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Bangko Sentral ng Pilipinas Modernization: A Policy Perspective

Cristeta B. Bagsic and Eloisa T. Glindro

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Center for Monetary and Financial Policy
Monetary Policy Sub-Sector

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ABSTRACT

Now more than ever, central banks must arm themselves with the capacity to read financial markets and their correlations with the real economy and with the necessary physical infrastructure to efficiently and effectively conduct market transactions and assess their impact on central bank financial statements. Meanwhile, even though profit maximization is not the primary objective of a central bank, keeping an eye on its bottomline is considered necessary because, at the end of the day, its independence rests on it ability to generate financial resources independent of congressional appropriation. For its part, the Bangko Sentral ng Pilipinas has embarked on activities to enhance its capabilities to investigate and quantify the impacts of economic realities on the transmission mechanism of monetary policy actions to the real economy and to come up with policy prescriptions that will strengthen BSP's adherence to its mandate of promoting and maintaining price stability that is conducive to balanced and sustainable growth of the economy.

The BSP's effectiveness in accomplishing its mandates rests primarily on timely information and analytical inputs that is supported by well-founded understanding of economic relationships and dynamics, and a pool of human capital committed to its vision and objectives. This perspective paper helps set the policy research agenda and cites options for the Bank to cultivate research-oriented human capital.

TABLE OF CONTENTS **PAGE**

1. INTRODUCTION ……..…….. …. 1
2. MODERN CENTRAL BANKING ….. …… …… 2
2.1 MONETARY POLICY: A MODERN DESIGN ……. 3
2.1.1 THE PRICE STABILITY OBJECTIVE …….. 3
2.1.2 MARKET-BASED MONETARY POLICY TOOLS ……. 5
2.2 FINANCIAL SYSTEM STABILITY AND SUPERVISION …… 6
3. THE BSP POLICY FRAMEWORK ……. 8
3.1 MONETARY POLICY FRAMEWORK: INFLATION RATE TARGETING 9
3.2 THE PHILIPPINE FINANCIAL SYSTEM SUPERVISORY ENVIRONMENT …… 12
3.3 THE PHILIPPINES PAYMENTS AND SETTLEMENTS SYSTEM …….. 12
4. CHALLENGES CONFRONTING THE BSP ……..... 14
4.1. ECONOMIC AND TECHNOLOGICAL INNOVATIONS …….. 16
4.1.1.MONETARY TRANSMISSION MECHANISMS AND CONTROLLABILITY OF TARGETS IN LIBERALIZED FINANCIAL SYSTEM 16
4.1.2.PAYMENT SYSTEM 20
4.1.3.FINANCIAL PRODUCTS AND SERVICES ……..... 21
4.1.3.1.ELECTRONIC-MONEY …….. 23
4.1.3.2.FINANCIAL SYSTEM SUPERVISORY FRAMEWORK ..…… 24
4.2. RISK MANAGEMENT …… ……... 30
4.3. FINANCIAL CRIMES ……..…… 31
4.4. ANALYTICAL TOOLS FOR POLICY ANALYSIS AND DECISION-MAKING …….. 33
4.4.1.INFLATION FORECASTING …… 33
4.4.2.STABILITY ANALYSES …… 34
4.4.2.1.STRESS-TESTING AT THE MACRO-LEVEL …… 35
4.4.2.2.STRESS-TESTING AT THE MICRO LEVEL …….. 37
4.5. ORGANIZATIONAL DEVELOPMENT ……. 38
4.5.1.CORPORATE CULTURE FOR MODERN STRUCTURE ……..... 38
4.5.2.FLATTER ORGANIZATIONAL STRUCTURE ……. 38
4.5.3.SEAMLESS FLOW OF INFORMATION ……. 40
4.5.3.1. EFFICIENT DATABANK MANAGEMENT …….. 40
4.5.3.2. PRIVATE SECTOR PROPRIETARY DATA …….. 42
4.5.4.MANAGEMENT STRUCTURE AND HUMAN RESOURCE DEVELOPMENT ….. 42
4.5.4.1. INCENTIVES ……. 43
4.5.4.2. WELL-STRUCTURED TRAINING PROGRAMS …… 43
4.5.4.3. MENTORING PROGRAM AND MANAGEMENT SUCCESSION ……. 45
4.5.4.4. PHYSICAL SET-UP AND INFRASTRUCTURE …… 45
5. CONCLUSION ……. 45

REFERENCES
APPENDIX I. EARLY WARNING SYSTEMS FOR MACROECONOMIC SURVEILLANCE

BANGKO SENTRAL NG PILIPINAS MODERNIZATION: A POLICY PERSPECTIVE[1]

By Cristeta B. Bagsic and Eloisa T. Glindro [2]

1. INTRODUCTION

Central banks face challenges today that necessitate an integrated and comprehensive evaluation of their structures, goals, conduct of policy, and even the traditional roles assigned them. Modern-day central banks must deal with greater economic and financial integration, progressively more deregulated and liberalized markets, greater volatility in exchange rate markets and other asset markets, rapid financial innovation, rapid technological progress, and ever more sophisticated players in financial markets in search of above-normal returns.

Rapid technological progress interacting with deregulation has significantly altered the financial landscape within which central banks operate. While these milestones deepened efficiency, they, nonetheless, heightened uncertainties and risks for financial markets. **The upshot of these developments is that central banks are compelled to re-assess their long-established ways of doing things.** With the Asian financial crisis adding further impetus for structural changes, the reform process gathered pace in its aftermath.

In keeping with the times, monetary policymaking in the Philippines has strived to proactively respond to the demands of modern central banking. Reforms date back to the pre-Asian crisis period. In 1981, the interest rate cap on deposits and loans – except for short-term loans which was removed later in 1983 – was abolished. (Manasan, 2000) In 1992, the Monetary Board issued Circular Nos. 1318 and 1353, deregulating foreign exchange transactions. The banking sector was liberalized in 1994 (Republic Act 7721) and selected foreign banks were awarded licenses. The BSP has curtailed its role in development financing, veering towards indirect implementation of monetary policy. Post-1998, reforms in financial disclosure rules, accounting standards, corporate governance standards, capital adequacy requirements, and banking/securities industry structure have been instituted. For instance, in 2000, the General Banking Law was enacted.

For the BSP, the last five years were distinctly marked by a number of significant measures which include the adoption of a risk-based capital adequacy framework; shift to inflation targeting as the framework for monetary policy; the implementation of a modern payment and settlement infrastructure (the *PhilPASS)* for large value interbank transactions; and the ratification of the Special Purpose Vehicle Act.

Also, in an effort to deepen the institutional reforms begun in the early days of the Bangko Sentral ng Pilipinas (BSP), the Bank held its first Strategic

[1] This paper is part of the research program of the BSP Center for Monetary and Financial Policy (CMFP). The authors are indebted to MBM Dr. Vicente B. Valdepeñas, Jr., Deputy Governor Diwa C. Guinigundo, MD Ramona GDT Santiago (TD) and Director Iluminada T. Sicat (DES) as well as to CMFP-OIC Dr. Francis G. Dakila, Jr. for very insightful comments.

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Planning Conference in 2002. Consequently, the initial set of a comprehensive medium-term program – covering key areas of supervision and regulation, economic research and analysis, statistics, treasury operations, information technology infrastructure, and human resource management – was implemented in 2003.

Moving forward, it is vital that the BSP remains vigilant in the face of the challenge to balance the need to make the organization flexible so as not to stifle the profit-driven dynamics of an increasingly-global financial market on the one hand, and, on the other, safeguard its credibility in implementing monetary policy and in imposing its regulatory powers. In this regard, the hierarchical set-up, typical of traditional central banks, is being reassessed. **In view of the fast-paced innovations in financial markets, among other things, a flatter and leaner structure with a strengthened research and bias-for-action culture would enhance the Bank's efficiency and effectiveness in pursuing its mandates.** Under this structure, efficient knowledge management both within and outside the organization is vital. Middle and top management play a critical role in harnessing both explicit and tacit knowledge in reconciling lofty leadership visions with the chaotic realities at the frontline, such that at the end of the day each employee internalizes the corporate goals into his own career development goals.

The main objective of this paper is to identify areas that today's monetary authorities face with the end in view that more detailed investigation, if warranted, be pursued at an opportune time. Admittedly, the issues identified here are far from being the "complete list", so to speak, though they are, in our humble opinion, at the forefront of challenges to its policymaking and regulatory powers being faced by the BSP. The discussion flow begins with **Section 2,** which gives an overview of the facets of modern central banking as these apply to the monetary stability and financial stability functions of central banks. It is important to emphasize at this juncture that far from being definitive, discussions on what makes for a modern central bank are not exclusive. **Section 3** is devoted to the current operational environment of the BSP while **Section 4** talks about the challenges confronting BSP as well as some of the important initiatives to address such. **Section 5** concludes.

2. MODERN CENTRAL BANKING

Within the domestic economy it serves, a central bank traditionally determines monetary policy, and supervises and acts as the lender of last resort to the banks therein. In its determination of the appropriate policy, it may decide to cede control of monetary policy to another central bank/monetary authority by pegging its currency to another. Consequently, it has been operationally difficult to detach the implementation of monetary policy from the choice of foreign exchange policy. For one, foreign exchange swap transactions are recognized tools of monetary operation. Moves by the central bank in the foreign exchange markets impact (unless sterilized) on monetary variables.

In implementing monetary policy, a central bank exposes itself to various risks just like other financial intermediaries or any other participant in the financial markets, albeit at lesser degrees in some instances (e.g., because it can charge to deposits at the central bank any unsettled amount arising from transactions with banking institutions). Thus, a central bank must arm itself with the capacity to read financial markets and their correlations with the real economy, and with the necessary physical infrastructure to efficiently and effectively conduct market transactions and assess their

impact on its financial statements. Furthermore, keeping an eye on its bottomline – even though profit maximization is not the primary objective of a central bank – is considered necessary because, at the end of the day, its independence rests on it ability to generate financial resources independent of congressional appropriation. **In sum, the staff of central banks require "not only the skills of a bureaucrat, formulating and implementing official policy, but also some of the skills of the commercial banker".** (Allen [2004], p.9)

Meanwhile, attendant to a central bank's role as the lender of last resort is the need to have up-to-date assessment of the state of each of the banks and the banking system in general, and of the payment system. This has been the cornerstone of the arguments for keeping supervision of the banking sector with the monetary authorities. The strength of central bank independence and its capacity to respond to the many challenges of modern central banking would be largely defined by the regulatory structure aimed at preventing and minimizing systemic risks as well as by the effectivity of the enforcement mechanisms in place.

Such regulatory structure, however, is not necessarily immune from the phenomenon of 'regulatory capture', wherein regulated institutions exercise their lobby power to ensure that regulations work to their advantage. The essence of banking regulatory capture has to do with how bank owners strive to preserve their banks' "franchise value," defined as the value of being an incumbent in an oligopolistic industry. It is, therefore, not surprising for incumbent banks to support, for example, entry barriers imposed by regulators such as tough licensing requirements. Regulatory capture can also arise from overt political pressures or from misperception among politicians that bank failures reflect poor supervision and hence, low supervisory skill. Conscious of its reputation, central banks might balk at implementing monetary policy that would stress certain banks or lower the industry's profits. This undermines the independence of monetary policy (Hardy, 2006).

2.1. MONETARY POLICY: A MODERN DESIGN

Bank of Canada's Tiff Macklem (2006) enunciates the four key aspects of modern central banking: "clear objectives and effective tools; legitimacy [of the policy objectives]; the effective use of markets [in the implementation of monetary policy]; and transparency and accountability". The inflation targeting framework is essentially characterized by having a clear objective and of transparency and accountability in the conduct of monetary policy. In general, a clear undertaking between the monetary and fiscal authorities confers legitimacy to the monetary policy objective. This undertaking could take the nature of either a joint announcement of the target by the authorities or by the announcement of the target by the fiscal authority. Such goal dependence does not diminish the independence of monetary authorities from fiscal dominance. After all, as part of the public sector, its endgame goal is to contribute to the maximization of social welfare – same as the elected government – by promoting an environment conducive to price stability. More importantly, goal dependence allows the central bank to more effectively implement monetary policy by cementing support from the fiscal authorities given that fiscal policy impacts on the success or failure of any monetary policy framework.

To ensure the success of the inflation targeting framework, it is necessary to clarify the transmission mechanisms of policy instruments to the real economy so that monetary authorities could identify and use intervention

instruments most effectively and efficiently. Lastly, to minimize externalities, central banks must rely on market-based instruments in the course of implementing monetary policy, presupposing the existence of efficient domestic financial markets.

2.1.1. THE PRICE STABILITY OBJECTIVE

The price stability objective or, more specifically, inflation targeting rests on the argument in classical economics of money neutrality, which implies that monetary policy can only affect nominal variables (e.g., wages, prices, foreign exchange rate) in the long run. It is but logical, then, to assign to monetary authorities only those objectives which they have the capacity to achieve given their powers and functions. At the same time, history is replete with examples of high and variable inflation derailing the real economy. For one, high and variable inflation discourages long-term investments, thus, affecting the production capacity of the economy.

Price stability could refer to either domestic (e.g., CPI), or external (e.g., peso-dollar exchange rate) price stability. Domestic price stability, in turn, could be translated into either price index targeting or inflation rate targeting. Usually, inflation targeting central banks target the inflation rate, as opposed to the price index. In brief, inflation rate targeting implies that when the target is breached in the previous period the policymaker can "charge it to experience" and focus on achieving the future targets, whereas with price index targeting, the authorities will have to implement a greater amount of intervention since it would be necessary to also correct for the deviation from target in the previous period to keep the target on track.

In an inflation targeting regime, it is not enough that a target is identified. It is equally important that the instruments and tools to achieve the target within an appropriate time period be identified. **The degree of independence of the monetary authority, the maturity of the domestic financial markets, the stability of fiscal policy, and clear communication of the policy direction determine the success of an inflation targeting regime.**

The independence of a nation's central bank is the hallmark of modern-day monetary order and has often been taken synonymously with the goal of price stability. The sound workings of the monetary system is intrinsically built on mutual trust wherein the implicit social contract confers upon the central bank the unique authority to determine the appropriate monetary base, preserve the integrity of money, and act as the lender of last resort, in support of the objectives of monetary stability and financial stability.[3] In fulfilling this social contract amidst modern challenges, it is almost indispensable for central banks to adhere to the principles of independence, transparency and accountability.

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[3] The essence of an independent central bank is best encapsulated in the Bank of England's declaration of its core purposes.

Monetary stability means stable prices and confidence in the currency. Stable prices are defined by the Government's inflation target, which the Bank seeks to meet through the decisions on interest rates taken by its monetary board, explaining those decisions transparently and implementing them effectively in the money markets.

Financial stability entails detecting and reducing threats to the financial system as a whole. Such threats are detected through the Bank's surveillance and market intelligence functions. They are reduced by strengthening infrastructure, and by financial and other operations, at home and abroad, including, in exceptional circumstances, by acting as the lender of last resort. (http://www.bankofengland.co.uk/about/corepurposes/index.htm)

Central bank independence is a multi-faceted concept [4] that underscores the autonomy of central banks in designing and implementing monetary policies. The different aspects of independence enunciated by the European Central Bank (ECB) [5] are very instructive:

- **Institutional independence** means that setting monetary policy is the sole prerogative of the monetary authority. Hence, central bank decisionmakers neither seek nor take instructions from other government instrumentalities, which, in turn, are expressly forbidden from attempting to give instructions.

- **Legal independence** gives the monetary authority the distinct legal personality that allows it to exercise its powers and functions unimpaired, i.e., with full flexibility and accountability. In this manner, the central bank is insulated from politics.

- **Personal independence** entails fixed but secured terms of office for its decision makers. While they may be relieved from office by any competent national authority on the basis of civil service guidelines and stipulations, they are protected from summary dismissal.

- **Functional and operational independence** highlight the special role of the monetary authority in controlling the monetary base by using instruments at its disposal. The concept also extends to the absence of fiscal dominance that unduly compromises the conduct of monetary policy.

- **Financial and organizational independence** means full budgetary autonomy in carrying out its tasks and functions. This includes setting up own staffing and profit distribution mechanisms.

Transparency facilitates the process of holding an independent central bank accountable. The accountability of an independent central bank rests on its important role of explaining to the public how it uses the powers and prerogatives it has been entrusted with. Specifically, it entails not just disclosure of information but more importantly, designing effective and well-structured information that can be readily understood by the public. This concept necessarily refers to an *ex post* justification and explanation, otherwise, the involvement of other parties in the decision making process by the monetary authority contravenes the essence of independence.

In turn, independence, transparency, and accountability impact on a central bank's credibility. The greater the central bank's credibility, the more effective and efficient it is in achieving its targets.

Still, arguments on the performance of inflation targeting as a monetary regime are not conclusive as yet. For one, inflation targeting has not been around long enough and it has been adopted during a relatively benign economic era. For another, it may be argued that what is being seen as benefits from inflation targeting

[4] This section draws heavily from Scheller's work on the European Central Bank (2004).

[5] The European Central Bank (ECB) represents the most encompassing surrender of sovereign right on monetary policy to a supranational monetary authority. Each member country has to ratify its accession to the Economic Monetary Union (EMU). Specifically, the adoption of a single currency and convergence criteria set forth in the Maascricht Treaty require an exceptional subordination of sovereignty over monetary policy to a group of country representatives.

derive primarily from credibility of monetary authorities. In other words, since these central banks were seen as serious enough in fighting inflation and promoting macroeconomic stability, the monetary regime they chose could have been not the primary determinant of the resulting stability. Nonetheless, the inflation targeting framework holds strong promise especially for countries that are susceptible to monetary and real shocks.

