniques like mystery shopping to obtain a demand-side perspective on particular FSPs, in addition to where there is greater technological maturity using techniques such as screen scraping and NLP to review marketing materials or social media commentary on FSPs.

Gender mainstreaming in financial services regulation

In many countries, regulators are required to avoid discrimination against women and to promote equal treatment of men and women as a result of gender or human rights legislation distinct from the legislation specific to financial services regulation. However, unless these duties are systematically embedded in the regulators' day-to-day operations and deliberately identified, they may receive little focus. Some regulators in our pilot countries and beyond are finding ways to formalize their focus on these areas and move beyond commenting on existing gaps to become agents for change, for example the BoZ's use of the FAMOS[7] Check.

Research has shown that increased participation of women in senior decision-making roles increases the focus on gender, and that diversity brings benefits to financial institutions in terms of enhanced governance and risk management. Several authorities in our pilot countries had policies and procedures to support increasing representation of women in the regulators' senior management; other regulators have gone further by publishing targets for such representation and progress against them. Such an approach can bring additional benefits in sensitizing staff and stakeholders to the importance of the issue, and to the associated need for and use of SDD in staffing at different levels. Both Colombia and Zambia collected data on the representation of women in senior management and found that a gender gap persisted. One authority went further and looked at the gender balance of the senior management team when assessing the appropriateness of governance arrangements in new FSPs applying for authorization. As a next step, supervisors could seek evidence from FSPs about their targets and action plans for change, how their internal remuneration policies ensure equal treatment of men and women, and monitoring the extent to which progress is achieved. These steps can use relatively small volumes of SDD to have a large impact.

Superintendente de Banca, Seguros y Adminstradoras APV (SBS)

While many agencies indicated that they supported women in senior management roles, fewer still were led by a woman. In Peru, Ms. Socorro Heysen Zegarra has been head of the SBS since August 2016 and is the first woman to hold the post. She is an expert in the regulation and oversight of banks and microfinance entities. She has discharged these roles in public institutions and international financial bodies, holding high-level positions in Peru's central bank as Deputy Manager of the Monetary Sector, in the authority itself as Deputy Head of Banking, and in the International Monetary Fund (IMF) as Deputy Head of the Banking Regulation & Supervision Division. Ms. Heysen Zegarra represents the leading wave of influential women in financial services supervision and regulation.

It is also important to ensure that regulators have staff who are trained in gender issues and are able to embed a gender-aware approach in regulatory and supervisory work to ensure that awareness of gender equality translates into increased inclusion.

A further step is to examine explicitly how core parts of firms' policies and practices impact women specifically to ensure that they are receiving full and equal access to products and services that meet their needs, as well as fair treatment. These are core aspects of consumer protection that are entirely consistent with regulatory mandates. They are enabled by a specific focus on women's experience and the associated SDD. Potential areas of focus include:

- Product design and governance
- Customer on-boarding

[7] Female- and male-owned small enterprises

- Sales and service agents' treatment of women customers
- Credit assessment and lending decisions (potential gender bias in ML/AI-driven credit assessments)
- Scale (including relative to men), nature, and response to complaints.

We were told of initiatives to both champion and train women leaders within their firms by some FSP stakeholders. We also heard about designing products specifically for women, with a particular focus on products that were relevant to the home environment (for example, financing clean energy, water tanks, or other home improvements); products that provided solutions to a lack of collateral (either lending to groups, or accepting guarantees from a husband or business); and low-cost/low-value products (such as low-cost life insurance, maternity insurance, and savings products with low minimum amounts).

In one of our pilot countries, regulators had rolled out systematic use of the International Labour Organization's (ILO) FAMOS Check tool[8] in their supervisory assessment, integrating specially trained assessors with gender equality expertise into their supervisory teams and processes. This approach complements Bank of Zambia's published strategic commitments to enhancing its own gender balance and to reducing the gender gap in financial inclusion and supports its structured supervisory monitoring of FSPs' financial inclusion plans.

