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Thoughts on Banking and Finance

Volume 2 Issue 1
January-June 2013

Bangladesh Bank Training Academy
Mirpur-2, Dhaka-1216

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Editorial Note

Bangladesh's Perspective Plan for the next several years envisions a transition from the low income country group to the middle income group in terms of GNI per capita by 2021. Beyond this, the country is looking forward to reaching the upper middle income country group threshold by 2030, on course to maturity as a prosperous advanced economy and one of the leading growth drivers in Asia by 2050. In Bangladesh, the government's inclusive growth efforts are being supported by Bangladesh Bank's financial inclusion drive, which helps banks reach out with credit and other financial services in order that they may encourage productive ventures in underserved areas like small landholder/tenant farming, SMEs, renewable energy, and other environmentally benign ventures. Moreover, Bangladesh Bank (BB) has adopted the new approach of guiding all banks into mainstreaming corporate social responsibility (CSR) in their corporate goals, objectives and ethos, motivating them to spontaneously engage in financial inclusion initiatives. With the new CSR-driven commitment to socially and environmentally responsible finance, banks also delve into financing environmentally friendly projects like solar and bio-fuel based energy production, waste treatment, and so forth. With banks sensitized towards socially responsible finance, BB's monetary policy stance, announced ex-ante in half-yearly Monetary Policy Statements (MPSs), now maintains a conscious directional bias that favors finance for productive pursuits and discourages lending for wasteful, unproductive, and speculative activities[1].

UNEP defines a green economy as one that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP 2010). In its simplest expression, a green economy is low-carbon, resource efficient, and socially inclusive. In a green economy, growth in income and employment are driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services[2]. Green technology is regarded as an effective way to improve resource efficiency and coordinate the different processes responsible for green growth. It is the potential solution to the substantial problem of environmental degradation and climate change. To foster the development of green technology, an appropriate financing mechanism from banks and financial intermediaries is essential. The widespread implementation of green initiatives and energy saving technologies can help Bangladesh clean its environment, but access to finance is vital for the successful implementation of these green initiatives. An unencumbered flow of financing can expedite the growth of the green industry. The availability of cost effective technologies is also essential for a successful green mission in Bangladesh, which is thus far latent in the development of green industries. This is the time for banks and financial institutions to move forward with research and development in this area, as research is indispensable for exploring the appropriate technologies, techniques, and new green products. Green banking has also been identified as one of the major drivers of sustainable economic growth in developing countries. An array of guidelines and instructions on sustainable banking issues like green banking, environmental risk management, corporate social responsibility, and financial inclusion have been encouraged by Bangladesh Bank since 2008. Of course, the pace has been accelerated in recent years. Bangladesh Bank is fully committed to pursuing digital, nearly paperless, sustainable, green banking operations by making the best use of information technology and related professional skills. BB's different initiatives, particularly IT-based, green banking

[1] Dr. Atiur Rahman. Inclusive Finance and Sustainable Development (Occasional Speeches of Bangladesh Bank Governor 2009-2013, BIBM 2013.

[2] UNEP, 2010.

activities through online banking, e-banking, e-commerce, online CIB, automated clearing houses, e-tendering, e-recruitment, National Payment Switch, etc., are moving ahead in full swing. Green financing requires thorough due diligence under Environmental Risk Management. Energy efficiency has received significant attention from Bangladesh Bank in recent years. Banks in Bangladesh have been advised to finance solar energy, bio-gas plants, ETP, and Hybrid Hoffman Kilns (HHKs) in brick fields under refinance programs. In order to bring further momentum in this mode of financing, BB has already introduced a Taka 2.0 billion refinance line against bank loans for investments in 16 green products[3].

The first paper of this issue, by Prachi Mishra, Peter J. Montiel and Antonio Spilimbergo, is on the effectiveness and policy implications of the monetary transmission mechanism in low-income countries. The paper reviews the monetary transmission mechanism in low-income countries (LICs). The authors use the standard description of monetary transmission as a benchmark to identify aspects of the transmission mechanism that may operate differently in LICs. In particular, the paper focuses on the effects of financial market structure on monetary transmission. The weak institutional framework prevalent in LICs drastically reduces the role of securities markets. Consequently, traditional monetary transmission through market interest rates and market-determined asset prices are weak or non-existent. The exchange rate channel, in turn, tends to be undermined by heavy central bank intervention in the foreign exchange market. The weak institutional framework also has the effect of increasing the cost of bank lending to private firms. Coupled with imperfect competition in the banking sector, this induces banks to maintain chronically high excess reserves and to invest in domestic public bonds or (when possible) in foreign bonds. With the financial system not intermediating funds properly, the bank lending channel also becomes impaired. These factors undermine both the strength and reliability of monetary transmission, which has important implications for the conduct of monetary policy in LICs.

The second paper is an efficiency analysis of nationalized commercial banks operating in Bangladesh by Dr. Muhammad Amir Hossain. This paper analytically explores the comparative efficiency of three types of deposit money banks in Bangladesh. The paper has applied a non-parametric approach Data Envelop Analysis, i.e. DEA approach, to discover the most efficient banks. The author also uses three input-oriented models, namely constant returns to scale, variable returns to scale, and cost efficiency DEA, and finds that nationalized commercial banks, especially Sonali Bank Limited, should minimize the use of input resources in order to achieve the same level of output as other banks.

The third paper, by Branko Milanovic, is on the history and current status of global income. The paper presents an overview of the calculations of global inequality from a recent and historical perspective, as well as the main controversies and political and philosophical implications of the findings. It focuses in particular on the winners and losers of the most recent episode of globalization from 1988 to 2008. It suggests that the period might have witnessed the first decline in global inequality between world citizens since the Industrial Revolution. The decline, however, can be sustained only if countries' mean incomes continue to converge as they have been doing during the past ten years and if internal (within-country) inequalities, which are already high, are kept in check.

[3] Dr. Atiur Rahman. Inaugural Speech of the Governor, Bangladesh Bank delivered at Green Finance Conference held at Bangladesh Bank Training Academy, Mirpur, Dhaka on March 01, 2014.

Mean income convergence would also reduce the huge "citizenship premium" that is enjoyed today by the citizens of rich countries.

The fourth paper is on the dispute between the bank and customers in the case of bai-bithaman-ajil (BBA), and is by Rininta Nurrachmi, Nawalin Nazah and Hamida Mohamed. This paper discusses the issues and disputes that arose in the practice of BBA in the context of Malaysia.

The final paper, by Md. Mahabbat Hossain, A N K Mizan and Tahmina Rahman, examines the revenue and expense components of listed non-bank financial institutions in Bangladesh. They find that the revenues of the NBFIs are not well diversified and they are heavily dependent on interest revenues. On the other hand, the interest cost against borrowing from the banking institutions are the major source of expenses. It is suggested that the NBFIs should diversify their product basket with a new, innovative financial architecture in order to increase their profitability.

As outlined previously, we expect very insightful papers on the current dynamics of our economy and banking system that cover issues like the green economy, green banking, access to finance, the CSR activities of banks and financial institutions, SME financing, the drivers of financial inclusion, etc.

I hope the readers of this issue will enjoy the papers.

Sincerely,

Md. Abdul Awwal Sarker
General Manager, BBTA and
Executive Editor
BBTA Journal "Thoughts on Banking and Finance"

Monetary Transmission in Low-Income Countries: Effectiveness and Policy Implications

Prachi Mishra, Peter J. Montiel and Antonio Spilimbergo@

Abstract

This paper reviews the monetary transmission mechanism in low-income countries (LICs). We use the standard description of monetary transmission as a benchmark to identify aspects of the transmission mechanism that may operate differently in LICs. In particular, the paper focuses on the effects of financial market structure on monetary transmission. The weak institutional framework prevalent in LICs drastically reduces the role of securities markets. Consequently, traditional monetary transmission through market interest rates and market-determined asset prices are weak or nonexistent. The exchange rate channel, in turn, tends to be undermined by heavy central bank intervention in the foreign exchange market. The weak institutional framework also has the effect of increasing the cost of bank lending to private firms. Coupled with imperfect competition in the banking sector, this induces banks to maintain chronically high excess reserves and to invest in domestic public bonds or (when possible) in foreign bonds. With the financial system not intermediating funds properly, the bank lending channel also becomes impaired. These factors undermine both the strength and reliability of monetary transmission, which has important implications for the conduct of monetary policy in LICs.

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While Milton Friedman was a great believer in the power of monetary policy to affect aggregate demand, his perception that these effects were transmitted with long and variable lags led him to be skeptical of the effectiveness of activist monetary policy. It is easy to imagine that if in addition to being subject to long and variables lags, the ultimate effects of monetary policy on aggregate demand had been perceived by Friedman as unpredictable, his conviction that nonfeedback rules for monetary policy were superior to rules with feedback would have been strengthened.

In contrast, the modern consensus that monetary policy should be conducted in accordance with predictable rules is not predicated on the view that the effects of monetary policy on aggregate demand tend to be uncertain. Instead, it is based on the perception that central bank credibility is vital for the effective conduct of monetary policy, because only systematic central bank behavior in accordance with an interpretable rule that embodies a commitment to price stability can provide a reliable anchor for private sector expectations.[1] As befits their different motivation, modern monetary policy rules tend to be of the feedback variety. Taylor rules, for example, incorporate feedback from both inflation and real activity to the setting of the monetary policy instrument. These rules are formulated on the explicit premise that the monetary policy instrument can exert systematic and predictable effects on aggregate demand, at least under normal (that is, nonliquidity trap) conditions. In other words, these rules take as given a reasonably reliable mechanism of monetary transmission.

This favorable view of the effectiveness of monetary transmission is the result of more than two decades during which economists have devoted a substantial amount of attention to the transmission mechanism. However, these efforts have typically been carried out in the analytical and empirical context of economies with sophisticated and well-functioning financial markets. Much less is known about monetary transmission in economies with more rudimentary financial systems—not just quantitatively, but even qualitatively. This is particularly true in low-income countries (LICs). Consequently, the link between the central bank's monetary policy instruments and the behavior of aggregate demand in such countries remains something of a black box. Since LICs have the same reasons to value rules-based monetary policy credibility as do high-income economies, and since the optimal design of such rules depends critically on the strength and reliability of monetary transmission (as suggested by the contrast between Friedmanesque constant-money-growth rules and more activist Taylor rules) understanding the characteristics of monetary transmission in LICs is an important issue, particularly since we have reason to believe that monetary transmission is strongly influenced by financial structure, and that the financial structure of most LICs differs significantly from that of most high-income countries.

[1] Goodfriend (2007) describes the evolution of this modern consensus

This paper examines how the various conventional channels of monetary transmission are likely to operate in the financial environment that tends to characterize LICs.[2] Not surprisingly, we find that there are strong a priori reasons for believing that the monetary transmission mechanism in LICs is fundamentally different from that in economies with more sophisticated financial systems. More importantly, we conclude that there are similarly strong a priori reasons to believe that monetary transmission may be both weak and unreliable in the context of LICs, and provide some empirical evidence consistent with this view.[3] We argue that this state of affairs has important policy implications for the conduct of discretionary monetary policy in such countries, for the desirability and design of inflation targeting, for the choice of exchange rate regimes, and for the desirability of capital account restrictions.[4]

The paper is structured as follows. The next section provides an overview of the monetary transmission mechanism as it is conventionally understood to operate in a general setting, with the goal of highlighting the assumptions about the economy's financial structure that underpin the various channels of monetary transmission typically identified in descriptions of the transmission mechanism. Section II turns specifically to the empirical characteristics of financial structure in LICs, documenting the extent to which the stylized facts about financial structure in such countries fail to match the assumptions identified in Section I. These differences in financial structure suggest that the bank lending channel is likely to be the dominant channel for monetary transmission in LICs, at least in relative terms (that is, compared with other potential channels of transmission).

However, the effectiveness and reliability of this channel may itself depend on the economy's financial structure. Section III provides a brief overview of the empirical literature on financial structure and monetary transmission in the context of higher-income countries. To explore the potential relevance of this issue for LICs, Section IV examines some cross-country evidence on the effectiveness of the bank lending channel, comparing the relationship between central bank policy rates and bank lending rates in LICs, advanced, and emerging economies. The results are consistent with this link being both weaker and less systematic in LICs than in the other country groups.

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[2] We limit our analysis to "typical" LICs. The usual definition of LICs refers to countries with PPP-adjusted income per capita of less than US$1,000 per year. We use this definition in a broad sense, considering that some countries with higher incomes per capita share many characteristics with typical LICs. Notably, we exclude India and China from our analysis. This is mostly because these countries present economic and institutional characteristics that are very different from the usual LICs. In addition, a vast and growing literature is devoted to these countries.

[3] By referring to monetary transmission in low-income countries as "weak" or "ineffective," we mean that the effect of monetary policy on aggregate demand is small; and by "unreliable," we mean that the effect depends on country-specific structural and institutional features and is likely to vary over time in unpredictable ways.

[4] We make a strong distinction in this paper between monetary and exchange rate policies. While the trilemma tells us that these are not independent instruments in the presence of high de facto capital mobility, this is not the situation that prevails in most LICs. Monetary and exchange rate policy tend to be independent instruments in the short run in most LICs, because credit market frictions that operate at the international level ensure that these countries are generally characterized by very limited de facto capital mobility, even when their capital accounts are open de jure (see Stultz, 2005). The implication is that fixing the exchange rate does not require these countries to surrender monetary autonomy.

They are also consistent with the frequent finding in empirical research (surveyed in Mishra, Spilimbergo, and Montiel, 2011) of weak monetary policy effects on output and prices in LICs. Section V examines the policy implications of these results. The final section summarizes.

I. Monetary Transmission: An Overview

The standard description of the monetary transmission mechanism proceeds as follows:

The Formulation of Monetary Policy

Monetary policy is usually taken to be formulated by an independent or quasi-independent central bank in pursuit of broad macroeconomic objectives, rather than with the objective of meeting the government's financing needs. In the United States, for example, this situation dates to the Fed-Treasury Accord of 1951, which freed the Federal Reserve to pursue its own macroeconomic objectives, rather than simply pegging the interest rate on Treasury bills for fiscal reasons.[5]

The Policy Instrument

Although the Finance Ministry may hold periodic auctions of government securities to finance deficits and refinance maturing debt (the primary market for government securities), these are assumed to be purchased by the domestic or foreign private sectors or by foreign official institutions, rather than by the domestic central bank. The central bank conducts monetary policy by buying and selling short-term government securities in a well-functioning secondary market. In doing so, its objective is to control the value of some financial market variable (for example, the interbank interest rate, the stock of unborrowed reserves, the monetary base, or the money stock) as an intermediate target. In recent years, central banks in advanced and emerging economies have most commonly targeted an interbank rate (for example, the federal funds rate in the United States). The value of this intermediate target is assumed to influence aggregate demand through the transmission mechanism and thus to affect the central bank's ultimate macroeconomic objective(s) (typically, price stability and/or full employment). The intermediate target is accordingly typically set through a feedback rule (such as a Taylor rule) that depends on the observed values of the ultimate macroeconomic objective(s).

The Transmission Mechanism

The transmission mechanism from open market transactions by the central bank to aggregate demand can be described as follows (consider for concreteness the example of a central bank *purchase* of government securities):

- From central bank intervention in the market for short-term government securities to interest rates in the interbank market for reserves.

[5] The role of central bank independence in monetary transmission (as opposed to monetary policy formulation) is discussed later in this section (see footnote 11).

The sellers of short-term government securities to the central bank hold the proceeds in commercial banks (these sellers are often the commercial banks themselves), thereby increasing commercial banks' free reserves. The increased stock of reserves causes a reduction in the interbank rate.

- From interest rates in the interbank market to interest rates on short-term government securities.

Arbitrage in commercial bank portfolios between the interbank market and bank holdings of very short-term government securities creates an equilibrium relationship between the return on those securities and the interbank rate. When the interbank rate is low relative to the prevailing rate on short-term government securities, banks reallocate their asset portfolios away from reserves, which can be used for lending in the interbank market, and into purchasing short-term Treasury bills, which lowers the rate of return on those bills (and vice versa when the interbank rate is high). The arbitrage condition between the return on short-term government securities and the interbank rate leads to the following relationship:

$$i_T = i_R, \tag{1}$$

where i_T is the interest rate on very short-term government securities and iR is the interbank rate. Notice that this arbitrage condition describes the relationship between the two interest rates, but does not pin down the value of either rate.

To see how the central bank can set iR, note that banks purchase short- term Treasury bills by issuing deposits on themselves, but for financial market equilibrium to hold, these new deposits must be willingly held by the nonbank public. For this to be the case, the rate of return on alternative assets has to fall. These alternative assets are precisely short-term Treasury bills. Write the demand for deposits as D(iT, Y), where Y denotes real income and D1<0, D2>0. Let rr be the required reserve ratio, er the ratio of excess reserves to deposits (taken to be a decreasing function of the differential between the Treasury bill rate iT and the return on reserves iR, with er equal to some equilibrium value er* when that differential is zero), equilibrium in the market for reserves requires:

$$H = (rr+er(i_T - i_R)\, D(i_T, Y), \tag{2}$$

where H is the supply of reserves. Using Equation (1), this becomes:

$$H = (rr+er^*)\, D(i_R, Y),$$

To hit a desired target for the money market rate, say * , the central bank therefore has to set:

$$H = (rr+er^*)\, Pd\,(i^*_R, Y),$$

This "liquidity effect" creates the first channel through which monetary policy may affect aggregate demand. Under sticky prices and rational expectations, the short-run expected rate of inflation is

unaffected by the central bank's intervention in the Treasury bill market, so the effects of open-market operations on the interest rate on short-term Treasury bills should be reflected in the short-term real interest rate, which (at least potentially) affects aggregate demand directly by altering the intertemporal profile of household consumption (in formal terms through the Euler equation). The effectiveness of this channel, which is one component of the interest rate channel, depends on the degree of intertemporal substitutability in consump- tion as well as on the extent to which households are rationed in credit markets.[6] The higher the degree of intertemporal substitution in consumption and the less prevalent is credit rationing, the more effective this channel is likely to be. As we shall discuss below, there is a separate component of the interest rate channel which affects spending on durable goods by households and firms. Accordingly, to be precise, we can refer to this first channel as the short-term interest rate channel.

- From the interbank rate to bank lending rates.

In principle, an increase in the size of banks' deposit base should increase the volume of resources that banks intermediate (but see below), thus increasing banks' supply of loanable funds. Competition among banks would be expected to cause this increased supply of funds to reduce bank lending rates as well as to increase the availability of credit for rationed borrowers, if any. This induces a second effect on aggregate demand, as the reduced interest rates on bank loans and greater availability of bank credit induces an increase in spending by bank-dependent agents (typically small, opaque firms). This second channel of monetary transmission is referred to as the bank lending channel, one component of a broader credit channel. The effectiveness of this channel depends on the extent that an expansion of reserves does increase the supply of bank loans, and that an increase in the supply of bank loans reduces the cost and/or availability of finance for the nonbank sector.[7]

Why might the supply of bank loans not be affected? There are two reasons. First, on the liability side of banks' balance sheets, banks may be able to attract resources not just by issuing deposits, but also by issuing their own short-term securities (for example, negotiable CDs in the United States).[8]

Thus, when their supply of deposits increases, they may simply cut back on the securities they issue, leaving the asset side of their balance sheets unchanged. This happens when short-term securities and deposits are close substitutes.[9]

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6 The interest rate channel is sometimes referred to as the "money" channel

7 The bank lending channel may operate whether or not banks ration credit to bank- dependent customers. To the extent that they do, the channel would operate through the availability of credit to rationed borrowers. But even if banks do not ration credit, the channel would operate through the cost of credit to bank-dependent borrowers.

8 Not everyone agrees that the role of securities and large CDs necessarily weakens the bank lending channel in advanced economies. For a contrary view, see Keeton (1993).

9 Notice that this implies a very high elasticity of demand for money—that is, a very flat LM curve.

Second, on the asset side of banks' balance sheets, when their deposit base increases, banks may simply purchase more securities, rather than make more loans. This would be more likely to happen when securities and loans are close substitutes (in the portfolios both of banks and their customers)—in other words, when bank lending is not "special" in the usual sense. The strength of that channel depends on the degree of competition among banks (which determines the response of banks' lending rate to banks' cost of funds). In a noncompetitive environment (because of regulation or collusion), banks will not pass on their reduced costs of funding to their loan rates.[10]

- From short-term government securities to the exchange rate.

Under floating exchange rates and perfect capital mobility, arbitrage between domestic and foreign short-term government securities causes incipient capital flows which change the equilibrium value of the exchange rate required to sustain uncovered interest parity. This triggers a third channel of transmission, the exchange rate channel. With sticky prices, this change in the nominal exchange rate is reflected in a real exchange rate depreciation that induces expenditure switching between domestic and foreign goods. The effectiveness of this channel depends on the central bank's willingness to allow the exchange rate to move (which may be constrained by "fear of floating"), on the degree of de facto capital mobility (for a given change in domestic short-term interest rates, there will be less movement in the exchange rate the lower the degree of capital mobility), on the strength of expenditure-switching effects (this depends on the commodity composition of production and consumption), on the importance of currency mismatches (because adverse balance sheet effects could create negative expenditure- reducing effects that may offset or even dominate expenditure-switching effects on aggregate demand), and on the degree of exchange rate pass-through (because what induces expenditure switching is a change in the real exchange rate, which is less likely to follow from a change in the nominal exchange rate when pass-through is large).

- From interest rates on short-term government securities to interest rates on long-term government securities.

An expectation mechanism operating on the term structure ties interest rates on short-term securities to rates on longer-term securities. The effectiveness of this mechanism depends, among other things, on the perceived per- manence of the change in short-term rates—that is, on the information content of a change in the current short-term rate for expected future short- term rates. Changes in long-term interest rates in turn give rise to two additional channels. The long-term interest rate channel operates through the effects of changes in long-term interest rates on firms' and households' purchases of durable goods.

[10] For example, if the banking sector is oligopolistic and individual banks believe they face a "kinked" demand curve for loans, they would be unlikely to pass small changes in their marginal cost of funds on to their lending rates.

While the short-term interest rate affects mostly household consumption, the long-term real interest rate affects firms' spending on investment through the cost of capital and household spend- ing on durables.[11, 12]

- From long-term interest rates to asset values.

Changes in long-term interest rates affect the discount factors applied to future income streams, including those from long-maturity bonds, equities, and real assets.

The asset channel operates through the implications of changes in long-term interest rates for the prices of such assets, which exert wealth effects on private consumption. The effectiveness of this channel depends on the sensitivity of asset values to changes in long-term rates, on the ratio of these components of wealth to household incomes, and possibly on the distribution of these assets among households if the marginal propensity to consume out of wealth varies across households.

- From asset values to external finance premiums

Changes in asset values affect the collateralizable net worth of firms and households. Because the availability of collateral reduces the severity of the moral hazard problem that is associated with external finance for firms and households, it reduces the premium that lenders charge such borrowers over the risk-free interest rate, known as the external finance premium. Fluctuations in asset values are therefore negatively correlated with fluctuations in the external finance premium. This creates a mechanism that reinforces the effects of changes in interest rates on the cost of external financing: higher interest rates reduce asset values and therefore increase the external finance premium. This financial accelerator is a manifestation of a distinct component of the channel for monetary transmission, the balance sheet channel.

Underlying Assumptions

Note that this conventional description of monetary transmission relies on effective arbitrage along several margins: between different domestic short- term securities, between domestic short-term and long-term securities, between long-term securities and equities, between domestic and foreign securities, and between domestic financial and real assets. It is therefore clearly intended to apply to an economy with a highly developed and competitive financial system. As such, it implicitly assumes the following institutional setup, which is typically taken for granted in discussions of monetary transmission in OECD countries:

11 Why does central bank independence matter from the perspective of monetary transmission as opposed to that of policy formulation? The answer is that, as suggested in the previous paragraph, the transmission from short-term interest rates to longer-term rates depends on agents' interpretation of what an unanticipated change in monetary policy indicates about future monetary policy. This in turn depends on their understanding of the central bank's "true" policy reaction function—that is, on the central bank's credibility. Because the degree of central bank independence affects the nature of the central bank's policy reaction function, it may thus be expected to also affect agents' interpretation of the implications of current monetary policy actions for expected future monetary policy.

