Rough guide: GMRA 2011 for operations staff & other non-lawyers

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A financial markets development company

ROUGH GUIDE: GMRA 2011 FOR OPERATIONS STAFF & OTHER NON-LAWYERS

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AN OVERVIEW OF THE GMRA

1.1 What is the GMRA?

The GMRA is the **Global Master Repurchase Agreement**. It is a model contract for repos that is published by the International Capital Market Association (ICMA) in co-operation with its US counterpart, the Securities Industry and Financial Markets Association (SIFMA). There have been several versions of the GMRA since the original was published in 1992. The latest is the GMRA 2011 but most firms are currently still using the 2000 version. However, the GMRA 2011 is expected to become the most common version over the next few years.

The GMRA was originally intended for cross-border repos in Europe but has now become the standard legal agreement in the global cross-border market (including in Asia) as well as in many domestic markets around the world. There are four broad benefits from using the GMRA.

First, the GMRA is a **written contract**.

- By setting out the terms and conditions of repo transactions in writing, the GMRA provides clarity to the parties as to their rights, obligations and remedies in the event of a breach of contract by one of the parties. This means that transactions are more likely to be performed as intended. And, if one of the parties defaults or otherwise fails to properly perform its side of the contract, setting out the original intentions of the contracting parties clearly in writing should make it is easier for the other party to enforce its contractual rights in court.
- A written contract makes express provision for **risk management**, in particular, variation margining and equivalent procedures.
- Because a written contract can strengthen the enforceability of rights and obligations and expressly provides for risk management, it is a regulatory requirement for being able to use collateral to reduce the amount of **capital** that must be held

by banks and securities companies against the risk of buying and selling repo. For the same reasons, a written contract is also required by major accounting standards bodies as a condition for reporting net positions on the balance sheet.

■ Written contracts set out sound procedures for **post-trade collateral management**, such as how to manage coupons, dividends or other income paid on collateral during the term of a repo. This enhances operational efficiency and reduces operational risk.

■ Because a written contract can reduce risk, some **laws and prudential regulations** (e.g. the EU Financial Collateral Directive and the EU SFT Regulation) require financial collateral arrangements to be in writing. Failure to use a written contract may deprive the contracting parties of legal rights or expose them to regulatory sanctions.

Second, the GMRA is a special type of written contract called a **master agreement**, which is sometimes referred to as a 'framework agreement'.

■ Under a master agreement, each new transaction is negotiated within a framework of standard terms and conditions. This avoids the need to agree all the same terms and conditions each time a new transaction is executed. It therefore simplifies **negotiation**. Parties are still free to diverge from the standard terms and conditions. All they have to do is agree on and record the special terms or conditions of any non-standard transaction.

■ Using a master agreement also reinforces parties' **netting rights** for legal, regulatory and accounting purposes by merging all transactions into one contract and therefore into one set of positions. This should make it difficult for the liquidator to 'cherry pick' transactions under the contract. That is, to repudiate loss-making transactions while enforcing performance of profitable transactions. In some jurisdictions, netting is allowed only between transactions under a master agreement.

Third, the GMRA is not just any master agreement. As observed already, it is the **standard** master agreement for a wide range of markets, both cross-border and domestic.

■ Where markets have adopted the GMRA as their standard master agreement, it enhances operational efficiency and reduces the operational cost and risk of collateral management by **harmonizing market practice**. This is especially important for a market like repo, which is characterized by high volumes of short-term transactions.

■ **Legal risk** is reduced because of the experience of using the GMRA that many institutions have accumulated. This means that institutions, particularly those who operate internationally, find it easier to open a repo business relationship with counterparties who offer to sign the GMRA. And because a standard master agreement is so widely used, courts may be willing to accept its terms and conditions as representing 'custom and usage' in the international market. In other words, courts may be willing to accept established international practice (enshrined in the GMRA) as representing a legitimate way of conducting business in the domestic financial market.

- **Legal costs** are reduced by limiting the scope of due diligence.
- A standard master agreement is required in order for collateralization to be used to reduce the amount of **regulatory capital** required for repos under the Basel rules.

Finally, the fourth and final benefit is that there are practical advantages of being based on **English law**; supported by a wide range of up-to-date **legal opinions** and having been **tested** in several market crises, including the unprecedented events of 2008.

- **English law** provides a well-developed and commercially-rational body of law backed by an experienced, well-qualified and impartial judiciary, which accordingly provides the basis of much modern international commercial law.
- Each year, ICMA commissions independent **legal opinions** for the benefit of its member firms on the enforceability of the standard GMRA in a wide range of jurisdictions (66 as of 2018). Annually-updated legal opinions assist members in satisfying the requirement under the Basel rules, which states that in order for the mitigation of credit risk by collateralization to be recognized for the purpose of capital calculations, institutions must have a demonstrably well-founded confidence based on up-to-date analysis on the enforceability of contracts. The fact that ICMA commissions the legal opinions provides a substantial savings in legal costs to its members. The ICMA opinions provide an important starting point but nevertheless, members may need to seek additional legal opinions of their own if the type of repo business they conduct goes beyond the standard transactions contemplated in the GMRA.
- The GMRA 2000 has performed very well in several **financial crises**, including those that erupted in 2008 in the aftermath of the Lehman Brothers' default. Whereas the unsecured creditors of Lehman and those relying on security interests have struggled to recover money and are unlikely to recover much, repo counterparties who used the GMRA were able to close-out their exposures more efficiently.

1.2 Negotiating a GMRA

The 'negotiation' of a GMRA means filling out Annex I to the GMRA (a copy of Annex I is attached as Appendix I of this guide).

The first stage of negotiation is to complete the set of **standard elections** listed in part 1 of Annex I. These elections are needed in order to be able to implement some of the standard provisions of the GMRA. For example, the parties must define the scope of the contract in terms of eligible types of collateral and agree on various basic operational parameters such as the default currency for cash payments and minimum variation margin delivery periods. The choices made by the parties will be specific to who they are and the jurisdiction in which they are located, as well as the preferences and constraints arising from their operational structures, policies, procedures and infrastructure. In order to make these elections, each party's negotiators will need to consult with other areas of the firm including operational areas such as the front office, the margin and settlement teams in the back-office, and the credit department. The standard elections in Annex I of the GMRA 2011 are discussed in Appendix I of this guide.

The second stage of negotiating a GMRA is to agree whether or not to adopt any of the five optional standard **supplementary terms or conditions** in part 2 of Annex I:

- whether repos that have been transacted under previous versions of the GMRA and are still outstanding should be brought under the terms and conditions of the new GMRA (in practice, the short-term nature of most repos means that there should not usually be many, if any, transactions to carry over);
- whether to adopt a provision on how to deal with a failure by the seller of collateral to deliver on a repo paying a negative repo rate;
- whether to adopt special provisions for forward repos under the new GMRA;
- whether to refine the calculation of exposure for the period between executing a repo (transaction date) and the initial exchange of cash and collateral (called the 'purchase date' in the GMRA but also known as the 'value date' or 'settlement date');
- whether to amend the calculation of exposure to include an amount equal to income on collateral (e.g. coupons) expected to be paid after the calculation but before the relevant variation margin is due.

The third stage of negotiation is to consider adding special supplementary terms or conditions to the GMRA, either one's own or as proposed by one's counterparty. In order to understand the purpose of special supplementary terms and conditions, one must appreciate that the standard GMRA was designed as a contract for what is typically the most common type of repo business. Specifically, the standard GMRA was designed for **repurchase transactions** (also known as 'classic repos') between **professional dealers** who are trading for their **own account** for **very short-term** against collateral in the form of **simple fixed-income securities** (typically government bonds) that pay **coupons gross of withholding tax (WHT)**. This type of repo has the advantage of being a low-risk type of transaction, with less to go wrong and between parties who are more inclined to negotiate than litigate when problems do arise. This makes for a simpler contract. But it also means that, if parties wish to transact other types of repo (e.g. buy/sell-backs and agency repos), engage with other types of counterparty (e.g. non-dealers) or use other types of collateral (e.g. equity), they will have to amend the standard provisions of the GMRA by applying special supplementary terms and conditions.

Care should be taken when amending the standard GMRA not to damage the so-called **Core Provisions** that underpin key safeguards such as the transfer of title to collateral and close-out netting in insolvency. The Core Provisions are identified in the legal opinions commissioned annually by the ICMA. You will have access to these opinions if your firm is a member of the ICMA. The opinions also helpfully list amendments to Core Provisions that should not cause problems.

You should not amend the standard GMRA by editing the main text. Instead, you should amend the agreement using a method by which such amendments are clearly identifiable. This is typically done by writing special supplementary terms or conditions into Annex I. This technique allows proposed amendments to be identified easily and in their entirety, which makes legal analysis and negotiation much more efficient. If proposed amendments were inserted by editing the main text, the parties would be forced to check draft copies of the GMRA line by line and word by word in order to identify all the proposals.

Where the same or similar special supplementary terms or conditions have been used repeatedly by market participants, they have been packaged into standard **product and country annexes** (a sort of 'plug and play'). So, for example, to transact buy/sell-backs under the GMRA, one can simply agree to apply the Buy/Sell-Back Annex, and for equity repos, the Equity Annex. The various country annexes adapt the standard GMRA to use in other jurisdictions. For example, the South Africa Annex, which applies when one or both of the contracting parties is incorporated in South Africa, introduces an additional Act of Insolvency specific to South Africa and a provision about the exchange controls in force in that country. The Thailand Annex, which applies when the collateral securities are issued in Thailand, changes the governing law, adds an Act of Insolvency specific to Thailand and requires both parties to confirm transactions.

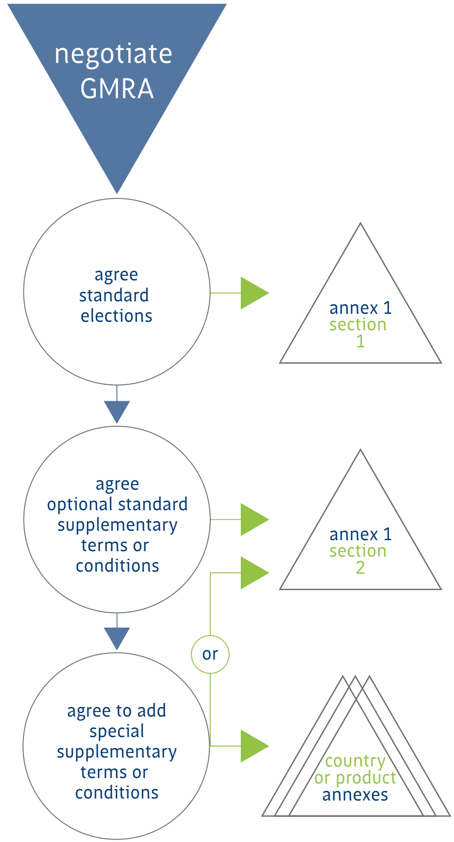
ICMA produces a range of standard product and country annexes. It also recognizes some standard annexes produced by other bodies. The current list of these annexes (as of 2018) for use with the GMRA 2000 and 2011 is given in Appendix II of this guide.

Where the parties wish to apply standard product and country annexes, they do so by referencing them in Annex I.

- In the case of the Agency and Buy/Sell-Back Annexes, Annex I specifically asks whether the parties wish to apply these annexes (see sub-paragraphs 1(a) and 1(c) of Annex I).
- In the case of other annexes, the agreement provides space for the parties to list the ones that they wish to apply (see sub-paragraph 1(d) of Annex I).

The sequence in which the amendment of a standard GMRA might be approached is illustrated in the flow diagram.

The relationship between the main text of the GMRA and annexes is explained in the next section, which also introduces the third element of the GMRA, which is 'confirmations'.



1.3 The architecture of the GMRA

THE GMRA, LIKE MANY MASTER AGREEMENTS, IS STRUCTURED INTO THREE LEVELS

■ The **main text** is sometimes called the 'pre-printed agreement'. As already mentioned, the standard GMRA was designed for very short-term repurchase transactions against collateral in the form of simple fixed-income securities paying coupons gross of withholding tax (WHT) between professional dealers acting as principals. The main text of the standard GMRA sets out the terms and conditions that are generic to the market in these simple, low-risk, interdealer transactions. It also offers optional provisions for some commonly-used variations of the terms of repurchase transactions:

- an alternative method to variation margining;
- the option for the buyer to agree to the substitution of collateral by the seller; and
- open(-ended) repos.

■ **Annexes.** As explained, annexes are documents used to add key legal and operational details to the standard GMRA (the standard elections listed in Annex I). They further expand on the types of repo, counterparty and collateral that can be contracted under the GMRA by introducing standard amendments (in the form of further supplementary terms or conditions) to the standard provisions of the main text. In this way, the GMRA is customized to fit the trading relationship between particular parties. The key annex is Annex I. Not only is Annex I the home for standard elections and for optional and special supplementary terms and conditions, it is also the link between the main text and other annexes. Where the parties wish to apply other annexes, they do so by recording their

agreement in Annex I. Because annexes are used to amend the main text, the GMRA provides that should there be a conflict between the terms or conditions of the main text and those of any applicable annexes, the annexes would take precedence over the main text.

■ **Confirmations.** When a repo has been agreed, the standard GMRA requires the parties to promptly verify with each other the details of the transaction by sending a confirmation in writing. A confirmation should set out:

- the key economic terms of a transaction;
- the information necessary for settlement (account numbers and addresses);
- any transaction-specific terms or conditions; and
- any text required by law or regulation (e.g. in the UK, firms are required to name their supervisory agency).

As a record of the economic terms of a transaction, a confirmation provides 'prima facie' evidence of the terms and conditions of that particular transaction. If you disagree with the details in a confirmation and think you negotiated different terms or conditions, then you need to promptly object and provide contrary evidence. In addition, although the contract between the parties is formed at the point of trade before the confirmation is produced, the confirmation constitutes a part of the contract. Should there be a conflict between the terms and conditions of a confirmation and either the main text or any applicable annexes, the confirmation would take precedence over both for that particular transaction. So it is important to check all confirmations that you receive. The contractual role of confirmations also means that the language used in confirmations must be consistent with that in the rest of the GMRA. For example, whereas the market uses the term 'repo rate', the GMRA uses 'pricing rate', so confirmations should also use the latter term (but the market terms can always be added in parenthesis).

1.4 Some useful terminology to learn before reading further

Terms listed below which come from the GMRA are in *italics* and have Capital Initials. References are given to the sub-paragraphs of the GMRA in which they are defined.

- **Seller** is the party selling securities (the *Purchased Securities*) at the start of a repo (the *Purchase Date*) and thereby effectively borrowing cash. See GMRA sub-paragraph 1(a).
- **Buyer** is the party buying securities (the *Purchased Securities*) at the start of a repo (the *Purchase Date*) and thereby effectively lending cash. See GMRA sub-paragraph 1(a).
- **Purchase** is the exchange of cash and securities at the start of a repo (the *Purchase Date*), when cash (the *Purchase Price*) is paid by the *Buyer* in exchange for the delivery by the *Seller* of securities (the *Purchased Securities*). See GMRA sub-paragraph 3(c).
- **Repurchase** is the exchange of cash and securities at the end of a repo (the *Repurchase Date*), when cash (the *Repurchase Price*) is paid by the Seller of the original securities (the *Purchased Securities*) in exchange for the delivery by the Buyer of the same or similar securities (the *Equivalent Securities*). See GMRA sub-paragraph 3(f).
- **Purchase Date** is the value date of a repo, when cash (the *Purchase Price*) is paid by the *Buyer* in exchange for the delivery by the *Seller* of securities (the *Purchased Securities*). See GMRA sub-paragraph 2(mm).
- **Repurchase Date** is the maturity date of a repo, when cash (the *Repurchase Price*) is paid by the *Seller* of the original securities (the *Purchased Securities*) in exchange for the delivery by the *Buyer* of the same or similar securities (the *Equivalent Securities*). See GMRA sub-paragraph 2(qq).
- **Purchased Securities** are the securities to be delivered as collateral by the *Seller* to the *Buyer* at the start of a repo (the *Purchase Date*). See GMRA sub-paragraph 2(oo).
- **Equivalent Securities** are the securities to be delivered by the *Buyer* to the *Seller* at the end of a repo (the *Repurchase Date*) which come from the same issue as the original securities (the *Purchased Securities*). If the issue is divided into several classes or tranches, equivalent securities must come from the same class or tranche. In other words, equivalent securities must be

fully fungible with the original securities. See GMRA sub-paragraph 2(u).

