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Banking for those unwilling to bank: Implications of Islamic banking systems☆

Cagri S. Kumru [a,b,*], Saran Sarntisart [c]

[a] Research School of Economics, Australian National University, Canberra, ACT 2601, Australia
[b] CEPAR, University of New South Wales, Sydney, NSW 2052, Australia
[c] School of Development Economics, National Institute of Development Administration, 118 Seri Thai Road, Klong-Chan, Bangkapi, Bangkok 10240, Thailand

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ABSTRACT

A significant number of Muslims are unwilling to deposit their savings into the conventional banking sector since it does not operate according to their religious beliefs. In this paper we provide a model that aims to explore growth and welfare implications of an Islamic banking system that operates according to Muslims' religious principles. Our model shows that in an economy populated with a certain number of religiously concerned individuals, the existence of an Islamic banking system can generate higher growth and improve welfare substantially. These theoretical results are in line with recent empirical findings.

1. Introduction

A part of the Muslim population is unwilling to deposit their savings into banks that do not operate according to their religious principles (see, for example, Demirguc-Kunt et al., 2013). Alternative (Islamic) banks and conventional banks have established dedicated Islamic banking subsidiaries aimed at providing financial services that comply with religious principles in order to serve the financial needs of Muslims who abstain from using the conventional banking system because of their religious concerns.[1] It is well documented that financial sector development boosts economic growth (see, for example, Levine et al., 2000). In a recent paper, Imam and Kpodar (2015) show that Islamic banking is positively associated with economic growth, even after controlling for the level of financial depth. Yet no formal theoretical analysis of Islamic banking is available.

Economists realized that individuals' economic decisions also depend on their religious concerns in general, and their afterlife beliefs in particular.[2] This implies that religious individuals' banking decisions differ from those of nonreligious individuals. The literature regarding individuals' religious concerns is still developing and hence the number of studies that deal with them is pretty limited. Myles and Omar Ali (2010) assume that individuals' religious concerns are related to warm glow or to social custom motives. On the other hand, Chang (2005) models individuals' religious concerns by using the afterlife utility concept: the utility function consists of two types of expenditures, that is, spending for the present life and spending for the afterlife. This includes, for example, participating in religious activities, donating to the needy, or investing in a way that complies with one's religious beliefs. In this paper, we follow Chang and model individuals' religious concerns accordingly.

Individuals with standard preferences seek investment opportunities according to their risk-aversion levels. In other words, individuals choose assets with high returns if they are also willing to accept the high risk that follows. However, when individuals have religious concerns, the risk/return profile of an asset isn't the only factor to take into consideration in making investment decisions. For instance, religious individuals would choose an asset with a relatively low return if it complied with their beliefs. This is especially relevant for Muslims since Islam strictly prohibits taking or offering *riba*. The majority of Islamic scholars view *riba* as *interest* or any *pre-determined return* on a loan. A unique feature that differentiates Islamic banking from conventional banking, in theory, is its profit-and-loss sharing paradigm. Under this paradigm, the ex-ante fixed rate of return in financial contracts is replaced with an uncertain rate of return that is determined ex-post on a profit-sharing basis (see Chong and Liu (2009) for a more detailed discussion).

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* Corresponding author at: Research School of Economics, Australian National University, Canberra, ACT 2601, Australia.
E-mail addresses: cagri.kumru@anu.edu.au (C.S. Kumru), saran.s@nida.ac.th (S. Sarntisart).

[1] An alternative banking system refers to a banking system that is an alternative to the conventional banking system. It might take different forms. The most common alternative banking system is the Islamic banking system. In the rest of the paper, we use the Islamic banking term to denote the alternative banking system.

[2] See Barro and McCleary (2006), Chen (2010), Elgin et al. (2013), and Tao and Yeh (2007).

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0264-9993/

There are both theoretical and empirical attempts to analyze the implications of the Islamic financial and banking system.[3] Our study deviates from the earlier studies by providing a framework, that is a formal theoretical model to explore the growth and welfare implications of Islamic banks. The interaction between the level of financial intermediation and economic growth has gained attention since the early 1990s. A number of studies have looked at the channels where financial intermediation plays a role in stimulating economic growth. Allen (1990) and King and Levine (1993) show that financial intermediaries undertake the costly process of searching investment possibilities for investors, thus reducing information costs that lead to an improved resource allocation and accelerated growth. Diamond (1984) shows that the financial intermediaries eliminate the free rider problem since they conduct monitoring for all investors. In addition, Bencivenga and Smith (1991) demonstrate that the intermediaries improve governance and reduce credit rationing, leading to higher productivity, capital accumulation, and growth. Although the economic implications of financial intermediation have been well analyzed in the literature, the economic implications of the Islamic banking system are still not known.[4]

