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Asset Composition of the Philippines' Universal and Commercial Banks: Monetary Policy or Self-Discipline?

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1. Introduction

The then-Arroyo administration (2004-2010) took a series of monetary easing in 2009 to stimulate lending to the export industries under the Economic Resiliency Plan at the onset of the global recession. Major measures applied were the interest rate (overnight lending rate in the interbank market) cuts three times in a year totaled to 2 percentage points to the historically low level since 1992, and increasing of the BSP's rediscounting resources. However, the loans outstanding to the manufacturing sector had decreased from PhP392.8 billion in December 2009 to PhP327.0 billion in December 2010 even though the total loans outstanding increased from PhP1,748.2 billion to PhP1,921.7 billion during the same period.

To better understand the Philippines' monetary policy infrastructure and its effectiveness, it is necessary to review the policy setting and earlier works on the BSP's monetary policy. In addition to the above survey, a series of simple correlation analyses between the Philippine banks' asset composition and their source of lending – deposits – , the key interest rates and the transaction volume in the secondary market as a preliminary study. The aim of this paper is to find some clues to the following questions: How the BSP has reviewed and assessed its own policy measures? On what effects in the economy has the BSP put importance? What are missed or less weighed in analyzing the policy effectiveness? The rest of the paper is organized as follows: the next section briefs BSP's mandate and its policy measures under the New Central Bank Act, considering Philippines' industrial structure and economic setting; section 3 provides a literature survey on the BSP's monetary policy measures and effectiveness of its credit channel; section 4 shows and summarizes the correlation analyses and extends discussions for a better understanding of the bank behavior – providing loans, choosing asset portfolios, etc. – in corporate financing and their asset allocations.

2. Monetary Policy Measures and Its Infrastructure in the Philippines

Similar to the central banks in other countries, the BSP adopts the interest rates applied on the overnight Repurchase Agreements (RPs) and Reverse Repurchase Agreement (RRPs) through open market operations (OMO) as a signal of BSP's stance on monetary policy. At the same time, the BSP implements monetary policy using direct and indirect instruments to influence the level of liquidity in the market and thereby achieve inflation to the target level. These instruments can be classified into four types: open market operations, acceptance of fixed-term deposits (Special Deposit Account: SDA), standing facilities (rediscounting and BSP loans), reserve requirements, and moral suasion (see Table 1).

Table 1: BSP Policy Measures

Direct Measures	Quantitative and/or Price Signals	Reserve requirements
		Rediscounting and BSP loans
		Acceptance of SDA
	Oral advice	Moral suasion
Indirect Measures	Open market operations (RPs and RRPs)	

[Source] BSP website.

Direct instruments: Those enable the BSP to directly control certain items in banks' balance sheets, which may be in the form of financial prices or quantities and at the same time, have a strong coercive element. Firstly, reserve requirements, which refer to the percentage of bank deposits and deposit substitute liabilities that banks must keep on hand or in deposits with the BSP, have a significant effect on money supply in the banking system. Those are applied to peso demand, savings, time deposit and deposit substitutes (including long-term non-negotiable tax-exempt certificates of time deposits: LTNCTDs) of universal and commercial banks, in the form of cash in vault, deposits with the BSP and government securities. To correct banks' reserve requirements, call money are traded in the interbank call loan market that correspond to the excess or deficiency of each bank in terms of reserves. As the reserve position of each bank or quasi-bank is calculated on the daily basis, these can be overnight placements. The interbank market can either be securitized (collateralized) or unsecuritized (clean) lendings/borrowings, as well as repurchase agreements. Repurchase Agreements (RPs) are generally short-term sale of government securities with an agreement to repurchase on the agreed maturity date through credit lines with its counterparties for these transactions.