■ **Purchase Price** is the amount of cash to be paid by the *Buyer* to the *Seller* at the start of a repo (the *Purchase Date*) and therefore the amount effectively being borrowed by the *Seller*. See GMRA sub-paragraph 2(nn).

■ **Repurchase Price** is often taken to be the amount of cash that is due to be paid by the *Seller* to the *Buyer* at the end of a repo (the *Repurchase Date*). However, in the GMRA, *Repurchase Price* is defined as the amount of cash owed by the *Seller* on any day during the life of a repo. This amount is simply the sum of (1) the repayment of the amount borrowed at the start (the *Purchase Price*) and (2) the amount of repo interest (*Pricing Differential*) that has accrued by the day of the calculation. For example, the *Repurchase Price* on the third day of a seven-day repo would be the *Purchase Price* plus three days of repo interest (on a simple, not compound basis). You will need to know the *Repurchase Price* during the life of a repo if you wish to calculate variation margin or should the repo be terminated early, because in both cases, you will wish to net the value of cash owed by one party against the *Market Value* of collateral held by the other. See GMRA sub-paragraph 2(rr).

■ **Collateral** is what the market calls securities sold in a repo (either *Purchased Securities* or *Equivalent Securities*).

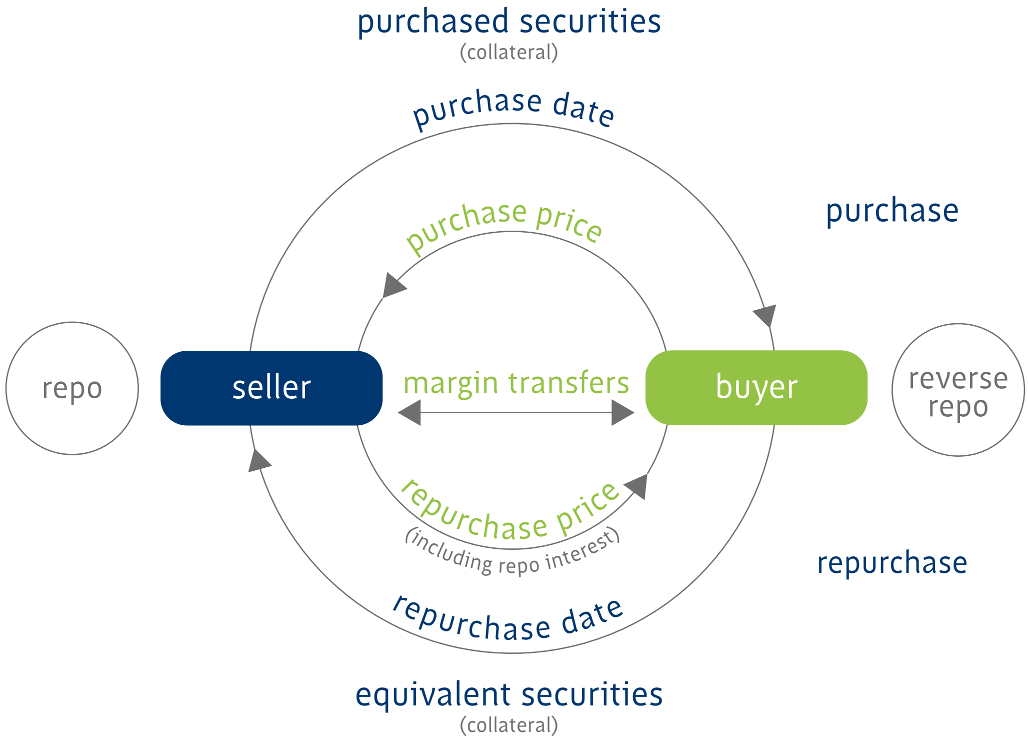
■ **Repo interest** is what the market calls the difference between the *Purchase Price* and the *Repurchase Price* but the GMRA, for legal reasons, calls the *Pricing Differential*. See GMRA sub-paragraph 2(kk).

■ **Repo rate** is what the market calls the annualized percentage difference between the *Purchase Price* and the *Repurchase Price* but the GMRA, for legal reasons, calls the *Pricing Rate*. See GMRA sub-paragraph 2(ll).

■ **Reverse repo** is how the market describes a repo from the point of view of the *Buyer*, who can be said to buy or 'reverse in' collateral (as opposed to the *Seller* who can be said to sell or 'repo out' collateral).

■ **Margin Transfer** is the GMRA term for what the market calls 'variation margin', which are payments of cash (**Cash Margin**) or deliveries of securities (**Margin Securities**) or a mix of both between the parties in order to eliminate excess exposures to counterparty credit risk that arise from variations in the value of securities and/or of the amount of cash held or owed.

Some of the terminology listed above is summarised in the diagram below. There is also a glossary at Annex V with a wide range of terms commonly used in the international repo market.


purchased securities
(collateral)
purchase date
purchase
purchase price
repo
seller
margin transfers
buyer
reverse repo
repurchase price
(including repo interest)
repurchase
repurchase date
equivalent securities
(collateral)

2

FREQUENTLY ASKED QUESTIONS: WHAT THE GMRA 2011 TELLS YOU ABOUT REPO AND WHAT YOU HAVE TO DO TO TRANSACT REPO UNDER THE AGREEMENT

The answers given in the table below concisely set out the key facts about the GMRA, so that you can quickly grasp the essential purpose of each of the main provisions of the agreement. Certain legal details have sometimes been left out such as the occasional requirement that the parties should make decisions 'acting in a reasonable manner' and/or 'acting in good faith'. To apply the GMRA in a real-life situation, you will need to read the agreement carefully and note these details. Perhaps it is necessary to seek professional legal advice.

Text in highlighted green is essential reading for everybody in a bank. Once again, terms from the GMRA have Capital Initials. All quotes from the GMRA are in *italics*. Underlining and **bold** font have been added here for emphasis.

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question	answer	where to look in the GMRA

1 What is a repo?

1.1 What is the GMRA definition of a repo?

- The GMRA defines repos as *transactions in which one party...('Seller')... agrees to sell to the other...('Buyer')... securities or other financial instruments ('Securities')...against the payment of the purchase price by Buyer to Seller, with a simultaneous agreement by Buyer to sell to Seller Securities equivalent to such Securities at a date certain or on demand against the payment of the repurchase price by Seller to Buyer.* 1(a)

- The definition in the GMRA means that, in legal terms, a repo is a pair of opposite securities transactions at different prices scheduled for different settlement dates. Legally-speaking, therefore, a repo does not pay interest, despite market use of the term 'repo interest' and despite the market quoting the price of most repos in terms of the 'repo rate'. Repo interest is what the market calls the difference between the Purchase Price and the Repurchase Price. In order to protect the legal character of repo from misinterpretation (use of the word 'interest' could suggest repo is a secured loan rather than a sale and repurchase), the GMRA calls repo interest the Pricing Differential and calls the repo rate the Pricing Rate.

- The fact that repo interest is the difference between the Purchase Price and Repurchase Price means that the total amount of interest that can accrue on a repo is capped as of the Repurchase Date (after which, the Repurchase Price will not change). One consequence is that, when a Buyer fails to deliver collateral at the end of a repo, he will accrue no more repo interest on the cash he has loaned to the Seller. This acts to compensate the Seller for the failed delivery and penalizes the Buyer for failing to deliver (see 7.2 below for a further discussion).

- A repo where the repurchase is *on demand* is, in the market, called an open repo (as in 'open-ended'). An **open repo** is a type of Repurchase Transaction (there are no open Buy/Sell-Backs) for which no Repurchase Date is agreed at the start but which can be terminated at any time by either party (provided due notice is given to the other party). 3(d)(e)

1.2 What are Equivalent Securities?

- On the Repurchase Date of a repo, the Seller is obliged to repurchase Equivalent Securities from the Buyer. The GMRA defines Equivalent Securities as *(i) of the same issue; and (ii) of an identical type, nominal value, description and (except where otherwise stated) amount* as the Purchased Securities. This definition means that the Purchased and Equivalent Securities are part of the same issue and would therefore have the same ISIN. If the issue is divided into several classes or tranches, equivalent securities must come from the same class or tranche. In other words, equivalent securities must be fully fungible with the original securities. 2(v)

- Although the Equivalent Securities are typically part of the same issue as the Purchased Securities, 'equivalent' means that they can be another part of the same issue (or, if the issue is divided into several classes or tranches, equivalent securities can be another part of the same class or tranche). If the securities were issued in paper form, this would mean the Purchased and Equivalent Securities could have different certificate numbers. Such flexibility makes it practicable for the Buyer to sell the Purchased Securities to a third party, which is important, as the practical ability of the Buyer to sell to a third party supports the claim that collateral in a repo is sold and not pledged. To see why this is the case, consider the situation where the Buyer is instead required to return exactly the same part of the same issue to the Seller. Such a requirement would make it risky for the Buyer to sell the Purchased Securities to a third party during the term of a repo, as there would be no certainty of being able to find and buy back from the market the same part of the issue in order to return it to the Seller. Under this constraint, the Buyer would, in practice, have to immobilize the Purchased Securities in a segregated account until the Repurchase Date. The problem is that the Buyer's practical inability to sell the Purchased Securities during a repo could be interpreted by a court as an indication that he did not have full legal title and therefore that the securities had not really been sold. The transaction might then be 're-characterized' by the court as a loan secured by a pledge, rather than a repo. In this case, in a default, the Non-Defaulting Party (NDP) would lose their right to close-out and net their repos under the contractual terms of the GMRA and would have to fight their way through 2(u) the long and uncertain insolvency process to recover what they are owed.

- If a collateral security becomes the subject of a **corporate event** during the term of a repo, the Equivalent Securities may differ significantly from the Purchased Securities. A corporate event is a change in the terms of a security and/or an offer of additional securities or other benefits to the holder. If a collateral security becomes subject to a corporate event, the question arises as to what will be the Equivalent Securities after the corporate event. Where the corporate event is mandatory and non-optional (where the holder has no choice about the corporate event occurring or about the type of event), there should be no problem about the identity of the Equivalent Securities because the corporate event produces a single predictable result. The GMRA defines the Equivalent Securities for several mandatory and non-optional 2(v)(A) corporate events including:
    - Redemption – the Equivalent Securities would be the value of the redemption proceeds (but see 2(v)(B) 4.1 below);
    - Conversions, subdivisions, consolidations, takeovers, entitlements to holders to receive or acquire other securities or property, or similar events other than income payments – the Equivalent Securities are effectively the original securities together with or replaced by a sum of money or securities or other property most similar to that received by holders of the original securities.
- However, problems arise when corporate events are voluntary and/or optional – such corporate events are called **corporate actions** – in that the holder has an option that they can exercise or not, and/or they have several choices. In the case of the original securities (the Purchased Securities), the decision is unequivocally the right of the Buyer (if he is still holding the securities). But what about the Equivalent Securities that the Buyer is obliged to return to the Seller on the Repurchase Date? Different options are available. Who should decide which option is exercised, the Buyer or Seller? The standard GMRA offers no guidance. However, if you apply the Equity Annex, the decision is expressly given to the Seller. So, there is a case for arguing that the Seller should exercise the option for other types of collateral as well. Giving the decision to the Seller would be consistent with the principle underlying repo that the risk and return on collateral is assumed solely by the Seller by virtue of his commitment to repurchase collateral at its original value (plus repo interest). However, different answers may apply depending on the precise circumstances of a transaction. As a practical matter, parties are advised to seek legal advice and to try to negotiate a solution with each other.

1.3 What is a Repurchase Transaction?

- Repurchase Transactions are often known in the market as 'classic repos'. The standard GMRA was designed solely for Repurchase Transactions.

- A Repurchase Transaction is always governed by a written contract, usually in the form of a master repurchase agreement such as the GMRA.

- The other essential characteristic of a Repurchase Transaction is that when a coupon, dividend or other income is paid on collateral during the term of a repo, it will be received by the Buyer given that he is the legal owner, but an immediate and equal income payment should be made to the other party (either the Seller or the party who provided those securities in a Margin Transfer). In the market, this immediate and equal payment is often called a 'manufactured payment' (see 4.1 below).

- Repurchase Transactions typically perform Margin Maintenance by means of Margin Transfers (see 5.1 below) and any substitution of collateral is performed by means of an exchange of securities without contracting a new transaction (see 3.8 below).

1.4 What is a Buy/Sell-Back?

- Buy/Sell-Backs are also known in the market as 'sell/buy-backs', 'buy/sells' or 'sell/buys'. And they often have local names (e.g. 'simultaneas' in Spain).

- Buy/Sell-Backs are one of the two species of repo, the other being Repurchase Transactions (see 1.3 above). Sometimes, it is claimed that Buy/Sell-Backs are fundamentally different to repo. This is incorrect.

- Buy/Sell-Backs differ from Repurchase Transactions in one essential way only. When a coupon, dividend or other income is paid on collateral during the term of a repo instead of an immediate and equal income payment to the other party by the party who received the payment from the issuer of the security ('manufactured payment'), as there would be for Repurchase Transactions, the Repurchase Price of the Buy/Sell-Back on the Repurchase Date is reduced by the amount of the collateral income payment plus extra interest for the delay between the Income Payment Date and the Repurchase Date (this adjustment is explained in 4.1 below). This adjustment provision is added to the standard GMRA by applying the Buy/ Sell Back Annex.

- There are some other differences between Buy/Sell-Backs and Repurchase Transactions (see Buy/Sell Back Annex) but these are not substantial.

1.5 What is a 'haircut'?

- A 'haircut' is the difference between the initial Market Value of collateral and the Purchase Price agreed between the parties expressed as a percentage discount to the Market Value. For example, collateral with a Market Value of 100 at the start of a repo and a Purchase Price of 95 implies a haircut of 5% (= (100 – 95)/100). The parties have to maintain this initial percentage discount between the Market Value and the current Repurchase Price (the cash owed by the Seller on the day of calculation) throughout the term of the repo. This process is called Margin Maintenance, which can involve Margin Transfers (variation margin) or an alternative mechanism that involves early termination and replacement of the transaction (see 5.1 below).

- The purpose of a haircut is to protect one of the parties (typically the Buyer but exceptionally the Seller) from loss after a default due to a shortfall between the realized or estimated value of the collateral held by the Buyer in respect of each transaction and the amount of money owed by the Seller under these transactions (or vice versa in the case of a haircut in favour of the Seller). Haircuts should therefore take into account:

  - the price volatility of the collateral securities;
  - the likely market impact of a sale of those securities, perhaps during a stressed market;
  - the risk of a default by the issuer of the collateral security;
  - in the case of a cross-currency repo (in which cash is denominated in a different currency to the collateral), the volatility of the relevant exchange rate;
  - the degree to which the Market Value of the collateral might fall at the same time as the default risk on the issuer increases (which is called 'wrong-way risk');
  - the frequency of Margin Maintenance; and
  - any other potential future risk to the value of the collateral, particularly during market turbulence.

- There is a debate about whether haircuts should reflect the credit risk of the repo counterparty. Strictly-speaking, this risk should be priced into the repo rate and haircuts should only hedge the credit and liquidity risks of the collateral. In practice, however, there can be trade-offs (some parties may ask for a lower haircut in return for a higher repo rate or vice versa).

- Some parties use mathematical models in order to try to calculate objective and consistent haircuts (usually Value-at-Risk models). But even where this is the case, the haircuts actually agreed between parties will usually also reflect commercial considerations. By virtue of their bargaining power, very creditworthy Buyers can often secure higher haircuts from Sellers and very creditworthy Sellers can often secure lower haircuts from Buyers. In exceptional circumstances, commercial pressure can result in negative haircuts (the Purchase Price exceeds the initial Market Value of the collateral).

- A haircut can also be deducted from the cash side of a repo (the Purchase Price can be lower than the nominal value of the cash) to reflect the illiquidity of the currency, possibly at the same time as a haircut is taken from the Market Value of the collateral to reflect the illiquidity of the collateral securities.

