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ORIGINAL ARTICLE

Crowdfunding and entrepreneurial/SME finance: regulatory framework for financial inclusion

Habib Ahmed[1,2]

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Abstract
Crowdfunding is considered an efficient alternative to traditional sources of finance that can enhance financial inclusion and reduce financing gaps faced by entrepreneurial firms and small and medium enterprises (SMEs). The growth of crowdfunding platforms (CFPs), however, depends on an enabling regulatory regime that can promote the objectives of innovation and financial inclusion on the one hand and mitigate the concerns of financial stability and consumer protection on the other hand. This article identifies some key elements of a sound regulatory framework that can promote CFPs to enhance entrepreneurial/SME finance and give opportunities to retail investors to invest in alternative assets while protecting them from large losses. The framework is used to assess regulatory regimes of CFPs in four GCC countries (Bahrain, Oman, Saudi Arabia and United Arab Emirates) by using content analysis of the relevant laws and regulations. The results show varied regulatory regimes in terms of institutional frameworks, types and scope of CFPs, the financing requirements for firms seeking funds and investment opportunities available to retail investors. The article concludes that the appropriate design of regulatory regimes is important for determining the scope of CFPs and their role in enhancing entrepreneurial/SME financing and financial inclusion.

Keywords Crowdfunding · Entrepreneurial/SME finance · Financial inclusion · Regulations

Introduction

Small and medium enterprises (SMEs) represent more than 90 per cent of businesses and over 50 per cent of employment worldwide, contributing to between 60 and 70 per cent of the gross domestic product (GDP) of low-income, middle-income and high-income countries GPFI [34]. However, SMEs face huge financing gaps that inhibit their growth. The financing gap faced by formal micro, small and medium enterprises (MSMEs) globally is estimated to be USD 5.2 trillion World Bank and IFC [52], p. 27), and the corresponding equity gap for them is valued at US$ 3.92 trillion [50], p. 73). Traditional banks are reluctant to fill this gap partly due to information and communication-related frictions that increase the risks and transaction costs of financing SMEs. Furthermore, the introduction of a regulatory framework after the global financial crisis increased capital charges for financing riskier unrated firms which discourage banks from financing SMEs [3, 29],FSB [31, 42]. While another option is to use capital markets to raise funds in the form of both debt and equity, key constraints that SMEs face in using capital markets are the relatively higher costs of issuing and listing securities and onerous disclosure and reporting requirements.[1]

✉ Habib Ahmed
habib.ahmed@durham.ac.uk

1 Durham University Business School, Durham University, Durham, UK

2 Department of Islamic Banking, University of Jordan, Amman, Jordan

[1] The direct costs include expenditures for preparing the documentation for listing, sponsor and advisor fees, audit and ongoing compliance fees and admission and ongoing fees paid to exchanges. Listing charges include application fee, vetting fee and admission or trading fee. Furthermore, other fees have to be paid to advisers, accountants and lawyers involved with the issuance and listing processes.

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One option for increasing financial inclusion is to use digital technologies to provide financial services [33]. In particular, crowdfunding platforms (CFPs) provide innovative models of new financing sources whereby loan or debt-based crowdfunding matches lenders and borrowers, and equity crowdfunding matches investors and investees on their electronic platforms [27]. Crowdfunding makes available low-cost sources of funds to consumers and businesses who cannot get funds from traditional sources such as banks and also provides opportunities for retail and institutional investors to gain relatively higher returns from alternative investments [38]: [39]. Crowdfunding, thus, has the potential to fill the gap in the market and help improve financial inclusion both for existing firms and new enterprises, particularly in developing countries [49, 51].

Since the financial sector is one of the most regulated industries, a key challenge for the development of the crowdfunding sector is to have sound legal and regulatory frameworks that can build trust among both fund seekers and providers [38]. Surveys of FinTech firms find that dealing with financial regulations is ranked as the highest challenge facing FinTechs [40], p. 25). From a regulatory perspective, CFPs can fulfil the objectives of innovation and financial inclusion, but they also raise concerns about financial stability, consumer protection and financial integrity. Conflicts in regulatory objectives that inhibit the development of supportive regulations can hinder the growth of the FinTech sector and impede financial inclusion. Thus, there is a need to design regulations related to CFPs in a balanced manner so that they can contribute to financial inclusion while maintaining stability and protecting the interests of both the fundraisers and investors. This can be done by using the principle of proportionality, which would reduce regulatory requirements when risks to regulatory objectives are low.

This article identifies the features of an enabling regulatory regime for CFPs that can help promote financial inclusion in general and SME financing in particular. It provides a framework of proportional regulations for CFPs and uses it to assess the regulatory regimes of four countries of the Gulf Cooperation Council (GCC): Bahrain, Oman, Saudi Arabia and the United Arab Emirates (UAE). Other than shedding light on the role of regulations in developing CFPs and promoting financial inclusion, studying regulations for CFPs in GCC countries is significant for a couple of reasons. First, the countries belong to a region that has one of the lowest financial inclusions in terms of SME financing. With a credit gap of USD 250 billion in the GCC, SME lending is estimated to be only 3% of the total loans [26]. Second, the article fills a gap in an under-researched area of examining the FinTech regulations in general and for the GCC region in particular. Whereas some studies examine regulatory frameworks for CPFs for countries from different regions, there is scant literature examining the regulatory frameworks for GCC countries. For example, a structured literature review of 89 research papers on crowdfunding in GCC published for the period 1981–2021 reveals that none covered regulatory issues [47]. One of the reasons for the lack of coverage is that regulations for CFPs have been adopted relatively recently in the GCC countries.

After providing a framework of proportional regulations to encourage crowdfunding, the article examines the regulatory regimes for CFPs by doing content analyses of the laws and regulations of select GCC countries. In particular, proportionality features applicable to regulatory requirements for CPF (capital requirements), issuers (amounts raised and enlisting requirements) and funders (type of lenders/investors and amount that can be lent/invested) are assessed. The comparative analysis enables identifying the strengths and gaps of crowdfunding regulations in these jurisdictions and suggests ways to strengthen the regulatory regimes that can help promote the crowdfunding industry and enhance financial inclusion.

The article is organised as follows. The next section provides an overview of crowdfunding and regulatory objectives, followed by a section presenting a risk-based framework for CF regulations to promote financial inclusion. The framework is then used to assess the regulatory regimes of four GCC countries in terms of their contribution to financing entrepreneurial firms and SMEs. Sect. "Evaluation and discussions" highlights the key findings and provides policy recommendations. The last section concludes the article.

Crowdfunding and regulatory objectives: literature review

Crowdfunding is 'an umbrella term describing the use of small amounts of money, obtained from a large number of individuals or organisations, to fund a project, a business or personal loan and other needs through an online web-based platform' [39], p. 4). Crowdfunding can be categorised as donation-based, reward-based, equity-based and debt-based [23]: [38, 39, 41, 49]. In donation-based crowdfunding, donations are made by philanthropic funders or donors without any expectation of returns. Reward-based models provide funders with a token gift or enable them to pre-purchase a product or service. Equity-based crowdfunding (ECF) is considered investments in the form of equity of unlisted firms, and investors become shareholders of entities in which they invest. ECFs provide alternative sources of capital to start-ups and small businesses to raise equity capital where funding is not available from venture capital or private equity firms. In debt-based crowdfunding (DCF), funding is provided to fundraisers in the form of time-bound loans from multiple lenders through the online platform.

While usually termed peer-to-peer (P2P) or consumer-to-consumer (C2C) lending, DCF can also take the form of peer-to-business (P2B) or consumer-to-business (C2B) and business-to-business (B2B). This article focuses on the latter two market-based financing mechanisms (ECF and DCF) that provide financial returns to creditors and investors.

A fundamental function of financial firms is to resolve economic frictions that arise in providing financial services [28]. Key frictions arising in financial intermediation relate to information, communication, coordination, implementing incomplete contracts and other market-related problems [1, 15, 35]. Resolving these frictions requires developing business models and operational structures that can minimise the risks and transaction costs. The information problems include adverse selection and moral hazard problems, which if acute, will prevent investors from participating in crowdfunding. Since the information problems may be acute for smaller firms, they cannot get financing from traditional sources such as banks due to opaque information and higher risks. A key role of the crowdfunding platforms (CFP) is to provide accurate and relevant information on the projects. Thus, the CFP performs the function of a delegated monitor and must do due diligence and come up with appropriate credit scores for the projects listed on the platforms.

