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# Implementing Repurchase Agreements in Emerging Markets

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## Abstract

Repurchase Agreements (repos) have received increasing scrutiny as a result of their involvement in the recent financial crisis. While viewed as an important part of the 'shadow banking system' allowing non-banks to access liquidity and expand leverage, the legal and accounting status of most 'repos' is still unclear. Meanwhile, the usage of 'repos' in the development of emerging financial markets continues to expand, playing a pivotal role in monetary operations and fixed income markets. In this briefing, I discuss the main issues surrounding 'repos' in relatively undeveloped markets (EMs<sup>1</sup>) including the legal status of the first leg of the 'repo' as a true sale and the distinction between 'repos' and 'sell-buybacks.' I also discuss aspects of EMs that are relevant to the adoption of 'repos.' Primary among these is the thinness of markets, the legal status of 'repos,' accounting practices, monetary policy. Recommendations are offered regarding specific issues common to these countries.

## Keywords

Repurchase agreement, Collateralized loan, Market thinness, Treasuries, Margining, Counterparty risk, Liquidity ratios, Sell-buyback.

## JEL classification

G18, O16, O17.

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The author is currently an independent consultant. While some of the insights presented in this briefing came from work done for the International Monetary Fund from 2003 to 2008 the views presented here are solely the views of the author.

<sup>1</sup> Kenya and Ukraine would be examples of such markets.

## ■ 1. The main roles for ‘repos’ in emerging markets

Repurchase agreements (‘repos’) in principle should play a pivotal role in the development of financial markets<sup>2</sup>. Basic finance theory tells us that, in order to price risky financial instruments we need to start with a ‘risk-free’ interest rate and that this would be from the market for government debt (treasuries). Ideally, this interest rate should come from secondary market transactions. ‘Repos’ can play important roles in both the primary and secondary treasury markets and the need for repos in these regards becomes painfully clear in markets that are not that far removed from the days when government financed itself through an overdraft facility at the central bank. In such markets, which are the focus of this briefing, it is common for only a small percentage of the population (usually financial institutions and sophisticated individuals) to have an interest in, or knowledge of fixed income concepts as basic as yield-to-maturity. Moreover, it is likely that a high percentage of those interested in owning treasuries have not moved beyond a buy and hold ‘strategy’ so that secondary markets are thin.

Initially in these economies the government debt market is promoted by only the central bank or the ministry of finance. However, given the relative lack of sophistication of staff at such institutions, eventually a movement is made towards instituting a primary dealership system (PDS) in which a select list of financial institutions is given the ‘privilege’ of exclusive access to the debt auction in return for the responsibility of quoting both buy and sell prices for a specified list of maturities and with the understanding that investors are to be educated on the basics of fixed income valuation. Repos, securities lending, and short-sales can play an important role in the success of PDSs.

With thin markets, dealers will not want to hold significant inventories of the instruments on which they are required to supply quotes. So, if an ‘ask’ quote is hit, a dealer will want to ‘repo’ out a security that she does not yet own, and ‘reverse’ in (buy with an agreement to sell in the future) a security with which to fill the sell order. Alternatively, the dealer might like to be able to borrow the security, possibly from the central bank. However, like the dealers, the central bank might not want to hold a significant inventory of treasuries given market thinness and high interest rate volatility. Or, existing legislation might prohibit the central bank from holding treasuries for such purposes. Along the same lines, dealers might wish to take a short position, and then to obtain the security through repos or securities lending. However, prohibitions on short-sales are common in economies without deep markets for government debt.

<sup>2</sup> Here ‘repo’ is being used as it is commonly defined: an agreement to sell a security with a simultaneous agreement to buy back the same or equivalent security at a given point in the future.

Another possible role for repos in the development of financial markets comes from their possible interpretation as collateralized lending. If excess liquidity frequently fails to move from surplus to deficit banks, it might seem that interbank credit limits are overly restrictive and that supplemental credit limits based on collateralized lending, would increase the amount of interbank lending. Although ‘repos’ are not properly thought of as only collateralized loans, adopting a repo framework, with a limitation on the ability of the buyer to sell, lend, or re-repo the collateral, might be a way forward towards a more fully functional market repo. The wisdom of promoting such ‘blocked’ repos, however, will depend on several factors, such as the adequacy of existing bankruptcy laws to enforce set-off. Adopting repo documentation from more developed countries by itself might not be sufficient to promote such collateralized lending.