Secondly, in order to influence the credit volume in the financial system and help banks meet temporary liquidity needs, the BSP applies rediscounting as a standing credit facility to qualified banks. It allows those banks to refinance the loans they extend to their clients, by borrowing money from the BSP using promissory notes and other loan papers as collateral. In addition to the peso rediscounting facility, the BSP introduced the Exporters' Dollar and Yen Rediscounting Facility in 1995.

Third, the BSP also accepts deposits from banks. The Special Deposit Account (SDA) facility functions as fixed-term deposits by financial institutions with the BSP, introduced in November 1998 to expand BSP's instruments in liquidity management. In April 2007, especially for a better controlling of strong foreign exchange inflows, the BSP allowed trust entities to deposit in the SDA facility.

Fourth, the BSP can employ moral suasion as a last resort when existing market mechanisms cannot adequately and promptly ensure the attainment of specific monetary objectives. This suasion has been employed for BSP's guidance other than its monetary policy as well.

Indirect instruments: Indirect instruments include adjustment in short-term policy interest rates and the conduct of OMOs of the government securities[1]. It involves the BSP publicly buying or selling government securities from banks and financial institutions in order to expand or contract the supply of money. When the BSP buys securities, it pays for them by directly crediting its counterparty's Demand Deposit Account (DDA), maintained with the BSP. Effectively, the transaction increases the buyer's level of reserves and on an aggregate level, expands the system's money supply. Conversely, when the BSP sells the securities, the buyer's payment (via direct debit against the buyer's DDA) reduces its reserve account causing money supply to contract. In conducting OMO, the BSP uses two instruments: (1) repurchase (repo)/reverse repurchase (reverse repo) agreements (RPs and RRPs), and (2) outright purchases and sales of securities.

The BSP defines OMO as the most practical tool among its policy measures with the reasons of OMO's greater flexibility in terms of the amount and timing of intervention and quick results which OMO yields. Any change in the policy rates is readily implemented, i.e., on the same day that the Monetary Board makes the resolution, thus any effect on the market becomes evident. On the other hand, as all OMO is undertaken only with the government securities, the BSP needs to manage the credit risk of eligible securities. Those securities are valued based on their current market yields as well as the applicable cut based on remaining life of securities involved. To avoid exposing the BSP to undue risks arising from purchases of securities, Section 91, Article V of RA 7653 sets the type of securities that can be used in OMO transactions as follows: (1) with evidences of indebtedness issued by the central government or by its political subdivisions; and (2) with evidences of indebtedness issued by government instrumentalities and fully guaranteed by the central government. As well, Section 92 of Article V also provides the BSP with effective instruments for OMO. The BSP may issue, place, buy and sell freely negotiable evidences of indebtedness of the BSP, subject to such rules and regulations as the Monetary Board may prescribe and in accordance with the principles stated in Section 90. However, such issuance shall be made only in cases of extraordinary movement in price levels. Said evidences of indebtedness may be issued directly against the international reserves of the BSP or against securities.

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[1] Republic Act (RA) 7653 does not allow the BSP to issue any type of "the central bank bond/note," due to the past experience that the old central bank had financed the central government's deficits by issuing notes and bills under the Marcos administration. Thus, all RP/RRP transactions today are conducted with the Treasury notes and bills issued by the Bureau of Treasury (BTr), Department of Finance, the central government of the Philippines.

3. A Survey of Earlier Works on the Effectiveness of BSP's Policy Measures

Literature on the monetary policy mechanism in the Philippines has not been abundant, except for the studies conducted by the BSP economists and some Philippine academics. With the methodologies and models applied to the cases in developed countries (see, e.g., Bernanke, Lauback, Mishkin and Posen [1999], Bernanke and Gertler [1995], Mishkin [1996], Mishkin and Posen [1997], Bayoumi and Melander [2008]), their main interest is deemed to exist on to what extent and how long a monetary policy tightening affects domestic economic activities. Based on the main analysis scope and objectives of the previous works, this section deals with three major objectives as the following: BSP's monetary policy change and responsiveness of the credit markets, the relations between monetary policy and exchange rate, and the changes in profitability of the banking sector. The summary of major earlier studies is provided in Table 2.