2.1.2. MARKET-BASED MONETARY POLICY TOOLS

In essence, monetary policy is implemented by setting a policy tool, say the repo rate, and implementing such rate through the conduct of open market operations. **The policy rate should ideally then affect the short-term rate, and, depending on market expectations, the long-term rates, thereby either shifting or twisting the yield curve.** The long-term rates are linked to sustainable economic growth and welfare improvement, e.g., in evaluating capital investment decisions, firms react to long-term interest rate movements. Meanwhile, in the short to medium term, these interest rate decisions of the central bank can affect expenditure decisions of households and businesses and thus, the deviation of actual output from potential output of the economy depending on the active transmission channels.

Shallow, inefficient and unstable financial markets have several undesirable implications. On one level, they impede the conduct of monetary policy because they distract policymakers from focusing attention and resources in refining objectives and tools to attain monetary objectives and instead require that resources be diverted towards averting system instability. On another level, the inefficiency in the financial markets obstructs the transmission channels of policy instruments. For instance, inefficiencies in the domestic foreign exchange market blunt monetary policy.

Thus, mature domestic financial markets not only imply less inefficiency in the allocation of financial resources but also highlight the degree of ease for the central bank to resort more to market-based instruments in effectively implementing monetary policy. The latter is preferred since "monetary policy works best when it is market based [rather than through] direct controls" (Macklem, 2006). Allen (2004) defines direct implementation of monetary policy as opposed to indirect implementation, to wit:

> "Direct methods [of implementing monetary policy] involve the state (government or the central bank) giving instructions to the banks on what loans they should and should not make, or on what interest rates they should charge to borrowers or pay to depositors, or on other aspects of their relationships with their customers. … Indirect methods of monetary control, in their most idealized form, allow the state no role at all in the relationship between commercial banks and their customers. In the idealized model, the state, in the guise of the central bank, deals only with commercial banks and perhaps some other financial institutions. The role of the central bank is purely to supply central bank money to the financial system in such a way as to enable the objectives of monetary policy to be achieved. Decisions about how much credit to extend to non-bank borrowers, and at what interest rate, and about what interest rates to pay depositors, are all left entirely to the private sector. Of course, those decisions are influenced by the behavior of the central bank. To give an obvious example, if the central bank increases the interest rate at which it is willing to lend central bank money to commercial banks, then it can be expected that the commercial banks will increase the interest rates at which they lend money to borrowers." (p.7)

Tools of indirect implementation are reserve and liquidity requirements (although it can be argued that these bear some nature of direct controls), open market operations (OMOs) and standing facilities. **Since indirect implementation of**

monetary policy is executed mainly through the financial markets, an efficient and mature financial market is desirable for primarily two reasons: (1) efficient conduct of OMOs, and (2) reliable transmission mechanism of monetary policy to the real economy.

2.2. FINANCIAL SYSTEM STABILITY AND SUPERVISION

The financial system is composed of financial markets (i.e., equities and debt markets) and financial intermediaries. The latter include deposit-taking institutions (e.g., banks); contractual savings institutions (e.g., insurance companies, private pension plans); and investment intermediaries (e.g., mutual funds). (Mishkin, 2003)

In general, financial regulation aims to correct market failures (arising from anticompetitive behavior, market misconduct, asymmetric information, and system instability), to protect consumers, to ensure the safety and soundness of markets, and to enhance the implementation of monetary policy. A fundamental tenet of regulation is the compatibility between the structure of the regulatory institution(s) and the structure of the industry being regulated so as to ensure a regulatory-neutral environment, and to minimize externalities. An inappropriate regulatory environment or system of incentives increases the probability of systemic failure because it encourages mispricing of risk.

For instance, "because banks play a very important role in determining the supply of money (which in turn affects many aspects of the economy), much regulation of…financial intermediaries is intended to improve control over the money supply. One such regulation is reserve requirement… Deposit insurance regulation can also be rationalized along these lines…[because it] gives depositors confidence in the banking system and eliminates widespread bank failures, which can in turn cause large, uncontrollable fluctuations in the quantity of money". (Mishkin (2003), p45)

Systemic risk, which refers to risk to the overall stability of the financial system, can be minimized by deposit insurance, emergency liquidity assistance from central bank (e.g., lender of last resort role), a well-designed payment system, and market discipline. Because of evidences that an unstable or fragile financial system makes it difficult for the monetary authorities to effectively and efficiently implement monetary policy, it has been necessary that emergency liquidity assistance be made available to banks in order to assure the public that the payment system will continue to work during emergencies and crises. During such crises the policy instrument likely will not work as intended, or as efficiently as intended. The role of central banks as the lender of last resort has been used to rationalize their supervisory role over banks, and in turn, their responsibility for the payment system. Lastly, easy access to financial disclosures by market participants magnifies the impact of efforts by financial supervisors by enabling market agents to make informed decisions, e.g., badly managed firms are appropriately subjected to the disciplinary mechanism of the capital markets.

From a micro-prudential point of view, shocks to a bank's liquidity position can be addressed by deposit insurance, reserve and liquidity requirements, and capital adequacy requirements. As to the latter requirement, as long as a bank is solvent it may still be possible to access the inter-bank market.

However, when the shock is common to all, it then becomes necessary to have the safety net provided by a lender of last resort to avoid disrupting the payment system and propagating financial system instability. "The payment system represents a major component of the infrastructure of any modern economy and systemic failure therein can undermine the effectiveness of monetary policy, the soundness of financial institutions and the economy in general." (Buenaventura, 2004)

The information technology revolution has had significant impact on payment systems, which integrity constitutes a foundation of central bank core functions of monetary stability and financial stability. Since payment systems operate in a network, they are highly vulnerable to systemic risks. This vulnerability arises either from contagion from the failure of one agent, or from dependence of network participants on a single supplier; thus, potentially giving rise to snarl-up in the system.

Diverse home currency payment systems[6] entail considerable risks when settling cross-border and multi-currency transactions. For one, simultaneous settlement of foreign exchange transactions may not be feasible given the non-convergence of home currency payment systems' operating hours. This limitation can, however, be eventually remedied with 24-hour service facility. Nevertheless, the risk inherent in non-finality of settlements gives rise to potential loss of principal. This is commonly referred to as Herstatt risk [7] whereby transfers in one currency become final while associated transfers in other currencies have not yet taken place.

The payment system is susceptible to liquidity crisis when the financial standing of a counterparty is in doubt. The fear of incurring principal risk can trigger liquidity risks as some participants may not honor earlier-settling currencies out of misgivings about the capacity of, say, counterparty A to settle its counterpart obligations in later-settling currencies. The sudden disruption of a significant level of expected flows could cause serious liquidity problems for counterparty A as well as other participants that expect payment from counterparty A.

Individual participants have little incentive to fully mitigate systemic risks but it is in everyone's collective interest that such risks are mitigated. The inherent "public bad" nature of systemic risks in the payment system (Haldane and Latter, 2005) demonstrates the need for unambiguous public policy oversight that would protect stability of the payment systems. Such protection could either be direct, where central banks both directly own and operate the high value payment system, or indirect, where private participants directly provide payment services but with public authority providing oversight in the form of regulations.

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[6] "Some systems complete home-currency large value funds transfers on a gross payment-by-payment basis while others rely on net settlement procedures. In some countries, final (irrevocable and unconditional) transfers can be made in "real time" throughout the business day while in others, such transfers might not become final after several hours or possibly a day or more after the transfers are initiated. Each country has its own hours of operation and typically are not synchronized with payment system operating hours in other countries." (BIS, 1993).

[7] Herstatt risk generally refers to settlement risk, which is a type of credit risk. The term 'Herstatt risk' is derived from the Herstatt Bank, which on June 26, 1974 was closed by the Bundesbank before it settled its dollar obligations to its New York counterparties in New York time. When the bank was closed, the US banks had already transferred deutschemarks to the Herstatt Bank in European time. (http://www.riskglossary.com/link/settlement_risk.htm)

3. THE BSP POLICY FRAMEWORK

Starting with the abolition of interest rate ceilings on deposits and the abandonment of the policy of development financing, or directed credit, the BSP has come to increasingly rely on "indirect" tools of monetary policy. The key policy levers it uses in implementing the inflation targeting framework are overnight reverse repurchase (RRPs) and repurchase (RPs) rates, and statutory and liquidity reserve ratio requirements. The Monetary Board sets rates for the BSP's overnight borrowing and lending facility to influence the timing, cost and availability of money and credit, for the purpose of stabilizing the price level. The use of these policy levers is undertaken within a floating exchange rate system and market-oriented interest rate policies.

3.1 MONETARY POLICY FRAMEWORK: INFLATION RATE TARGETING[8]

The New Central Bank law stipulates that the primary objective of the BSP is to maintain "price stability conducive to a balanced and sustainable economic growth".[9] The law empowers the BSP to take remedial measures when there are abnormal movements in prices, monetary aggregates, or credit, or when the international stability of the peso is threatened. Thus, even though the BSP is no longer encumbered with multiple objectives such as financing the national government (NG) deficit, fixing the exchange rate, or other policy agenda of the national government, other economic goals—such as promoting financial stability and achieving broad-based, sustainable economic growth—are still given consideration to ensure that monetary policies are part of a consistent and coherent overall policy framework.

The BSP started implementing inflation targeting as its framework for monetary policy in January 2002. The shift has been occasioned by the vast changes in the structure of the financial system and the advent of innovative financial products and services following financial deregulation and liberalization, two forces which appeared to have undermined the traditional relationship[10] linking money supply to income and prices.

The inflation targeting regime that governs the BSP's monetary policy decision-making process is within what Bernanke and Mishkin (1997) describe as an exercise of "constrained discretion" rather than an "ironclad policy rule". The framework, although clear in its objective, is easily adapted to the judgments and other policy considerations of the monetary authorities. Rather than being a hard-and-

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[8] The description of the rationale and implementation details of BSP's inflation targeting framework were sourced from http://www.bsp.gov.ph/about_bsp/inflation/default.htm

[9] Chapter 1, Article 1.Section 3 of Republic Act 7653 or the New Central Bank Act (passed into law in 1993).

[10] This approach was modified beginning in the second semester of 1995 to put greater emphasis on price stability instead of rigidly observing the targets set for monetary aggregates. In addition, monetary authorities wanted to address one of the pitfalls of monetary targeting, i.e., it does not account for the long and variable time lag in the effects of monetary policy on the economy. Under the modified framework, the BSP can exceed the monetary targets as long as the actual inflation rate is kept within program levels. Thus, a larger set of economic variables are being monitored and analyzed for monetary policy decision making. The goal of price stability became the centerpiece of monetary policy when inflation targeting was adopted as the official framework in 2002. It would, however, be presumptuous to credit the success of monetary policy setting to inflation targeting alone because of the relatively short experience with it. As noted by the IMF, the institutional requirements of inflation targeting may not be as stringent as once thought of to be.

fast rule for low inflation at all costs, the inflation targeting framework can, for instance, give due considerations to possible increases in the volatility of output growth. On the other hand, it is important that this framework be complemented by a strong political commitment to a consistent fiscal policy as suboptimal fiscal policy choices can derail effective use of monetary policy instruments.

On hindsight, the timing of BSP's decision to adopt inflation targeting was auspicious in the sense that the legal and institutional independence granted to the BSP in 1993 has been steadily buoyed by its increasing credibility in setting monetary policy. In addition, it must be pointed out that the national government fiscal deficit reduction program has been proceeding as planned. On the other hand, developments in the global oil markets had resulted to the targets being breached.

The BSP's inflation targeting entails the announcement of an explicit inflation target, with a two-year policy horizon. The inflation target is a range, with a band of 1 percentage point.[11] It is defined in terms of the consumer price index (CPI) inflation rate or the headline inflation rate. It is a commonly used measure of inflation and therefore, has the advantage of being easily understood by the public. However, the BSP also examines the movements of "core inflation" in setting the monetary policy stance to account for price movements that are not within the control of monetary policy.[12]

The "legitimacy" of the policy objective is validated by institutional and political support of the target. The inflation target is jointly set by the Government and the BSP, through the Development Budget Coordination Committee (DBCC). In fact, in the budgeting process, the inflation target is an important input. Furthermore, through Republic Act 7653 or the New Central Bank Act and the various resolutions and regulations by the Monetary Board, the price stability objective, in general, and inflation targeting, in particular, has been advocated, implemented and strengthened.

Even though the BSP is goal dependent, it is instrument independent and the responsibility for achieving the target rests primarily on the BSP. However, for deviations that are not within the BSP's control, exemption clauses apply. In the Primer on Inflation Targeting posted in its website, the BSP lists four major causes of increased inflation volatilities outside its purview and under which monetary policy has limited, if not non-existent, influence:

(1) volatility in the prices of agricultural products;
(2) natural calamities or events that affect a major part of the economy;
(3) volatility in the prices of oil products; [and]
(4) significant government policy changes that directly affect prices such as changes in the tax structure, incentives and subsidies.

The design of the inflation targeting framework requires BSP to issue an open letter to the President in the event that inflation targets are breached. This open letter explains the reasons for the discrepancy and sets out the measures that

[11] A range inflation target provides the monetary authorities more flexibility, while a point target helps focus the expectations of the public.

[12] *Core or underlying inflation* is an alternative measure of inflation that removes certain components of the CPI basket that are subject to volatile price movements such as food and energy and whose price changes are not within the control of monetary policy inasmuch as these are supply shocks.

will be adopted to bring inflation back to target. Open letters were issued for the years 2003, 2004, and 2005 on account of supply-side shocks.

The exercise of greater transparency is intrinsic in an inflation targeting regime because its effectiveness is largely contingent on the disclosure mechanisms on BSP's policy actions and decisions. Given that information is pivotal in influencing public expectations as well as in facilitating informed discussion on monetary issues, a well-structured communication program also helps reinforce BSP's accountability to meet its objectives. Towards this end, inflation reports are published on a quarterly basis. These reports contain information on price and cost developments, prospects for aggregate demand and output, monetary and financial market conditions, labor market conditions, fiscal developments and international developments.[13] Calendar of Monetary Board meetings and minutes of the MB meetings are similarly made public through the BSP website with a lag of six weeks. Regional briefings have also become a staple in BSP's communication and advocacy toolkit.

A modest attempt at appraising BSP's observance of the modern central banking principles is presented in Table 1.

TABLE 1. THE BSP CHARTER VIS-À-VIS THE PRINCIPLES OF MODERN CENTRAL BANKING

PRINCIPLES OF MODERN CENTRAL BANKING	BSP'S OBSERVANCE OF MODERN CENTRAL BANKING PRINCIPLES
I. INDEPENDENCE	***Article XII, Section 20 of the 1987 Constitution of the Republic of the Philippines*** provides that there shall be an "independent central monetary authority, the members of whose governing board must be natural-born Filipino citizens, of known probity, integrity, and patriotism, the majority of whom shall come from the private sector. They shall also be subject to such other qualifications and disabilities as may be prescribed by law. The authority shall provide policy direction in the areas of money, banking, and credit. It shall have supervision over the operations of banks and exercise such regulatory powers as may be provided by law over the operations of finance companies and other institutions performing similar functions.'' ***Chapter 1, Article I. Section 1 of Republic Act (RA) 7653 or the New Central Bank Act*** clearly stipulates in its declaration of policy that the "State shall maintain a central monetary authority that shall function and operate as an independent and accountable body corporate in the discharge of its mandated responsibilities concerning money, banking and credit. In line with this policy, and considering its unique functions and responsibilities, the central monetary authority established under this Act, while being a government-owned corporation, shall enjoy fiscal and administrative autonomy."
1.1 Legal independence	RA 7653 explicitly provides the requisite legal mantle for the conduct of independent monetary policy.
1.2 Institutional independence	BSP has its own Monetary Board that has been empowered to design and implement monetary and financial policies in accordance with the primary objective of price stability, conducive to balanced and sustainable growth of the economy. The Board is also responsible for promoting and maintaining monetary stability and the convertibility of the peso. ***(Chapter 1, Article II, RA 7653)***
1.3 Personal Independence	While the members of the MB are all Presidential appointees serving for a fixed term, the appointment is subject to fit and proper rule. Correspondingly, no member can be summarily dismissed as removal from office is also subject to certain conditions. ***(Chapter 1, Article II. Monetary Board, RA 7653)***
1.4 Functional and operational independence	***Chapter IV – Instruments of Bangko Sentral Action*** (RA 7653) delineates the powers and functions of the Monetary Board in operations in gold and foreign exchange, regulation of foreign exchange operations of banks, loans to banking and financial institutions, OMO, composition of BSP's portfolio, bank reserves, selective regulation of bank operations, and coordination of credit policies by government institutions. Specifically, it empowers the MB to use policy instruments at its disposal for the conduct of monetary policy.

[13] BSP 4th Quarter 2005 Inflation Report. (available at www.bsp.gov.ph)

	• Article IV, Section 74 states that MB "shall determine the exchange rate policy of the country"; • Article IV, Section 85 states that MB shall fix the interest and rediscount rates on BSP's "credit operations in accordance with the character and term of operation but after due consideration has been given to the credit needs of the market…and the general requirements of the national monetary policy".
	Chapter VI, Article II, Section 128 (RA 7653) proscribes the central bank from ownership of equities securities and from "engagement in development banking". ***Chapter VII, Article II. Sections 129 of the Transitory Provisions*** limits the role of the BSP in the borrowing activities of the national government and other fiscal agencies. Furthermore, the BSP's provisional advances to the NG were shortened to three months, renewable for another three months but not to exceed 20% of the government's annual income in the preceding three fiscal years ***(Chapter IV, Article IV, Section 89)*** Lastly, **Section 130** transfers to the Securities and Exchange Commission the regulation of finance corporations not engaged in banking or quasi-banking.
1.5 Financial and organizational independence	Section 15 on the Exercise of Authority delineates powers and functions of the Monetary Board with regards to the issuance of rules and regulations, management and operations of the BSP, establishment of a human resource management system, adoption of annual budget and expenditure program. The Monetary Board is also empowered to authorize the payment of costs related to the litigation of its members and other Bank personnel provided that (1) such actions arise from the performance of their duties, and (2) they are found not guilty of negligence or misconduct. ***(Chapter I, Article II. Section 15)***
II. TRANSPARENCY	***Chapter I, Article V, Sections 39, 40 and 41*** prescribe the reportorial duties of the BSP to the President, Congress, and the general public.
III. ACCOUNTABILITY	***Chapter I, Article II. Section 16*** stipulates that "members of the Monetary Board, officials, examiners, and employees of the Bangko Sentral who willfully violate this Act or who are guilty of negligence, abuses or acts of malfeasance or misfeasance or fail to exercise extraordinary diligence in the performance of his duties shall be held liable for any loss or injury suffered by the Bangko Sentral or other banking institutions as a result of such violation, negligence, abuse, malfeasance, misfeasance or failure to exercise extraordinary diligence." The parties above shall also be held accountable for any unauthorized communication of privileged information or from profiting from such information.