Ideally, repo markets also provide for the mitigation of counterparty risk; the lender of cash can sell the collateral and then obtain an equivalent security to return at the end of the repo term. However, in EMs where government debt markets are still thin and volatile market risk is a more pressing concern to private FIs. While widely accepted repo frameworks provide for the provision of both initial margin (haircut) and variation margin (topping up) as a way to mitigate market risk, thin markets make it likely that there will be no reference prices to use for marking-to-market. More importantly, without some indication as to what the market price would be, potential participants in repo markets can be at a loss for how to value the repo collateral. Adopting the use of initial margin applied to book values might be the best that can be done initially.

Open market repos often are used before the development of market repos. Central banks often begin to use repos or reverses to manage the amount of reserve money, or to achieve interest rate targets, the former objective being more common. In concert with a target for reserve money, or M1, or one of the other aggregates and with the use of a liquidity forecast, many EM central banks ‘sell’ government securities with an agreement to purchase those securities back at some specified point in the future.

Such central banks repos might not improve the odds that private financial institutions would accept initiatives intended to ease the way for market repos simply because repos and reverses conducted by the central bank as part of its monetary operations need not adhere to internationally accepted conventions regarding law or accounting. For example, while the idea that the security ‘sold’ in effect serves as collateral in the event that the seller does not pay back the cash, when the seller is the central bank it is immaterial whether there is an established legal precedent regarding the ability of the buyer to obtain the collateral since the central bank is exceedingly unlikely to fail. Similarly, while the ability of the buyer to sell the collateral and return an equivalent security is generally accepted in developed countries, given a limited array of alternative investments for cash in many EMs, private FIs might not argue

too strongly against such a limitation imposed by a central bank offering a market rate for their excess reserves.

Whether or not central bank repos lead the way for market repos depends in large part on the details of such operations. If the central bank keeps custody of the repo security, open market repos will be seen as less risky than repos involving custody by parties that have a higher probability of failure. This might become an impediment to moving towards more modern infrastructure. Similarly, if the central bank offers some preferential treatment of open market repo for the calculation of prudential liquidity ratios, the development of market repos is hindered. Perhaps most importantly, if the central bank refuses to acknowledge that title to the collateral passes to the seller, an important aspect of repo will be harder to adopt for market repos.

Finally, the overall stance of monetary policy and its implementation operationally will influence the development of repo markets, money markets, and government debt markets. Central banks either target prices (interest rates) or quantities (monetary aggregates), while caring about both. In the early stages of development monetary aggregates are often targeted as a means to reach an inflation goal. However, if the central bank is not operationally independent of the finance ministry, it is likely that its operations in either the primary market or the money market will confuse the market. The development of a rational linkage between repo rates and other market interest rates will be that much more difficult.

**Summary of suggestions:**

Repos provides a means for getting out of the trap of thin markets implying a lack of market pricing that impedes the selling of treasury securities which implies thin markets. By being able to sell (via repo) a security which is simultaneously obtained (via reverse repo) and then delivered to fulfill the sale, repos allow for increased market depth. However, it is far from clear whether central bank repos (open market repos) facilitate the move towards market repos. Central bank repos are often ‘blocked’ so that the repo security cannot be sold, lent, or re-repoed. Such instruments are in fact better thought of as collateralized loans with zero default risk. The operation of central banks repos might actually inhibit the development of market repos if the former are seen offering benefits in terms of risk-adjusted rate of return or some regulatory benefit.

The use of primary dealership systems is almost inevitable in the development of government debt markets and this also argues for the use of market repos by the dealers. While securities lending and short-selling will probably be requested by potential dealers, the benefits from developing a repo market probably exceed either of the other two. Consequently EM authorities (usually central banks) are advised to focus on removing the main obstacles to market repos, primarily legal impediments to selling the collateral.

Consideration of other factors driving market thinness is also advisable. For example, the lack of a benchmarking program can lead to the proliferation of issues, each of which might be fully subscribed but few of which have much volume in the secondary markets. Another factor might be the tax system, which might penalize the sale (disinvestment) of government securities. Finally, market thinness often implies uncertainty about the accounting treatment of sales. Some flexibility and clarity on the part of the tax authorities might be advisable.

## ■ 2. Repos, Sell-buybacks, and Secured Loans

Confusion about what should be called a repo plagues even discussions about repo markets in developed economies. For example, in the U.S. it is common to use the term ‘repo’ and ‘sell-buy back’ interchangeably even though the literature makes clear the distinction between the two. This usage might be related to the fact that ‘sell-buy backs’ are seldom used in the U.S. The legal finding that a ‘repo’ was in fact a collateralized loan is common enough that it is a legal risk recognized in the literature. However the perception still persists in some quarters that repos are essentially collateralized loans. It is difficult to know how many transactions that are described as ‘repos’ should not be described in such a fashion. Most ‘repos’ are never evaluated by the courts and supervisors cannot be expected to scrutinize all, or even most such transactions. Moreover, even in relatively modern financial systems (e.g. the U.S. and the U.K) it has become clear that the legal, accounting, and regulatory treatment of ‘repos’ needs improvement. Consequently it is not clear what exactly the repo market should look like for a given EM.