Table 2: Summary of Researches on the BSP Policy Rate Change and Credit Channels

Objective of Analysis	Author(s)	Methodology	Findings
Credit market responsive-ness	Pobre [2003]	VAR	Higher lending rate in the credit market persists longer, and the interest-rate premiums to the private sector become higher.
	Dakila and Claveria [2006]	VAR	BSP's policy rate is the most significant determinant of the T-bill rate over the very near term. The BSP retains its capability to influence market interest rates.
	Dakila and Paraso [2005]	VER	A policy rate hike influences the aggregate investments decrease and GDP growth last longer than the short-term interest rate (the 91-day T-bill rate).
	Bayangos [2010a]	VAR	A rise in overnight RRP causes a larger and longer rate increase in the real bank lending than the 91-day T-bill rate. Co-efficiency of the aggregate credit to the overnight RRP rate shows a mixed result.
	Tuano-Amador, Glindro and Claveria [2009]	Partial equili-burium	Impacts of policy rate adjustments on the real economy work strongly via OMO, and a gradual strength increase in the interest rate and bank lending channels.
Exchange rate and monetary/ exchange rate policy	Glindro and Estigoy [2006]	VEC	Shorter interest rates respond more strongly and sharply to shocks on the exchange rate, and large interest rate differentials have stronger forecasting power for currency movement.
	Tuano-Amador, Glindro and Claveria [2009]	Partial equili-burium	The exchange rate channel has gone down during the inflation targeting period of 2002-2009.
	Yap [2009]	Macro-econometric	Incorporating the exchange rate in the reaction function improves BSP's policy credibility if the exchange rate is included in the objective function.

3.1 Impacts of BSP's monetary policy and responsiveness of the credit markets

Appling a series of vector auto-regression (VAR) methodologies, Pobre [2003] analyzes the responsiveness and magnitude of the interest rates, the outputs and the credit market conditions in South Korea, Thailand and the Philippines caused by policy shocks (monetary

tightening) from the first quarter 1981 to the third quarter 2000. It finds out that in the Philippines, (1) tighter conditions (higher lending rate) in the credit market persist longer, and (2) the external finance premium (interest-rate premiums to the private sector) is higher. These findings suggest that, in the Philippines, risk perception by banks plays a more crucial role in influencing their willingness to supply credit than a policy shock itself. Dakila and Claveria [2006] also applies the VAR to verify shifts in the direction of causality – from T-bill rate in the secondary market to RRP/ERRP (effective RRP) to the opposite – in the pre- and post-inflation targeting period January 2000 to March 2006. The study concludes that BSP's policy rate is the most significant determinant of the T-bill rate over the very near term thus the BSP retains its capability to influence market interest rates through adjustment of the policy rate.

Another study also confirms a monetary shock influence on the domestic output and investments persists longer. Dakila and Paraso [2005] uses a vector error correlation (VER) model, concentrating on the interest rate channel, to validate the results of BSP's monetary policy during the period of 1987 and the first quarter of 2003. The paper finds that the negative impacts (decrease in the aggregate) on investments and GDP growth last longer than that on the short-term interest rate (the 91-day T-bill rate) due to a policy change.

On the other hand, some are focusing on changes on the aggregate of credit to the private sector. For example, with a similar methodology to Pobre [2003] and Bayoumi and Melander [2008], Bayangos [2010a] conducts co-efficiency analyses among a raising of overnight RRP rate due to expectations of increasing inflation, real bank lending rate and aggregate of credit to the private sector and real output, etc., through the changes in the short-term rate (the 91-day T-bill) from March 1999 to December 2010. It finds a one-percentage-point rise in overnight RRP causes 0.25 percentage-point change in the 91-day T-bill rate, then a change in the real bank lending rate (0.15 percentage point) after a quarter, but the impact on the bank lending rate expands to 0.27 percentage point and stays longer than that on the T-bill rate in the long run. Contrary to the changes in T-bill and bank lending rates co-efficiency to the overnight RRP rate, that of the aggregate credit shows a mixed result.