Bank of Zambia's use of the FAMOS Check tool

Bank of Zambia has integrated the tool in its supervisory assessments of firms. Specially trained FAMOS assessors are integrated into supervisory teams for on-site inspections. They carry out the check and train the FSP's staff to be able to use it as a self-assessment tool. Findings from the check carried out by BoZ staff are communicated to the FSP, highlighting gaps that the FSP is expected to address.

In another case, the regulator advised that they were aware of mobile services specifically designed to provide credit for women entrepreneurs, and that one financial institution had a project to issue bonds using blockchain technology, which would help heads of households or female entrepreneurs who already had their own business.

Another gender mainstreaming example from Kenya was a program enhancing capacities of national and county government institutions to embrace Gender Equality and Women Empowerment (GEWE). This will ensure integration of gender-related issues in policies, planning, and budgeting processes. It will also oversee the implementation of the national strategy for supporting increased participation of women in elective politics, public service, and private sector leadership positions.

Key enablers of regulators' role as change agents for women's financial inclusion

From the experience of our four pilot countries, we identified the following as key enablers that can help regulators move from being monitors to becoming agents of change in promoting women's financial inclusion:

[8] Accessible at https://www.ilo.org/empent/Publications/WCMS_116094/lang--en/index.htm, as of January 13, 2021.

Regulatory

- Establish explicit statutory objective for regulators to protect consumers of gateway financial services (payment services, credit, insurance)
- Statutory regulatory regime for NBFIs, mobile money operators, and FinTechs to be licensed to provide payment services such as remittance and credit through digital and other means, without full prudential regime applicable to banks or other regulated FSPs, in order to provide a level consumer protection playing field
- Framework for simplified CDD and KYC where risk of money laundering is lower, which takes account of the means available to women to prove identity
- Policies on collateral and guarantees that are informed by data on women's access to assets and means of demonstrating/registering ownership, and that leverage group arrangements commonly used by women

Inclusion

- Explicit targets in the national financial inclusion strategy or similar strategy for changes in the position of women, including reduction of the gender gap
- National financial inclusion or development strategy that includes measures to ensure necessary non-financial infrastructure is in place to support digital provision and regulation of financial services (e.g., improvements to electricity, literacy, internet, and mobile telephony)
- Multi-agency governance and implementation plans for the national financial inclusion strategy, including, but not limited to, Ministries of Finance, Gender, and Telecommunications, with financial sector and communications/digital regulators
- Policies, processes, and targets for reaching equality of women's participation in leadership positions within regulators and FSPs

Innovation and Data

- Innovation mindset and exposure to international techniques for harnessing RegTech, for example through participation in GFIN
- Dedicated resource and governance within regulators to determine and drive implementation of a data-centric approach to policy and supervision
- Explicit reference to gender equality and need for supporting SDD in international standards relating to FSP governance and risk management, consumer protection and CDD/KYC for AML/CFT
- Development of case studies and toolkits for regulators that map what SDD can help supervisors with specific parts of their mandate, what RegTech and other tools can help them collect and analyze SDD, and what infrastructure and skills are needed to use them effectively
- Further identification of use cases for RegTech-enabled supervision of market conduct and consumer protection, and mapping to potentially useful technologies such as NLP trained by machine learning and artificial intelligence
- Where country data is limited or absent, use internationally developed data (Global Findex, IMF, OECD, World Bank) to help explore root causes for the differences in the treatment of men and women.

4 The status quo: how four regulators collect, analyze, and use SDD for financial inclusion

"A big opportunity for enhancing the use of SDD to increase financial inclusion of women is to build on technological infrastructure, tools, and staff capabilities already in use or planned for other aspects of regulators' work."