Adding to this confusion is a plethora of types of ‘repos.’ Harding and Johnson (2006) list 12 types of repos: reverse repo, flex repo, general collateral repo, special repo, hold-in-custody repo, open repo, overnight repo, term repo, cross-currency repo, tri-party repo, syndicated repo, and equity repo. The distinctions between these types of repos includes those made on the basis of custodial arrangements, settlement conventions, legal treatment, and other aspects too numerous to warrant mention. Not all of these distinctions are of equal relevance to the development of repo markets in EMs. In fact, most EMs would be better off focusing on the legal differences between repos and secured loans and between special repos and general collateral repos.

It is often said (e.g. Steiner, 1997) that there are three types of ‘repos’; ‘classic’ repos, sale-buybacks, and securities lending. This particular typology appears driven by the fact that economically, all three are the same; a security is delivered in exchange for cash, with the security (or equivalent) returning to the provider and cash plus payment moving in the opposite direction at an agreed upon point in the future. Securities

lending, de facto, is a different type of activity whose development is often distinct from repo initiatives. The importance of the distinction between sell-buybacks and ‘classic’ repos, on the other hand, cannot be overstated for the development of EM repo markets.

The important differences between ‘classic’ repos (sometimes referred to as ‘true’ repos) and sell-buybacks are as follows: in a classic repo both legs are viewed jointly as a single transaction whereas a sell-buyback comprises two transactions; in a ‘classic’ repo the security being sold remains on the books of the seller (preferably with the accounting treatment showing that such a security is involved in a repo), whereas for a sell-buyback the security is derecognized; in a ‘classic’ repo any coupon received during the term of the repo is returned to the seller, whereas for a sell-buyback the buyer keeps the coupon. It is not clear how important the accounting and regulatory issues are for the development of EM repos<sup>3</sup>. However, clarifying the legal, accounting, settlement, and regulatory treatment of sell-buybacks involves much of what would be achieved by doing the same for ‘classic’ repos.

At least as important as the accounting differences between ‘classic’ repos and sell-buybacks is the legal treatment; in both instances legal title is transferred to the buyer and ‘true’ sale is said to have taken place. The apparent contradiction between title transfer and lack of derecognition of the security from the books of the seller is rationalized by the statement that in a ‘classic’ repo both legs are viewed as a single transaction so that the seller retains ‘economic’ exposure to changes in the value of the security during the repo term. However, this distinction might not be meaningful to treasury staff in EMs, who will primarily be guided by their local lawyers and accountants and not necessarily by first-world best practices. Obvious exceptions to this would be the multinational banks and perhaps local banks that look to them for guidance.

The crucial point made by saying that true sale has taken place in the first leg of a ‘classic’ repo is that, while the security stays on the books of the seller (who also receives any coupon), the buyer can sell, lend, or re-repo the security, only having to return an equivalent security at the end of the repo term. The widespread view that repos are ‘essentially’ collateralized loans seems consistent with the security staying on the books of the seller and with the borrower of cash paying the principal balance plus interest which is equal to the difference between the selling and buying prices. It is for good reason that the fact that the security sold can be immediately dealt is often not properly appreciated by EM market participants; in thin markets for even government securities the risk of failure to return an equivalent security at the end of the repo term is relatively high. In the event that the laws guiding such delivery failures

<sup>3</sup> Although the case of *Drysdale Securities in the U.S.* highlights the risk associated with a lack of consensus about whether coupon paying securities should be quoted ex-accrued interest or not. See Acharya and Oncu (2010).

are poorly developed it would be understandable for the authorities to minimize the probability of such events by restricting the ability of the cash lender (buyer) to deal freely with the security. In the event that the buyer is unable to deal at all with the security, the repo is often said to be 'blocked.' Open market repo operations conducted by central banks in EM are often conducted in such a manner. Unfortunately, such transactions might better be described as collateralized loans, rather than pretending that a sale has taken place.