With a different scope applying partial equilibrium analysis, Tuano-Amador, Glindro and Claveria [2009] analyzes the relative strength of the monetary policy transmission channels to the private sector lending in the pre- and post-inflation targeting period during January 1995-January 2008. It finds that the impact of policy rate adjustments on the real economy appears to work quite strongly via OMO throughout the examined period, and a gradual strength increase in the interest rate pass-through and in the bank lending channels since the inflation targeting was introduced. On the contrary, the paper finds the exchange rate pass-through has gone down during the inflation targeting period of 2002-2009. Thus the paper concludes that the interest rate and bank lending channels need to be strengthened.

3.2 Stability of the exchange rate and monetary/exchange rate policies

The past Philippine administrations have liberalized its financial regulations since 1994 and adopted the floating rate system, and another challenge for the BSP to promote and maintain price stability is closely related to managing the peso exchange rate. Like other emerging/ developing economies, the peso exchange rate plays an important role in the Philippines' economy through the trade channel.

Glindro and Estigoy [2006] uses the Vector Error Correction (VEC) approach to analyze the exchange rate and interest rate differential (the Philippine 91-day T-bill and five-year T-bond rates) dynamics to validate the uncovered interest rate parity (UIRP) condition,[2] in the period of 2001-2005. To include the notion in Bautista [2006], which emphasizes regime shifts in exchange rate policy among developing countries affected by the Asian crisis were the norm, the paper added other ASEAN5 (Indonesia, Malaysia, Singapore, Thailand) data in addition to the US T-bill/bond rate and LIBOR for comparison. The paper's results generally show that interest rate differentials respond more strongly to shocks on the exchange rate by steeper response of short-term interest rate, and large interest rate differentials have stronger forecasting power for currency movement than small differentials. Though the analysis direction is opposite each other, Glindro and Estigoy [2006] and Tuano-Amador, Glindro and Claveria [2009] show different results.[3] This may be caused by the difference in the analyzed periods or that of data used, which needs more researches to be accumulated.

On the other hand, Yap [2009] discusses whether the BSP should include the exchange rate in its policy objectives or not. Showing the data of SDA outstanding accumulation in the latter 2000s and applying macroeconometric model, the paper analyzes the increase/decrease of BSP's credibility. The results indicate that incorporating the exchange rate in the reaction function improves BSP's credibility if the exchange rate is included in the objective function. Although most central banks with their major objective of inflation targeting and free-float exchange rate system, including the BSP, are reluctant to acknowledge that the exchange rate plays a direct role of its own monetary policy rule, the paper indicates that BSP intervention in the foreign exchange market is to some extent consistent with its inflation-targeting framework.

3.3 Profitability of the banking sector

Though not so many researches have been conducted, non-BSP economists have had interests on changes in the banking sector. Their major objective is to identify how the

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[2] The UIRP condition posits that t country should expect its exchange rate to depreciate when the nominal interest rate differential widens.

[3] Glindro and Estigoy [2006] explains the paucity of data is due to that of long-run Philippine Treasury rate data, which incidentally capture the policy shift to inflation targeting framework. The choice of 2001 as the beginning date was because of the availability of a more complete series of five-year Philippine T-bond rate.

profitability of local banks has changed since the financial liberalization in the mid-1990s, which is backed by their recognition that the competition in the domestic credit market has been further heightened by foreign banks' new entrants to the market due to the financial sector reforms since the late 1990s.

