Journal of Management, Marketing and Logistics
Year: 2015 Volume: 2 Issue: 3

BANKS OFFER LOTTERY PRIZES: WHAT ARE THE IMPLICATIONS?

DOI: 10.17261/Pressacademia.2015312951

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Keywords
Banking sector,
Jordan,
lotterey,
net interest margin,
return on assets.

JEL Classification
G10, G20, G21

ABSTRACT
The primary goal of this interdisciplinary paper is to examine whether or not the adoption of depositor-focused marketing tool (Lottery prizes) pays in the Jordanian banking system. The fact that about half of the commercial banks offer lottery (cash) prizes to their customers (depositors), it would be interesting for academics in finance and marketing, bank managers, and bank shareholders, to examine the impact of this marketing policy on the performance of this sector in terms of return on assets and net interest margin. Based on a total of thirteen (13) Jordanian commercial banks and the time period 2002-2012, the results indicate that lottery prizes have a positive and significant impact on the accounting performance of banks. However, this positive impact comes at the expense of bank efficiency. In other words, it is concluded that the extra "cost" incurred by banks that offer cash prizes are "passed on" to their customers in the form of wider net interest margin.

1. INTRODUCTION

Economists, as well as others, have always attempted to explain and model the growth performance of national economies, industries, and firms. As expected, this literature has become extremely large. Within this context, the importance of financial development (establishment and expansion of financial intermediaries like banks, stock markets, and types of financial instruments) has kept its prominent place in both the theoretical literature and empirical literature.

Following the scholarly publications by Gurley and Shaw (1967) and Shaw (1973), the financial economics literature argues that financial development provides economies with services that promote the growth of national economies, industries, and firms. These services, for example, include the production and processing of information about possible investments and allocating capital, monitoring individuals and firms and exerting corporate governance after allocating capital, and facilitating the trading, diversification, and management of risk (World Bank, 2012).

On average, the positive role of financial development is supported by the published empirical research papers. This is why the literature has expanded to cover various banking and stock market issues.

As a component of any financial system, banks have always caught the imagination of the research community. Following any examination of this literature, one can list a myriad of issues that have led to the publication of numerous papers. These issues include the determinants of bank profitability, bank net interest margin, bank capital, and bank credit. In addition, the measurement of competitiveness and its implications have also been well-researched in the literature. Finally, the banking literature contains additional papers that examine the impact of foreign bank entry on the performance of local banks.

Relative to the banking literature, one can probably argue that bank profitability (return on assets) and bank net interest margin are two of the most researched issues. The classical papers which examined these issues are published by Demirguc-Kunt and Huizinga (1999) and Demirguc-Kunt and Huizinga (2001). On average, and based on a large set of countries and bank-level data, both of these papers conclude that banks which operate in developing countries tend to have wider net interest margins and are more profitable.

Following the publication of the papers by Demirguc-Kunt and Huizinga (1999) and Demirguc-Kunt and Huizinga (2001), many papers examine banks' performance at the country-level. Again, this literature is too large to review, even in a specialized paper. However, within the context of this paper, some of those, recently published, include Claeys and Vennet (2008), Beck and Hesse (2009), Marinkovic and Radovic (2010), Maudos and Solis (2009), Oreiro and de Paula (2010), Perera et al. (2010), Souza-Sobrinho (2010), Heffernana and Xiaoqing (2010), Chortareas et al. (2011), Naceur and Omran (2011), Fungáčová and Poghosyan (2011), Kansoy (2012), Gurbuz et al. (2013), Trujillo-Ponce (2013), Nassar et al (2014), and Helhel (2015).

As far as the performance of Arab banks are concerned, a growing number of papers is emerging including Ben Naceur and Goais (2001) and Ben Naceur (2003), Ben-Khedhiri et al (2005) and Mensi (2010), Ghazouani and Mhiri (2013), Nouaili et al. (2015), and Yaseen et al. (2015). Here, it is interesting to note that Yaseen et al (2015) examined the impact of foreign bank entry on the net interest margins and competitive conditions that exist in the Jordanian banking sector. Using a total of 12 Jordanian banks, 5 non-Jordanian banks, and the time period 2000-2010, it is stated that "while the overall mean cost of financial intermediation in Jordan is similar to that which prevails in other countries, it is reported that, opposite to expectations, foreign banks in Jordan have not resulted in a decrease in the cost of financial intermediation (net interest margin)…following the entry of foreign banks, the competitive conditions in the Jordanian banking system have not witnessed any significant change and remains, as has been, monopolistic competition" (Yaseen et al., 2015). Also, it is worth noting that Omet et al. (2015) examined the Jordanian banking sector in terms of the impact of foreign exchange deposits on bank credit, bank accounting performance, and bank net interest margin. The results indicate that foreign deposits do not impact credit and positiviely affect net interest margin and accounting performance.

In examining the performance of banks in terms of their profitability (return on assets) and net interest margin, the literature estimates a model which looks as follows:

$$Y_{i,t} = \alpha_i + X_{it}\,\beta + \varepsilon_{i,t} \qquad i = 1,..., n,\ t = 1, ..., T \qquad (1)$$

where $Y_{i,t}$ is net interest margin (interest income minus interest expense divided by total assets) of bank i at time t, or profit before tax to total assets, while X_{it} represents the vector of k explanatory variables, and $\varepsilon_{i,t}$ is the disturbance term.