Communications frictions arise due to the difficulties of establishing relationships and delivering services to customers through different distributional channels [15]. A related problem of coordination arises in matching the parties (buyers and sellers). For example, entrepreneurs seeking funds in the pre-investment stage are unable to communicate with the investors and exchanges and CFPs provide opportunities for matchmaking between investors and seekers of funds. In the post-investment stage, coordination problems can arise when fund providers want to sell their investments. Some CFPs provide liquidity services by establishing secondary markets or bulletin boards where investors can trade their equity or debt [35]. Market-related frictions involve barriers to entry that can arise due to various factors. A key constraint is competing with existing financial institutions providing similar services as they have information advantages and enjoy economies of scale.

Other than increasing competition by providing additional sources of funding and access at a relatively lower cost of capital compared to traditional sources, the benefits to fundraisers using CFPs include convenience and speed [38]. Using digital technology reduces the costs that legacy-based financial institutions incur for using physical premises and increases convenience [39]. CFPs also provide opportunities for retail investors to invest in a new asset class that gives relatively higher returns and helps them diversify their portfolio by investing small amounts of funds in numerous projects. In some jurisdictions, CFPs are allowed to solicit funding globally, which expands the sources of funding further.

The traditional risks faced by financial institutions include credit, market, liquidity and operation risks. The specific risks facing FinTechs would depend on the types of products and business models used. However, FinTechs face additional operational risks due to the use of digital technologies [40]. Risks arising from using technology and new business models include cyber threats and data security and privacy risks [16]. Security-related risks in new business models and technologies include cyber risks, biases in algorithms and smart contracts and the robustness of different digital technologies. Risks related to data protection and privacy include issues related to data ownership and protection, data privacy, digital ID and identity theft and customer due diligence (CDD) to prevent financial crimes. BCBS [4],BCBS [4],BCBS [13, 15, 28],FSB [30, 54]. FinTechs that use artificial intelligence (AI) can raise additional risks such as embedded bias, accuracy and robustness of AI systems and explainability of how results are arrived at [14],OECD [43, 46]. CFPs, such as donation-based CFs that use AI to enhance their operational performance, need to mitigate these additional risks [11].

Certain risks arise for both fundraisers and fund providers using CFPs. If the CFPs are not regulated and financing applications are not properly scrutinised, there can be cases where fundraisers take on excessive debt, which becomes difficult to service. This can arise due to the incentive structures of CFPs in their role as brokers, whereby they do not take on the credit risks. Since CFPs generate revenue through fees which depend on the volume of financing that is facilitated, there may be incentives to increase the listing of funding requests on their platforms [38]. Furthermore, fees paid to CFPs add to the costs of financing and the protections available to borrowers from well-regulated banks may not be available to those raising funds from platforms. The lenders/investors also face certain risks, such as the risk of default and illiquidity of their investments. Specifically, DCF funding is in the form of time-bound loans from multiple lenders who face credit risk. ECF investments are considered long-term investments in the form of equity and investors face business and liquidity risks.[2] Lenders/investors also face cyber risks, platform risks, risk of fraud and issues related to lack of transparency and information asymmetry. Furthermore, there is a risk of retail investors' inexperience and lack of protection of their interests [39].

[2] Liquidity of crowdfunding investments will depend on the opportunities of selling equities or debt in secondary markets or through bulletin boards.

Regulatory objectives and tools

In this section, the regulatory objectives discussed in the literature and the tools identified by international standards-setting bodies and multilateral institutions to achieve them are presented. Regulations must fulfil the broader public policy objectives of enhancing overall public welfare on the one hand and mitigating societal risks and concerns on the other hand. While the specific regulatory objectives under enhancing public welfare for the financial sector are encouraging innovation and market development, financial inclusion, competition and efficiency, the main regulatory concerns under mitigating economic and societal risks include financial stability, consumer protection and financial integrity. Financial sector regulations are structured to balance the welfare objectives of financial inclusion and societal risks.

As indicated, CFPs also introduce certain risks that can raise regulatory concerns related to financial stability and consumer protection. In general, the nature of risks arising in different FinTech models will depend on the activity and business model used. The key international regulatory guidelines and principles used to achieve regulatory objectives of financial inclusion, stability and consumer protection are discussed below.

Financial inclusion

Global Partnership for Financial Inclusion, along with G20, published the *G20 High-Level Principles for Digital Financial Inclusion* in 2016 [33] that includes eight principles. While Principle 1 argues for the promotion of a digital approach to financial inclusion, Principle 2 recommends balancing innovation and risks to achieve this goal. The *High-level Principles* assert providing an enabling and proportionate legal and regulatory framework (Principle 3), expanding the digital financial services infrastructure ecosystem (Principle 4) and facilitating customer identification for digital financial services (Principle 7). Furthermore, comprehensive approaches should be taken to protect consumers and their data (Principle 5) and also to strengthen digital and financial literacy and awareness (Principle 6).

Crowdfunding can meet the regulatory objectives of enhancing financial inclusion, efficiency and competition. Other than providing alternative lower-cost sources of financing for SMEs that cannot access financing from traditional sources such as banks, CFPs also provide opportunities to investors who are not able to invest in capital markets [38, 39]. Crowdfunding can meet the financing needs of small and medium enterprises (SMEs) and also promote entrepreneurship, whereby entrepreneurial firms can raise equity capital from a large number of investors. ECF serving as an alternative source of equity capital for new entrepreneurial firms is more relevant for countries lacking seed and venture capital providers [44]. CFPs also enhance financial inclusion on the supply side, whereby investors get an opportunity to invest in a diversified portfolio by investing small amounts in different ventures, and the use of digital technology significantly reduces the transaction costs.

Financial stability

Financial stability is achieved by instituting prudential regulations that can increase the resilience of financial institutions. BCBS developed the Basel III standards to protect banks against credit, market and operational risks in 2010 BCBS [5] and published the liquidity standards to mitigate liquidity risks in 2013 BCBS [7]. Furthermore, BCBS BCBS [6] published the core principles for banking supervision, which cover principles of prudential regulations. A key regulatory instrument for achieving financial stability is to require financial institutions to hold adequate capital to absorb the losses that may arise due to negative shocks. Pillar 1 of Base III outlines the capital adequacy requirements (CAR) for banks to deal with credit, market and operational risks. Pillar 2 of Basel III relates to the supervisory review process to ensure that banks implement the Pillar 1 CAR by requiring banks to have a process in place to assess the risks and hold appropriate levels of capital [12]. This can be done by having in place a sound corporate governance and risk management framework BCBS [8], [12].

Since debt-based crowdfunding pairs lenders and borrowers and equity crowdfunding matches investors and investees on their online platforms, CFPs can be considered intermediaries or brokers who do not undertake maturity and liquidity transformation activities. Thus, CFPs do not face the credit and market risks faced by banks, and the stringent capital adequacy requirements applied to banks may not be applicable to CFPs. However, FinTechs, in general, face additional operational risks due to the use of technology in their business models. In particular, cyber threats can be major risks facing FinTechs that can affect their stability [40]. Cyber risks refer to different types of risks and threats that can disrupt the operations of FinTechs. Examples of cyber risks and threats include ransomware, malicious codes and viruses, destructive malware, spyware, website security, etc.[3] Cyberattacks can erode confidence in the FinTech sector and hamper the growth of the industry. Thus, from a regulatory perspective, a robust cyber risk management framework must be in place for all FinTechs, including CFPs.

[3] For a list of cyber risks and threats see NIST website at https://www.nist.gov/itl/smallbusinesscyber/cybersecurity-basics/cybersecurity-risks.

Consumer/investor protection

Regulations related to consumer protection are important to build the trust that is necessary for making investments [49]. Consumer protection in FinTechs, in general, is guided by *G20/OECD High-Level Principles on Financial Consumer Protection* (HLPFCP) [32].[4] Some issues related to consumer protection are also covered under Banking Core Principle 25 (Operational risk) which calls for having necessary controls to prevent internal and external fraud, issues related to execution, delivery and process management particularly when using agents, inappropriate products and business practices, disruption and system failures and protection of consumers' personal and financial information BCBS [9], pp. 27–28).

Key aspects of consumer protection regulations related to CFPs relate to the risks that investors face. Other than the default risk and liquidity risk, investors using CFPs also face risks of fraud, cyber risks, lack of transparency and disclosure, fair handling of complaints and risk of platform closure or failure [39, 44, 49]. Regulations have to ensure that these risks are mitigated adequately. While the focus of most of the regulations has been to protect the interests of fund providers, there is also a need to protect the fundraisers [38]. Care has to be taken that SMEs do not use CFPs to raise funds rapidly to invest in risky and unsustainable projects.

