OFF-BALANCE SHEET ACTIVITIES OF PHILIPPINE COMMERCIAL BANKS: REGULATION ISSUES AND MEASUREMENT PROBLEMS

Santos José O. Dacanay III
Institute of Management, University of the Philippines Baguio
Gov. Pack Road, Baguio City, Philippines 2600
E-mail: third@upb.edu.ph

─Abstract ─

The paper tracks the growth, drivers and regulatory pressures on off-balance sheet (OBS) activities of Philippine commercial banks in the post-Asian financial crisis period. OBS refers to those activities that generate income without expanding or appearing on the asset portion of the balance sheet. Since these involve the creation of contingent claims against the banks, they are also referred to as contingent accounts. Using *Bangko Sentral ng Pilipinas* (BSP) data for the period 1998 to 2005, the study employs financial analysis and panel regression to track the growth and investigate the drivers of banks' OBS activities. Liberalization of foreign bank entry in 1994 brought in financial innovation in the Philippines in the form of extensive OBS activities. However, non-interest income as a percent of both interest and non-interest incomes generated from OBS activities of foreign banks are almost equal to their local expanded commercial bank counterparts, suggesting that local banks can earn as much as the foreign banks through engagement in less risky fee-based activities. The varying risk profile of OBS activities gives rise to measurement issues that challenge regulatory conventions.

Keywords: Off-balance sheet, contingent accounts, commercial banks, Philippines
JEL Classification: G21, M41, C33

1. INTRODUCTION

Over the past three decades, the Philippine banking industry has undergone tremendous structural changes: liberalization of foreign bank entry in 1994; Asian financial crisis in 1998; and consolidation through mergers after the crisis (Dacanay 2007, 2010). With these profound developments, complemented by more intense global competition and technological innovation, commercial banks have heavily diversified their products and portfolio by leveraging their on- and

off-balance sheet (OBS) activities (Boyd and Gertler, 1994; Calmes and Theoret, 2010). OBS refers to those activities of commercial banks which generate income without expanding or appearing on the asset portion of their balance sheet, hence the term off-balance sheet. These activities also involve the creation of contingent claims against the banks, hence they are also referred to as contingent accounts. This paper attempts to address the dearth in the literature by focusing on the Philippine commercial banking sector as a case study. There was only one study on Philippine banks' OBS activities after the balance of payments crisis in 1983, covering the years 1984 to 1988 (Zingapan et al., 1990). Hence, this gap as the study's primary motivation. The remainder of the paper is organized as follows. Section 2 discusses the data sources, specifies the framework and method, and defines the variables. Section 3 discusses the results. Section 4 gives some concluding remarks.

2. FRAMEWORK AND METHOD

2.1. Data Description

The dataset is constructed from the banks' published statements of condition filed with the BSP. The sample includes a balanced panel of 35 commercials banks from 1998 to 2005, accounting on average for 92.3%, 77.2% and 91.9% of total assets, deposits and loan base of the commercial banking system. The other cross-section and industry-level variables are sourced from the BSP, Philippine Deposit Insurance Commission (PDIC), National Statistical Coordination Board (NSCB), and the Philippine Institute for Development Studies (PIDS). The exclusion of banks that have incomplete information, or banks that failed or were absorbed in a merger over the study period possibly creates a sample selection and survivor bias which is a limitation of the study. Failed banks have been shown to be considerably less efficient on the average (Berger and Humphrey, 1992), though those absorbed in a merger are not necessarily less efficient (Dacanay 2010).

The period of eight years for the balanced panel data is sufficient to track growth of OBS activities. If too short a period is chosen, random errors might not average out; if too long a period is chosen, the bank's specific OBS activities becomes less meaningful because of changes in management and other events. DeYoung (1997) showed that a six-year time frame reasonably balanced these concerns. The eight-year period 1998 to 2005 dataset used is sufficient to track OBS determinants. Furthermore, the period under study is considered post-Asian financial crisis, hence there were no other external shocks that could have potentially affected

measurement, notwithstanding the uniform accounting and regulatory conventions enforced during the study period.