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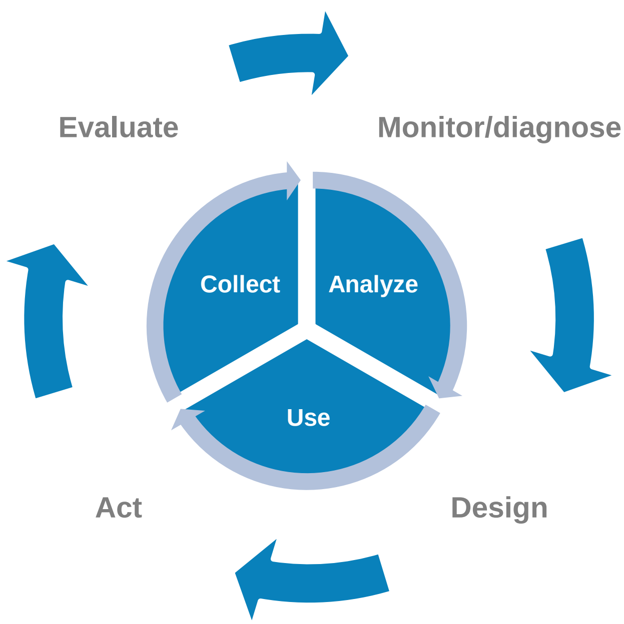
The status quo: how four regulators collect, analyze, and use SDD for financial inclusion

Insights from four countries: Colombia, Kenya, Peru, and Zambia

We wanted to understand how regulators were collecting, analyzing, and using SDD, how RegTech was already being deployed to enable this, and where there was potential for further developing the use of RegTech to support regulators' use of SDD for financial inclusion of women.

We considered collection, analysis, and use as part of an iterative lifecycle because the choice of what to collect and how depends in part on the intended use. We also considered different types of use – from monitoring or assessing the current situation, which in turn can be used to diagnose priority areas of focus, and then to design, implement, and evaluate action taken by the regulator or other stakeholders. For regulators, we further considered their standard setting and supervisory functions distinctly, as well as seeking to understand any other activities undertaken specifically for purposes of enhancing financial inclusion and/or gender equality.

Figure 5: Data lifecycle



We considered governance, people, technology, and gender capabilities as enablers of, or potential barriers to, increased maturity. We paid particular attention to methods used to gather, store, analyze, and use data from FSPs given the core role that the infrastructure and tools needed to do so plays in preparing the ground for the deployment of other RegTech.

What these regulators were collecting and why

Regulators in all our pilot countries played an important role in providing some data for the overall national financial inclusion effort about developments in financial services markets and access to and use of products and services by consumers. This included underserved groups such as women, young people, or inhabitants of rural areas, typically in partnership with civil society actors, and often drawing principally on periodic demand-side surveys.

The CBK noted that the gender gap in Kenya is now relatively small at 7%, and that access to formal financial services by women had increased from 34% in 2009 to 80% in 2019. This monitoring data is clearly sex-disaggregated and is developed from its long-term FinAccess Household Survey process. More granular SDD shows that bigger differences between men and women remain in some areas; for example, analysis of usage shows men using banks 14% more than women, and women using informal groups 14% more than men. Nevertheless, the SDD shows clear increases in access.

Some regulators were involved in the design and/or delivery of financial education programs informed by this data. Often, the regulators had also used this data to inform the design of new regulatory regimes (e.g., for co-operatives, microfinance institutions, or non-bank payment service providers) and adjustments to regulatory standards (e.g., simplified CDD) with a view to providing a more appropriate policy framework for inclusion. This data typically focused on access – i.e., whether consumers had an account with or credit from an FSP and alternative sources of provision (such as informal service providers, peer groups, or friends and family). This data was often sex-disaggregated and stratified in other dimensions too (e.g., age, rural/urban). One pilot country had recently enhanced the scope of its data collection in order to increase the data available about how products were being used and its quality, reflecting the fact that significant progress had been made towards increased access to gateway products.

Many of the regulators in our pilot countries were aware of and referred to the existing international sources of SDD, including FinScope, Global Findex, and various World Bank and OECD data, and were discussing associated financial inclusion and/or RegTech initiatives in regional or international as well as domestic forums.

However, it was less common for regulators to be collecting FSPs' SDD themselves, or to be collecting such data specifically for the purpose either of financial inclusion or of market conduct/consumer protection supervision, as distinct from policy-making. For example, some authorities did have sex-disaggregated credit data, but this was typically not collected for financial inclusion reasons or used for that purpose. Others had SDD about pension scheme participation that, though not primarily collected for that purpose, was used to identify the extent to which there were differences in participation between men and women, but not used directly in scheme oversight.