Crowdfunding and financial inclusion: a proportional risk-based regulatory framework

Crowdfunding can enhance financial inclusion and has the potential to democratise finance both by providing necessary funds to the unserved and underserved segments that need finance and enabling retail investors and the community to fund them [44, 49]. Other than providing debt to existing SMEs, equity-based CFPs can provide early-stage financing to entrepreneurial enterprises that do not have access to angel finance and venture capital. However, the existence and growth of CFPs in different jurisdictions would depend on regulatory regimes. The regulatory regimes and approaches for crowdfunding depend on the activities and differ in different countries. In general, the regulatory regimes for CFPs can be classified as prohibited, unregulated or regulated [38, 39]. For example, a survey of 12 jurisdictions shows that while 50% have set up bespoke regulations for debt-based CF, 17% are planning to have regulations, 17% have prohibited them and in another 17% of the countries CFPs operate unregulated [21], p. 34). In countries where CFPs are regulated, some jurisdictions regulate CFPs under the existing banking, securities and payments regulations and others have introduced new regulations for crowdfunding.

The approach to CFP regulations will partly depend on how to categorise crowdfunding activities from a regulatory perspective. Since crowdfunding platforms match the financiers/investors and enterprises/consumers, they perform the brokerage function of financial intermediation akin to capital markets [35, 39]. However, regulatory regimes for debt-based CF vary with some jurisdictions identifying them as intermediaries and others as banks [39], p. 6).[5] Furthermore, while in some countries debt-based CFPs are regulated by the banking sector regulators and equity-based CFPs by the securities regulators, in some other cases, both types of CPF are subject to a common crowdfunding regulatory framework [27].

Given the potential benefits and risks posed to investors, Cumming and Johan [25] discuss preferences that different stakeholders (platform or portal, entrepreneurs and investors) have towards crowdfunding regulations. First, some stakeholders may prefer a 'race-to-the-bottom' approach with relaxed regulatory regimes which enable enterprises to raise funds. Second, the stakeholders are neutral to the regulatory regime for crowdfunding and do not have a preference one way or the other. Finally, in the 'race to the top', the stakeholders prefer a stringent regulatory framework to mitigate the risks. Using survey data from Canada, Cumming and Johan [25] find that while entrepreneurs and CFPs prefer the race-to-the-bottom perspective, the investors want the race-to-the-top regime.

Since onerous regulations can hinder the growth of CFPs, applying stronger investor protection regulations to crowdfunding can impact crowdfunding adversely [35, 36]. For example, the regulatory listing requirements applied to large firms in capital markets can impose large compliance costs on smaller firms and inhibit them from accessing finance from crowdfunding platforms. This can have a detrimental impact on the growth of entrepreneurial firms and SMEs particularly in countries that have little or no alternative sources of financing from angel finance and venture capital. However, with lax regulations, the platforms can be used to raise funds rapidly to invest in risky and unsustainable projects [38]. Thus, there is a need to balance the need for

[4] The 12 principles of HLPFCP cover the following broad topics: laws, regulations and supervision, financial access and literacy, information and data, fair practices and protecting consumers' interests and appropriate products.

[5] One view maintains that ECF and DCF can be considered securities [39]. This is based on the argument that investments represent tradable notes in some crowdfunding models the platforms act as brokers who facilitate the selling of these notes. Kirby and Worner [39] discuss how IOSCO's *Objectives and Principles of Security Regulation* applies to crowdfunding platforms.

financial inclusion and mitigate the risks by using a proportional approach.

Proportional regulations for CFPs: elements of the framework

G20 High-Level Principles for Digital Financial Inclusion identifies seven principles that help promote digital financial inclusion. While Principle 2 underscores balancing between the innovation and risks to achieve digital financial inclusion, Principle 3 calls for providing an enabling and proportionate legal and regulatory framework for digital financial inclusion by taking into account the relevant international standards and guidance [33]. This would require using a proportionate risk-based regulatory approach that does not impose heavy compliance costs that can inhibit innovation and growth of digital finance.

The general framework of a risk-based proportional approach would balance between regulatory objectives of enhancing overall public welfare (such as financial inclusion and efficiency) and mitigating societal risks (financial stability, consumer protection and financial integrity). Applying the proportionality principle would imply reducing regulatory requirements when the risks are lower BCBS [10]. While proportionality usually is discussed in terms of reducing regulatory burdens, it can also imply increasing regulatory surveillance for risks that are magnified in certain business models. For instance, the use of digital technologies in FinTechs increases the technological-related operational risks significantly and more regulatory requirements should be imposed to deal with these risks.

To understand how proportional regulations can be framed for CFPs to enhance financial inclusion can be viewed from the perspectives of different stakeholders.[6] First key stakeholders are CFPs, and the regulations should facilitate their establishment and growth. Recognising that regulations have become onerous for many financial institutions after the GFC, the regulatory framework for CFPs should be proportional to reduce regulatory burdens on CFPs to encourage their establishment. The second key stakeholders are fundraisers or issuers. While CFPs can achieve financial inclusion, there is a need to protect both SMEs that raise funds and retail investors providing funds. A key issue related to fundraisers is the disclosure requirements to be listed on platforms. Since compliance with stringent disclosure requirements can be costly and can be onerous on small firms, regulations that are proportional to the risks can be introduced. Finally, investors form the third main stakeholder in crowdfunding. While CFPs provide retail investors with alternative investment opportunities, they should be protected by limiting how much they can invest in risky projects listed on the platforms.

International regulatory standards and guidelines identify some ways in which proportionality can be applied to balance the goal of financial inclusion on the one hand and the regulatory objectives of financial stability and consumer protection on the other hand. While recognising various regulatory tools that can be used to achieve the regulatory objectives, some key instruments that can be applied in framing proportional regulations for CFPs are discussed below.

Capital requirements

As indicated, a key regulatory concern is to mitigate micro-prudential risks by imposing capital requirements. The international regulatory standards and guidelines give indications on how proportionality can be applied for capital adequacy. BCBS [9], p. 21) calls for using risk-based approaches in applying Principle 16 (Capital adequacy) whereby the capital adequacy standards can be relaxed for smaller and less complex financial institutions. BCBS BCBS [10] provides a framework for applying different aspects of the capital adequacy standards depending on issues such as systemic importance, risk profile, business model and international activity. As financial institutions become large and gain systemic importance, more stringent capital requirements covering operational risks would be introduced.

Since CPFs are not engaged with maturity and liquidity transformation and act as intermediaries between providers and users of funds, the micro-prudential stability-related risks are relatively small. In their role as intermediaries, CFPs do not face credit risks or market risks but they have to deal with operational risks. Since systemic risks arise in larger systematically important financial institutions and CFPs are relatively small in size, they do not pose systemic risks.[7] Other areas of concern include cases where crowdfunding platforms offer cross-border investments and the risk created by securitisation of P2P unsecured loans that are sold in the financial markets [39]. To cover these risks, crowdfunding platforms must have minimum operating capital requirements. While most countries set a fixed minimum capital requirement for CFPs, a proportional approach would set capital holding as a percentage of the total financing or loaned funds in some jurisdictions [27, 35].

[6] The risks arising in FinTechs are discussed by Feyen et al., [28] from the perspectives of the consumers and banks and financial system.

[7] The relatively smaller size of CFPs is apparent in the capital requirements for establishing CFPs in the Gulf Cooperation Council (GCC) countries which ranges from USD 66,250 in Bahrain to USD 1.33 million in Saudi Arabia. Please see Table 4.

Table 1 Regulatory tools, objectives and proportionality. *Source*: Compiled by author

Regulatory tools	Regulatory objectives	Risks and proportionality
Capital requirements	Financial stability	Proportional approach (low risks, low capital)
Limits on funds raised	Financial stability	Lower systemic risks
Due diligence to assess risk of projects	Consumer protection	Balanced approach to facilitate using CFPs raise funds and keep risk levels low for investors
Suitability and appropriateness of investors	Consumer protection	Proportional risk taking for investors

Limits on funds raised

To balance the objectives of financial inclusion and macro-prudential risks, regulators can limit the amounts that can be raised through crowdfunding to specific amounts so that SMEs can benefit from CFPs. For example, while the UK limits the loan amount that can be raised on CFPs to GBP 5 million, the corresponding figure for the EU is 1 million Euros [35], p. 7). Since smaller firms would need smaller amounts of financing compared to their larger counterparts, the size of funds that can be raised indicates the size of firms that would use the platforms to raise funds. In particular, a lower limit of funds indicates that relatively smaller firms use the platforms to raise funds implying better financial inclusion.[8] Furthermore, limiting the size of funds that can be raised on CFPs also mitigates systemic risks.