2.2. Model Specification and Methodology

A cross-sectional OBS-specific equation including bank-specific characteristics (BankChar), industry-level market-share competition variables (IndComp), regulatory dummies (RegDum) and general macroeconomic variables (Macro) is specified:

$$\text{OBS-activity}_{it} = \text{intercept} + \alpha\text{BankChar}_{it} + ß\text{IndComp}_{it} + \gamma\text{RegDum}_{it} + \delta\text{Macro}_{t} + \eta_{it}$$

For the sample banks, the variance for each panel or cross-section differ, hence a heteroskedastic error structure with no cross-sectional serial correlation is specified. Such specification controls for individual bank's heterogeneity as manifested in the scale in the data, and in addition, assumes that the error terms of panels are uncorrelated, that is, $E(\varepsilon_i\ \varepsilon_j) = 0$. The model is an expansion of the typical model $\mathbf{y}_{it} = \mathbf{X}_{it}\mathbf{ß} + \boldsymbol{\varepsilon}_{it}$. The error structure for the disturbance term is specified $\boldsymbol{\varepsilon}_{it} = \alpha_{it} + \eta_{it}$ where we assume that η_{it} is uncorrelated with $\mathbf{X}_{it}$, the vector of exogenous variables. The first part of the decomposition, α_i is called an individual effect but bank-specific differences are not the object of the study. Hence, the model assumes a common intercept which means that it is an identical intercept for all cross-sections which may or may not be correlated with the explanatory variables. The second part, η_{it}, varies independently across time and cross-sections. The subscripts *i* pertain to cross-sections or banks, *i*=1 to 35, and *t* to time period, or *t* =1 to 8 with the year 1998 as *t*=1. The equations were estimated using the panel least squares procedure, with the data run in Eviews software. The possible criticism of employing a common intercept includes the enhancement of explanatory power by allowing for individual fixed or random effects. However, bank-specific fixed effects are the main object of this study. A problem with using the fixed effects model is that there are already regressors that do not vary with individual banks such as regulatory dummies and macroeconomic variables, hence the fixed effects model is no longer warranted.

2.3. Variable Definition

The dependent variables are divided into two groups. The first group includes the total and specific OBS accounts as a percentage of total assets: total contingent

accounts (CONA_TA); letters of credit (LC_TA); and, bills for collection (BILLS_TA). The second group includes specific OBS accounts expressed as a percentage of total contingent accounts: trust and other fiduciary accounts (TRUST_CONA); spot/future exchange sold (SPOT_S_CONA); and spot/future exchange bought (SPOT_B_CONA).

The regressors for the first group of dependent variables include bank-specific, industry-level competition, regulatory dummies and macroeconomic variables. The first set of bank-specific variables includes bank size operationalized as the natural logarithm of total assets (LN_TA). By controlling for size, the possibility of scale and scope (diversification potential) economies is taken into account. Hence, the sign of this coefficient is indeterminate. The ratio of capital account to total asset (CA_TA) is included given that the OBS activities of banks are not risk-adjusted. Banks with low capital asset ratios may be more aggressive and may take on more extensive OBS activities, hence the expected sign of the coefficient is negative. Another possible reason is that well-capitalized banks tend to be credit-worthy and profitable, hence stick to what they do best and engage in less OBS activities. Following Calmes and Theoret (2010), the ratio of non-performing loans to total loan portfolio (NPL_TLP) as a measure of on-balance sheet asset quality, is expected to have a negative sign. Increased involvement in OBS activities lead to decreased loan loss provision level and volatility. The second set of regressors includes measures of industry competition such as the market share of the banks in the deposit (MS_DEP) and loan (MS_LOAN) markets. The third set of regressors are the regulatory dummies EKB, FB and GOVT, which assume a value of 1 and 0 otherwise, if the bank is an expanded commercial bank (allowed to engaged in insurance and securities underwriting among others), foreign bank (entered the industry as a result of liberalization with six-branch limitation), and government (if it is state-owned), respectively. The last set of regressors is macroeconomic variables which attempt to capture the general economic climate. Only one time-varying but cross-section invariant macroeconomic variable is regressed with each dependent variable. These are the square of the peso-dollar rate (FOREX); the interaction between the average tariff and the peso-dollar rate (AVE_TAR*FOREX); and, the budget deficit as a percentage of GDP (DEF_GDP). The regressors for the second group of dependent variables include select bank-specific, industry-level competition, regulatory dummies and macroeconomic variables as in the first set. These are

NPL_TLP, MS_DEP, MS_LOAN, EKB, FB, GOVT, DEF_GDP as earlier defined.

