

The Importance of Domestic Institutional Investors in Pakistan's Growing Bond Market

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As financial systems migrate from a bank-centric model to one that includes bond markets as a companion channel for credit intermediation, they face challenges from both institutional inertia and in learning what works best locally, in a way that limits the risks of experimentation.

While many countries learned too much of one of the many lessons from the 1997-98 Asian experience, they have failed to learn an unavoidable corollary: domestic institutional investors (IIs) must be the pillars of domestic capital markets. Developing the risk-management capability of these domestic IIs has been slower than other aspects of capital-market development throughout Asia. This has been, in part, because the government has a conflict of interest with these IIs, since it is the issuer of its own sovereign bond and the regulator of the market.

As Pakistan continues its own market development, it would do well to focus on this area – the demand side rather than just the supply side. This paper explores the experience of others and ways in which Pakistan might proceed.

1. Introductory Summary

Across Asia, since the beginning of this decade, over a dozen countries have been comparing notes on ways to build up robust, liquid local-currency bond markets as a way to improve the allocation of credit. These markets should also help us better integrate with the global financial markets to finance our growth, while still protecting us from the kind of shocks that shook the region in the late 1990s. It is now pretty widely accepted that the emphasis needs to be on liquidity, rather than just on a representative variety of bond types and maturities. Both are important and greater choice can lead to better liquidity, but greater choice is a necessary condition for liquidity, not a sufficient one. Liquidity allows the bond yield to reflect the market's estimate of risk. This, in turn, provides an essential guide to allocating resources (from savers) and a motive to improve operations and transparency (for issuers).

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Much of the emphasis in regional planning has been on boosting the supply of bonds, both sovereign and corporate, as the first step in improving liquidity. For countries with on-going fiscal deficits this has been less of a challenge than for those with a small state sector or a strong tax regime. But even the deficit markets are unlikely to issue enough bonds to saturate local demand and so trigger a reallocation of surplus paper. This is why we must also look more closely at the market's demand side to understand investor motives to buy and hold or to trade. Is it just a lack of choice that acts to discourage trading or are there regulations that have the unintended consequence of curbing liquidity?

From the review of market practice that follows, we shall see that diversity of investment product and diversity of investment motive (that is, of investor types) are both needed to support market liquidity. However, if prudential guidelines are too tight for each investor type, then rigid market segmentation arises and the motive to trade dries up, along with liquidity. In such circumstances the prices of debt in each segment tend to reflect the narrow interests of that investor segment, or even that of a localized cartel, rather than the opinion of a wide cross-section of bond market and money market users. The power of the market to price risk and allocate credit is reduced to almost nothing as a result.

On the other hand, if prudential guidelines are too loose and supervisory oversight insufficient, then the portfolio returns can become unjustifiably volatile and full-period losses can occur. There is clearly a balance to be struck between informed choice and the security of state guarantee mechanisms. The former proposes higher risk-adjusted returns and a more adaptive system. The latter offers greater certainty at the cost of what amounts to a state-managed insurance program. While many would say the former offers the consumer and the financial system a better bargain, the real question is how does one move from where we stand today to a balanced system. There is risk of mistakes in the transition to a more flexible, liquid bond market. Most of the biggest economies have suffered this transition risk at some point in the twentieth century.

This paper attempts to identify an effective balance in regulation of the bond market's investors and how a transition to that balanced state might evolve. This balance can be achieved substantially with domestic reform and effective stakeholder management. While foreign competition can further improve the quality of domestic service providers and can add to bond market liquidity, it can also disrupt the transition to a stable domestic system if introduced too early or quickly.

2. Model of a Market Guided by Good Risk-management Practice

Let us first consider how a well-balanced bond market might look from the perspective of a domestic institutional investor (II). This model draws successful characteristics from a range of well developed markets, so it does endorse any one country's practice. It considers the goal structure of domestic IIs and how that, plus the regulatory and competitive structure of the market influences their trading incentives and risk-management strategies. It assumes a risk-based regulatory regime, about which more will be said later, rather than a quota-based segmentation approach to regulation, as still practiced in most markets. As such, it anticipates the eventual adoption of a Basel II-like approach by regulators outside the banking sector.