12 Given the central role of expectations about future monetary policy in this channel, it is sometimes referred to as the "expectations" channel.

- A strong institutional environment, so that loan contracts are protected and financial intermediation is conducted through formal financial markets.
- An independent central bank.
- A well-functioning and highly liquid interbank market for reserves.
- A well-functioning and highly liquid secondary market for government securities with a broad range of maturities.
- Well-functioning and highly liquid markets for equities and real estate.
- A high degree of international capital mobility.
- A floating exchange rate.

As we shall argue below, these conditions are rarely satisfied in LICs. This raises doubts about the relevance of the standard description of monetary transmission for such countries.

The question is how far off the mark the standard description of monetary transmission is in a "typical" LIC.

II. The Monetary Policy Environment in LICs

To the extent that financial structures in LICs depart from the assumptions listed at the end of the last section, we should expect the transmission mechanism in those economies to differ from the standard description. In this section we will examine the extent to which the conditions listed above are satisfied in LICs, and will consider the implications both for the channels of monetary transmission that are likely to be dominant in LICs and for the likely effectiveness of those channels.

Size of the Formal Financial Sector

Financial intermediation may be carried out either inside or outside the formal financial sector. Informal finance may involve transactions between related parties, reliance on specialized moneylenders, or the use of informal credit cooperatives. All of these have in common that they rely on informal means to overcome asymmetric information and contract enforcement problems, and they are likely to play a dominant role in financial inter- mediation when the formal institutional environment is weak. Under these circumstances the formal financial sector is likely to be small and to conduct a relatively minor fraction of total domestic financial intermediation.

Panel A of Table 1 suggests that this is indeed the case in LICs. Relative to advanced and emerging economies, LICs exhibit substantially smaller ratios of deposit money bank assets to GDP as well as of nonbank financial intermediary assets to GDP.[13] The ratio to GDP of assets held by deposit money banks and other formal financial institutions in advanced economies is 1.24, while in LICs it is only 0.32. Thus, relative to what is typically the case in advanced economies, the formal financial sector is a relatively much smaller player in LICs.

[13]The data are from Beck, Demigurc-Kunt, and Levine (2010).

How should this be expected to affect monetary transmission? The transmission mechanism can be decomposed into two steps: from central bank actions to financial variables such as those described in the last section, and from financial variables to aggregate demand. When the formal financial sector is small, much of the economy does not interact with the formal financial sector. Consequently, any effects of monetary policy on formal financial sector variables (for example, on bank loan rates) would tend to have weaker effects on aggregate demand than would be true where formal financial intermediation is extensive. In other words, the second step in the transmission mechanism, which depends on the elasticity of the IS curve with respect to formal-sector financial variables, would tend to be weak when the formal financial sector is small.

Central Bank Independence

Arnone, Laurens, and Segalotto (2006) constructed a measure of central bank independence for a group of 145 advanced, emerging, and low-income economies. Panel B of Table 1 provides a comparison of this measure for groups of countries classified into each of these categories. The key observation is that central banks in both emerging and low-income countries appear to be significantly less independent than those in advanced economies, with LIC central banks being roughly half as independent by this measure as those in emerging economies. As indicated before, this affects not just the scope for the exercise of monetary policy, but also the effects of that policy, because it influences the perceived implications of any current monetary policy action for future monetary policy.

Quality of the Institutional and Regulatory Environment

The small size of the formal financial sector in many LICs is undoubtedly due in large part to the serious deficiencies in the institutional and regu- latory environment that characterizes many of these countries. As indicated in Panel C of Table 1, LICs score substantially lower than both advanced and emerging economies on the full range of the Kaufmann, Kraay, and Mastruzzi (2009) governance indicators. This poor institutional environment affects not just the overall size of the formal financial sector, but also the environment in which that sector operates. Political instability, poor account- ing and disclosure standards, weak property rights, limited government accountability, a weak regulatory environment, a poorly functioning legal system, and the prevalence of corruption would all tend to contribute to high costs of financial intermediation.

Money and Interbank Market Development

While we know of no comprehensive data set on this issue, substantial case study evidence suggests that money and interbank markets are poorly developed or nonexistent in many LICs (see IMF, 2005). The poor institutional environment provides a plausible reason. In the absence of an institutional infrastructure that promotes bank transparency, with a weak regulatory and supervisory structure, and with the occasional inability to enforce contracts, mutual distrust causes banks to avoid lending to each other. Moreover, these same institutional deficiencies also make lending to the nonbank sector an expensive proposition, which means that unlike banks in advanced economies, which sometimes demand or supply excess reserves, banks in many LICs have chronic excess reserves.[14] With all potential participants on one side of the market, there is no demand for interbank transactions.

[14] Saxegaard (2006), for example, estimated that excess reserves amounted to over 13 percent of deposits on average in sub-Saharan banking systems in 2004.

Table 1. Financial Environment Across Countries, 2005

Groups	A. Size of Banking Sector		B. Central Bank Independence	C. Governance Indicators 2008					
	Deposit money bank assets/gdp	Other financial institutions assets/gdp		Voice and accountability	Political stability & absence of violence/ terrorism	Government effectiveness	Regulatory quality	Rule of law	Control of corruption
Advanced									
Mean	1.24	0.55	0.96	1.08	0.92	1.44	1.34	1.47	1.54
#countries	28	5	28	29.0	29.0	29.0	29.0	29.0	29.0
Emerging									
Mean	0.63	0.17	0.60	-0.03	0.35	0.40	0.37	0.09	0.07
#countries	26	11	26	28.0	28.0	28.0	28.0	28.0	28.0
LIC									
Mean	0.32	0.06	0.33	-0.34	0.30	-0.52	-0.45	-0.51	-0.49
#countries	91	18	91	118.0	118.0	118.0	118.0	118.0	118.0
Total									
Mean	0.55	0.17	0.50	-0.06	0.10	-0.05	-0.02	-0.09	-0.06
#countries	145	34	145	175	175	175	175	175	175

Table-1 (Continued)

Groups	D. Securities Market			E. Bank Competition				F. Degree of Financial Repression
	Arnone-Laurens-Segalotto 2003	Private bond market capitalization/GDP: Thorsten-Beck	Public bond market capitalization/GDP: Thorsten-Beck	Security Markets Index	Net interest margin	Bank concentration	Entry barriers/ procompetition measures index: SR Database	Interest rate controls index
Advanced								
Mean	0.73	0.51	0.46	1.00	0.02	0.67	1.00	1.00
#countries	29	22	22	21	28	28	21	21
Emerging								
Mean	0.58	0.12	0.29	0.86	0.05	0.57	0.87	0.96
#countries	27	24	24	28	28	28	28	28
LIC								
Mean	0.55	0.00	0.43	0.56	0.06	0.73	0.89	0.83
#countries	89	3	3	42	85	87	42	42
Total								
Mean	0.59	0.28	0.38	0.75	0.05	0.69	0.91	0.91
#countries	145	49	49	91	141	143	91	91

Table-1 (Continued)

Groups	G. Stock Market				H. International Financial Integration
	Stock market capitalization/gdp	Stock market total value traded/gdp	Stock market turnover ratio	No. of listed companies per 10k population	
Advanced					
Mean	0.90	0.79	0.77	0.43	4.40
#countries	29	29	29	29	20
Emerging					
Mean	0.82	0.53	0.61	0.24	1.03
#countries	28	28	28	28	20
LIC					
Mean	0.27	0.02	0.11	0.23	0.92
#countries	51	52	51	51	61
Total					
Mean	0.58	0.35	0.41	0.29	1.63
#countries	108	109	108	108	101

Table-1 (Continued)

Groups	I. Exchange Rate Classification (IMF)				J. Exchange Rate Classification (Ilzetzki, Reinhart, and Rogoff)				
	1	2	3	4	1	2	3	4	6
Advanced									
#countries	19	0	0	10	19	0	7	3	0
% countries	22	0	0	34	29	0	23	38	0
Emerging									
#countries	7	0	11	9	5	9	10	2	1
% countries	8	0	20	31	8	17	33	25	50
LIC									
#countries	60	4	44	10	41	45	13	3	1
% countries	70	100	80	34	63	83	43	38	50
Total									
#countries	86	4	55	29	65	54	30	8	2
% countries	100	100	100	100	100	100	100	100	100

Sources: International Financial Statistics (IFS) of IMF; Beck, Demirguc-Kunt, and Levine (2009),, "A New Database on Financial Development and Structure" IMF Structural reform (SR) database "Structural Reforms and Economic Performance in Advanced and Developing Countries" (2008), prepared by the Research Department of IMF; Dhungana Sandesh (2008),, "Capital Account Liberalization and Growth Volatility," Williams College, unpublished. Governance Indicators (2008), are taken from Kaufmann, Kraay, and Mastruzzi (2009). "Governance Matters VIII: Governance Indicators for 1996–2008" World Bank Policy Research June 2009. The index of Central Bank Independence and the first securities market index are taken from Arnone, Laurens, and Segalotto (2006).

Notes: Securities market index relates to securities markets and covers policies to develop domestic bond and equity markets, including (i) the creation of basic frameworks such as the auctioning of T-bills, or the establishment of a security commission; (ii) policies to further establish securities markets such as tax exemptions, introduction of medium- and long-term government bonds to establish a benchmark for the yield curve, or the introduction of a primary dealer system; (iii) policies to develop derivative markets or to create an institutional investor's base; and (iv) policies to permit access to the domestic stock market by nonresidents. Entry barriers/procompetition measures index measures competition restrictions, such as limits on branches and entry barriers in the banking sector, including licensing requirements or limits on foreign banks. Interest rate controls index covers interest rate controls, such as floors or ceilings.

Secondary Market for Government Securities

The secondary markets for government securities tend to be poorly developed in LICs. Panel D in Table 1 provides some evidence for this observation. For example, the index of securities market development presented in the last column attains only half of its average advanced country value in LICs.[15] The implication of poor securities market development is that central banks cannot conduct monetary policy through open market transactions in liquid secondary markets. Instead, monetary policy instruments tend to consist of purchases of Treasury bills in primary auctions (which effectively give the central bank control over the share of new Treasury issues that must be held by the public) and of the amounts and terms of credit extended by the central bank to the commercial banking system (rediscounts).[16]

Competition in the Banking Sector

Banking sectors in LICs tend to be only imperfectly competitive, partly because the banking industry is characterized by a small number of banks and by an important role for government-owned banks, but also because the industry faces weak competition from nonbank financial intermediaries. As shown in Panel E of Table 1, banking sectors in LICs on average exhibit both larger net interest margins and higher degrees of concentration than those in advanced and emerging economies. As shown in Panel A, the size of the nonbank financial sector is very small compared with those in advanced and emerging economies not only in absolute terms, but also relative to the size of the banking sector.

The relevance of this observation for monetary transmission concerns the connection between policy rates and market rates: when the banking system is imperfectly competitive, changes in policy interest rates (for example, the central bank's rediscount rate) may have weak effects on market rates, since imperfectly competitive banks may not pass on changes in policy rates. If so, changes in policy rates may largely affect banking spreads, rather than market rates.

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15 The index is drawn from the IMF structural reform database. It relates to securities markets and covers policies to develop domestic bond and equity markets, including (i) the creation of basic frameworks such as the auctioning of T-bills, or the establishment of a securities commission; (ii) policies to further establish securities markets such as tax exemptions, introduction of medium- and long-term government bonds to establish a benchmark for the yield curve, or the introduction of a primary dealer system; (iii) policies to develop derivative markets or to create an institutional investor base; and (iv) policies to permit access to the domestic stock market by nonresidents.

16 In contrast to advanced economies, discount credit is used very commonly as a monetary policy instrument in LICs. As a rough indicator, approximately three-quarters of our LIC sample of 109 countries report at least five years of monthly data on discount rates, and there is significant variation in discount rates over time. A simple variance decomposition exercise suggests that 95 percent of the variation in discount rates in our sample is within countries (as opposed to across countries). Buzeneca and Maino (2007) report that, while no advanced countries in the IMF's Information Systems for Instruments of Monetary Policy (ISIMP) database used discount credit as a monetary policy instrument, 69 percent of low- income countries did so.

Financial Repression

The flexibility of market rates may also be reduced by legal restrictions on the interest rates that banks can apply both to their liabilities and to their assets. This is one component of financial repression, a set of restrictive policies toward the financial system that was formerly quite common in developing countries. Since the late 1980s, financial liberalization has greatly reduced the incidence of financial repression among LICs. Nevertheless, as shown in Panel F of Table 1, while financial liberalization has been undertaken widely in LICs, this process is not complete.[17] Restrictions on the role of the market in setting bank loan rates remain somewhat more common in LICs on average than in advanced or emerging economies.

Maturity of Government Obligations

As documented in the "original sin" literature (see Eichengreen and Hausmann, 1999), governments in LICs are typically unable to issue long- term domestic currency-denominated bonds. The absence of long-term government bonds means that there is no observable market-based term structure. This implies more uncertainty about future short-term interest rates than would be the case with a well-developed term structure, since in the absence of long-term securities agents are unable to contract in the present for the interest rate that will prevail over the life of an asset and are forced to finance such assets by rolling over short-term loans at whatever interest rate prevails at the time.

In principle, the effects of the absence of long-term securities on monetary transmission are ambiguous. On the one hand, because the average maturity of financial contracts is shorter, it means that monetary policy can have a more significant short-run impact on the cash-flow positions of firms and households. On the other, because long-maturity assets are scarce, wealth effects operating through changes in the value of such assets are likely to be weaker (Kamin, Turner, and Van't dack, 1998).

Stock Market Size and Liquidity

Many LICs are characterized by the complete absence of a domestic stock market, or where such a market is present, by a small number of listed firms and minimal turnover in the market. Panel G of Table 1 indicates that stock market capitalization relative to GDP is significantly smaller in LICs than in either advanced or emerging economies, and both the ratio of value traded to GDP and the turnover ratio in the market are dramatically smaller in LICs than in the others. The implication is that the value of physical capital in place is not easily marked to market in LICs, and the illiquidity of physical capital may short- circuit the asset channel working through equity prices.

[17] Financial repression is measured by controls on interest rates, including whether the government directly controls interest rates or whether floors, ceilings or interest rate bands exist. The index is taken from the IMF structural reform database and is normalized between zero and one, with higher values indicating less financial repression and higher degrees of liberalization.

Efficiency of Real Estate Markets

The data on the functioning of real estate markets in LICs are notoriously difficult to obtain. Nevertheless, there is substantial indirect evidence that such markets are poorly developed and highly illiquid. Many LICs are characterized by poorly defined property rights, which inhibits the buying and selling of real estate. While property rights have many dimensions, at bottom they require a low risk of predation, either by the government or by other private agents. A poor institutional environment is likely to be associated with a high risk of predation, and thus with de facto weak property rights. As panel C in Table 1 indicates, in this respect LICs are far worse than advanced economies. The implication is that, like the market for shares in productive firms, the real estate market is also likely to be highly illiquid and market prices for real estate poorly defined. Again, the implication for monetary policy is that a potentially important channel for arbitrage is weakened, diminishing the power of the asset channel.

International Financial Integration

Panel H of Table 1 reports the ratio of the sum of gross external assets and liabilities (net of foreign exchange reserves on the asset side and of official borrowing on the liability side) to GDP, an indicator of de facto international financial integration. This indicator provides evidence that LICs are characterized by a significantly smaller degree of de facto integration with international capital markets than are advanced economies, and by a smaller degree of integration than emerging economies as well. This affects another important arbitrage margin: that between domestic and foreign financial assets. The implications of imperfect capital mobility for monetary transmission depend on the exchange rate regime. Under fixed exchange rates, the weakening of this arbitrage margin allows at least some degree of monetary autonomy, and thus allows the functioning of an interest rate channel. Under floating rates, it implies a smaller change in the exchange rate for a given change in the domestic interest rate, and thus weakens the exchange rate channel.

Exchange Rate Flexibility

The very presence of an exchange rate channel depends on the exchange rate regime adopted by the country. Here again, LICs tend to differ from advanced and emerging economies. As indicated in Table 1, whether classified by their official (de jure) announced regimes (Panel I), or by de facto exchange rate behavior (Panel J), LICs tend to restrict exchange rate flexibility to a much greater extent than do either advanced or emerging economies. This reduced exchange rate flexibility leaves relatively limited scope for an exchange rate channel.

Summary

The evidence presented above has important implications for the channels of monetary transmission in a "typical" LIC. First, the complete absence or poor development of domestic securities markets suggests that both the short-run and long-run interest rate channels should be weak. Second, small and illiquid markets for assets such as equities and real estate would tend to weaken the asset channel.

Third, in countries that are imperfectly integrated with international financial markets and tend to maintain relatively fixed exchange rates, the exchange rate channel would tend to be completely absent, or relatively weak. In general, therefore, the financial structure of LICs should lead us to expect the interest rate, asset, and exchange rate channels to be weak or nonexistent in such countries. By a process of elimination, the bank lending channel remains as the most viable general mode for monetary transmission in LICs.[18]

III. Financial Structure and Monetary Transmission

Although we argue on a priori grounds that the banking lending channel is likely to be relatively more important than the other channels, this does not necessarily imply that strong monetary transmission should be expected through the bank lending channel in LICs. A large empirical literature for advanced economies suggests that the strength of the bank lending channel depends on the specificities of the banking sector—in particular, the institutional environment in which it operates, its regulation, the degree of substitutability among different assets in bank portfolios and the degree of competition in the banking sector. The empirical literature has focused on some of these dimensions to identify the potential strength of a bank lending channel. This section provides a brief review of that literature to suggest what might be expected regarding the effectiveness of the bank lending channel in LICs.

The evidence on the strength of the bank lending channel in the United States is primarily based on variation across banks' characteristics. For example, Kashyap and Stein (2000) find that the impact of monetary policy on bank lending is stronger for banks with less liquid balance sheets (that is, banks with lower ratios of securities to assets), and that this pattern is largely attributable to smaller banks. The implication is that small banks with highly liquid balance sheets are unlikely to pass on changes in policy interest rates to their lending rates.

Cecchetti (1999) and Mihov (2001) provide some cross-country evidence from countries in the euro area, the United States, and Japan. They find that the strength of monetary transmission varies systematically across countries with differences in the size, concentration and health of the banking system, as well as with differences in the availability of primary capital market financing. Specifically, the bank lending channel is likely to be stronger in countries in which small banks are relatively more important, the banking systems are less healthy, and firms have little access to nonbank sources of finance.[19] Similarly, Angeloni and others (2003) summarize the evidence from a number of individual country studies from the euro area, and find that bank liquidity position seems to be an important determinant of the strength of the bank lending channel. However, they find less evidence that bank size and bank capital play significant roles. In a similar vein, Ehrmann and others (2001), in a comprehensive study of the structure of banking and financial markets in the euro area, find that the effect of monetary policy on the supply of bank loans is most dependent on the liquidity of individual banks, though the size of banks is not a significant determinant.

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18 The strength of this channel may be influenced by balance sheet effects on the cost and availability of bank credit—that is, by the operation of the balance sheet channel

19 Cecchetti (1999) traces these differences in financial structure to differences in countries' legal systems.

An important observation that emerges from this literature is that where banks opt to remain highly liquid, the bank lending channel tends to be weak. Since the level of portfolio liquidity is a decision variable for banks, the appropriate interpretation of this finding is that those characteristics of their environment that induce banks to hold high levels of liquidity also tend to be conducive to weakness in the bank lending channel. This is important for our purposes for two reasons. First, the evidence of the last section provides reason to suspect that the variation in the environment in which banks oper- ate between low- and higher-income countries may be substantially larger than that among higher-income countries themselves. Second, the banking sectors of many LICs indeed tend to maintain high levels of liquidity, compared with those of banks in higher-income countries.[20] If institutional environment and financial structure indeed matter for monetary transmission through bank lending, and if high levels of bank liquidity are the telltale sign of environmental characteristics that tend to weaken the bank lending channel, these two observations together imply that we should expect to find significant differences in the functioning of this channel when comparing LICs to higher-income economies. The next section takes up this issue.

IV. The Bank Lending Channel in LICs: Some Cross-Country Evidence

The central role of the bank lending channel in LICs implies that the strength and reliability of the monetary transmission mechanism in these countries depend critically on the effectiveness of this channel. However, as shown in the previous section, there is evidence that the strength of this channel differs from country to country, even among industrial countries, depending on the environment in which banks operate and on the structure of each country's banking system. Section II showed that in LICs banks tend to operate in an environment characterized by poor institutional development and limited competition. This makes the functioning of the bank lending channel potentially quite different in LICs from what is observed in advanced economies, implying that the strength and reliability of this channel cannot be taken for granted in LICs. Since Section II also indicated that the bank lending channel is likely to be the dominant channel for monetary transmission in LICs, weaknesses in the bank lending channel are likely to imply overall weakness in monetary transmission.

To get a sense of the empirical relevance of these issues, this section presents some cross-country evidence bearing on the effectiveness of various steps in the bank lending channel in countries at different income levels. Specifically, we examine broad cross-country differences in the links between central bank policy actions and bank lending rates by computing some simple correlations among the relevant financial variables in advanced, emerging, and low-income economies. We focus on the association between central bank policy rates and money market rates, as well as that between money market rates and bank lending rates. In doing so, we seek to unearth suggestive empirical regularities, rather than to identify specific causal relationships.

[20] See Mishra, Montiel, and Spilimbergo (2010).

Policy Rates and Money Market Rates

The first step of the transmission mechanism relates changes in policy rates to changes in money market rates. We therefore begin by looking at the correlation between policy rates and money market rates across alternative country groups.

Recall from footnote 16 that discount credit is used as a monetary policy instrument in the vast majority of LICs. Accordingly, we use the discount rate as a proxy for the policy rate. Consistent with our observation in Section II, liquid money markets are not common in LICs. Out of a total of 109 LICs in the sample used to develop the stylized facts in that section, only 29 report data on both discount rates and money market rates. Of the 109 LICs in our sample, 83 report discount rates, but only 45 report money market rates.

Since direct central bank lending to commercial banks is more often used as a policy instrument in LICs than in countries with more sophisticated financial systems, we would expect changes in discount rates to be more closely associated with changes in money market rates in LICs (where such markets exist) than in advanced and emerging economies. Table 3 reports statistics on the relationship between discount rates and money market rates in advanced, emerging, and low-income economies, where such rates are available.[21]

The second column of Table 2 reports the average contemporaneous correlations between changes in discount rates and changes in money market rates in all three types of economies. Despite the likelihood that the discount rate represents a better indicator of the monetary policy stance in the LIC context, this correlation actually turns out to be somewhat lower on average in LICs than in advanced and emerging economies. Columns 3 and 4 report the average short- and long-term correlations between the policy rate and money market rates. These correlations are calculated by estimating the equation $y_{it} = \alpha_i y_{it-1} + \beta_i y_{it-2} + \gamma_i x_{it} + \delta_i x_{it-1} + \eta_i x_{it-2} + \varepsilon_{it}$ (where y is change in the money market rate and x the change in the discount rate) for each country. The short-term effect reported in column 3 is the average estimated γ; the long-term effect reported in column 4 is calculated as the average $\hat{\gamma}_i + \hat{\delta}_i + \hat{\eta}_i / 1 - \hat{\alpha}_i - \hat{\beta}_i$. If interpreted causally, these results would suggest that an increase in the policy rate by 1 percentage point would be associated with a 0.82 percentage point increase in the money market rate in advanced economies within one month, but only with a 0.29 percentage point increase in LICs. In the long run, the increase in the policy rate would be fully transmitted to an increase in the money market rate in advanced economies, but only partially transmitted (0.40) in LICs. This suggests a much weaker link between the policy instrument and market rates in LICs, both in the short and in the long run.[22]

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21 Only countries with at least 60 observations are included in the sample. For simplicity we use the same specification for all countries. Similar results are obtained if we use different specifications, including different lag structures.

22 These results are not driven by outliers. Taking the medians rather than the means of the various income groups gives qualitatively similar results.