The vector of bank characteristics includes measures like bank size, bank capital, and operational efficiency. In addition, both real Gross Domestic Product (GDP) growth rate and inflation rate are included in the estimated models.

Relative to the above brief review of the literature, it is interesting to note that the Jordanian banking sector is peculiar in terms of one specific issue; namely six banks distribute lottery (cash) prizes to their depositors. In other words, the fact that six banks out of the total of 13 banks offer cash prizes to their customers (depositors), it would be interesting for academics in finance and marketing, bank managers, and bank shareholders, to examine the impact of this marketing policy on the performance of this sector in terms of accounting performance (return on assets) and efficiency (net interest margin). Indeed, it can be argued that the impact of this marketing too is expected to be positivel on bank profitability. However, the "cost" that is incurred by the cash prizes might be "passed on" to the customers of the banks in the form of wider net interest margins.

The rest of the paper is organized as follows. In section 2 the data and methodology are discussed. In section 3 the empirical results are presented and discussed. Finally, section 4 summarizes and concludes the paper.

2. THE DATA AND METHODOLOGY

The Jordanian banking sector is composed of a total of thirteen (13) national banks and two (2) Islamic banks. To examine the issue of cash prizes and bank performance, we include in the statistical analysis the 13 commercial banks and exclude the two Islamic banks. Naturally, this exclusion is due to the fact that these banks are different in terms of their economic activities.

To assess the impact of the marketing tool (lottery) on the performance of banks, the following two models are estimated:

$$ROA_{i,t} = \beta_1 LOTTERY_i + \beta_2 SIZE_{i,t} + \beta_3 COM_{i,t} + \beta_4 CAPITAL_{i,t} + \beta_5 EXPENSE_{i,t} + \beta_6 LOANS_{i,t} + \beta_7 INF_t + \beta_8 GROWTH_t + \varepsilon_{i,t} \qquad (2)$$

$$NIM_{i,t} = \beta_1 LOTTERY_i + \beta_2 SIZE_{i,t} + \beta_3 COM_{i,t} + \beta_4 CAPITAL_{i,t} + \beta_5 EXPENSE_{i,t} + \beta_6 LOANS_{i,t} + \beta_7 INF_t + \beta_8 GROWTH_t + \varepsilon_{i,t} \qquad (3)$$

where the subscripts i and t denote banks (i = 1, …, N) and time (t = 1, …, T) respectively .

The dependent variables are income before tax divided by total assets (ROA) and net interest margin (NIM). The variable NIM is measured as follows: NIM = [Interest Income – Interest Expense] / Total Assets.

In common with the empirical literature the independent variables include bank-specific variables and the macroeconomic environment. These are the natural logarithm of total

assets (SIZE), net commission income to total assets (COM), equity capital to total assets (CAPITAL), total operating expenses to total assets (EXPENSE), total credit (loans) to total assets (LOANS), inflation rate (INF), and real GDP growth rate (GROWTH). In addition, we include in the model a dummy variable (LOTTERY) which is equal to zero for those banks (7) that do not distribute cash prizes, and 1 otherwise.

To estimate these models (2 and 3), the used method is the Period Seemingly Unrelated Regression (SUR) – Pooled Estimated Generalized Least Squares (EGLS). This method corrects for "both arbitrary period serial correlation and period heteroskedasticity between the residuals for a given cross-section. In estimating this specification (Period SUR), the method uses residuals obtained from first stage estimates to form an estimate of the error covariance matrix. In the second stage, a feasible GLS specification is estimated. The standard error and covariances are calculated with (panel-corrected) cross section weights (PCSE) to obtain robust estimate of the cross-section residual (contemporaneous) covariance matrix" (E-Views Manual).

3. THE EMPIRICAL RESULTS

In Tables 1 and 2, we report the mean annual values of the dependent variables and some descriptive statistics for all the variables during the period 2002-2012. Based on these Tables, some comments can be made including the followings.

Table 1: Dependent Variables: Overall Descriptive Statistics

Year	ROA	NIM	Year	ROA	NIM
2002	0.0067	0.0232	2008	0.0217	0.0320
2003	0.0120	0.0253	2009	0.0169	0.0293
2004	0.0192	0.0237	2010	0.0187	0.0319
2005	0.0344	0.0261	2011	0.0157	0.0310
2006	0.0249	0.0287	2012	0.0175	0.0321
2007	0.0213	0.0282			
Mean (ROA)		0.0190	**Standard Deviation (ROA)**		0.0071
Mean (NIM)		0.0283	**Standard Deviation (NIM)**		0.0033

First, during the period 2002-2012, bank profitability reflected more annual fluctuations than net interest margin (Table 1). In addition, it is interesting to note that following the 2008 global financial crisis, ROA dropped from 2.17 percent (2008) to 1.69 percent (2009). This is probably due to the fact that in 2008 and 2009, total bank credit to total deposits dropped from 49.8 percent to 45.2 percent. However, net interest margin decreased from 3.2 percent to only 2.93 percent.