3. RESULTS AND DISCUSSION

Contingent accounts of Philippine commercial banks are classified into six accounts: 1) unused commercial letters of credit; 2) bills for collection; 3) spot/future exchange sold; 4) spot/future exchange bought; 5) assets held under trust and investment management agreements; and, 6) other contingent accounts. Table 1 shows the percent of total contingent accounts of the commercial banking industry from 1998 to 2005. The average contingent accounts of foreign banks (FBs) are almost double their total assets for the eight-year period. The domestic expanded commercial banks (EKBs) have contingent accounts which are 43% of their average total assets; the plain commercial banks (KBs) have contingent accounts which are only 20% of their total assets; and, the government banks (GOVTs) have contingent accounts which are 30% of their total assets. On average, for the different types of banks in the commercial banking industry, contingent accounts as a percentage of total assets is 62%. This figure has grown from 54% in 1998 to 65% in 2005, or an average growth rate of 11.68% annually.

Table 1. Contingent accounts as a percent of total assets according to commercial bank classification and industry total, 1998-2005

	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**Average**
EKBs	41.38	40.12	37.15	35.58	44.10	48.32	48.68	44.89	42.53
KBs	19.81	16.31	14.98	16.02	19.05	22.68	28.84	24.10	20.22
GOVTs	33.42	33.38	31.95	30.10	26.70	29.70	28.92	26.36	30.07
FBs	147.45	174.20	170.90	205.48	182.53	257.15	198.38	217.16	194.16
Industry	54.67	56.59	55.61	61.14	61.30	75.30	67.15	65.77	62.19

Source: PDIC

A rough approximation of the percent of income generated by OBS activities is given by Table 2. This estimate is computed as non-interest income divided by both interest and non-interest income. Employing such measure for the eight-year period, the industry averages 19.54% of income from OBS activities. In terms of bank types, expanded commercial banks and foreign banks average 21% while plain commercial banks average 17% and government banks average 13.5%. This seems to suggest that although foreign banks engage extensively in OBS activities as shown in Table 1, the income that they generate from such activities are not far from those earned by their local expanded commercial bank counterparts as

shown in Table 2. The return on asset per bank type confirms the above industry returns of foreign banks. Government banks have the highest average return on equity, with the equity coming from the state.

Table 3. Percent of non-interest income to non-interest and interest income according to commercial bank classification and industry total, 1998-2005

	1998	1999	2000	2001	2002	2003	2004	2005	Average
EKBs	10.87	16.58	16.37	17.31	29.57	30.19	24.04	21.92	20.86
NEKBs	12.29	14.18	14.41	13.91	25.12	22.36	16.30	17.49	17.01
GBs	9.11	18.54	6.15	12.81	15.43	15.88	14.80	15.18	13.49
FBs	16.97	19.28	18.29	21.14	25.86	27.42	16.30	20.71	20.75
Industry	11.67	17.12	15.39	17.21	26.54	27.15	20.80	20.43	19.54

Source: PDIC

Regression results for the first and second group of dependent variables are shown in Tables 4 and 5. The variable LN_TA is significant and negatively influences OBS activities (CONA_TA) in general and issuance of commercial letters of credit (LC_TA) in particular. This seems to point that size as a control variable reduces risk and therefore the required return contributed by OBS activities. Capital asset ratio (CA_TA) is also significant and negatively impacts on overall OBS as well as specific OBS activities such as unused commercial letters of credit and bills for collection. Since this ratio is included in the model to account for the unequal risk levels between banks, banks with low capital ratios tend to be more aggressive and undertake higher-risk OBS activities to compensate for the limited income from traditional loan-granting and deposit-taking activities posed by their low or inadequate capitalization. Conversely, highly capitalized banks might find it safe to remain engaged in traditional banking activities or shy away from non-traditional, OBS activities. The variable that takes into account asset quality and risk, the ratio of non-performing loan to total loan portfolio (NPL_TLP), is significant and inversely related to overall OBS activities and for specific OBS activities: bill for collection, spot/future exchange bought and sold. This result is consistent with Calmes and Theoret (2010) who posit that risk is transferred from on- to off-balance sheet activities as banks increased their involvement in the latter. However, NPL_TLP shows a positive relationship between asset quality and trust operations, indicating a signaling effect for the complementation between loans and trust funds. The industry measure of competition (MS_DEP) is significant and positively related to the overall OBS activities as well as specific engagements such as letters of credit, bills for collection and spot/future exchange