Due diligence to assess risk of projects

Investors/customers should be provided information on the material aspects of all stages of a product including the benefits, risks and terms and conditions (Principle 7 Disclosure and Transparency) [32], p. 7). Regulations must indicate the relevant information that borrowers and issuers should provide to assess their credit quality and risks [27].[9] The CFPs may be required to develop a credit assessment model that uses the information on the fundraiser's company, the business, financial conditions and potential risks that lenders and investors face to determine a credit score. Assessing the risks of projects listed on platforms is important for both fundraisers and fund providers. While the CFPs can use due diligence to exclude heavily indebted firms, the credit scores give investors an indication of the risks they face and whether the projects are within their risk appetites. Entities raising equity on CFPs may have to submit a prospectus or a White Paper. However, proportionality would require that the disclosure requirements are not similar to large firms that raise funds on capital markets as onerous requirements would be costly and discourage SMEs from using CFPs to raise funds.

Suitability and appropriateness of investors

Principle 8 (Quality Financial Products) of HLPFCP calls for products that 'are designed to meet the interests and objectives of the target consumers and to contribute to their financial well-being' [32], p.7). There is a need to assess the suitability of lenders/investors and classify them according to their economic status, knowledge, etc., and impose limits accordingly. In doing so, the digital skills of different customers need to be considered [32], p. 6). In particular, the regulators can identify limits on the amounts that can be invested by retail investors and tie the investment amounts to their income or net wealth to protect retail consumers from investment risks. In some cases, only high-net-worth individuals or accredited investors are allowed to invest [49]. However, this would not only limit the funding sources but also limit the options available to retail investors to invest in alternative investment opportunities.

Table 1 summarises how proportionality can be applied to regulatory tools to achieve the regulatory objectives.

Regulatory regimes for crowdfunding: country case studies

In this section, the regulatory regimes of CFPs are assessed for four countries of the Gulf Cooperation Council (GCC): Bahrain, Oman, Saudi Arabia and UAE. MSMEs constitute 97% of the business in the Arab world and employ around 50% of the private sector in some economies IMF [37], p. 6). However, a key constraint to the development of SMEs in the region includes access to finance as they face the largest gap in financial inclusion in the world IMF [37]. This is confirmed in a survey of entrepreneurs in the Arab world

[8] In microfinance literature, a lower average size of financing is used as an indicator of depth of outreach that measures the extent to which the poorer sections of population have access to finance. For a discussion see Ahmed [2].

[9] The regulatory approach can be principles based where the broad principles of disclosures are mentioned in regulations and the platform then specifies the information that is required or rules-based approach where the specific due diligence information are mentioned in the regulations [27].

Table 2 Regulatory authorities and relevant laws and regulations

Countries	Regulatory authorities	Relevant laws and regulations
Bahrain	Central Bank of Bahrain (CBB)	'Crowdfunding Platform Operators Module' under its Rulebook Volume 5, Type 7 Ancillary Service Provider, 2022
Oman	Capital Markets Authority of Oman (CMAO)	CMA Decision No. E/153/2021 'Rules for Crowdfunding Platforms', 2021
Saudi Arabia	Saudi Central Bank (SAMA),	'The Updated Rules for Engaging in Debt-Based Crowdfunding', 2021
UAE	Central Bank of the UAE (CBUAE)	'Loan-based Crowdfunding Activities Regulation' (LCF-UAE), 2020
	Securities and Commodities Authority (SCA)	'Cabinet Resolution No. (36) of 2022 'Concerning Regulating Activity of the Crowdfunding Platform Operator' (ECF-UAE), 2022

identified the most severe obstacle to be a lack of financing which is reported by 42% of the respondents [53]. The average share in total bank lending to SMEs in the Arab world is 7% and only 3% for the GCC IMF [37], p. 11). While the financial sector is relatively large, these figures indicate that the bulk of the financing goes to the larger firms. An option to enhance the financing to SMEs is to introduce FinTechs in general and CFPs in particular. However, policy makers must institute enabling regulations to harness the potential of FinTechs and encourage innovation and enhance competition [22].

The specific regulatory issues that can enhance the financing of SMEs by CFPs in the selected GCC countries are discussed below. The regulations are examined in light of the proportional framework developed in the previous section to assess the role of CFPs in promoting financing to SMEs and providing opportunities for investments to retail investors.

Regulatory authorities and specific laws and regulations

Bahrain. CFP falls under specialised licences and is regulated by the 'Crowdfunding Platform Operators Module' issued by the Central Bank of Bahrain [17] in April 2022 under its Rulebook Volume 5, Type 7 Ancillary Service Provider [18] (hereafter referred to as Rulebook). The module is divided into the following chapters: Introduction (CFP-A), Operating Requirements (CFP-1) and Obligations of the borrower/issuer (CFP-2).[10] Beyond the rules of the Crowdfunding Platform Operations Module, the CF operators must also abide by some other modules that include the Authorisation Module, Principles of Business Module, Auditors and Accounting Standards Module, Financial Crime Module, Enforcement Module, CBB Reporting Requirements Module and the High-level Controls Module (CFP-A.1.1).

Oman. Crowdfunding operations were declared as regulated activity by the Capital Markets Authority of Oman (CMA) in its Decision No. 151/2021 which identified CFPs as companies operating in the field of securities [45]. Subsequently, CMA issued Decision No. E/153/2021 'Rules for Crowdfunding Platforms' in November 2021 [20] detailing the regulatory rules guiding CFPs (hereafter CMA-Rules). Furthermore, the requirements of Part Four of the Executive Regulation of Capital Market Law also apply to crowdfunding activity (Article 2).[11]

Saudi Arabia. Saudi Central Bank (SAMA) issued 'Rules for Engaging in Debt-Based Crowdfunding' in December 2020 and later published 'The Updated Rules for Engaging in Debt-Based Crowdfunding' in December 2021. The discussions on Saudi CFPs are based on the latter updated regulatory document (hereafter SAMA Rules).

UAE. UAE has issued two regulations related to CFPs, one for debt-based platforms and other for equity-based operators. The 'Loan-based Crowdfunding Activities Regulation' (LCF-UAE) was issued by the Central Bank of the UAE [19] in 2020 and 'Cabinet Resolution No. (36) of 2022 Concerning Regulating Activity of the Crowdfunding Platform Operator' (ECF-UAE) issued by the government in 2022 [48] . The latter directive applies to equity-based crowdfunding and is regulated by the Securities and Commodities Authority (SCA).[12] The SCA should take all required procedures to supervise, control and inspect the ECF platform according to the regulation(s and resolutions (Article 9.1, ECF-UAE).

Table 2 provides an overview of the regulatory regimes for CFPs in the sample countries.

Regulatory perimeters and CF activities

Bahrain. Crowdfunding activities fall under 'regulated specialised activities' and require a specialised license (UG-A.1.4). Although regulations apply to both financing-based

[10] The Articles refer to Crowdfunding Platform Operators Module under Rulebook Volume 5, Type 7 Ancillary Service Provider.

[11] The Articles refer to the Decision No. E/153/2021 (Rules for Crowdfunding Platforms).

[12] The law defines crowdfunding as a means to 'obtaining funds from investors for the purpose of financing its project through the platform in exchange for shares in the capital of a company that will be established or a company established to execute this project' (Article 1).

and equity-based CFPs, they do not apply to rewards-based and donation-based platforms (CFP-A.1.1). While financing-based models are debt-based, the equity-based models can issue different types of equity shares. CFPs can operate either financing/equity-based models or both models on the same platform (CFP-A.1.3). CFPs are allowed to carry out person-to-business (P2B) and business-to-business activities only (CFP-A.1.2). Furthermore, income generating residential and commercial real estate can also be hosted on the platforms. Commercial entities incorporated in Bahrain or overseas can be hosted by CFPs (CFP-1.1.12).[13]

Oman. Article (3) of the CMA-Rules recognises donation, reward, equity and peer-to-peer crowding activities. Peer-to-peer crowding includes invoice financing and debt-based investments notes can be converted to equity (Article 4, No. 4). CFPs can be used to raise funds by commercial companies and enterprises, not by individuals (Article 4). Furthermore, public joint stock companies, companies and enterprises with no specific business plans and non-profit organisations are not allowed to use CFPs to raise funds (Article 5). Investors, donors and companies seeking funds can be from both within and outside Oman (Article 6).