Listing the various ways in which repo documents might trigger recharacterization and then trying to avoid these is unlikely to be a fruitful way to proceed. On such matters even U.K. and continental lawyers might disagree (Choudhry, 2006). However, limiting the ability of the buyer to deal freely with the security by specifying that the identical security must be returned is a likely trigger. And even specifying that returning a different security requires approval of the authorities might be enough to hold up market development (one sub-Saharan African country in which the author worked).

With the benefit of hindsight regarding the history of repo markets development in countries such as the U.S. we can advise that EMs pass legislation clarifying the property rights associated with repos rather than awaiting piecemeal clarifications through the courts.

An alternative to clarifying the legal status of 'classic' repos is to clarify the treatment of buy-sell backs. The attractiveness of proceeding in this manner is that such an instrument clearly is comprised of two separate transactions so that its confusion with a collateralized loan is far less likely and the ability of the buyer to sell, lend, or re-repo the security is less likely to be in dispute. At the same time, buy-sell backs are economically equivalent to 'classic' repos so that some of the benefits will still be obtainable. Primarily among these should be market deepening, and the emergence of generally acceptable reference prices and yields. The value of the opportunity to develop an understanding about the proper accounting and regulatory treatment of such instruments also should not be underestimated.

### **Summary of suggestions:**

While what constitutes a 'repo' for legal, accounting, and regulatory purposes is crucial for the development of market repos, the choice between 'classic' repos and sell-buy backs is unclear for a given country. The determining factor might be the legal traditions, as they impinge on the ability of the lender of cash (seller) to sell on the collateral. The main benefit for many EMs of repos can be obtained with sell-buy-backs; market deepening. However, sell-buybacks, as commonly understood, do not require as much documentation, do not involve margining (which might be burden-



some to some counterparties), and do not involve close-out netting. In other words, sell-buybacks are simpler to implement. However, the widespread use of repos in developed financial markets argues in their favor and sell-buybacks should only be seen as steppingstones towards that goal.

### ■ 3. Legal Frameworks

Master repurchase agreements have become the preferred vehicle for laying out the legal, accounting, and settlement detail for repos, even allowing for the inclusion of sell-buy backs in the case of the Global Master Repurchase Agreement (GMRA). It should be noted the securities lending has its own master agreement and both General Collateral (GC) and special repos are covered by the three major master agreements, the GMRA (which is based on U.K. legal precedent), the Master Repurchase Agreement used in the U.S. and the European Master Agreement developed by the European Union. While some countries have developed their own, customized master repurchase agreements (e.g. Sri Lanka), the case for adhering to an internationally accepted standard can be overwhelming in some environments. The most important factor determining whether customization is feasible will likely be whether there is already in place a generally accepted and workable legal framework for collateralized lending. However, to the extent that the relevant portion of the law is still evolving the case for customization is weakened.

The GMRA appears to have emerged as the preferred master agreement for repos, perhaps in part because of the wealth of evidence about how European countries have adapted their laws so as to ensure consistency with the intended use of the GMRA. However, for many EMs, many aspects of the GMRA will not be applicable for some time and the question then becomes whether to have all the intended participants sign onto an agreement that will not be fully enforced. There can be no general answer to this question but it should be pointed out that the development of accepted ‘business’ practices can provide a bridge to the day when all aspects of the master agreement are enforced. Local treasurers associations, for example, can play an important role.

For many EMs, the most important part of the GMRA will be its clarification that repos explicitly involve title transfer so that there is clear intent for ‘true’ sale and repurchase. The seller is said to only have a proprietary interest. However, having signed onto this agreement will then place demands on the existing legal system’s treatment of collateralized loans and sales of government debt, the most likely type of collateral. Ultimately title transfer and the ability to set-off in the event of the bankruptcy of the borrower will have to be validated by the courts.

The requirement for netting that is embedded in the GMRA is a steep hurdle for many EMs. Not only might this be inconsistent with existing bankruptcy regimes, it might be difficult given the settlement infrastructure and market thinness. Close-out netting, for example, requires the valuation of all of the securities being used for repo between the two parties.

A third major aspect of the GMRA is that it envisions the use of margining. While initial margin is possible it is stated that “If the value of the bonds sold to the Buyer falls during the life of the repo transaction, the Buyer is entitled under paragraph 4 (Margin Maintenance) to call for more bonds or for Cash Margin to maintain the value of the bonds against which it has paid out its cash at the start of the repo transaction.<sup>4</sup>” It is thus clear that variational margining can be induced by the choice of the buyer. In principle, it is possible that in Annex I, the parties to any bilateral repo agreement could agree to not provide variational margin. However, based on the discussion on Harding and Johnson (2004) such an exception is not usually made.