Money Market Rates and Bank Lending Rates

The second step in the bank lending channel is the link between the money market rate and bank lending rates. A necessary condition for the channel to be operative is that the lending rate charged by banks is responsive to the money market rate, where that rate exists. Forty-two LICs in our sample report data on money market and bank lending rates.[23] Table 3, which follows the same structure as Table 2, shows a strong contemporaneous correlation between money market rates and bank lending rates in advanced and emerging economies, but a much weaker correlation in LICs. The short-term partial correlation between money market rates and lending rates is also significantly weaker among LICs than among either advanced or emerging economies (column 3), and while differences in long-term effects are not as pronounced, they remain weaker in LICs. Most importantly, note that changes in money market rates explain a much smaller proportion of the variance in lending rates in LICs than in either advanced or emerging economies.

We consider these findings to be important, since they suggest that the links between the policy instrument controlled by central banks and the mechanism for transmission to the economy's IS curve that is likely to be most relevant in LICs may actually be relatively loose and unreliable.

Table 2. Correlation Between Changes in Discount Rate and Changes in Money Market Rate

	Contemporaneous Correlation	Short-Term Effect	Long-Term Effect	R-squared	Number of Countries
Advanced	0.28	0.82	0.95	0.32	25
Emerging	0.31	0.72	0.59	0.93	26
LICs	0.22	0.29	0.40	0.31	29

Note: The discount rate corresponds to IFS line 60 and the money market rate to IFS line 60b.
The data are monthly from January 1960 to December 2008, where available. The second through the fifth columns report the average of each variable for the number of countries reported in the last column.

Possible explanations, as alluded to before, are institutional deficiencies that discourage bank lending activity and/or noncompetitive behavior by banks. To explore these explanations, we first run panel regressions in which monthly changes in bank lending rates are regressed on changes in discount rates, a measure of bank concentration, and interaction terms between changes in discount rates and the index of bank concentration for our full sample of countries. The first column of Table 4 shows that 1 percentage point increase in the discount rate is associated on average with a contemporaneous

[23] Almost all the LICs in our sample report at least five years of data on bank lending rates.

0.31 increase in the lending rate. The second column of the table shows that the partial correlation between discount and lending rates indeed appears to be affected by the degree of bank concentration (this index is equal to one if the index of bank concentration is higher than the median and 0 otherwise). However, this result is not robust to the introduction of an index of transparency (column 3), our proxy for institutional quality.[24]

As shown in column (3), improved transparency increases the correlation of changes in policy rates with lending rates, suggesting that the institutional deficiencies that discourage bank lending may be more important than bank concentration in explaining the limited pass-through from policy rates to lending rates in LICs. However, the specification in column 4 shows that a dummy variable for LICs interacted with changes in the policy rate is highly significant in explaining the weak correlation between the policy rate and the lending rate in LICs, even after controlling for our measures of bank concentration and institutional quality. Thus, although bank concentration and transparency appear to be part of the story, other unidentified factors may also play a key role in explaining the difference between LICs and other countries.[25]

Table 3. Correlation Between Changes in Money Market Rate and Changes in Lending Rate

	Contemporaneous Correlation	Short-Term Effect	Long-Term Effect	R-squared	Number of Countries
Advanced	0.33	0.19	0.35	0.41	25
Emerging	0.35	0.38	0.61	0.65	27
LICs	0.18	0.09	0.29	0.16	42

Note: The lending rate corresponds to IFS line 60p and the money market rate to IFS line 60b.

The last three columns in Table 4 assess the robustness of these results. Column (5) reports regression results using the same specification as in column (4) but restricting the sample to observations in the period after 2000. This is done to allow for the possibility that the persistence of financial repression in earlier years may have affected our results. The results confirm that, even in the absence of pervasive financial repression, transparency and the "LIC dummy" continue to play a relevant role in explaining the link between the discount and lending rates. The same results hold when we drop high-inflation countries and emerging-market economies from the post-2000 sample. The motivation for doing so is that correlations between lending rates and policy rates may be contaminated by the large swings in nominal interest rates associated with inflation stabilization, or with stabilizing exchange rates in the face of speculative attacks (arising either indigenously or as contagion from crises in other emerging economies). Note particularly that both bank concentration and transparency are statistically significant in column (7), but they do not eliminate the significance of the LIC dummy.

[24] The index of transparency is from the World Bank.

[25] As suggested below, such factors may include limited central bank credibility and informal dollarization.

As a final robustness check, Table 5 restricts the sample to countries with flexible exchange rate regimes, to allow for the possibility that the weak relationship between policy rates and bank lending rates in LICs may in part reflect the greater prevalence of fixed exchange rates among those countries. As can be verified by a comparison of Tables 4 and 5, this does not seem to be the case. While the number of countries in the sample is reduced sharply in this case and some statistical precision is lost, the results in this table are qualitatively very similar to those of Table 4.

The cross-country evidence presented above should be interpreted with caution, mainly owing to the poor quality of data for LICs.[26] Nonetheless, the main message from the cross-country evidence is that there is indeed reason to suspect that bank concentration and weak institutional quality may adversely affect the strength of the link between policy rates and bank lending rates in LICs, raising questions about the strength of the first link in the bank lending channel (between policy rates and bank lending rates).[27]

Coupled with the suspicion that the small size of the formal financial sector would imply a weak effect of bank lending rates on aggregate demand, there are even stronger reasons to question the effectiveness of the bank lending channel in LICs and therefore the overall effectiveness of monetary transmission in those countries.

There is indeed a large VAR-based empirical literature examining the effects of monetary policy innovations (as measured through a variety of monetary policy variables including, but not limited to, policy interest rates) on aggregate demand (as indicated by the behavior of output and/or prices) in a large number of individual LICs. This literature does not restrict the specific channels through which monetary policy may affect aggregate demand. It broadly finds weak and imprecise effects of monetary policy on output and prices in such countries.[28] We consider our findings in this paper as offering an interpretation of those results: specifically, monetary policy innovations have weak effects on output and prices in LICs because the typical financial structure in LICs renders channels of monetary transmission other than the bank lending channel inoperative, while a poor institutional environment and high levels of bank concentration, possibly in conjunction with other factors, combine to make the bank lending channel both weak and unreliable.

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26 One complicating factor, for example, is the role of dollarization in developing countries. To the extent that a significant share of bank loans is denominated in foreign currency, the domestic-currency lending rates used in our tables may measure the true cost of bank loans with error. Since we would expect arbitrage by banks between foreign- and domestic-currency lending to weaken the link between policy rates and domestic-currency bank lending rates, the sign and significance of the LIC dummy may partly reflect the effects of dollarization. Unfortunately, we lack the cross-country data with which to test this hypothesis.

27 In addition to the LIC-specific factors emphasized in this section, the link between policy rates and bank lending rates may also be affected by factors that apply in other countries as well, such as the extent of central bank credibility. If altering lending rates is perceived by banks as costly, for example, and the central bank lacks credibility, then banks may be reluctant to alter their lending rates in response to changes in the policy rate, in the expectation that such a change may be reversed in the near future.

28 For a survey of this literature, see Mishra, Montiel, and, Spilimbergo (2011).

V. Policy Implications

As just noted, we interpret the evidence of the previous sections, as well as that of the broader VAR-based literature, as creating a strong presumption that in the financial environment that tends to characterize many LICs, monetary policy is likely to have both weak and unreliable effects on aggregate demand. If this is true, the implications for policy in such countries are far-reaching. In this section we review some of these implications, concerning the discretionary use of monetary policy for stabilization purposes, the desirability and design of inflation-targeting regimes, the choice between fixed or floating exchange rates, and the desirability of capital account restrictions.

Stabilization Policy

Consider a simple policy model, based on Blinder's (1998) adaptation of Brainard (1967). The structure of the economy is given by:

$$y=y_0 +am+ \varepsilon \qquad (3)$$

where y denotes aggregate demand, m is a monetary policy instrument, a is a parameter that captures the effect of monetary policy on aggregate demand, and e is a shock to aggregate demand. We assume that α is a random variable with $E(a) = \mu_\alpha$ and $Var(a) = \sigma_\alpha^2$. When monetary policy is "weak and uncertain," as suggested by our previous finding, μ_α is small and σ_α^2 is large. Similarly, ε is a random variable with $E(\varepsilon) = 0$ and $Var(\varepsilon) = \sigma^2$. We assume that a and ε are uncorrelated, so $E(a-\mu_\alpha)\varepsilon = 0$. The expected value of y is given by $E(y) = y_0 +\mu_\alpha m$ and its variance by $E(y-E(y))^2 = \sigma_\alpha^2 m^2 + \sigma^2$.

The central bank has to set monetary policy before it observes the realized values of a and ε. Its objective is to stabilize aggregate demand around a desired value y* —that is, to minimize $E(y-y^*)^2$. Using Equation (1), we can write the central bank's loss function as:

$$L(m) = E(y-y^*)^2=E\{y_0+am+\varepsilon-y^*)=E\{(y_0+am+\varepsilon)^2 -2y^*(y_0+am+\varepsilon)+y^{*2}\}= E(y_0+am+\varepsilon)^2-2y^*(y_0+\mu_\alpha m)y^{*2}. \qquad (4)$$

Minimizing Equation (4) with respect to m we can derive the optimal value of m with stochastic a, which we denote m^*_S :

$$m^*_S(y^*-y_0)/(\mu_\alpha+\sigma_\alpha^2/\mu_\alpha). \qquad (5)$$

Notice that if α is nonstochastic (that is, if it has a degenerate distribution around $E(a) = \mu_\alpha$, so that $\sigma_\alpha^2= 0$), meaning that the effects of monetary policy on aggregate demand are not uncertain, we would have

$$m^*_N = (y^*- y_0)/\mu_\alpha,$$

Table 4. Transmission Mechanisms and Bank Concentration

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
					After 2000	After 2000 + drop high inflation countries	After 2000 + drop emerging markets
Dependent variable: monthly changes in lending rate							
Change in discount rate	0.309***	2.935***	1.443	1.525	0.183**	0.022	0.574***
	[0.092]	[0.393]	[1.278]	[1.293]	[0.086]	[0.051]	[0.151]
Concentration Change in discount rate		-2.393***	-1.155	-1.21	0.037	0.349***	-0.381*
		[0.452]	[1.525]	[1.519]	[0.167]	[0.099]	[0.200]
Concentration		-0.938	-1.388	-1.31	-0.32	- 0.368	0.006
		[0.818]	[1.215]	[1.211]	[0.235]	[0.327]	[0.195]
Transparency Change in discount rate			0.642**	0.603*	0.149***	0.172***	0.232**
			[0.309]	[0.313]	[0.047]	[0.026]	[0.105]
LIC Change in discount rate				0.761***	0.228***	0.213***	0.413***
				[0.186]	[0.050]	[0.028]	[0.146]
Country fixed effects	X	X	X	X	X	X	X
Number of observations	33,296	14,480	9,650	9,650	3,806	2,988	1,970
Number of countries	140	116	67	67	51	40	29
R-squared	0.03	0.51	0.53	0.53	0.15	0.18	0.03

Note : *significant at 10 percent; ** significant at 5 percent; ***significant at 1 percent. Robust standard errors clustered by country in parentheses. The index of bank concentration is 1 if banks are highly concentrated. The of transparency is from Transparency International.

Table 5. Transmission Mechanisms and Bank Concentration: Flexible Exchange Rate Regimes

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
					After 2000	After 2000 + drop high inflation countries	After 2000 + drop emerging markets
Dependent variable: monthly changes in lending rate							
Change in discount rate	0.307***	3.199***	1.795*	1.792*	0.490**	0.423*	0.563
	[0.090]	[0.378]	[0.982]	[0.991]	[0.187]	[0.222]	[0.438]
Concentration x Change in discount rate		2.743***	2.284*	2.268*	0.551	0.419	1.083
		[0.434]	[1.198]	[1.210]	[0.362]	[0.430]	[0.981]
Concentration		0.324	0.101	0.096	0.364	0.224	0.227
		[0.588]	[0.743]	[0.745]	[0.352]	[0.545]	[0.446]
Transparency x Change in discount rate			1.121***	1.113***	0.259**	0.221***	0.431**
			[0.163]	[0.161]	[0.097]	[0.073]	[0.173]
LIC Change in discount rate				-0.297***	0.218**	0.169**	0.118
				[0.106]	[0.085]	[0.064]	[0.101]
Country fixed effects	X	X	X	X	X	X	X
Number of observations	13,682	5,163	3,360	3,360	1,274	1,094	639
Number of countries	140	116	67	67	51	19	13
R-squared	0.03	0.51	0.53	0.53	0.15	0.18	0.03

Note : *significant at 10 percent; ** significant at 5 percent; ***significant at 1 percent. Robust standard errors clustered by country in parentheses. The index of bank concentration is 1 if banks are highly concentrated. The of transparency is from Transparency International.

where m^*_N is the optimal value of m in the nonstochastic case. That is, monetary policy would be used actively to stabilize the economy by adjusting the monetary policy instrument so as to set $E(y) = y^*$. In this case, weaker monetary policy (smaller μ_α) implies more policy activism (larger m^*_N). When the effects of monetary policy are uncertain, however, optimal monetary policy is *less* activist, closing only part of the gap between $E(y)$ and the target y^*. This can be verified by noting that:

$$m^*_S / m^*_N = 1/1 + (\sigma_\alpha / \mu_\alpha) < 1: \quad (6)$$

The reason for this result is that when a is stochastic, higher values of m—more aggressive monetary policy—increase the *ex* ante variability of aggregate demand. This cost of activist policy has to be traded off against its benefit in the form of closing the gap between actual and desired aggregate demand. This tradeoff suggests less activist use of monetary policy the weaker monetary policy is (the smaller μ_α) and the more uncertain it is (the larger σ^2_α). To see the intuition, consider first the effect of smaller μ_α.

Note that we can express the monetary authority's loss function as:

$$E(y - y^*) = \sigma^2_\alpha m^2 + \sigma^2 + (y_0 + \mu_\alpha m - y^*)^2 \; : \quad (7)$$

This expression shows that the central bank's loss function can be expressed as the sum of the variance of y and the square of the gap between the expected and target values of y. Notice that changes in m play two roles in Equation (7): they affect the variance of y (the first term on the right-hand side of equation (7)) as well as the gap between the expected and target values of y (the third term on the right-hand side). The marginal benefit of increasing m after a reduction in μ_α is given by $2(y_0 + \mu_\alpha m - y^*)\mu_\alpha$, which captures the effect of higher m in reducing the larger negative gap between expected y and target y, that would be created by a reduction in μ_α. This marginal benefit depends on the size of the gap, which is decreasing in m. The marginal cost, on the other hand, is given by $2\sigma^2_\alpha m$, which captures the effect of higher m in increasing the variance of y, and is increasing in m. It is precisely because increases in m are subject to increasing marginal costs through their effects on the variance of y that it would not be optimal for the central bank to pursue such increases to the point where their marginal benefit is zero—that is, where they would fully eliminate the gap between the expected and targeted values of aggregate demand. The upshot is that weaker monetary policy encourages less activist policy when the effects of policy are uncertain. Similarly, for a given value of μ_α, an increase in σ^2_α increases the uncertainty penalty associated with each unit increase in the value of the monetary policy instrument (the first term on the right-hand side of equation (7)) and thereby also discourages monetary activism. In short, weak and uncertain monetary policy transmission calls for less activism in monetary policy.

Inflation Targeting

The adoption of formal inflation targeting involves the central bank putting its reputation on the line by making a public announcement of its objectives and being held accountable for achieving them. The desired result is for the private sector to form inflation expectations that are consistent with

the central bank's inflation target. Weak and uncertain monetary transmission undermines this objective in two ways. First, unreliable transmission is likely to undermine the effectiveness of public announcement and central bank accountability as a commitment device, because the probability that the central bank would miss its mark would create uncertainty as to whether it is trying to manipulate monetary policy or is genuinely missing the mark— that is, unreliable transmission gives plausible cover to the central bank for deviating from its announced intentions without being caught, which undermines the credibility of monetary policy ex ante. Second, even if the commitment device associated with the public announcement and central bank accountability is effective—that is, even if the central bank is expected to behave in accordance with its announced objective—its inability to reliably attain that objective in the presence of uncertain monetary transmission loosens the link between the central bank's announcement and the inflation outcome that the private sector would be led to expect, thereby reducing the benefits to be expected from adopting inflation targeting. The implication is that the adoption of inflation targeting is less desirable when monetary transmission is weak and uncertain.

Alternatively, if inflation targeting is to be adopted in a context in which monetary transmission is weak and unreliable, these characteristics of monetary transmission have implications for the optimal design of the IT regime. In particular, since the central bank would be less confident in hitting its target, avoiding the additional social loss associated with a loss of reputation would suggest lengthening the horizon over which the target is to be attained and widening the band within which the central bank commits itself to delivering actual inflation.

Exchange Rate Regimes

An important argument for floating exchange rates is that, when capital mobility is high, the trilemma implies that the adoption of fixed exchange rates involves the sacrifice of monetary autonomy. When a country is subject to asymmetric shocks, when domestic wages and prices are sticky, when fiscal policy is inflexible, and when it does not enjoy a migration safety valve, this sacrifice of monetary autonomy can be costly, because it deprives the economy of its only available stabilization policy tool. But the value of monetary autonomy in allowing the use of monetary policy to stabilize the economy in response to shocks that are asymmetric to those of a country's trading partners depends on the effectiveness of monetary policy as a stabilization policy instrument. If monetary policy is unreliable, so that the optimal policy involves restricting the exercise of monetary autonomy, the value of that autonomy is impaired and the case for floating exchange rates is thereby weakened.

The value of monetary autonomy can be interpreted as the reduction in the central bank's loss function that can be achieved by setting monetary policy optimally, compared with eschewing the use of monetary policy altogether. The latter can be derived by setting $m = 0$ in Equation (7), while the former is determined by setting $m = m^*_S$. The gain from monetary autonomy, therefore, given by $L(0)-L(m^*_S)$, is:

$$L(0)-L(m^*_S) = [\sigma^2 +(y_0-y^*)^2]-[\sigma_\alpha^2 m^{*2}_S+\sigma^2+(y_0+\mu_\alpha m^*_S- y^*)^2 :$$

After some algebra this can be written as:

$$L(0) - L(m^*_S) = (y_0 - y^{2*})^2 / (1 + (\sigma_a / \mu_\alpha)^2): \quad (8)$$

Notice that in the absence of uncertainty about monetary transmission ($\sigma_a = 0$), the gain from monetary autonomy would be given by $(y_0\text{-}y^*)^2$, since monetary autonomy would allow the entire gap between the actual and target levels of aggregate demand to be eliminated. Uncertainty about monetary transmission, however (sa40), reduces the value of monetary autonomy, and this loss of value is greater the greater the level of uncertainty and the weaker the effects of monetary policy.

Capital Account Restrictions

Similarly, suppose that a country places a high value on exchange rate verifiability, so that it judges a fixed exchange rate regime to be optimal. In this case, the optimality of capital account restrictions depends on the value placed on monetary autonomy. Capital account restrictions would tend to be viewed as more desirable the more prized is monetary autonomy. By a similar analysis to that just completed, the lower the effectiveness of monetary policy, therefore, the weaker the case for capital account restrictions.

Summary

The implications of the analysis in this section are that a setting in which domestic monetary policy is weak and unreliable is one in which the central bank should restrain activist impulses and should either postpone the adoption of policy regimes that raise the stakes associated with attaining publicly announced price level objectives or modify the design of those regimes to reflect the uncertainty about monetary policy effects. In addition, this setting strengthens—but by no means clinches—arguments favoring fixed exchange rates and unrestricted capital movements.

VI. Conclusions

It has long been recognized that, while the general outlines of monetary transmission share many common features across economies, specific channels of transmission are highly country-specific, and depend among other things on each economy's financial structure. There are significant differences across economies in financial structure, even among those at very advanced stages of financial development. These differences are even more pronounced between economies at advanced stages of financial development and those—such as many LICs—that have long suffered from financial repression and have only recently liberalized their financial systems. Unfortunately, research on mechanisms of monetary transmission has traditionally been focused on countries with advanced financial systems, leaving a significant gap in our understanding of monetary transmission for contexts that are more typical of LICs. This situation is particularly serious because monetary policy is often the only countercyclical policy tool available in such countries, making its effective operation a very high priority.

This paper has provided an overview of the reasons why we might expect monetary transmission to be different in an LIC context from what we are familiar with in industrial countries. We have argued that at lower levels of financial development, the transmission mechanism is likely to be dominated by the bank lending channel. Yet in many LICs a combination of institutional deficiencies that restrict bank lending, as well as high levels of bank concentration, lack of central bank credibility, and informal dollar- ization may make the transmission from central bank monetary policy actions to bank lending rates both weak and unreliable. We have pro- vided some simple cross-country evidence that is consistent with this proposition.

This situation has important policy implications. When domestic monetary policy is weak and unreliable activist policy is less desirable, and the adoption of policy regimes that raise the stakes associated with attaining publicly announced monetary objectives should be postponed or their design should be modified to take the uncertainty about monetary policy effects into account. In addition, weak and unreliable monetary transmission weakens arguments for floating exchange rates as well as for capital account restrictions under fixed exchange rates.

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Efficiency Analysis of Nationalized Commercial Banks Operating in Bangladesh: A DEA Approach

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Abstract

There are mainly three types of Deposit Money Banks (DMBs) operating in Bangladesh, such as; Nationalized Commercial Banks (NCBs), Private Commercial Banks (PCBs) and Foreign Commercial Banks (FCBs). Among the DMBs four NCBs have been selected to compare their performances. The main objective of this study is to find out most efficient banks and how much inefficient the other banks are compared to most efficient banks. In the present study Data Envelopment Analysis (DEA) technique has been applied which is nonparametric in nature. Input oriented three models namely, Constant Returns to Scale (CRS), Variable returns to Scale (VRS) and Cost Efficiency DEA have been applied. In each of the models attempts have been made to work out Technical Efficiency (TE), Scale Efficiency (SE), Allocative Efficiency (AE) and Cost Efficiency (CE) of each bank separately. After applying these measures Agrani bank has been found as the most efficient bank and Sonali bank has been found as the least efficient bank during the period of study.

Key Words: Technical Efficiency, Scale Efficiency, Allocative Efficiency, Nonparametric, Data Envelopment etc.
JEL Classification: B22, C44, C51, E23, G21

Section I: Introduction

The importance of commercial banks to the socioeconomic development of a country cannot be ignored, both from developed and developing countries banks have shown a significant role in the development and growth of economy by ensuring prudent allocation of resources as well as their efficient utilization (Raphael, G. 2013). The analysis of performance is a subjective as well as a relative concept. The study of performance is necessary for further improvement of an organization. There are different types of commercial banks operating in Bangladesh such as; Nationalized Commercial Banks (NCBs), Private Commercial Banks (PCBs) and Foreign Commercial Banks (FCBs). State owned banks are two types such as; Commercial banks and Specialized banks. Although specialized banks have profit oriented activities, these banks are operating in special areas and purposes. The present research is attempted to analyze efficiency performance of State owned commercial banks. Presently, there are four NCBs namely, Sonali Bank Limited (SBL), Janata Bank Limited (JBL), Agrani Bank Limited (ABL) and Rupali Bank Limited (RBL). NCBs have some social responsibilities but profit earning motive cannot be avoided at all. All four NCBs have the same view and working under the guidance of government. In a comparative study among different types of banks it has been shown that performance of FCBs and PCBs are much better than performance of NCBs (Hossain, M. A. 2010). Therefore it is essential to increase efficiencies of NCBs to run their business in a competitive environment like Bangladesh. Before taking any policy decision regarding performance of NCBs, it is necessary to study their individual efficiencies and comparative efficiencies among them. In view of that sense, NCBs has been chosen for study in the present research.

The initial DEA model, as originally presented in Charnes, Cooper and Rhodes (1978), built on the earlier work of Farrell (1957). According to their name this model is also known as CCR model. The resulting measure which is referred to as the "Farrell measure of efficiency," was regarded by Farrell as restricted to meaning "technical efficiency" or the amount of "waste" that can be eliminated without

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worsening any input or output. This was then distinguished by Farrell from "allocative" and "scale" efficiencies as adapted from the literature of economics.