Saudi Arabia. The SAMA Rules apply to companies licensed to engage in debt-based crowdfunding (Article 2). Debt-based crowdfunding (DCF) can be carried out after obtaining a license from SAMA and guided by the Finance Companies Control Law and instructions issued by SAMA (Article 4). Approval of the license is done in phases with an initial approval (Article 10) and final approval of the license after all SAMA makes onsite visits, meets the company's executives and reviews its regulations, procedures and records (Article 12). A licensed DCF operator is not allowed to engage in any other activity unless approval for it is taken from SAMA (Article 12). The license term is valid for five years and can be renewed after that (Article 13). The fee for license issuance is SAR 5,000 and for license renewal SAR 2,000 (Article 16). The financing from the DCF platform must be for commercial purposes only and not for consumer purposes (Article 28, No. 2).

UAE Loan-based CF (LCF). The purpose of regulating loan-based crowdfunding platforms is identified as safeguarding the financial system from the risks posed by LCF and protecting the interests of consumers (LCF-UAE). A borrower eligible to use LCF to raise funds must be a registered UAE company (Article 1.1, LCF-UAE). A company intending to carry out LCF activities must apply to CBUAE for a loan-based crowdfunding licence and indicate if they are applying for Category 1 or Category 2 LCF (Article 2.3, 3.3 LCF-UAE). Category 1 (large) LCF includes entities

Table 3 Regulatory perimeters and activities

Countries	Regulatory perimeters and activities
Bahrain	Financing (debt) based and equity based
Oman	Donation, reward, equity and peer-to-peer (invoice financing and debt-based investments notes) crowdfunding
Saudi Arabia	Debt-based
UAE	Equity based should be here as follows: Debt-based (two categories) Equity-based

whose cumulative loans over a calendar year are equal to or more than AED 5 million, and in Category 2 (small), the cumulative loans over the year are less than AED 5 million (Article 2.1, LCF-UAE). A platform with a Category 2 license can upgrade to Category 1 by providing evidence of meeting all regulatory requirements of the latter (Article 2.4, LCF-UAE). A CF company licensed as Category 1 cannot be deemed as Category 2 without written approval from CBUAE (Article 2.5, LCF-UAE).

UAE Equity-based CF. ECF platforms must have a licence from SCA and pay the prescribed fees (Article 4A & C, ECF-UAE). Some entities such as joint stock companies, investment funds, entities operating within the securities, insurance and banking services, companies intending to grant loans or invest in other companies and companies with paid-up capital of 6 million UAE dirhams are not allowed to raise funds on the ECF platforms (Article 3, EFC-UAE).

Table 3 shows that while Oman has the widest range of products allowed on CFPs, crowdfunding in Saudi Arabia is restricted to debt-based CF only. Bahrain and UAE allow both debt-based and equity-based CF.

Capital requirements

Since crowdfunding platforms do not engage in liquidity and maturity transformation, the micro-prudential risks are minimal, and the capital requirements can be relatively small. Jurisdictions with smaller capital requirements would lower barriers to entry and encourage more CFPs to be established compared to ones with higher capital requirements. The capital requirement is considered to be 'low' if CFPs are required to hold less than USD 1 million as capital and 'high' if they are required to have more than this amount as capital.

Bahrain. There is no specific mention of capital requirements of capital requirements in the CFP module. However, the Authorisation Module under High-Level Standards (Type 7, Module 5) stipulates that the CFP operator must maintain a minimum core capital of BD 25, 000 (USD 66,250) (AU-2.5.6A).

[13] Overseas companies that are UN sanctioned, non-cooperative or from high-risk jurisdictions are not allowed to be hosted by CFPs (CFP-1.1.12).

Oman. While specific capital requirements for CFPs are not mentioned in CMA-Rules, Article 16.3 and Article 18.12 require the CF operator to have sufficient financial, human and other resources to operate the platform at all times.

Saudi Arabia. While the minimum capital for DCF is set at SAR 5 million (USD 1.33 million), SAMA can increase or decrease the minimum capital amount based on the prevailing market conditions, business model or the nature of the activity (Article 6).

UAE Loan-based CF. The minimum capital for a Category 1 LCF company is AED 1 million (USD 272,479) and for a Category 2 company is AED 300,000 (USD 81,743) (Article 4.1, LCF-UAE). The LCF companies should hold the higher of the minimum capital indicated (in Article 4.1) or capital equivalent to 5% of the outstanding lending volume (Article 4.1, LCF-UAE).

UAE Equity-based CF. ECF platforms must have paid-up capital of at least AED 1 million (USD 272,479) (Article 4.B, ECF-UAE).

Table 4 shows that the capital requirements for CFPs in Bahrain and UAE are low (under USD 1 million) and high in Saudi Arabia. Furthermore, UAE has a unique proportionality feature for capital requirements for loan-based CF depending on their size of operations. Category 1 LCF being a relatively larger CFP is required to hold more capital than its smaller Category 2 LCF counterpart.

Limits on funds raised

As indicated, a lower limit of funds indicates that relatively smaller firms use the platforms to raise funds implying better financial inclusion. A limit of USD 1 million or lower can be considered as 'low' and an indicator that relatively smaller firms will use CFPs to raise funds. Similarly, a limit of greater than USD 1 million would be considered 'high' and indicate that relatively larger firms will use CFPs to access funds.

Bahrain. While financing-based CF offers should be a maximum of BD 500,000 (USD 1,325,000) per borrower within a 12-month period and have a tenor of less than 5 years, the maximum amount for equity-based CF is BD 250,000 (USD 662,500) in general and BD 500,000 (USD 1,325,000) for equity-based project backed by real estate within a 12-month period (CFP-1.1.4). CFPs are not allowed to accept a borrower/issuer that is hosted by another CFP (CFP-1.6.4).

Oman. An applicant for funding of less than 12 months can raise a maximum of OMR 100,000 (USD 260,000) and either submit audited financial statements from an audit firm accredited by CMA or financial statements approved by the board of directors of the applicant. For funding of 12 months or longer, more than OMR 100,000 (USD 260,000) can be raised and audited financial statements from an audit firm accredited by CMA are required (Article 10).

Saudi Arabia. The total amount of financing provided by a DCF platform should not exceed 40 times its capital and reserves unless approval is taken from SAMA (Article 28, No. 1). A maximum of SAR 7.5 million (USD 2 million) can be given to each borrower (Article 28, No. 3).

UAE Loan-based CF. A borrower can list itself only on one CFP and borrow a maximum of AED 10 million

Table 4 Capital requirement and financial inclusion/proportionality

Countries	Capital requirements	Proportionality features
Bahrain	USD 66,250 (BHD 25, 000)	Low and fixed
Oman	Not mentioned	–
Saudi Arabia	USD 1.33 million (SAR 5 million)	High and can be increased further by SAMA
UAE	*LCF:* Cat 1: USD 272,479 (AED 1 million)	LCF: Two-categories model, low and proportional to size of operations
	Cat 2: USD 81,743 (AED 300,000)	ECF: Low and fixed
	ECF: USD 272,479 (AED 1 million)	

Table 5 Funding limits and financial inclusion/proportionality

Countries	Funding limits (per borrower/year)	Proportionality features
Bahrain	DCF: USD 1,325,000 (BHD 500,000)	Weak financial inclusion (High funding limit)
	ECF: USD 662,500 (BHD 250,0000)	Strong financial inclusion (Low funding limit)
Oman	DCF & ECF: USD 260,000 (OMR 100,000)	Strong financial inclusion (Low funding limit)
Saudi Arabia	DCF: USD 2 million (SAR 7.5 million)	Weak financial inclusion (High funding limit)
UAE	DCF: USD 2,724,790 (AED 10 million)	Weak financial inclusion (High funding limit)
	ECF: USD 681,199 (AED 2.5 million)	Strong financial inclusion (Low funding limit)

Table 6 Due diligence to assess risk of projects

Countries	Information on owners/Board	Business plan of fundraiser	Credit quality of fundraiser	CFP inspection and assurance
Bahrain	Required	Not mentioned	Required	Required
Oman	Required	Required	Required	Required
Saudi Arabia	Not mentioned	Required	Required	Required
UAE				
LCF	Not mentioned	Not mentioned	Required	Required
ECF	Required	Required	Required	Required

(USD 2.724 million) on an LCF platform (Article 8.14, LCF-UAE).