Sources: RA 7653 or the New Central Bank Act; 1987 Constitution

3.2 THE PHILIPPINE FINANCIAL SYSTEM SUPERVISORY ENVIRONMENT

The regulation of the Philippine financial system is shared by four agencies: the Bangko Sentral ng Pilipinas (BSP), the Philippine Deposit Insurance Corporation (PDIC), the Securities and Exchange Commission (SEC) and the Insurance Commission (IC). Article XII, Section 20 of the 1987 Constitution of the Republic of the Philippines provides that the BSP, as the "independent central monetary authority…shall have supervision over the operations of banks and exercise such regulatory powers as may be provided by law over the operations of finance companies and other institutions performing similar functions." The BSP supervises the banking industry and non-banks with quasi-banking functions, while the PDIC also regulates banks to protect depositors. Financial markets (equity and debt securities markets), exchanges, and investment houses are under the SEC. The IC oversees life and non-life insurance companies.

On 05 July 2004, the four agencies formed the Financial Sector Forum (FSF) to strengthen coordination amongst them. Even though the member-agencies agree to implement agreements in the FSF, it is "not intended to be a regulatory superbody since it is not vested with any powers." (BSP, 2004b) The FSF aims to:

(1) push for risk-based frameworks in the entities the members regulate;

(2) synchronize regulation in the financial sector in order to minimize regulatory arbitrage;
(3) enhance the reliability of financial data and disclosure system; and
(4) inform consumers and investors of their rights and responsibilities.

Through the FSF, guidelines have been established between the BSP and PDIC with respect to information sharing, and between the BSP and the SEC with respect to sharing of regulatory tasks.

3.3. THE PHILIPPINES PAYMENTS AND SETTLEMENTS SYSTEM

The Philippine payment system is characterized by banks and non-banks with quasi-banking (NBQB) functions providing peso payment services for retail transactions, while the BSP, together with some privately-owned institutions, handles large value fund transfers. The Philippine Postal Corporation is also authorized under Republic Act 7254 to issue domestic and international money orders.

For large value interbank transactions, several systems were developed and linked to the *Philpass*,[14] a real-time gross settlement system (RGTS) operated by the BSP, to effect high-value payment transactions between banks through the deposit accounts of the banks that are maintained with BSP. The system was implemented in 2002. It provides the required infrastructure for modern and automated payment and settlement system. Transactions settled in the system are final and irrevocable, thus, minimizing settlement, credit and liquidity risks.[15] Although participants have to comply with qualifying requirements, no admission or membership fees are levied. Participants, however, pay transaction fees for using the system. The 2005-2011 BSP Medium-Term Strategic Plan (2005) provides a comprehensive description and analysis of the Philippine payment system.

The BSP, as owner and operator of the *PhilPaSS*, is responsible for ensuring system integrity. It had already laid out the requisite periodic testing of the back-up system as among its medium-term strategic deliverables. The central bank is also charged with maintaining and upgrading the system and ensuring uninterrupted operations between the System and SWIFT (the network provider), and instituting adequate Continuity of Business Plans (CBP).

As the settlement bank, the responsibilities of the BSP are multidimensional. It is responsible for "(a) creating a Participant's *PhilPaSS* account in the system, wherein all *PhilPaSS* transactions and other bank transactions shall be

[14] "Prior to 12 December 2002, banks/financial institutions were using the Enhanced Multi-transaction Interbank Payment System (MIPS2) for their interbank transactions. MIPS2 was an electronic net clearing system that was operated by the Bankers Association of the Philippines (BAP) and Philippine Clearing House Corporation (PCHC) in coordination with the BSP. Both counter-parties in an interbank transaction under MIPS2 had to input their transaction through the PCHC System who, in turn, verified and authenticated the transactions prior to its electronic transmission to the BSP for settlement. Banks/financial institutions secured transaction status through reports from MIPS2, while the BSP/ Comptrollership Department communicates the balances of their demand deposits through hourly electronic broadcast." (BSP, 2004a)

[15] "The PhilPaSS makes use of the Logica Clearing and Settlement System/Central Accounting System (LCSS/CAS). Its basic function is to process incoming SWIFT settlement instructions by participants and prompt the accounting and recording of these transactions to the participants' accounts with BSP. The existing global communication network of SWIFT is a component of the system that enables the participants to transmit electronically their financial transactions to their counter-parties. The participants are required to enroll and subscribe to SWIFT FIN Copy Service to allow them to transmit directly their *PhilPaSS* transactions to BSP's LCSS/CAS for processing and settlement." (BSP, 2004a)

posted during the *PhilPaSS* business day; (b) receiving and authenticating electronic fund transfer instructions from the participants; (c) checking if the paying bank has sufficient balance and posting the debit entry in its account and credit entry in the beneficiary bank's account; and (d) providing feedback to participants regarding their *PhilPaSS* transactions, balances and queries." (BSP)

The Bankers Association of the Philippines (BAP), Chamber of Thrift Banks (CTB) and Investment House Association of the Philippines (IHAP) have been designated by their members to negotiate and sign the agreement for *PhilPaSS*. As such, they are responsible for ensuring that their member banks/financial institutions adhere strictly to the terms and conditions of the *PhilPaSS* agreement and *PhilPaSS* rules and regulations.

Participants are responsible for the upgrading, testing and maintenance of their Computer Based Terminal (CBT) for the SWIFT FIN Service Facility or PPS-FES to ensure uninterrupted linkage with the system. They shall likewise ensure that a back-up computer site configuration is available to recover their systems operations if their primary computers fail.

4. CHALLENGES CONFRONTING THE BSP

According to Goodhart (2000), inflation targeting central banks are confronted with the following conundrums in the short-run:

(1) returning inflation to the target within the shortest period versus real stabilization;
(2) supporting the internal value versus supporting the external value of the currency (e.g., domestic inflation versus foreign exchange stability); and
(3) the role of asset price movements on the one hand and consumer price inflation on the other.

The BSP is working towards finding the appropriate balance between monetary and real stabilization, and a suitable role of asset prices in inflation targeting by enhancing its analytical capability, advocating reforms in the statistical system to address statistical gaps, and reorganizing its corporate structure to better address the challenges that modern-day central banks must face. Because the BSP is a small and open economy, the BSP advocates a market-driven foreign exchange policy and participates in the foreign exchange market to the extent that inflation outcomes are contained within targets.

The set of rationale that gave birth to central banking has accordingly given rise to a universal set of minimum institutional requirements for an effective monetary authority. Consequently, the requisite business systems and processes for modern central banking are essentially the same across all central banks. **Viewed against the backdrop of near-seamless global flow of capital and the ever-increasing linkages among economies, it may be argued that central banks of emerging markets are confronted with deeper challenges than its counterparts in industrialized countries.** For one, they have to undertake similar functions despite constraints in expertise and resources. Moreover, they have to function in a national financial system that is not as sophisticated or as stable as in more developed economies. A summary, albeit not exhaustive one, of identified challenges and BSP's responses is presented in Table 2.

TABLE 2. SUMMARY OF CB MODERNIZATION CHALLENGES AND BSP'S RESPONSE

CHALLENGES ARISING FROM:	BSP'S RESPONSE
1. ECONOMIC AND TECHNOLOGICAL INNOVATIONS	
RAPID INNOVATIONS OF FINANCIAL PRODUCTS	As early as 1995, the BSP has issued a number of directives defining the scope of trading activities and disclosure requirements for banks and other financial institutions. In 2005 alone, the BSP released two circulars detailing the rules and regulations governing banks' investments in securities overlying securitization structures (Circular 269) as well as the capital treatment of banks' exposures to structure products (Circular 469).
COMPLEXITIES IN TRANSMISSION CHANNELS	One of the medium-term thrusts embodied in the BSP MT-Strategic Plan is the development of a model on the transmission mechanisms of monetary policy. Econometric modeling of the different channels can be done through the micro-founded dynamic stochastic general equilibrium (DSGE) model of the economy that would allow a theory-consistent approach to identifying a shock and tracing its transmission to the different sectors of the economy.
RAPID TECHNOLOGICAL INNOVATIONS: ELECTRONIC MONEY	The BSP has prescribed prudential guidelines in the conduct of electronic banking. Applicant banks must prove that they have in place a risk management process that is adequate to assess, control and monitor any risks arising from the proposed electronic banking activities. The Core Information Technology Supervision Unit (CITSU) was established in June 2005 to help banks align their information technology policies with international best practices.
INCREASING ECONOMIC INTEGRATION: PAYMENT SYSTEM	The *PhilPASS*, a real-time gross settlement system operated by the BSP was implemented in 2002. The BSP has sufficiently administered the *PhilPASS* in accordance with the Core Principles for Systematically Important Payment Systems although its powers to apply the core principles to systems outside its jurisdiction remain limited because of the absence of statutory power over the entire payment system.
CHANGING FINANCIAL SECTOR STRUCTURE CHARACTERIZED BY REGULATORY ARBITRAGE AND CONGLOMERATION	A more consolidated supervision is being considered in the Financial Sector Forum, a group composed of the BSP, SEC, the IC, and the PDIC. "The creation of the FSF is underscored by the need to establish an overall framework that will provide the exchange of relevant reports and/or data for the development of comprehensive statistics on the financial system and the sharing of relevant market information on individual financial institutions; facilitate sharing of lists of reputation agents and provide proper forum to discuss and resolve issues of common concern; and supplement existing bilateral data sharing arrangements". (Aquino, 2005)
2. RISK MANAGEMENT	Several guidelines and regulations were issued regarding the adoption of risk-based supervision. The new risk-based capital adequacy framework has already incorporated both credit and market risk for universal and commercial banks as well as modified the required minimum ratio; the qualifying capital; and the classification used on the risk weighting system. The Monetary Board, in its Resolution No. 1516 dated 14 October 2004, approved the implementation plans for Basel 2 Accord, or the International Convergence of Capital Measurement and Capital Standards: (a) Universal/Commercial Banks (U/KBs) are expected to comply with the standardized approaches for credit risk and operational risk by 2007. By 2010, these banks may move to the foundation internal rating based (IRB) or advanced IRB approaches for credit risk, and advanced measurement approaches for operational risk. TBs affiliated with U/KBs should use the same approach used by U/KBs. (b) Small thrift banks and rural banks are expected to be subject to an enhanced Basel-1 type approach by 2007.
3. FINANCIAL CRIMES	Since the ratification of the enabling laws and the issuance of the implementing rules and regulations, a total of 27 BSP issuances in support of the AMLA have been released. For instance, the BSP has been actively promoting strict implementation of the know-your-customer (KYC) doctrine. The new rules and regulations highlight the customer-identification requirements by requiring, among others, the proper identification of the payee of cashier's or manager's checks payable to cash or bearer; the maintenance of banks of parallel customer-identification records for numbered foreign currency deposit accounts; and the introduction of a suspicious transaction reporting system.
4. GROWING COMPLEXITY OF THE ECONOMY AND INCREASING SOPHISTICATION OF ECONOMIC AGENTS	

INFLATION FORECASTING MODELS	The BSP continuously endeavors to improve its existing models for better inflation forecasts. These include the two short-term forecasting models (single-equation model and multi-equation model) and the long-term structural model.
STABILITY ANALYSES AT THE MACRO AND MICRO LEVELS	Early warning systems (EWS) for surveillance work have been developed and are continuously being improved. **Macro stress-testing** • EWS on Business Cycles • EWS on Currency Crisis • Bank Distress Index • External Debt Sustainability Stress-Testing **Micro stress-testing** • Bank Performance Report System • Comprehensive Bank Folders • Top Corporate Borrower Reports • Bank Early Warning System
5. ORGANIZATIONAL DEVELOPMENT	In recognition of evolving challenges, strategic planning conferences are conducted periodically to assess and map out BSP's medium-term program encompassing areas of organizational structure; systems and processes; human resource development; merit-based incentive structure; culture change; databank management; and space rationalization.

Sources: SEC Presentation to the 2005 PICPA Annual National Convention
http://www.bsp.gov.ph/regulations/regulations.asp
BSP Medium-Term Strategic Plan (2005)

4.1. ECONOMIC AND TECHNOLOGICAL INNOVATIONS

The forces of globalization and the rapid development of new technology have radically transformed the major aspects of bank operation, such as access to liquidity, transformation of assets, and monitoring of risks. Because of the revolution in information and data processing technology, there are greater potentials for reducing transactions costs and improving risk management. On the other extreme, the same technology that allows real-time execution of massive transactions is equally capable of generating huge losses previously thought of to be inconceivable.[16]

The evolution of e-money, e-banking, and e-finance continue to transform the financial system in ways that would require intensive build-up of market intelligence capability. With these new developments, BSP will have to adapt its technology to emerging business needs without overstretching its resources, lest its own financial sustainability gets compromised in the process.

4.1.1. MONETARY TRANSMISSION MECHANISMS AND CONTROLABILITY OF TARGETS IN A LIBERALIZED FINANCIAL SYSTEM

Monetary policy feeds largely through aggregate demand with minimal effect on supply capacity in the short run. In the long run, it determines how much the purchasing power of money has changed over time, thus, setting the rationale for the central role played by price stability in monetary policy making.

While indeed a "powerful tool", monetary policy sometimes engender externalities. (Nualtaranee, undated) The design and implementation of monetary policy must, therefore, consciously take into account the changes in the structure of

[16] Quaden (2001), in his speech, noted that most new technology spreads via an S-shaped curve whose base section can be quite long and practically horizontal. However, it will sooner or later be succeeded by a steep section as experienced in Nordic countries.

the economy – including changes in the balance sheet position, in financial sector technology and institutions, or in expectations concerning future policy. Hence, central banks must be able to continuously reinterpret the channels of transmission of monetary policy (Kamin, et al, 1998) since these channels are not invariant over time.

An overview of the different transmission channels of monetary policy distilled from Kamin, et al (1998), Drew, et al (2004) and Nualtaranee (undated) is provided below.

(a) Interest Rate Channel

While views on the transmission channels continue to diverge in view of the different economic environment within which such channels operate, there is merit to strengthening the interest rate channel. This channel enjoys primacy over explanations of the workings of the monetary policy transmission mechanism since adjustments in the monetary policy stance is normally done through repo and reverse repo rates. Central banks' monopoly power over the creation of high-powered money (also known as the base money) confers upon them the power to set the interest rates in the wholesale money markets.

When the central bank decides to tighten monetary conditions to stem inflationary pressures, it raises policy rates, which in turn, affect the market rates banks charge their customers. Higher cost of credit stemming from higher bank lending rates alters the investment decision of firms. Higher deposit rates, on the other hand, may affect households' decision between present and future consumption. These forces dampen aggregate demand and temper inflationary pressures.

Kamin et al (1998) propounded that the key issue in the interest rate channel is the extent to which monetary policy action is transmitted along the yield curve. This transmission process is largely a function of market expectations, and the structure and level of development of the domestic financial markets. This underscores the importance of the pass-through effects of policy-induced movements in interest rate on both marginal costs of borrowing and average rates on outstanding contracts. Aggregate demand is influenced by changes in expectations of future inflation as seen in nominal interest rates and by changes in investment attitude which is a function of the real interest rates.

Recent study by Dakila and Claveria (2005) indicates that even as the BSP policy rates retains its capability to influence market interest rates, the pass-through from the policy rate to the Treasury bill rate[17] remains limited. Causality tests undertaken also show that the channel of impact may also be indirect, through secondary markets. In addition, the impact of policy rate increase on inflation is relatively smaller compared to those in developed countries.

(b) Credit Channel

Over time, the importance of the credit channel of monetary policy compared with the interest rate channel (and related effects) may have diminished as a result of liberalization of financial system. For instance, hedging instruments could insulate firms' cash flows. On the other hand, recent crisis experiences show that a more

[17] Apart from the past trend in the T-bill rate itself, the policy rate is the most significant determinant of the T-bill rate over the very near term (within three months). Beyond this period, exchange rate begins to dominate the policy rate in influencing the T-bill rate.

liberalized global financial system may have also deepened the fragility of the financial sector. These financial crises in the late 1990's have emphasized the credit availability channel.

The credit channel, considered more of an extension of the interest rate channel, highlights the roles of "asymmetric information and costly enforcement of contracts". (Bernanke and Gertler [1995] cited in Nualtaranee) Consistent with Akerlof's market for lemons, only firms with very risky projects will be willing to accept high rates during periods of contractions making interest rates insufficient as a screening device, thus higher loan rates may be complemented by more stringent standards. As a result, even creditworthy borrowers will have to face higher costs of credit. Unless firms can easily substitute at zero cost bonds and commercial paper for loans, the changes in the supply of loans will affect the real economy. In this respect, credit channel works on the supply side while at the same time highlights the more traditional "money channel," *i.e.* the demand effect of a monetary contraction, which modifies borrowing conditions and affects asset prices, and thus, the market value of wealth.

The credit channel was highlighted anew in the financial crises that hit Mexico in 1994-1995 and Asia in 1997. Many economists, Mishkin (1999) included, believe that these crises were fundamentally triggered by the deterioration in bank balance sheets following surge in credit growth on the back of heavy inflows of foreign capital. The regulatory and supervisory systems then were ill-prepared to mitigate the moral hazard arising from the government safety net or subsidies. Thus, the opportunities opened up by financial liberalization led to excessive risk taking by banks that eventually led to corrosion of their balance sheets.