Charnes et. al. (1978) developed and extended Farrell's idea into a non-parametric methodology known as Data Envelopment Analysis. Boles (1966) and Afriat (1972) suggested mathematical programming methods which could achieve the task although the method did not receive wide attention. There are only a few papers written on the cost efficiency of banks in the developing countries using the DEA method, such as Bhattacharya, Lovell and Sahay (1997) for India, Taylor, Thomsom, Thrall and Dharmapala (1997) for Mexico, Al-Faraj, Alidi and Bu-Bshait (1993) for Saudi Arabia.

There were some other studies relating to DEA techniques such as Saaid, Rosly, Ibrahim and Abdullah (2003) investigated efficiency regarding Sudanese Islamic banks. They showed that the Sudanese Islamic banks were not optimizing their inputs usage. They also showed that the inefficiency in the Sudanese Islamic banks could be more associated with inputs wasting rather than choosing the incorrect input combinations; In an empirical analysis of Islamic banks, Yudistira, D. (2004) showed that Islamic banks in a particular sample suffered from the global crisis in 1998-1999 but performed very well after the difficult periods; Primorac and Troscot (2005) dealt with the empirical measurement of relative technical efficiency of Croatian banks. It has been shown that the Malmquist index helps both central and commercial bank analysis to monitor trends within the banking sector; Hassan, Zubair (2005) provides an appraisal of some of the researches conducted in recent years for evaluating the recent year's efficiency of Islamic banks. He stated that stochastic frontier and data envelopment analysis models leave much to be desired and the conclusions they arrive at are of suspect validity for variety of reasons; Boshrabadi, Villano and Fleming (2006) reports on an analysis of technical efficiency and environment-technology gaps in wheat farming in Iran; Mattews and Ismail (2006) examined the technical efficiency and productivity of commercial banks in Malaysia. They found that foreign banks are more efficient than domestic banks. The main source of productivity growth is technical change rather than improvement in efficiency; Sufian (2006) showed an empirical evidence regarding efficiency of non-bank financial institutions of Malaysia by applying DEA method. His results suggest that the merchant banks have exhibited mean overall efficiency of 78.1% while the finance companies mean overall efficiency was 91.3%. Loukoianova (2008) analyzed the efficiency and profitability of Japanese banks. He used a non-parametric approach, the DEA, to analyze bank's cost and revenue efficiency. The results show that performance of Japanese banks has steadily improved since 2001, but there are significant differences within the banking sector, with regional banks being less cost and revenue efficient relative to both city and trust banks; Raphael, G. (2012) examined the relative efficiency of selected 20 commercial banks in Tanzania from 2008 to 2011. The findings were categorized based on two groups of commercial banks i.e., small and large groups. He observed that through make use of underutilized resources and reduce operating expenses most commercial banks will remain to be relative efficient in the productive frontier; In an efficiency analysis of commercial banks in East Africa, Raphael, G. (2013) concluded that inefficient utilization of input resources could be one of the reasons for the inefficiency of commercial banks in East Africa. There was a very limited study of efficiency analysis related to Bangladeshi commercial banks.

This article is divided into four sections. The first section includes the introduction and brief literature review. Second section explores the objectives and methodologies. The third section concentrates on empirical results. Finally, summary and conclusions have been incorporated in the fourth section.

Section II: Objectives and Methodologies

The broad objective of this study is to make a comparative analysis of performances of Nationalized Commercial Banks (NCBs) operating in Bangladesh. Specific objectives of this study are as follows:

- To measure the technical efficiency
- To measure the scale efficiency
- To measure the allocative efficiency
- To measure the cost efficiency and
- Compare efficiencies among selected banks

There are many input and output oriented measures of DEA methodology. In the present study five types of input oriented efficiency measures have been applied to test comparative performances of nationalized commercial banks. The measures are 1) Technical Efficiency under Constant Returns to Scale (TECRS) 2) Technical Efficiency under Variable Returns to Scale (TEVRS) 3) Scale Efficiency (SE) 4) Allocative Efficiency and 5) Cost Efficiency (CE).

Four nationalized banks have been selected to study comparative performances among them. The period of study has been covered from 2007 to 2011. The efficiency analysis has been performed among the banks for each individual period. In this study four inputs have been used to produce a single output for each bank i.e., DMUs. The inputs in our consideration are, Manpower Per Branch (MPB), deposits per branch (DPB), Investment Per Branch (IPB) and assets per branch (APB). On the other hand the one output in our consideration is Profit per Branch (PPB). The price information of selected input variables have also been considered to work out allocative efficiencies.

According to Farrell (1957) there are two types of broad measures of DEA, such as; Input-Oriented Measures and Output-Oriented Measures. The present study is attempted to apply input oriented measures. Let us consider there are M inputs and K outputs on each of N Decision Making Units (DMU's). In the present research DMUs will be considered as banks. If i-th DMU's inputs and outputs represented by xi and yi respectively, then X represents the input matrix of order MxN and Y represents the output matrix of order KxN.

The efficiency measurement (e_0) of a particular bank can be expressed as:

$$\text{Max } e_0 = \frac{\sum_{r=1}^{k} u_r y_{r0}}{\sum_{i=1}^{m} v_i x_{i0}} \qquad (2.1)$$

Subject to the constraints

$$\frac{\sum_{r=1}^{k} u_r y_{rj}}{\sum_{i=1}^{m} v_i x_{ij}} \leq 1;\ j = 1,2,\ldots,\ n$$

Where,

$$\frac{u_r}{\sum_{i=1}^{m} v_i x_{i0}} \succ \varepsilon; r = 1,\ldots, k$$

$$\frac{v_i}{\sum_{i=1}^{m} v_i x_{i0}} \succ \varepsilon; i = 1,\ldots,\ m$$

The model measures the relative performances of banks. There are n DMUs which are j = 1,2,……,n. In the model, $Y_{rj} > 0$ represent the rth output of jth bank and >0 represent the observed amount of ith input of jth bank; and represent the weights of rth output and ith input respectively; ε is a constant smaller than any positive valued real number for.

The CCR DEA model can be represented as a dual problem of maximization linear programming, such as;

$$\text{Min} \quad \theta_0 - \varepsilon \left[\sum_{i=1}^{m} s_i + \sum_{r=1}^{k} s_r \right]$$

Subject to the constraints

$$0 = \theta_0 x_{io} - \sum_{j=1}^{n} x_{ij}\lambda_j - s_i \text{ and } y_{ro} - \sum_{j=1}^{n} y_{rj}\lambda_j - s_r \qquad (2.2)$$

Where, θ_0 is the efficiency score of a particular DMU, λ_j is a vector of constants while s_i and s_r are nonnegative slacks associated with inputs and output inequalities respectively.

When all of DMU's are not operating in an optimal scale, CRS specification will result in measures of TE which are confounded by Scale Efficiencies (SE). The use of VRS specification will permit the calculation devoid of these scale effects. The CRS linear programming problem can be easily modified to account for VRS by adding the convexity constraint, $\sum_{j=1}^{n} \lambda_j = 1$ to equation 2.2.

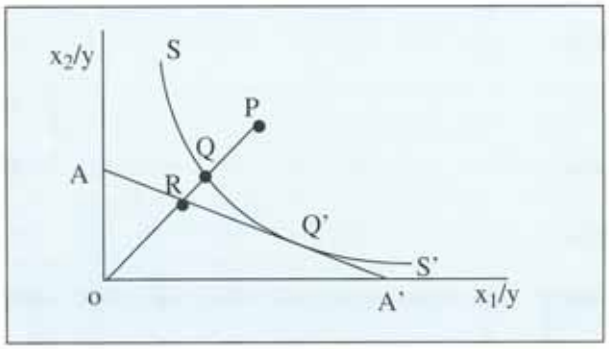
This approach forms a convex hull of intersecting planes which envelope the data points more tightly than the CRS conical hull and thus provides technical efficiency which may be different from those obtained using CRS model.

If a given firm uses quantities of inputs, defined by the point P to produce a unit of output, the technical inefficiency of that firm could be represented by the distance QP, which is the amount by which all inputs could be proportionally reduced without a reduction in output. This is usually expressed in percentage terms by the ratio $\frac{QP}{OP}$, which represents the percentage by which all inputs could be reduced. The technical efficiency (TE) of a firm is most commonly measured by the ratio

$$TE = \frac{OQ}{OP} \tag{2.3}$$

TE will take a value between 0 and 1, hence it provides an indicator of the degree of technical inefficiency of the firm. A value of 1 indicates the firm is fully technically efficient. For example, the point Q is technically efficient because it lies on the efficient isoquant.

Figure 2.1: Technical and Allocative Efficiencies



If the input price ratio, represented by the line AA' in figure 2.1 is known, allocative efficiency may also be calculated. The allocative efficiency (AE) of the firm operating at P is defined to be the ratio

$$AE = \frac{OR}{OQ} \tag{2.4}$$

Since the distance RQ represents the reduction in production costs that would occur if production were to occur at the allocatively (and technically) efficient point Q', instead of at the technically efficient, but allocatively inefficient point Q.

Section III: Empirical Results

3.1 Technical Efficiency under CRS

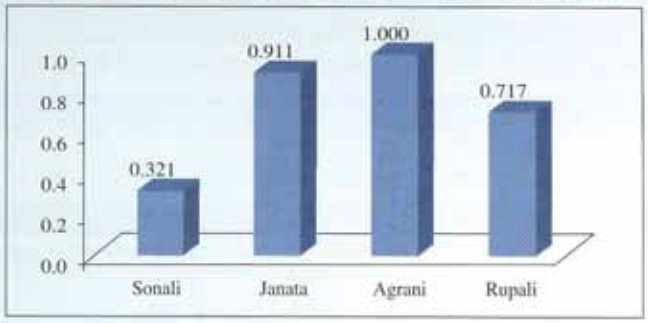
It is an input-oriented Constant Returns to Scale (CRS) Methodology based on cross-section data. In this research four inputs have been used to produce a single output for each type of banks i.e., DMUs. The inputs in our considerations are, Manpower Per Branch (MPB), deposit per branch (DPB), investment per branch (IPB) and assets per branch (APB). On the other hand the one output in our consideration is profit per branch (PPB). Inputs and output data for 5 years (2007-2011) have been analyzed separately.

Table 3.1: CRS Input Oriented DEA Results: 2011

DMUs	TECRS	λAgrani	λRupali	MPB Slack	DPB Slack	IPB Slack	APB Slack
Sonali	0.542	0.499	0.276	0.000	38.232	0.000	36.078
Janata	0.986	0.932	0.371	0.000	63.841	0.000	23.887
Agrani	1.000	1.000	---	0.000	0.000	0.000	0.000
Rupali	1.000	1.000	---	0.000	0.000	0.000	0.000
Mean	**0.882**	**---**	**---**	**0.000**	**25.518**	**0.000**	**14.991**

The table 3.1 shows that Agrani and Rupali are the full efficient banks whereas, Sonali is the least efficient bank among NCBs in 2011 under constant returns to scale. It is observed that Agrani and Rupali bank are the peer of Sonali and Janata bank. The table 3.1 also shows that efficiencies of Sonali bank is lying below the mean efficiency and efficiencies of other banks lying above the mean efficiency level. Efficiency measures means that Sonali and Janata bank are using more inputs to produce same level of output compared to Agrani and Rupali bank in 2011.

Figure 3.1: Mean TE of Last 5 Years Under CRS



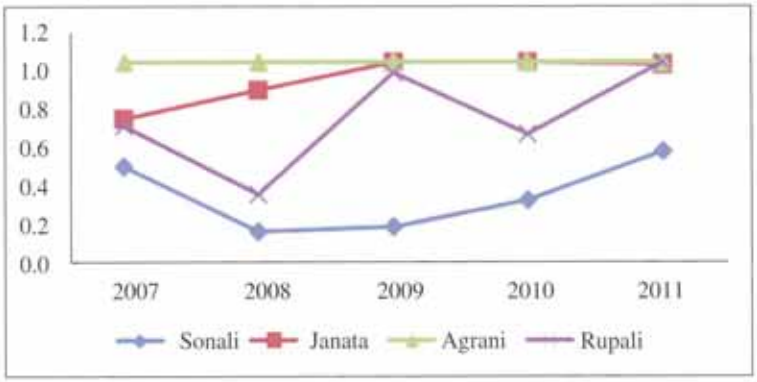
Using the DEA, it is observed that mean of the mean technical efficiency under CRS over the period under study is 73.7% (table 3.2). This implies that there is sufficient room for improvements in technical efficiency of NCBs. Table 3.2 and figure 3.1 shows that mean technical efficiency for the Agrani bank is the highest (100.0%) and for Sonali bank is the lowest (32.1%) during 2007-2011.

The figure 3.2 shows that TE for Agrani bank remains maximum and TE for Sonali bank remains minimum throughout the period of study.

Table 3.2: Mean Technical Efficiency under CRS

DMUs	2007	2008	2009	2010	2011	Mean
Sonali	0.470	0.134	0.161	0.296	0.542	0.321
Janata	0.711	0.859	1.000	1.000	0.986	0.911
Agrani	1.000	1.000	1.000	1.000	1.000	1.000
Rupali	0.677	0.328	0.944	0.635	1.000	0.717
Mean	**0.715**	**0.580**	**0.776**	**0.733**	**0.882**	**0.737**

Figure 3.2: Period and Bank-wise TE under CRS



3.2 Technical Efficiency under VRS

In the previous model it has been found technical efficiencies by considering Constant Returns to Scale (CRS). An attempt has been made to work out technical efficiencies in the present section by considering Variable Returns to Scale (VRS). This is another input-oriented DEA analysis using same output and inputs used in case of CRS. The VRS and CRS input-oriented DEA results for the year 2011 are listed in table 3.3 It has been observed that mean technical efficiency for all DMUs is 90.7% under VRS and 88.2% under CRS in 2011. The Janata, Agrani and Rupali banks are found as the efficient banks under VRS and Agrani and Rupali are found as efficient bank under CRS. On the other hand, Sonali bank has been found as the inefficient bank both in CRS and VRS in 2011.

Table 3.3: VRS Input Oriented DEA Results: 2011

Banks	CRSTE	VRSTE	SE	Scale
Sonali	0.542	0.630	0.860	irs
Janata	0.986	1.000	0.986	drs
Agrani	1.000	1.000	1.000	---
Rupali	1.000	1.000	1.000	---
Mean	**0.882**	**0.907**	**0.962**	

It is also observed that Agrani and Rupali bank are the most scale efficient and Sonali bank is the least scale efficient. The scale inefficiencies for Sonali and Janata are 14.0% and 1.4% respectively.

3.3 Allocative and Cost Efficiency

This is a CRS cost efficiency analysis using the four inputs and one output along with related cost data. In this case, the input and output variables remain same as in previous sections. In the model of discussion allocative efficiencies and cost efficiencies have been worked out for each bank in addition of technical efficiencies. The table 3.4 shows that, Agrani bank is the most efficient bank in terms of AE and CE in 2011. On the other hand Sonali bank has been found as the least cost efficient in 2011.

Table 3.4: CRS Cost Efficiency DEA Results: 2011

DMUs	TECRS	AE	CE
Sonali	0.542	0.779	0.433
Janata	0.986	0.863	0.851
Agrani	1.000	1.000	1.000
Rupali	1.000	0.583	0.583
Mean	**0.882**	**0.806**	**0.714**

After analyzing every year from 2007 to 2011, it has been observed that Agrani bank is found as the most efficient in terms AE and CE but Sonali bank has been found as the least efficient under the same measures.

3.4 Overall Performance in Last 5 Years

The table 3.5 shows the mean TECRS, TEVRS, SE, AE and CE of last 5 years. From the table it has been observed that Agrani bank is found as the full efficient and Sonali bank has been found as the least efficient in terms of TECRS, TEVRS, SE, AE and CE throughout the period of study. From the figure 3.3 it is observed that the mean efficiencies of Sonali, Janata, Agrani and Rupali bank are 49.9%, 90.7%, 100.0% and 79.2% respectively, which means that Sonali, Janata and Rupali bank are using 50.1 %, 9.3% and 20.8% more inputs compared to Agrani bank to produce same level of outputs. The figure 3.4 shows that all types of efficiencies are maximum in case of Agrani bank and the same measures are minimum for Sonali bank.

Table 3.5: Measure-wise Efficiencies in Last 5 years

Banks	TECRS	TEVRS	SE	AE	CE	Mean
Sonali	0.321	0.534	0.577	0.806	0.257	0.499
Janata	0.911	0.951	0.958	0.898	0.817	0.907
Agrani	1.000	1.000	1.000	1.000	1.000	1.000
Rupali	0.717	1.000	0.717	0.811	0.557	0.760
Mean	**0.737**	**0.871**	**0.813**	**0.879**	**0.658**	**0.792**

The average efficiency of all measures for each year has been listed in table 3.6. and also shown in figure 3.5. The table shows that mean efficiency level remains maximum for Agrani bank and remains minimum for Sonali bank throughout the period of study.

Table 3.6: Period-wise Efficiencies in Last 5 years

Banks	2007	2008	2009	2010	2011	Mean
Sonali	0.611	0.361	0.403	0.471	0.649	0.499
Janata	0.796	0.877	0.984	0.941	0.937	0.907
Agrani	1.000	1.000	1.000	1.000	1.000	1.000
Rupali	0.772	0.589	0.905	0.703	0.833	0.760
Mean	**0.795**	**0.707**	**0.823**	**0.779**	**0.855**	**0.792**

Figure 3.3: Mean of TE, SE, AE and CE of Last 5 Years

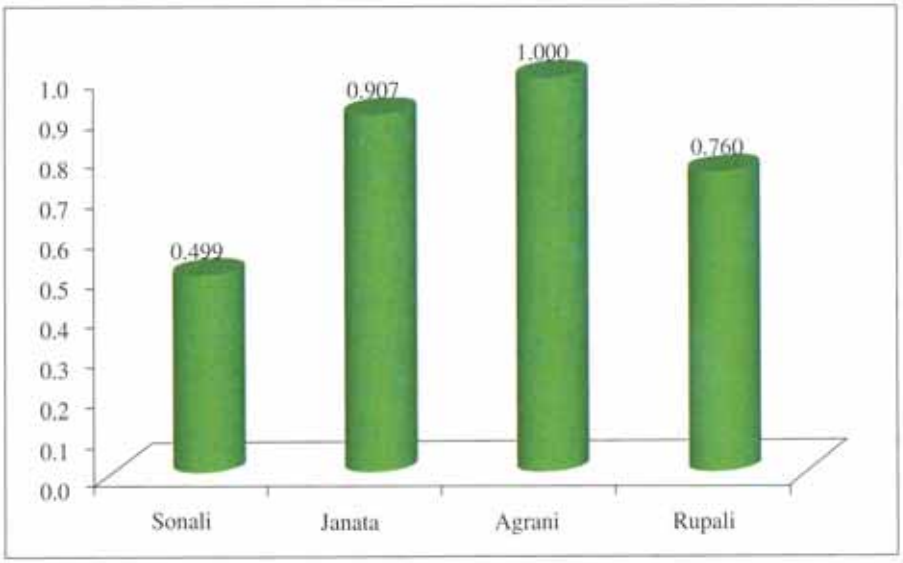


Figure 3.4: Measure and Bank-wise TE of Last 5 Years

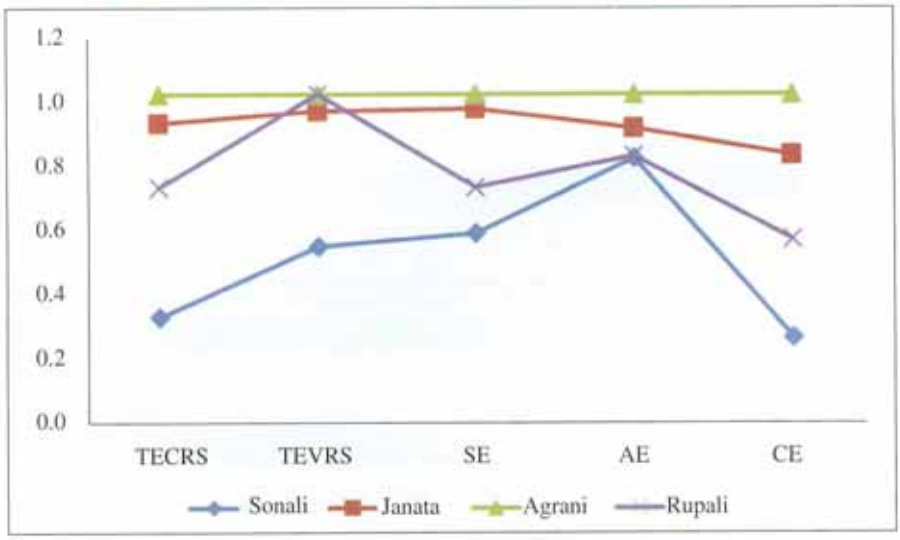
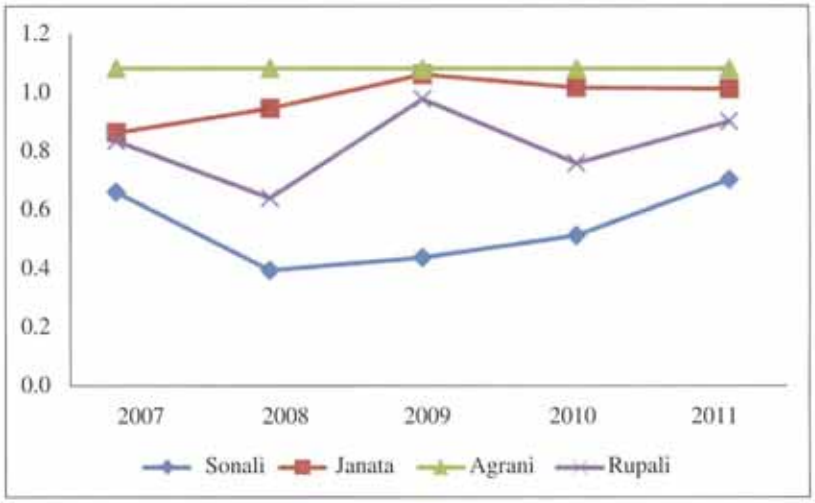


Figure 3.5: Period and Bank-wise Efficiencies (Mean of All Measures)



The results of table 3.5 could be validated by significant at the 5% level (2-tailed). The null hypothesis is that the rank correlation co-efficient between two efficient variables is zero. The empirical results of table 3.7 indicate that there is a satisfactory relationship among different efficiency measures. It is suggested that the various measures of banking efficiencies are satisfactorily associated with each other.

Table 3.7: Significance Test of Spearman's Correlation Coefficient among Efficiency Measures

	TECRS	TEVRS	SE	AE	CE
TECRS	1.000	---	---	---	---
TEVRS	0.759* (0.000)	1.000	---	---	---
SE	0.974* (0.000)	0.615* (0.004)	1.000	---	---
AE	0.500* (0.024)	0.398 (0.082)	0.458* (0.042)	1.000	---
CE	0.924* (0.000)	0.726* (0.000)	0.895* (0.000)	0695* (0.001)	1.000

**Significant at 5% level of significance*

Section IV: Summary and Conclusions

Five different measures have been applied in each of NCBs separately. In each of the measures it is attempted to work out efficiency performance of each bank separately. After analyzing performances of NCBs from 2007 to 2011 it is observed that Agrani bank has been found as the most efficient bank and Sonali bank has been found as least efficient bank in consideration of TECRS,

TEVRS, SE, AE and CE. Further analysis is needed to find out the reasons of inefficiencies of Sonali bank.

It is recommended that nationalized commercial banks specially, Sonali bank should minimize the use of input resources while maintaining the same level of output compared to other banks. By improving handling of operating expenses, advances, capital and by boosting banking investment operation, the less efficient banks can successfully endorse resource utilization efficiency. However the results of the analysis have important implications for management of the banks, policy makers and bank regulators in Bangladesh.