We think that one reason for this is that in the earlier stages of market maturity few consumers are using services from regulated providers and hence the focus of regulators and policymakers is on structural interventions and policy, with limitations in what supervision of individual regulated firms can achieve. However, as markets mature and the state of inclusion evolves, firm supervision becomes more relevant and impactful, but data about consumer behaviour and experiences typically needs to be analyzed and used at a firm-specific rather than a market-wide level, and a gender dimension to firm-specific supervision may be unfamiliar.

However, one authority did require FSPs to submit an annual financial inclusion plan, which was monitored in the supervisory cycle, and was piloting collection of SDD on product/service holdings and usage in order to better inform its targeting and implementation of its financial inclusion strategy.

Although some regulators were providing aggregated data, including SDD, to FSPs with the aim of better equipping them to identify ways to serve women and other underserved groups, there appeared to be little consensus that this was making a material impact on the behavior of FSPs. In some countries, some FSPs said that they were collecting and analyzing a lot more SDD than the regulator required. Some gave examples of how they had used that data to design products and service delivery better suited to the needs of women customers. However, it is clear that others did not see value in collecting or using SDD.

How these authorities were collecting and analyzing data today

Regulatory reporting from FSPs

As noted above, a big opportunity for enhancing the use of SDD to increase financial inclusion of women is to build on technological infrastructure, tools, and staff capabilities already in use or planned for other aspects of regulators' work. Therefore, we considered how the regulators in our pilot countries were collecting and analyzing data more broadly, and what steps they were taking or considering to enhance capabilities.

We found that where data was collected from FSPs as part of periodic regulatory reporting, regulators were typically using a dedicated portal with some degree of automation – for some submitters. However, some data was still submitted manually or outside the system altogether, either by e-mail or hard copy. Some had automated receipts and validation in place for at least some types of data, but typically a significant amount of validation was carried out manually.

Several regulators had projects underway to enhance their data and analytics capabilities. Some had a particular focus on RegTech, though none as yet had specific data strategies. Initiatives included updating the identification of data needs, definition of data fields, upgrading of portals and opportunities for straight-through transmission, creation of a data lake bringing together data from multiple sources, and provision of automated alerts and visualization tools to end users, particularly supervisors. One had actions planned under its financial stability regime that would also act as enablers for enhanced capability to deploy RegTech and use data effectively, including a sandbox to allow FinTech innovation, data warehousing, enhanced data collection and management, and use of SupTech.

As a result, regulators in our pilot countries typically did not see their own technological capacity as a barrier to the greater collection, analysis, and use of SDD specifically, but were aware that more could be done to enhance the value obtained from regulatory returns generally, and the efficiency with which data could be used. Few FSPs advised us that the technological capabilities of regulators hindered their technology development, but a time could arrive where this might become a barrier if regulators' RegTech did not advance in tandem.

Insights from the demand-side

Where regulators collected demand-side data, this was typically done in partnership with other organizations through traditional face-to-face surveys by market researchers. This typically had a quantitative rather than a qualitative focus, seeking to describe the proportion of respondents in a particular situation or with a particular perspective, rather than seeking to identify underlying drivers, although some regulators explored these indirectly by seeking data on access to SIM cards and handsets as enablers of access to digital financial services. One regulator had analyzed data from surveys conducted by the national statistical office to argue that type of employment, income level, and level of education were the determinants of financial exclusion and that differences in account ownership disappeared when these factors were controlled for. However, it is not clear whether the analysis considered how aspects of the regulatory regime, such as ID or collateral requirements, might contribute to the differential experience of those in the disadvantaged groups.

Taking the next step: how these regulators could do more and what challenges might appear

Key enablers of making progress on the collection and use of SDD included:

- Recognition of the benefits of a data-driven, tech-enabled approach to supervision more broadly, with associated investment in infrastructure, tools, and staff capabilities
- An innovation-friendly mindset that is open to new ways of providing, regulating, and supervising financial services
- A clearly articulated financial inclusion focus coupled with female senior managers empowered to make decisions and implement change.