Variety in the type of investor – and their typical objectives

The standard institutional-investor profile falls into one of three types: that of a pension fund, an insurance company (both for the general account and specified-purpose or unit-linked accounts), or a mutual fund (or investment trust). In reality, there are many variations and combinations of these in fully developed markets. Banks are often bond investors too, but their treatment of bonds is often as loan substitution, making them reliable buy-and-hold investors. If one considers the additional requirements of the, there are specific variations at the bond and portfolio level, but the basic principals of accountability and predictability of outcome can be protected. These principals could allow -compliant instruments to trade in a manner consistent with the rest of the market, thus integrating these two parallel systems through standard bond-pricing protocols. In effect, this is already practiced in a few domestic and offshore markets.

The most consistent difference between these generic types of institutional investors, is the length of their liabilities and their resulting demand for bonds of a specific maturity. Pension funds and, for the most part, insurance companies have long-dated liabilities, whose present value is quite volatile with respect to long-term interest-rate, growth, inflation and morality expectations. Outside the world's largest bond markets, finding bonds to match such liabilities in either maturity or interest-rate sensitivity is difficult, leaving some of these funds to buy loans and real estate as alternatives. That shortage of long-dated paper is one of the factors that support buy-and-hold behavior among pension and insurance funds.

By contrast, mutual funds and investment trusts investing in bonds usually have shorter expected lives, under ten years. The specific investment strategy chosen can vary widely, meaning both the risk-type and maturity of the bonds required

will also vary a lot. For example, even money-market funds will normally put some portion of their money into two-year and three-year instruments, if the risk-adjusted yield is sufficiently advantageous and their sector is sufficiently competitive.

Within each type there are also differences in the use of investment monies. Where the use requires the option of cash availability on short call, such as for part of insurance reserves or for open-ended unit trusts, there is an additional requirement for very liquid instruments. The need to meet redemption or insurance claims on time will mean that a certain percentage of incoming funds (from new beneficiaries) stays in low-yielding money-market instruments or cash. The rest of funds will normally be invested in assets with a term structure (range of maturities) that, on average, matches the term structure of funding liabilities (or expected claims).

Addressing the investors' goal structure through regulation

In a competitive environment, all types of domestic IIs will attempt to raise their funds' yield, subject to risk and cashflow constraints. For fixed income funds this means pushing their portfolio further out the maturity or credit spectrum when the available yield justifies the additional term and credit risk. Likewise, they will consider investing in less-liquid instruments (such as securitized notes) for a portion of their portfolio if the loss of liquidity is adequately rewarded to improve the whole portfolio's risk-return tradeoff. These opportunities will come and go with the market cycle and the effect of new regulations, thereby creating some trading to reflect changes in market conditions.

In all these funds, an additional goal must be to keep assets as diversified as possible. As first demonstrated over fifty years ago by Harry Markowitz¹ and verified by market practice since then, portfolios with a low correlation among constituent assets have a superior risk-return profile to portfolios with high correlations among their assets. In other words, diversified portfolios can gain additional return (as compared with un-diversified portfolios) without suffering a proportionate increase in risk, or they can lower their risk without suffering a proportionate decline in return. Maintaining a level of diversification requires finding new bonds to replace maturing ones, with a similar or lower correlation to other bonds in the portfolio. Thus, in pursuing this attribute in a fund, managers demand greater variety in bonds.

¹ Harry M. Markowitz, "Portfolio Selection." Journal of Finance. Vol. VII, No.1, 1952, pp. 77-91

In this environment regulations on fund promotion are aimed at clarity, fairness of representation and accountability for each fund's risks (as represented). Correspondingly, risk regulations do not require managers to meet certain quotas of asset types (the inputs) but to ensure that portfolio risk and returns (the outcomes) fall within advertised limits. In other words, managers are given scope to choose how they meet risk and return targets and are continually monitored on how well they meet stated objectives. This gives fund managers another incentive to create new types of funds and to educate investors in their risk and return characteristics.

The importance of clear and consistent standardization

The basic requirements to harness investor (and intermediary) risk and return motives into a stable pricing environment are clear standards for documentation, other information and regulation. To the extent that documentation for investment products and services are not subject to standards, the contract between the provider and recipient will require special effort to understand and to adjudicate (in event of a breach). As a result transaction costs rise and an additional layer of analytical "overhead" expense is required within all IIs – or any investor. This is the case to some extent with securitized notes. Since these investment products evolve so quickly, they tend to be somewhat tailored to the issuer's needs. The additional cost of analysis also discourages liquidity, since true value will not be obvious except to a highly specialized group of experienced initiates.