Variational margining is difficult in thin markets, even if the regulatory authorities clarify how it could be done. Yield curves constructed from historical data are not likely to be accepted if markets are volatile and yield curves promoted by private associations might be met with suspicion. It would be unwise for the central bank or other public entity to put forward a yield curve viewed as indicative of current market conditions as this would be tantamount to indicating the stance of monetary policy. Perhaps the best that could be hoped for initially is that the practice of initial (haircut) margining be adopted as a minimum, with some study done of the factors bearing on the amount of the haircut. On the other hand, if two parties agree to variational margining, specifying a manner in which this is to be done, the authorities should not react to this by requiring that all counterparties to repos follow suit. It is quite possible, for example, that a large multinational bank would have generated its own yield curve which it could then offer for use in variational margining for all those who wish to conduct repos with it.

**Summary:**

There is no general answer to whether or not a given EM should write a customized master repurchase agreement. It is probably only advisable if the groundwork has been laid in terms of the development of a relatively modern bankruptcy code and thus the establishment of collateralized lending. However, even then, as the financial system develops subsequent master agreements would be needed and the issue of consistency with international standards would arise. The alternative is to adopt an accepted international standard master agreement and then come to an under-

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<sup>4</sup> Paragraph 2, (f).

standing (business practice) about how to deal with provisions of these that were not yet feasible.

Netting and margining are two examples of risk management specified in the international standard agreements that are likely to be problematic for EMs. Netting is facilitated with the deepening of financial markets and also with the installation of appropriate infrastructure. Variational margining can be promoted by flexible and clear regulation. For example, there is no reason why there needs to be unanimous agreement within the private sector about the market price; there can be multiple accepted sources of such information and Annex I of the GMRA can be used to specify which would be acceptable for counterparties.

## ■ 4. Accounting and Regulation

As the accounting rules for repos are evolving in response to the financial crisis authorities in EMs seeking to promote market repos should focus on clarifying any aspects of accounting and regulation that might be impeding market development.

For example, for a ‘classic’ repo which is governed by a master agreement or is otherwise constrained to be a single transaction albeit with two legs, the accepted treatment for the seller is to keep the collateral on the books. That this is different for a sell-buyback is explained by there being two legally separate transactions for that instrument. However, as a first step towards adequate collateral management, the seller should provide a separate heading indicating that a certain security is involved in a repo.

The borrower of cash is viewed as having a cash liability while the security that has been sold is not viewed as a liquid asset for the calculation of prudential liquidity ratios. In markets with excess liquidity these rules might not appear to be of much significance. However, some general principles should still be followed. First, there should be no net increase in system wide prudential liquidity resulting from repo between private counterparties. Second the treatment of central bank repos and market repos should not be inconsistent. To the extent that the central bank is mopping up liquidity (reducing a monetary aggregate) the prudential liquidity of the private sector would be reduced.

In the event that the counterparties to the central bank repos contest the accepted regulatory treatment of the exchange of cash for security, the central bank might be tempted to deviate from the standard rather than to allow the open market repo rate to be influenced. Such considerations also arise when considering whether to

treat central bank reverse repos in an asymmetric fashion, as some banks do (Choudhry, 2006).

The regulatory capital treatment of repos is currently being re-evaluated, in light of a re-focusing on the importance of collateral management associated with the financial crisis. However, it is likely that the nature of the collateral will still be relevant along with the extent of documentation. The last has generally been interpreted as implying that repos done under one of the major master agreements would receive preferential treatment. However, this presumes that the master agreements would have been made consistent with local bankruptcy proceeding and that the netting provisions in the master agreement would be upheld. Given the increased attention being given to repo markets it would be unwise for authorities in EMs to base repo initiatives on assumptions about how the capital treatment of these instruments will evolve.

**Summary:**

It goes without saying that the accounting and regulatory treatment of repos in EMs should not deviate much from international standards. However, as international standards for repos are evolving, authorities in EMs should focus on developmental aspects. A clear distinction has been made between derecognition of the security sold in a sell-buyback and the lack of derecognition of a security sold in a repo. This corresponds to the coupon treatment and the provision of margin for the latter. This distinction should be maintained, clarified by the authorities and logically related to the treatment of regulatory capital.

Prudential liquidity calculations can also be a concern. The general view has been that the repo security is not a liquid asset for the buyer. On the other hand, as has been made apparent by the recent crisis, there is a broader sense in which repos increase liquidity. The authorities need to consider their overall monetary policy stance when promulgating such regulations. Furthermore they need to consider any distortions that might be introduced by differential treatment of central bank repos and market repos for liquidity ratio calculations.

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