



# Can an interest-free credit facility be more efficient than a usurious payday loan?



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## ABSTRACT

Inefficiencies in mainstream credit markets have pushed selected households to frequent high cost payday loans for their liquidity needs. Ironically, despite the prohibitive cost there is still persistent demand for the product. This paper rides on the public policy objective of expanding affordable credit to rationed households. Here, we expound a simple model that integrates inexpensive interest-free liquidity facility within an endogenous leverage circuit. This builds on the technology of ROSCA/ASCRA/mutual/financial cooperative and cultural beliefs indoctrinated in Islam. Our results indicate the potential Pareto-efficiency of this interest-free circuit in contrast to the competing interest-bearing schemes of payday lenders and mainstream financiers.

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## 1. Introduction

“Many people, particularly low-to-moderate income households, do not have access to mainstream financial products such as bank accounts and low-cost loans. Other households have access to a bank account, but nevertheless rely on more costly financial service providers for a variety of reasons. In addition to paying more for basic transaction and credit financial services, these households may be more vulnerable to loss or theft and often struggle to build credit histories and achieve financial security”. [FDIC \(2009, p. 10\)](#)

A survey by the Federal Deposit Insurance Corporation (FDIC) in 2009 carries concerns on the extent of financial rationing faced by American households.<sup>1</sup> According to the [FDIC \(2009\)](#), approximately 17.9% or 21 million households who do have banking accounts subscribe to the services of alternative financial service providers. With respect to their credit needs, these households have had to frequent these service providers, including payday lenders. In a separate study, [Lawrence and](#)

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<sup>1</sup> A further 5 million households may potentially face similar constraints but have been omitted from the above due to paucity of data on their usage of alternative financial services ([FDIC, 2009](#)).

Elliehausen (2008) find 73% of the surveyed payday loan borrowers suffered rejection or limitation on their credit application (i.e., rationed or completely rationed out) by mainstream financiers, which is three times above the United States general population. The use of payday loans are largely for unplanned events that highlights the liquidity constrained status of this cohort.

Payday loans or cash advances, are structured to function as a short-term liquidity facility to smooth inter-temporal income shocks. This involves issuance of single, small, short-term and unsecured consumer loan, ranging from \$100 to \$500. An average payday loan is for less than \$300, with repayment period of 7–30 days (Lawrence and Elliehausen, 2008). The industry has been severely criticised for its high credit cost, in combination with wider issues of predatory practices and expropriation of wealth (OFT, 2013).<sup>2</sup> Undergirding these criticisms is the interest servicing burden (Melzer, 2011) faced by these households who are in the moderate to low income bracket, and lack financial sophistication (Lawrence and Elliehausen, 2008). The fees reflect the industry's severe default rates (DeYoung and Phillips, 2009).<sup>3</sup> Interestingly, despite heavy criticisms, there is still persistent demand for the products. Thus, this highlights a pressing need to explore inexpensive financial alternatives to assuage the liquidity needs of this market segment.<sup>4</sup> The fact that these households have had to exhaust other credit avenues alludes to the rationed out effect and potentially non-Pareto efficient solution. To date, studies on payday loans have either focused on (i) credit behaviours; or (ii) welfare effect of the borrowers, without delving on Pareto optimal substitutes.

Recognising this shortcoming, the primary motivation of this paper is to expound an institutional design for the provision of inexpensive, short-term liquidity facility, which satisfies the latent demand of these households to smooth their inter-temporal exogenous income shocks. Specifically, our study aims to explore the following question: Can an *endogenous* interest-free payday loan circuit provide a more efficient credit solution in contrast to current payday lenders and mainstream financiers? This is achieved through integrating the two strands of literature on: (i) institutional structures related to endogenous circuits; with (ii) cultural beliefs (i.e., Islamic tenets) in particular, interest-free loans.<sup>5,6</sup> Our research motivation is consistent with that of Coase (1937) and Alchian (1950), who in their seminal papers rationalise efficient institutions as those that evolve and adapt to the environment to deliver services in a cost effective manner. Moreover, the approach taken in this paper to intertwine institutional design with culture is reflective of Acemoglu et al. (2005, p. 424), who reiterate “*belief differences clearly do play a role in shaping policies and institutions*”.