One of the partial cures to this particular problem has been the covered-bond (originally the *pfandbriefe* of German banks) market. In this case, most of the defining framework has been lifted from the deal-specific documents and enshrined in national law. Each feature of an issue refers to a part of the law and defines where the bond falls within the permitted spectrum for that feature. Aside from greatly reduced documentation volume, this standardization has allowed almost money-market-like liquidity in covered bonds.

When accounting, market-pricing and product information fit within standards the communication process inherent in any market is simplified and becomes less expensive. Such information standards also increase competitive pressure on intermediaries and IIs to distinguish themselves through innovation and service. This can lead to extremes, however, and there is an argument for setting standards of permitted service. An example is the foreign-exchange market, in which the financial products are highly standardized. One result is the very high level of expenditure on client entertainment in that market.

The move to establish a regulatory framework for finance in most countries represents an attempt to standardize regulation. While the appearance of the universal bank has prompted this concept originally, the greater benefit is in a more consistent approach to the pricing of capital for businesses both within and outside the financial community. One of the great challenges in developing a capital market is to come to terms with the unintended consequences of regulation. Rules for one sector – say tax policy – may help the economic sector originally targeted but can also change the pricing of capital in ways that create new (and even perverse) incentives in other sectors. This is also apparent in the different types of risks that banking and insurance businesses face. There are asymmetries in the risks to assets and liabilities particular to each of these businesses, for example, deposit roll-over risk as compared with the actuarial risk of insurance policy claims.

In the case of taxation, the additional cost of gains or income tax will usually render a new bond market uncompetitive. Once the market has matured and begun to squeeze out a lot of the inefficiencies of non-standard practice and to achieve some economy of scale, a regulator can justify recouping the costs of setting the market up with new taxes. Many securities regulators face a real challenge in convincing the national treasury's revenue department to (temporarily) forego tax revenue on an easily documented source. In this model market, the scale will be great enough to tolerate transaction and profits taxes that are consistent with national regulatory policy. But no bond market will overcome the bias toward bank borrowing in its early stage if it must fund its own infrastructure from the start. Freeways need to precede tollways to attain their potential in supporting commerce.

By regulating the assets and liabilities of IIs in a consistent manner, one can avoid giving these investors incentives other than that of keeping risks and returns consistent with each other and with that advertised to their end investors. For example, by adopting a mark-to-market rule in valuing both assets and liabilities (as opposed to historic average costs), the regulator encourages portfolio trading that keeps pace with the market cycle and changes in its structure. But valuing only one side of the balance sheet this way can lead to no turnover or to excessive trading. Similarly, taxing unrealized gains on one side but only realized gains on the other can cause the unintentional withdrawal of capital or addition of leverage to the portfolio.

A process-based approach to risk management

The way a bond investor approaches yield enhancement (when competition and rules encourage higher returns, subject to specific constraints) under an effective risk-management system is by an incremental extension of risk above a benchmark. A risk-factor analysis results in a model that projects incremental risk and return for the change in portfolio composition. Every step of the investment-decision process is modeled in this way and model performance is tracked against expected outcome to decide, regularly, on either model revision or reinforcement. Such an approach lends itself to risk-based regulation, but it also requires risk-management tools.

Like stocks or property, a bond is a bundle of risk components: system-wide interest-rate volatility, plus credit conditions (effecting the issuer), issuer management (the ability to cope with system-wide or issuer-specific stress) and other factors that constitute credit risk (the probability of default). Regulatory change and the rationing of credit (by investors) may also be environmental factors with which the issuer must cope. If the fund manager can identify proxies for any of these risk components, then they can be split off from the investment if they do not reward the investor for the risk. Being able to split up these risk factors is the main benefit of risk-management tools, such as repos (repurchase agreements), interest-rate forwards, futures and options, credit, currency and index derivatives. The ability to sell a bond short (through a repo or other lending arrangement) can also help a manager split off undesired risk.

Indexation is a preferred tool, with multiple uses, in this risk-management environment. Ideally there will be a high-grade, middle-grade and low-grade index, each consisting of a representative sample of bonds with moderate to high liquidity and having an internally consistent pattern of risk and return. Such indices, like a sovereign yield curve, form risk benchmarks that allow investors to choose the most suitable investment strategy for their purpose and risk tolerance. They allow end investors and regulators another tool with which to measure manager ability. It is also possible to create derivatives based on these indices in order to give managers a way to easily gain or reduce exposure to a specific risk class, selecting only the risks for which they expect to be rewarded.