sold. This suggests that the bank's market share in the deposits market serve as a magnet for the above mentioned OBS activities. However, the market share in the loans market (MS_LOAN) is negatively related to bills for collection as the nature of the two points to possible substitution effect. The regulatory dummies confirm the positive and significant relationship between overall OBS activities and issuance of letters of credit on one hand and having an expanded (universal) commercial bank license (EKB) and government stake in banks (GOVT), on the other. The EKB license suggest economies of scope while the GOVT ownership suggest the mandated foray of state banks in trade facilitation (letters of credit) and other OBS activities such as bills collection operations. Foreign bank license (FB) is significant and negatively related to overall OBS activities and bill collection operations. FB status is found to be correlated with cost inefficiency due to higher personnel and other operating costs in the Philippines (Dacanay 2010). These findings are consistent with Sensarma (2003) who posits that foreign banks are not necessarily the best in local banking markets. For the macroeconomic variables, the square of the FOREX term is found to be positive and significant for overall OBS activities while the interaction terms between the average tariff rate and forex (AVE_TAR*FOREX) is likewise positive and significant for the issuance of letters of credit as an OBS activity. The budget deficit as a percent of GDP (DEF_GDP) is positive and significant for the bill collection, spot/future exchange buy and sell operations of banks.

Table 4. Panel least squares results: CONA_TA, LC_TA, BILLS_TA as dependent variables

Dependent variable	CONA_TA	LC_TA	BILLS_TA
Intercept	67424.89*	1399.70*	-12.43**
	(1.93)	(1.93)	(-1.98)
LN_TA	-2824.51*	-63.51*	
	(-1.92)	(-1.93)	
CA_TA	-86.94*	-1.87*	0.94**
	(-1.91)	(-1.90)	(2.44)
NPL_TLP	-33.86*		-0.30**
	(-1.74)		(-2.02)
MS_DEP	353.32*	7.95*	2.22***
	(1.89)	(1.93)	(3.11)
MS_LOAN			-3.55***
			(-3.11)
EKB	3731.65*	83.03*	4.15
	(1.92)	(1.90)	(1.25)

FB	-1813.18*	-37.61*	3.16
	(-1.78)	(-1.87)	(0.95)
GOVT	2170.31*	49.94*	3.40*
	(1.81)	(1.76)	(1.65)
FOREX^2	0.41*		
	(1.63)		
AVE_TAR*FOREX		0.17*	
		(1.71)	
DEF_GDP			-2.06*
			(-1.77)
Adjusted R-squared	0.47	0.47	0.12
F-statistic	32.19***	36.77***	5.65***

t-statistic in parentheses; ***, ** and * indicate significance at $p<0.01$, $p<0.05$ and $p<0.10$, respectively.

For the regulatory dummies, the universal and foreign bank licenses are positive and significant for forex spots and options (spot/future exchange bought and sold). This suggest the expertise of universal and foreign banks to engage in such high-risk OBS activities compared to the government-owned banks which showed negative coefficients for the dummy variable. Foreign and government banks remain disadvantaged in terms of trust operations.

Table 5. Panel least squares results: TRUST_CONA, SPOT_S_CONA, SPOT_B_CONA as dependent variables

Dependent variable	TRUST_CONA	SPOT_S_CONA	SPOT_B_CONA
Intercept	54.44***	5.02	2.25
	(6.50)	(0.87)	(0.40)
NPL_TLP	0.57***	-0.44***	-0.20**
	(3.24)	(-4.59)	(-2.04)
MS_DEP	-2.41**	2.35***	
	(-2.08)	(3.02)	
MS_LOAN	4.69***	-4.29***	
	(3.17)	(-3.86)	
EKB	3.90	7.30***	1.01*
	(1.00)	(2.93)	(0.52)
FB	-30.89***	5.59**	11.77***
	(-9.56)	(2.34)	(5.37)
GOVT	-28.54***	-8.18***	-12.14***
	(-8.23)	(-3.18)	(-7.03)
DEF_GDP	0.57**	-0.40***	-0.31**

	(2.83)	(-2.76)	(-2.08)
Adjusted R-squared	0.53	0.17	0.19
F-statistic	46.48***	9.04***	13.86***

t-statistic in parentheses; ***, ** and * indicate significance at $p<0.01$, $p<0.05$ and $p<0.10$, respectively.