- The GMRA 2011 describes the application of haircuts in a formula for the calculation of the Transaction 2(xx)(B) Exposure of a repo (note that the GMRA 2000 does not provide for haircuts, only for initial margins). Transaction Exposure is a measure of the extent to which an individual repo is under- or over-collateralised. The formula for the calculation of the Transaction Exposure where a haircut applies is simply the difference between the Repurchase Price less the haircut (which gives the amount of collateral desired) and the Market Value of the collateral (the actual amount of collateral). The haircut is applied by multiplying the Market Value by one minus the haircut ((100-H)/100) to calculate the amount of cash that is safely collateralized (see 5.1 below). If the Repurchase Price less the haircut is greater than the Market Value, the repo is under-collateralised and vice versa. In the GMRA, this formula is called Transaction Exposure method (B).

1.6 What is an 'initial margin'?

- An 'initial margin' in the case of a repo is the initial Market Value of collateral expressed as a percentage of the Purchase Price agreed by the parties. For example, a repo of collateral with a Market Value of 100 at the start of a repo and a Purchase Price of 95 implies an initial margin of just over 105.3% (= 100/95). The parties have to maintain the initial premium of the Market Value over the current Repurchase Price (the cash owed by the Seller on the day of the calculation) throughout during the term of the repo. This process is called Margin Maintenance, which can involve Margin Transfers or an alternative mechanism that involves early termination and replacement of the transaction (see 5.1 below).

- An initial margin performs the same function as a haircut, so the same considerations should go into its fixing (see 1.5 above).

- In the GMRA, an initial margin is called a **Margin Ratio.**

- And just as haircuts can be negative in exceptional circumstances, so initial margins can be less than 100% (the Purchase Price exceeds the initial Market Value of the collateral) to favour the Seller rather than the Buyer.

- The GMRA sets out a formula for the calculation of the Transaction Exposure of a repo where a Margin Ratio applies to the collateral. The Transaction Exposure in this case is simply the difference between 2(bb), 2(xx)(A) the product of the Market Value and the Margin Ratio (that gives the amount of cash for which there is sufficient collateral) and the current Repurchase Price (the actual amount of cash that needs to be collateralized). If Market Value times Margin Ratio is less than the current Repurchase Price, the repo is under-collateralised and vice versa. In the GMRA, this formula is called Transaction Exposure method (A). The formula includes a cap on the value of the Transaction Exposure equal to the Repurchase Price. This is to ensure that if the Market Value of the collateral dropped to zero, the Seller would not face a Transaction Exposure greater than the current Repurchase Price, which is the amount he owes the Buyer.

- Note that the term ‘initial margin’ has a different meaning in the GMRA to that used by clearing houses and central counterparties (CCPs), where initial margins are deposits that both parties place with the clearing entity at the start of a transaction. However, their functions are very similar.

1.7 How do I decide between using an initial margin or a haircut?

- The standard GMRA requires the parties to agree to use either an initial margin or haircut for all Appendix I transactions and to record the choice in Annex I of the GMRA (specifically in the standard election in sub- (1)(g) paragraph 1(g) of Annex I).

- The choice is purely matter of preference. It is more important that both parties agree which method is to be applied.

1.8 What is the Base Currency?

- The Base Currency is the currency agreed by the parties when they negotiate their GMRA for the purpose of denominating: 2(e)
  - calculations of excess exposure (see 5.1 below about the calculation of Net Exposure) for the purpose of Margin Maintenance (see 5.1 below about the calculation of Transaction Exposures);
  - payments of Cash Margin; and
  - calculation and settlement of default close-out amounts (see 6.2 below).
- Despite their choice of Base Currency, the parties can agree to use any other currency for Cash Margin whenever a payment is due to be made.
- The Base Currency is usually the domestic currency of one of the parties. This would be helpful in case of a default by that party as local insolvency laws typically require calculations and settlement in local currency.
- If the parties are incorporated in different jurisdictions, a different Base Currency can be agreed for each party (and branch) at least for the purpose of default calculations.
- To convert amounts of other currencies into the Base Currency, the standard GMRA requires use of the Spot Rate, which it defines as: 2(ss)
  - for the purpose of default close-out amount calculations and settlement – a quote from a source in the London interbank market chosen by the Non-Defaulting Party (NDP) in a commonly reasonable manner;
  - for the purpose of other calculations (such as calculating whether an individual repo is under or over-collateralised for the purpose of Margin Maintenance) – the latest spot rate on the day of calculation (or if that is not a Business Day, on the previous Business Day) taken from a source or quoted by a bank in the London interbank market as agreed by the parties (or failing agreement as selected by the Buyer).
- In valuing repos involving more than one currency, the GMRA requires you to convert the currency of the collateral into the Contractual Currency – which is the currency of the Purchase Price. If the Contractual Currency is not the Base Currency then a further conversion is required into the Base Currency. 7(a)

1.9 What is the Contractual Currency?

- The Contractual Currency is the currency of the Purchase Price. 7(a)
- Any payments of the Purchase Price or Repurchase Price should be made in the Contractual Currency unless the party receiving payment agrees to accept another currency.
- Payments relating to the Purchase Price or Repurchase Price such as interest for late payment of either, should also be in the Contractual Currency unless otherwise agreed. 7(b)(c)
- Where party A agrees to accept payment of the Repurchase Price from party B in a currency other than the Contractual Currency, but the value of the other currency when sold in the spot market falls short of the amount of Contractual Currency that was originally due to be paid, party B is obliged to make up the shortfall. If there is a surplus of value, A must pay this to B. 2(ss)
- A currency conversion under the GMRA (other than for default calculations) should take place at the latest spot rate on the day of the calculation (or, if that is not a Business Day, on the previous Business Day) taken from a source or quoted by a bank in the London interbank market as agreed by the parties (or failing agreement as selected by the Buyer).

2 The scope of the GMRA

2.1 What types of repo are covered by the GMRA?

- **Repurchase Transactions** (also known in the market as 'classic repos'). The standard GMRA was designed solely for Repurchase Transactions. (See 1.3 above.) 1(b)
- **Buy/Sell-Backs** (also known in the market as 'sell/buy-backs', 'buy/sells' or 'sell/buys''). (See 1.4 above.) 1(c)(i)
- **Open repos** – also sometimes called 'on demand' repos – a type of Repurchase Transaction (there are no open Buy/Sell-Backs) for which no Repurchase Date is agreed at the start but that can be terminated at any time by either party provided they give a period of notice not lower than the minimum period as is customarily required for the settlement or delivery of money or Equivalent Securities of the relevant kind, which means the standard securities settlement period. You can give notice of the termination of an open repo by telephone (one of just two occasions when a notice under the GMRA does not have to be 3(d)(e)

in writing). While an open repo is live, the repo rate can be changed by agreement between the parties (known in the market as 're-rating'). Open repos are useful where one or both of the parties are not certain about how long they might need the transaction. The alternative of rolling over one-day repos involves additional dealing and settlement costs as well as operational risk.

- **Agency repos** – repos negotiated by one of the parties to the GMRA (called the Agent) on behalf of another party (called the Principal) or as a collective transaction on behalf of several other parties (the Principals). Agents are usually asset managers transacting repos on behalf of a group of funds under their management. The Agent signs the GMRA on behalf of its Principal(s) with a third party (called the Counterparty) but is not exposed to any profit or loss on transactions undertaken as an agent. The exposure is between the Principals and the Counterparty. In order to transact agency repos, the Agent and the Counterparty must agree to apply the Agency Annex and the decision should be recorded in Annex I of the GMRA (specifically in the standard election in sub-paragraph 1(c) of Annex I). An Agent can also use a GMRA that it has signed with a Counterparty on behalf of its Principal(s) to trade on its own account with the same Counterparty. The GMRA therefore requires than an Agent make known to a Counterparty at the 9(b)
point of trade in which capacity it is acting every time it trades. If the Agent fails to disclose that it is acting as the Agent for a third party under the standard GMRA, it will be treated as the Principal to the trade.

2.2 Which of your offices can use your firm's GMRA?

- The **Designated Offices** of the two parties are any of their **branches** that the parties list in Annex I 1(a), 2(p)
(specifically in sub-paragraph 1(f) of Annex I). Designated Offices must be part of the same legal entity and cannot be legally separate affiliates such as subsidiaries.

- Including more than one office under the same GMRA enhances the benefit of netting and therefore reduces risk for the group as a whole.

- Designated Offices should be located only in jurisdictions in which the close-out netting provisions of the GMRA will work in insolvency. Including offices in other jurisdictions poses the risk that, in a default by an office in a non-netting jurisdiction, a court in that jurisdiction may prevent the netting of transactions with that office, fragmenting netting and reducing its effectiveness. Another problem may be that courts in a particular jurisdiction will allow netting but in order to protect local creditors, will 'ring fence' transactions by a local office and only allow netting within the jurisdiction, preventing netting across jurisdictions. Therefore, if you want one of your overseas branches to trade repo under your GMRA, you will need to check whether there are any material legal problems in the jurisdiction of that branch. There may be a legal opinion on the effectiveness of the GMRA in that jurisdiction published by ICMA. You will have access to this opinion if your firm is a member of the GMRA.

■ If you trade a repo on a desk in country A but 'book' the transaction in a branch in country B, your branch in country B must be a Designated Office. It is not necessarily relevant where your trading desk is located. What matters is the country in which your asset or liability is located, which should be where it has been booked.

■ You also need to be careful about whether your counterparty is a type of institution that falls into one of the categories of legal entity for which the standard GMRA is produced. There may be a legal opinion published by ICMA on the effectiveness of the GMRA for the type of institution represented by your counterparty. You will have access to this opinion if your firm is a member of the ICMA. GMRA legal opinions usually cover commercial banks, securities dealers, corporates and the central bank. And most also cover insurance companies, hedge funds and mutual funds. If your counterparty is not one of these types of legal entity or if the legal opinion makes restrictive assumptions or there are qualifications applied to the opinion about the counterparty, you may need to seek your own legal opinion on the effectiveness of the GMRA. For example, the ICMA's legal opinions may not cover specialist investment funds. In some cases, the legal opinion may suggest helpful amendments. Note that the standard GMRA does not cover individuals, partnerships or trustees. Note also that ICMA's legal opinions are based on assumption that the types of counterparty which they cover have the legal capacity under local law to engage in repo. Whether this is the case is a question on which you will have to get your own advice.

2.3 What types of collateral are covered by the GMRA?

■ The standard GMRA was designed to cover collateral that takes the form of simple fixed-income securities, usually government bonds. More complex fixed-income securities, such as corporate bonds, MBS and ABS, may require special supplementary terms or conditions to deal with any unusual features (although the standard GMRA does include a provision for taking account of a deterioration in the value of the assets underlying an ABS when calculating its value in a default). 10(f)(ii)(A)

■ **Equity** can be traded under the GMRA provided the parties agree to apply the Equity Annex and their decision is recorded in Annex I of their GMRA (specifically in the standard election in sub-paragraph 1(d) of Annex I).

- **Net Paying Securities** can be traded under the GMRA, provided the parties agree and their decision is recorded in Annex I (specifically in the standard election in sub-paragraph 1(b) of Annex I). A Net Paying Security is not, as the name may imply, a security on which a coupon, dividend or other collateral income paid by the issuer is subject to withholding tax (WHT). To understand the nature of a Net Paying Security, you need to understand what happens when income is paid on a collateral security during a repo. That income must be paid by the issuer of the security to the Buyer, given that the Buyer is the legal owner during the repo. However, as the Seller continues to take the risk on collateral sold to the Buyer, the standard GMRA requires the Buyer to compensate the Seller if the collateral generates a return. In the case of a Repurchase Transaction, an income payment on collateral is compensated by means of an immediate and equal income payment from Buyer to the Seller. In the market, this payment is often called a 'manufactured payment'. A Net Paying Security is one for which the manufactured payment (but not necessarily the original income payment on the collateral) is subject to WHT, whether deducted by the Buyer or Seller. The drawback to using a Net Paying Security as collateral is that paragraph 6(b) of the GMRA require that a party making payments must compensate the other party for any tax on these payments (the latter paragraph is often called a 'gross-up' provision). In the case of a Net Paying Security, the Buyer would thus have to make up for WHT imposed on manufactured payments. The reason for requiring the parties to explicitly consent to the use of Net Paying Securities as collateral is to ensure that they recognize and deal with this problem by amending paragraph 6(b) to say that the Buyer does not have to gross-up manufactured payments. The amendment should be recorded as a special supplementary term in Annex I of their GMRA (specifically in paragraph 2 of Annex I). 1(c)(ii), 2(hh) 6(b)

3 Initiating and terminating a repo

3.1 What is the legal requirement for executing a repo under the GMRA?

- According to the GMRA, a repo can be executed orally or in writing, and at the initiative of either party. 3(a)
- The legal meaning of *in writing* in paragraph 14 of the GMRA. It includes traditional written communications, fax and electronic messaging systems including e-mail. 14

3.2 What is a Confirmation and why is it necessary?

- Whether a repo is agreed orally or in writing, the parties need to subsequently confirm the details of each repo and they are required by the standard GMRA to do so promptly and in writing ('promptly' is usually taken to mean as soon as possible after execution and on the same day). 3(b)
- The GMRA lists the minimum contents of a Confirmation. In addition, a specimen form of Confirmation is given in Annex II.
- When the parties negotiated their GMRA, they should have agreed and recorded in Annex I whether both will send Confirmations to each other or just one of them (specifically in paragraph 1(h) of Annex I).
- Confirmations constitute part of the contract between the parties, so the language used in a Confirmation must be consistent with the rest of the GMRA. For example, whereas the market uses the term 'repo rate', the GMRA uses Pricing Rate.
- Confirmations also constitute 'prima facie' evidence of the terms and conditions of a repo, unless a prompt objection is made by the receiving party. And in the event that the terms and conditions in a Confirmation conflict with those in the main text or any applicable annexes, the Confirmation would override the other parts of the GMRA in respect of the particular transaction being confirmed. So you need to check incoming Confirmations to make sure there are no errors, disagreements or unacceptable additions. If you disagree with any detail in a Confirmation received from a counterparty, you should raise these with the counterparty immediately.
- Note that Confirmations should be sent, not just for the Purchase and Repurchase legs of a repo, but also for any material changes in terms or conditions during the life of the repo e.g. fixing a new rate on an open repo.

3.3 What happens at the start of a repo?

The GMRA says *On the Purchase Date...Seller shall transfer the Purchased Securities to Buyer or its agent against the payment of the Purchase Price by Buyer...* 3(c)

3.4 What happens at the end of a repo?

The GMRA says *On the Repurchase Date, Buyer shall transfer to Seller or its agent Equivalent Securities against the payment of the Repurchase Price by Seller...* 3(f)

3.5 What does the GMRA say about the settlement of repos?

■ The standard GMRA requires that all cash must be paid in immediately available *freely convertible funds of the relevant currency* unless agreed otherwise. 6(a)

■ In the case of securities in the form of physical certificates, the GMRA requires delivery *in suitable form for transfer and…accompanied by duly executed instruments of transfer or assignment in blank (where required for transfer) and such other documentation as the transferee may reasonably request*. Immobilised or dematerialized securities should be delivered through a book-entry or other securities settlement system or by some other agreed method.

■ The standard GMRA envisages that settlement of cash against securities will typically be delivery-versus-payment (DVP). But it does recognize that DVP is not always possible or practicable and so provides for an occasional waiver of this requirement *(from time to time in accordance with market practice and in recognition of the practical difficulties in arranging simultaneous delivery of Securities and money waive in relation to any Transaction its rights).* However, a non-DVP exchange must be same-day and the waiver applies only to that one transaction and is without prejudice to the right to settle future repos DVP. 6(c)

■ Where cash amounts in the same currency are payable on the same date by both parties, the standard GMRA requires the amounts to be netted to a single payment from one party to the other. 6(h)

■ Where securities of the same issue, denomination, currency and series are to be delivered on the same date by both parties, the standard GMRA requires the amounts to be netted to a single delivery from one party to the other. 6(i)

■ If the netting of coincident payments or deliveries is not possible because of local rules or not practicable because of operational constraints, you can agree with the other party to waive these provisions.

3.6 If I have repoed out a security for a fixed term, can I get it back before the Repurchase Date?

■ You could in the case of (1) an open repo; (2) if your counterparty agreed in advance when the transaction was negotiated, to allow you to substitute collateral securities at a time or times of your choosing during the term of the repo; or (3) if you ask and your counterparty agrees to a substitution request made during the term of a repo.