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Global Income Inequality by the Numbers: In History and Now-an Overview

Branko Milanovic*

Abstract

The paper presents an overview of calculations of global inequality, recently and over the long-run as well as main controversies and political and philosophical implications of the findings. It focuses in particular on the winners and losers of the most recent episode of globalization, from 1988 to 2008. It suggests that the period might have witnessed the first decline in global inequality between world citizens since the Industrial Revolution. The decline however can be sustained only if countries' mean incomes continue to converge (as they have been doing during the past ten years) and if internal (within- country) inequalities, which are already high, are kept in check. Mean-income convergence would also reduce the huge "citizenship premium" that is enjoyed today by the citizens of rich countries.

JEL classification: D31.
Key words: globalization, global inequality, citizenship premium. Number of words: about 8,700.
Sector board: social protection.

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When we think of income inequality, our first reaction is to think of it within the borders of a country. This is quite understandable for a world where the nation-state is very important in determining one's income level, access to a number of benefits, from pensions to free health care, and where by far the dominant way in which political life is organized is at the level of a country. However, in the era of globalization another way to look at inequality between individuals is to go beyond the confines of a nation-state, and to look at inequality between all individuals in the world. Once we do so, many of the things about inequalities in general that we believe or that we think we know change; it is like going from a two-dimensional flat world to a three-dimensional one.

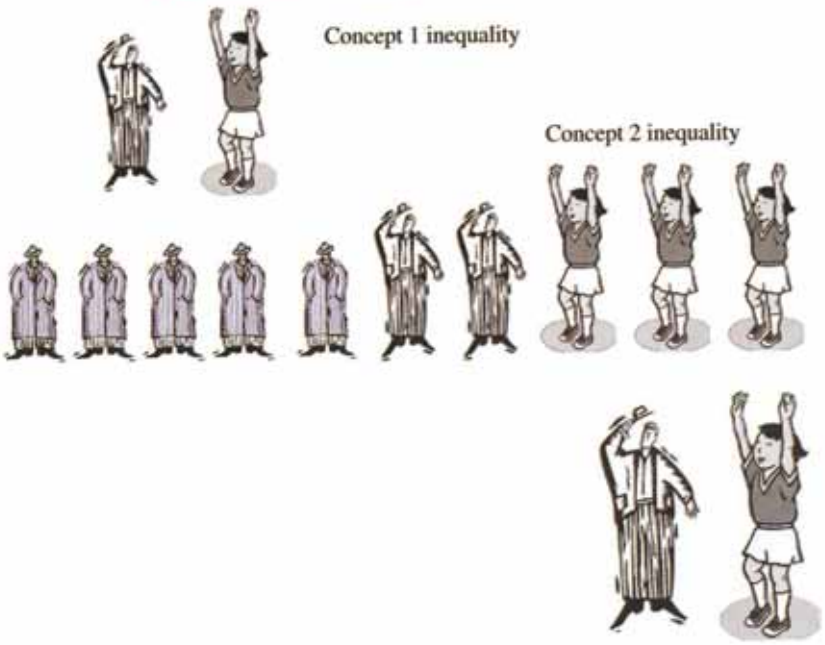
As the world becomes more integrated the global dimension of inequality is likely to become increasingly relevant. This is for at least two reasons: because of much greater movement of factors of production across borders, and because of greater influence of other people's (foreigners') standard of living and way of life on one's perceived income position and aspirations. Greater movement of capital, goods, technology and ideas from one end of the globe to another implies greater connectivity with people who are not one's compatriots, and greater dependence on other nations for generation of one's income. Movements of labor which illustrate this interdependence in a most obvious fashion are still less important than movements of capital, but they are increasing. The knowledge of how other people live and how much money they make influences strongly our perception of own income and position in the income pyramid. An imaginary community of world citizens is thus gradually built. And once this is done, comparisons of actual incomes and welfare between different members of that imaginary community acquire importance. This is why global inequality, even if not as relevant and important for an average individual as inequality within her political community (nation state) will gain in importance. Once we compare ourselves with people from other parts of the world, we are indeed interested in global income distribution. Global inequality begins to matter.

1. Three concepts of inequality and how they evolved over the past sixty years

When we talk about inequality that transcends national borders, we really often have in mind not one but three different concepts—even when we are not fully aware of it. I am going to articulate these three concepts.

The first concept of inequality (let's call it Inequality 1) is focused on inequality between nations of the world. It is an inequality statistic calculated across GDPs or mean incomes obtained from household surveys of all countries in the world, without population-weighting.

Figure 1 Three concepts of inequality define



To show how this is done, consider the three individuals in the top row of Figure 1: the height of each person represents the GDP or mean income of his or her country. Somebody from a poor country would be represented as a short person, somebody from a middle-income country as a person of medium height, and somebody from a rich country as a very tall person. When we calculate this concept of inequality, we take all countries with their mean incomes –we have some 150 countries in the world with such data- and calculate the Gini coefficient.[1] China and Luxembourg have the same importance, because we do not take population sizes into account. Every country counts the same, somewhat like in the UN General Assembly.

Consider now the second row of the figure which would help us define Concept 2 inequality or Inequality 2. There, individuals from poor countries are all equally short as before and those from rich countries all equally tall, but the difference lies in the fact that countries' population sizes are now taken into account. We do exactly the same as we did in Inequality 1, but now China and Luxemburg (or any other country) enter the calculation with their populations. In Figure 1, the poor country is the most populous (5 individuals out of total of 10 displayed there), and the middle- income country, the least populous (2 individuals). Introducing population is very important. As we shall see in the next section, during the past 25 years, the movements in Concept 1 and Concept 2 inequalities were very different. Recall, however, that in both cases the calculation takes into account not actual incomes of individuals, but country averages.

[1] Gini coefficient is a statistical measure of inequality which takes its name from the Italian statistician and economist Corrado Gini. The Gini index is the most frequently used measure of inequality, ranging from 0 – when everybody has the same income - to 1, or 100 (expressed as a percentage or an index), when one person gets the entire income of a city (province, nation, world)—whatever is the relevant population over which we calculate inequality.

nequality 3 is the global inequality, which is the most important concept for those interested in the world as composed of individuals, not nations. Unlike the first two concepts, this one is individual-based: each person, regardless of her country, enters in the calculation with her actual income. In Figure 1, this is represented by the different heights of individuals who belong to the same country. Not all Americans have the average income of the United States, nor do all Chinese have the average income of China. And indeed in Figure 1, the poorest person is from the middle-income country, while her compatriot is the second richest (the second tallest) in our group of ten individuals.

But moving from Concept 2 to Concept 3 inequality is not easy. The chief difficulty comes from the fact that to calculate the latter we need access to household surveys with data on individual incomes or consumption. They have to be measured using the same or similar methodology, and need to include as many countries of the world as possible. Perhaps at least 120-130 surveys are needed in order to cover more than 90 percent of the world population and account for 95 or more percent of world income.[2] Ideally of course we would like to have surveys from all the countries in the world. This is a very hard requirement. There are still quite a few countries, mostly in Africa, where household surveys are not regularly conducted and where methodologies change, rather brusquely, from one survey to another, thus rendering comparisons difficult.

Because the calculation of global inequality relies on household surveys, we cannot calculate Inequality 3 with much precision for the period before the mid- or late-1980s. There are simply no household surveys available for too many parts of the world. The first available Chinese household surveys are from 1982, the first usable surveys from the former Soviet Union are from

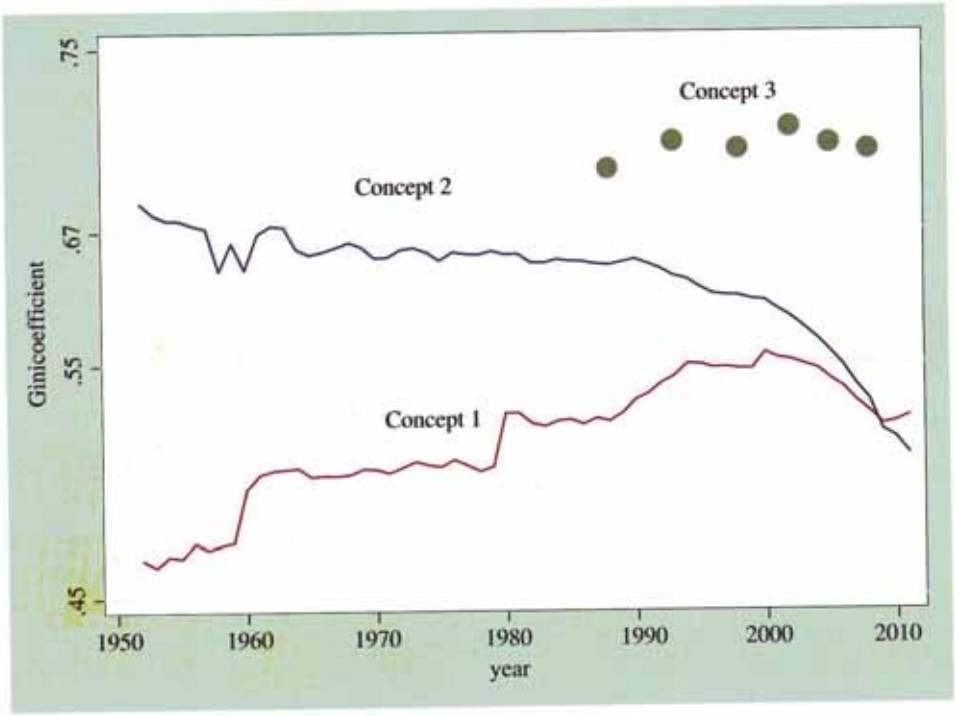
1988, and for many Sub-Saharan African countries, the earliest household surveys date from the mid-1980s. Thus, for the past, we have to rely on much more tentative data, where countries' income distributions are only approximated, using various more or less reliable methods. This is particularly so if we wish to study global inequality in the long-run, covering the 19th century as well—a topic which I will discuss in Section 3 below.

Figure 2 displays the movements of the three types of inequalities after the Second World War. The Gini coefficient is on the vertical axis. Inequality 1 was stable from 1960 to 1980. This means that there was no systematically faster or slower growth of poor or rich countries. Neither were poor catching on with the rich, nor were the two groups growing further apart. Divergence started only at the beginning of globalization, around 1980, and went on until the turn of the century. These two decades were very bad as far as convergence, or catching up by poor countries, is concerned: rich countries grew, on average, faster than poor countries. However China and India,

[2] The coverage is always greater for total world income than population because countries that do not have household surveys are generally poor countries whose importance in global output is small.

which are the huge success cases of that period and the two most populous countries in the world, do not enter into calculation of Inequality 1 with greater weights than any other country.

Figure 2. International and global inequality, 1952-2011: "The mother of all inequality disputes"



Let us now consider further Figure 2. Why is it called "the mother of all inequality disputes"? To see what the dispute is about, consider the difference in the movements of Inequality 1 and Inequality 2. While the first, as we just saw, rose during the globalization era, the second declined, at times even dramatically. Measured by Inequality 2, the world has certainly become a much better ("more convergent" or more equal) place precisely during the same period. Thus, those who desire to emphasize the unevenness of globalization tend to focus on growing inter-country gaps, not taking into account sizes of population, and prefer Inequality 1. Those who, on the contrary, wish to focus on positive aspects of globalization tend to favor Concept 2, and to point to the indubitable successes of China and India. In effect, to grasp intuitively why and how Concept 2 inequality declined, we need just to recall that in these calculations, China counts a lot because of its large population size. And China, starting in the 1980s from an extremely low level of income, has during the past three decades grown very fast, converging on the rich world. Until recently, it was China alone that had been preventing a rise in global inequality as measured by Concept 2. But now it has "support" from India which is also registering high rates of growth, and is also starting from a very low baseline. High rates of growth of these two countries are thus the major factor underlying the downward trend of Inequality 2.

Inequality 3 can be calculated, as mentioned before, only from the mid-1980s because we do not have household surveys going further back in time. Figure 2 shows that Inequality 3 is higher than Inequality 2. This is true by definition because in Inequality 3 people enter the calculations with their actual incomes, not with country averages. A quick glance at Figure 1 shows that the variability of heights is greater in the third row than in the second. Averaging-out reduces measured inequality.

To calculate "true" global inequality or Concept 3 inequality, we have to adjust people's incomes with the price levels they face and which, of course, differ between countries. We are interested in real welfare of people and those living in "cheaper" countries will get a boost in their incomes compared to what they make in nominal dollar terms. The currency we use is international (or "PPP" for purchasing power parity) dollar with which, in principle, one can buy the same amount of goods and services in any country of the world. Indeed, if we were not to adjust for the differences in price levels, and were to use nominal dollars, global inequality would have been even higher. This is because price levels tend to be lower in poorer countries, and income of people living in poorer countries thus gets a significant "boost" when we use PPP dollars.

Often, a key issue of concern regarding global inequality is not only its level, but its trend: has it been going up or down during the globalization era? Global inequality is calculated at approximately five-year intervals, from 1988 (the first dot on the left) to 2008 (the dot on the right). If we compare this last dot with a couple of dots for the earlier years, we see something that may be historically important: perhaps for the first time since the Industrial Revolution, there may be a decline in global inequality.[3] Between 2002 and 2008, global Gini decreased by 1.4 points. We must not rush to conclude that what we see in the most recent years represents a real or irreversible decline, or a new trend, since we do not know if the decline of global inequality will continue in the next decades. It is so far just a tiny drop, a kink in the trend, but is indeed a hopeful sign. For the first time in almost two hundred years—after a long period during which global inequality rose and then reached a very high plateau—it may be setting onto a downward path.

The main reason for this break in the previous trend is what also underlies the decrease in Concept 2 inequality: fast growth of relatively poor and very populous countries, most notably China and India. Their growth, reflected in the rising real incomes of their populations, has not only curbed the rise in global inequality, but pushed it slightly down. China's and India's roles stand in marked contrast to the two other factors that influence global inequality and which have both been clearly pro-inequality. The first is the divergence of countries' mean incomes which lasted from around 1980 to 2000; the second were rising within-national inequalities in many countries. The catching-up of poor and large countries has been the sole factor offsetting these upward pressures. But it has been such a strong factor that it has either kept global inequality from rising or, more recently with the acceleration of Indian growth, reduced it.

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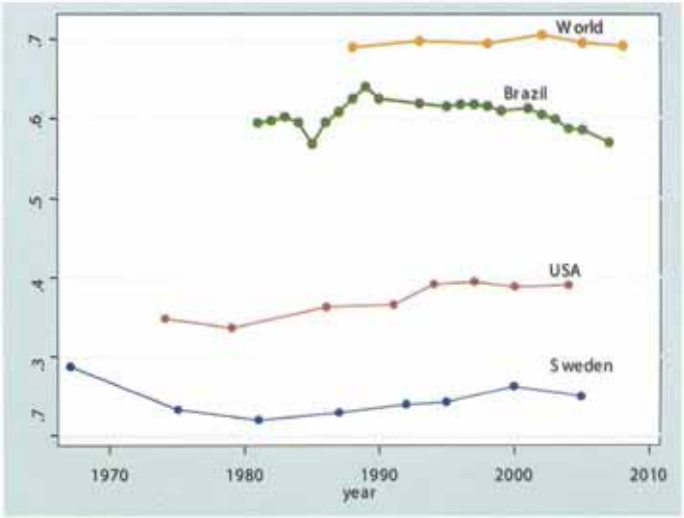
[3] Our knowledge of the long-run evolution of global inequality is indeed very tentative, as far as its exact levels are concerned, but very clear as far as broad tendencies since the mid-19th century: the Industrial Revolution, by creating a massive divergence between the rich Western countries and the rest of the world, has pushed global inequality up (see also Section 3 below).

What can we say about the level of global inequality? What does the Gini of about 70, which is the value of global inequality (see Figure 2), mean? One way to look at it is to take the whole income of the world and divide it into two halves: the richest 8% will take one-half and the other 92% of the population will take another half. So, it is a 92-8 world. Applying the same type of division to the US income, the numbers are 78 and 22. Or using Germany, the numbers are 71 and 29. Another way to look at it is to compare what percentage of world population, ranked from the poorest to the richest, is needed to get to the cumulative one-fifths of global income. Three quarters of (the poorer) world population are needed to get to the first 1/5th of total income, but only 1.7% of those at the top suffice to get to the last one-fifth.

Global inequality is much greater than inequality within any individual country. In Figure 3, global Gini of 70 is shown together with the Ginis for several countries. Global inequality is substantially greater than inequality in Brazil, a country that is often held, despite the recent improvements under the Lula presidency, as an exemplar of excessive inequality. And it is almost twice as great as inequality in the United States.[4]

Figure 3. Global Gini coefficient compared to the Ginis of selected countries



How confident are we that these numbers truly reflect what is happening to inequality among world citizens? The global inequality numbers come from calculations done across representative national surveys which monitor incomes or consumption of households. About 120 such surveys stand behind each of the six dots shown in Figures 2 and 3. These 120 surveys include actual incomes or consumption levels for about 10 million people in the world. This is about 1.5% of the current world population, not a negligible number, and in principle, sufficiently

4 The vertical axis in Figure 3 shows Gini coefficient in its "natural" values, i.e., not in percentages. Thus a Gini of 0.7 displayed there is the same as a Gini of 70. For simplicity, we use the second approach throughout the paper.

representative for the world as a whole even if recently there has been an apparent greater reluctance of the rich to participate in national household surveys. This in turn likely imparts a downward bias to national and perhaps to global inequality estimates.[5]

Table 1 shows the coverage of world population by household surveys. The second row from the bottom shows the overall coverage which was in all years but one greater than 90%. This is quite good, but should not make us forget that the countries that are omitted because they do not conduct household surveys are not a random draw from among all countries in the world but are all poor countries such as Afghanistan, Sudan, Congo, Somalia, Eritrea, etc. This is reflected in substantially lower population and income coverage of Africa. While the population coverage of other continents never falls below 92 percent, African coverage at its peak is 78 percent (see Table 1). And, in a worrisome development, the number and availability of household surveys in Africa is currently less than five or ten years ago. If we could include all of the omitted countries, global inequality would increase. In other words, what we calculate here, the Gini of about 70, is a lower bound to global inequality, simply because we do not have data from many of the poorest countries. Thus both the decreasing participation of rich individuals in national surveys, and the fact that countries that do not have surveys are overwhelmingly poor, bias the global inequality numbers down.

Table 1. Population coverage by household surveys, 1988-2008 (in percent)

	1988	1993	1998	2002	2005	2008
Africa	48	76	67	77	78	75
Asia	93	95	94	96	94	98
Latin America and the Caribbean	87	92	93	96	96	95
Post-communist countries	99	95	100	97	93	92
Rich world (Western Europe, North America and Oceania)	92	95	97	99	99	97
World	*87*	*92*	*92*	*94*	*93*	*94*
Number of countries with household surveys	*103*	*122*	*124*	*122*	*122*	*116*

Note: Post-communist countries include Eastern European countries (many of which are members of the EU), and former Soviet republics. This is not an ideal classification, and in the future it may have to be changed.

[5] The effects of non-participation in surveys on measured inequality is by definition difficult to estimate since income of people who refuse to participate is not known. It is only indirectly (e.g., by looking at the geographical distributions of refusals as in Korinek, Mistiaen and Ravallion, 2005) that we can conclude that it is the rich who comply less. The difficulty of figuring out the effects of rich's non-participation exists despite the intuition that it must underestimate actual inequality. In a model proposed by Angus Deaton (2005), where compliance decreases with income following a Pareto-like function, standard deviation of income distribution does not change and inequality, by most measures, is unaffected. However, with different non-compliance functions, inequality may indeed be underestimated.

2. From the fall of the Berlin Wall to the global financial crisis: Who won and who lost

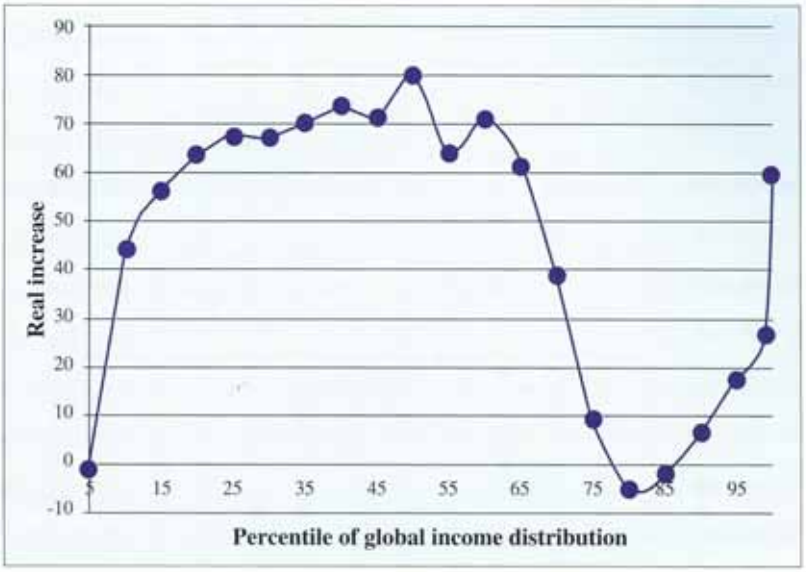
It is generally thought that there are two groups who are the big winners of the past two decades of globalization: first, the very rich, those at the top of national and global income distributions, and second, the middle classes of emerging market economies, in particular China, India, Indonesia and Brazil. Is this true? Figure 4 provides an answer by showing the change in real income (measured in constant international or PPP dollars) between 1988 and 2008 at various percentiles of the global income distribution.

What parts of the global income distribution registered the largest gains between 1988 and 2008? As the figure shows, it is indeed among the very top of the global income distribution and among the "emerging global middle class", which includes more than a third of world population, that we find most significant increases in per capita income. The top 1% has seen its real income rise by more than 60% over those two decades. The largest increases however were registered around the median: 80% real increase at the median itself and some 70% around it. It is there, between the 50th and 60th percentile of the global income distribution that we find some 200 million

Chinese, 90 million Indians, and about 30 million people each from Indonesia, Brazil and Egypt. These two groups—the global top 1% and the middle classes of the emerging market economies— are indeed the main winners of globalization.

The surprise is that those at the bottom third of the global income distribution have also made significant gains, with real incomes rising between more than 40% and almost 70%. The only exception is the poorest 5% of the population whose real incomes have remained the same. It is this income increase at the bottom of the global pyramid that has allowed the proportion of what the World Bank calls the absolute poor (people whose per capita income is less than 1.25 PPP dollars per day) to go down from 44% to 23% over approximately the same 20 years.

Figure 4. Change in real income between 1988 and 2008 at various percentiles of global income distribution (calculated in 2005 international dollars



Note: The vertical axis shows the percentage change in real income, measured in constant international dollars. The horizontal axis shows the percentile position in the global income distribution. The percentile positions run from 5 to 95, in increments of five, while the top 5% are divided into two groups: the top 1%, and those between 95th and 99th percentiles.

But the biggest losers (other than the very poorest 5%), or at least the "non-winners," of globalization were those between the 75th and 90th percentiles of the global income distribution whose real income gains were essentially nil. These people, who may be called a global upper- middle class, include many from former Communist countries and Latin America, as well as those citizens of rich countries whose incomes stagnated.

Global income distribution has thus changed in a remarkable way. It was probably the profoundest global reshuffle of people's economic positions since the Industrial revolution. Broadly speaking, the bottom third, with the exception of the very poorest, became significantly better-off, and many of the people there escaped absolute poverty. The middle third or more became much richer, seeing their real incomes rise by approximately 3% per capita annually.

The most interesting developments, though, happened among the top quartile: the top 1%, and somewhat less so the top 5%, gained significantly, while the next 20% either gained very little or faced stagnant real incomes. This created polarization among the richest quartile of world population, allowing the top 1% to pull ahead of the other rich and to reaffirm in fact -- and even more so in public perception -- its preponderant role as winners of globalization.

Who are the people in the global top 1%? Despite its name, it is a less "exclusive" club than the US top 1 percent: the global top 1% consists of more than 60 million people, the US top 1% of only 3 million. Thus, among the global top percent, we find the richest 12 percent of Americans (more than

30 million people) and between 3 and 6 percent of the richest Britons, Japanese, Germans, and French. It is a 'club' still overwhelmingly composed of the 'old rich' world of western Europe, northern America and Japan. The richest 1% of the embattled Euro countries of Italy, Spain, Portugal and Greece are all part of the global top I percentile. However, the richest 1% of Brazilians, Russians and South Africans belong there, too.