A key barrier seemed to be the difficulty of articulating use cases for SDD in the regulator's core business, particularly risk-based supervision, and therefore justifying the investment needed to collect the data and embed its use in core processes. We think this barrier could be reduced by the production of off-the-shelf use cases for common pain points where existing data suggests that women may have different experiences, needs, and preferences than men, or FSP-specific data could inform the supervision of key market conduct/consumer protection controls such as product design and governance, behavior and remuneration of sales agents, and complaints-handling and redress. This is an area in which new or additional aid or resources might be provided by civil society.

We think there is considerable potential to use targeted collection and analysis of SDD from FSPs to inform the risk-based prioritization of FSPs for market conduct/consumer protection supervision, and to make certain that firm assessments and any remedial action ensure that female as well as male customers receive fair treatment.

Regulators would need to begin by mapping the SDD needed for specific supervisory use cases, requiring or incentivizing FSPs to provide this (which may mean changes to their internal systems or processes), and ensuring that the necessary technology and processes are in place within the regulator to collect, analyze, and use the data.

Technological advances allow the data to be collected through various means, including by the adoption of pull techniques, through which regulators are able to extract data directly from FSPs' own systems and then process it according to their needs. Additionally, FSPs can download data to a third-party provider that houses a mirrored but protected system. This then allows the regulator access to its data without entering FSPs' live systems. Some regulators in our pilot countries have been experimenting with this approach, as have regulators elsewhere. Though not without challenges, such an approach has the potential to reduce costs for FSPs and create real-time supervision opportunities for regulators. The data could also be held by a reputable third-party for access by the regulator as needed, thus avoiding FSP concerns about unlimited access. However, regulators could also require FSPs to collect and aggregate the data before transmission to the regulator, meaning that the regulator would not need the capacity to handle or interrogate large volumes of data and reducing the extent to which regulators have access to customers' personal data.

In order to understand the causes of barriers to access or consumer harms, where they arise, and to design effective remedies, there is likely to be a need for more qualitative data, which typically comes in less structured forms; examples include consumer complaints, social media commentary, consumer diaries, interviews or focus groups, or mystery shopping exercises.

We think that regulators' propensity to collect and use supply-side SDD could also be enhanced by working with appropriate partners to map how specific data sets could be sex-disaggregated and deployed using existing or planned technology and capabilities, so that the business case only needs to be made for the marginal cost of collecting the SDD, rather than the infrastructure as a whole. As market maturity increases and more consumers, including women, are using formal financial services, other tools become available, particularly where women have access to the internet.

Experience in our pilot countries suggests that one legacy of the COVID-19 pandemic will be increased access to basic payment or deposit accounts for government assistance payments, and increased awareness of the benefits of digital access to financial services.

Existing case studies from a wide range of jurisdictions have shown that a variety of technological approaches are available to support these use cases. These approaches range from back-end aggregation of data from multiple sources to facilitate analysis and case management (to which may be added distinct dashboards for different types of users), through to sophisticated front-end chatbots, trained with machine learning and AI, to field queries or complaints from consumers and provide an additional, resource-efficient means of collecting data and managing cases. There are also examples of regulators using natural language processing (NLP)[9] techniques to monitor advertising and disclosure materials and social media commentary from consumers to inform the focus of conduct and consumer protection supervision.

[9] NLP describes the interaction between human language and computers. It is a relatively common technology that has been around for years. Examples of everyday uses of NLP in word processing are spell check and translation functions.

5 Conclusions and recommendations

"As regulators' technological capabilities are enhanced, new opportunities arise to use different and bigger datasets, to automate aspects of the processing and analysis, and to make it easier for end users to see the significance of SDD for women's financial inclusion and to act on it in routine supervisory work."

Conclusions and recommendations

Conclusions

Regulators have the potential to move beyond observing levels of women's financial inclusion to becoming agents of change where they have a clear statutory mandate to do so and a risk-based approach to supervision.

Regulators' potential is enhanced by cross-sectoral national governance of financial inclusion efforts to help address barriers outside the regulators' remit, such as physical, power, and telecoms infrastructure, data protection legislation, and cultural barriers to gender equality. It is also enhanced where there is a wide regulatory perimeter, particularly in relation to gateway services such as payments, credit, and household insurance products. The regulatory perimeter includes services delivered digitally.