What do all these features do to support bond liquidity? How does the model system described differ from those that discourage bond-market liquidity? In the most basic sense, this environment allows the investment manager choice and continually measures performance against expected returns. Because no one can predict the future, any fund manager must constantly adjust the bond portfolio to

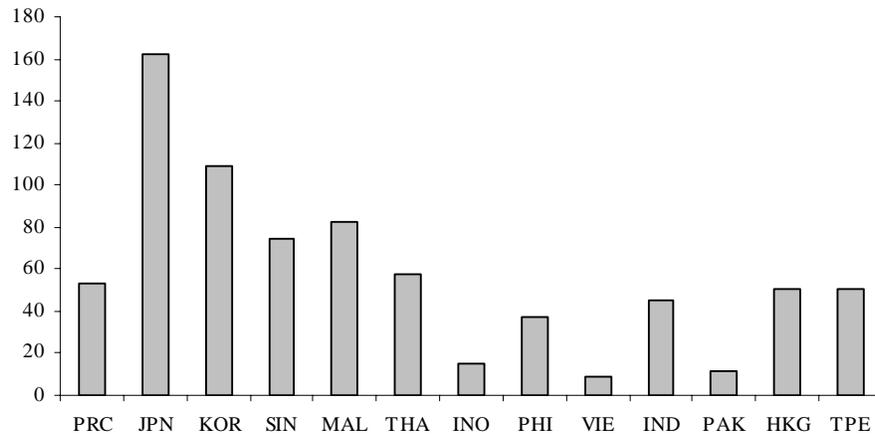
meet its risk and return target. So choice, both in risk and maturity, help boost liquidity. Having the tools to control this choice further improves liquidity. Being regulated to achieve a target risk and return, rather than just buying from a narrowly defined, homogeneous list will certainly improve liquidity from a given stock of bonds in issue – but only if there is a variety of bonds from which to choose.

A purely passive manager – one paid to track the index tightly – may appear to be a buy-and-hold investor, discouraging liquidity. But the risk-based approach to passive investing still requires regular “rebalancing” of the portfolio to keep its tracking error small. All rebalancing requires trading of benchmark constituents, thus supporting liquidity. In contrast, an active fund manager – one who seeks yield enhancement over the benchmark – will continually look for ways to be rewarded by eliminating inefficiencies in market pricing. Risk-based regulation gives the manager the scope but strict accountability for the results. The more active fund managers in a market, the higher its liquidity – all other factors being held constant.

3. How other Markets in Asia are Addressing Investor Needs

Pakistan has made significant strides in this decade toward developing a competitive institutional investor sector. In particular, the introduction of a voluntary private pension program could stimulate development and education in new investment products. New Sharia-compliant products in the insurance and mutual fund sub-sectors are typical of this shift. The new investment strategies, which might emerge from this channel innovation could, in turn, lead to greater demand from the domestic IIs for more variety in credit instruments. Certainly, with the new growth in OTC derivatives and planning for exchange-traded derivatives, there will be more capacity to invest in higher-yielding bonds (weaker credits).

Nonetheless, it might be useful to establish a context with changes afoot in the rest of Asia’s bond markets, since innovation is still proceeding at a faster pace across the region than in the 1990s. Figure 1 shows the size of twelve bond markets (bonds in issue) compared with their own gross domestic product. One can see that no one factor (economic development, legal system, equity market size, banking NPL levels, urbanization ratio, etc) explains these differences entirely because the shift to establish a robust bond market has not been on purpose through most of history. Asian consensus, born out of 1998’s events, has taken root in different ways across the region.