Following Berger and Mester [1999], Dacanay III [2010] analyzes the evolution of cost and profit efficiency for Philippine commercial banks during the period of 1992-2004, and shows Philippine banks experienced a steady declining profit (by 6 percentage points) and rising cost efficiencies (by 13 percentage points) after the financial liberalization in 1994 to 2004. It also suggests that the banks may have opted for defensive strategies – the "quiet life" hypothesis – threatened by new foreign competitors' entrants in the domestic market, instead of reducing their costs. Some earlier studies show similar results: Karim [2001] reports an average of 34.1 percent cost inefficiency in the banking sector from 1989 to 1996, and Manlagnit and Lamberte [2004] explains an average profit inefficiency of 85 percent and cost inefficiency of 39 percent from 1990 to 2002. Considering the previous papers' results together, the evidence which shows the credit market competition was additionally increased by the financial sector reforms in the post-Asian financial period is not clear. There may be other factors that the local banks have opted for lower loans outstanding to the business sector, thus it requires analyses on the asset side of local banks to clarify if there exist other financial and non-financial instruments for their preference.

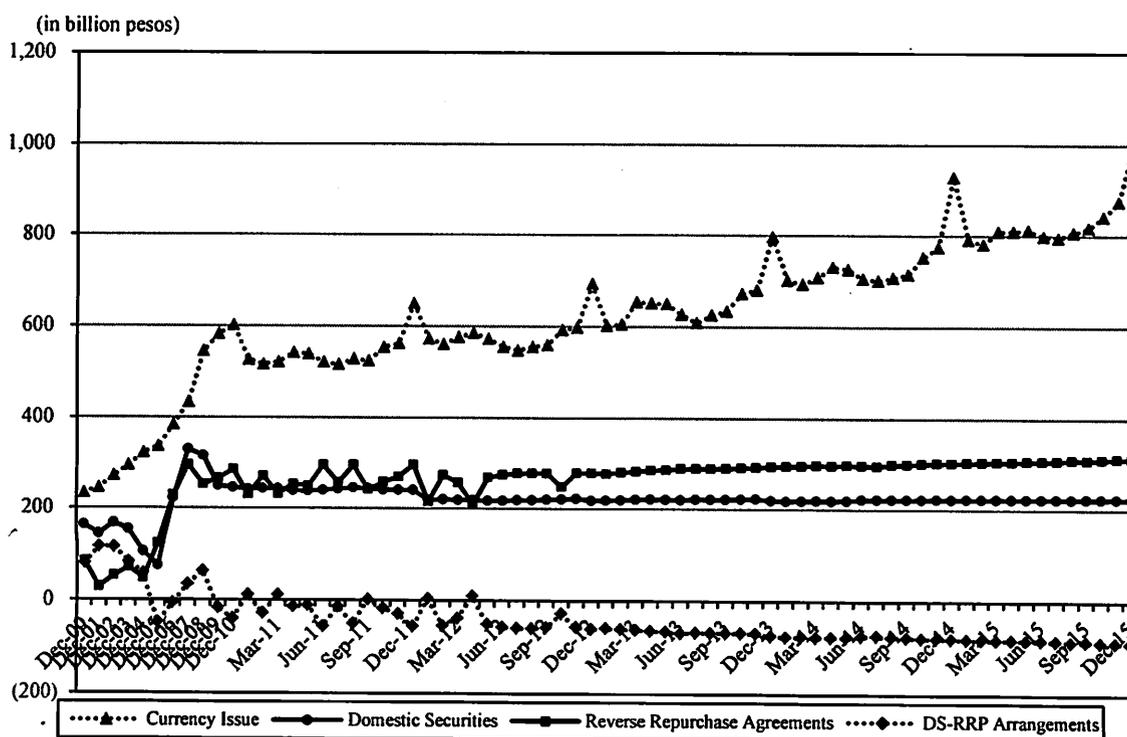## 4 The Correlation Analyses and Results

4.1 Data (and monetary policy change)

In this section, correlation analyses are conducted for the estimation of factors which influence the universal/commercial banks' asset allocation based on the BSP's quarterly statistics (for details, see also the appendix). The major items on the banks' asset side – "Cash and due from banks (C&D)," "Loans and discounts/receivables (L&D)," and "Investments (INV)" – as the explained variables, and the explanatory variables of the indicative policy interest rates are 91-day Treasury bill rates and inter-bank call loan rates, and for those of the UCBs' financing resources and investing market trend are the total amount of deposit in the UCBs and the trading volume in the Philippine Dealing Exchange.