Weakness in the banking sector, in turn, fueled speculative attacks on domestic currencies. Attempts by central banks to stave off the depreciation by raising interest rates further compounded the balance sheet problem. In emerging markets, many of banks' liabilities were in foreign currency. A region-wide currency crisis materialized when it became apparent that the various central banks were no longer able to defend their currencies.

Meanwhile, the rise in interest rates constrained the ability of firms and households to service their debts. This put in doubt and in a lot of cases even made worthless portions of banks' assets. The worsening balance sheet conditions resulted in lending restrictions, limiting access to funds of otherwise sound economic investments.

(c) Asset Price Channel

The liberalization of financial systems in emerging market countries gave impetus to balance sheet diversification of private non-financial sector, which, in turn, enhanced the role of asset prices.

As for the wealth channel, a rise in the policy rate as a response to higher inflation will ultimately give rise to increase in market rates and lower market values of bonds, securities and equities. Since the present value of the future stream of income from such assets is lower than the replacement cost of capital, firms may opt to defer investment. This implies that even if loan rates respond sluggishly to policy-induced changes in interest rate, monetary authorities can still influence aggregate demand by affecting prices of securities and other financial assets. The

extent of this power is function of the maturity and efficiency of the domestic capital and financial market.

The propagation of the policy rate changes into asset prices also alters the net worth of households and firms, which affects their income prospects. These changes become functions of the consumption-investment decisions of households and firms. If sufficiently severe, the ensuing decline in asset prices may impact on the abilities of households and firms to pay their debts. In these circumstances, households and firms will react by tightening their belts, possibly blunting the efficacy of subsequent countermeasures by the monetary authorities once the negative shock has dissipated.

(d) Exchange Rate Channel

Changes in policy rate and its ensuing impact on market rates have implications on the demand for domestic assets and eventually on the exchange rate. Exchange rate feeds though spending via two channels: the relative price effect and balance sheet effects.

For example, the relative price effects of a currency appreciation emanating from higher policy rate and market rate relieve inflationary pressures by making domestic goods more expensive, thereby, reducing exports and aggregate demand. The balance sheet effect, on the other hand, can be an important channel when households and firms hold foreign currency debt. When residents are net debtors to the rest of the world, a large appreciation, can improve the debt positions and net worth of the residents and hence, domestic demand. Thus, it may be possible that the balance sheet effects offset or even dominate the relative price effect.

Any effort, therefore, to strengthen the channels assumes an accurately estimated model of such channels. This further highlights the necessity of strong modelling and research capability in the BSP. It is worth noting that the development of a model on the transmission mechanisms of monetary policy is among the medium-term thrusts of the BSP. Econometric modelling of the different channels can be done through the micro-founded dynamic stochastic general equilibrium (DSGE) model of the economy that would allow for a theory-consistent approach to identifying a shock and tracing its transmission to the different sectors of the economy (BSP Strategic Plan, 2005). In any case, the following considerations will have to be taken into account in determining the strength of the pass-through from policy rates,: (i) state of capital market development, (ii) role of banks in the financial system, (iii) changes in the regulatory framework, (iv) extent of securitization, and (v) degree of flexibility of product and labor markets. At the same time, the importance of initiatives to improve the efficiency of markets – both real and financial – cannot be overly emphasized.

4.1.2. PAYMENT SYSTEM

While the BSP has sufficiently administered the PhilPASS in accordance with the Core Principles for Systematically Important Payment Systems, its powers to apply the core principles to systems outside its jurisdiction are limited.[18] The legal framework for the complete implementation of the core principles

[18] About 63.9 percent of the total universal/commercial and thrift banks are participants in the Philpass (Updates on BSP Supervision and Regulation, June 2005.

remains inadequate. The current payment system is governed by fragmented rules and regulations issued by means of circulars (BSP MT Strategic Plan, 2005). For one, the BSP's oversight function over the payment system is not explicitly included in its Charter. The untenable legal backing could spill into credit and liquidity risks in the event of systems breakdown or severe economic distress. It will be noted that the Bank of England recognizes the challenge posed on its payment system by the absence of statutory powers in effecting remedial measures in the event of system breakdown.

In the area of payment system legislation, the New Zealand experience is very instructive. **The Reserve Bank of New Zealand Amendment Act 2003 granted it with (1) oversight power over the payment systems, and (2) the power to collect and publish information relating to the payment system.** (DeSourdy, 2004) The amendments ensure the finality and irrevocability of payments executed through the system even in the event of insolvency.[19] However, protection is accorded only to the transactions settled and not to the underlying transactions[20]. Even so, the NZ rules allow one party to challenge or sue another party who has acted fraudulently or dishonestly without invalidating the enforceability of rules, payment, and netting in the designated payment system. Similar arrangements exist in the UK, Canada, Australia, and Singapore.

The reputational capital of the BSP and its good relationship with the banking sector provide justification for strengthening BSP's oversight authority over the payments and settlement system. Sound legal basis for the payment system will aid the migration to online, real-time facility of existing infrastructure for transmission of transactions from the regional and branch offices. However, BSP's reputational capital is only as good as the structure of the payment system itself because BSP's enforcement credibility largely hinges on the efficiency of the system.

The BSP recognizes the advantages of a single Payments System Act. The proposed Payment System Act is envisioned to support multilateral netting,[21] and finality and irrevocability of payments done through the designated payment system (BSP MT Strategic Plan, 2005). Likewise, in an effort to further reinforce the legal basis for statutory responsibility over the payment system, one of the proposed amendments to the New Central Bank Act of 1993 is an explicit provision giving the BSP the responsibility to promote, oversee and maintain the stability of the financial and payments system.

Haldane (2005) maintained that greater risk challenges in the future may arise from operational dependencies on technology platforms that support multiple payment systems of financial markets. These risks will most likely intensify

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[19] "Prior to the amendment, New Zealand has few specific legislative and regulation requirements concerning payment systems. Payment systems must operate within the general law, including general commercial and consumer law. However, there existed possibility that settlements through a payment system may have to be unwound if a participant became insolvent. This is due to voidable preference provisions in the insolvency law." (DeSourdy, 2004, p.22)

[20] The NZ law describes "underlying transaction" as "a transaction that gives rise to a payment or a payment obligation but does not include a payment instruction or settlement in accordance with the rules of a designated system". (DeSourdy, 2004, p.25)

[21] Multilateral netting means offsetting of receivables and payables among 3 or more parties to a transaction, with each making payments to an agent of clearing house for net obligations due to others or receiving net payments due from others. This mitigates credit and settlement risk.

with increasing consolidation, global integration and technical sophistication of the key systems.

Corporate governance constitutes another area which requires continuous enhancements. In view of uncertainties governing the adequacy of mutually-owned infrastructures in safeguarding public interest, strengthening corporate governance will provide further checks in the system and ensure that corporate risk-taking are not overly-excessive.

Meanwhile, the payment system could play a greater role in facilitating remittance flows. OFW remittances have already outpaced other sources of financial flows such as net exports, foreign direct investment and change in external debt (Songwe, 2005). The flows could still go higher if transaction costs of remittances are substantially lowered. Not only will the value of inflows go up, lower remittance costs could induce higher welfare gains for the household recipients. A good example of the use of payment system technology is the Sistema de Transferencia Electrónica de Fondos Internacionales (TEFI)/Fed Automated Clearing House (ACH) International Mexico Service.[22] The system provides for low-cost government and commercial cross-border payments through the financial interconnection of the United States and Mexico, supporting Mexico's financial infrastructure. Another Mexican policy of reducing remittance cost is the issuance of identification cards to migrant workers to facilitate their banking transactions.

4.1.3. FINANCIAL PRODUCTS AND SERVICES

Due in part to the complex nature of derivatives, different studies have reached diverse conclusions regarding their impact on the monetary policy transmission mechanism and on financial system stability. The jury is still out on the net impact of derivatives on monetary policy and financial stability.

For instance, Fender (2000) concludes that hedging activities by corporations weaken the financial accelerator or the broad credit channel of monetary policy. A firm that, say, borrows long-term at floating interest rates essentially makes a bet that future interest rates will decrease. Financial derivatives would allow such a firm to cover its bet and mitigate the balance-sheet effect of possible contractionary policy interventions. Thus, when this practice becomes the norm, the power of BSP interest rate interventions on the real economy could weaken, other things remaining the same.

Particular attention has been given to credit derivatives. Credit derivatives present supervisors with regulatory issues and stability risks. **Instefjord (2005) argues that credit derivatives and the trading of credit derivatives increase both the concentration of risk and total risk in the banking sector.** According to him, "[c]redit derivatives trading is…a potential threat to bank stability even if banks use these instruments solely to hedge or securitize their credit exposures". (p.344)

On the other hand, Rule (2001) finds that the credit derivatives market effectively allows the banking sector to concentrate on what it does best: originating loans and allocating credit. Effectively, the resulting credit risks are borne by entities more equipped to deal with them. Because of the improvement in risk allocation, there are efficiency gains, which could redound to bank margins. Yet

[22] Part of the US-Mexico Partnership for Prosperity (P4P) Program.

still, Hentschel and Smith (1996) conclude that the impact of derivatives on monetary policy and on the payment system has been exaggerated.

The IMF, in its 2006 Global Financial Stability Report, recognized that the transition from bank-dominated to market-based financial systems present new challenges and vulnerabilities. The report noted that "*the remarkable growth of the derivative and structured credit markets over the past few years transpired in a relatively benign environment such that market liquidity and certain aspects of the market infrastructure have not yet been fully tested by a prolonged or severe credit downturn. Thus, while these markets facilitated primary transfer of risks, secondary market liquidity is still absent within some segments, thus creating potential for market disruptions."*

The same IMF study concludes that while the potential vulnerabilities elicit supervisory concerns, the information generated from the credit derivatives market are useful for financial sector surveillance and for instilling market discipline. Specifically, these information signal broad credit conditions and progressively provide a gauge for the marginal price of credit. For one, the enlargement of the product base similarly is an early warning indication of stress in sectors other than banking. For another, the ensuing transparency in the pricing of credit risks would facilitate proactive portfolio adjustments that may help smoothen the credit cycles. This implies that notwithstanding the still ambiguous relationship of asset price changes and the underlying economic fundamentals, the regulatory environment would have to increasingly monitor asset markets in order to better understand credit flows and their impact on the monetary transmission mechanism.

Future studies to validate the foregoing findings using Philippine data will add to the proper understanding of the monetary transmission mechanism. A rigorous investigation of the impact of derivatives on the conduct of monetary policy and on financial stability should reward policymakers with a richer appreciation of how financial products innovations could affect the goals of the monetary authorities.

In any event, promoting best practices and educating the public on the nature and risks involved in different types of transactions should be pursued to mitigate risks engendered by information asymmetry. Already, the BSP has issued a number of directives (e.g., Circular 102 dated 29 December 1995 defining the scope of trading activities and disclosure requirements for banks and other financial institutions; Circular 135 dated 22 July 1997 requiring prior clearance from BSP of non-deliverable forward contracts with non-residents). For regulators and policymakers concerned with risk management and system stability, it is important is to ensure that processes and reporting channels in corporations - not only in financial institutions – are adequate to safeguard against one employee or group of employees running unjustifiable level of risks to the detriment of the entire institution/system.

4.1.3.1. ELECTRONIC-MONEY

One aspect of the technological revolution that has a direct and long-lived impact on the conduct of monetary policy and on financial regulatory requirements is the increasing use of electronic money products[23]. In particular,

[23] Marcelo (2002) defines electronic money products, or e-money, as "stored-value or prepaid products in which a prepaid balance of funds or value is recorded on a device (e.g., card) held by the consumer. Electronic money products can be categorized into three groups: (1) card-based products; (2) prepaid software products that use computer networks such as

e-money affects the demand for coins and currency and, by definition, the monetary base. This means that there is a direct link from e-money to liquidity, and thereby, the price stability objective of the BSP. A negative impact on the demand for currency will consequently be reflected on central bank financial performance as lower income from seigniorage. Note, however, that there is as yet no general agreement among economists on whether e-money products have significant impact on monetary policy.[24] On the regulatory side, the concomitant risks on the payment system arising from widespread use of e-money products presents supervisors with further challenges.

Goodhart (2000) concludes that even if the information technology revolution were to eliminate demand for currency – which he argues will not happen primarily because it is the legal tender and it allows transacting agents to feel secure under a blanket of anonymity – a central bank can still set the nominal interest rate. A central bank can pay interest on its own liabilities, such as bank reserves. If a central bank wants to lower the interest rate, it will lend at its desired rate. However, under these scenarios, Goodhart pointed out that the central bank may have to absorb losses or suffer lower profits from its open market operations. On the other hand, its credibility may be enough such that an announcement (what Goodhart calls "open mouth operation") of its intention might be enough to lead the market to the interest rate the central bank deems appropriate.

One way to blunt system instability risks arising from e-money products is to require that these products be subject to reserve requirement. (Marcelo, 2002) The BSP will have to weigh this consideration with the advantages of lowering the reserve requirement. So far, to strengthen the monitoring of internet banking as an IT-related service, the BSP, through its Monetary Board (MB) Resolution No. 864 dated 30 June 2005, approved the establishment of an information technology supervision unit – Core Information Technology Supervision Unit (CITSU) – to help banks and non-bank institutions align their information technology policies with international best practices. The responsibilities of the CITSU[25] include the review of requests from banks to offer services that involve the use of electronic channels via the Internet, particularly the overseas or domestic wire transfers of funds, payment of bills and other online transactions offered to retail and wholesale customers. Assessments of safeguard procedures are done to forestall operational problems such as collapse of the computer system resulting in the disruption of banking services and fraud in internal and external transactions.

4.1.3.2. FINANCIAL SYSTEM SUPERVISORY FRAMEWORK

Because of the rapid pace of financial products innovation, the advantages of being a financial conglomerate or financial supermarket, and the

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the Internet; and (3) access devices."

[24] Please see Marcelo [2002] for a detailed discussion of electronic money and electronic banking in the Philippines, and the challenge they pose to the conduct of monetary policy and financial supervision.

[25] The CITSU is also mandated to:

(a) Provide baseline minimum standard through issuance of information technology risk policies including the management of IT risk, which is an operational risk under Basel II.
(b) Conduct information technology examination of banks and other payment entities.
(c) Inspect banks' technology-related risk management process, including the plan for the use of technology, the implementation procedure, and the measurement and monitoring of risk-taking activities of financial institutions.

incentives to engage in regulatory arbitrage, a reassessment of our current financial regulatory framework is timely. Under the current set-up, regulation is done according to industry and not according to activities. Thus, even if two entities are essentially engaged in the same activity (e.g., getting money from the public either through "deposits" or through "premium"), they may be subject to different rules of the game if one calls itself, say, a bank while the other calls itself a pre-need company. Should either fail, the impact of the problems posed to the institutions and markets likely are similar, except probably in magnitude.

To counter the challenges posed by regulatory arbitrage and conglomeration, an increasingly well-coordinated and consolidated supervision is being considered in the Financial Sector Forum. Because of (1) the bank-dominated nature of the Philippine financial system; (2) the increasing vertical/horizontal integration in the financial sector (e.g., emergence of financial conglomerates); (3) the advantages of keeping bank supervision and monetary policy under one roof in a bank-dominated economy; and (4) the resources and institutional credibility of the BSP, it may be appropriate to consider the lessons that the set-up of the Monetary Authority of Singapore (MAS) (integrated regulator model), the Financial Services Authorities of England (lead regulator), and the Financial Supervision Authority of Finland (lead regulator) can provide.

Citing Goodhart et al (1998), Taylor and Fleming (1999, p3) pinned down the reasons why adoption of an integrated financial regulation system has been gaining serious consideration:

1. The rapid structural change that has taken place in financial markets spurred by the acceleration in financial innovation. This has challenged the assumptions behind the original structuring of regulatory organization. The question that arises here is whether institutional structure should mirror the evolution of the structure of the financial sector.
2. The realization that financial structure in the past has been the result of a series of ad hoc and pragmatic policy initiatives raising the question of whether – particularly in the wake of recurrent banking crises and dislocation – a more coherent structure should be put in place.
3. The increasing complexity of financial business as evidenced by the emergence of financial conglomerates. This has raised the issue of whether a series of agencies supervising parts of an institution can have a grasp of developments in the institutions as a whole.
4. The increasing demands being placed on regulation and its complexity, in particular the development of a need for enhanced regulation of "conduct of business" (e.g., covering financial products like pension schemes and insurance offered to consumers)
5. The changing risk characteristics of financial firms occasioned by financial innovation.
6. The increasing internationalization of banking which has implications for the institutional structure of agencies at both the national and international level.

Under integrated supervisory systems, regulatory arbitrage is minimized. Since all regulators are assembled under and/or reports to one entity, gaps, overlaps, and other frictions arising from inter-agency coordination are minimized. However, the inter-agency friction eliminated might become interdepartmental tensions because of the inherent differences in the objectives of prudential regulation, market conduct regulation, systemic stability regulation and competition regulation. Also, the authorities need to be careful in defining the eligibility for deposit insurance safety net under this framework.

Australia, Canada, Denmark, Finland, Japan, Norway, Singapore, Sweden, and the UK all follow the integrated regulator model. **The case of Finland provides a useful picture of a lead regulator model where banking supervision resides with the central bank.** For Finland, the lead regulator is the Financial Supervision

Authority. The FSA, while administratively under the Bank of Finland is operation-independent. (Jännäri, 2001, p. 91) The law creating the FSA directs it to cooperate with the other financial regulators, namely, the Insurance Supervision Authority, Bank of Finland, Ministry of Finance, and Ministry of Social Affairs and Health. The Bank of Finland, the Ministry of Finance and the Insurance Supervision Authority are all represented in the Board of the FSA.