As markets mature, the financial inclusion challenge shifts from access to financial services to increasing usage and quality of services access. As this occurs, the role of regulators grows in significance and, correspondingly, attention needs to expand to focus on supervision, particularly of conduct and consumer protection controls, as well as formulation of underlying regulatory framework and standards. This is likely to require different data, and hence openness to different techniques for collecting, analyzing, and using it.

Regulators do not need cutting edge technology to start collecting, analyzing, and using SDD to enhance financial inclusion of women. No special infrastructure or tools are needed to seek data and supervise firms' progress towards equality of representation of women and men in senior management roles. However, as regulators' technological capabilities are enhanced, new opportunities arise to use different and bigger datasets, to automate aspects of the processing and analysis, and to make it easier for end users to see the significance of SDD for women's financial inclusion and to act on it in routine supervisory work.

SDD checklist: suggested actions for regulators, financial institutions, and other stakeholders

We set out steps below that regulators and other stakeholders can take to capitalize on regulators' potential to become agents of change and enhance maturity of regulatory use of RegTech-enabled SDD to increase financial inclusion of women.

It should be noted that individual stakeholder efforts can have a cumulative or multiplier effect against the work of other stakeholders. As international standard setters begin incorporating gender and inclusion, ministries and regulators will begin to align their practices to come into line with these new standards, in particular where agencies or countries are assessed against them by Bretton Woods institutions. As regulators incorporate new standards, their supervisory practices will require FSPs to incorporate governance and internal control systems to show that they support national interests, aid in the achievement of the UN SDGs, in particular UNSDG5, and that their business processes are aligned with the outcomes that regulators seek. Efforts like these in EMDCs will then be more likely to attract the interest and aid of capacity builders and civil society stakeholders.

International standard setters and regulatory capacity builders

International standard setters and regulatory capacity builders need to show more clearly how gender is relevant to financial regulation, why SDD is important, and how it can be used in the application of international standards.

Action checklist:

- ✓ Explicitly incorporate gender into assessment methodologies, both in relation to governance controls and specific aspects of conduct and consumer protection supervision from which both women and men should benefit equally.
- ✓ Provide case studies of how regulators can carry out consumer protection activities in ways that ensure equality of treatment between men and women, particularly in relation to gateway products and services.
- ✓ Further develop literature and case studies on the use of RegTech for conduct supervision and consumer protection (for example, in relation to product design and governance, customer communications and sales/distribution practices, and complaints and redress).
- ✓ Develop examples of use cases for SDD in regulatory policy and supervision (for example, in relation to assessing the suitability of senior management and governance, product design and governance, customer due diligence and KYC, credit risk management, customer communications and sales/distribution practices, and complaints and redress).

Donors, capacity builders, and civil society

Donors, capacity builders, and civil society need to help regulators to access funding and expertise on gender equality and RegTech to understand the real drivers of difficulties experienced by women, and to help governments enhance the non-financial infrastructure that supports digital delivery and use of financial services and RegTech.

Action checklist:

- ✓ Continue to fund and provide technical expertise to enable the gathering and dissemination of internationally comparable SDD on women's economic and financial situation and factors affecting it to inform policy design and demonstrate the need for and impact of such data.
- ✓ Provide funding and skills to support the development of a RegTech roadmap for regulators and dedicated expertise and funding to make the case for any additional marginal cost needed to use these tools for the collection, analysis, and use of SDD.
- ✓ Share case studies of how regulators have used a focus on gender equality supported by specialist expertise to address exclusion and poor treatment of women in other financial services markets, to help make the case for change and build capability to integrate a gender focus in mainstream supervisory work.
- ✓ Source and/or fund specialist training in gender awareness and supporting tools to inform the management and leadership of the regulator itself and its focus on gender equality issues within FSPs and in their treatment of women customers.
- ✓ Provide toolkits to regulators to help them self-assess their current maturity in relevant dimensions and to diagnose and plan how to capitalize further on their potential as agents of change.