The period analyzed is from 2000 to 2015 on the quarterly basis, which was divided into two sub-periods; 2000-2008 and 2009-2015. The reasons for setting these sub-periods are: (1) the BSP changed its policy stance and measure during 2007-2008 from monetary easing to very

moderately tightening, but with a series of increasing its currency issuing thereafter[4] (Figure 1); (2) the UBCs' allocation of their assets drastically changed during the above period as well (Figure 2) – the share of "loans and discounts/receivables" to the total assets (ASSET) increased to have the largest share in their asset side after the financial/economic crisis at the end of 1990s; and (3) the Philippine Dealing and Exchange Corp. established and commenced its operation of the secondary market for the government and corporate securities in March 2005, (4) most of depository organizations' non-performing assets were separated from their financial statements due to an amendment of the governing regulation and extension of settlement deadline in 2007.

Figure 1: BSP's Policy Measures

(in billion pesos)

····▲···· Currency Issue ──●── Domestic Securities ──■── Reverse Repurchase Agreements ····◆··· DS-RRP Arrangements
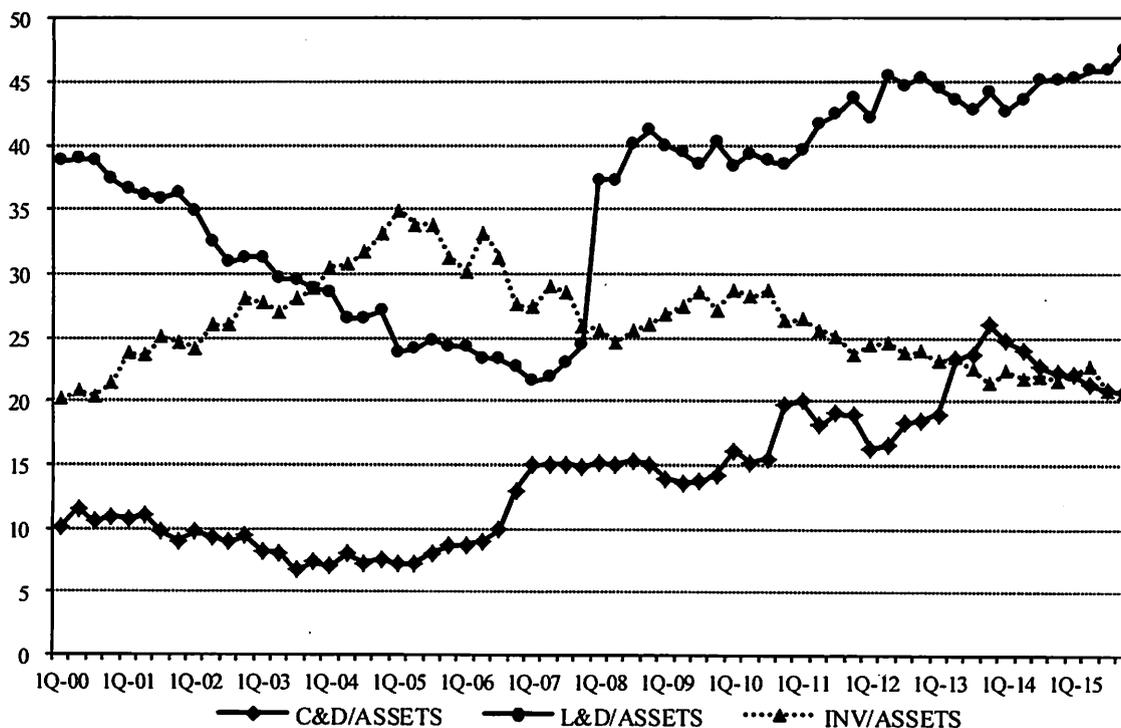
[Note] The data for December 2015 is unaudited.
[Source] BSP website.