Under the "lead regulator" setup, a single regulator takes the lead in coordinating among the regulators involved but market sectors are supervised by separate institutional regulators. In Finland, the central bank supervises the banking sector, is responsible for the stability of the payment system, and, in general, performs oversight of the financial system. Because it is a member of the euro zone, the European System of Central Banks (ESCB) steers its monetary policy. The credit institutions and securities markets in Finland are regulated by the Financial Supervision Authority. Insurance and social security concerns report to the Insurance Supervision Authority, which is administratively under the Ministry of Social Affairs and Health.

In the case of England, since the "Bank of England had established a substantial banking supervisory capacity and had stressed, over many years, the need to keep monetary policy making and banking supervision in the same body…[m]uch stress was put on the argument that monetary and financial stability are inter-related" during the debates leading to the shift to the current system. (Taylor and Fleming [1999] p2) **Eventually, policymakers decided that while the Bank of England is to remain responsible for monetary policy, the Financial Services Authority is to supervise "banking, insurance, investments, listing and other financial services concerns".**[26] Decisions by the FSA that impinge on competition are reviewable by the Director General of Fair Trading, who shall, in turn, advise the Competition Commission of any "anti-competitive" impact of such decisions.[27] Meanwhile, the Bank of England, the Financial Services Authority and England's Treasury are jointly responsible for stability of England's financial system.

The Monetary Authority of Singapore (MAS) is a super-regulator. In addition to being responsible for monetary policy of the city state and the supervision of the banking industry, the MAS regulates the other players in the financial sector: insurance companies, securities firms.

Australia has also adopted integrated regulation of its financial system. **Unlike the kind of integrated systems practiced in England, Finland, and Singapore though, the Australian system is explicitly organized according to sources of market failure or goals of financial regulation, e.g., functional regulation.** The Reserve Bank of Australia (RBA) is in-charge of monetary policy and financial system stability. Although the RBA still is the lender of last resort, it "no longer has an obligation to protect the interests of bank depositors". (CFR (2002), p.10) The Australian Prudential Regulation Authority (APRA) crafts and implements prudential policies that "balance financial safety and efficiency, competition, contestability and competitive neutrality" among deposit-taking (e.g., banks, life and general insurance and pensions) financial intermediaries. (CFR (2002), p.8) However, the Australian Competition and Consumer Commission (ACCC) is the overall arbiter of competition policy. For instance, it is the final arbiter of competition and access to the Australian payment system. Lastly, the Australian Securities and Investments Commission

[26] http://www.fsa.gov.uk/Pages/About/Who/Accountability/legal/index.shtml

[27] http://www.fsa.gov.uk/Pages/About/Who/Accountability/index.shtml

(ASIC) is in charge of consumer protection and market integrity regulations. More specifically, it "administers and enforces a range of legislative provisions relating to financial markets, financial sector intermediaries and financial products, including investments, insurance, superannuation and deposit-taking activities (but not lending). ASIC's aim is to protect markets and consumers from manipulation, deception and unfair practices and, more generally, to promote confident participation in the financial system by investors and consumers." (CFR [2002] p.9)

Table 3. Financial System Regulatory Frameworks

Jurisdiction	**Philippines**	**England** (separate monetary policy and bank supervision)	**Singapore** (super regulator)	**Finland** (lead regulator)	**Australia** (functional regulators)
Monetary Policy	BSP	BoE	MAS	ESCB	RBA
Banking Supervision	BSP PDIC	FSA_E	MAS	BoF	APRA, ASIC, ACCC
Capital Markets Supervision	SEC	FSA_E	MAS	FSA_F	ASIC, ACCC
Insurance Supervision	IC	FSA_E	MAS	ISA	APRA, ASIC, ACCC
Functional Regulation					
Consumer Protection	BSP; SEC; IC; DTI	FSA_E	MAS	FSA_F	ASIC
Competition Regulation	BSP; SEC; IC; DTI	FSA_E; OFT; CC	MAS	FSA_F	ACCC
Market Integrity	BSP; SEC; IC; DTI	FSA_E	MAS	BoF; FSA_F	ASIC
System Stability	BSP	BoE, Treasury, FSA_E	MAS	BoF	RBA
Prudential Regulation	BSP; SEC; IC	FSA_E	MAS	BoF; FSA_F	APRA

Sources: www.fsa.gov.uk; www.rba.gov.au; www.accc.gov.au; www.pdic.gov.ph; www.bsp.gov.ph; www.insurance.gov.ph; Jännäri (2001); www.bankofengland.co.uk; www.mas.gov.sg

ACCC : Australian Competition and Consumer Commission
APRA : Australian Prudential Regulation Authority
ASIC : Australian Securities and Investments Commission
BoE : Bank of England
BoF : Bank of Finland
CC : Competition Commission, England
DTI : Department of Trade and Industry, Philippines
ESCB : European System of Central Banks
FSA_E : Financial Services Authority, England
FSA_F : Financial Supervision Authority, Finland
IC : Insurance Commission
ISA : Insurance Supervision Authority, Finland
MAS : Monetary Authority of Singapore
OFT : Office of Fair Trading, England
PDIC : Phil. Deposit Insurance Corporation
RBA : Reserve Bank of Australia
SEC : Securities and Exchange Commission, Philippines

Taylor and Fleming's (1999) integrated supervision decision tree (Figure 1), discussed below provides a useful guide on how to proceed with the choice of organizational model.

The first step in the decision tree asks whether there could be economies of scale if an integrated financial sector supervisor is created. Aside from cost savings from consolidating overlapping functions and infrastructure, an integrated supervisor within a small country could also benefit from the concentration of top notch

professionals who would otherwise be scattered among different agencies. This environment could then be a good breeding ground for the formation of a stronger pool of supervisors.

If the economy could not achieve economies of scale from integrating its financial supervisors, the policymakers are then to consider, successively, the following until they get an affirmative answer:

(1) whether one group or a few large financial institutions dominate the financial sector;
(2) whether a significant number of financial institutions offer a range of financial products and services that encompass banking, insurance and securities markets (i.e., financial supermarkets); and
(3) whether the domestic financial sector is experiencing swift developments, e.g., in terms of products and services they offer or that are demanded from them; legal environment; major players.

If market power is highly concentrated, a politically and professionally powerful integrated supervisor may be more capable of balancing the requirements of a free market with consumer protection and a stable financial system. Likewise, if financial conglomerates play a major role, a regulator which would have control of how banking, insurance, and securities markets are supervised would be more effective and more efficient in limiting the possibility of firm activities falling between regulatory cracks. Furthermore, in an environment where new products and services are being developed and demanded, where the legal and economic landscape is rapidly shifting, and where the financial sector could be consolidating or undergoing a merger and acquisition phase, an integrated supervisor might be able to limit negative externalities and achieve regulatory objectives better than a system of separate and independent regulators that supervise according to the conventional segregation of regulatory turfs.

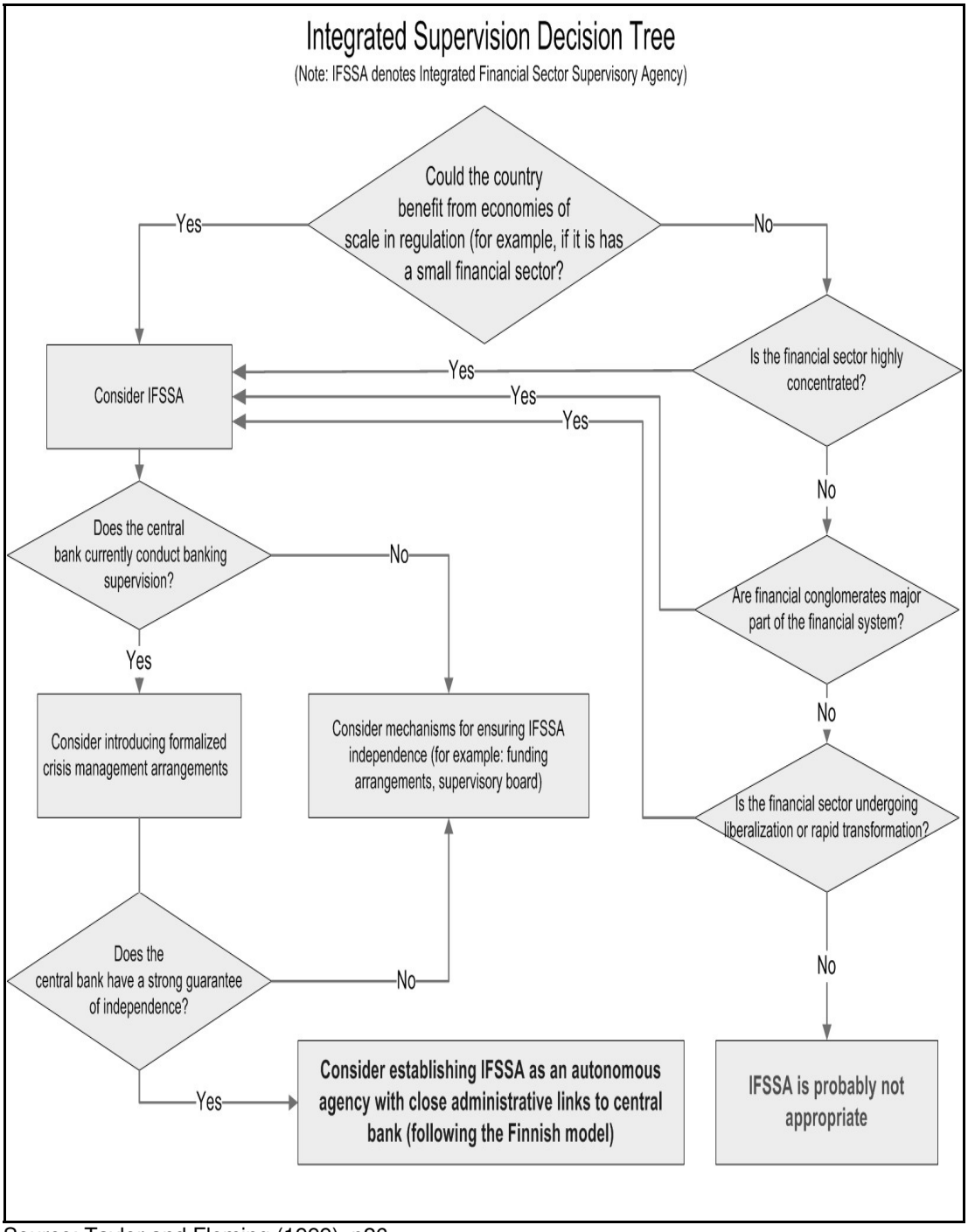
Should it then be decided that the creation of an integrated regulator is appropriate, the policymakers then have two options for the basic setup of the integrated supervisor that depend on the powers and degree of independence the country's central bank enjoys. If the banking sector is under the central bank in the current framework and the central bank is highly independent, Taylor and Fleming (1999) recommend the Finnish model where the integrated regulator is administratively under the Bank of Finland. Otherwise, if either of these two conditions is lacking, it is suggested that the policymakers design a system that can guarantee independence of the integrated supervisor. Lastly, Taylor and Fleming (1999) emphasized that since a central bank which supervises the banking sector in the current regulatory regime might likely yield some of its authority and functions, it would be beneficial if a "crisis management arrangement" where the central bank can share its expertise can be arranged among the parties involved.

Using Taylor and Fleming's (1999) decision tree, it would seem that the Finnish model is worth considering for the Philippines. Furthermore, citing Shirai (2001), Milo (2002) argues that:

> …an umbrella approach, in which separate regulatory authorities are established and coordinated, has been deemed as desirable for Asian developing countries because they typically do not have sufficiently strong prudential regulations or banking sector supervision. In such a situation, integrating nonbanking regulators with bank regulators could weaken the regulatory capacity of the latter if human and financial resources are limited,

which could in turn reduce confidence in the overall financial system. ...Thus, integrating the various regulators without ensuring independence may weaken the quality and credibility of the overall regulatory regime. Instead, the priority should be the strengthening of bank regulation, while improving regulatory capacities for nonbanking business. (p13)

FIGURE 1. INTEGRATED SUPERVISION DECISION TREE



Source: Taylor and Fleming (1999), p26

Ultimately, the choice between these models may depend on how much accountability the central bank is willing and able to bear and how much power the other regulatory bodies are willing to cede to the BSP on the one hand, and on the perceived benefits of seamless supervision of the financial system, on the other.

4.2. RISK MANAGEMENT

A key policy area that Basle II brings to focus pertain to the risk management systems employed by banks in measuring their credit, market, and operational risks. This entails requiring banks to set up systems that allow their managements to have the information and procedures to assess their "true" risk exposures on a global basis, and to modify such exposures in a timely manner.

Appropriate risk information systems and control processes enhance the abilities of banks in balancing risk-return tradeoffs and the powers of central banks in assessing minimum capital adequacy standards. These should help minimize the probability of system instability or the need for assistance from central bank/deposit insurance institutions to arrest system instability. However, since risk management systems work best when they are tailored to the individual needs of the institution being assessed, each bank could have a unique risk management model. Therefore, regulators, supervisors and policymakers must have intimate knowledge of the various risk management models, and – particularly in the case of the supervisors – of the particular company supervised.[28]

This tailor-fitting of risk management systems gives rise to information asymmetry. Inter-company comparison and industry analysis would be particularly challenging and would require appreciation of subtle elements of finance, economics and accounting. For the regulators and the monetary policy decision-makers, it means an additional dimension in crafting consumer protection and market conduct regulations. On the other hand, investors and savers would need a level of financial sophistication greater than the average investor to be able to participate profitably in the system.

In view of the foregoing, it becomes imperative that the accompanying external risk assessment relied on by supervisors and investors be robust and be imbued with integrity. **Only credible credit rating agencies (CRAs) should be awarded status of recognition.** Such recognition must be founded on the existence of a credit rating methodology that is "rigorous, systematic, continuous, and subject to validation". (Datschetzky et al, 2003). To date, status of recognition has been conferred to the Philippine Rating Services Corporation (PhilRatings). Its ratings shall be used as basis for determining risk weights in compliance with risk-based capital requirements. For bank supervisory purposes, international CRAs that will undertake local and national ratings, are to have at least a representative office in the Philippines.[29]

It has been argued that the high costs entailed by a top-of-the-line risk management system means that bigger banks will gain greater market power to

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[28] The intimate relationship that a supervisor must develop to attain this level of understanding could likely have an unintended and undesirable effect for the central bank, human resource-wise. Because the bank employee will need to be highly-specialized in a particular company, the employee would naturally look at such firm as one avenue for career advancement.

[29] Circular No. 473 dated 01 February 2005. Among international CRAs recognized by BSP are Moody's Standard and Poor's and Fitch Ratings.

the detriment of smaller banks. Thus, the BSP must ensure that the aim to minimize systemic risk does not unintentionally provide a competitive edge to one group over another. On the other hand, a case could also be made that since this process could improve efficiency, the benefits of improved overall welfare justify the pain and that as long as markets remain contestable, monopolistic/oligopolistic tendencies are restrained.

However, at the end of the day, the benefits to the public of efforts to enhance risk management are only as good as the ability of the BSP to enforce its supervisory powers. A strong supervisory body should be able to independently carry out its responsibilities and examine closely compliance with prudent banking practices and sound corporate governance standards. In recognition of this, reinforcement of regulations in accordance with international standards for greater transparency and accountability has been set as one of the reform priorities in the Medium-Term Philippine Development Plan (MTPDP) 2004-2010. Towards such end, amendments to the BSP Charter have been proposed to include "immunity of supervisors from law suits, authority to compel banks to implement prompt corrective action and higher capital build-up, shift away from the strategy of forbearance and liquidity assistance, and stronger criminal and administrative penalties for violations of banking laws". (MTPDP 2004-2011, p.108). Such immunity is aimed to minimize adverse regulatory capture that can undermine enforcement of prudential regulations.

These multidimensional issues evoked by the shift to risk-based supervision as put forward by Basle II clearly calls for a distinctive breed of technocrats. **Both the central bank and the financial institutions face the challenge of recruiting and harnessing a human resource pool adept at the progressively complicated, specialized and model-dependent art and science of risk management.**

4.3. FINANCIAL CRIMES

The BSP must boost its abilities to keep abreast with the greater-than-ever sophistication and ingenuity of perpetrators of financial crimes, who progressively are leveraging on the information technology revolution. High Incidence of financial and bank fraud also reflect weak controls and reporting systems, and a low level of public awareness regarding safety measures. When perpetrated in significant magnitude and breadth, bank fraud and other financial crimes impinge on bank solvency and impair payment system stability. For instance, *phishing*[30] scams and other methods to commit identity theft are direct and present threats to the integrity of financial systems.

Likewise, the challenges that a 21st century central bank faces include not only activities that directly use the financial system in the commission of crimes but also those that erode its integrity by hijacking it to hide evidence of or fruits from criminal activities. This is a case when the use of regulation to achieve a social objective improves efficiency. Money laundering activities have direct implication on the integrity of the country's financial system and, thus, on the competitiveness of a country's financial institutions and corporations among their global peers.

[30] An example of *phishing* activity would be the email messages that purport to come from a reputable bank asking the recipient to click a link in the body of the email and update his account details. The link appears to lead to the site of the bank (e.g., when one hovers his mouse pointer over the link, a website address that appears to be that of the legitimate establishment will be displayed) but in reality leads to a site controlled by the *phisters*. (www.antiphishing.org).

On 29 September 2001, the Anti Money Laundering Act (AMLA),[31] **which criminalizes money laundering in the Philippine was signed into law.** The law defines unlawful activities that constitute money laundering; makes mandatory the submission of reports on suspicious transactions; grants immunity to reporting institutions and officers; provides for forfeiture of laundered money; creates a financial intelligence unit; allows access to deposit accounts; and provides for international cooperation.