UAE Equity-based CF. The total amount a company and its affiliates can raise funds from ECF platform is AED 2.5 million (USD 681,199) during 12 months and AED 5 million during the company's duration (Article 7.3, ECF-UAE).

Table 5 summarises the regulatory requirements of funding limits in different sample jurisdictions. A lower funding limit implies that relatively smaller companies can apply for funding on CFPs which is an indication of financial inclusion. The table shows that all CFPs in Oman and ECFs in Bahrain and UAE have funding limits of less than USD 1 million and, as such, perform better in terms of financial inclusion.

Due diligence to assess the risk of projects

While the fundraisers should be required to disclose relevant information on the company, its governance, financial conditions and potential risks that lenders and investors face, these should not be onerous and costly to discourage SMEs from using CFPs to raise funds.

Bahrain. CFP must conduct due diligence of borrowers/issuers by ascertaining the identity of the company and its owners and ensuring that the entity/persons are free from a criminal record and are not a UN-sanctioned entity or from a high-risk country. Furthermore, CFP has to examine the performance and credit history, ensure that the entity abides by the laws and the crowdfunding offering statement is complete and not misleading (CFP-1.3.1).

Oman. An applicant for funding must submit the following information to CFP: key characteristics of the business and company, purpose of fundraising, targeted amount, period and the minimum percentage of funds raised to the targeted amount, business plan and financial statements (Article 11). The CF operator should take reasonable steps to conduct background checks to ensure the fit and properness of the applicant, its board members and senior management and verify the business proposition of the applicant (Article 20). For peer-to-peer flatforms, the operator must carry out a risk assessment of the applicant, use an efficient and transparent risk scoring system to rate the investment notes and have in place processes or policies to manage defaults to recover outstanding amounts for investors (Article 31).

Saudi Arabia. The DCF platform should carry out due diligence and assess the creditworthiness of the institutional beneficiary (or the borrower) by checking and documenting its credit record (Article 26, No. 1). After obtaining the borrower's approval, the platform has to register the credit information with one or more credit bureaus and this information should be kept updated during the transacting period (Article 26, No. 2). The business plan of the borrower and its financing levels must be assessed (Article 26. No. 4f, g). The platform must adopt clear, transparent and scientific methods and procedures to assess the creditworthiness of the borrower. The method used must be approved by the board of directors and reviewed and updated by them annually (Article 26, No. 3). Furthermore, the platform must verify that the borrower has sufficient resources to carry out activities and maintain its solvency, credit history and performance (Article 26. No. 4e). The results of the due diligence done on the borrower must be shared with the participants (Article 26. No. 5).

UAE Loan-based CF. An LCF platform must ensure that a transparent and sufficient risk scoring and loan pricing system is in place and the basis and methodology of this system must be made publicly available (Article 8.7a, LCF-UAE). The platform must also require information on cash flow forecasts, carry out due diligence, risk assessment and credit reports to enable risk scoring and loan pricing for borrowers (Article 8.7.e, LCF-UAE). The LCF company must take adequate measures to ensure that borrowers do not take loans for personal use (Article 8.7.d, LCF-UAE). The LCF company must ensure that the borrower is not listed on any other CFP as a part of its due diligence (Article 8.15, LCF-UAE). The borrowers must declare their current and intended borrowing from other sources including CFPs for the calendar year, and the platform must monitor if the borrowers are accessing any other loans by checking with the credit bureau (Article 8.11, LCF-UAE).

UAE Equity-based CF. The ECF platform must publish a clear and specific work plan and financial and economic

Table 7 Investment limits to protect investors

Countries	Investment limits (per borrower/year)	Proportionality features
Bahrain	Self-declaration	No explicit requirement (Principle based regulation)
Oman	Retail: USD 7,800 (OMR 3000) Sophisticated/Angel: USD 260,000 (OMR 100,000)	Proportional (strong financial inclusion and consumer protection)
Saudi Arabia	Only HNW individuals can invest	Weak financial inclusion
UAE	DCF (Retail): USD 5,450 (AED 20,000) DCF (Market Counterparty): USD 13,624 (AED 50,000) ECF (Retail): USD 8,174 (AED 30,000)	Proportional (strong financial inclusion and consumer protection)

feasibility of the project related to the financing application and ensure that the documents and procedures are valid (Article 6.14, ECF-UAE). The credit information of the financing applicant and its board members must be provided by a competent credit bureau or authority (Article 6.16, ECF-UAE). The financing applicant must also disclose information on its management, financial statements, the purpose of the project, the amount required and the proposed offering period not exceeding 15 working days extendable by the same period upon obtaining the operator's approval (Article 7.2A, ECF-UAE).

Table 6 shows that although the regulatory requirements for due diligence to assess risks of projects that are listed on platforms vary across jurisdictions, all of them require assessing the credit quality of the fundraiser and CFP inspection and assurance on the projects. While CFP in Oman and ECF in UAE have more robust regulatory requirements for due diligence to assess the risks of projects that are listed on platforms, the LCF in UAE has the least stringent requirements.

Suitability and appropriateness of investors

Proportionality in the suitability of investors would segregate retail investors from professional and institutional investors to mitigate the risks that the former could face. Inclusiveness would imply allowing retail investors to invest in CFPs but limiting the amount that can be invested to protect them from large losses. The regulatory regimes related to the suitability of investors in the sample countries are presented below.

Bahrain. When onboarding retail clients as lenders/investors, the CFP should assess the suitability and appropriateness of clients in terms of their knowledge, experience, financial situation and understanding of the risks of crowdfunding (CFP-1.1.13). Before clients can use the platform, they have to sign a self-declaration that acknowledges that they understand the risks, that they can lose their money and should invest only amounts that they can afford to lose, that they can have problems exiting from the investments and that offers are not approved by CBB (CFP-1.1.14).

Oman. A person can donate or invest any amount in the donation- and reward-based CFPs within the limits of the funding request by the applicant (Article 8). Investors in equity-based CFP are categorised as sophisticated investors, angel investors and retail investors. While there are no restrictions on investment amounts for sophisticated investors, angel investors can invest a maximum of RO 100,000 within a 12-month period. Retail investors can invest a maximum of RO 3,000 per offer/applicant and a total amount of RO 20,000 within a 12-month period (Article 9).

Saudi Arabia. An eligible participant is defined as a natural or legal person fulfilling one or more of the following: a). Has assets of at least SAR 3 million; b). currently working or has worked for at least three years in the financial sector; c). has an internationally approved professional certificate in finance or investment; and d). has an annual income of at least SAR 600,000 in the past two years (Article 1, No. 2.7).

UAE Loan-based CF. The process of onboarding lenders should be documented, and the LCF platform should assess the suitability of lenders and ensure that they have a clear understanding of the risks when onboarding them (Article 8.1, LCF-UAE). This can be done by obtaining sufficient information from the lender about their objectives and financial circumstances by using self-declared assessment questionnaire forms or equivalent means and confirming the information provided (Article 8.3, 8.7b, 8.7c, LCF-UAE). The limit of lending per person per project in a calendar year is AED 20,000 for retail clients and AED 50,000 for market counterparties along with a total lending of AED 200,000 for retail lenders and AED 500,000 for market counterparties per calendar year (Article 8.12, 8.13, LCF-UAE).

UAE Equity-based CF. The lenders can be classified as retail or market counterparty (Article 8.4, LCF-UAE). Market counterparties have net assets of AED 2 million not including their primary residence, and retail lenders are those who do not fulfil the criteria of market counterparty (Article 1.12, LCF-UAE). Investors who do not qualify as professional investors or counterparties are limited to invest 30,000 UAE dirhams for each financing applicant and a total of 100,000 UAE dirhams on the platform (Article 6.5, ECF-UAE).

Table 7 shows that while Bahrain requires self-declaration and has no specific regulatory rules indicating the amount that can be invested by retail investors, Oman and UAE impose limits on investment amounts on both retail and sophisticated/institutional investors. In Saudi Arabia, investments in CFPs are not open to retail investors and are limited to high-net-worth individuals only.