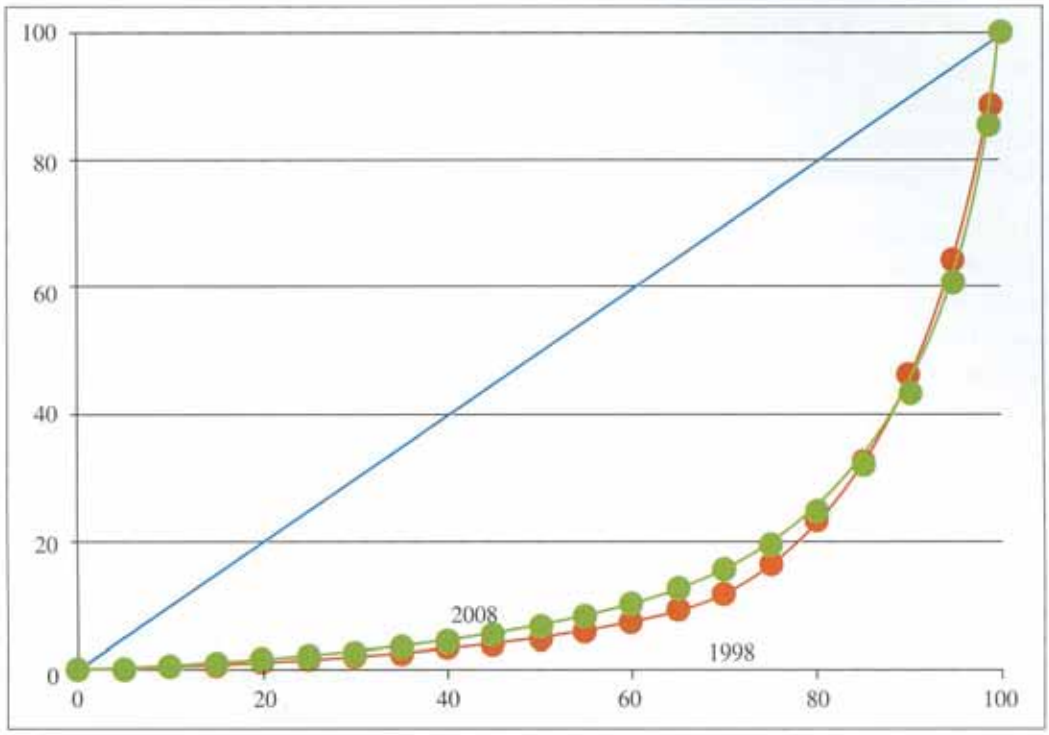
To which countries and income groups do the winners and losers belong? Consider the people in the median of theri national income distributions in 1988 and 2008. In 1988, a person with a median income in China was richer than only 10% or world population. Twenty years later, a person at that same position within Chinese income distribution, was richer than more than one-half of world population. Thus, he or she leapfrogged over more than 40% of people in the wolrd. For India, the improvement was more modest, but still remarkable. A person with a median income went from being at the 10th percentile globally to the 27th. A person at the same income position in Indonesia went from the 25th to 39th global percentile. A person with the median income in Brazil gained as well. She went from being around the 40th percentile of the global income distribution to about the 66th percentile. Meanwhile, the position of large European countries and the United States remained about the same, with median income recipients there in the 80s and 90s of global percentiles. But if the economic crisis that currently affects these countries persists, we should not be surprised to find the median individual in the 'rich world\ becoming globally somewhat poorer.

So who lost between 1988 and 2008? Mostly people in Africa, some in Latin America and post-Communist countries. The average Kenyan went down from the 22nd to the 12th percentile globally, the average Nigerian from the 16th to 13th percentile. A different way to see this is to look at how far behind the global median was an average African in 1988 and twenty years later.

In 1988, an African with the median income of the continent had an income equal to two-thirds of the global median. In 2008, that proportion had declined to less than one-half. The position of a median-income person in post-Communist countries slid from around the 75th global percentile to the 73rd. The relative declines of Africa, and Eastern Europe and the former Soviet Union confirm the failure of these two parts of the world to adjust well to globalization, at least up to the early years of the 21st century. Their improved more recent performance is still too fragile to have been reflected in the data.

The Lorenz curves, which plot the percentage of cumulative income (running from 1 to 100) on the vertical axis against the percentage of cumulative population (running also from 1 to 100) on the horizontal axis, for 1988 and 2008 intersect in an almost textbook-like fashion (see Figure 5). Neither distribution is Lorenz-dominant. The gains at below and around the median make the Lorenz curve for 2008 lie above the one for 1988 all the way up to the 80th percentile. For example, the bottom two-thirds of world population received 12.7 percent of world income in 2008 as against 9.3 percent in 1998. But the stagnation or decline in real income of the global upper middle class, and big gains realized by the top 1%, reverse the position of the Lorenz curves for the last one-fifth of the distribution. Here, the top 1% in 2008 receives almost 15 percent of global income vs. 11½ twenty years earlier.

Figure 5. Lorenz curves for global income distributions in 1988 and 2008



Note: The Lorenz curve shows on the horizontal axis, the cumulative percentage of population, ranked from the poorest to the richest percentile, and on the vertical axis, the cumulative percentage of total income received by such population percentiles. If, for a given value of x, y is greater, it means that the bottom x percent of population receives a greater share of total income.

The bottom line is that these results show a remarkable change in the underlying global income distribution. We now live in a world with a bulge around the median with significantly rising incomes for the entire second third (or more) of the global income distribution. That is the new aspiring global middle class. We also see growing wealth and probably power of those at the very top and, remarkably, stagnant incomes for both the people just below the "enchanted" richest 1 or 5 percent, and those poorest in the world.

3. Global inequality over the long-run: From proletarians to migrants

I will now look at global inequality over the long sweep of history. It is here that we can establish an important finding, which goes, I think, into some core issues of political philosophy and economics.

Let us try to do for the entire period since the Industrial Revolution the same type of global inequality calculations which we have just shown for the last 20 years. We ask, "what was global inequality then—say, around the mid-19th century?" It is a question impossible to answer with any precision, because we do not have household surveys or any other reliable sources of income data for these times. Nonetheless, some important attempts to estimate it have been made before, notably by

François Bourguignon and Christian Morrisson (2002), who were the first to take such a long-run view. They used income levels (GDP per capita) from Angus Maddison's database (2004;

2007), and some of their own (necessarily often shaky) estimates of income distributions for different parts of the world, to create global income distributions for eleven benchmark years spanning the period 1820-1992. They did the best one could do with the available data —and their results have been corroborated, to the extent that it is possible to corroborate something as tentative, by several later authors (Van Zanden, Baten, Foldvari and van Leeuwen 2010; Milanovic,

2011). The basic story that emerges from these calculations of income inequality in far-away times is that since the Industrial Revolution, which launched a score of European countries and their overseas off-shoots onto a path of faster growth, global inequality kept on rising until the mid-20th century. There was a period of more than a century of steady increase in global inequality, followed by perhaps fifty years (between the end of the Second World War and the turn of the 21st century) when global inequality remained on a high plateau, changing very little. We saw this in Figure 2 where the six dots are all within several Gini points of each other, that is, within one- standard error of the calculated Gini coefficients. It is only in the early 21st century that global inequality might have commenced its downward course. If indeed this happens to pass, global inequality would have charted a gigantic inverted U-shaped curve and perhaps in some fifty years— if the emerging market economies continue to grow faster than the rich world—we might be back to the state of affairs that existed around the time of the Industrial Revolution.

But, for now, we are still very far from it. And perhaps nothing shows it better than Figure 6. There the height of the bar represents the Theil coefficient of global inequality in two baseline years: 1870 and 2000.[6] The height of the bar is much greater now, meaning that global inequality today is greater than in 1870, which of course is not a surprise.[7]

6 Theil coefficient, named after the Dutch econometrician Henri Theil, is another way to measure inequality. It is not as popular, nor is its meaning as intuitive, as Gini, but in this case, when we have to decompose inequality into two components, Theil coefficient is preferable to Gini whose decomposition is not "exact". That is, with the Gini there is a residual terms whose interpretation is not always clear.

7 The results would have been the same with the Gini.

Figure 6. A Non-Marxian world: Level and composition of global inequality in the 19th century and around year 2000 (measured by the Theil index)

Note: I use Theil mean log deviation because it is exactly decomposable (as between "class" and "location") and because the importance of each component does not depend on the rest of the decomposition. Anand and Segal (2008) in their review of global inequality studies suggest that it is the most appropriate inequality index for this kind of decomposition.

What is less obvious and less well known is that the shares of the two factors determining global inequality have changed in a remarkable fashion. Global inequality can be decomposed into two parts. The first part is due to differences in incomes within nations, which means that that part of total inequality is due to income differences between rich and poor Americans, rich and poor Chinese, rich and poor Egyptians and so on for all countries in the world. If one adds up all of these within-national inequalities, one gets their aggregate contribution to global inequality. This is what I call the "class" component to global inequality because it accounts for (the sum) of income inequalities between different "income classes" within countries. The second component, which I call the "location" component, refers to the differences between mean incomes of all the countries in the world. So there, one actually asks "how much are the gaps in average incomes between England and China, between the Netherlands and India, between the United States and Mexico and so on influencing global inequality?" It is the sum of inter-country differences in mean incomes. In technical terms the first part - "class" – is also called "within inequality", the second part – "location"- is called "between inequality".

Figure 6 plots these two parts, class and location, for the years 1870 and 2000. Around 1870, class explained more than 2/3 of global inequality. And now? The proportions have exactly flipped: more than 2/3 of total inequality is due to location. The implication of this overwhelming importance of location, or which is the same, citizenship (i.e., being a member of a rich or poor country), for our lifetime incomes can be also very well captured by another exercise. We divide the population of each country into 100 income percentiles, ranked from the lowest to the richest. Now, if we run a regression

with income levels of these percentiles (for 120 countries, this gives 12,000 observations) as the dependent variable, and on the other side of the regression, use as the only explanatory variable the mean income of the country where each percentile comes from, we explain between more than one-half of variability in individual incomes. This is a remarkable achievement for a single explanatory variable. Differently put, more than fifty percent of one's income depends on the average income of the country where a person lives or was born (the two things being, for 97% of world population, the same). This gives the importance of the location element today. There are of course other factors that matter for one's income, from gender and parental education which are, from an individual point of view externally given circumstances, to factors like own education, effort and luck that are not. They all influence our income level. But the remarkable thing is that a very large chunk of our income will be determined by only one variable, citizenship, that we, generally, acquire at birth. It is almost the same as saying, that if I know nothing about any given individual in the world, I can, with a reasonably good confidence, predict her income just from the knowledge of her citizenship.

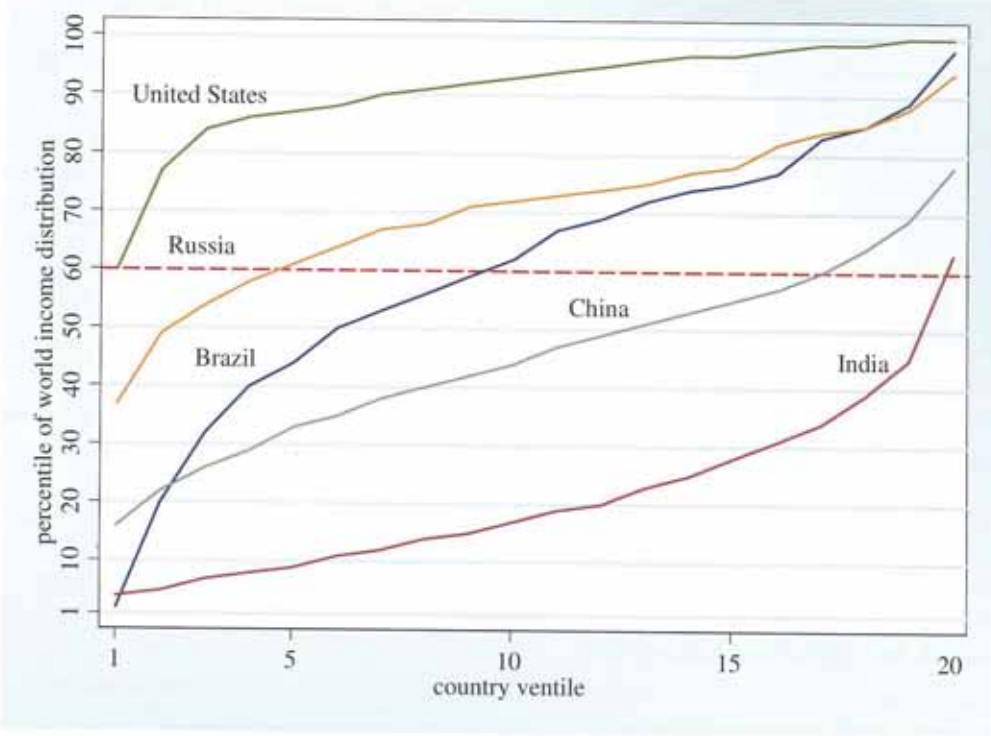
As stated in the title of Figure 6, we live today in a non-Marxian world. Karl Marx could indeed eloquently write in 1867 in "Das Kapital", or earlier in "The Manifesto" about proletarians in different parts of the world—peasants in India, workers in England, France or Germany— sharing the same political interests. They were invariably poor and, what is important, they were all about equally poor, eking out a barely above-subsistence existence, regardless of the country in which they lived. There was not much of a difference in their material positions. One could imagine and promote proletarian solidarity, and consequently—because equally poor people of different nations faced equally rich people each in their own nation—a generalized class conflict. This was the idea behind Trotsky's "permanent revolution". There were no national contradictions, just a worldwide class contradiction.

But if the world's actual situation is such that the greatest disparities are due to the income gaps between nations, then proletarian solidarity does not make much sense. Indeed income levels of poor individuals in poor countries are much lower than income levels of poor people in rich countries. Those who are considered nationally poor in the United States or the European Union have incomes which are many times greater than the incomes of the poor people in poor countries and moreover often greater than the incomes of the middle class in poor countries. And if that gap is so wide, then one cannot expect any kind of coalition between these income-heterogeneous groups of nationally poor people, or at least not any coalition based on the similarity of their material positions and near-identity of their economic interests. Proletarian solidarity is then simply dead because there is no longer such a thing as the global proletariat. This is why ours is a distinctly non-Marxian world. But what kind of the world is it? To this question I turn next.

4. Gaps between country incomes today

In Milanovic (2012), I have argued that a proper analysis of global inequality today requires an empirical and mental shift from concerns with class to concerns with location, in other words, a movement "from proletarians to migrants". This was meant to summarize a macro-development that has taken place over the last two centuries. If the main determinant of one's income is now location, who are the underdogs? People who live in poor countries. And what do underdogs want to do? They want to become richer at home, or failing that, to migrate to richer places.

Figure 7. Different countries and income classes in global income distribution, 2005



Note: The line drawn at y=60 shows the global position of the poorest 5% of the US population

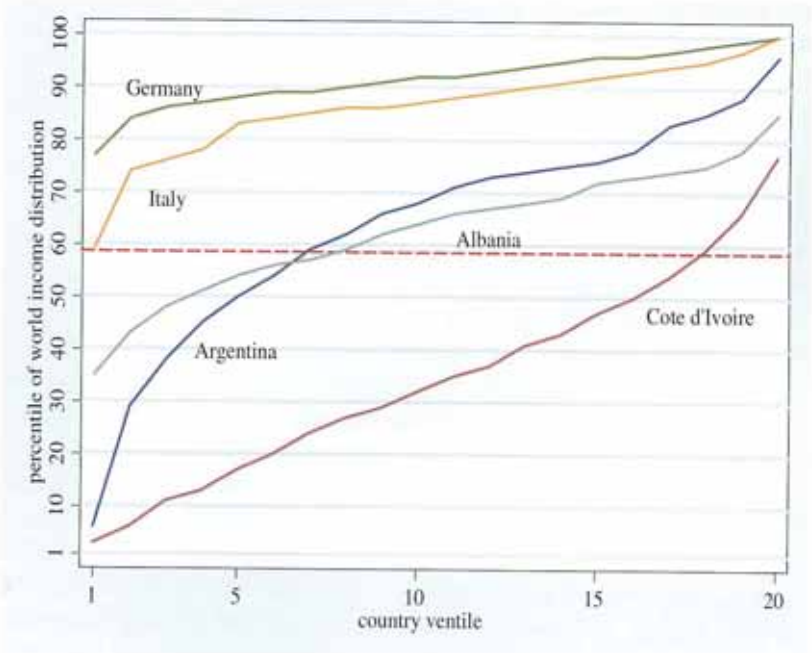
To illustrate the difference in the economic positions of people from different countries, we resort to the same exercise as was sketched above: I divide the populations of all countries into groups of 5% (called ventiles, since there are 20 such groups in a population) running from the poorest to the richest. This is shown on the horizontal axis of Figure 7: the poorest ventile in any country will be at x=1. Consider for example the poorest 5% of people in the United States. I put them all together, and calculate their average income; I then do the same for the next 5%, then for the next 5% --all the way to the very top, richest ventile. The poorest 5% of Americans are making around $3,000-4,000 per capita per year. How do they compare with the rest of the world? In what percentile of the global income distribution would they be? This is shown on the vertical axis. We can start with intuition: poor Americans are unlikely to be among the poorest people globally speaking, because their incomes are not that low. For example, we know that some 20 percent of global population live at less than 1 international dollar per day, while the US poverty line (below which, in principle, nobody in the United States should fall) is 13 dollars per day. Thus, intuitively and based on such very limited evidence, we can already expect the poorest Americans to be relatively high up in the global income distribution. Indeed, as shown by the graph, the poorest Americans are at the 60th percentile of world income distribution. This means that they have higher annual income than 60% of the world population. As one moves higher up, obviously each richer ventile of Americans will stand even higher in the world income distribution, with the richest 5% of Americans belonging to the

global top 1 percent. (With a more detailed and finer partitioning it can be shown that the top 11 percent of Americans are all part of the highest global percentile, as we saw in Section 2.).

How does the same thing look for a country like India? The very top of the income distribution in India overlaps with the very bottom of the income distribution in the United States. Clearly, there are millionaires in India as well as other people who are quite rich, and the same graph with percentiles (rather than ventiles) would have shown the top end of India's income distribution to be a little bit higher, but even in that case it would not go past the global 80th percentile. So these rich Indians, as a group, barely match the average income of middle-class Americans. Note that these are indeed very large groups of people and that the averages may conceal some very high individual incomes: if I use ventiles, each Indian ventile consists of some 60 million people, if I use percentile each percentile is 12 million people. The latter figure is equal to the population of the municipality of Mumbai. But the key point is that although there are in India some very rich, and even some extravagantly rich people, their numbers are not statistically significant, and the number of people who have the standard of living of the American middle class is still very limited.

Consider the same graph for China. China dominates India throughout the whole income distribution (people at a given percentile level of Chinese distribution always have higher income than people at that same percentile of India's income distribution), and the Chinese top ventile attains almost the 80th percentile of the world's income distribution. If we used percentiles, the top 1% of the Chinese would be better-off than 93% of world population.

Figure 8. Italy and the rest of the world



Consider now Brazil. Not surprisingly, Brazil mimics the world. The poorest people in Brazil are at the bottom of the global income distribution, among the poorest people in the world, while its fairly large middle class enjoys income levels that place it between the 70th and 80th percentiles in the world. At the very top, the richest Brazilians are part of the top one or two global percentiles.

Figure 8, displayed in the exactly the same fashion as Figure 7, is dedicated to Italy but could have done for any important migration-receiving country: United States, Germany, France or Spain. In the Figure, Italy's distribution is compared with that of the world, and then with the distributions of the countries providing the bulk of immigrants into Italy. First, where is Italy, compared to the rest of the world? Its poorest people are just below the 60th global percentile; it is, as we just saw, approximately the same percentile where the poorest Americans are. As we move toward the richer Italian ventiles, their global position (obviously) improves, and the richest 5% of Italians are at the top of the world, that is, among the top global percentile.

Compare now Italy with a few other countries, Germany for example. What stands out is the very high income level of the bottom ventiles for Germany. The same would be true if instead of Germany, we used Denmark, Norway or other Nordic countries. The people at the bottom of the income distributions in those countries are around the 80th percentile of the world income distribution or higher. The poorest Danes are at the 90th percentile while in the countries like Mozambique and Uganda not even the top ventile reaches further than the 65th percentile. The poorest Danes (as a group) are richer than the richest Ugandan (as a group).

To zero in on the importance of citizenship and consequently migration, it is useful to compare the data for Italy with those for the countries where most of migrants into Italy come from. This is because the major implication of a world where location matters is that migration can significantly increase a person's income. The way to improve one's standard of living is simply to move to a richer country. In Albania, about 30% of the population have incomes that are below the poverty threshold in Italy, and obviously these people, even if they were to become the poorest people in Italy after migration, would still improve their real income. The same is true for Argentina: a very high percentage –about a quarter of the population—have incomes that are below the Italian de facto poverty threshold. And finally consider the Ivory Coast, as a representative of African countries. There, a staggering 80% of the population live below the Italian poverty threshold. So if these 80% of Ivoirians were to move to Italy, they would all become better off— even if they were just to join the poorest Italians.

5. Concluding remarks: Philosophical reflections and political implications.

I want to conclude with two points which I think can be derived from what I discussed so far.

The first one is an issue for political philosophy. If most of global inequality is due to differences in location, can we treat location, and thus citizenship, as a rent or a premium (or observely, as a penalty)? Is citizenship—belonging to a given country, most often through birth— something that gives us by itself the right to greater income? Is there a difference in our view of the matter if we take a global, as opposed to national perspective? Is there a contradiction between the two?

Within a single country, society tries in principle to limit the advantages that accrue to people born in rich families. This includes having access to better education and health, to powerful friends and private information, and of course to greater wealth. Society tries to limit these inherited advantages by either taxing wealth or by making education, health etc. available to all, regardless of their income level. But what is the case in the "global world"? The situation is, at one level, very similar. There are rich countries that have accumulated lots of wealth, and transmit that wealth, along with many other advantages, to the next generations of their citizens. This is why, for example, the poorest Americans are relatively well-off by world standards. They are lucky to have been born in the country that is rich (or has become rich; the case was different with the poorest Americans in the 17th century). And there are also people from poor countries who do not have wealth, and advantages and opportunities it confers. But—and this is in stark difference to the within-country case —this is considered unobjectionable, or rather it is not questioned whether one may keep on benefiting from something that the previous generations have created, and she has simply inherited by virtue of birth. In one case, we frown upon the transmission of family-acquired wealth to offsprings if two different individuals belong to the same nation. In the other case, we take it as normal that there is a transmission of collectively acquired wealth over generations within the same nation, and if two individuals belong to two different nations, we do not even think, much less question, such acquired differences in wealth, income and global social position.

Now, in political philosophy, there are good arguments to go on with that approach, as we implicitly do today, and there are also good arguments to disapprove of it. It is hard to decide which way is right. But what we can do is to put that argument on the table, open it for discussion.

The second implication of all of this has to do, of course, with the issue of migration. If citizenship explains 50 percent or more of variability in global incomes, then there are three ways in which global inequality can be reduced. Global inequality may be reduced by high growth rates of poor countries. This requires an acceleration of income growth of poor countries, and of course continued high rates of growth of India, China, Indonesia, etc. The second way is to introduce global redistributive schemes although it is very difficult to see how that could happen. Currently, development assistance is a little over 100 billion a year. This is just five times more than the bonus Goldman Sachs paid itself during one crisis year. So we are not really talking about very much money that the rich countries are willing to spend to help poor countries. But the willingness to help poor countries is now, with the ongoing economic crisis in the West, probably reaching its nadir. The third way in which global inequality and poverty can be reduced is through migration. Migration is likely to become one of the key problems—or solutions, depending on one's viewpoint— of the 21st century. To give just one stark example: if you classify countries, by their GDP per capita level, into four "worlds", going from the rich world of advanced nations, with GDPs per capita of over $20,000 per year, to the poorest, fourth, world with incomes under $1,000 per year, there are 7 points in the world where rich and poor countries are geographically closest to each other, whether it is because they share a border, or because the sea distance between them is minimal. You would not be surprised to find out that all these 7 points have mines, boat patrols, walls and fences to prevent free movement of people. The rich world is fencing itself in, or fencing others out. But the pressures of migration are remaining strong, despite the current crisis, simply because the differences in income levels are so huge.