- In the case of an open repo, you have the right to terminate the transaction at any time provided you give a period of notice *not less than the minimum period as is customarily required for the settlement or delivery of money or Equivalent Securities of the relevant kind,* i.e. the standard securities settlement period. You can give notice of the termination by telephone.
- The GMRA sets out a mechanism for exercising pre-agreed permissions to substitute (see 3.8 below). 8
- Whether a counterparty would agree to substitute collateral securities if you were to make a request during the term of a repo is entirely at the discretion of that party and may come at a cost.

3.7 Can I terminate a repo before its Repurchase Date?

- You can in the case of (1) an open repo; (2) if your counterparty agreed in advance when the transaction was negotiated, to allow you to substitute collateral securities at a time or times of your choosing during the term of the repo; or (3) if you ask and your counterparty agrees to a termination request made during the term of a repo. 3(d)(e)
  - In the case of an open repo, you have the right to terminate the transaction at any time provided you give a period of notice *not less than the minimum period as is customarily required for the settlement or delivery of money or Equivalent Securities of the relevant kind,* i.e. the standard securities settlement period. You can give notice of the termination by telephone.
  - In the case of an early termination option given by your counterparty at the point of trade, notice requirements should have been agreed and recorded in Confirmation of the transaction. In practice, there may also be a requirement for compensation to be paid if there is an income loss to the other party (e.g. if there is a replacement cost to the other party).
  - Whether a counterparty would agree to the early termination of a repo if you were to make a request during the term of a repo is entirely at the discretion of that party and may come at a cost.

3.8 How does the substitution of securities work?

- Under the standard GMRA, a Seller can seek the permission of the Buyer to substitute collateral securities 8(a) after the Purchase Date and party A can seek the permission of party B to substitute any Margin Securities held by party B. Permission is usually sought by a party in advance at the point of trade to be used later at 8(d) its discretion, but a permission can also be sought during the term of a repo.

■ If your counterparty gives advance permission for you to substitute collateral securities during the term of the repo, you do not have an unconditional right to substitute even though you will be paying for the permission in the form of a higher repo rate. This is because your counterparty is entitled to reject the substitute securities you offer (an automatic right of substitution may suggest that the Seller still has control over the Purchased Securities, in which case, a court could 're-characterize' the repo as a secured loan). Where a counterparty has agreed in advance to allow you to substitute collateral securities during the term of a repo, the risk of them refusing to accept a substitute when it is offered can be avoided if the parties are able to pre-agree which securities are to be acceptable as substitutes, in which case, these could be recorded in Annex I as a special supplementary term or in the Confirmation of a particular transaction.

■ Under the standard GMRA, a substitution of collateral securities does not legally replace the original repo with a new one. However, in some jurisdictions, the idea of the Seller being able to recover securities that he has supposedly sold (albeit with the permission of the Buyer) may raise legal objections. For this reason and sometimes for operational reasons, some parties prefer to substitute collateral securities by early termination of the original repo and replacement with a new repo for the original Repurchase Date and identical other terms except for a change in collateral.

■ The GMRA requires substitute securities to be of at least the same Market Value as the original securities (see 5.1 below). The market usually also requires the substitute to be of at least the same 'quality'. 8(d)

■ Under the standard GMRA, if you are substituting Margin Securities, the Market Value is fixed when the request to make a specific substitution is agreed. But the Market Value of other securities is fixed at the time at which the substitution is settled (that is, at delivery), which is contrary to general market practice – to agree the value of securities in advance of settlement. So when you negotiate a GMRA with another party, it might be a good idea to amend this provision to fix the Market Value of all securities at the time a specific substitution is agreed rather than at settlement.

■ Substitution is supposed to be effected by simultaneous transfers of the original and substitute securities. In practice, this is not possible, so the party holding the original security often demands delivery of the substitute before it will release the original security.

■ The standard GMRA envisages that a substitution will take place by each security being transferred free-of-payment (FOP) but provides that, if FOP settlement is not possible and settlement has to be delivery-versus-payment (DVP), the parties should arrange to repay the cash proceeds outside the settlement system. However, in practice, you can transact a back-to-back combination of a repo and a reverse repo for the same Purchase Price to achieve a substitution, with the cash side of each transaction collateralizing the security side and the cash payments cancelling each other out.

3.9 Does the Repurchase Price have to be in the same currency as the Purchase Price?

■ Under the standard GMRA, the Repurchase Price must be paid in the same currency as the Purchase Price – this is called the Contractual Currency – unless (1) there is a default by one of the parties and all transactions are closed-out (in which case there will be a single payment to settle all outstanding transactions and related obligations, which would be made in the Base Currency) or (2) the parties agree otherwise. 7(a)

■ Where the Buyer agrees to accept payment of the Repurchase Price in a currency other than the Contractual Currency, but the value of the amount paid in other currency falls short of the amount of Contractual Currency when the other currency is sold in the spot market, the Seller is obliged to make up the shortfall. If there is a surplus of value, the Buyer must pay this to the Seller. 7(b)(c)

3.10 What happens if you do not want to trade repos any more with a particular counterparty?

You can terminate a GMRA with a counterparty by giving written notice. However, if there are any repos still outstanding after the termination of the agreement, they remain subject to the terms and conditions of the terminated agreement. And if anything goes wrong, e.g. failure to deliver collateral, all the remedies provided by the terminated GMRA will continue to apply to the outstanding repos. 16(c)(d)

4 Managing life-cycle events

4.1 What happens when a coupon, dividend or other income is paid on collateral during a repo?

■ A coupon, dividend or other income payment on collateral securities should be paid by the issuer of the security to Buyer, given that the Buyer is the legal owner. However, because the Seller has committed to buy back the security at its original value plus repo interest, he continues to take the risk on the 5(a) security and should therefore receive the return, including any income. Under the GMRA, in the case of a **Repurchase Transaction**, when income is paid on the collateral security to the Buyer, an immediate and equal sum in the same currency should be paid by the holder to the Seller. In the market, this payment is often called a 'manufactured payment'.

- The same principle applies to income paid on Margin Securities. 2(z), 5(b)

- In the case of registered securities, a manufactured payment is due on the income record date, which is earlier than the actual Interest Payment Date. In the case of other securities, a manufactured payment is due on the Income Payment Date. The GMRA does not define what it means by 'other' securities but it has been assumed that they are bearer securities.

- In practice, manufactured payments are often deferred for a day in order to be sure that income is received from the issuer of collateral securities (see 4.2 below about what happens when income is never paid by the issuer).

- If a manufactured payment is still owing to a Seller on the Repurchase Date of the Repurchase Transaction 3(f)
that gave rise to it, the amount is deducted from the Repurchase Price paid by the Seller. An interest claim 12
can also be made for compensation for the delay in payment. But the same mechanism is not available to the holder of Margin Securities on which income is due, as they are not subject to repurchase and do not have a Repurchase Date (see 5.10 below).

- In the case of a **Buy/Sell-Back**, when income is paid on collateral securities held by the Buyer, no manufactured payment is made by the Buyer to the Seller. Instead, the Repurchase Price due to be paid by the Seller on the Repurchase Date is reduced by the amount of the collateral income plus interest to compensate for the delay between the collateral Income Payment Date and the Repurchase Date. However, a manufactured payment would still be required between the parties to a Buy/Sell-Back in the case of Margin Securities.

- The manufactured payment should be in the same currency as the income payment on the collateral securities, unless the parties agree otherwise.

■ The definition of manufactured payments in the GMRA 2011 is difficult to interpret. First, they are called Income, just like coupon, dividends and other income payments on collateral securities. Second, it is unclear if manufactured payments include the proceeds of any redemption of collateral securities that might take place during the life of a repo. In sub-paragraph 2(u), redemption proceeds other than Distributions are included in the definition of Equivalent Securities, which means they would be repaid on the Repurchase Date. Distributions are Income and would be repaid immediately as manufactured payments. However, sub-paragraph 2(y) defines Distributions as including 'a payment or repayment of principal'. So according to the GMRA, the proceeds of redemption – which are a repayment of principal – exclude repayments of principal! Sub-paragraph 2(u) is apparently an attempt to solve a problem that has arisen with multi-year repos. The treatment of redemption proceeds as Equivalent Securities, as in sub-paragraph 2(y), means no repayment until the Repurchase Date, which could involve a delay of years in the case of multi-year repos. This is undesirable given that there is no provision for the payment of interest to compensate for the delay. If redemption proceeds are instead classed as Income, as in sub-paragraph 2(u), they would be repaid immediately as manufactured payments. If your business is short-term repos, redemption proceeds are best treated as Equivalent Securities, as in sub-paragraph 2(y), in which case, it would be a good idea to agree with your counterparty to amend the GMRA accordingly. 2(q)(u)(y)

■ In many jurisdictions, parties are prohibited from using securities as collateral which may be subject to redemption during the term of a repo.

■ When a manufactured payment is made by the Buyer, the Market Value of the collateral he is holding will fall (this is because the income will not be available to the next buyer, so the collateral security is worth less by that amount). Other things being equal, this will increase the Buyer's Net Exposure to the Seller and lead to a call being made on the Seller for a Margin Transfer or alternative action in favour of the Buyer (see 5.1 below). So the Seller has to make a Margin Transfer or take alternative action but this should be offset by the receipt of a manufactured payment. However, problems can arise in the case of a repo involving a collateral security where (1) there is a delay or 'ex-dividend' period between the income record date (the date on which the holder of securities is registered as being entitled to the next income payment) and the Income Payment Date and (2) the income record date occurs during the life of the repo

but the Income Payment Date falls after the Repurchase Date. As the Buyer will be registered as the holder of the security on the income record date, he becomes entitled on that date to the coupon, dividend or other income that is due to be paid on the following Income Payment Date, despite the fact that he will not be the holder of the security on the Income Payment Date. In addition, there will be an ex-dividend fall in the Market Value of the collateral security due to the income payment by the issuer and other things being equal, this will trigger a call for Margin Transfer or alternative action in favour of the Buyer. So, in this case, the Seller has to make a Margin Transfer or take alternative action but this will not be off-set by the receipt of a manufactured payment (that will not be due until the Income Payment Date, which is after the Repurchase Date). The GMRA solves this problem by triggering a manufactured payment to the Seller on the same day as the drop in the Market Value of a collateral security may potentially trigger a Margin Transfer or alternative action in favour of the Buyer. This is done by deeming the Income Payment Date (on which a manufactured payment is triggered) to be on the income record date (on which a Margin Transfer or alternative action may be triggered). However, this solution is offered only for 'registered securities', 2(z)
as it was assumed that only these securities had income record dates in advance of Income Payment Dates. In practice, it would appear that some bearer securities now have this feature. But, as they are not registered, such securities are not covered by the GMRA's mechanism for off-setting a Margin Transfer or alternative action with an accelerated manufactured payment. Accordingly, consideration could be given to amending the definition of Income Payment Date to read something like 'with respect to any Securities, the date on which Income is paid in respect of such Securities or, if different, the date by reference to which particular holders are identified as being entitled to payment of Income'.

- The issue discussed in the previous paragraph also applies to Margin Securities.

4.2 What happens if a Buyer does not receive a coupon, dividend or other income payment on collateral when it is due?

The GMRA says that it is only when a coupon, dividend or other income is actually paid on collateral 5(a)
securities or Margin Securities that the Buyer or margin-holder is obliged to make a manufactured payment to the Seller (even if the Buyer or margin-holder has re-used the securities and is no longer holding them). Therefore, if the issuer of a security does not pay the income due to the Buyer, the Buyer is not obliged to make a manufactured payment to the Seller. Remember that the Income Payment Date of a registered security is deemed under the GMRA to be its Income Record Date (see 4.1 above).

4.3 What happens if a Buyer does not make a manufactured payment when it receives an income payment on collateral securities from the issuer?

- When a coupon, dividend or other income payment is made on collateral securities or Margin Securities, failure to make a manufactured payment to the Seller or margin-giver is an Event of Default by the Buyer or margin-holder. The Seller or margin-giver could close-out the GMRA (see 6.1 below).

- Otherwise, the Seller can deduct the overdue manufactured payment from the Repurchase Price that he is due to pay to the Buyer on the Repurchase Date. He can also deduct interest for the late payment from the Buyer at the higher of the repo rate on the transaction and the Applicable Rate agreed by the parties (see 4.6 below). However, this cannot be done for Margin Securities as they are not subject to repurchase and do not have a Repurchase Date (see 5.10 below). 3(f)

- The above applies only to a Repurchase Transaction. In the case of a Buy/Sell-Back, there is no manufactured payment. Rather, the Repurchase Price due to be paid by the Seller on the Repurchase Date is reduced by the amount of the collateral income plus interest to compensate for the delay between the collateral Income Payment Date and the Repurchase Date.

4.4 What happens if a Buyer receives a coupon or dividend on collateral that is subject to tax?

- The GMRA makes clear that any payments due on any repo should be made without tax or duty being withheld or deducted, unless this is required by law. If the law requires withholding or deduction, the payer must make up the loss to the payee. This provision is sometimes referred to as a 'gross-up' clause.. 6(b)

- Note that parties are free to agree other arrangements. If they do, these should be recorded as a special supplementary term or condition in Annex I of their GMRA (specifically in paragraph 2 of Annex I). If the parties wish to repo bonds which pay coupons subject to withholding tax, they will need to delete the 'gross-up' clause in the GMRA (sub-paragraph 6(b)), so that the Buyer does not suffer a loss.

- Under the standard GMRA, if the Buyer has to gross-up payments to Seller, he can terminate similar repos in future in order to avoid further such tax losses. He has to give notice of 30 days, cover any legal and other professional expenses incurred by the Seller in terminating the repo and at the request of the Seller, has to provide a supporting professional opinion confirming his risk of loss. Moreover, the Seller can refuse to terminate (as he might need this repo) but would then be deemed to indemnify the Buyer against future tax losses (see 8.1 below). 11

■ The ICMA publishes a FATCA (Foreign Account Tax Compliance Act) Annex, which allow parties to amend the GMRA in order to conform to the requirements of this US tax legislation. This Annex waives the standard gross-up provision to accommodate withholding obligations under FATCA.

4.5 When is repo interest paid on open repos?

■ Unless otherwise agreed, repo interest is paid on the Repurchase Date as an integral part of the Repurchase Price on the Repurchase Transaction. This procedure applies to open repo.

■ However, an open repo can run for a long period, with the parties increasing or decreasing the amount of cash loaned but not terminating the Transaction Exposure. It is imprudent to allow repo interest to accrue indefinitely. As a matter of practice in such cases, the parties often agree to pay accumulated repo interest periodically, typically monthly. This means reducing the Repurchase Price back to the level of the Purchase Price. An operationally simple way of doing this is to terminate an open repo at the end of every month and replace it with a new open repo for the original Purchase Price.

4.6 What interest rates apply to cash owed under the GMRA?

■ The market talks of repos earning 'repo interest'. But as noted above, legally-speaking, repos are pairs of opposite securities transactions and so do not actually pay interest. 'Repo interest' is just what the market called the differential. This is why the GMRA calls repo interest the Pricing Differential. The market also talks about the 'repo rate', which the GMRA calls the Pricing Rate.

■ However, the GMRA requires the parties to pay true interest on (1) Cash Margin and (2) late payments.