Evaluation and discussions

The assessment of regulations of four jurisdictions in the GCC shows important features of the regulatory regimes and the types and scope of operations of CFPs. The regulatory regimes for CFPs in the GCC countries show a diversity of institutional arrangements. While the central banks regulate CFPs in Bahrain and Saudi Arabia, in Oman, the capital markets regulator regulates CF entities. In UAE, the debt-based CFPs are regulated by the central bank and the equity-based CFPs are regulated by the capital markets authority. Furthermore, debt-based CF in the UAE has a tiered regulatory framework distinguishing between larger and smaller CFPs. Except for Saudi Arabia, which only allows debt-based CF, other countries allow both debt and equity-based CF, implying that entrepreneurial firms can raise capital in the form of equity from diverse investors. Oman also allows donation, reward and invoice financing CF.

The regulatory regimes in four countries show variations in regulations related to financial inclusion in terms of establishing CFPs, financing entrepreneurs/SMEs and providing opportunities for investors to invest in alternative asset classes. While the capital requirements of CFPs in Bahrain and UAE are low, the regulatory regime of DCF in UAE has distinct proportionality features with two categories of CFPs with different capital requirements. Furthermore, in the latter, the capital requirement is proportional and increases as the operational sizes of CFPs increase. However, the capital requirement for DCFs in Saudi Arabia is high and SAMA can further increase capital requirements if deemed necessary. The relatively higher capital requirement for DCF and not allowing ECF in Saudi Arabia can hinder the formation of CFPs in the country.

For fundraisers, regulations in all countries require that firms provide information on their credit quality and CFPs should ensure the accuracy of the information. Some countries (Bahrain, Oman and ECF in UAE) require disclosure of information of owners/board members and other jurisdictions (Oman, Saudi Arabia and ECF in UAE) also require disclosing the business plan of fundraisers. Furthermore, the limits on funds that can be obtained in ECF in Bahrain, DCF and ECF in Oman and ECF in UAE are less than USD 1 million, indicating that the relatively smaller firms can raise funds, implying better financial inclusion. However, the funding limit for DCFs in Bahrain, Saudi Arabia and UAE is over USD 1 million, indicating that relatively larger firms can also use CFPs to raise funds.

As for fund providers, regulations in Bahrain do not mention a specific maximum amount for investments for retail investors. Oman and UAE allow both retail and sophisticated/institutional investors to invest in CFPs and impose limits on their investment amounts. While providing opportunities for retail clients to invest in alternative investments, the limits protect them by restricting the amounts they can invest. In Saudi Arabia, however, investments in CFPs are limited to high-net-worth individuals only, which prevents access to retail investors.

The results in this article show that the regulatory regimes are important determinants of the operations of CFPs and highlight some key policy recommendations to promote CFPs to enhance their role in contributing to financial inclusion. Specifically, it identifies how the proportionality features of specific regulatory tools can be used in a balanced manner to promote CFPs. For example, the analyses indicate that Oman and UAE have an overall conducive regime for both DCF and ECF. Saudi Arabia's regulatory regime, however, does not allow ECF and is not favourable to financial inclusion from the perspective of establishing CFPs due to high capital requirements and also preventing retail investors from using CFPs. The article underscores that regulations can be designed in ways that can contribute to the growth of CFPs to enhance financial inclusion both in terms of providing additional financing sources for entrepreneurs and SMEs and also creating opportunities for retail investors to invest in alternative asset classes while protecting them from large losses.

Conclusion

While CFPs have the potential to increase financial inclusion, their growth depends on an enabling regulatory regime. From a regulatory perspective, promoting CFPs fulfils the objectives of financial inclusion and competition, but regulators also have to take adequate measures to ensure financial stability and protect consumers/investors. This would require designing a regulatory framework that can balance regulatory objectives of financial inclusion, stability and consumer protection.

Using the principle of proportionality, the article identifies the elements of a risk-based regulatory framework for CFPs that can promote entrepreneurial/SME financing while maintaining financial stability and consumer protection. Specifically, a lower and proportional capital requirement for CFPs would facilitate their establishment; a lower limit of funds that borrowers/issuers can obtain implies that smaller firms would use CFPs to raise funds; providing adequate information to assess the credit quality of firms would enable investors to make informed investment decisions; and limiting the investment amounts by lenders/investors protect them from incurring large losses. Introducing these features in CFP regulations can balance the objectives of financial inclusion on the one hand and fulfil the objectives of stability and consumer protection on the other hand.

Declarations

Conflict of interest The author confirms that there is no conflict of interest.

References

1. Aaron, M., Rivadeneyra, F., & Sohal, S. (2017). FinTech: Is this time different? A framework for assessing risks and opportunities for central banks. Bank of Canada Staff Discussion Paper, No. 2017–10, Bank of Canada, Ottawa, https://www.econstor.eu/bitstream/10419/200480/1/894585355.pdf
2. Ahmed, H. 2013. Financial inclusion and islamic finance: Organizational formats, products, outreach and sustainability. In *Economic development and Islamic finance*, ed. Z. Iqbal and A. Mirakhor, 203–229. Washington DC: World Bank Publications.
3. Allen, B., K.K. Chan, A. Milne, and S. Thomas. 2012. Basel III: Is the cure worse than the disease? *International Review of Financial Analysis* 25: 159–166.
4. BCBS (2018). *Implications of FinTech developments for banks and bank supervisors*, February 2018, Basel Committee on Banking Supervision, https://www.bis.org/bcbs/publ/d431.pdf
5. BCBS (2010). *Basel III: A* global *regulatory framework for more resilient banks and banking systems,* Basel Committee on Banking Supervision. https://www.bis.org/publ/bcbs189.pdf
6. BCBS (2012). *Core Principles for Effective Banking Supervision*, Basel Committee on Banking Supervision. https://www.bis.org/publ/bcbs230.pdf
7. BCBS (2013). *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools,* Basel Committee on Banking Supervision. https://www.bis.org/publ/bcbs238.pdf
8. BCBS (2015). *Corporate governance principles for banks,* Basel Committee on Banking Supervision, https://www.bis.org/publ/bcbs294.pdf
9. BCBS (2016). *Guidance on the application of the Core Principles for Effective Banking Supervision to the regulation and supervision of institutions relevant to financial inclusion*, Basel Committee on Banking Supervision. https://www.bis.org/bcbs/publ/d383.pdf
10. BCBS (2022). *High-level considerations on proportionality*, Bank of International Settlements. https://www.bis.org/bcbs/publ/d534.pdf
11. Behl, A., P. Dutta, Z. Luo, and P. Sheorey. 2022. Enabling artificial intelligence on a donation-based crowdfunding platform: A theoretical approach. *Annals of Operational Research* 319: 761–789.
12. BIS (2019). Pillar 2 framework - Executive Summary. FSI Connect, Bank of International Settlements. https://www.bis.org/fsi/fsisummaries/pillar2.pdf
13. Bofondi, M., & Gobbi, G. (2017). The Big Promise of FinTech. in Navaretti GB, Calzolari G and Pozzolo AF (eds.), *FinTech and Banking. Friends or Foes*, European Economy: Banks, Regulation, and the Real Sector. http://european-economy.eu/wp-content/uploads/2018/01/EE_2.2017-2.pdf#page=109
14. Boukherouaa, E.B., Shabsigh, G., AlAjmi, K., Deodoro, J., Farias, A., Iskender, E. Mirestean, A. T. and Ravikumar, R. (2021). Powering the Digital Economy: Opportunities and Risks of Artificial Intelligence in Finance. IMF Departmental Paper 2021/024, International Monetary Fund, Washington, DC.
15. Boot, A., P. Hoffmann, L. Laeven, and L. Ratnovski. 2021. FinTech: What's old, what's new? *Journal of Financial Stability* 53: 1–13.
16. Buckley, R.P., Arner, D.W., Zetzsche, D.A., & Selga, E. (2019). The Dark Side of Digital Financial Transformation: The New Risks of FinTech and the Rise of TechRisk. UNSW Law Research Paper No. 19–89, European Banking Institute Working Paper 2019/54, University of Luxembourg Law Working Paper 2019–009, University of Hong Kong Faculty of Law Research Paper No. 2019/112, Singapore Journal of Legal Studies (Forthcoming), Available at SSRN: https://ssrn.com/abstract=3478640 or https://doi.org/10.2139/ssrn.3478640
17. CBB (2022a). *Crowdfunding Platform Operators Module*, Central Bank of Bahrain https://cbben.thomsonreuters.com/sites/default/files/net_file_store/Vol_5_Ancillary_CFP_July_2022.pdf
18. CBB (2022b). *Ancillary Service Providers Authorisation Module*. Central Bank of Bahrain. https://cbben.thomsonreuters.com/sites/default/files/net_file_store/Vol_5_Ancillary_AU_July_2022.pdf
19. CBUAE (2020) *Loan-based Crowdfunding Activities Regulation*. Central Bank of the U.A.E. https://www.centralbank.ae/media/p3edqstt/2020-10-28-c-7-2020-loan-based-crowdfunding-reg-og-published2.pdf
20. CMAO (2021). Rules for Crowdfunding Platforms. CMA Decision No. E/153/2021, Capital Markets Authority of Oman.
21. CCAF. 2021. *FinTech regulation in the Middle East and North Africa*. Cambridge: Cambridge Centre for Alternative Finance at the University of Cambridge Judge Business School.
22. Chehade, N. (2021). Harnessing FinTech in the Arab World: An Opportunity Worth Billions. CGAP Blog, 05 January 2021. https://www.cgap.org/blog/harnessing-fintech-in-arab-world-opportunity-worth-billions
23. Cicchiello, A.F. 2020. Harmonizing the crowdfunding regulation in Europe: Need, challenges, and risks. *Journal of Small Business & Entrepreneurship* 32 (6): 585–606. https://doi.org/10.1080/08276331.2019.1603945.
24. Cumming, D.J., and S. Johan. 2008. Global market surveillance. *American Law and Economics Review* 10: 454–506.
25. Cumming, D., and S. Johan. 2013. Demand-driven securities regulation: Evidence from crowdfunding. *Venture Capital* 13 (4): 361–379.
26. Deloitte (2022), Bridging the SME finance gap in the GCC. Deloitte. https://www2.deloitte.com/content/dam/Deloitte/xe/Documents/strategy/me_bridging-the-sme-finance-gap-in-the-gcc.pdf