- ✓ Contribute to aid, research, and training, as these actions will help regulators and FSPs to better understand the real barriers to access and usage of products and services by women and the underlying issues driving women's behavior (e.g., concerns about safety when dealing with agents).
- ✓ Spot and communicate opportunities to enhance provision to underserved market segments.
- ✓ Help to raise awareness of products and services (primarily those classified as gateway) and how to access them.
- ✓ Support digital access, including building capacity and interest among women in using technology.

National ministries

National ministries need to ensure that regulators have the right statutory mandates to act as change agents for financial inclusion. This means giving them explicit consumer protection objectives, a broad regulatory perimeter, and shared responsibility for gender equality. Ministries also need to put in place cross-sectoral strategies and governance to tackle underlying barriers to financial inclusion, including infrastructure, cultural barriers, and access to technology, as regulators cannot solve these issues alone.

Action checklist:

- ✓ Ensure that financial services regulators, particularly those for gateway products such as banking, payments, and credit, have an explicit consumer protection regulatory objective in legislation.
- ✓ Explicitly require and/or incentivize regulators to achieve their regulatory objectives in ways that promote competition, financial inclusion of women and men, and innovation.
- ✓ Ensure that the regulatory perimeter and standards allow for and apply to non-bank providers of payments and credit, including where provided digitally, and for coordination and coherent regulatory treatment where more than one regulator is responsible.
- ✓ Set targets for – or require the regulators to set their own targets for – increasing the proportion of women in senior management positions within the regulator itself and within regulated FSPs.
- ✓ Ensure that regulators have explicit powers to require FSPs to collect and to provide them with data, including SDD, for relevant regulatory purposes.
- ✓ Require regulators to carry out gender equality impact assessments of their policies and procedures.
- ✓ Use cross-sectoral governance and strategies to address barriers that financial services regulators alone cannot address, such as access to electricity, telecommunications networks and infrastructure, formal proof of identity and title, and data protection.
- ✓ Ensure that the responsible regulators have explicit consumer protection objectives in their primary enabling legislation.
- ✓ Consider cross-cutting governance that can overlay all policies, strategies, and initiatives to ensure coherence and co-ordinated effort on horizontal themes (gender mainstreaming).
- ✓ Ensure that personal privacy and protection of data laws do not unnecessarily interfere with regulatory data collection, analysis, and use.

Regulators

Regulators need to lead by example on gender equality and set expectations in regulated firms that explicit consideration of women is needed to ensure sound management of the firm and sound *provision of financial services to customers. They can leverage broader digital transformation programs and engagement with innovators to identify and build capacity for use of SDD in supervision, particularly in relation to core aspects of consumer protection supervision that benefit women as well as men.*

Action checklist:

- ✓ Lead by example on gender: set targets and plans to achieve equal representation of women and men in senior management, governance, and leadership positions, and use SDD to track progress.
- ✓ Collect data from FSPs about female representation in senior management and intermediaries, and use it in decision-making about governance, risk management, and fair treatment of customers in authorization and supervision, like qualitative and quantitative data on women's experience of providing ID for CDD/KYC checks.
- ✓ Recruit or train staff to be gender specialists and embed them within supervision teams.
- ✓ Develop or update data and RegTech strategies: work towards secure, automated data transmission and validation; create workflows through to end users with user-friendly interfaces and integration into case management or CRM tools reaching beyond policy/analysts to frontline supervisors in a digestible format.
- ✓ Build consideration of the needs, preferences, and experience of women into market conduct/consumer protection supervisory modules: for example, in relation to product design and governance, sales and distribution practices, and complaints and redress.
- ✓ Sex-disaggregate any complaints the authority itself receives from consumers to identify trends in propensity to complain, nature of complaints, and FSPs' response, and move to require FSPs to sex-disaggregate their own complaints data.
- ✓ Supplement periodic surveys with additional tools to get a demand-side perspective in a way that can be used for supervision, such as mystery shopping and, where internet use is common, NLP-enabled analysis of marketing material and social media comments, and deployment of tools such as chatbots to enable higher volume of communication with customers who have complaints.
- ✓ Create opportunities for dialogue with FSPs and the wider tech ecosystem about where technology can address pain points in service provision or regulation, including where specific consideration is needed in relation to financial inclusion or women customers specifically.
- ✓ Use financial inclusion data for identifying financial inclusion priorities, monitoring progress in financial inclusion, planning supervisory programs, and planning other initiatives, such as sensitization and access points available.