- In the case of Cash Margins, the margin-taker must pay the interest rate agreed and recorded in Annex I of the GMRA (specifically, in the standard election in sub-paragraph 1(i) of Annex I). An overnight interest rate is usually seen as most appropriate, given the uncertain term for which the margin will be held and can be reinvested. Annex I asks for the percentage rate for whatever currencies may be used plus the payment intervals and dates. However, in practice, the parties may prefer to agree an interest rate index or source rather than a specific level. 4(f)

- In the case of the rate of interest on late payments other than late payment of a close-out amount calculated following a default, the rate of interest on late payments should be the higher of: 12

- the repo rate on a particular transaction, if the late payment can be attributed to that transaction (e.g. late payment of a manufactured payment); and
- the **Applicable Rate**, which is the interest rate agreed by both parties, both acting in a commercially reasonable manner. To avoid disagreements and delays when interest is claimed in non-default situations, parties are advised to agree an Applicable Rate to be used as a fallback when they negotiate their GMRA and to record this rate as a special supplementary term in Annex I. But it is perfectly acceptable to agree the Applicable Rate each time it is needed. 2(c)

4.7 What happens if a collateral security is redeemed during the term of a repo?

- Under previous versions of the GMRA, the Equivalent Securities after a redemption where the proceeds of the redemption and this cash would be paid over to the Seller on the Repurchase Date (having been netted against the Repurchase Price due from the Seller) with no interest compensation for the delay between the redemption date and the Repurchase Date. 2(y)
- Under the GMRA 2011, there are two ways of dealing with redemptions. In sub-paragraph 2(u), the proceeds of redemption during the life of a repo are included in the definition of 'Equivalent Securities', which means that the proceeds would be repaid on the Repurchase Date. The definition of Equivalent Securities explicitly excludes 'Distributions', which are normally taken to mean income. That is not a problem, except that sub-paragraph 2(y) defines Distributions as including 'a payment or repayment of principal'. So, according to the GMRA, the proceeds of redemption – which are a repayment of principal – exclude repayments of principal! As explained in 4.1 above, sub-paragraph 2(u) is apparently an attempt to solve a problem that has arisen with multi-year repos. The treatment of redemption proceeds as Equivalent Securities, as in sub-paragraph 2(y), means no repayment until the Repurchase Date, which could involve a delay of years in the case of multi-year repos. This is undesirable given that there is no provision for the payment of interest to compensate for the delay. If redemption proceeds are instead classed as Income as in sub-paragraph 2(u), they would be repaid immediately as manufactured payments. If your business is short-term repos, redemption proceeds are best treated as Equivalent Securities, as in sub-paragraph 2(y), in which case it would be a good idea to agree with your counterparty to amend the GMRA accordingly. 2(v)(B)

5 Risk management

5.1 What happens if value of the collateral and cash held by one party falls below or rises above the value of collateral and cash held by its counterparty?

1 Managing excess exposures using Margin Transfers 4

- When transacting a repo, parties agree on the Market Value of collateral that should be provided by the Seller relative to the amount of cash owed to the Buyer (the Repurchase Price), any difference being a haircut or initial margin (see 1.5 and 1.6 above). During term of a repo, the actual difference between the Market Value of the collateral and the Repurchase Price will diverge from any agreed initial margin or haircut. In the GMRA, such a divergence is known as a Transaction Exposure. In the case of fixed-income collateral, **Transaction Exposures** arise because the clean price of a security fluctuates. In addition, accrued interest will accumulate on the security and other things being equal, tends to increase its Market Value. On the other hand, repo interest will accrue on the cash held by the Seller and increase the Repurchase Price. 2(ee) 2(xx)

- The Transaction Exposure of a repo with an initial margin (called the Margin Ratio in the GMRA) is calculated using Transaction Exposure Method A: 2(xx)(A)

“Transaction Exposure = “ (“Repurchase Price x Margin Ratio”) “- Market Value”

Note that in the GMRA, there is a cap on the value of the Transaction Exposure under Method A equal to the Repurchase Price. This is to ensure that if the Market Value of the collateral dropped to zero, the Seller would not face a Transaction Exposure greater than the Repurchase Price, which is the amount he owes the Buyer.

- The Transaction Exposure of a repo with a haircut is calculated using Transaction Exposure Method B: 2(xx)(B)

“Transaction Exposure = “ (“Market Value x (1 - Haircut”)) “- Repurchase Price “

Note that in the GMRA, the product of the Market Value and (1 – Haircut) is called the Adjusted Value of Equivalent Securities.

- The GMRA provides alternative mechanisms to eliminate Transaction Exposures that are collectively called **Margin Maintenance**.

- The most commonly used Margin Maintenance method is for one party to call for the other to provide a Margin Transfer, which consists of **Margin Securities**, **Margin Cash** or a mixture.

- A Margin Transfer is not called to eliminate the Transaction Exposure for each individual repo. Instead, Transaction Exposures are aggregated across all the repos outstanding between the parties to produce a total that the GMRA calls a **Net Exposure**. 4(c)

- Net Exposure also includes any manufactured payments that are due and payable but have not yet been paid.

- Account is also taken of previous Margin Transfers. If the parties have previously called Margin Transfers from each other and both are still holding some or all of those transfers, under the GMRA the party holding more 2(gg)
Margin Transfers than the other is said to be holding **Net Margin**. This excess margin reduces the Net Exposure of that party. So, if party A holds 15 of margin and party B hold 8, then party A has a Net Margin of 7. See 5.11 below for a further explanation of how both parties can be holding Margin Transfers at the same time.

- The value of the Margin Transfers used in the calculation of Net Margin should include the interest accrued on any Cash Margin but not yet payable (see 5.5 below).

- The calculation of Net Exposure under the standard GMRA must be done in the Base Currency as recorded in Annex I of the GMRA (specifically, in the standard election in sub-paragraph 1(e) of Annex I). All amounts in other 2(ss)(ii)
currencies have to be converted into the Base Currency at the Spot Rate, as defined in the GMRA (using the standard provision or as amended by the parties). For all purposes other than default calculations including the calculation of Net Exposure, the standard definition of the Spot Rate is *the latest available spot rate of exchange obtained by reference to a pricing source or quoted by a bank, in each case agreed by the parties (or in the absence of such agreement, specified by the Buyer) in the London inter-bank market for the purchase of the second currency with the first currency on the day on which the calculation is made or if that day is not a day on which banks are open for business in London, the spot rate of exchange quoted* 4(c)
at close of business in London on the immediately preceding day in London on which such quotation was available.

- The GMRA prescribes a particular process for calculating Net Exposure. This involves segregating Transaction Exposures into two sets: party A's exposures to party B and party B's exposures to party A. The two sets are aggregated into separate gross transaction exposures, one for A and the other for B. Any outstanding manufactured payments are added to the gross transaction exposures of the party waiting for payment and the total gross transaction exposure of the party holding the Net Margin is reduced by that amount. The two sub-totals are then off-set to give the Net Exposure. An example of the calculation is given in Appendix III of this guide. 2(ee)

■ Note that the Market Value of the Purchased Securities at the start of a repo is negotiated by the parties. The subsequent Market Value, which is used to calculate Transaction Exposures, is described by the GMRA simply as *the price for such Securities...obtained from a generally recognised source agreed by the parties or as otherwise agreed by the parties...having regard to market practice for valuing Securities of the type in question* plus accrued interest. The standard GMRA does not specify whether the bid, offer or middle price should be used, although it is common market practice to use the middle (at the close of business on the previous Business Day). The reference to *as otherwise agreed by the parties...having regard to market practice for valuing Securities of the type in question* provides flexibility to use models to calculate the Market Value of illiquid securities rather than having to mark to market. Ideally, agreed pricing sources or methods should be recorded as a special supplementary term in Annex I. 4(j)(k)(l)

2 Managing unintended exposures using Repricing or Adjustment

■ In addition to Margin Transfers, the GMRA offers an alternative mechanism for eliminating Net Exposures. This was designed for documented Buy/Sell-Backs but can also be used for Repurchase Transactions. However, it does not appear to be widely used. Where an individual repo has a Transaction Exposure, the transaction can be terminated early and replaced by a new repo in that either (1) the Purchase Price has been changed to align with the latest Market Value of the collateral or (2) the amount of collateral has been changed to bring its Market Value at the latest prices into line with the Repurchase Price of the original repo on the day it was terminated. The former method is called **Repricing**; the latter is called **Adjustment**.

■ Repricing and Adjustment are performed transaction by transaction in sequence, starting with transactions with the highest Transaction Exposure and working through each in sequence until Transaction Exposures become immaterial. Although Repricing and Adjustment are applied to individual transactions, the GMRA envisages that parties will aggregate and net the changes in cash or collateral amounts resulting from Repricing or Adjustment of multiple repos.

■ The net amounts resulting from Repricing and Adjustment resemble Margin Transfers but should be free of the legal objections that Margin Transfers can face in some jurisdictions because of the unilateral nature of the transfer (meaning they might be regarded as pledges as they are not sales against cash and would then be subject to statutory insolvency regime).

■ Repricing or Adjustment may be simpler to implement for small institutions with only a few repos outstanding with each counterparty. In practice, Adjustment seems not to be used at all.

5.2 When can I make a Margin Maintenance call?

- Whichever party has a Net Exposure is entitled (but not obliged) to call for a Margin Transfer or Repricing or Adjustment at any time while it has a Net Exposure. 4(a)

- If a party with a Net Exposure fails to call for Margin Maintenance, it does not waive its right to make such calls subsequently.

- If you know your counterparty has a Net Exposure, you are not obliged or expected to prompt them to call you. But be ready to meet delayed calls.

5.3 What must I do when I receive a Margin Transfer call?

- In response to a call for a Margin Transfer, you can provide Cash Margin or Margin Securities or a combination of both. 4(d)

- Net settlement of a Repricing must be in cash (in your Base Currency unless your counterparty agrees otherwise). Net settlement of an Adjustment must be in securities.

- The choice of what asset(s) to provide in response to call for a Margin Transfer can be pre-agreed by the parties when they negotiate their GMRA and recorded in Annex I as a supplementary term. Otherwise, the choice falls to the party receiving the call with one exception. That exception is that party A when making a call on party B, can demand that party B returns any Cash Margin and/or Margin Securities previously given by A to B that have not yet been returned.

- If party A makes a call on party B and exercises its right to ask for its call to be satisfied by the return of Margin Securities previously given to party B, but party B cannot immediately return those particular assets due to circumstances beyond its control and despite making all reasonable efforts, the GMRA requires party B to temporarily satisfy the call with an interest-free Cash Margin (that will be in the Base Currency unless otherwise agreed by the parties). If after at least two days, the securities in question still cannot be returned, they are valued using the same methodology as is used in the event of a default (see 6 below) and the value is paid by party B (in the Base Currency unless otherwise agreed by the parties). This payment is called a **Cash Equivalent Amount**. 4(h)

- If a Margin Transfer is to be provided in the form of cash, the parties can pre-agree when they negotiate their GMRA, which currency or currencies will be allowed and record this agreement in Annex I of their GMRA. Otherwise, Cash Margin must be paid in the Base Currency of the margin-caller as recorded in Annex I. 4(e)

- If a Margin Transfer call is satisfied in cash except in the case of Cash Equivalent Amounts, interest has to be paid on the cash by the party making the call at an interest rate agreed between the parties when they negotiated their GMRA and recorded in Annex I (specifically in the standard election in sub-paragraph 1(i) of Annex I). It is usual to agree an overnight interest rate as it uncertain how long Cash Margin will be available for reinvestment. 4(f)

- If a Margin Transfer is to be made in the form of securities, the securities particular provided must be acceptable to the party calling for the Margin Transfer. To avoid disputes, the parties can pre-agree when they negotiate their GMRA, which types of securities will be eligible and record this agreement in Annex I as a special supplementary term (but they can always agree additional securities on a trade-by-trade basis). Margin Securities do not have to be the same issues as the Purchased Securities. 4(g)

- Parties are required under the GMRA to agree a Margin Delivery Period when they negotiate their GMRA and to record this in Annex I (specifically in the standard election in sub-paragraph 1(j) of Annex I). This period should be as short as possible, shorter than the standard settlement period, so that any Net Exposure is eliminated quickly.

5.4 How is the Market Value of collateral fixed for the purpose of calculating Net Exposure?

- All that the standard GMRA says is that the clean price used to calculate Market Value must be *obtained from a generally recognized source agreed by the parties or as otherwise agreed...having regard to market practice for valuing* these securities. Accrued interest on fixed-income securities is calculated up to the date of the calculation (but the market often includes accrued interest up to the date of any margin delivery). 2(ee)

- The definition of Market Value can be elaborated by the parties in order to provide greater certainty and minimize disputes. They could for example, agree on more than one source for prices and include more detail about the sources and method of calculation. Such a redefinition should be recorded as a special supplementary term in Annex I of the GMRA.

- The definition of Market Value in the GMRA does not say whether it should be the bid, mid or offer price of a security. Interdealer market practice is to use the middle price for calculating Net Exposure as this makes sense for parties buying and selling from each other. The price is usually taken at close of business on the previous business day.

5.5 Are haircuts & initial margins applied to securities given in Margin Transfers?

- Provision is made in paragraph 2(aa) for a haircut to be taken from the Market Value of Margin Securities. Such a haircut is called a Margin Percentage. The **Margin Percentage** is a haircut and not an initial margin since a haircut is defined as a ratio of collateral to cash, while Margin Securities are delivered free of payment (no cash is exchanged). 2(aa)
- It is up to the parties as to whether they apply Margin Percentages. Some argue that if haircuts are taken from securities given as collateral, then the same should be done when the same securities are given as Margin Securities. However, not everyone in the market seems to agree.

5.6 How often should I make or expect Margin Maintenance calls?

- In principle, a party with a Net Exposure is entitled to call for a Margin Transfer or for Repricing or Adjustment at any time while it has a Net Exposure. In practice, parties tend to calculate and make calls for Margin Transfer or for Repricing/Adjustment once a day. 4(a)
- However, in the event of exceptional intraday fluctuations in the Market Value of collateral, parties may make more than one Margin Maintenance call each day.

5.7 Do I have to meet very small Margin Maintenance calls?

- The GMRA gives the party with a Net Exposure the right to call for Margin Maintenance whenever it chooses and for all or part of the Net Exposure. In practice, parties often seek to avoid the disproportionate operational cost of making small Margin Transfers or delivering small net amounts in settlement of a Repricing or Adjustment by agreeing an exposure threshold below which they undertake not to make a call. In the repo market, this **exposure threshold** is also sometimes called a **minimum transfer amount (MTA)**. As this name implies, once Net Exposure reaches or breaches the threshold level, the call for Margin Maintenance is for the whole exposure. 4(a)
- Note that practice in the repo market differs from the use of exposure thresholds and MTAs in the derivatives market.
- Exposure thresholds and MTAs are not mentioned in the standard GMRA. Parties wishing to use these devices have to record their agreement as a special supplementary term in Annex I. Alternatively, they can informally agree such levels so they are free to increase the frequency of Margin Maintenance calls if the other party suffers credit problems.

5.8 What happens if my counterparty fails to meet a Margin Maintenance call?

- If a Margin Maintenance call is not satisfied when due, the party making the call can put the other into default.
- However, if there was a dispute over the size of a Margin Maintenance call, it is not clear whether a default would be enforceable in respect of the disputed portion of the call.

5.9 What happens if my counterparty disagrees with the size of a Margin Maintenance call by me?

- The standard GMRA offers no advice on resolving disputes, as it was designed for low-risk repos against simple fixed-income securities such as government bonds and it was not envisaged that there would be a problem in valuing such securities.
- Market best practice is for each party to promptly provide details of its calculation to the other party for checking.
- It is also best practice for the party disputing a call to make an immediate Margin Transfer or settlement of a Repricing or Adjustment for the amount not in dispute, while the dispute is being resolved. For example, if party A makes a Margin Transfer call on party B for 1.2 million but party B calculates that the Net Exposure is only 1.1 million, party B should settle 1.1 million and dispute only the 0.1 million difference.
- Parties should ensure they have in place efficient operational policies and procedures for the management and speedy resolution of margin disputes, whether made by the other party or made in response to margin calls by the other party.

5.10 When are Margin Transfers returned?

- Margin Transfers are called to hedge Net Exposures (see 5.1 and 5.2 above) rather than the Transaction Exposures on individual repos. Furthermore, Margin Transfers are not attributed to individual repos. So when an individual repo matures, it does not directly lead to the return of Cash Margin or Margin Securities at the same time as the Repurchase Price and Equivalent Securities are returned. It is only if the maturing of an individual repo creates a Net Exposure that a party can demand the return of some or all of any Margin Transfers that it had previously provided to the other party (see 5.1 above).

- In contrast, where the parties choose to use Repricing or Adjustment instead of Margin Transfers, cash provided in net settlement of a Repricing will be returned automatically as part of the Repurchase Price of that repo and securities provided in net settlement of an Adjustment will be returned automatically as part of the Equivalent Securities. This is because Repricing and Adjustment update the values of each transaction.

5.11 Can I do Margin Maintenance separately for different repos under the same GMRA?

- The GMRA makes provision for a party to 'carve out' an individual repo from the portfolio of outstanding 4(i)
transactions with another party and to calculate Net Exposure and to conduct Margin Maintenance for this individual repo separately from the collective calculation and Margin Maintenance of other repos.

- This provision is intended to allow institutions to delegate the valuation and management of structured repos to a specialist unit, while leaving the valuation of its more standard repos to the main operational unit. It does not envisage breaking up the Margin Maintenance of repos with the same counterparty into processes for separate sets of routine repo (e.g. local currency repo versus USD repo), although this is not ruled out.