This paper aims to fill this gap in the literature by providing an answer to the following important question: What are the growth and welfare implications of the Islamic banking system? Thus, we develop a simple three-period overlapping generations model with financial intermediation and heterogeneous population. Our model incorporates both conventional and Islamic banking systems. The model economy is populated with two types of individuals who differ in terms of their religiosity: nonreligious and religious. In our model, religious individuals do not use conventional banks since using them generates a huge utility loss. This assumption does not mean that all religious Muslims stay away from using conventional banks. It only means that there is a positive measure of Muslims who stay away from conventional banks. This assumption is realistic and innocuous for the following reasons. First, Islam considers offering and taking interest (*riba*) is a serious offense, worse than adultery, and attracts severe afterlife punishment.[5] Hence, it is natural to think that there will be some pious Muslims who do not use conventional banks at all. Second, recent empirical studies find that at least some Muslims take the prohibition of interest seriously in their banking decisions. For instance, Demirguc-Kunt et al. (2013) find that, after controlling for other characteristics, Muslims are significantly less likely than non-Muslims to own a conventional bank account or save at a conventional bank. Naceur et al. (2015) reaches a similar conclusion. Third, Islamic banking has grown rapidly since its first introduction in Egypt in 1963. Islamic banking is currently practiced in more than 50 countries worldwide. In Iran, Pakistan, and Sudan, only Islamic banking is allowed. In other predominantly Muslim countries, such as Bangladesh, Egypt, Malaysia, Indonesia, and Turkey, Islamic banking coexists with conventional banking. Islamic banking is not limited to predominantly Muslim countries. In August 2004, the Islamic Bank of Britain became the first bank licensed by a non-Muslim country to engage in Islamic banking (see Chong and Liu, 2009 for more detailed information). According to the World Islamic Banking Competitiveness Report 2011–2012, the Islamic banking and finance industry is valued at $1.14 trillion and has been growing at a rate of 10% each year.[6] This growth is achieved despite the fact that Islamic deposits offer a riskier return that is not higher than those offered by conventional banks (see Khan, 2010, for example).

In the model, both types of individuals, religious and nonreligious, and banks can invest in both liquid but unproductive (consumption goods) and illiquid but productive (capital goods) assets. The capital stock owned by a portion of old individuals and the labor supplied by young individuals are used to produce consumption goods. Young individuals make saving decisions and face a probability that investments may be liquidated early to meet demand for consumption goods. As there are many individuals who demand liquidity and have different religious concerns, there is room for Islamic banks to exist and meet those demands. We conduct our analysis in two distinct settings: variable savings and non-variable savings. In the variable savings setting, Islamic banks affect savings in the economy while in the non-variable savings setting, Islamic banks can only offer liquidity insurance.

Our results show that the Islamic banking system causes an increase in the aggregate level of savings and shifts the savings to a more productive channel. This, in turn, increases the capital stock and hence, social welfare. As a result, Islamic banks foster economic growth if there are some religious individuals who do not use conventional banks. The growth effect of Islamic banking is independent from the religious type's population share. Yet, the welfare implications of Islamic banks depend on the population share of Muslims who do not use conventional banks. The existence of Islamic banks generates higher welfare if the population share of religious type is larger. Interestingly, in the non-variable savings setting, we are able to show that the presence of an Islamic bank can still benefit the economy even if the level of savings does not vary.

Our results have important policy implications. There is no doubt that individuals demand different financial products. This demand is not driven only by the standard risk/return comparisons but also driven by individuals' religious, social, and ethical concerns. Appropriate financial products that channel savings from unproductive uses to productive uses are quite important for economic growth and welfare improvement. There is ample evidence showing that some Muslims keep themselves away from conventional banking practices. Islamic banking can be a solution to overcome low growth rates in countries with a large Muslim population by channeling these savings to more productive uses. Our results are important in the sense that they clearly demonstrate the positive growth and welfare implications of Islamic banks. These theoretical results would encourage policy makers to be more active in promoting Islamic banking activities. Our results are also compatible with those of the empirical findings demonstrating that Islamic banks affect economic growth and macroeconomic efficiency positively (see Gheeraert and Weil, 2015; Imam and Kpodar, 2015, for instance).

The remainder of the paper is organized as follows. In Section 2 we set up a model with variable savings and lay out the results. In Section 3 we provide a model with non-variable savings and lay out the results. Section 4 concludes. The mathematical details of the solutions in both variable and non-variable savings cases are given in the Appendix 0.

2. The model with variable savings

2.1. The economy

Our analysis is based on an overlapping generations model with financial intermediation. We extend Bencivenga and Smith's (1991) model by incorporating different types of individuals and banks to analyze the impact on the growth rate in an endogenous growth context, as well as level effects in social welfare in a non-growth context. Theoretically, Islamic banking is different from conventional banking because banks are not allowed to offer a fixed rate of return on deposits and are not allowed to charge interest on loans. A unique feature of Islamic

[3] See Beck et al. (2013), Khan (1985), Darrat (2002), Yousefi et al. (1997), Hassoune (2002), Yusof and Wilson (2005), Isa and Kaleem (2006), Furqani and Mulyany (2009), Abduh and Chowdhury (2012), Goaied and Sassi (2012), Shamsuddin (2014), and Lee (2011).

[4] Other studies include: Greenwood and Jovanovic (1990), Kashyap et al. (2002), De la Fuente and Marin (1996), Saint-Paul (1992), Obstfeld (1994), Acemoglu and Zilibotti (1997), Allen and Gale (1997), Arestis et al. (2001), and Fase and Abma (2003).

[5] Chapra (1984): "The prohibition of riba (interest) appears in the Qur'an in four different revelations. The second revelation (4:161) severely condemned it. It placed those who took riba in juxtaposition with those who wrongfully appropriated other people's property and threatens both with severe punishment from God. The fourth revelation (2:275-81) severely censured those who take riba by declaring them to be at war with God and His Messenger. The Prophet also condemned in the most unambiguous words. He even equated the taking of riba to committing adultery thirty-six times."

[6] http://www.ey.com/Publication/vwLUAssets/IBCR_Report/$FILE/IBCRReport2011(LR)%20Final.pdf.