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[4] After the world economic distress started in 2008, the BSP had cut its policy rate three times in 15 months, which brought the rate historically low at 2.0 percent. On the other hand, the BSP started to distribute the new generation currency in December 2012.

Figure 2: Composition of UCBs' Major Asset Items (% to total assets)

1Q-00 1Q-01 1Q-02 1Q-03 1Q-04 1Q-05 1Q-06 1Q-07 1Q-08 1Q-09 1Q-10 1Q-11 1Q-12 1Q-13 1Q-14 1Q-15
◆ C&D/ASSETS ● L&D/ASSETS ▲ INV/ASSETS

4.2 Results

The results of simple correlation analyses are shown in Table 3 (a)-(c). Overall, the positive/negative signs and levels of coefficients stand somewhere between moderate and high and indicate rational trends (91-day T-bill rates, Inter-bank call loan rates, and the outstanding of deposits), except for those regarding the trading volume, that is discussed later.

Throughout the analyzed period, interest rates have been basically in the declining trend. On the contrary, the deposit outstanding has been increased during the same period. Table 3 (b) clearly shows close relations between the interest rate indicators and the volume of lending especially in the second sub-period: the lower the former is, the lager is the latter. It also suggests that even though the Philippines' loans-to-deposit rates have been lower than those of other neighboring countries in the region, the major source of the UCBs' lending is deposits from customers.

On the other hand, the results show an interesting aspect regarding the securities secondary market and the UCBs' asset allocation into that market (the column "PDEx volume"). The PDEx market commenced in 2005 and the trading volume increased rapidly since, peaked in 2013, backed by the country's improved sovereign credibility and economic indicators as well. However, the importance of the market in the UCBs' asset side has been decreased in the second

sub-period including the "Investment" (Table 3 (c)), contrary to the rapid increase of the "Loan and discounts/receivables" share in their asset side (see also Figure 2). A possible explanation to this result is that the most of UCBs' assets for the "Investment" is put under their "held-to-maturity" item, rather than the "available-for-sale" or "held-for-trading" items[5], which suggests they trade a limited number of security series in the secondary market thus relatively keep a conservative attitude in their securities trading.

Table 3: Results of Correlations

(a) Cash & Due from Banks

	91-day T-bill	I-B call loan	Deposits	PDEx volume
2000-2007	-0.542868781	-0.13656045	0.792824332	0.885926842
2008-2015	-0.681322092	-0.919526624	0.972106043	0.112666836
2000-2015	-0.775600604	-0.831812051	0.983382216	0.643805883

(b) Loans & Discounts/Receivables

	91-day T-bill	I-B call loan	Deposits	PDEx volume
2000-2007	0.585746503	0.649667874	-0.404032382	0.015892307
2008-2015	-0.638403112	-0.861984448	0.985788355	0.133281926
2000-2015	-0.740233141	-0.832192808	0.976644558	0.668560502

(c) Investments

	91-day T-bill	I-B call loan	Deposits	PDEx volume
2000-2007	-0.651137924	-0.564164334	0.878285728	0.554433039
2008-2015	-0.592571829	-0.877550557	0.974461973	0.145987562
2000-2015	-0.82597145	-0.883687304	0.957774818	0.666177203

4.3 Universal and commercial banks' asset allocation: their internal discipline rather than BSP's monetary policy?

Though the analyses are very preliminary and basic, the results show two characteristics in the UCBs' behavior of asset allocation: (1) their lending behavior in 2008-2015 has generally reflected the country's interest rate policy, and on the contrary, (2) their investment behavior, especially in the securities secondary market, does not necessarily resonate with the market trend. The difference (contrast) with the results of Table 3 (b) and (c) of 2000-2007 suggests the UCBs may keep complementary positions between the loan and investment allocation in their asset side. Thus there may exist a kind of mixture of internal (or the industry-wide, common) policy for their asset allocation and following the country's monetary policy.