FSPs

FSPs need to consider the commercial opportunity of enlarging their customer base by including more women, how they will demonstrate to regulators that they are treating women as well as men customers fairly and meeting the needs of both, and how increasing the representation of women in their own staff can support these aims. Leveraging available tools and the wider tech ecosystem will help FSPs to optimize data and technology to meet these goals. FSPs need to tell regulators and ministries about pain points that make it harder for them to provide women with the services they want.

Action checklist:

- ✓ Consider the market opportunity of increasing the provision of services for women, including as a channel for reaching younger consumers, and what data you would need to design and deliver products for them.
- ✓ Use FAMOS Check and other tools to self-assess your readiness to attract and serve women and men customers to meet their needs.
- ✓ Set targets and plans for ensuring balanced representation of women and men in your management team, key functions, and use data to track progress.
- ✓ Consider the balance between women and men in your senior management, sales agents, and other customer-facing functions. Determine how you could ensure a more balanced representation and ensure that all are treating female customers appropriately. Set policies and procedures to ensure equality of treatment of male and female employees. Nominate a senior manager responsible for gender focus.
- ✓ Use available tools designed to help you to use data to enhance and target product offerings. Have policies and procedures to ensure female-friendly product design and governance.
- ✓ Consider the differences between men and women in relation to the prevalence or types of complaints made, or the response/redress offered.
- ✓ Use available tools to assess your technological capability and path to readiness for enhanced use of RegTech applications.
- ✓ Tell regulators what you need to be able to provide services more cheaply and efficiently and to reduce the cost and effort of meeting regulatory requirements.
- ✓ Identify regulatory pain points that make it harder for you to provide services to women and other underserved groups and ensure your regulator is aware of them; think about what a solution could look like.

Technology providers

Technology providers need to show FSPs how digital service delivery can change the economics of providing services to women and other underserved groups and enable easier collection, analysis, and use of SDD to enhance customer service and demonstrate to regulators that women are being given access to financial services and are being treated fairly. They also need to ensure regulators know what solutions are available to address key pain points and to ensure that security and reliability are sufficient to maintain confidence in the solutions used.

Appropriately used, a further enabler is recognition of the potential role of digitalization and innovation and a route map for further technological development. This includes telecoms and other infrastructure, regulation and competition, access to technology, and associated consumer protection safeguards, such as management of cyber and other security risks and data protection requirements. In countries where electricity capacity is constrained, benefits will be derived from additional efforts to reduce load-shedding and provide more widespread access to stable, 24/7 electricity, supporting better internet accessibility.

Action checklist:

- ✓ Work with partners to ensure interoperability and ease of user access so that tech solutions can be widely adopted more easily.
- ✓ Design security to maintain confidence of regulators, FSPs, and customers and look for opportunities to use biometric and other ID tools that are readily available to women.
- ✓ Discuss with regulators what RegTech solutions are possible and ensure you know what pain points they and FSPs are trying to address.
- ✓ Make technology solutions available to regulators to enhance the capabilities of the ecosystem as a whole.
- ✓ Tell regulators and FSPs what you have seen others achieve and help them to learn about new developments and opportunities.

First Deputy Managing Director David Lipton in his April 2017 speech on Central Bankers and Inclusive Growth: Building a Framework for Financial Inclusion stated,

> *"[IMF] research suggests that risks to financial stability increase when access to credit is expanded without proper regulation and supervision. Unfortunately, countries with the biggest gaps in access to the financial system also tend to have the lowest supervisory quality. So, investing in high quality supervision can pay big dividends as financial inclusion expands."*

This study supports the premise that financial services regulators need to and can play a role in addressing financial inclusion of women. In examining the ecosystem in which they operate, there are increasing opportunities for regulators to collect and analyze SDD and to leverage technology to support better supervisory decision-making that can support and improve the access to and the quality of financial services for women.

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