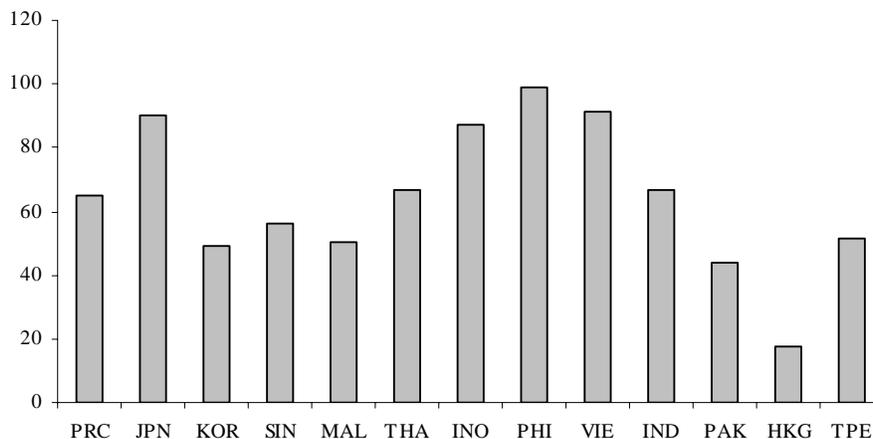
Figure 1. Asian Bond Market as Percent of GDP (Dec. 2006)

Basis: Bloomberg Data; National statistical offices

Improving the structure of supply

Pakistan's Rs 695 billion domestic bonds in issue today are only about 50% greater in value than the assets under management (AuM) by its insurance and mutual fund sectors combined and less than domestic pension AuM, according to my estimates. Even with a bias toward equity, this shortfall in supply would suggest the market's overall size needs to increase significantly and a larger share of the government's budget financing than last year's 7% could be arranged with bonds. While there is some risk of crowding corporate issuers out of the market, the corporate bond market is very young in Pakistan and is still finding its natural growth rate, amidst a rapidly changing regulatory environment. Clearly, companies are reluctant to issue when rates are rising rapidly. The share of government issues to total has been rising across the region in the last few years and rising rates have been a factor in that trend.

With the precedent of the super-sized Wapda First Sukuk floating-rate note this year and the prospect of flat or declining interest rates, we may see a rise in the corporate sector's share of issuance next year. Continued progress with the privatization schedule might also bring the government and agency share of stock below 60% in another five years. But the real growth in private-sector issuance

Figure 2. Govt. Share of Domestic Bonds Outstanding (Dec. 2006)

Basis: Bloomberg Data; AsianBondsOnline

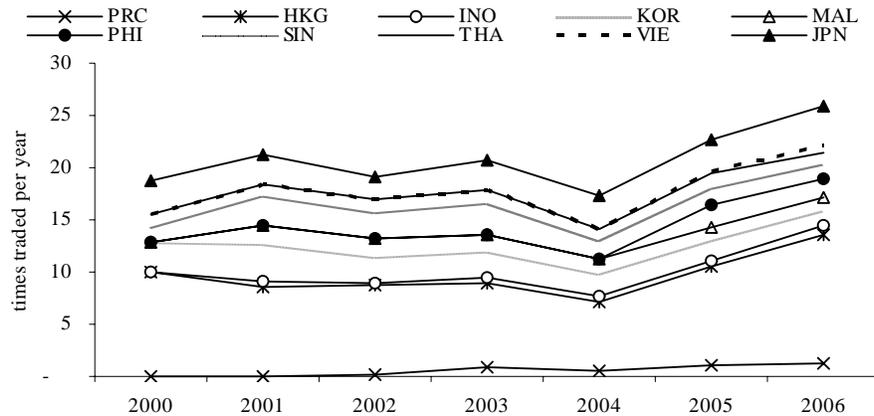
will come when the regulatory framework is ready to accommodate high-yield issuers and securitized (or covered) infrastructure bonds.

The power of consistency

This year's shift to a regular T-bill auction program is one of the most helpful changes in the market for IIs. It has the potential to revive the money market and eventually bring repurchase agreements into broader use. If the State Bank is successful in extending its regular auction program to its longer-dated issues, a growing supply of five-year and ten-year paper could trigger more trading among mutual funds and non-life insurance pools, especially if the yield curve is starting to flatten. Certainly Pakistan's relatively large supply of long-term bonds should be cultivated to support the IIs growing demand.

One factor that is easily observed is turnover ratios, as a rough indicator of liquidity. As the trend in Figure 3 shows, this has been generally rising in the region, as more governments turn their attention to reduce the information cost of dealing. Better indicators of the cost of information are the difference between the bid and offer prices and the intra-day volatility of prices, since these indicate the profitability of dealers in return for their information services. These have declined less than turnover ratios have increased, suggesting more inter-dealer

**Figure 3. Turnover Ratio Trends of Selected Asian Markets
(Regional Averages 2004)**



Source: Asian Bonds Online

trading rather than an increase in competition or standardization of product. These latter two trends should be major objectives in the effort to improve liquidity.