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[5] Due to the data limitation, the breakdown of these three items is available only since 2013 at present. According to the released data (January 2013 to December 2015), the outstanding of the "held-to-maturity" increased from 252 billion pesos to over 1,000 billion pesos, whereas that of the "held-for-trading" slightly decreased from 215 billion pesos to 185 billion pesos. That of the "available-for-sale" seems to have been kept unchanged at a certain volume, between 960 billion pesos and 1,290 billion pesos throughout 2013-2015, peaked in December 2013.

5   Summary and Discussions for Further Analyses

The results of simple correlation analyses in this paper do not clearly show a sort of "follow-through" behavior of UCBs' lending behavior to BSP's interest rate policy, but suggest a possible mixture of the country's monetary policy and their own decision-making in asset allocations. Further and detailed analyses are necessary to better understand UCBs' criteria or the factors to compose their asset mixtures.

On the other hand, questions arise based on the second sub-period (2008-2015) results: the reason(s) for turning into the "cash abundant" circumstances and its influences on UCB's profitability; how the effectiveness of BSP's monetary policy is affected. Even though the BSP increased the liquidity while its interest-rate policy moderate and unchanged, the increasing outstanding of "Currency Issue" – which is out of depository corporations – indicates that such liquidity has been kept unutilized within the household and corporate sector. It may impair BSP's policy effectiveness and UCBs' role of financial intermediation in the economy.

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Philippine Dealing Exchanges Corp   www.pdex.com.ph

Philippine Institute for Development Studies (PIDS)   www.pids.gov.ph

Appendix: Data Sources and Definitions

Data Item (quarterly)	Source (Name of Statistical Data)	Definition
Currency issue	Balance sheet and key ratios of universal and commercial banks, BSP's statistical data on its website	Outstanding or the cash and its equivalents outside the depository corporations.
Domestic securities	BSP assets and liabilities	BSP's investment in bills, notes bonds and share of stocks issued by the government and private entities.
Reverse Repurchase (RRP) arrangements	BSP assets and liabilities	Outstanding of the RRP arrangements, end of each quarter.
Cash and due from banks	Balance sheet and key ratios of universal and commercial banks, BSP's statistical data on its website	The sum of (a) cash on hand, (b) checks and other cash items, (c) due from BSP, and (d) due from other banks.
Loans and discounts/receivables	Balance sheet and key ratios of universal and commercial banks, BSP's statistical data on its website	Loans and discounts (the term used until 2011)/receivables (2012 and onwards) in Total loan portfolio (TLP), gross (net of amortization).
Investments	Balance sheet and key ratios of universal and commercial banks, BSP's statistical data on its website	Financial assets, excluding equity investment in subsidiaries/associates/joint ventures, net of amortization.
91-day T-bill rate	Selected domestic interest rates (weighted averages in percent per annum), BSP's statistical data on its website	An average of 3-month weighted averages in percent per annum.
Inter-bank call loan rate	Selected domestic interest rates (weighted averages in percent per annum), BSP7s statistical data on its website	The rate on loans among banks for periods not exceeding 24 hours primarily for the purpose of covering reserve deficiencies.
Deposits	Balance sheet and key ratios of universal and commercial banks, BSP's statistical data on its website	The outstanding in Deposit Liabilities (including in foreign currencies) from customers. Due to other banks is excluded.
PDEx volume	Monthly reports "Trade volume trends – PHI denominated" by the Philippine Dealing Exchange Corp. website	Sum of 3-month trade volume in pesos (including the foreign-currency denominated) calculated quarterly.