For the purpose of this paper, the target population are economically active households. This is consistent with the underwriting criteria of payday lenders that require borrowers to be in employment and bank account holders, as well as with the findings of the FDIC (2009) survey. Additionally, our model is based on risk neutral economic agents.<sup>7</sup> We illustrate the above through an institutional structure of an endogenous leverage circuit formed from member based contributions.<sup>8</sup> This is followed by two stepped extensions that assimilate real world elements of having fraction of borrowers within a finite life circuit, and subsequently extending the circuit as a going concern with random repetitive borrowing. The objective of the basic framework and the extensions is to solve for Pareto-efficiency by simultaneously (i) ensuring availability of affordable credit (where credit is due); and (ii) moderating their commitment issues that promotes long-term financial security. This is showcased by mathematically modelling a short-term interest-free liquidity facility circuit that moderates adverse selection and moral hazard. The beauty of the model lies in the structuring of the circuit, where members help one another to alleviate

<sup>2</sup> Predatory lending is characterised by “*excessively high interest rates or fees, and abusive or unnecessary provisions that do not benefit the borrower*” (Carr and Kolluri, 2001, p. 1).

<sup>3</sup> The industry's default rate of 21% is extremely risky compared to the 3% rate experienced by commercial banks (DeYoung and Phillips, 2009). We find that the high cost concurs with credit literature to compensate for risk associated with these risky borrowers.

<sup>4</sup> Although we have used the United States as the primary reference base, this does not preclude the existence of payday lending in other developed and developing economies.

<sup>5</sup> Forms of endogenous circuits include informal institutions of Rotating Savings and Credit Associations (ROSCA) and Accumulating Savings and Credit Association (ASCRA), where members contribute periodically an amount of funds to a common pool over a specified period. In ROSCA, the assignment of the pooled funds to each member is determined either (i) on *random* basis whereby the sequence is only known ex-post to the member at the point of disbursement; (ii) through a *bidding* process to the winning member who pledges higher contribution to the pot or one-time side payment to the other members; or (iii) *fixed/pre-determined* ex-ante by the ROSCA governing authorities. By pooling resources, it permits the mobilisation of funds that otherwise would have been kept out of circulation. Whilst ASCRA shares similar features of its nemesis, there is greater flexibility in the amount and timing of each member contribution, larger membership, allocation of the pooled funds, and its greater social function (Bouman, 1995). The motives for participating in ROSCA/ASCRA ranges from savings mechanism to acquire durables, fund life-cycle events, self-control commitment device, insurance and investment avenue of surplus funds to either protect against social/marital pressures or generate returns (Besley et al., 1993; Bouman, 1995; Dagnelie and LeMay-Boucher, 2012). Mutual and financial cooperatives are the more advanced and formal forms of these circuits.

<sup>6</sup> Charitable concept of interest-free funding is also present in other Abrahamic faiths. For example, the existence of Jewish free loan societies is linked to the obligation in Judaism for extending free loans to the poor (Lewinson, 1999). The integration of Islamic cultural beliefs in the design of this liquidity facility exemplifies its universality in ‘democratisation of finance’ to the masses.

<sup>7</sup> The paper adopts a simple framework of risk neutrality to derive close form solutions. The model can be extended to risk-averse agents by incorporating higher opportunity cost of capital or discount rate ‘ $\gamma$ ’ that comprises an imputed return ‘ $r$ ’ (see Eq. (3) in Section 4). However, we have chosen not to incorporate risk aversion as the resultant outcome only increases the threshold that the circuit needs to observe to ensure fulfilment of the Pareto-efficiency conditions, leaving its fundamentals unaffected. Moreover, this would limit financial participation contrary to the injunction of the *Qur’an* (the Holy Book of Islam verse 30:39) which prefers charity over exorbitant cost of funding especially for the underprivileged. Our approach is also consistent with Ebrahim (2009).

<sup>8</sup> We employ a generic term ‘circuit’ to signify all institutions where the principal and agent are the same individual. The structure is akin to that of a non-profit institution. An administrator may be present but is not incentivised by rent-seeking motives.

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