6 Default management

6.1 What is an Event of Default?

- An Event of Default is one of the acts or omissions listed in the standard GMRA. Events of Default include 10(a)
several **Acts of Insolvency.** Parties can agree to add Events of Default when they negotiate their GMRA 2(a)
(which is often necessary when using the GMRA outside Europe).

- If an Event of Default occurs, the Defaulting Party is deemed to have stopped performing its obligations under the GMRA. This means that the Non-Defaulting Party can 'close-out' the agreement. The process of close-out is described in 6.2 below.

6.2 What happens after an Event of Default?

- As soon as your counterparty is deemed to be in default, you can 'close-out' the GMRA with that party. 10(b)
Initially, this means accelerating payment and delivery obligations outstanding under the agreement to an **Early Termination Date**.

- If the parties, when they negotiated their GMRA, elected to apply the **Automatic Early Termination (AET)** provision, then the Early Termination Date will be deemed to have occurred at the time immediately preceding the occurrence of the relevant Event of Default. AET can be applied to two Acts of Insolvency; namely, the serving of a winding-up petition or similar process and the appointment of a liquidator or analogous official (both of which mean that insolvency is imminent).These Acts of Insolvency should be selected to be AETs only in jurisdictions where the statutory insolvency regime would interfere with the contractual process of close-out under the GMRA if insolvency occurs on or before the Early Termination Date.

- If, on the other hand, Automatic Early Termination has not been applied, it is up to the Non-Defaulting Party to fix the Early Termination Date. To do this, he must send a **Default Notice**, giving the Defaulting 2(n)
Party up to 20 days' notice of his intention to terminate. The Default Notice must be given using one of 14
the methods of communication listed in GMRA and will only be effective when served on a Business Day 2(f)
as defined in the GMRA (see 9.3 below).

- On the chosen Early Termination Date, all outstanding obligations under the GMRA are accelerated from their due date for immediate settlement. Any outstanding Cash Margins and Margin Securities are added 10(c)
to the accelerated amounts. By the Early Termination Date or as soon as practicable afterwards, the Non-Defaulting Party should have determined the **Default Market Value** of any collateral or Margin Securities held by himself and by the Defaulting Party and the value of any cash owed by each party, as of the Early Termination Date.

- The default value of future Repurchase Prices is calculated by deducting future repo interest for the number of remaining days to maturity.

- To calculate the Default Market Value of securities, the standard GMRA offers three valuation options (see 6.4 below).

- All amounts have to be converted into the Base Currency selected when the GMRA was negotiated. 2(e)
These amounts are then netted against each other into a single close-out amount which will be owed by one party to the other. A statement of account must be served to the Defaulting Party as soon as practicable and the amount should be paid the next day.

6.3 What happens if my counterparty becomes insolvent?

- Acts of Insolvency are Events of Default listed in the GMRA. If one of these Acts of Insolvency occurs, 2(a) you can 'close-out' the GMRA (see 6.2 above). However, the insolvency of a Defaulting Party can pose legal challenges in that the insolvency regime may try to interfere with close-out netting under the GMRA.

- Before negotiating a GMRA, you should check that the listed Acts of Insolvency adequately cover the insolvency laws in the relevant jurisdictions (i.e. your jurisdiction, that of your counterparty and any others that may have an interest in your transactions).

6.4 What happens if my attempts to serve a Default Notice are prevented?

- If having made *all practicable efforts* to serve a Default Notice – including at least two of the methods 14(c) fax, certified or registered mail, an electronic messaging system or such methods as you normally use to communicate with the Defaulting Party – you have been unable to do so, you should draw-up and sign a Special Default Notice explaining your efforts and noting the time of signature.

- The Special Default Notice should be delivered to the Defaulting Party as soon as practicable.

6.5 How should I value securities if my counterparty defaults?

- The method of valuation in a default is different to that used for calculating Net Exposure. It is much more conservative and allows the inclusion of a wider range of costs.

- The Default Market Value of securities (including those have yet to settle) is calculated using a method or certain combination of methods from the following menu:

  - **Dealing prices**. If you buy or sell collateral or Margin Securities or another desk in your bank buys or sells the same issue in the market, *on or about the Early Termination Date*, then (1) you can use the net proceeds of 10(f) sales to value the amount actually bought or the aggregate cost of purchases to value the amount actually sold or (2) if you have to value more than the amount actually bought or sold, you can use the net proceeds and aggregate cost to value the remaining securities as well. Net proceeds and aggregate cost can take into account *all reasonable costs, commissions, fees and expenses* incurred in the execution of the deals.

- **Quotes**. If you do not buy or sell all the collateral or Margin Securities that need to be valued, you can use market quotes for whatever amounts you have not bought or sold. The standard GMRA says you should get bid prices for the securities that you had expected to deliver to the Defaulting Party (called Receivable Securities in the GMRA) and offer prices for securities that you had expected to receive from the Defaulting Party (called Deliverable Securities). These quotes should be taken from *two or more market-makers or regular dealers in the Appropriate Market in a commercially reasonable size, using pricing methodology that is customary for the relevant type of security* (determined by you the Non-Defaulting Party). The Appropriate Market is the one with the most liquidity in the security being valued. You can adjust the quotes you get to take account of Transaction Costs *that would be incurred or* 2(d) *reasonably anticipated.* In other words, your estimate of the costs of execution.

- **Net Value**. The standard GMRA defines this as the amount that you believe represents the *fair market* 10(e)(v) *value of securities having regard to such pricing sources (including trading prices) and methods (that may include, without limitation, available prices for Securities with similar maturities, terms and credit characteristics) as the Non-Defaulting Party considers appropriate.* Estimated Transaction Costs can also be included. You can use Net Value as the Default Market Value if you have been unable to:

    - find quotes for these securities, or you believe that it would not be commercially reasonable to:
    - buy or sell at the prices available in the market; or
    - obtain quotations; or
    - use any quotations that are available.

- Net Value is the appropriate valuation method for illiquid securities.

- If you decide to use quotes or to calculate Net Value to value collateral or Margin Securities, it is advisable to document all price sources and calculations and securely archive all documents, in case the liquidator challenges your valuation, which could happen after a considerable delay. For example, if you use brokers' quotes, keep copies of brokers' screenshots.

- All default calculations must be done in the Base Currency. Other currencies must be converted into the Base Currency at the Spot Rate as defined in the GMRA. For the purposes of default calculations, the standard GMRA defines the Spot Rate as *the latest available spot rate of exchange obtained by reference to a pricing source or quoted by a bank. In each case specified by the Non-Defaulting Party, in the London inter-bank market for the purchase of the second currency with the first currency at such dates and times determined by the Non-Defaulting Party.* 2(ss)(i)

6.6 What costs can I charge a defaulting counterparty?

- In addition to being liable for Transaction Costs – the costs of executing the purchase or sale of collateral or Margin Securities – the Defaulting Party can also be charged *all reasonable legal and other professional expenses* that you incur in managing the default. These expenses include the cost of external legal advice and collateral valuation consultants. 10(g)

- You also need to consider costs that might arise from having to deal with the gap in your repo book left by the default. You will need to replace the defaulted repos or hedge the exposure left by their default or do something with other transactions connected with the defaulted repos (e.g. a repo with the Defaulting Party may have been matched with a reverse repo with another party or the interest rate risk on repos with the Defaulting Party may have been hedged with derivatives).

    - If you decide to replace the repos on which your counterparty has defaulted or to hedge the exposure created by their termination, any net loss or expense incurred as a result can be charged to the Defaulting Party in the close-out calculation.

    - If you decide not to replace the terminated repos nor to hedge the exposure created by their termination but to instead unwind or replace any existing hedges against the terminated repos, any net loss or expense can also be charged to the Defaulting Party.

- The above items are a complete list of what you can charge to the Defaulting Party in regard to repos. You cannot charge for any further *consequential loss or damage* you may have suffered. 10(j)(k)

6.7 What can I do if I am still owed money after a counterparty default despite netting?

- Under the GMRA, you can 'set off' any amount owed after close-out netting under the GMRA with any amounts payable by the Defaulting Party under any other agreement or instrument or undertaking. These other amounts can be payable at the time or in the future or may be contingent or may be estimated. 10(n)

- If you are still owed money by the Defaulting Party after set off, you become an unsecured creditor of the Defaulting Party in respect of the sum still owed and will have to enter the insolvency process for this sum.

- Until the Defaulting Party pays the sum, interest will accrued on that sum at the higher of the Applicable Rate (see 4.5 above) or, in the case of an expense attributable to a particular repo, the repo rate on that transaction. 10(g)

6.8 What must I do if I owe money after a counterparty default despite netting?

You must pay the sum to the Defaulting Party on the day after you have delivered a statement showing your close-out calculations. 10(d)(iii)

6.9 What happens if a defaulting counterparty fails to pay me the net amount due after close-out?

If you have served a statement on the Defaulting Party setting out how much they owe and how you calculated that amount, the debt should be paid the next Business Day. If they fail to do so, the debt will accrue interest at the Applicable Rate, which is the interest rate selected by you *in a commercially reasonable manner.* 10(g) 12

6.10 What can I do if I am due to make a payment or delivery to my counterparty but they are already in default?

As the Defaulting Party has committed an Event of Default, you can suspend the performance of your obligations to him. You have two options about what to do next: 6(j)

- You can terminate and close-out your GMRA with the counterparty (see 6.2 above).

- If when you negotiated your GMRA, you agreed with your counterparty to make the Events of Default subject to the 'condition precedent' clause of paragraph 6(j), you are entitled to immediately and without notice suspend all payments and deliveries to the other party as soon as an Event of Default has occurred. You do not have to terminate and close-out the GMRA. You may be able to suspend your obligations indefinitely. However, the legality of the condition precedent provision and the length of time for which you can suspend your obligations will depend on the jurisdiction in which you are operating, so you need to consult the legal opinions commissioned by the ICMA (if you are a member) or seek your own professional legal advice.

7 Failure to deliver collateral

7.1 What happens if the Seller fails to deliver collateral on the Purchase Date?

- The Buyer must ensure that any payment made to the Seller is recovered and if necessary, by calling for Cash Margin to be paid to cover the Transaction Exposure on the failed repo. However, under a DVP securities settlement system, this should not be a problem. 10(h)

- The Buyer can just wait and see if the Seller delivers the collateral. If the Seller delivers late, he is still obliged to pay the full Repurchase Price on the Repurchase Date, despite the fact that he will only have had use of the Purchase Price from the day of late delivery (this follows from the definition of a repo under the GMRA – see 1.1 above). This means the Buyer earns repo interest even for days on which no cash has been loaned to the Seller. For example, consider a 7-day repo with a Purchase Price of 100,000,000 and a final Repurchase Price of 100,000,972 of which 972 is repo interest for 7 days. Assume the Seller fails to deliver on the Purchase Date but manages to do so on day 3. Although the Seller will only have cash from the Buyer for the last 4 days of the repo, the Buyer is entitled on the Repurchase Date to the final Repurchase Price of 100,000,972 that includes repo interest for the full 7 days. And as during the first 3 days, the Buyer would invest his idle cash, he would be earning double interest during the fail.

- The Buyer can terminate the repo at any time during the failure to deliver but must do in writing. In this case, the Seller would owe the amount of repo interest accrued up to the termination date.

- But if the collateral was never delivered and the Buyer did not exercise his termination right by or on the Repurchase Date, the contract would automatically terminate with no settlement of either the Purchase or Repurchase and no payment due to the Buyer.

7.2 What happens if the Buyer fails to deliver collateral on the Repurchase Date?

- The Seller must ensure that any payment made to the Buyer is recovered and if necessary, by calling for Cash Margin to be paid to cover the Transaction Exposure on the failed repo. However, under a DVP securities settlement system, this should not be a problem. 10(i)

- The Seller can wait for the Buyer to deliver the collateral. During that wait, the Seller has interest-free possession of the Repurchase Price. This is because all the repo interest due from the Seller is included in the Repurchase Price due on the Repurchase Date and this amount is fixed (see 1.1 above). While waiting for the Buyer to deliver the collateral, the Seller can reinvest the cash and keep the interest.

- The Seller can at any time while the Buyer is failing, terminate the repo using a provision in the GMRA known in the market as a 'mini close-out'. Notice of the intention to trigger a mini close-out must be given in writing (there is no prescribed notice period). The ICMA recommends that pre-notice advice is also given (recommended practice endorsed by the ICMA). A mini close-out is different to but often confused with the 'buy-in' procedure that can be used in the event of a failure to deliver in the cash market. A mini close-out requires collateral to be valued at its Default Market Value and net this against the Repurchase Price owed on the day of termination, the balance being due next day. Default Market Value is likely to be a much more conservative valuation than the Market Value used for Margin Maintenance: bids and offers will be used rather than the middle price which is conventionally used for Margin Maintenance and various costs can be added to the Default Market Value (see 6.5 above). Concern about the likely cost to Buyers means that the mini close-out provision is not widely used in the market for fear that it would deter market-making. This is particularly the case for repos of government securities, as they typically earn narrow profit margins.

- Reluctance to use the mini close-out provision means that parties typically to try to negotiate a settlement.

8 Tax issues

8.1 What happens if the tax treatment of a repo changes to my detriment?

- If the change will in your reasonable opinion, have a *material adverse effect* on you, you can ask the other party to agree to terminate the repo. But you must give notice of at least 30 calendar days and if so requested by the other party, furnish an opinion from a suitably qualified adviser. 11
- You will also have to compensate the other party for any reasonable expenses (undefined) but you will not be liable for further so-called 'consequential' loss or damages.
- The other party can refuse to terminate the repo by issuing a counter-notice to you but would then be deemed to have indemnified you against the tax loss.
- A change in a rate of tax does not qualify as a reason for invoking this provision but a loss due to the 'gross-up' provision in sub-paragraph 6(b) of the GMRA does (but only for future transactions).

9 Other issues

9.1 How must I communicate with my counterparty?

- Except in the case of calls for Margin Maintenance and the termination of open repo, any communication with your counterparty under the GMRA should be *in writing*. 14, 2(yy)(s) 14(b(i))

- In writing is defined in the GMRA and includes Electronic Messaging Systems. In the GMRA 2011, Electronic Messaging Systems expressly include e-mail. This was not the case with the GMRA 2000. An Electronic Messaging System is *any electronic system for communication capable of reproducing in hard copy.* 18
- However, in writing does not include Electronic Messaging Systems when you are notifying your counterparty that you are waiving a certain right.

9.2 What should I do if I or one of my counterparty changes address?

- If you change address, you should give notice to counterparties as soon as possible. 14(d)
- If you are aware that a counterparty has changed address, encourage them to formally notify you. If they should fail to do so and then they default, you should serve non-electronic Default Notices at both addresses to make sure your notices are legally and practically effective.
- It is advisable to establish a policy and procedures for keeping the addresses of counterparties up-to-date.

9.3 What is a Business Day?

- The GMRA defines the Business Day for (1) settlement across a securities settlement system as a day on which the system is open; (2) for settlement outside a securities settlement system, a day on which banks are open in the place of securities delivery and if different, the place of cash payment; and (3) for other payments, a day on which banks are open in the financial centre for that currency and if different, the location of the accounts. 2(f)
- The definition of a Business Day is important as payments and deliveries can only occur on a Business Day and notices (e.g. Default Notices) only take effect if served on a Business Day.
- When negotiating a GMRA, it may be prudent to include a provision for ‘unscheduled bank holidays’. These are non-Business Days declared unexpectedly and at short notice by the authorities. Parties can agree to allow notices to be served and Margin Maintenance called and fulfilled on such days.
- It is also important to know when the Business Day ends. For payments and deliveries, this is when the relevant systems or agent banks stop taking or making deliveries and payments. But for the service of notices, the Business Day is likely to be longer as banks do not close when securities settlement and payment systems close. It may be advisable to agree a local time for close of business for each purpose.