I conclude with something that resembles a slogan: either poor countries will become richer, or poor people will move to rich countries. Actually, these two developments can be seen as equivalent. Development is about people: either poor people have ways to become richer where they are now, or they can become rich by moving somewhere else. Looked from above, there is no real difference between the two options. From the point of view of real politics, there is a whole world of difference though.

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The Dispute between Bank and Customer in the Case of Bai Bithaman Ajil (BBA): Malaysian Experience

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Abstract

This paper discusses the issue and dispute in Bai BithamanAjil (BBA) which ended in court cases. It attempts to define the issues and dispute that arisedin the practice of BBA and the practical case of BBA in the context of Malaysia and Shariah perspective in regards to BBA practices. Critical analysis from the existence literature is employed to answer the objective of the paper.

It shows that the dispute arised due to customer's less understanding of the contract in BBA. The court cases that occurred between the bank and the customer were always won by the bank because the bank has more legality and the judge won the bank in order to maintain the good image of Islamic bank in the eye of public.

Keyword: BBA, Shariah, Bank, Customer, Financing

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1. Introduction

1.1. Background

A huge interest in Islamic financeduring three decades worldwide particularly in the Muslim countries, has led to tremendous progress in Islamic Financial Industry. This phenomenon is not restricted to Muslim Countries, but it is emerging and spreading wherever there is Muslim Community even though in non-Muslim countries. Nowadays many people are no longer seek the wish to maximize profit only, however there is shift of people's will to ethical system to fulfill their desire of religiosities' aspects.

Malaysia as one of the Muslim countries also showed the positive development in this sector. Some Islamic financial products have been created and applied well in this country in accordance with the Shariah principle.The most preferred kind of Islamic financing in Malaysian Islamic Banking Industry is Bai'Bithaman Ajil (BBA), due to the easiness compared to other products. However, it is also considered as the most debated type of facility in terms of its validity and Shariah-compliance.

BBA is a sale contract in which payment of the price is deferred to a certain time in the future date with pre agreed payment period. This financial concept has broadly used for many purposes namely home financing, vehicles, education financial package, corporate financing and many more. On the other hand, in the practice, not all of the financing provided by Islamic Bank is well organized in the process of repayment by customers, since they faced the difficulties in discharging their obligation, thus it creates customer's default payment. These cases lead to the dispute between Islamic bank and the customers, and many of the cases were finally end in the court.Taking into account the above mention argument, this paper aimed at elaborating the issues and dispute that arise in the practice of BBAand the practical case of BBA in the context of Malaysia and Shariah perspective with regard to BBA practices. Critical review of the existing literature namely journals and research papershave been employed in this paper as methodology. Observation on current situation has been used to complement as a way to response objective of the paper.

The remaining section of this paper is structured into 4 sections. Section two elaborates the issue of rise in BBA transaction and dispute on BBA in case of default payment. Section three comprises of the practical case of BBA namely court cases occurred in Malaysia. Section four covers the main issues in the practice of BBA in Malaysia from Shariah perspective. Lastly, section five sums up the result in the paper.

2. Issue and Dispute in BaiBithamanAjil (BBA)

As a way to achieve justice and religious purpose, many Islamic instruments are offered to the customer. The main purpose is to avoid activities which are prohibited in the Shariah. However, in practice there are many things which contradict with the teaching of Islam. This section discusses the issue of BBA and the dispute on BBA in the case of default payment.

2.1. Issue on BBA

BBA is a popular instrument in South East Asian countries namely Malaysia, Indonesia and Brunei. The practice of BBA that occurred in those countries had shown to be quite unsatisfied for the customers and bankers that then lead to legal disputes. The question is then, why such an Islamic financing raise disputes whereas it supposes to promote fairness between the parties involved. From the customer's perspective, firstly, they usually are not convinced when it comes to early redemption or in the event of default. In these matters, with the same reason, BBA contract always brings the customer to end up with a higher financing balance at any certain time if compared to the conventional loan with the same monthly payment and Affin Bank vs. Zulkifli Abdullah was the example of BBA dispute case which ended up in court.

Secondly, when there is default payment, the ownership of the asset is remained in hold in the bank as the financier; there is no transfer of ownership proportionate according to the amount paid by the customer. Thirdly, the price of the assets, particularly the balance of financing at any point of time often exceeds the original price of the asset compared to other Islamic product like MMP (Musharakah Muta qisah) which is the combination between the Partnership and Ijarah. Critically, the global Fuqaha specifically Shariah scholars in the Middle East are diverged in the opinion of the BBA with regard to the prohibition of interest as stated in the guideline from the council of Islamic Ideology (Pakistan) that

"However, although this mode of financing is understood to be permissible under the Shariah, it would not be advisable to use it widely or indiscriminately in view of the danger attached to it of opening a backdoor for dealing on the basis of interest." Furthermore, dissatisfaction from the Banker's point of view arises when the BBA fixed financing mode triggers the problem of liquidity management due to the charge of funds especially the deposit rate is determined based on floating rate while its income is decided predominantly based on fixed rate Murabaha and Ijara contracts whereby the rate is unchanging. The divergence in the rate during the installment periods become serious concern for the banks. Usually, the Islamic Bank would substitute its fixed rate Murabaha case flow for floating rate cash flow to match its cost structure.

Presently, one of the improvisations in methods to BBA is done by allowing the rate to be based on variable rate. In addition, BBA has converged to the conventional mode where the computational formula is similar to its counterpart where the profit rate tracks the market interest rate (Meera 2005). Instead of imposing the interest to the customers, Islamic Banks charge a profit rate which is reliant on the rate of market interest. And according to Azhar (2011), in practice, Islamic and conventional Bank is alike as the purchasers buy the property first and then look for financing. The transactions seem to be looked like a loan rather than a sale. This presumption was confirmed by the case of Dato' Haji Nik Mahmud bin Daud v Bank Islam Malaysia Berhad (1996) where the presiding judge thought that there was no intention of the parties (customer and bank) to effect the transfer of the property, and that it was merely a device to facilitate the BBA transaction.

One thing should be distinguished that the profit derived from the deferred payment in loan basis is prohibited as this is considered as Riba. However, this trading based transaction is allowed by majority Muslim Jurist. Some support the idea of taking profit upon deferred payment in the sale and purchase contract due to the follwing reasons.

1. Price will possibly rise due to its deferred payment.
2. The deferment for some period of time has a value in the price.
3. Five which is paid in cash is equal to six which is paid on deferred.
4. The period is part of the price.
5. This is the evidence that the period of time in sale and purchase has its portion in the price; and it is permissible for sale and purchase contracts.

2.2. Dispute on BBA in case of default payment

The problem arises in BBA cases leading to the disputes are due to the bank making a claim for the full sale price as stipulated in the property sale agreement (PSA) because the bank have a legal right as noted by High Court Judge DatukRohana Yusuf. The bank's agreement that comes first to the court should be respected and implemented in clear written terms of the contract and should not be interfered by the intention of parties imputing any other term. As long as the parties involved agreed to the price as stated in the PSA, the defendant is under a legal obligation to pay the full sale price, irrespective of when a breach occurs.

For most cases attracted much public attention is that the way how the bank practitioner calculated the outstanding amount to be repaid by borrower who had defaulted on their BBA contract. The amount has been designed by Banks up to the full periods of the contracts even though the borrower may have defaulted only a few years or months during the financing period. According to the judge, Abdul Wahab, the courts accepts the banks as the owner or became the owner under a novation agreement, then the sale become bona fide sale to the customer. The selling price as one of the debated subject matter was interpreted from the agreement of BBA contracts. Consequently, the bank is the owner of the property by a direct purchase from the vendor or by a novation from its customer.

In brief, most of the dispute cases that pass to the court were won by the Bank. Thus before the contract signed by both parties, the customers have to see clearly and ensure the understanding to avoid any dispute in the future.

3. The Practical Case of BBA

The purpose of Islamic economics and finance is to ensure justice and prevent things which isprohibited in Shariah namely riba (usury), gharar (uncertainty) and maisir (gambling). Moreover, there are many Islamic instruments which provide benefit to the bank and the consumer and Bai' BithamanAjil (BBA) is one of those instruments. Under the Shariah principle, BBA facility is sale transaction which involves a deferred payment arrangement. Malaysia as thecenter of Islamic finance was the first country that implemented BBA. Although there were many scholars against this system, BBA initially was applied in home financing. After the instrument has been implemented, in practice there were many court cases occurred in BBA transaction. The dispute between the bank and the consumer happened because of several reasons such

as:less comprehension of the consumer and the Bank regarding Islamic finance. This section analyzes two court cases arised on BBA in Malaysia namely: (a) Dato' Haji Nik Mahmud bin Daud versus Bank Islam Malaysia Berhad, and (b) Affin Bank Bhd versus Zulkifli bin Abdullah.

3.1. Court Cases of Dato' Haji Nik Mahmud bin Daud versus Bank Islam Malaysia Berhad

The case of Dato' Haji Nik Mahmud bin Daud versus Bank Islam Malaysia Berhad represents the earliest case of dispute between the customer and Islamic banking under the concept of BBA which occurred in 1998. The customer alleged the bank because the instrument executed by it for the transaction was null and void, and there was no transfer of ownership in the lands concerned. The previous argument elucidate that the court is not in favor of the customer to win the case. Moreover, the court intended to save the bank because if the court wins the customer, the bank will not be able to recover benefits or gain profit under the BBA instrument. It will also harm the Islamic financial institutions in Malaysia because BBA is consider as the most preferred type of Islamic instrument in Malaysia at that time.

3.2. Court cases of Affin Bank Bhd versus Zulkifli bin Abdullah

On the other hand, there was a court case Affin Bank Bhd versus Zulkifli bin Abdullah in 2006. The case was won by the bank and the customer had to pay the remaining installment. This case occurred due to default in payment of installment before the end of tenure in the form of home financing facility. In the transaction this incident is consider as part of the sale price or the bank selling price profit margin for the unexpired tenure of the facility.

Under BBA agreement, the customer bought the a house for a sum of RM 346.000 and the loans was to be repaid over an 18 year tenure or 216 monthly installments and charge was registered against the title. At the end of December 1997, the defendant resigned from the agreement at his request, the loan facility was restructured and the bank selling price of the house was RM 992,363.40, payable over a period of 25 years. There was no fresh set of documents was executed. After making several payments in total of RM 33,454.19 and the last was in June 2001, the defendant defaulted again. The two actions were filed, namely an order for sale and an order to recover such sums in the event of a deficiency in the proceeds of sale.

The above information shows that the bank did not elaborate the detail of the contract to the customer, which made the customer need to pay more due the Bank,restructured the loan facility. The customer had less legal power.

3.3. Economic Implication from BBA court cases

In the previous section both cases for (a) Dato' Haji Nik Mahmud bin Daud versus Bank Islam Malaysia Berhad, and (b) Affin Bank Bhd versus Zulkifli bin Abdullah were won by the bank. The judge intentionally won the bank side in order for the bank to recover its profit. If the court won the banks, they will gain positive image from the economic side and in the public eye.

The purpose of the customer in dealing with Islamic bank through BBA instrument is to avoid conventional banking based on interest, which is prohibited in QS Al-Baqarah. However,in the practice of BBA due to less comprehension in the customer side regarding the agreement in BBA contract, the customer lost the case and received the burden by paying the remaining installment. Further, the customer had less legal coverage to sustain his right.

Islamic finance and banking is still a young industry in the global market and it is still in the process to be better in the image of the public. If the judge won the customer, the public trust for Islamic bank will be decline and it will be difficult for Islamic institution in the future to offer and promote other Islamic instruments. In short, public should be educated with Islamic economics and finance knowledge, hence they can prevent themselves from legal tricks of banking institutions. Moreover, there are NGOs that have stood on the customer side in terms of legality for Islamic instruments agreement.

4. BBA from Shariah perspective

BBA is a sale contract which is widely used not only in Malaysia but also in other countries such as Pakistan and Indonesia. Almost all financial institutions in Malaysia have practiced it since Bank Islam Malaysia Berhad (BIMB) implemented it in 1983 (Razak et al,2008). This section will discuss the Shariah perspective in terms of the concept of BBA and the main issue arised in the practice of Malaysian BBA.

4.1. The Concept of BBA according to Shariah

It's very important to explain the difference between the BBA, what is practiced now by the Malaysian financial institutions, and the original concept of BBA or what is its similarity to other instruments namely Al Bay al muajal, Bay' al nasiah and Al Bay' bi al taqsit'. According to Kameel (2005), BBA is a sale contract which provides the buyer the benefit of a deferred payment, whereby the deferred price of the sale object carries an additional profit. It is an extension of the Murabahah(cost plus) contract, whereby the goods exchanged is delivered straight away but the sale price (with profit) is paid in installments, over a long period. However, the Murabahah itself being generally for short periods and it is used to be called Al baialmu'jl, which has been allowed and proven by all scholar or mazahhib.

The principles that have been allowed by Hanafi, Shafiai, Maliki and Hanbali are the conditions that the price must be fixed and any difference in price with the change in duration of payment makes it invalid. For example if the price for the good is said to be RM 1000 now and there is an agreement in which the buyer must make the payment (RM 1100) in six months and if in one year the payment will be increased to RM 1200.[1] From the definition of BBA, there are two constituents that exist in BBA; first al-Bay' (sale) which is the main component in the contract exchanges the transfer of ownership of the commodity for a price.

[1] http://www.hablullah.com

Second, Tajil al thaman (deferment payment) depend on agreed period. Moreover, there are two more components added in the recent transaction which are Al-Murabahah(cost plus profit) and Al-taqsit (payment in installment).[2]

4.2. The Transaction of BBA according to Shariah

Theoretically, in the contract of BBA, the bank sells the house to the customer at a mark-up price, whose content consists of the cost price plus a profit margin the bank wants to make over a specified financing period, say 20 years. Thus the contract of BBA should be only between the bank and the customer. The contract of BBA must not include the sale contract between the developer and the bank. In order to validate the contract, the bank must have separate contract with the developer to claim ownership of the house first, then resale it to the customer.[3]

Financing documentation shall be prepared and completed earlier for the disbursement of the financing amount. For instance, if the customer has purchased the house from a developer and the Sale and Purchase Agreement (SPA) between the two parties has been completed. The SPA requires customer to pay 10 percent of the total selling price to the developer. When the customer pays 10 percent to the developer he becomes the beneficial owner. Then the customer is ready to sign Property Purchase Agreement (PPA) wherein the bank buy the house from the customer for the intention of right away selling the same to the customer upon deferred under Shariah principle. Then the parties shall right away complete Purchase Property Sale (PPS) to reflect the act of reselling the same property to the customer upon deferred payment which includes bank's profit margin. PSA has added more responsibilities on the customer to the extent that the bank is free from all risks whatsoever.

From the above structure, one may recognize which type of contract that is. It's the Bay'al-Inah contract from the Fiqh view. All the jurists including Maliki's, Hanafi's, and Hanbali's are in the opinion that this kind of act (contract) is forbidden, except Al Shafi and Al Thahri. There are a temporary scholar Ahmed Al Salus who believe that the Shafi'sconcurred on the validity of the sale not the permissibleand they provide evidence that cheating is haram. However, in the practice when cheating is involved in sales, the contract is still valid.[4]

The element of khiyr-al'Ayb in BBA financing (the option of defect) has become an issue in this transaction, whereas it is a significant element in a sale contract. They found that the Property Sale Agreement (PSA) transfers all the liabilities on the part of the bank to the customer, which means the banks here act as financier not as the seller or vendor. They conclude that the absence of khiyr-al'Ayb in BBA financing has a risk of involving riba in the profit gain from this contract. The authors noted that using Property Purchase Agreement (PPA) and Property Sale Agreement (PSA) in BBA transaction is sort of legal device (hilah) to grant evidence that the act of buying and selling is actually taking place as required by Shariah.

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2 Ahmad Tarmidzi. Bay' BithamanAjil(BBA) in Housing Financing as Implemented by Malaysian financial Instituation: A Criticle Analysis of Its Procrdures and Application From the Fiqh Point of View.IIUM 2007

3 Rosly, SaifulAzhar, and MahmoodSanusi. "The Role of Khiyar Al-'AybIn Al-Bay'BithmanAjil Financing."

4 Ahmad Tarmidzi. Bay' BithamanAjil(BBA) in Housing Financing as Implemented by Malaysian financial Instituation: A Criticle Analysis of Its Procrdures and Application From the Fiqh Point of View.IIUM 2007

Another study done by Dzuljastri et al (2008) shows that the practice of BBA in Malaysia is similar to the concept of debt financing which is often results in high cost that cause the BBA contract seen as not in compliance with the Shariah principle because the bank does not take the risk of ownership and liability on the property which is a similar finding for the previous study. Based on their study there was low customers to use BBA which due to high level of dissatisfaction. They recommendthat Islamic banks or Islamic financing needs to come up with alternatives of Islamic home financing product.

Hilal and Zubaidah(2011) study the Shariah and legal issue in the Malaysian house buying. In their study they investigated whether the existence of the sale and purchase agreement in BBA practice and the loan agreement on it agreed with the requirement of the Shariah law. They argued that the customer is required to complete two agreements (PPA) and (PSA) to get financing for his property. Moreover, they explained that this type of transaction between the purchasers and the Bank is known as Bay al-Inah. There is different opinion among the fuqaha regarding Bay' al-Inah for the sale involving riba (i.e. difference of prices) or a trick (helah).

Nevertheless, the minority (such as the Shafiie, Abu Hanifah, and Zahari Schools) have allowed it but with the condition that the application of Bay' al-Inah must be used with caution and if acceptable by the conditions. They also argue that some of BBA practices consists of a few elements of gharar which is prohibited in Islam (QS : Al Baqarah : 188) and Islamic law is clear on contracts involving non-existing subject matter (in this case house under construction) referring to many cases of abandoned housing projects in Peninsular Malaysia which is one of the spread out problems of the housing industry. Finally they concluded that the current practice of the BBA in Malaysia is conversed to the teachings of Islam, and thus, it should be modified and revamped until it is fully able to protect the interests of the customer.

One of the most comprehensive papers studied the practice of BBA in house financing as it is implemented by Malaysian institutions (Tarmidzi, 2007). We quoted some points as follow, considering that BBA is the mainly preferred type of financing mode in the Malaysian and in view of that it is also the most debated type of facility in terms of its validity and Shariah-compliance. The study reviews and analyzes the structure as well as the implementation of the facility. Five areas have been identified as involving fiqh concerns and brought into discussion. Those concerned five issues in BBA are:1) the issue ofBay'almadum, 2) the issue of Isqatkhiyar al-ayb, 3) the issue of Bay'washart, 4) the issue of ibraand 5) the issue of Bay' al-Inah. Out of these five, only three are found to be justifiable. There are many opinions from different schools that support the practices. The five issues are elaborate as follows:

1) The issue of Bay'almadum

Issue of Bay'al-madum or Bay' ma la tamlik is referred to Bay' the property under construction is the property that does not exist yet the writer explained that according to IbniTayimah and Ibn al-Qayyim it is permissible as long as the seller is capable to make the delivery; however, the preferred way is bay'istinsa.

2) The issue of Isqatkhiyar al-ayb

Based on the Hanafi school of thought, it is an approved sale on the condition that the seller is not liable for any defects.

3) The issue of Bay'washart

It was concluded that all conditional sales are prohibited. However, it is allowed to attach certain terms and conditions to the sales contract. The certain conditions that are allowed vary according to each school of law. The conditions that are imposed on BBA facilities are allowed since the condition are inserted in order to secure the interest and benefits of the contracting parties.

4) The issue of Ibra

For early settlement or during default is seen as more of a legal and technically concern despite there being some fiqh considerations. The question is how much a BBA customer should be required to pay in both situations. It was concluded that a certain amount of Ibra should be given to a customer either through a binding promise to the party (financial institution) or through the insertion of a clause that stipulates the sum of rebate. It will be given when the settlement is made; the amount will be given based on how long the settlement lasts.

5) The issue of Bay' al-Inah

The writer considers Bayal-Inah as permissible instrument. However, he has a solution for the discussion he provided in his paper. In the case of Bay al-Inah, Abu Ishaq al-Isfriyani and Abu Mohamed mention that if the practice has become a custom, both the contracts considered invalid. Moreover, the elements of Bay'al-Inah in BBA should be eliminateto avoid any disputes on its authenticity. The writer also believes that it is not impossible to avoid using this particular type of contract since the customer's real need in this context is to obtain real estate and not cash. Therefore, it is very plausible to abstain from using Bay'al-Inah by introducing other methods of financing.

5. Conclusion

As a way to establish justice and realize religious purpose, many Islamic instruments are offered to the customer as a way to avoid activities which is prohibited in the Shariah. As part of Islamic instrument, many issues arise in the practice of BBA. The issue arises due the customer is not convinced when it comes to early redemption or in the event of default, there is default payment, there is no transfer of ownership, and the price of the asset often exceeds the original price of the asset compared to other Islamic products such as MMP (Musharakah Mutaqisah).

One of the improved methods to BBA is by allowing the rate to be based on variable rate. Instead of imposing the interest to the customers, Islamic Banks charge a profit rate which is reliant on the rate of market interest.

The problematic arised in BBA cases that led to dispute are due to the bank making a claim for the full sale price as stipulated in the property sale agreement (PSA) because the bank have a legal right. Most cases that attracted much public attention were the way the bank practitioner calculated the outstanding amount to be repay by borrower who had defaulted on their BBA contract. Dispute cases that arised between the customer and the Bank that passed to the court won by the Bank.

The prominent court cases occurred in Malaysia were the case of Dato' Haji Nik Mahmud bin Daud versus Bank Islam Malaysia Berhadin 1998 and Affin Bank Bhd versus Zulkifli bin Abdullah in 2006.

According to the Shariah, principles allowed by Hanafi, Shafii, Maliki and Hanbalifor Islamic transactions to be valid require the price must be fixed and the duration of payment or period of payment bringing difference in the price or the period makes it invalid. In the contract of BBA, the bank sells the house to the customer at a mark-up price. All the jurists including Maliki's, Hanafi'sand Hanbali's are in the opinion that this kind of act (contract) is forbidden, except Al Shafi and Al Thahri.

The scholars mentioned that the absence of khiyr-al'Ayb in BBA financing has a risk of involving riba in the profit gain from this contract. Moreover using Property Purchase Agreement (PPA) and Property Sale Agreement (PSA) in BBA transaction is a sort of legal device (hilah).

The practice of BBA in Malaysia is similar to the concept of debt financing which is often resulted in high cost. It causes the BBA contract seen as not in compliance with the Shariah principle because the bank does not take the risk of ownership and liability on the property which is a similar finding for the previous study. There is high level of dissatisfaction among the customers as shown in their low intention to use BBA. They recommended that Islamic banks or Islamic financing needs to come up with alternatives of Islamic home financing product.

Furthermore, the BBA practices consist of a few elements of gharar which is prohibited in Islam (QS : Al Baqarah : 188) and Islamic law is clear on contracts involving non-existing subject matter (in this case house under construction) referring to many cases of abandoned housing projects in Peninsular Malaysia. And also the practice of the BBA in Malaysia is conversed to the teachings of Islam. BBA transaction should be modified and revamped until it is fully able to protect the interests of the customer. There are five concern issues in BBA, which are: 1) the issue of Bay'al-Inah, 2) Isqatkhiyar al-ayb, 3) Bay'almadum, 4) Bay'washart and 5) Ibra for early settlement. Out of these five, only three are found to be justifiable. In the case of Bay-al-Inah, Abu Ishaq al-Isfriyani and Abu Mohamed mention that if the practice has become a custom, both the contracts are considered invalid. Moreover, the elements of Bay'al-Inah in BBA should be removed to avoid any disputes on its authenticity.