Asset-holding rules

A final area worth comparing is how regulators treat domestic IIs across the region. The table in an Appendix to this paper compares minimum and maximum holding rules for IIs in seven markets. The floors vary widely and those above 50% for the sovereign bond or similar asset mean that the pension fund becomes, in effect, a captive market for the sovereign, indirectly subsidizing the cost of public debt.

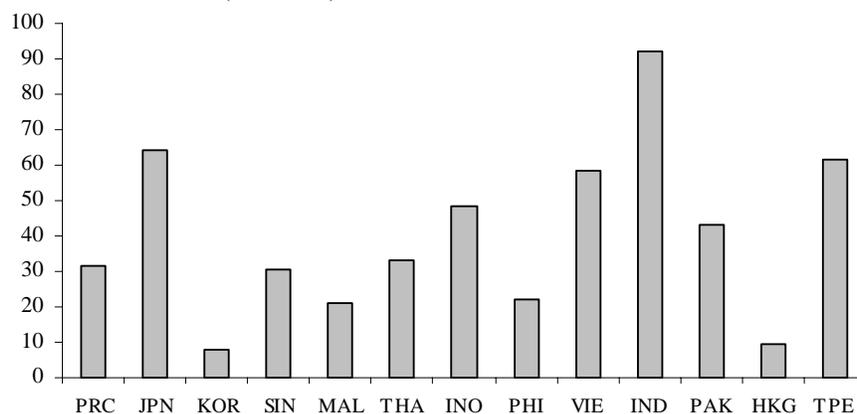
Because the issuer and regulator are often the same or are closely related, this pattern also represents a conflict of interest that needs to be clearly addressed. Ceilings on riskier assets are likewise intended to make prudential supervision easier but have the effect of preventing fund managers from learning how to manage risk rather than regulations. In none of the countries in this survey, running the gamut of sophistication, are the prudential guidelines framed in terms of a risk-based process to be managed.

4. Transition from *status quo* to Risk-based Supervision

A well-regulated market will have addressed the need for clear and consistent standards, but truly good risk management and adaptive regulation will arise from a shift to risk-based regulation. Traditional financial regulation concentrates on the inputs (e.g. asset allocation) and less on process. Risk-based regulation concentrates on the process and the outcomes (asset yields and volatility). This makes it harder to set up but easier to manage. The regulators for investment management need to adopt a similar approach to that now required by the Bank of International Settlements (BIS), so that they can focus on risk-management process rather than asset-class thresholds. Process-style fund managers, as discussed above, already follow such a method and would easily fit into such a regulatory program. They already use various techniques for measuring their portfolio risk, such as duration targeting, value-at-risk tracking and diversification measures.

To illustrate the point, consider the Basel II accord, which contemplates this need for a better operating process, as a result of changes in the banking market in response to the initial BIS standards on capital requirements twenty years ago. The accord outlines a statistical approach to measuring risk for banks and requires the gradual adoption of internal capacity to measure and manage these risks. To manage risks under this fine-grain approach requires banks to adopt new processes of risk management, which include the ability to assess their own model's effectiveness in risk identification and reduction. Adopting this process will be a

Figure 4. Percentage of Domestic Issues Maturing in Over 5 Years, When Issued (June 2006)



Source: Bloomberg Data; National Statistical Offices

decade long exercise for all but the five or ten most sophisticated global banks. But the benefit to the whole banking system will be huge – better stability and increased liquidity in bank assets, as value measurement becomes more frequent and accurate.

Enlisting the support of incumbents, who may undermine reform

One of the most contentious steps in most countries has been the loosening up of the primary dealer or inter-dealer cartel that operates most over-the-counter (OTC) markets. They provide many services including (near) continuous pricing, risk capital, speculative capital, quotation archiving and other features of market making. Where they have evolved together with the portfolio side, there can be a balance of forces that limits the cost of price discovery and supports market efficiency.

Where the dealer network has been transplanted from abroad, it can have a significant information advantage over its portfolio clients and generate abnormal profits, at the ultimate expense of portfolio beneficiaries and issuers. This latter case is common in the Asian region and achieving a better information balance between the dealing and investment sides of the market should be included in transition planning. Some governments are using the threat of exchange-listed bonds as a way to negotiate a balance in their market.