3

A SUMMARY OF THE GMRA PARAGRAPH BY PARAGRAPH

Any terms from the GMRA are given in Capital Initials. All quotes from the GMRA are in *italics*. Underlining and **bold** font have been added. In the final column are the names of the desks, teams and departments that should focus on each particular chapter of the GMRA. However, it is best practice for everyone to read the whole agreement. It is much easier to understand individual chapters if they are read in context. It is of course vital that the legal department reads the whole agreement. The desks, teams and departments that have been highlighted assume that a firm is organised into the functional units listed in the table in Appendix VI. In reality, every firm organises itself differently and often gives different names to the same unit, so you will need to map from your organisational structure to the one in Appendix VI.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
1 | Applicability	(a) Which branches of the firm can transact repo under the firm's GMRA and what type of collateral cannot be used unless special provision is made (see sub-paragraph 1(c)). (b) What types of repo can be transacted under the GMRA (Repurchase Transactions or Buy/Sell-Backs). (c) The annexes that need to be applied in order to transact Buy/Sell-Backs or repos of Net Paying Securities under a particular GMRA.	**Everyone** involved in repo needs to read this paragraph.
2 | Definitions	A list of 49 key concepts used throughout the GMRA. Some sub-paragraphs are just references to definitions in other paragraphs. Of special interest to operations staff are: ■ **Applicable Rate** (2(c)) – the interest rates to be applied to late payment ■ **Business Day** (2(f)) ■ **Electronic Messaging System** (2(s)) – includes e-mail ■ **Equivalent Securities** (2(u)) – what securities are to be returned by the Buyer ■ **Equivalent** (2(v)) – what is the equivalent after redenomination of the currency into euro or after conversion, sub-division, consolidation, take-over, corporate actions or similar event ■ **Income** (2(y)) – coupons, dividends and other income payments on collateral as well as the consequent manufactured payments, but may include redemption proceeds (see 4.1 above) ■ **Income Payment Date** (2(z)) – for 'registered securities', this is the income record date (see 4.1 above) ■ **Margin Percentage** (2(aa)) – haircut on Margin Securities ■ **Margin Ratio** (2(bb)) – initial margin	**Everyone** involved in repo should be familiar with the contents of this paragraph as they will need to refer to these definitions when reading other parts of the GMRA.

2 | Definitions	■ **Margin Securities** (2(cc)) – variation margin in the form of securities ■ **Margin Transfer** (2(dd)) – variation margin ■ **Market Value** (2(ee)) – the value of collateral in Margin Maintenance calculations (but not in default calculations) ■ **Net Margin** (2(gg)) – the difference between the value of Margin Transfers held by one party and the value of Margin Transfers held by the other ■ **Net Paying Securities** (2(hh)) – securities that when used as collateral, incur withholding tax on manufactured payments ■ **Price Differential** (2(kk)) – repo interest ■ **Pricing Rate** (2(ll)) – repo rate ■ **Purchase Date** (2(mm)) – date of initial exchange of Purchase Price and Purchased Securities ■ **Purchase Price** (2(nn)) – cash paid by Buyer on Purchase Date ■ **Purchased Securities** (2(oo)) – securities delivered by Seller on Purchase Date ■ **Repurchase Date** (2(qq)) – maturity ■ **Repurchase Price** (2(rr)) – cash owed to Buyer at any time during the life of a repo ■ **Spot Rate** (2(ss)) – exchange rate to be used to convert between currencies ■ **Termination** (2(vv)) ■ **Transaction Exposure** (2(xx)) – the difference between the Market Value of collateral and the Repurchase Price of an individual repo, taking account of Margin Ratios (initial margins) and haircuts ■ **written/in writing** (2(yy)) – the medium for notices and communications other than a variation margin call and the termination of an open repo	**Everyone** involved in repo should be familiar with the contents of this paragraph as they will need to refer to these definitions when reading other parts of the GMRA.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
3 | Initiation; Confirmation; Termination	(a) How to create a repo and who can initiate the negotiation. (b) The obligation for at least one party to send a Confirmation to the other of the terms and conditions of each repo as well as the settlement accounts and addresses. (c) What the parties need to do to settle the Purchase leg of a repo. (d) When transactions can be terminated. (e) How parties can terminate open repos. (f) What the parties need to do to settle the Repurchase leg of a repo.	■ The trading & sales desks in the **front office** – they will have to decide whether to terminate open repos (assuming the firm transacts them). ■ The trader support team in the **operational middle office** – they will perform terminations for the front office. ■ The trader assistance team in the **operational middle office** – they send, receive & check Confirmations. ■ The settlement team in the **back-office** – they perform settlement. ■ The **tax** department – they should highlight any unwelcome tax consequences that might be triggered by purchases & repurchases or by the termination of repos.

4 | Margin Maintenance	(a) When a party is entitled to call for Margin Maintenance. (b) How to call for Margin Maintenance to eliminate a Net Exposure. (c) How to calculate the **Net Exposure** of one party to the other. This provision means that subject to the exception allowed in sub-paragraph 4(i), a Margin Transfer is calculated and called for all the repos outstanding under the same GMRA and when received, is not attributed to individual transactions. (d) Which party has the right to decide what sort of asset to provide as a Margin Transfer (Cash Margin or Margin Securities). (e) What currencies can be provided as Cash Margin. (f) Interest is to be paid on a Cash Margin at the rate specified in Annex I (specifically sub-paragraph 1(i)). (g) The parties need to agree Margin Transfer payment and delivery deadlines. (h) What happens if party A asks for the return of a Margin Security previously given to party B and not yet returned but party B has difficulty returning those particular assets, having made all reasonable efforts, due to problems in the market or with the settlement system. The procedure involves (i) the payment of an interest-free cash margin and (ii) if the difficulty is not overcome within at least two days, settlement by payment of a **Cash Equivalent Amount** determined using default valuation methodology following notice by party A. (i) Parties have the right to calculate & make calls for Margin Maintenance to eliminate the Transaction Exposures on individual transactions separately from the calculation and calling of Margin Maintenance to eliminate the Net Exposure on the rest of the outstanding transactions between them.	■ The margin team in the **operational middle office** – they calculate & manage variation margin calls. ■ The financial control team in the **operational middle office** – they monitor payments & deliveries. ■ The treasury team in the **front office** – they manage any cash provided or received as variation margin. ■ The trading desk in the **front office** – they manage any securities provided or received as variation margin. ■ The **risk management department & credit department** – they need to understand how the margining process is mitigating risk.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
4 | Margin Maintenance	(j) Instead of Margin Transfer, the parties can agree to use different procedures to eliminate Net Exposure as specified in sub-paragraphs 4(k) and 4(l).	■ The margin team in the **operational middle office** – they calculate & manage variation margin calls. ■ The financial control team in the **operational middle office** – they monitor payments & deliveries. ■ The treasury team in the **front office** – they manage any cash provided or received as variation margin. ■ The trading desk in the **front office** – they manage any securities provided or received as variation margin. ■ The **risk management department & credit department** – they need to understand how the margining process is mitigating risk.
	(k) How to eliminate Net Exposure not by a Margin Transfer, but in a series of operations involving the termination in sequence of each transaction with a Transaction Exposure (starting with largest and working down towards the smallest) and its replacement with a new transaction in which all terms and conditions remain unchanged, except that the new Purchase Price is brought into line with the current Market Value adjusted for any Margin Ratio (initial margin) or haircut. The difference between the old and new Purchase Prices in each termination and replacement will give rise to a debt to the party with the Transaction Exposure. This method is called **Repricing**. All payments and deliveries required in terminating and replacing shall be netted.	
	(l) How to eliminate Net Exposures not by Margin Transfers, but in a series of operations involving the termination in sequence of each transaction with a Transaction Exposure (starting with largest and working down towards the smallest) and its replacement with a new transaction in which all terms and conditions remain unchanged, except that the nominal value of the collateral is brought into line with the Repurchase Price at which the original transaction was terminated adjusted for any Margin Ratio (initial margin) or haircut. The difference between the old and new adjusted Market Values in each termination and replacement will give rise to a net delivery to the party with the Transaction Exposure. This method is called Adjustment. All payments and deliveries required in terminating and replacing shall be netted. Parties can agree to take the opportunity of an Adjustment to pay off outstanding repo interest when the original transaction is terminated, which will bring the new Purchase Price into line with the original. They can also agree to take the opportunity to substitute the collateral.	

5 | Income Payments	(a) The Buyer must make an immediate and equal payment to the Seller on the date the Buyer receives a coupon, dividend or other income payment on collateral from the issuer. In the case of <u>registered</u> securities, where there is a delay or 'ex-dividend' period between the income record date (the date on which the holder of securities is registered as being entitled to the next income payment) and the Income Payment Date, the income record date is deemed to be the Income Payment Date, so a manufactured payment is made on the income record date. In the case of <u>other</u> securities, the manufactured payment is due on the income payment date. This means that, if the income record date and the Income Payment Date are different in this type of security, the Seller could receive a Margin Maintenance call on the income record date (because the advent of the ex-dividend period will trigger a fall in the Market Value of the security to compensate for the fact that the income payment has been assigned to the holder and will not be available to the next buyer) but having to wait until the income payment date for the manufactured payment. See 4.1 in the previous chapter.	■ The income collection team in the **back-office** – they are responsible for managing coupon, dividend & other income payments. ■ The financial control team in the **operational middle office** – they monitor payments & deliveries. ■ The product control team in the **operational middle office** – they monitor income payments. ■ The margin team in the **operational middle office** – they need to know the impact on Net Exposure. ■ The **tax** department – they should highlight any unwelcome tax consequences.
	(b) The above provision also applies to Margin Securities. Manufactured payments should be gross of withholding tax (WHT) or tax deductions regardless of whether the coupon, dividend or other income payment on collateral is gross or net of tax.	

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
6 | Payment and Transfer	(a) The form and manner in which cash must be paid and securities delivered. (b) All cash payable in respect of any transaction must be paid free of tax or duty unless required by law or otherwise agreed. But where tax or duty is withheld or deducted unless otherwise agreed, the payer has to make up the loss to the payee. (c) Settlement shall be delivery-versus-payment (DVP). (d) Parties can on a case-by-case basis, waive their right to receive collateral DVP but the exchange of cash and collateral must still be on the same day. (e) The parties must take whatever steps are needed to ensure legal title to collateral passes cleanly to the other party. (f) A statement of the intention of the GMRA is to transfer legal title to collateral despite the use of certain terms such as Margin, which merely reflect market terminology. (g) Time is of the essence. (h) Where cash is payable in the same currency on the same date by both parties to each other, the amounts shall be netted to a single payment from one party to the other. (i) Where securities of the same issue, denomination, currency and series are to be delivered to each other on the same date by both parties, the amounts shall be netted to a single delivery from one party to the other. (j) If the parties have agreed when they negotiated their GMRA and recorded their agreement in Annex I (specifically, in sub-paragraph 1(k) of Annex I) that this provision will apply, all obligations of one party to the other are subject to **a condition precedent** that no Event of Default listed in the GMRA between the parties has occurred and is continuing. This provision means that a party can immediately and without notice suspend all payments and deliveries to the other party if an Event of Default is in effect (without having to terminate the GMRA).	■ The trading & sales desks in the **front office** – they need to be aware of the 'gross-up' provision in 6(b), if this has not been deleted during negotiation of the GMRA. ■ The **tax** function needs to be aware so that they can highlight any unwelcome tax consequences. ■ The settlement team in the **back-office**. ■ The financial control team in the **operational middle office** – they monitor payments & deliveries. ■ The **legal** department – they need to be aware of the issue of waivers, the obligation to takes steps to ensure title transfer, the issue of terminology, the payment/settlement netting provision and the condition precedent. They of course need to read the rest of the agreement too.

7 | Contractual Currency	(a) The Contractual Currency is the currency of the Purchase Price. Any payments in respect of the Purchase Price or the Repurchase Price must be made in the Contractual Currency, except default close-out amounts. But the payee can accept payment in another currency. (b) If a payee accepts payment in another currency but the amount proves insufficient when converted into the Contractual Currency, the other party must immediately make up the shortfall. (c) If a payee accepts payment in another currency but the amount proves too generous when converted into the Contractual Currency, the other party must immediately refund the surplus.	■ The trading & sales desks in the **front office** – they need to understand the flexibility to vary the terms of a transaction & the currency exposure. ■ The financial control team in the **operational middle office** – they monitor payments & deliveries. ■ The **risk management** function & **credit department** – they need to understand the currency exposure. ■ The settlement team in the **back-office**.
8 | Substitution	(a) If the Seller asks and the Buyer agrees, some or all of the collateral securities held by the Buyer can be substituted for another issue in an amount and description agreed between the parties but the substitute must be of at least equal Market Value to the original securities. The Market Value of the securities being substituted is fixed at the time at which the substitution is to be settled (at delivery). (b) Unless the parties waive the requirement, the exchange involved in a substitution should be by simultaneous exchange. (c) Substitution involves a variation in one of the terms of a repo, which continues uninterrupted. (d) Margin Securities can also be substituted by agreement. Under the standard GMRA, if you are substituting Margin Securities, the Market Value is fixed when the request to make a specific substitution is agreed (in contrast to the fixing of the Market Value of other securities being substituted, which is fixed at the time at which the substitution is to be settled).	■ The trading desk in the **front office** – they may wish to use substitution as part of collateral management. ■ The trader support team in the **operational middle office** – they will perform the substitution for the front office. ■ The financial control team in the **operational middle office** – they monitor payments & deliveries. ■ The settlement team in the **back-office**. ■ The **accounting** department – they will have to check that substitution falls within certain accounting rules. ■ The **legal** department – they need to ensure that substitution is not subject to legal risk. They of course need to read the rest of the agreement too.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
9 | Representations	(a) **Due authorisations** – Each party represents that it has successfully taken all the steps necessary to secure the legal capacity to sign the GMRA and to perform their obligations under the agreement. (b) **Acting as principal** – Each party represents that it will transact as a principal other than transactions under the Agency Annex (if applicable). (c) **Signing authority; capacity and authority** – Each party represents that the person signing the GMRA on its behalf and any person transacting under the agreement on its behalf has the authority to do so. (d) **Official authorisations** – Each party represents that it has all necessary official authorisations and they are all still current. (e) **No breach of law, constitution or agreement** – Each party represents that signing the GMRA and transacting under the agreement does not violate any law, regulation or commitments under other agreement. (f) **Satisfaction with tax consequences** – Each party represents that it is relying on its own tax advice. (g) **Non-reliance and understanding of risks** – Each party represents that it is trading at arm's length and that: (i) unless there is a written agreement, it is not relying on advice from the other party; (ii) it has and will enter transactions on its own advice; and (iii) it understands and accepts the risks of each transaction. (h) **Free transfer of title** – Each party represents that it has the right to transfer full title to securities subject only to liens granted to clearing agents (which are required in order to cover the credit risk taken by the agent in settling transactions).	■ The **legal** department. They of course need to read the rest of the agreement too. ■ Trading & sales desks in the **front office** – they need to ensure they do not contradict any of these representations or accidentally make new ones.

Representations are repeated every time a new repo is transacted or transfers are made. In addition, it is agreed that if one of the parties does not disclose that it is acting as an agent for another party, then it will be treated as the principal.

10 | Events of Default

(a) If any of the following Events of Default affect one of the parties (the Defaulting Party), then the agreement will be closed out according to sub-paragraphs (b) to (g).

(i) Buyer fails to pay the Purchase Price on the Purchase Date or Seller fails to pay the Repurchase Price on the Repurchase Date.
(ii) Seller fails to deliver the Purchased Securities on the Purchase Date or Buyer fails to deliver the Equivalent Securities on the Repurchase Date – but only if the parties agreed to make failure to deliver an Event of Default when they negotiated their GMRA.
(iii) Seller or Buyer fail to pay any amounts owed under the provisions covering failure to deliver securities (sub-paragraphs 10(h) – terminating a repo on which there has been a failure to deliver on the Purchase Date – and 10(i) – applying a mini close-out to a repo on which there has been a failure to deliver on the Repurchase Date).
(iv) Seller or Buyer fail to pay or deliver in response to a call for Margin Maintenance.
(v) Seller or Buyer fail to make manufactured payments.
(vi) An Act of Insolvency applies to Seller or Buyer (there are several Acts of Insolvency – see sub-paragraph 2(a)).
(vii) Seller or Buyer make or repeat materially incorrect or untrue representations.
(viii) Seller or Buyer admits to the other that it is unable or unwilling to perform any of its obligations under the GMRA.
(ix) Seller or Buyer is declared in default, is suspended or expelled from a securities exchange or is prevented from dealing in securities by a Com-

■ **Everyone** needs to read this chapter. In the case of front and back-office, it is to get a rough idea of what happens in a default.