In brief it is not impossible to avoid using this particular type of contract since the customer's real need in this context is to obtain real estate and not cash. Therefore, it is very plausible to abstain from using Bay'al-Inah by introducing other methods of financing.

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A Critical Examination of Revenue and Expense Components of Listed NBFIs in Bangladesh

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Abstract

Non-bank Financial Institutions (NBFIs), involved mainly with long-term financing, have earned significant changes in terms of both number and list of their activities. Thus, performance evaluation of NBFIs, considering this changed environment, is a time demanding issue. The study aims to analyze the revenue and expense compositions of listed NBFIs in Bangladesh and examine the impacts on their profitability. The study covers all 20 NBFIs listed on DSE and data have been collected from the annual reports during the year 2008 to 2011. Data have been presented through table and graphs for better visual understanding. For the purpose of the analysis, the revenues composition has been classified into interest revenue and non-interest revenue whereas the expenses are classified as interest expense and operating expense. Profitability has been measured by return on assets. It is found that revenues are not well diversified and they are heavily dependent on their interest revenues. On the other hand, the interest cost against borrowing is the major source of expense and NBFIs are heavily dependent on the banking financial institutions for borrowing. NBFIs are suggested to increase their product diversification with value added services along with efficient and skilled manpower to reduce their interest expenditure in raising high cost fund unlike the banking institutions on the way to magnify their profitability.

Key words: Revenue, Expense, Interest, Non-interest, Profitability, Non-Bank, Bangladesh.

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Introduction

Non-bank Financial Institutions (NBFIs) play a very important role to meet the diverse financial needs of different economic sectors and they also contribute in the financial development of a country. They entered into the financial sector of Bangladesh in 1981, by the establishment of IPDC under chapter V of the Bangladesh Bank order 1972 (Shaha, Barai and Mamun 1999). At that time financial sector of Bangladesh was highly regulated, interest rates were at a high level, amount of classified loans were excessive, and activities of banks were limited to a few sectors. NBFIs were established mainly to offer long-term financing. Meanwhile, NBFIs of Bangladesh have earned significant changes in terms of both number and list of their activities. NBFIs, numbering 31, invested Tk. 163.5 billion in different sectors of the economy in Bangladesh up to June 30, 2010.[1] Therefore, sustainable and profitable operation of those institutions is immensely necessary for further contribution by them for the development of Bangladesh economy. Profitability is the prerequisite of sustain So, performance evaluation of NBFIs like any other financial institutions is a very relevant issue with ever-changing environment which demand continuous work out on it. Uninterrupted assessment of performance of NBFIs in Bangladesh using appropriate indicators is indispensable for the stakeholders to know the previous achievement, present involvement and forecast the future prospect of those organizations. There are lots of methodologies in assessing the profitability of financial institutions. Among them the most accepted is the one suggested by European Central Bank (2010). They suggested earnings, efficiency, risk taking and leverage as key drivers of Financial Institutions' performance. In addition for performance indicators, the Ministry of Finance (MoF) of Government of China in 2011 has published the rules for evaluation of financial institutions' performance which is based on a financial institution's profitability, asset quality, solvency and business growth in a financial year.[2] In context of Bangladesh, the Bangladesh Bank uses the ROA, ROE, sources of revenue and asset quality to measure the financial health of the NBFIs (BB, 2011).

The NBFIs in Bangladesh facing serious competition due to increasing market participation among peer institutions, banking institutions in terms of product proliferation, changing need and demand, regulatory amendment, etc. So, to sustain in the long run NBFIs are required to diversify their revenue sources and cost management in operating business. Usually, fee-based revenue increases the scope cross selling and supplements the downward trend of earnings, if any, from core business. But, this will give the NBFI a comfortable cushion only when it can manage its expense composition in time and need basis. In this connection, the current paper on NBFIs focusing profitability will, therefore, identify the revenue diversification, expense composition and finally try to relate them to profitability of NBFIs in Bangladesh.

The paper is divided into five parts. The first part includes the introduction where objectives & methodology and literature review have been covered in second and third part consecutively. Forth part illustrates the findings and finally the last part comes up with conclusion addressing the issues detected in the finding of the study.

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[1] Annual Report 2009-2010, Bangladesh Bank.

[2] www.esnai.com

Research Question and Objective

As the NBFIs are facing serious competition from their peers as well as from the

Banking financial institutions they need to diversify their revenue sources to stay healthy and ensure profitability. In addition, proper management of cost is also necessary to stay competitive in both short and long run. The quest of this study is to identify the level of revenue diversification and status of the profitability of the NBFIs. The study also aims to analyze the revenue and expense composition of listed NBFIs in Bangladesh. It also analyzes the impact of revenue-expense composition on their profitability. To establish this fact a hypothesis has been developed which is as follows:

H0: Revenue Expense composition does not affect profitability of NBFIs.

Methodology

The study covers all 20 NBFIs listed with Dhaka Stock Exchange (DSE) in the study period (Table 1). The paper is based on secondary data which were gathered from the audited annual report published by the NBFIs. According to Guthrie and Petty (2000) annual reports are highly useful source of data, because managers of companies commonly signal what is important through the reporting mechanism.

Table 1: List of Sample Companies

SL	Name of the NBFIs	Short Name	Year of Listing*
1.	Investment Corporation of Bangladesh	ICB	1977
2.	IDLC	IDLC	1992
3.	United Leasing	UL	1994
4.	Uttara Finance and Investments Limited	UFIL	1997
5.	Midas Financing Limited	MFL	2002
6.	First Lease Finance & Investment Limited	FL	2003
7.	Prime Finance & Investment Limited	PFIL	2005
8.	People's Leasing and Financial Services Ltd.	PLFS	2005
9.	Islamic Finance and Investment Limited	IFIL	2005
10.	Premier Leasing & Finance Limited	PL	2005
11.	Industrial Promotion and Development Co.	IPDC	2006
12.	Lanka Bangla Finance	LB	2006
13.	Bangladesh Industrial Finance Company Limited	BIFC	2006
14.	Phoenix Finance	PF	2007
15.	Union Capital Limited	UC	2007
16.	Bangladesh Finance and Investment Co. Ltd.	BFIC	2007
17.	International Leasing	IL	2007
18.	Delta Brac Housing Finance Corporation Limited	DBH	2008
19.	National Housing Finance and Investments Limited	NHF	2008
20.	FAS Finance & Investment Limited	FAS	2008

*Source: DSE 2012

The annual data for the all listed NBFIs during the year 2008 to 2011 are used in order to analyze the revenue-expense composition and profitability. Help of other sources like journals, websites, etc. have also been consulted whenever found necessary. The analysis consists of inter-company comparison and industry analysis. The data have been presented through table and graphs for better visual understanding. For the purpose of analysis, the revenues composition has been classified into two broad categories as (a) interest revenue (INTREV), and (b) total non-interest revenue (TNIREV). TNIREVs are classified as (i) investment revenue (INVREV), (ii) fees revenue (FEEREV), and other revenue (OTHREV). The expenses are classified as (a) interest expense (INTEXP), and (b) operating expense (OPEEXP). Profitability of the NBFIs has been measured by return on assets (ROA). Correlation coefficient has been used to test the perceived hypothesis.

Existing Literature

Earnings diversification to attain the expected profit level is becoming immensely important for better performance in long run. Several studies have been executed till date in determining profitability indicators. But, most of them focused on the banking industry. There are some works done on the NBFIs of Bangladesh such as Shaha, Barai and Mamun (1999), Ahmed and Chowdhury (2009). These works are basically related to the reviews of the NBFIs in Bangladesh. There is another study by Banerjee amd Mamun (2003) on NBFIs in Bangladesh is basically focused on the study of status of the lease financing in Bangladesh. But works on profitability, expense management and revenue diversification is not available.

So, the evidence regarding profitability is scarce for NBFI sector. The empirical findings of Sufian and Chong (2008) in examining the determinants of Philippines banks profitability during the period 1990–2005 suggested that size, credit risk, and expense preference behavior are negatively related to banks' profitability, while non-interest income and capitalization have a positive impact. After surveying 22 public and private sector commercial banks of Pakistan covered the period of 2006-2009 by Ali et al. (2011) concluded that the efficient asset management and economic growth establish positive and significant relation with profitability (measured by ROA & ROE). Balchandher et al. (2002) in their research paper on Malaysian commercial bank suggested that in order to increase profitability the expense management should be properly handled as it has a high significance. Sufian (2009) analyzed the determinants of NBFIs' profitability in developed country in his research paper. The study revealed that Malaysian NBFIs with a higher risk exhibits lower profitability level. In addition, the study supported the expense preference behavior hypothesis as the large Malaysian NBFIs with high operational expenses exhibits higher profitability level. Abreu and Mendes (2000) surveyed some Banks from four different EU countries (Portugal, Spain, France and Germany) and found that the net interest margin reacts positively to operating costs, but pre-tax profits do not. Tarawneh (2006) analyzed five Omani commercial banks with more than 260 branches and concluded that the bank with higher predictors of total assets, credits, deposits, or shareholder equity does not always mean that it has better profitability. Davydenko (2011) surveyed about 3236 bank-quarter observations and concluded that Ukrainian banks suffer from low quality of loans

and provisions for loans have a strong negative effect on profitability. Christos and Wood (2011) examined the factors that influence the profitability of financial institution and the main finding was the rate of return earned is affected by numerous factors including elements internal and external forces shaping earnings performance.

In Bangladesh, there also have some studies centering profitability measurement.

According to Goddard et al. (2004), commercial banks are holding less expensive capital in Bangladesh. Jahangir et al. (2011) surveyed 15 commercial banks in Bangladesh and found that market concentration and bank risk do little to explain bank return on equity, whereas bank market size is the only variable providing an explanation for banks return on equity in the context of Bangladesh. Hossain and Mizan (2012) studied 43 scheduled commercial banks and showed that interest and non-interest proportion is 65:35 respectively. The research paper of Rahman and Farah (2012) examined the indicators of the profitability of firms in NBFIs industry of Bangladesh and found that profitability indicators have impact upon net profit.

Findings of the Study

The NBFIs are different from the banking financial institutions in terms of their functions, sources and uses of funds and revenues. The NBFIs although collect term deposits from the market as the commercial banks but they are heavily dependent on borrowing from the commercial banks. NBFIs do not offer trade finance services but they offer large lease, factoring and consumer credit services. So the revenue sources are somewhat similar to the banking financial institutions. The current study is an effort to identify the revenue and expense compositions of the NBFIs along with the profitability status.

Revenue Composition of NBFIs

Interest revenue is the largest source of revenue for the NBFIs on an average about 77.76% of the revenues are coming as interest against loans disbursed to the clients (Table 2). The next important source of revenue is the investment income. That was highest in the year 2010. But it has fallen drastically in the 2011 due to crash in the stock market. It indicates that the NBFIs were not well protected from the fluctuation of the stock market. The contribution of fee income is gradually decreasing. The reason behind that is the NBFIs are competing with the banks and the borrowing cost of NBFIs is high so they are forced to reduce their service charges to stay competitive. The other revenue is increasing gradually which indicates efforts to diversify the revenue sources. The average ROA of the listed NBFIs is 3.17 but they performed worst in 2011 (Table 2). This also the impact of bubble burst of the stock market. This is evident from the analysis of consecutive years' investment income from the stock market.

Table 3 shows the revenue structure of the selected NBFIs grouped on the basis of their listing year with the DSE. NBFIs show higher concentration on INTREV (77.76) compared TNIREV (22.24). From the year 2008 the percentage of interest revenue has been steadily decreased but in 2011 by more than 16% (Graph 1).

Table 2: Industry Average Revenue Composition of NBFIs in Bangladesh (%)

Year	INTREV	INVREV	FEEREV	OTHREV	TNIREV	ROA
2008	82.76	10.41	3.26	3.56	17.24	2.65
2009	77.13	14.85	4.04	3.98	22.87	3.46
2010	67.71	21.74	5.11	5.44	32.29	4.54
2011	83.46	8.93	2.41	5.20	16.54	2.04
Average	77.76	13.98	3.71	4.55	22.24	3.17
SD	7.2773	5.7540	1.1465	0.9134	7.2773	1.0790
CV	0.0936	0.4115	0.3093	0.2009	0.3273	0.3401

Source: Researchers' own analysis

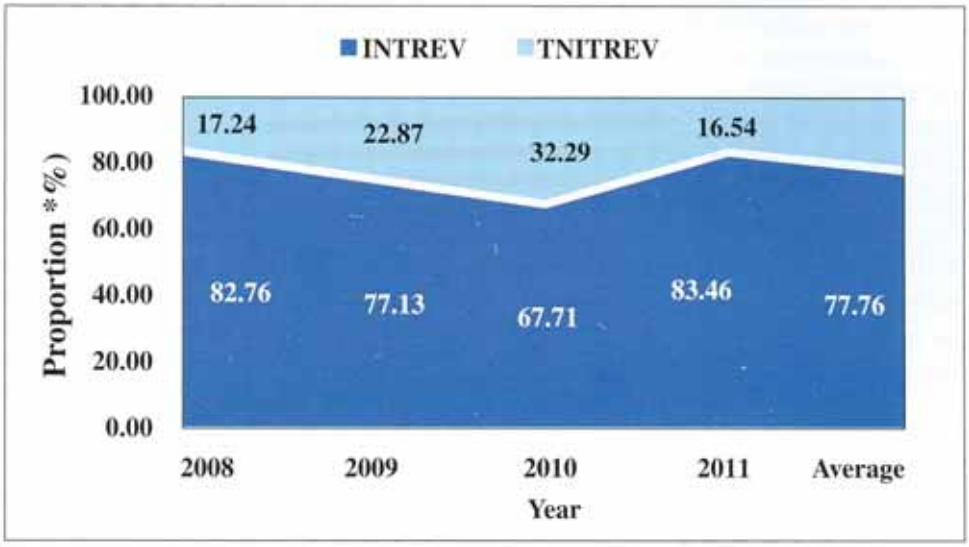
Table 3: Revenue Composition of NBFIs Listed in DSE (%)

Year	2008		2009		2010		2011		Average	
Item / Group	INT REV	TNI REV	INT REV	TNI REV	INT REV	TNI REV	INT REV	TNI REV	INT REV	TNI REV
Before 2000	79.29	20.71	72.74	27.26	67.36	32.64	73.50	26.50	73.22	26.78
2000-2005	81.72	18.28	75.15	24.85	69.67	30.33	84.41	15.59	77.74	22.26
After 2005	84.78	15.22	80.07	19.93	66.68	33.32	86.87	13.13	79.60	20.40
Industry Average	82.76	17.24	77.13	22.87	67.71	32.29	83.46	16.54	77.76	22.24

Source: Researchers' own analysis

In 2010, the NBFIs had highest level of non-interest revenue stood at 32.29% of the total revenue (Table 3). The reason behind the fact is the investment revenue generated from the investment in stock market. Therefore, the revenue of the NBFIs is highly sensitive to the fluctuations in the stock market. This may pose a serious threat to the revenue earning capacity of the NBFIs. One important thing to note that is the sources of revenue of the NBFIs are not well diversified. As a result, the revenues generated from the investment fell and as result the ROA fell drastically. It indicates that it will hamper the interest of the general investors in the long run. So, to generate a stable level of profitability the NBFIs should try to diversify the sources of revenue to look after the interest of general investors. As the market is going to become more competitive because new financial institutions will be starting their operation so these institutions must have find out innovative sources of revenue to pay off the investors required return.

Graph 1: Industry Average Revenue Composition of NBFIs in Bangladesh (%)



Source: Researchers' own analysis

Expense Composition of Banks

In regard of expenses of NBFIs the average interest expenses (INTEXP) is 85.57% that indicates the cost of fund is very high as evident by the recent increase in the lending rates of the commercial bank (Table 4). In 2011, the interest cost was 89.18%. It poses a serious threat for the listed companies. Because, if the interest cost increase in this fashion they are going to lose the competition in the long run.

Table 4: Industry Average Expense Composition of NBFIs in Bangladesh (%)

Year	INTEXP	OPEEXP	TEXTRE	ROA
2008	85.35	14.65	67.55	2.65
2009	83.74	16.26	61.70	3.46
2010	84.01	15.99	48.59	4.54
2011	89.18	10.82	65.45	2.04
Average	**85.57**	**14.43**	**60.82**	**3.17**
SD	**2.506**	**2.506**	**8.505**	**1.079**
CV	**0.029**	**0.174**	**0.140**	**0.340**

Source: Researchers' own analysis

The operating expenses showed a decreasing trend, which is very interesting because the inflation remained very high during the observed period. So, it indicates the institutions achieved high level of cost efficiency which is very good. The NBFIs had highest level of ROA in the year 2010 along with lowest level of expense to revenue ratio. But the ROA dropped to almost half in the year 2011 and the

Appendix 1: Average Revenue Composition of NBFIs in Bangladesh

Name	INTREV (%)		INVREV (%)		FEEREV (%)		OTHREV (%)		TNIREV (%)		ROA (%)	
	AVE	SD	AVE	SD	AVE	SD	AVE	SD	AVE	SD	AVE	SD
ICB	34.08	8.88	52.06	8.52	13.62	4.25	0.25	0.13	65.92	8.88	7.40	1.40
IDLC	75.23	10.13	5.95	5.84	15.59	5.53	3.23	1.23	24.77	10.13	3.13	1.46
UL	96.35	1.96	0.88	0.15	0.00	0.00	2.77	1.82	3.65	1.96	2.44	1.10
UFIL	87.24	5.71	2.80	3.35	0.00	0.00	9.96	5.03	12.76	5.71	4.24	1.05
MFL	86.72	10.83	10.06	11.42	0.74	1.38	2.48	0.83	13.28	10.83	1.57	2.43
FL	91.15	6.14	2.26	3.13	0.00	0.00	6.59	4.51	8.85	6.14	5.75	2.29
PFIL	50.64	10.66	30.42	8.19	7.35	2.51	11.58	1.70	49.36	10.66	7.55	3.97
PLFS	63.83	14.05	19.27	15.50	11.06	13.03	5.83	2.23	36.17	14.05	4.53	1.95
IFIL	82.44	7.39	13.80	6.74	1.30	0.09	2.45	1.86	17.56	7.39	2.34	1.45
PL	91.63	9.10	7.32	9.27	0.00	0.00	1.06	1.08	8.37	9.10	1.67	0.85
IPDC	81.08	7.49	15.19	4.73	0.39	0.23	3.35	5.52	18.92	7.49	1.96	0.58
LB	71.71	7.65	23.36	7.38	2.42	2.50	2.51	2.90	28.29	7.65	3.18	0.65
BIFC	81.42	11.57	18.19	11.45	0.00	0.00	0.39	0.18	18.58	11.57	1.79	1.32
PF	80.45	9.49	10.48	10.82	0.00	0.00	9.07	1.89	19.55	9.49	1.72	0.44
UC	65.32	16.79	12.96	10.99	6.80	8.91	14.92	6.33	34.68	16.79	3.37	2.33
BFIC	69.61	16.77	26.14	17.78	0.25	0.31	4.00	2.01	30.39	16.77	2.76	2.17
IL	85.67	13.23	4.04	5.58	9.65	8.21	0.63	0.58	14.33	13.23	1.10	1.08
DBH	92.16	4.19	4.07	4.19	3.47	0.73	0.30	0.17	7.84	4.19	1.58	0.31
NHF	96.10	4.94	2.39	4.59	0.80	0.54	0.71	0.52	3.90	4.94	2.29	0.63
FAS	72.46	16.64	18.00	7.57	0.71	1.40	8.83	8.57	27.54	16.64	3.08	2.09

Source: Researchers' own analysis

Appendix 2: Average Expense Composition of NBFIs in Bangladesh

Name	INTEXP (%)		OPEEXP (%)		TEXTRE (%)		ROA (%)	
	AVE	SD	AVE	SD	AVE	SD	AVE	SD
ICB	81.16	8.91	18.84	8.91	35.60	9.12	7.40	1.40
IDLC	79.94	3.01	20.06	3.01	60.31	8.87	3.13	1.46
UL	86.22	2.81	13.78	2.81	64.93	9.78	2.44	1.10
UFIL	93.23	1.56	6.77	1.56	64.34	4.44	4.24	1.05
MFL	84.26	9.75	15.74	9.75	64.48	15.64	1.57	2.43
FL	69.59	16.37	30.41	16.37	55.60	14.74	5.75	2.29
PFIL	87.46	6.42	12.54	6.42	43.54	10.61	7.55	3.97
PLFS	81.33	1.80	18.67	1.80	35.62	15.61	4.53	1.95
IFIL	86.50	3.72	13.50	3.72	67.77	9.22	2.34	1.45
PL	93.20	1.87	6.80	1.87	70.42	5.85	1.67	0.85
IPDC	84.64	2.52	15.36	2.52	67.31	9.62	1.96	0.58
LB	82.49	5.93	17.51	5.93	68.00	16.07	3.18	0.65
BIFC	81.73	19.48	18.27	19.48	59.71	32.75	1.79	1.32
PF	88.09	2.81	11.91	2.81	73.25	8.49	1.72	0.44
UC	86.63	4.11	13.37	4.11	53.60	13.26	3.37	2.33
BFIC	90.49	2.96	9.51	2.96	69.37	18.35	2.76	2.17
IL	94.88	0.92	5.12	0.92	79.12	12.63	1.10	1.08
DBH	95.43	0.95	4.57	0.95	66.51	4.62	1.58	0.31
NHF	92.44	2.32	7.56	2.32	67.24	8.41	2.29	0.63
FAS	71.68	7.97	28.32	7.97	49.74	11.64	3.08	2.09

Source: Researchers' own analysis

Papers Published in the Past Issue
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Introduction to Bangladesh Bank Training Academy (BBTA)

Bangladesh Bank Training Academy (BBTA) is a training wing of central bank of Bangladesh, Bangladesh Bank pursues tasks of capacity building and human capital development in order to prepare skilled human resources in central bank as well as for commercial banks. BBTA organizes different training courses, training workshops, conferences, seminars and other related activities on main topics of economics, banking and finance, financial sector development, human resources development and macroeconomic management. It was established in 1977.

BBTA's Mandate

The purpose of the Academy is to undertake training activities for enabling the officials of central bank and the banking sector to perform their jobs efficiently well-equipped with the latest knowledge of economic, financial and banking developments. To this end, BBTA extends its all-out efforts to facilitate training to personnel engaged in the financial sector. It also works to modernize its library and information center to collect, systematize and disseminate information in the financial arena. Recently, a plan has been adapted to reorganise BBTA library as a Knowledge Management Centre (KMC). This new role puts more weight on BBTA for knowledge creation and application. Since information is important to create new knowledge for educating staff and professionals, we hope that it would contribute to the creation of knowledge and disseminate knowledge for use by others.

BBTA's Strategic Objectives

Bangladesh Bank has adopted its 5-year Strategic Plan 2010-2014 and bestowed responsibilities upon BBTA (Strategy # 13, Objective 13.2) to adopt all-out efforts to enhance professional excellence and grooming of the officers of Bangladesh Bank. To fulfill the target of the plan document, BBTA has been employing its full capacity to providing need-based training to the officials both from central bank and commercial banks; continuously striving to diversify the contents of its courses in order to ensure their consistency with evolving training needs; facilitating the practical application aspects of knowledge of economics, banking and finance; and developing training as a scientific discipline.

In order to achieve the above mentioned strategic objectives, BBTA has introduced the following initiatives.

1. Building and enhancing training capacities of the trainers;
2. Improving quality, efficiency, impact and cost-effectiveness of training programs;
3. Linking training with real-world cases and experiences;
4. Building training partnership programs with the public and private sector domestic and overseas training institutions;
5. Building and maintaining the BBTA financial institutions information system,
6. Utilization of the Internet for dissemination of the Academy's biannual Journal 'Thoughts on Banking and Finance';

7. Building a database on trainers and training institutions in the field of banking and finance; as well as

8. Facilitating the digitization of BBTA documents.

Organization

The Executive Director is the head of the Academy. There are six wings to look after the administration, training and research programs of the Academy.

Location

The Academy is located in Mirpur, Dhaka, Bangladesh.

Mailing Address

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