27. Ehrentraud, J., Ocampo, D.C., & Vega, C.Q. (2020). Regulating fintech financing: digital banks and fintech platforms. Financial Stability Institute. https://www.bis.org/fsi/publ/insights27.pdf
28. Feyen, E., Frost, J., Gambacorta, L., Natarajan, H., & Saal, M. (2021). Fintech and the digital transformation of financial services: Implications for market structure and public policy. BIS Paper No. 117. https://www.bis.org/publ/bppdf/bispap117.pdf
29. Fisera, B., Horvath, R., & Melecky, M. (2016), Basel III Implementation and SME Financing Evidence for Emerging Markets and Developing Economies. World Bank Policy Research Working Paper 9069. https://www.enterprisesurveys.org/content/dam/enterprisesurveys/documents/research-1/SME%20Financing.pdf
30. FSB (2017). *Financial Stability Implications from FinTech*. Financial Stability Board. https://www.fsb.org/wp-content/uploads/R270617.pdf
31. FSB (2019). Evaluation of the effects of financial regulatory reforms on small and medium-sized enterprise (SME) financing. Financial Stability Board. https://www.fsb.org/wp-content/uploads/P070619-1.pdf
32. G20/OECD (2022). *G20/OECD High-Level Principles on Financial Consumer Protection*. https://www.oecd.org/daf/fin/financial-education/G20_OECD%20FCP%20Principles.pdf
33. GPFI (2016a). *G20 High-Level Principles for Digital Financial Inclusion.* Global Partnership for Financial Inclusion. https://www.gpfi.org/sites/gpfi/files/documents/G20%20High%20Level%20Principles%20for%20Digital%20Financial%20Inclusion%20-%20Full%20version-.pdf
34. GPFI (2020). *Promoting Digital and Innovative SME Financing.* Global Partnership for Financial Inclusion. https://www.gpfi.org/sites/gpfi/files/saudi_digitalSME.pdf
35. Havrylchyk, O. (2021) *Regulatory framework for the loan-based crowdfunding platforms.* OECD Economics Department Working Papers No. 1513. https://hal.archives-ouvertes.fr/hal-03201936/document
36. Hornuf, L., and A. Schwienbacher. 2017. Should securities regulation promote equity crowdfunding? *Small Business Economics* 49: 579–593.
37. IMF (2019). Enhancing the Role of SMEs in The Arab World—Some Key Considerations. International Monetary Fund. https://www.imf.org/en/Publications/Policy-Papers/Issues/2019/12/13/Enhancing-the-Role-of-SMEs-in-the-Arab-World-Some-Key-Considerations-48873
38. Jenik, I., Lyman, T. & Nava, A. (2017). Crowdfunding and Financial Inclusion. CGAP Working Paper. https://www.cgap.org/sites/default/files/Working-Paper-Crowdfunding-and-Financial-Inclusion-Mar-2017.pdf
39. Kirby, E., & Worner, S. (2014). *Crowd-funding: An Infant Industry Growing Fast,* Staff Working Paper No. SWP3/2014, IOSCO. https://www.iosco.org/research/pdf/swp/Crowd-funding-An-Infant-Industry-Growing-Fast.pdf
40. Lukonga, I. (2018). Fintech, Inclusive Growth and Cyber Risks: Focus on the MENAP and CCA Regions. IMF Working Paper No. WP/18/201, International Monetary Fund.
41. Meadows, M.R. 2018. The evolution of crowdfunding: Reconciling regulation crowdfunding with initial coin offerings. *Loyola Consumer Law Review* 30 (2): 272–295.
42. Mehrotra, A., & Yetman, J. (2015). Financial inclusion – issues for central banks. *BIS Quarterly Review*, March 2015, 83–96.
43. OECD (2021). Artificial Intelligence, Machine Learning and Big Data in Finance: Opportunities, Challenges, and Implications for Policy Makers, https://www.oecd.org/finance/artificial-intelligence-machine-learningbig-data-in-finance.htm
44. Pekmezovic, A., and G. Walker. 2016. The global significance of crowdfunding: Solving the SME funding problem and democratizing access to capital. *William & Mary Business Law Review* 7 (2): 347–458.
45. Petrou, M.M.R., and A. Al Hanai. 2022. Oman's crowdfunding regulations. *The MENA Business Law Review* 2: 11–15.
46. Shabsigh, G., and E.B. Boukherouaa. 2023. *Generative artificial intelligence in finance: Risk considerations, Fintech notes 2023/006*. Washington DC: International Monetary Fund.
47. Thottoli, M.M. 2022. The starring role of crowdfunding in GCC: a structured literature review. *Asian Journal of Economics and Banking* 6 (2): 155–177.
48. UAE Government (2022). The Cabinet: The Cabinet Resolution No. (36) of 2022 Concerning Regulating Activity of the Crowdfunding Platform Operator. https://www.sca.gov.ae/assets/1ee8a9a8/the-cabinet-resolution-no-36-of-2022-concerning-regulating-activity-of-the-crowdfunding-platform.aspx
49. World Bank (2013). *Crowdfunding's Potential for the Developing World*. Washington, DC: World Bank. https://documents1.worldbank.org/curated/en/409841468327411701/pdf/840000WP0Box380crowdfunding0study00.pdf
50. World Bank (2020). *Capital Markets and SMEs in Emerging Markets and Developing Economies: Can They Go the Distance.* Washington DC: The World Bank. https://openknowledge.worldbank.org/handle/10986/33373
51. World Bank & CCAF (2019). *Regulating Alternative Finance: Results from a Global Regulator Survey,* World Bank and Cambridge Centre for Alternative Finance. https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2019-11-ccaf-regulating-alternative-finance-report.pdf
52. World Bank and IFC (2017). *MSME Finance Gap*, World Bank and International Finance Corporation, https://documents1.worldbank.org/curated/en/653831510568517947/pdf/121264-WP-PUBLIC-MSMEReportFINAL.pdf
53. World Bank and WEF (2018). *The Arab World Competitiveness Report 2018.* https://www.ifc.org/wps/wcm/connect/dcfcb6da-1ad6-45fb-a7d4-097da23c3492/AWCR+2018.post-launch+updates.180824_1442.pdf?MOD=AJPERES&CVID=mlXzofa
54. Zetzsche, D.A., D.W. Arner, and R.P. Buckley. 2020. Decentralized finance. *Journal of Financial Regulation* 6 (2): 172–203.

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Habib Ahmed is Professor and Sharjah Chair in Islamic Law & Finance at Durham University Business School, Honorary Professor at the Department of Islamic Banking, University of Jordan and Fellow (Honorary) at the Cambridge Judge Business School, University of Cambridge, UK.