Meanwhile, recognizing the merits of the FATF[32]**-proposed amendments, RA No. 9194, an Act Amending R.A. No. 9160, was signed into law on 7 March 2003.** The law's implementing rules and regulations was approved by the Congressional Oversight Committee on 6 August 2003. Specifically, the amended law:

(1) gives the Anti Money Laundering Council (AMLC) access to suspicious bank accounts without first securing a court order in special circumstances;
(2) lowers the transaction threshold amount that could be examined without a court order to ₱500,000.00 from ₱4 million;
(3) includes kidnapping for ransom, violation of the Dangerous Drugs Act, and hijacking as crimes under unlawful activities;
(4) extends the law's coverage to suspicious transactions under certain specified circumstances, regardless of the amount involved;
(5) allows the Court of Appeals to freeze accounts upon application by the AMLC; and
(6) authorizes the BSP to inspect any deposit or investment with any bank or non-bank financial institutions (NBFI) in the course of BSP's periodic or special examination.

As a result of the enactment of R.A. No. 9194, the members of the FATF have decided not to apply any countermeasures to the Philippines in addition to Recommendation 21[33].

Since the ratification of the enabling laws and the issuance of the implementing rules and regulations, the BSP has issued a number of circulars[34] **in support of the AMLA.** For instance, the BSP has been actively promoting strict implementation of the know-your-customer (KYC) doctrine. Nonetheless, the regulatory authorities – much more the BSP – cannot rest satisfied that what have been done so far are enough to deter persons involved in unlawful activities from using the financial system to camouflage their tracks. Meanwhile, the authorities must remain mindful that implementing the law does not unnecessarily impinge on the rights of law-abiding citizens and discourage them from participating in the domestic financial

[31] R. A. No. 9160

[32] The Financial Action Task Force (FATF) is an international group composed of banking industry representatives from developed countries.

[33] Recommendation 21 states that "[f]inancial institutions should give special attention to business relations and transactions with persons, including companies and financial institutions, from countries which do not or insufficiently apply these Recommendations. Whenever these transactions have no apparent economic or visible lawful purpose, their background and purpose should, as far as possible, be examined, the findings established in writing, and be available to help supervisors, auditors and law enforcement agencies." (Updates on BSP Supervision and Regulation, June 2005, p. 215)

[34] Circular Nos. 258, 279, 291, 333.

system. This balancing act becomes harder in view of the efforts to contain terroristic activities.

4.4. ANALYTICAL TOOLS FOR POLICY ANALYSIS AND DECISION-MAKING

The role of econometric models and statistical methodologies in undertaking monetary policy analyses is becoming more pronounced. The analyses required for credible inflation targeting and robust treatment of system stability demand substantial analytical and statistical skills in central banks. Analysts from large central banks such as the US Federal Reserve Bank and the European Central Bank are extensively using econometric models in making policy simulations and analyses for their monetary boards, monetary policy committees, or board of governors.

At the same time, judgment has never been more central in the analytical and statistical work of central bankers. Knowledge of data nuances and economic and policy development milestones are essential in the analytical and statistical work of central bankers. No matter how sophisticated and user-friendly statistical packages for economic analysis have become, they need to be substantiated with a well-considered evaluation by the analysts. At the same time, since judgment plays a critical role in many statistical model-driven policy-simulation works, prudence is necessary in interpreting model-generated results.

Aside from macro surveillance tools, it is also vital to give due consideration to the development of portfolio and risk models given the growing sophistication of the financial market. It is expectedly within the ambit of central bank responsibilities to develop methodology to stress test the financial system.

More importantly, the ability to package information into useful analyses requires a strong research culture. The benefit of a research-oriented organizational mindset is that it fosters entrepreneurship in ideas. Research culture is characterized by, among others, constant examination of causes and effects of certain trends in macro and micro indicators, efficient utilization of the mass of statistical information available, keeping abreast of latest literature on methodological and policy oriented issues; and closely tracking domestic and global developments.

4.4.1. INFLATION FORECASTING

The shift to inflation targeting has brought inflation forecasting to the fore of monetary policy making. The credibility of the BSP and the success of monetary policy strategy largely depend on the reliability of inflation forecasts as these play a crucial role in the determination of appropriate policy interventions.

Since inflation forecasting has become an institutional priority under the inflation targeting framework, the process and system for generating the forecasts will have to be efficiently managed. Forecasting is a complicated business that requires efficient data management, adequate hardware and software support, and a specialized forecasting team with knowledge of different forecasting methods. The various models used for forecasting help the central bank provide a coherent story about how it sees the economy evolving, thus, serving also as a potent communication device.

In terms of data management, members of the forecasting team should have access to a common set of real-time data and should be equipped with adequate information about the nuances on methodological revisions. In this manner, the team will be spared from the arduous task of data validation and consistency checking (thus, minimizing possible errors and omissions) and concentrate more on data analysis and forecasting (Kriljenko, et al, 2006). Real-time data also underpin a more informed judgement regarding adjustments and calibrations needed for estimation.

Under the new set-up of the BSP, an Economic and Financial Forecasting Group was created within the Department of Economic Research. The more focused delineation of functions arising from this new set-up is seen to create better synergies among the different groups for sustained strengthening of the inflation targeting framework. The group currently utilizes two short-term forecasting models – single equation model and multi-equation model – which are continuously being improved. Since the inception of inflation targeting framework in 2002, the accuracy of one-month ahead forecasts in terms of "hits" has averaged 60 percent. This is reasonable considering the still relatively short period of inflation targeting implementation, a period also characterized by the confluence of internal and external challenges such as growing fiscal imbalance, peace and order concerns, geopolitical tensions in the aftermath of 9/11, slump in the electronics and information technology sector, severe acute respiratory syndrome (SARS), and unprecedented oil price increases (MTPDP, 2005-2011).

4.4.2. STABILITY ANALYSES[35]

Studies on robustness of financial sectors have traditionally focused on averages, but there is a growing interest in the "dispersion of experiences around the mean". (Stevens, 2005) An example is the analysis on the concentration of defaulting borrowers. The policy response would differ significantly if those facing risk of default are small borrowers or large borrowers as the latter has the potential to induce systemic panics.

Second, stability analyses also deal with relationships among financial institutions, markets and portfolios. Developments that, say, negatively impact on the financial health of major employers in the economy could affect the spending power and the asset portfolios of the employees. It is also possible that over time relationships can evolve.

The aforementioned interdependence highlights the need for stress testing[36] markets, institutions, and the entire banking system. The development of

[35] This rationale for stability analysis draws heavily from Stevens (2005).

[36] The Austrian central bank explains in its website that "[s]tress tests were originally used in risk management by banks in order to determine how certain crisis scenarios would affect the value of their portfolios or subportfolios. Typical crisis scenarios examined in this context include stock market crashes, interest and exchange rate shocks, as well as a general economic recession leading to deterioration in the average creditworthiness of the bank's borrowers. Generally speaking, the objective of stress tests is to determine the (hypothetical) losses which would arise from the realization of certain risks generally inherent to banking operations. Depending on the type of risk, main distinctions are made between market risk factors (e.g. prices, interest rates, stock indices, exchange rates, etc.) and credit risk factors (e.g. expected default rates, creditworthiness of business partners, etc.). In addition, stress tests may also extend to other risk categories (e.g. liquidity risk, operational risk, etc.)."

(http://www.oenb.at/en/finanzm_stab/finanzmarktstabilitaet/Systemrisikoanalyse/Stress/stress_tests.jsp)

a methodology to stress test the system will typically be under the purview of the central bank. [37] This entails assessing how a sudden crisis scenario will affect the financial market and the banking system as a whole. Such macro stress test focuses on "systemic risk," which refers to risks to the overall stability of the financial system.

In stress-testing the entire banking system, additional aspects other than credit and market risks need to be taken into account. One of these is the contagion risk due to wide-ranging credit relationships among banks such that insolvency in one institution could set off a domino effect that threatens the stability of the overall system. There are also macroeconomic risks. An example of which is the risk of considerable deterioration in the average creditworthiness during a recession, thereby eventually triggering higher default rates.

In recognition of the evolving analytical requirements, the BSP has begun work in stress testing both at the macro and micro levels.

4.4.2.1. STRESS-TESTING AT THE MACRO-LEVEL

Several in-house analytical tools have been developed and are continuously being enhanced for regular macroeconomic surveillance in aid of monetary policy review. This is part of the effort to ensure that risks to the attainment of the inflation target are incorporated in the formulation of monetary policy.

The analytical methods developed can be broadly categorized under the family of early warning systems (EWS), whose prominence was highlighted anew in the aftermath of the 1997 Asian financial crisis. An EWS, as the name implies, is forward-looking and probabilistic. EWS models typically have an empirical structure and attempt to forecast the likelihood of certain types of “crises” using factors such as country fundamentals, developments in the global economy and/or global financial markets, and, in some cases, political risks (IMF, 2002).

Being forward-looking, the assessment of likely scenarios is carried out through stress-testing using different assumptions of economic shocks. Such type of analysis helps authorities monitor movements of key macroeconomic variables particularly when their values diverge from normal trends within the time horizon over which the forecast of a crisis is defined. Deviations from normal trends are interpreted as warning signals of a potential crisis occurring within a specified timeframe. These signals allow them to issue prompt corrective action, if deemed warranted, and thus, avert a full-blown crisis.

In 2005, the BSP conducted a study on ***“Early Warning System (EWS) on Macro Economic-Identification of Business Cycles in the Philippines.”*** The study provides an early warning system for monitoring turning points in economic activities, especially on any impending slowdown or contraction in the economy. (DES, 2005)

The *Vulnerability Indicator Early Warning System (VIEWS)* for economic and financial monitoring was also completed under the auspices of the Asian Development Bank. VIEWS has the advantage of providing an automated process for assessing the probability of both currency and banking crises within a 24-month horizon. It adopts a non-parametric method, using high-frequency data with long back

[37] This points to the need for arrangements which foster close co-operation, particularly where the central bank is not the bank supervisor and hence may not collect data directly (as is the case in Australia).

series. Being a prototype model and hence, subject to different response to country-specific conditions, VIEWS is currently undergoing review and fine-tuning.

Efforts are currently underway in developing a parametric EWS currency crisis model. This is intended to complement the analysis made from the BSP's macroeconometric models, and will be used to prompt the BSP of possible impending period of serious difficulty so that preemptive measures could be undertaken accordingly.

The BSP likewise conducted a study that attempts to gauge the extent of banking sector fragility using the Bank Distress Index (BDI). The dates of banking crisis as derived from the BDI model may be used in the construction of the signal indicators that will constitute an early warning system model for banking crisis. More importantly, the BDI may be used in the quantification of systemic risk arising from the grant of financial assistance by BSP to troubled banks and PDIC. However, data problems pose limitations to the use of BDI (DER, 2003).

A crucial part of the mandate of the BSP is to ensure external debt sustainability. Sustainability and vulnerability are key concepts used in assessing debt sustainability. Sustainability relates to solvency and liquidity while vulnerability pertains to the risk of insolvency or illiquidity. Put simply, debts are unsustainable if the debt ratio rises without bounds. Since the evolution of the debt-to-GDP ratio is defined by key macroeconomic parameters such as GDP growth, interest rate, and primary balance, macroeconomic stability is a pre-requisite for debt sustainability. It is generally accepted that an economy with larger and volatile macrofluctuations is also highly vulnerable to liquidity shortfalls that can readily spill into debt-servicing problems.[38]

The BSP-Department of Economic Statistics and the International Department had already completed the first phase of external debt sustainability system whose design is akin to the EWS for currency crisis. As with any early warning system, the crucial decision point is the level of distress the government is able to tolerate. While the approach is non-parametric, it, nonetheless, provides a gauge of potential source of vulnerability and policy prescriptions to stay within the sustainable path, *i.e.,* debt can be continuously serviced without resort to exceptional financing or a major correction in the future balance of income and expenditures.[39] Just like other EWS, the new debt sustainability management system also undergoes periodic assessment and recalibrations to improve the reliability of estimates.

Appendix I explains methodologies for the EWS described above more fully.

4.4.2.2. STRESS-TESTING AT THE MICRO-LEVEL

At the micro level, new early warning tools were added to existing regulatory reports for the purpose of enhancing offsite surveillance system. The new early warning tools are**:**[40]

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[38] 2004 Socioeconomic Report (box article on fiscal sustainability in the Philippines).

[39] IMF (2004)

[40] Bangko Sentral ng Pilipinas. *Updates on BSP Supervision and Regulation*. June 2005.

(a) Bank Performance Reports (BPR) system
(b) Use of Comprehensive Bank Folders
(c) Preparation of Top Corporate Borrower Reports
(d) Bank Early Warning System

The BPR system and the comprehensive bank folders are intended for monitoring the financial performance of supervised entities in between on-site examinations. The BPR contains compact information on key performance indicators that support CAMELS[41] soundness analysis. Current performance levels are related to historical trends and relative performance vis-a-vis peer group.

The Top Corporate Borrower Reports, on the other hand, are used to measure and monitor the total exposures of the banking system to a particular borrower, family, and/or business group, as well as any developments in the loan-beneficiary industries which could affect the status of such exposures. The reports provide bank-by-bank exposure of major corporate borrowers, on both solo and affiliated group basis, as well as facilitate comparison and harmonization of individual bank classification of corporate accounts and regular monitoring of potential lending concentrations that can have serious consequences on banking stability.

The Bank Early Warning System (EWS) is a statistical model that generates one-year-ahead forecasts of key bank performance variables, especially solvency and asset quality. This is used to help prioritize on-site examinations.

4.5. ORGANIZATIONAL DEVELOPMENT

The ability of the central bank to effectively foster monetary and financial stability rests on strengthened market intelligence capability. Central bankers are essentially knowledge workers whose primary tasks involve the management of knowledge and information. Management's role, therefore, is to influence the effective and efficient use of knowledge and to maximize its impact towards the attainment of the Bank's objectives.

4.5.1. CORPORATE CULTURE FOR MODERN STRUCTURE

The ideal culture for a modern corporate structure is one that is driven by commitment to outputs rather than inputs. Thus, performance rating is heavily anchored on the quality of outputs and less emphasis on the amount of resources spent doing the tasks. Quality encompasses meeting work objectives through complete staff work delivered well within targeted dates of completion. By emphasizing on quality and timeliness, every employee is empowered to take responsibility for his outputs. As such, there is a need for constant re-examination of tasks for greater focus on core assignments.

The emphasis on outputs rather than inputs calls for adopting leaner and flatter corporate structure that rewards excellence and commitment. Towards this end, the BSP has engaged an organizational development consultant to explore the benefits of making its organizational structure flatter, which is considered more apt for

[41] **C**apital adequacy ratios; **A**sset quality ratios; **M**anagement indicators; **E**arnings quality indicators; **L**iquidity ratios; **S**ensitivity to market risks

knowledge workers. A flatter structure can result in faster turnaround time for tasks, even as it allows employees to gain better appreciation of various dimensions of their assignments.

To ensure adequate safeguards and proactive response to demands from the BSP, a performance assessment program, which include analysis of gaps in service delivery, has to be sustainably carried out. Toward this end, well-structured client/customer satisfaction surveys can be periodically conducted among internal and external clients. In this manner, management can improve on gains achieved as well as proactively assess and address the gaps and dysfunctions identified.

4.5.2. FLATTER ORGANIZATIONAL STRUCTURE

A flatter organizational structure is perceived to better aid knowledge creation. The BSP's top-bottom structure is typical of central banks and other institutions in the bureaucracy. There has been a growing trend among public institutions, however, in adopting leaner and flatter corporate structure. Oftentimes, the process of knowledge creation evolves in an unorganized manner, and therefore, difficult to predict. Since all organizations engage in knowledge creation, it is important to develop a more systematic knowledge management system within the organization. It has been argued that such effort necessitates departure from the traditional hierarchical model. Nonaka and Takeuchi (1995) provide a cogent and simple description of three management models and how each facilitates knowledge creation. A summary is discussed below.

Under the top-down model, knowledge creation is limited to information-processing where simple and selected information is relayed up the pyramid to senior management, who then use it to create plans and orders, which are eventually passed down the hierarchy. Top management decisions become the operational conditions for middle managers, who then decide on the means to realize them. Middle managers' decisions, in turn, constitute the operational conditions for front line work. Thus, work at the frontline becomes largely routine and the whole knowledge creation process involves huge amount of work and information.

At the other extreme is the bottom-top model, which emphasizes autonomy and has a flat and horizontal shape. Interaction is minimal and only certain individuals, not a group of individuals, interact to create knowledge.

The top-down model is suited for dealing with explicit knowledge but it could neglect the development of tacit knowledge that takes place at the front line. Bottom-up model, on the other hand, is appropriate for the creation of tacit knowledge. However, its emphasis on autonomy makes it difficult to disseminate information within the organization.

A middle ground is the Japanese-model of middle-up-down management process. The approach emphasizes the role of middle managers in knowledge creation. Middle managers are often disparagingly portrayed as unnecessary layers in the bureaucracy and obstructions to knowledge creation. In Western societies, there has been a trend in downsizing middle management in the process of attaining flatter structure. In this new model, however, they are seen as the prime movers of change and ideas. Hence, they should reflect the essential qualities of leadership, innovativeness and dynamism required of top management.

The requisite qualifications for middle managers to become effective knowledge engineers are highlighted in this new model. These include:

(a) top notch capabilities in project coordination and management;
(b) highly skilled at formulating hypotheses in order to create new concepts;
(c) ability to integrate various methodologies for knowledge creation;
(d) effective communication skills to encourage dialogue among members of the team;
(e) proficient at employing metaphors in order to help others generate and articulate imagination;
(f) capability to engender trust among team members; and
(g) ability to envision the future based on deep understanding of the past.

A mutually reinforcing loop among the top, middle, and bottom rungs in the corporate ladder would also call for visionary leaders, who can effectively articulate corporate visions and objectives, and challenge the employees in actualizing these corporate goals. They have the uncanny ability of choosing the right team leaders as well as possess the willingness to take risks and failures.

In a central bank, task differentiation among diverse units would require different structure. Flatter set-ups with strong middle management would seem to work best for units involved in, say, research and analysis but the top-down set-up would seem to fit highly sensitive and structured sectors such as those in cash and comptrollership, among others. Thus, it may be important to have an assessment of how each unit should be reconfigured to better respond to the demands of modern central banking. Such reconfiguration will also mean modification of the qualification requirements for entry into the BSP.