Stepwise approximation of the equilibrium state

Another lesson that can be drawn from early successes, such as the very different experiences of Korea and Malaysia, is that quantitative restrictions on institutional investors should be lifted in stages, as risk process is gradually imposed. An essential element of risk-based regulation is that fund managers understand how to use the tools at their disposal. As quantitative and qualitative restrictions are lifted, managers will have the chance to learn through experimentation what they have studied but not been allowed to practice. The trial-and-error experience is necessary and a controlled experiment will limit the cost of errors; thus, the benefit of a staged approach to greater choice and responsibility for process and results.

The pathway to regulatory reform in finance can have dangerous detours if not carefully managed. The savings-and-loan collapse in the US is but one colorful example of how poorly planned reforms can have unintended consequences. Most regulatory changes will affect how capital is priced, whether by affecting cashflows or asset and liability valuations. If the change is significant, the system

will need some time to absorb the shift in values and profits. If the change is complex or moves to a more complex process, then a lot of training and practice time will be required. If several reforms overlap, then the changes resulting from one may exacerbate the difficulties of adapting to the next, creating system instability.

The sequence of steps chosen will have to consider both feasible supply and satiable demand at each stage. A certain critical mass of resources and market interest is also needed at each step. For example, in building a benchmark yield curve, some governments have tried to generate too many pricing points at once, with a limited issuing authority. The result is usually a scattered issuance pattern that is insufficient to mount a regular, predictable auction calendar or generate liquidity at any point. Without this, investors will find it harder to schedule their portfolio rebalancing and manage their yield target or to use any point on the curve as a pricing benchmark.

Expanding the credit range to fit contemporary domestic society

Because the bond investor has less coercive power over the issuer than a bank has over its borrower, most economies have restricted weaker credits to financing themselves with bank loans. As bond markets emerge, that is leaving Asian banks with poorer-quality balance sheets than even fixed-income mutual funds. The majority of business borrowers in Asia are below the both international and domestic standard of “investment grade.” So, developing a lower-grade bond market will improve access of the poor to credit, improve the balance sheet of domestic lenders, and provide domestic IIs with a useful, realistic choice in credit risk. As issuance and default patterns emerge, this experiment will have to be refined too, but if managed carefully this innovation will catalyze the corporate bond sector.

Credit assessment skills are still under development in most countries. Local credit rating agencies must cope with issuer and political coercion as well as skill constraints in establishing a useful and credible service. These pose hurdles to the development of the corporate bond market, even before it is extended to weaker credits. For this reason, pooling these riskier assets and financing them through subordinated tranches can quickly expand credit access and the credit range of bonds. In particular, this process squeezes the most difficult credit questions into the bottom ten to twenty percent of the pool.

While the US bond market has developed this approach through the structure of securitization, this approach burdens each deal with enormous legal and

“structuring” costs. Even though the most important parameters have become well established and are defined in standards set by ISDA (the International Swap Dealers Association), the charges and structural requirements discourage greater use of subordination techniques in smaller markets. A superior approach for all but the lawyers and arrangers is the covered bond, mentioned above. By using national law to define structure and constraints, it standardizes the process and lowers costs. By using lender balance sheets, rather than special-purpose vehicles, it avoids the problems of the true sale in its solution of conflicts of interest. Thus, it is a bank-friendly technique that supports Basel II implementation, while still offering large-volume, standard issues. Most covered bonds have been issued for high quality assets such as residential real estate, but the opportunity to use them for riskier assets and in -compliant form is significant.

In each of these dimensions – expanding credit range, filling in term structure and focusing on risk-and-return outcomes – a series of controlled (i.e. scaled) experiments will limit system risk while achieving liquidity. The focus and pace of financial reforms in Pakistan today prove an ability to achieve bond market liquidity and variety ahead of its peer markets. Continued commitment is the last ingredient.