4. CONCLUSION

The results point to four implications. First, the integrated global financial landscape anticipates the foray of the Philippines at least as a regional player. The Association of Southeast Asian Nations (ASEAN) will be a free-trade zone among the member countries by 2015, and with it freer flow of capital and financial services (Moshirian, 2009). This necessitates the tracking of OBS activities before the expected upsurge of OBS activities such as spot/future exchange bought and sold, letters of credit, trade-related commitments and guarantees due to the dismantling of trade, financial and monetary barriers in the region. Second, as a signatory of the BIS Capital Accord (International Convergence of Capital Measurement and Capital Standards), the Philippines has implemented Basel II's Pillars 1 and 3 conventions and standards for universal and commercial banks effective July 2007, and Pillar 2 by January 2010 (BSP M-2006-022, 24 November 2006). Since the study covers the period 1998 to 2005, a period after the Asian financial crisis and before the general application of risk-based conventions on financial statement accounts, it provides a valuable baseline in a unique setting like the Philippines with which to examine pre- and post-implementation of transplanted standards for banks in developing countries. Third, the BSP adopted the Philippine Financial Reporting Standards/Philippine Accounting Standards (PFRS/PAS) patterned after the revised International Financial Reporting Standards (IFRS) and International Accounting Standards (IAS) issued by the International Accounting Standards Board (IASB) in January 2005, though the report format was only issued in February 2006 (BSP Circular 512, 2006). Again, the period covered in the study tracks the OBS accounts prior to the adoption of new set of accounting standards aimed at promoting fairness, transparency, accuracy and comparability across banks in financial and prudential reporting. Fourth, the Personal Equity and Retirement Account (PERA) law or Republic Act No. 9505 signed on 22 August 2008 tax-exempts contributions, interest and dividends earned by trust accounts provided the contributor does not withdraw the funds before age 55. This new legislation is consistent with Section

79 of Republic Act No. 8791 (General Banking Act) that allows the monetary board to allow stock corporations, aside from banks, to engage in trust businesses. Trust funds account for the largest OBS activity in the banking sector. These developments make the Philippine banking sector an ideal ground for empirically setting and analyzing the baseline OBS activities after the Asian financial crisis and prior to the four regulatory breaks mentioned: 1) regionalization of financial services in the ASEAN; 2) implementation of risk-based BIS measures; 3) adoption of international accounting standards; and, 4) new legislation that promotes capital market development and savings mobilization by allowing non-bank trust companies to operate.

BIBLIOGRAPHY

Berger, A.N., and D.B. Humphrey (1992) "Measurement and efficiency issues in commercial banking," in *Output Measurement in the Service Sectors*, Zvi Griliches, ed. Chicago: University of the Chicago Press, 245-300.

Boyd, John H. and Mark Gertler (1994) "Are banks dead? Or are the reports greatly exaggerated?," *Federal Reserve Bank of Minneapolis Quarterly Review* 18 (3), 2-23

Calmes, Christian and Raymond Theoret (2010) "The impact of off-balance sheet activities on bank returns: An application of the ARCH-M to Canadian data," *Journal of Banking & Finance*, 34, 1719-1728

Dacanay, S.J.O. (2007) "Profit and cost efficiency of Philippine commercial banks under periods of liberalization, crisis and consolidation," *The Business Review, Cambridge*, 7 (2), 315-322.

Dacanay, S.J.O. (2010) "The evolution of cost and profit efficiency of Philippine commercial banks," *Philippine Review of Economics*, 42 (1), 109-146.

DeYoung, R. (1997) "Comment of 'Operational efficiency in banking: An international perspective,'" *Journal of Banking & Finance* (21), 1325-1329.

Moshirian, Fariborz (2011) "The global financial crisis and the evolution of markets, institutions and regulation," *Journal of Banking & Finance*, 35, 502-511.

Zingapan, Ma. Socorro V, Mario B Lamberte, and Josef T. Yap (1990) "Off-balance sheet activities of commercial banks in the Philippines," Philippine Institute for Development Studies Working Paper Series No. 90-25, 1-32.