4.5.3. SEAMLESS FLOW OF INFORMATION

A strong research and bias-for-action culture calls for "seamlessness" of flow of ideas and information among analysts. Area specialization should not be associated with monopoly of sector/area-specific information and skills. Oftentimes, sectoral specialization overlooks the need for constant information exchange for enhanced cross-leveling of information across the different units in the organization.

Known as the embodiment of middle-up-bottom structure, Canon's corporate philosophy of "three self spirit" (Nonaka and Takeuchi (1995), pp140-150) – the spirit of self-motivation, self-knowledge and self-government – is highly informative. **Its management philosophy also enabled Canon in some ways to operate in a bottom-up manner, where views and opinions generated from various technical fora were strategically packaged into concrete operational details.** Middle managers remain in constant dialogue with senior management as the operational details of the ideas are being developed. In this manner, they provide the strategic link in knowledge creation --- link that binds the grand vision of management with the chaotic realities at the bottom of the corporate ladder.[42] This is akin to 3M's approach

[42] "The Canon Minicopier (PC-10 and PC-20) introduced in 1982 was an offshoot of senior management's vision of developing a small multi-feature product that could be used by anyone and produced at minimum cost. It was the brainchild of the Feasibility study team headed by Hiroshi Nitanda whose members consisted of people from R&D, marketing, production, and product design. The team produced a conceptual breakthrough in the form of disposable cartridge, which does away with costly regular maintenance service. With management's imprimatur, the idea of disposable cartridge was transformed into actual production through the Mini Copier Task Force consisting of 130 members and eventually involved more than 200 scientists in pure research, product development, product engineering and consumer research". (Nonaka, 1995).

that has the so-called 11th commandment, i.e., *"Thou shall not kill ideas for new products,"* which could be very useful especially in generating ideas from the rank-and-file about systems and processes and even policy options and implications.

4.5.3.1. EFFICIENT DATABANK MANAGEMENT

In developing a research and bias-for-action culture, the databank system is highly critical. The systems and processes in files organization and databanking can be streamlined to ensure that analysts have uncomplicated but privileged access (hence, subject to internal policies on use and dissemination of data) to real-time data and relevant common-use files. This is particularly important to units that are normally given quick-response assignments. Access to real time data saves time and effort in terms of data validation and face-to-face contact with data compilers, thus, allowing analysts to concentrate on the analytical aspect of the work. As access is facilitated, data integrity should not be compromised.

In July 2003, the Monetary Board laid the groundwork for centralized data warehousing and query system within the BSP to facilitate the handling and exchange of information on financial and non-financial data. The data warehousing project is a bank-wide initiative to be executed in phases. The first phase will focus on the requirements of the Supervision and Examination Sector (SES) with linkages to the Department of Economic Research (DER) and Philippine Deposit Insurance Corporation (PDIC) while the second phase shall cater to the data requirement of other BSP departments.

Phase I of the Data Warehouse project is envisioned to deliver timely data essential for off-site and on-site examination with value-added functionalities for data analysis. The general framework of the Data warehouse is designed to extract, load and transfer essential financial and non-financial data from existing databases which shall be processed and made available to different users of information with varied levels of access for security purposes. Business intelligence tools available through the Data Warehouse will enable users to define essential report parameters with options for automated report generation, financial statement analysis and peer analysis, among others. Design, development and implementation of Phase I will span a period of one year.

Prior to the data warehousing project, the DER already has the DBank project that facilitates remote access to time series maintained by the Department of Economic Statistics.[43] To date, the DBank remains operational and continues to service the needs of the Monetary Board, BSP Senior Management and DER analysts. Since the design of the DBank is expectedly more attuned to the requirements of the data compilers, its user-friendliness feature is limited. For the uninitiated researchers, the initial use of DBank is a hit-or-miss experience because the data codes and latest workfiles are not readily known.[44] Despite the goodwill established with the statisticians, it would have been more efficient if users have uncomplicated access to real-time data, complemented by search buttons where

[43] Prior to BSP reorganization, the current Department of Economic Statistics was a unit under the Department of Economic Research (DER).

[44] Unless one is sufficiently briefed about the need to approach individual statisticians maintaining the time series of interest to obtain accurate information on data codes and workfiles, a bank researcher with access to the DBank may inadvertently cull series from erroneous workfiles.

definitions, corrections, and even changes in methodology can be similarly accessed. These features could save a lot of time and effort of both data compilers and users and at the same time, prevent data errors used in research work. Auspiciously, the data warehousing project is seen to address these gaps.

Another program aimed at enhancing the quality of data management is the proposed creation of the One-Stop Economic and Financial Literacy Center (EFLC) that would integrate the Library, Statistical Center, Archives and other information sources within the BSP. For one, BSP's journal collections are impressive. It is unfortunate, however, that these are rarely utilized. The planned modernization of library facilities and digitization of library materials would enhance efficiency of library services by making possible remote access to the BSP library. Access to the virtual library will, nonetheless, require certain proprietary protocols and security codes to ensure the integrity of the database and library collections.

4.5.3.2. PRIVATE SECTOR PROPRIETARY DATA

Another feature of the statistical landscape today is the proliferation of private sector data,[45] particularly in the area of financial asset prices. Prices in the exchange are readily available and verifiable. However, with the increasing shift towards over-the-counter (OTC) and non-standard products, this task is more difficult and it becomes necessary to rely more on financial institutions' proprietary data. Hence, the use of such datasets to infer market attitudes to risk and expectations about the future would require increasingly sophisticated analytical skills.

4.5.4. MANAGEMENT STRUCTURE AND HUMAN RESOURCE DEVELOPMENT

An organization's success depends on a strong employee base interacting with visionary leaders.

A look at BSP's manpower complement (as reported in the 2004 draft BSP strategic report) reveals an organizational structure that is bottom-heavy with the non-executive positions accounting for the bulk of its manpower complement. The challenge with bottom-heavy organizations has to do with considerable time lags in sharpening both institutional and industry knowledge and skills, deficiency in which impinges on management succession program. Notwithstanding its limitations, the BSP has consistently remained as the best performing and among the most highly respected government agencies in public surveys. One can therefore envision impact that developing the full potentials of its employee base through strategic human resource development program will have on its performance.

Bottom-heavy organizations with rigid, hierarchical structure could also dampen initiative and creativity, thus, undermining the culture of accountability. Weak accountability slows down upward mobility, which, in turn, could spawn disenchantment particularly among those with longer tenure. There is, therefore, a need to develop a management culture and processes that facilitate shorter and

[45] The caveat on the use of survey of economic conditions applies, *i.e.*, policy analysts should not attach too much weight to it until after performance over a period of time long enough for some business cycle fluctuations to have been observed and methodologies for compilation are known to the users. A good dialogue with the compilers of these data is therefore necessary.

quicker reporting; and promote employee creativity, greater participation in the work process, greater sense of ownership and accountability, and development of leadership skills.

This management culture expectedly demands greater accountability from middle managers since they provide the crucial link between the top management and the rest of the workforce. A critical aspect of the role of middle managers in the organization is to influence their staff to aspire for the realization of BSP's goals by improving their own competencies, which will manifest in the improvement in service delivery to the Bank's internal and external clients. In the end, empowering an organization entails having individuals possess the knowledge, skill, desire, and opportunity to succeed in a way that leads to collective organizational success (Covey, 1996).

4.5.4.1. INCENTIVES

The BSP's new incentive package has opened the avenue for culture change and for exacting greater accountability from its people. Nonetheless, the security of tenure provided by civil service rules together with this corporate pay structure may also prove to be perverse incentive and produce complacency. To guard against that, it may be helpful to conduct comprehensive skills and performance mapping vis-à-vis organizational skills and competencies requirements. Such mapping would help identify knowledge gaps more clearly and aid in the formulation of a comprehensive and strategic human resource development program that is responsive both to individual career goals and organizational modernization thrusts.

In this respect, the extent of BSP's administrative independence in designing its human resource management system may have to be re-evaluated, considering that it remains circumscribed by Civil Service rules.

4.5.4.2. WELL-STRUCTURED TRAINING PROGRAMS

Trainings have to be viewed as much more than a part of the incentive package. The concomitant responsibilities of both the staff trained and management to appropriately accommodate new learnings into the work process require particular attention. Organizational and administrative structures that are compatible with and that facilitate the efforts to make the acquired skills and knowledge more productive should be introduced or reinforced.

Notwithstanding the demonstrated commitment and individual capacity of BSP employees, the statistics on employees obtaining higher education has been rather low for an organization as big as, and like the BSP. For instance, based on the professional profile of BSP,[46] 12.86 percent of regular employees have Master's degrees, 0.33 percent have doctoral degrees, and 53.11 percent of the 4,873-strong workforce have college degrees.

Knowledge gap could become particularly acute in a fast-paced and highly deregulated environment, where more involved analyses underpinned by stronger market intelligence capability are primordial. There are, of course, departments whose functions do not necessitate obtaining post-graduate degree for

[46] Source: BSP-HRMD. Statistics on Personnel Highest Educational Attainment, as of March 15, 2006.

upward mobility and effective discharge of responsibilities. Even so, obtaining higher education, whether or not it is necessary for current functions, would greatly facilitate lateral mobility.

Section 24 of RA 7653 authorizes the Bangko Sentral to sponsor the training of qualified technical personnel. **Realizing the imperative of upgrading and sustaining technical skills and knowledge of BSP personnel, the BSP Educational Scholarship and Training (BEST) Program for graduate studies abroad was established** in December 2004 under MB Resolution No. 1773, as amended by MB Resolution No. 1904. The BEST program is a mechanism for creating a pool of BSP personnel with specialized skills and training suited for advances in central banking practices.

More so, financial innovation and the changing nature of financial supervision and structure necessitate retooling/rechanneling of current human resources through well-structured academic and non-academic training programs and recruitment of new personnel with the needed background. These are complicated further by the *sui generis* nature of central banks in their respective countries at least such that it might be necessary for them to create their own supply of human resource.

The development of appropriate training programs will require closer networking with the industry and the academe. Central banks increasingly need to be attuned to the latest insights of market participants. In addition, the curricula of leading business schools and actual industry practices provide the best signals to the central bank on trends in banking and finance, and hence, help it design appropriate training programs. A closer relationship with the academe not only facilitates access to their research capability but also presents the BSP as a viable career option to their best students.

Part of the effort to link up with the academe is the establishment of the BSP Professorial Sterling Chair in Monetary and Banking Economics, a partnership with the UP School of Economics. A similar partnership with the UP School of Statistics has been established through the BSP Sterling Professorial Chair in Government and Official Statistics. It is hoped that these partnerships with the UPSE and UP School of Statistics, institutions that are known for their outstanding reputation for research, would inject greater rigor in research at the BSP and encourage a more dynamic dialogue between theorists and market practitioners. Environmental scanning fora also serve as avenues for gaining insights on topical economic issues from industry practitioners and researchers from the academe.

To ensure a deep pool of human assets, strategic implementation of the following, or a combination of them, would be useful:

(i) Designing and implementing Certificate courses (under the BSP Institute) on various and specialized aspects of finance/monetary/central banking for employees/outsiders in coordination with foreign or local professors/visiting scholars/industry practitioners. This is important for career mobility among employees and for outsiders interested in applying to the BSP/working in the market.

(ii) Coordinating with Economics, Finance, Math, and Science departments of universities to include courses relevant to finance/central banking in their

undergraduate/graduate programs.

(iii) Six-month training programs similar to those of other financial and multilateral institutions, which shall be open to both incumbents and outsiders on a limited-slot and competitive basis:

(a) Officer Development Program for MA/PhD degree holders; and
(b) Junior Officer/Specialist Program for BA/BS graduates;

The participants will have to pass written and oral exams, and do group projects. They will be assigned for 6 months, after passing the training phase, to a sector, preferably operations and not the sector where the trainee will eventually be detailed. In this manner, the trainee gains deeper appreciation of what the BSP does and will have the appropriate perspective when he applies/is appointed to his chosen unit.

4.5.4.3. MENTORING PROGRAM AND MANAGEMENT SUCCESSION

To foster broad-based acquisition of sectoral knowledge as well as application of acquired skills in the work setting, well structured mentoring/coaching program on major Bank operations (with clear timetable and measurable outputs) will have to be institutionalized. In this manner, gains from both academic and non-academic trainings can be maximized. Knowledge and skills gained from trainings, if not properly applied in the actual work setting, will eventually become meaningless.

An effective mentoring program is a good complement to a management succession program. This is a self-reinforcing process that allows cross validation of learning. Staffs are not only trained but supervisors also continuously sharpen their knowledge and skills as they progressively impart knowledge to their staff. Continued enhancement of knowledge and competencies facilitate achievement of greater productivity, thus, promoting the well-being of the organization and its people.

4.5.4.4. PHYSICAL SET-UP AND INFRASTRUCTURE

Apart from monetary incentives and improved systems and processes, organization development literature also gives equal emphasis to the physical set-up. **Differentiated set-ups may be necessary for different types of work.** An assessment of how physical set-ups affect work flow and processes has been integral in the Bank's organizational development planning and has been embodied in the Bank's Space Rationalization and Furniture Standardization project.

5. CONCLUSION

The foregoing discussion highlights the pillars, so to speak, that support the conduct of monetary policy, the challenges that could weaken these pillars, and possible courses of actions that BSP might want to explore to turn these challenges into opportunities to improve the evaluation, setting, and execution of monetary and financial stability policies.

The BSP is fully aware of the need to ensure that policy prescriptions to address modern-day challenges are appropriate. It has, in fact, embarked on activities aimed to strengthen its research capability in terms of personnel and physical infrastructure. It also has a clear, comprehensive and integrated research agenda that seeks to clarify and continuously evaluate policy objective, the transmission channels of the policy instrument, and the policy-setting framework (e.g., rules versus discretion). Its plan documents also spell out the role that each sector plays in attaining its objectives. What remains, therefore, is undistracted implementation of its strategic plan.

Former Federal Reserve Governor Alan Blinder (1998) concludes that "looking out of the window" is not optimal for monetary policymaking. **The increasingly complex economic landscape requires central bankers to rigorously think through the end policy actions and commit to a stand in the current period given presently available information even if it is known that in the next round of evaluation, a revision of long-term plans is inevitable.** Thus, it may be instructive to the policy-setting process for the BSP to specify policy "rules" or policy objective functions. It is worth noting that doing so does not mean an abandonment of the inflation targeting framework. Far from supplanting Monetary Board judgment with model outcomes, rules enhance the ability of policymakers in exercising discretion. Models help in evaluating the assumptions that go into the various scenarios being evaluated, the transmission mechanism, and the impacts of changes in economic variables. Implementing this, however, requires statistics on potential output, and estimates of the neutral interest rate and the optimal inflation rate target in the long run. Current efforts in the central bank to evaluate output gap estimation methodologies and the usefulness of output gap in monetary policy should be a useful foundation of this end.

Likewise these efforts to estimate and investigate the usefulness of output gap could provide the springboard for evaluating whether it pays for the central bank to engage in real stabilization. **The optimal point in the so-called Taylor curve, with inflation variability in the y-axis and output variability in the x-axis, implies some weight being given to the deviation of output from potential.** The estimates of potential output, along with those for long-run inflation target, can be used to evaluate policy rules, e.g., Taylor rule, and the role, if any, that such rules should play in the conduct of monetary policy.

A vital analytical tool for any central bank is a clear representation of active transmission channels of monetary policy. Because – as famously pointed out by Milton Friedman – of the "long and variable lags" of the effects of monetary policy on the real economy, central banks must be guided by empirically estimated transmission channels in order to maximize the impact of policy interventions. It is vital that the impact of structural changes in the economy and in the monetary and financial system be clarified to ensure that the economy is not only moving towards the desired direction but also at an appropriate pace. For this reason and also for any real[47] or monetary stabilization policy to be effective and efficient, the transmission channels to the real economy of the policy instrument need to be specified and estimated. The value of transmission channels to policymakers is, likewise, a function of their ability to explain the impact of rapid financial products innovation, economic integration, e-money, technological shocks, and asset prices on the channel itself.

[47] There is agreement that even though monetary policy cannot and should not try to control output in the long run, it impacts on the variability of actual output around potential in the short- to medium-term.

Domestic asset markets have yet to shed inefficiencies. It is hardly debatable that an efficient peso-dollar market or securities market, for example, redounds to more effective implementation of monetary policy. Thus, theoretical and empirical investigations of methods to increase the efficiency of asset markets would seem to be in order. At a practical level, a system of statistics that would allow rigorous studies on asset valuation has to be strengthened at the onset. The procedure and the timing for reforms need more intensive treatment than this paper could allot. **On the whole, what is relevant to the BSP is the role that the foreign exchange and the asset market in general should play in an inflation targeting regime.** For instance, in the aftermath of the Asian financial crisis, a number of studies tried to address the question of whether central banks should – or could – arrest the onset of price bubbles, prick asset bubbles, or just ensure soft landing for the economy once bubbles burst.

Meanwhile, it is generally admitted that a stable financial system is a responsibility of central banks.[48] **The success – and hence, stability – of any financial system rests, not merely on having the most modern exchanges and most sophisticated financial legislations, but, more importantly, on the level of sophistication of the financial reporting and audit system, enforcement of property rights, debt resolution/bankruptcy mechanism, credit rating and corporate governance system.**

Many of the reform areas within the BSP's control would necessitate continuous strengthening of its oversight functions principally by adapting its own systems, processes, and HRD programs to the growing sophistication of the financial market. Flatter structure complemented by competency-based HR program would greatly aid in infusing greater efficiency in the selection process both for hiring and training.

For reform areas not explicitly within the ambit of the BSP's powers and responsibilities, actively promoting them would not only strengthen the corporate sector and the economy in general but would also help in deepening the financial sector (e.g., capital market development).