Appendix – Comparison of Holding Rules for Institutional Investors

Regulatory position	PRC	Indonesia	Korea	Malaysia	Philippines	Singapore	Thailand
1. Current minimum holdings of domestic sovereign bonds for pension funds, provident funds, insurance companies (life and non-life).	<p><u>The Social Security Fund</u>: 50% of NAV minimum holding in sovereign debt or cash (bank accounts), of which, 5% is a minimum liquidity balance in cash;</p> <p><u>Enterprise annuity funds</u>: 20% of NAV minimum holding in sovereign debt, plus 5% minimum liquidity balance in cash, including money markets.</p> <p><u>Insurance companies</u>: 30% of assets</p>	None specified.	<p><u>Provident funds</u>: by investment trusts, must have 60% minimum in bonds.</p>	<p><u>Employees' Provident Fund (EPF)</u>: 70% minimum of non-cash investments in sovereign or agency paper with over three years maturity, and 50% of (re-)investment in any one year, but shortage of qualifying paper has meant the share achieved has been less than 40%</p> <p><u>Private provident funds</u>: 20% min in government-related and 80% minimum in</p>	<p><u>Insurance companies</u>: 25% minimum of paid-up capital must be in government or agency securities.</p>	<p><u>Central provident fund</u>: 100% are invested in government bonds that fund the GIC, Temasek and other government investment institutions, but individuals may direct allocations into other assets, such as unit trusts and equity.</p>	<p><u>Pension and provident funds</u>: 60% min must be invested in very low-risk assets, including government bonds.</p> <p><u>Life insurance companies</u>: rules imply a 60% minimum must be invested in very low-risk assets.</p>

	minimum in debt of sovereign or state enterprise			Malaysian securities. <u>Takaful operators:</u> 15% minimum reserves in central or state government and 80% minimum in Malaysian securities.			
2. Other minimum-holding requirements for each of these types of institutional investors.	No.	None specified.	<u>Hybrid (equity, bond, etc) investment trusts:</u> 10% minimum in liquid assets.	For certain types of unit trusts.	The Government Services Insurance System must invest 40% min in loans to members.	None.	None.
3. Maximum share of each other asset class allowed for each of these types of institutional investors. (e.g. foreign bonds, bonds rated BBB or higher, equity, property, etc)	<u>The Social Security Fund:</u> 40% of NAV maximum in equity or securities investment trusts and 10% maximum in corporate bonds; <u>Enterprise annuity</u>	<u>Social Security and pension funds:</u> May not invest in foreign currency assets; no maximum on government debt; 20% maximum each on listed stocks and bonds, mutual funds,	<u>Provident funds:</u> if investment-trust hybrid funds 30% maximum in equity; if bank hybrid funds 10% maximum in equity; if bank bond funds 50% maximum in loans.	<u>EFP:</u> 25% maximum in equity, 0% in foreign bonds. <u>Insurance and Takaful operators:</u> 5% maximum of reserves and 30% maximum of unit-linked investment funds may be	<u>Social Security System:</u> 40% maximum in private sector securities, 35% in property (esp. in housing), 30% in agency debt or infrastructure (debt or equity), and 7.5% max in	<u>Insurance companies:</u> 45% max in equity and unit trusts, 25% maximum in property and 30% maximum in foreign currency assets.	<u>Pension and provident funds:</u> 10% maximum in equity convertibles or warrants; <u>Life insurance companies:</u> 20% maximum in equity, 20% in domestic non-

	<p><u>funds</u>: 50% of NAV maximum in fixed-income products and 40% maximum in equity products, of which stocks have a maximum of 30%. <u>Insurance companies</u>: 20% of assets maximum in corporate or enterprise bonds; where authorized to invest overseas 70% maximum of foreign ceiling in international-rated AA bonds or better, 30% in A-rated or better bonds, and deposits of A-rated banks.</p>	<p>domestic land, domestic property and bank deposits; 10% max each on unlisted equity and bonds. <u>Insurance companies</u>: 20% maximum on bank deposits and debt or equity holdings in any one issuer and in foreign assets; 10% maximum on any unlisted equity investment and on either foreign equity, debt or direct investments.</p>	<p><u>Insurance company provident account</u>: 40% maximum in loans, 40% maximum in equity and 15% max in real estate.</p>	<p>invested in foreign assets.</p>	<p>foreign investments. <u>Insurance companies</u>: 25% maximum, life insurers, non-government domestic bonds of BBB rating or better and 20% maximum for non-life insurers.</p>	<p>sovereign bonds above BBB or in foreign bonds above A, and 20% in mutual funds.</p>
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Source: Project report on ADB RETA 6244, "ASEAN+3 Multicurrency Bond Study", October 2005