Second, the standard deviations of bank size (SIZE) and bank credit (LOANS) reflect the largest variations among the sample of banks (Table 2). For example, the standard deviation of the natural logarithm of total assets is equal to 1.2139 and this is much higher

than, for example, the standard deviation of commission income as a proportion of total assets (0.0072).

Table 2: Descriptive Statistics (2002-2012)

Variable	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	0.0182	0.0186	0.0607	-0.0407	0.0118
NIM	0.0279	0.0284	0.0433	0.0079	0.0072
SIZE	20.7894	20.6167	23.8980	17.7931	1.2139
COM	0.0071	0.0065	0.0200	0.0026	0.0025
CAPITAL	0.0791	0.0615	0.3419	0.0057	0.0536
EXPENSE	0.0260	0.0257	0.0750	0.0063	0.0096
LOANS	0.4377	0.4352	0.6846	0.1916	0.0914
INF	0.0420	0.0395	0.1394	-0.0067	0.0347
GROWTH	0.0571	0.0563	0.0856	0.0231	0.0225

The estimation results of models 2 and 3 are reported in Table 3. Again, based on these results, the following comments can be provided.

First, the most important variable in the analysis is the dummy variable which differentiates those banks that distribute cash prizes (6 in total) from those that do not (7 in total). As far as its impact on ROA is concerned, the signs of this coefficient are positive (+0.0033 and +0.0028) and significant. This indicates that the performance (ROA) of the banks that do distribute cash prizes is significantly higher than those banks which do not.

Second, when we use net interest margin as the dependent variable, the signs of the dummy variable (LOTTERY) remain positive and significant. This finding implies that the "cost" incurred by cash prizes are "passed on" to the customers of the banks in the form of wider net interest margins.

Third, the signs and significance of most of the other variables are as expected. For example, the impact of operating expenses on bank profitability is negative and significant. Within this context, it is interesting to note that the impact of this variable on net interest margin is positive. In other words, it can be argued that less efficient banks tend to pass on their "extra" expenses relative to other banks on to their customers.

Fourth, the sign of the coefficient of net commission income is positive and significant in its impact on bank profitability. This observation implies that banks which earn higher commission income (more diversified in their sources of income) tend to perform better. However, those banks that do earn higher commission do not charge their customer narrower net interest margins.

Table 3: Regression Results (ROA and NIM)

Variable	Coefficient	Coefficient	Coefficient	Coefficient
LOTTERY	0.0033 (3.052*)	0.0028 (2.554*)	0.0065 (5.330*)	0.0055 (4.586*)
SIZE	0.0003 (3.501*)	0.0002 (2.027**)	0.0001 (2.386*)	0.0003 (3.653*)
COM	0.6283 (6.207*)	0.4495 (4.441*)	-0.0663 (-0.822)	-0.0132 (-0.152)
CAPITAL	0.0003 (0.037)	-0.0065 (-0.709)	-0.0200 (-3.755*)	-0.0138 (-1.810***)
EXPENSE	-0.5085 (-19.00*)	-0.4247 (-14.559*)	0.1985 (11.794*)	0.1701 (4.713*)
LOANS	0.0321 (7.912*)	0.0292 (7.043*)	0.0421 (18.145*)	0.0390 (12.076*)
INF	-----	-0.0056 (-1.116)	-----	0.0223 (5.369*)
GROWTH	-----	0.0669 (3.7457*)	-----	-0.0441 (-4.514*)
Adjusted R^2	0.826	0.839	0.857	0.923
F-Statistic	325*	287*	578*	237*
D-W Statistic	1.986	1.899	1.912	1.839

*, ** imply significance at the 99 and 95 percent levels respectively.

Fifth, and as expected, the ratio of total loans to total deposits (LOANS) has positive and significant coefficients. This implies that increased credit risk causes reciprocal increase in banks' interest margin and in banks' profitability.

Finally, the macroeconomic environment (real GDP growth and inflation) do impact banks' performance. For example, it is found that real economic growth positively impacts bank profitability and negatively net interest margin. Moreover, although the inflation rate does not impact bank profitability, this variable, a measure of macroeconomic uncertainty, impacts net interest margin negatively.

4. SUMMARY AND CONCLUSIONS

Banks provide economies with a number of economically useful financial services. Indeed, because the provided services are known to positively affect economic growth, the literature examines banks' performance in terms of many issues including net interest margin and profitability.

The fact that about half of all Jordanian banks provide their customers (depositors) with cash prizes, it would be interesting to examine this sector in terms of its profitability and net interest margin. This paper has examined the impact of offering cash prizes on bank profitability and on net interest margin. Based on the time period 2002-2012 and a total of 13 banks, the results clearly indicate that those banks which offer prizes are more profitable and one source of this profit (greater) is the wider net interest margin. In other words, banks that pay lottery prizes pass on this "extra" cost on to their customer.

The implication of this paper is clear and important. If net interest margin is considered as one of the efficiency measures with which banks are evaluated, offering prizes is not a good idea in the economic sense. This practice must be stopped (by the Central Bank of Jordan).

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