No matter the regulatory form the BSP decides to take, it may be hard put to take out of the equation the nature of the increasingly globalized financial system and the moves towards a more economically integrated Asian/ASEAN region. **For any shift in the regulatory framework, it is best to follow a gradualist approach rather than a "Big Bang" technique.** To minimize things falling "between chairs", the integrated regulator model might be considered, or the Financial Sector Forum could be given formal powers to define responsibilities and strengthen coordination among the financial sector regulators.

[48] The debate in current literature is whether to explicitly include financial stability objective in central bank objective functions. For instance, Svensson (2002) writes that during "normal circumstances, financial stability does not pose a constraint on monetary policy" (p.288)

REFERENCES:

Allen, W. 2004. "Implementing Monetary Policy", Handbooks in Central Banking, Lecture Series No. 4, Centre for Central Banking Studies, Bank of England.

Anti-Phishing Working Group.

[accessed February 2006: http://www.antiphishing.org]

Anti Money Laundering Act (RA 9160). 17 October 2001.

An Act Amending Republic Act No. 9160 (RA 9194). 23 March 2003.

Aquino, J. 2005. PICPA Annual National Convention.

Bangko Sentral ng Pilipinas. 1995. Circular No. 102.

_____. 1997. Circular No. 135.

_____. 2000. Circular No. 258.

_____. 2001a. Circular No. 279.

_____. 2001b. Circular No. 291.

_____. 2002. Circular No. 333.

_____. 2004. Report on the BSP's Professional Profile.

_____. 2004a. BSP Strategic Review (Draft).

_____. 2004b. BSP, SEC, IC, and PDIC Sign MOA Establishing the Financial Sector Forum. Press release dated 05 July.

_____. 2005. The Bangko Sentral and the Philippine Economy.

_____. 2005. Updates on BSP Supervision and Regulation, June.

_____. 2006. 4th Quarter 2005 Inflation Report

_____. Undated. Primer on Inflation Targeting. http://www.bsp.gov.ph/downloads/Publications/FAQs/targeting.pdf

Bank for International Settlement (BIS). 1993. Central Bank Payment and Settlement Services with Respect to Cross-Borders Multicurrency Transactions. Report prepared by the Committee on Payment and Settlement Systems of the Central Banks of the Group of Ten Countries. Basle, September 1993.

Bernanke, B. and Mishkin, F. 1997. Inflation Targeting: A New Framework for Monetary Policy. NBER Working Paper No. 5893 (also appeared in the Journal of Economic Perspectives, 1997, v11 (2, Spring), 97-116), pp. 1-31.

Blinder, A.S. 1998. Central Banking in Theory and Practice. MIT Press, London.

Buenaventura, R.B. 2004. Strengthening the Financial System Through a World-Class Payments and Settlements System, A Speech delivered during the Celebration of the 11th Anniversary of the Bangko Sentral ng Pilipinas, 5 July.

Carmichael, J. and M. Pomerleano. 2002. The Development and Regulation of Non-Bank Financial Institutions. World Bank, Washington, D.C.

Constitution of the Republic of the Philippines. 1987.
[accessed April 2006: http://www.chanrobles.com/philsupremelaw1.htm]

Covey, S. 1996. Essay on Principle-Centered Leadership: What Is Empowerment? [accessed October 2005: http://www.qualitydigest.com/jan/covey.html]

Council of Financial Regulators (CFR). 2002. Annual Report. [accessed March 2006: http://www.rba.gov.au/PublicationsAndResearch/CFRAnnualReports/2002/Pdf/cfr_annual_report_2002.pdf]

Dakila, F, Jr.. and Claveria, R. 2006. The Impact of BSP Policy Interest Rates on Market Interest Rtaes. Bangko Sentral Review, Vol, VIII, No. 1, pp.1-6.

Datschetzky, D., D. Straka, and S. Wukovits. 2003. Overview of Austrian Banks' Internal Credit Rating Systems. Financial Stability Report 5, Oesterreichische Nationalbank, Vienna, Austria. April 29, 2003

Department of Economic Research. 2003. The Macro-Level Analysis of Systemic Risk: The Bank Distress Index Approach. Bangko Sentral ng Pilipinas.

_____. 2005. Study on the Business Cycles in the Philippines. Bangko Sentral ng Pilipinas.

DeSourdy, L. 2004. Designation of Payment Systems – New Part VC of the Reserve Bank of New Zealand Act of 1989. Reserve Bank of New Zealand: Bulletin Vol. 66, No. 1, pp.21-26. [http://www.rbnz.govt.nz/research/bulletin/2002_2006/2004mar67_1.pdf]

Drew, A. Kennedy, M., and Sløk, T. 2004. Differences in the Resilience Between the Euro Area and US Economies. Economic Department WP No. 382. Organization for Economic Cooperation and Development.

Fender, I. 2000. Corporate Hedging: The Impact of Financial Derivatives on the Broad Credit Channel of Monetary Policy. BIS Working Papers, No. 94-November 2000.

Goodhart, C. 2000. Can Central Banking Survive the IT Revolution?. Special Paper No. 125, LSE Financial Markets Group.

Haldane, A. and E. Latter. 2005. Role of Central Banks in Payment Systems Oversight. Bank of England Quarterly Bulletin, Spring.

Hardy, D. Regulatory Capture in Banking. IMF-WP06/34. International Monetary Fund. January 2006.

Hentschel, L. and C.W. Smith, Jr. 1997. Derivatives Regulation: Implications for Central Banks. Journal of Monetary Economics, Vol. 40, No. 2, 305-346.

Instefjord, N. 2005. Risk and Hedging: Do credit derivatives increase bank risk?, Journal of Banking and Finance, pp 333-345.

International Monetary Fund and International Development Association. Debt Sustainability for Low-Income Countries – Proposal for an Operational Framework and Policy Implications (03 February 2004).

_____. 2002. Global Financial Stability Report. Chapter IV. Early Warning System Models: The Next Step Forward, pp.48-84 (March 2002).

_____. 2006. Global Financial Stability Report. Chapter II. The Influence of Credit Derivative and Structures Credit Markets on Financial Stability, pp. 51-94 (April 2006).

Jännäri, K. 2001. "The Role of Different Institutions and Cooperation Between FSA, Central Bank and Ministry of Finance: The Case of Finland". Challenges for the Unified Financial Supervision, pp 89-97. [accessed October 2005: http://www.fin.ee/?id=3528]

Kamin, S., P. Turner, and J. Van't dack. 1998.The Transmission Mechanism of Monetary Policy in Emerging Market Economies: An Overview. Monetary and Economic Development. Bank of International Settlements. Basle, Switzerland. http://www.bis.org/publ/plcy03a.pdf

Kriljenko, J., Kisinbay, T., Maino, R. and Parrado, E. 2006. Setting the Operational Framework for Producing Inflation Forecasts. Working Paper by the Monetary and Financial Systems Department, International Monetary Fund (IMF).

Lamberte, Mario, B. The Philippine Payment System: Efficiency and Implications for the Conduct of Monetary Policy. Philippine Institute for Development Studies. RPS 2002-05. 2002,

Macklem, T. 2006. Renewing the IMF: Some Lessons from Modern Central Banking. Remarks by Bank of Canada's Deputy Governor Tiff Macklem to the Global Interdependence Center, Pennsylvania, USA. 09 March 2006.

Manasan, R. 2000. Public Sector Governance and the Medium-Term National Action Agenda for Productivity (MNAAP). Philippines Institute for Development Studies Discussion Paper Series 2000-24.

Marcelo, T.B. 2002. Electronic Banking and Electronic Money: Implications for the Conduct of Monetary Policy and Prudential Supervision in the Philippines. Bangko Sentral ng Pilipinas Review.

Milo, Melanie. Financial Services Integration and Consolidated Supervision: Some Issues to Consider for the Philippines. Perspective Paper Series No. 6 Philippine Institute for Development Studies (2005).

Mishkin, F. 1999. Lessons from the Asian Crisis. National Bureau of Economic Research Working Paper 7102. April 1999, pp. 1-24.

National Economic Development Authority. 2005. Socioeconomic Report (SER) 2004 (Box Article 1.2 Fiscal Sustainability Assessment), pp. 35-36.

_____. 2004. Medium-Term Philippine Development Plan, 2004-2010.

Nonaka, I and H. Takeuchi. 1995. The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation. Oxford University Press, New York.

Nualtaranee, J. undated. Transmission Mechanism of Monetary Policy.

http://wb-cu.car.chula.ac.th/papers/transmission.htm

Oesterreichische Nationalbank. Financial Market and Stability. [accessed November 2005: http://www.oenb.at/en/finanzm_stab/financial_market_and_stability.jsp]

Quaden, G. 2001. Central Banking in an Evolving Environment. Speech delivered at the 23rd SUERF Colloquium, Brussels, 27 October 2001.

Republic Act No. 7653. The New Central Bank Act. June 10, 1993.

Reserve Bank of Australia. 2006. Payment System Board.

[accessed April 2006: http://www.rba.gov.au/PaymentsSystem/ payments_system_board.html]

Rule, D. 2001. The Credit Derivatives Market: Its Development and Possible Implications for Financial Stability. Financial Stability Review 10 (June), 117-140.

Scheller, H.K. 2004. European Central Bank – History, Role and Functions.

[accessed October 2005: http://www.ebc.int]

Stevens, G. 2005. The Changing Statistical Needs of Central Banks. Address to the Irving Fisher Committee for Financial Statistics of the International Statistical Institute Sydney. (April 8, 2005)

Songwe, V. 2005. OFW and Remittances: The Philippine Story. Presentation during the WB Global Economic Perspective Launch, WB Manila Office, Taipan Place, Emerald Avenue, Ortigas Center, Pasig City, December 2, 2005.

Svensson, L.E.O. 2002. Monetary Policy and Real Stabilization. Paper presented in the *Rethinking Stabilization Policy*, A Symposium sponsored by the Federal Reserve Bank of Kansas City, August 29-31, 2003.

Appendix I
EARLY WARNING SYSTEMS ESTIMATION METHODOLOGIES

EARLY WARNING SYSTEM (EWS) ON MACRO ECONOMIC-IDENTIFICATION OF BUSINESS CYCLES IN THE PHILIPPINES.

Using the real Gross Domestic Product as the overall measure of current economic activity, the business cycle path of the economy was measured using the growth cycle method, *i.e.*, by examining the quarterly movement of real GDP (net of agriculture) from 1981-2004. The RGDP growth rate series was adjusted by removing seasonal and long-term trend components. The resulting series identifies the business cycle turning points.

EARLY WARNING SYSTEM FOR DETECTING THE PROBABILITY OF CURRENCY CRISIS

In the non-parametric currency crisis model, a currency crisis is defined as a situation in which an attack on the peso leads to sharp depreciation, a large decline in gross international reserves, or a combination of the two. The identification of a currency crisis is based on the index of exchange market pressure (EMP). The EMP index is computed as follows:

$$EMP_t = \%\Delta e_t - \lambda \%\Delta r_t$$

where:

- $\%\Delta e_t$ - monthly percentage change in the nominal exchange rate
- $\%\Delta r_t$ - monthly percentage change in the gross international reserves
- λ - $\sigma\%\Delta e_t / \sigma\%\Delta r_t$
- $\sigma\%\Delta e_t$ - standard deviation of $\%\Delta e_t$
- $\sigma\%\Delta r_t$ - standard deviation of $\%\Delta r_t$

A currency crisis occurs if $EMP_t > \mu_{EMP} + T\sigma_{EMP}$

where:

- μ_{EMP} - mean of EMP_t
- σ_{EMP} - standard deviation of EMP_t
- T - 1.5 with α = 5% level of significance

Using monthly time series data on exchange rate and GIR, the EMP threshold = $\mu_{EMP} + 1.5\ \sigma_{EMP}$ equals 7.2. This threshold means that any month is classified as a currency crisis point if the EMP exceeds 7.2.

The signals approach was then used to evaluate the ability of an indicator to provide advance warning on an impending currency crisis. When an indicator deviates from its normal value and assumes an extreme value beyond a certain threshold, this is taken as a warning signal of an impending currency crisis. The possible thresholds of an indicator are the values corresponding to the 80th percentile and above or the 20th percentile or below or some other predetermined percentile.

A parametric EWS model currently being developed is essentially based on the probit regression analysis.[49] Compared to the signals approach, a major advantage of a regression-based EWS model is that it is multivariate and considers all explanatory variables simultaneously. The impact of a particular indicator on the probability of a crisis is conditional on values of other indicators in the model. A further advantage, as mentioned earlier, is that it allows testing of statistical significance of individual indicators.

The parametric EWS currency crisis model being developed deviates from the earlier models in that it is basically a combination of autoregressive conditional heteroskedasticity (ARCH) and probit

[49] In a typical regression, the dependent variable can take on any number of possible numerical values. This would be true, for example, in research which relates the level of consumption to its determinants. By contrast, in the first stage of this paper, we attempt to explain whether or not a crisis occurs. A **probit model** would be appropriate for the present case, when the dependent variable can take on only two possible values (i.e., 1 for crisis periods and 0 for non-crisis periods). The probit equation then yields the initial estimate of the probability that the dependent variable takes on a value of 1 (i.e., the probability that a crisis occurs). This estimate is refined further in the second stage, which uses an autoregressive conditional heteroskedasticity (ARCH) equation.

approaches. In addition, the DER employed the results obtained in the non-parametric EWS model of the BSP in constructing the parametric EWS model. The model was estimated using quarterly data from Q1 1980 to Q4 2004.

The development of the BSP's parametric EWS model for currency crises consists of two steps. First, a probit model is estimated by regressing the crisis index—the binary transformation exchange market pressure (EMP) index in the non-parametric EWS model—on the composite index, likewise computed in the non-parametric model. Predicted values of crisis probabilities are generated from this probit estimation. Second, a generalized autoregressive conditional heteroskedasticity (GARCH) model is estimated by regressing EMP raw index on various indicators used in the non-parametric model and by including the predicted crisis probabilities generated from step one as an additional explanatory variable in the variance equation.[50]

THE VULNERABILITY INDICATOR EARLY WARNING SYSTEM (VIEWS)

In essence, VIEWS identifies leading indicators of crises and estimates their corresponding threshold levels. The identification of leading indicators is based on established economic rationale while threshold estimation for each leading indicator involves minimization of noise-to-signal ratio (NSR).[51] All indicators with NSR less than unity are shortlisted. Composite indices are then computed and their respective probability distribution mapped out, from which the overall probability of crisis[52] can be estimated.

Currency crisis is defined using exchange rate market pressure index (EMPI)[53] where a standard deviation higher than two indicates a crisis episode. Crisis identification for banking crisis, on the other hand, is events-based, i.e., the duration of a crisis episode is defined to be equivalent to one year. Thus, in cases of multiple crisis episodes within a 12-month period, the reckoning of crisis episode would be the month when the crisis first became manifest.

BANK DISTRESS INDEX (BDI)

The Bank Distress Index (BDI), was developed to date the banking crisis episodes in the country. This measure uses the numerical-based method in identifying banking crises. The BDI was computed as follows:

$$\text{BDI} = \sum_{t}^{t=23} \frac{\text{Financial Assistance + Liabilities of Closed Banks}}{\text{Gross Domestic Product}}$$

The numerator in this BDI has two components: financial assistance and outstanding liabilities of closed banks. Financial assistance granted by the BSP consists of emergency loans to banks, loans to PDIC and overdrafts incurred by banks. The second item in the numerator refers to the outstanding value of liabilities of banks as of period of closure. To avoid double counting, however, we deduct from total

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[50] Essentially, while a typical regression equation specifies how the level of a dependent variable changes in response to changes in values of explanatory variables, an equation in the ARCH family of models accounts for changing variance of the dependent variable through time by modeling how this variance responds to certain other variables. A GARCH model extends the ARCH model by allowing for lagged forecast variances in the conditional variance equation.

[51] Noise- to-signal ratio (NSR) = $\frac{\text{probability of signaling non-crisis episodes}}{\text{probability of signaling crisis episode}}$

for an indicator to qualify, the NSR should be less than 1.

[52] $p = \frac{\text{number of months with } I^{L} < I < I^{U} \text{ with crisis occurring after 24 months}}{\text{number of months with } I^{L} < I < I^{U}}$

where: I^{L} refers to lower-bound index (minimum number of crisis episodes)

I^{U} refers to upper-bound index (maximum number of crisis episodes)

[53] $$\text{EMPI} = \%\ \text{change in exchange rate} - \left(\frac{\text{standard deviation of exchange rate}}{\text{standard deviation of foreign exchange reserves}}\right) * (\%\ \text{change in foreign exchange reserves})$$

liabilities of closed banks their liabilities to BSP and PDIC, because the said liabilities already form part of the financial assistance that has been factored in earlier.

The numerator includes only the financial assistance granted to and liabilities of closed banks during a two-year window. The choice of a two-year window is consistent with the estimated 15-18 month period for the full impact of monetary policy adjustments on inflation and output to take hold. It may be noted that the grant of financial assistance expands reserve money and eventually domestic liquidity and can have a similar impact as an expansionary monetary policy action. The approach of including only the financial assistance and bank closure data in the past two years also eliminates from the BDI information about the distant past which have no more impact on the system. Thus, the BDI is more representative of the current situation of the banking system.

The BDI measure takes into account both the cost of rescue to the banking system as well as the exposure of other sectors to the closed banks (i.e. liabilities of closed banks net of), and compares this aggregate to the size of the economy (i.e., the country's Gross Domestic Product or GDP, the denominator in the formula). The ratio gives an indication of the effects on the economy of bank rescues and could provide a measure of whether the costs involved have reached a certain proportion that could be considered systemic.

Banking crisis literature points to excessive credit growth, recessions, burst of asset price bubbles, and deterioration of loan quality and equity as factors precipitating a banking crisis. However, the lack of consistent time series information on these variables or the relatively long time lags before they become available make bank failure quite difficult to predict. The methodology is also not able to distinguish the degree by which the BDI is below or above the crisis threshold level, which may contain important information in assessing the sector's fragility.

Sources: Department of Economic Research and Department of Economic Statistics