■ The **legal** department and senior management need to read this section very carefully in order to plan for a default. They of course need to read the rest of the agreement too.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
10 | Events of Default	petent Authority but in each case, only because it has failed to meet requirements on financial resources or credit rating (a Competent Authority is in defined in 2(i) as 'a regulator, supervisor or any similar official with primary insolvency, rehabilitative or regulatory jurisdiction over a party in the jurisdiction of its incorporation or establishment or the jurisdiction of its head office'). (x) Seller or Buyer fail to perform any other obligation under the GMRA and do not remedy that failure within 30 days of a notice served by the Non-Defaulting Party. (b) If an Event of Default occurs and continues, either: the agreement can be terminated by the Non-Defaulting Party; or if the Event of Default is either the presentation of a petition for winding-up or analogous proceedings, and it was agreed that these should be Automatic Early Termination events, then the Early Termination Date is deemed to have occurred automatically. In both cases, an Early Termination Date has to be fixed. Where Automatic Early Termination does not apply (either because this provision does not apply to the particular Event of Default that has occurred or the parties did not agree on Automatic Early Termination for the two relevant Acts of Insolvency), the Non-Defaulting Party can fix an Early Termination Date by giving no more than 20 days' notice to the Defaulting Party and specifying the Event of Default. If Automatic Early Termination does apply, then the Early Termination Date is deemed to have occurred 'immediately preceding' the relevant Acts of Insolvency. This is to try to pre-empt the application of statutory insolvency rules in jurisdictions where these rules would prevent the application of the contractual default provisions of the GMRA. (c) On an Early Termination Date, all repurchase obligations and all Margin Securities and Cash Margin still held by the parties become immediately due for payment or delivery. In practice, as the Defaulting Party is unlikely to make such repayments or deliveries, the amounts go into the calculation of who owes what.	■ **Everyone** needs to read this chapter. In the case of front and back-office, it is to get a rough idea of what happens in a default. ■ The **legal** department and senior management need to read this section very carefully in order to plan for a default. They of course need to read the rest of the agreement too.

10 | Events of Default

(d) The Non-Defaulting Party:

(i) establishes the Default Market Value of securities due to be delivered and all cash amounts due to repaid as at the Early Termination Date;

(ii) converts all the amounts into Base Currency at the Spot Rate and nets what is due from each party against each other;

(iii) as soon as practicable after making the previous calculation, the Non-Defaulting Party should provide the Defaulting Party with a statement setting out the calculations and showing the balance that is due the next Business Day, after which it will accrue interest at the Applicable Rate, which is that chosen by the Non-Defaulting Party in a commercially reasonable manner.

(e) The Default Market Value is determined '*on or as soon as reasonably practicable after the Early Termination Date*', for which purpose the following terms are defined:

(i) **Appropriate Market** is the 'most appropriate market' for a security as determined by the Non-Defaulting Party.

(ii) **Deliverable Securities** are those that the Defaulting Party would have delivered had it not defaulted, which means the Non-Defaulting Party will have to buy them from the market or estimate their purchase price at the market offer price.

(iii) **Net Value** is the amount that represents the '*fair market value*' of securities in the reasonable opinion of the Non-Defaulting Party '*having regard to such pricing sources (including trading prices) and methods (which may include…available prices for Securities with similar maturities, terms and credit characteristics…as the Non-Defaulting Party considers appropriate 'adjusted for Transaction Costs which would be incurred or reasonably anticipated'*. This is 'marking to model' and is intended for illiquid securities.

(iv) **Receivable Securities** are those that the Non-Defaulting Party would have delivered had the other party not defaulted, which means the Non-Defaulting Party will have to sell them to the market or estimate their sale price at the market bid price.

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- The **legal** department and senior management need to read this section very carefully in order to plan for a default. They of course need to read the rest of the agreement too.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
10 | Events of Default	(v) **Transaction Costs** are *'reasonable costs, commissions, fees and expenses... incurred or reasonably anticipated...calculated on the assumption that the aggregate...is the least that could reasonably be expected'.* Note that these are the immediate costs of execution. (f) There are three options to calculate Default Market Value: (i) If, *'on or about'* the Early Termination Date, the Non-Defaulting Party has sold Receivable Securities or purchased Deliverable Securities, it may elect to fix the Default Market Value using: (A) the **proceeds from the sale** of Receivable Securities, net of Transaction Costs, for the amount sold or to calculate a net price for all the securities held, if not all were sold at or around this time; (B) **the cost of the purchase** of Deliverable Securities including Transaction Costs, for the amount purchased or to calculate a net price for all the securities due, if not all were bought at or around this time. (ii) If, *'on or about'* the Early Termination Date, the Non-Defaulting Party has received **quotations** *'from two or more market-makers or regular dealers in the Appropriate Market in a commercially reasonable size, using price methodology that is customary for the relevant type of security'* of offer prices for Deliverable Securities or bid prices for Receivable Securities, it may elect to fix the Default Market Value using: (A) the prices for the purchase of Deliverable Securities (the market offer price) or for the sale of Receivable Securities (the market bid price) plus accrued interest and in the case asset-backed securities that have been affected by an event (*Pool Factor Distortion*), which has decreased the value of the underlying assets, an adjustment in value; (B) and applying Transaction Costs *'which would be incurred or reasonably anticipated'*. (iii) The Non-Defaulting Party can determine the **Net Value** of the securities and use that as the Default Market Value if, acting in good faith, it:	■ **Everyone** needs to read this chapter. In the case of front and back-office, it is to get a rough idea of what happens in a default. ■ The **legal** department and senior management need to read this section very carefully in order to plan for a default. They of course need to read the rest of the agreement too.

10 | Events of Default

(A) has tried but been unable to buy or sell the securities being valued or obtain quotations in accordance with sub-paragraphs 10(f)(i) and 10(f)(ii) above; or

(B) believes it would not be commercially reasonable to transact at the prices quoted (e.g. the quotes may be for amounts that are impractically small or there is significant disparity between the quotes) or to obtain such quotes or to use such quotes (e.g. if the position to be liquidated is so large that it would probably trigger a dramatic shift in market prices).

(g) The Non-Defaulting Party can charge 'all reasonable and legal and other professional ***expenses*** *incurred…together with interest…at the Applicable Rate or in the case of an expenses attributable to a particular Transaction, the Pricing Rate for the relevant Transaction'* if higher than the Applicable Rate. These include the cost of external legal advice and collateral valuation agents.

(h) If there is a **failure to deliver by the Seller** on the Purchase Date, the Buyer can:

(i) demand repayment of the Purchase Price if it has been paid;
(ii) demand Cash Margin from the Seller on any Transaction Exposure on the failed transaction;
(iii) terminate the failed transaction at any time, in which case the Seller must pay the repo interest accrued up to the termination date.

(i) If there is a **failure to deliver by the Buyer** on the Repurchase Date, the Seller can:

(i) demand repayment of the Repurchase Price, if it has been paid;
(ii) demand Cash Margin from the Buyer for any Transaction Exposure on the failed transaction;
(iii) terminate the failed transaction at any time, in which case it must be valued using the Default Market Value of the collateral and settled by payment of the difference with the Repurchase Price on the termination date.

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- The **legal** department and senior management need to read this section very carefully in order to plan for a default. They of course need to read the rest of the agreement too.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
10 | Events of Default	(j) No other remedies for default are available other than those under the GMRA. In other words, the Non-Defaulting Party cannot apply any costs other than those allowed in this paragraph. (k) No **consequential loss or damage** is available to either party for the failure of the other to perform its obligations other than that specified below, meaning costs not arising directly from the failure itself. (l) If a repo is terminated because of a default or failure to deliver collateral (including forward repo terminated before the forward Purchase Date) and either party incurs a net loss or expense in entering into a replacement repo or otherwise hedging the exposure resulting from the termination: (i) that party can claim compensation from the other; or (ii) if the first party *'reasonably'* (undefined) decides not to replace the terminated repo but to replace or unwind any hedges or to enter into replacement hedges, it can claim compensation from the other party. (m) Each party is obliged to notify the other party, if it is the subject of an Event of Default. (n) At the option of the Non-Defaulting Party, any close-out amount owed under the GMRA by either party can be **set off** against any amount payable by the other party to the first party, whether estimated or certain, and whether owed under another agreement or obligation. These amounts can be close-out amounts under other master agreements or amounts owed under individual transactions outside a master agreement or amounts owed under an *'undertaking issued or executed by one party to or in favour of the other party'*.	■ **Everyone** needs to read this chapter. In the case of front and back-office, it is to get a rough idea of what happens in a default. ■ The **legal** department and senior management need to read this section very carefully in order to plan for a default. They of course need to read the rest of the agreement too.

11 | Tax Event	(a) If either party notifies the other that, in its reasonable opinion: (i) an action by a tax authority or court; or (ii) a change in fiscal or regulatory rules; will have a material adverse effect on a repo by giving notice, the following actions can be taken. (b) If required by the other party, the party giving notice must supply an opinion of a suitably qualified adviser that the event has occurred and affects the first party. (c) The party giving notice may terminate the effected repo with effect from a date given in the notice that is no earlier than 30 days after the date of the notice, subject to the next paragraph. (d) The party receiving the notice may prevent the termination by giving a counter-notice but in doing so, commits itself to indemnifying the other party against the adverse effect. (e) If the effected repo is terminated, the party giving notice indemnifies the other party against any reasonable legal and other professional expenses but not consequential loss or damage (that is, costs not arising directly from the termination itself). (f) This provision is subject to the gross-up clause in paragraph 6(b), although that clause could be used as a circumstance to invoke this provision.	■ The **tax** department. ■ The **regulatory** department – they need to be aware that this chapter applies to regulatory events as well as tax events.
12 | Interest	Interest shall accrue on unpaid money at the higher of (1) the Applicable Rate agreed by the parties when they negotiated their GMRA and (2) the repo rate on a particular repo to which the unpaid money relates.	■ **Front office** – they should negotiate the Applicable Rate. ■ The interest payment team in the **back-office** – they will need to apply the agreed Applicable Rate.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
13 | Single Agreement	The parties agree that all repos between them are part of a single business relationship and contract. A default on an obligation on one repo will therefore be a default on all repos. Payments and deliveries in respect of an individual repo will be considered payments and deliveries in respect of all repos.	■ The **legal** department. They of course need to read the rest of the agreement too.
14 | Notices and Other Communications	(a) Any notice or other communication under the GMRA: (i) shall be in English and except where expressly stated otherwise, shall be in writing; (ii) may be given using any of the methods in (b) or (c) below; (iii) shall be sent to the address or number or electronic messaging details in Annex I. (b) Subject to (c), any notice or other communication shall be effective: (i) If in writing and physically delivered, on the date delivered; (ii) If sent by fax, on the date received by a responsible employee of the other party in legible form (a transmission report is not proof but the responsible employee does not have to be someone involved in the default process); (iii) If sent by certified or registered or equivalent mail, on the date of actual or attempted delivery; (iv) If sent by electronic messaging system, on the date received; provided that receipt or attempted delivery is before close of business and is on a day on which commercial banks are open for business in the relevant location, otherwise the notice or other communication will be effective the next business day. (c) If: (i) an Event of Default occurs; and (ii) the Non-Defaulting Party has made all practicable efforts to serve a termination notice on the Defaulting Party, including at least two of	■ **Everyone** who communicates with a counterparty or customer needs to look at this provision in order to ensure that routine communications are correctly dispatched. ■ The **legal** department – they need to be familiar with this provision in respect of Default Notices and related communications. Legal need to read the rest of the agreement too.

14 | Notices and Other Communications	the three methods in sub-paragraphs b(ii) to b(iv) above (fax, certified or registered or equivalent mail, and electronic messaging) and other methods normally used by the parties, the Non-Defaulting Party can draft and sign a Special Default Notice which specifies: (A) the Event of Default; (B) the Early Termination Date; (C) that the Non-Defaulting Party has made all practicable efforts (using the methods in (c)(ii) above) to serve a termination notice but has been unable to do so; and (D) the date on which the Special Default Notice has been signed. (d) Either party can change their contact details in Annex I by giving notice to the other party.	■ **Everyone** who communicates with a counterparty or customer needs to look at this provision in order to ensure that routine communications are correctly dispatched. ■ The **legal** department – they need to be familiar with this provision in respect of Default Notices and related communications. Legal need to read the rest of the agreement too.
15 | Entire Agreement; Severability	The GMRA supersedes any existing agreements for repos. Each provision is separate from every other provision and if one is judged unenforceable, this shall not affect the enforceability of the others.	■ The **legal** department. They of course need to read the rest of the agreement too.
16 | Non-assignability; Termination	(a) Either party may terminate the GMRA by giving written notice to the other but repos outstanding at the time of termination notice remain subject to the terms and conditions of that agreement. The GMRA will remain applicable to outstanding repos. (b) Sub-paragraph (a) above shall not apply to close-out amounts. (c) Either party may terminate the GMRA by giving written notice to the other but the GMRA will remain applicable to outstanding repos. (d) The remedies provided by the GMRA will continue to apply to outstanding repos after the agreement has been terminated. (e) The entry of any country into the eurozone will not affect the terms of the GMRA or any repos, nor allow one of the parties to unilaterally amend or terminate the GMRA.	■ The **legal** department. They of course need to read the rest of the agreement too.

paragraph | table	what matters are covered in the paragraph	who needs to read this paragraph carefully?
17 | Governing Law	■ The GMRA is governed by and interpreted under English law.	■ The **legal** department. They of course need to read the rest of the agreement too.
	■ All disputes must be settled in English courts. This 'exclusive jurisdiction' is to stop parties from seeking the most favourable jurisdiction for settling disputes in their favour.	
	■ The parties must name in Annex I an agent to receive writs and other legal papers (specifically in sub-paragraph 1(o)). If a party fails to do so, the other party can do so on behalf of the first party and at that party's expense. An agent is only required for parties not incorporated in the UK and is necessary to be able to make an effective claim in the English courts.	
	■ The parties must deliver to each other evidence of the acceptance of its appointment by the agent within 30 days of signing the GMRA or of appointing a new agent.	
18 | No Waivers, etc.	If a party does not terminate the GMRA following a particular Event of Default, it is not waiving its right to terminate under other Events of Default. If a party does not exercise a particular remedy under the GMRA, it is not waiving its right to exercise any other remedy. No modification or waiver of any provision of the GMRA or consent to such, will be effective unless in writing and duly communicated to the other party. Failure to make a Margin Transfer call does not waive the right to do so later.	■ The **legal** department. They of course need to read the rest of the agreement too.
19 | Waiver of Immunity	Each party waives to the extent it is permitted, all immunity from action relating to the GMRA or any individual repo in English courts or the courts of any other relevant jurisdiction. This is aimed at parties who can claim sovereign immunity, which is not considered appropriate in commercial transactions.	■ The **legal** department. They of course need to read the rest of the agreement too.

20 | Recording	The parties agree that each may record all telephone conversations between them.	■ The trading & sales desks of the **front office** – they need to be aware they can be recorded by their counterparty or customer. ■ The **legal** department. They of course need to read the rest of the agreement too. ■ The **compliance** department.
21 | Third Party Rights	The parties agree to waive their right to enforce any provision of the GMRA under the Contracts (Rights of Third Parties) Act 1999. This provision is an English statute but is relevant given that the governing law of the GMRA is that of England. It removes the rights of third parties, whose introduction could undermine the netting provisions of the GMRA by destroying the mutuality of the obligations to be netted, which is an essential requirement for netting.	■ The **legal** department. They of course need to read the rest of the agreement too.

	standard election	comments
1(a)	■ This election would amend sub-paragraph 1(c)(i) of the main text. ■ Do the parties elect to be able to transact Buy/Sell-Backs under this GMRA? ■ And do the parties to apply the Buy/Sell-Back Annex to the GMRA in consequence?	■ These joint elections are optional. There is little risk in electing in making provision to transact Buy/Sell-Backs under the GMRA. ■ Affirm or delete this provision.
1(b)	■ This election would amend sub-paragraph 1(c)(ii) of the main text and the Buy/Sell-Back Annex. ■ Do the parties elect to be able to repo **Net-Paying Securities** under this GMRA? ■ Do the parties elect to make the proposed amendment to sub-paragraph 1(c)(ii) to allow the use of Net-Paying Securities? ■ And do the parties elect to make the proposed amendment to the Buy/Sell-Back Annex? This amendment ensures that, in calculating the Transaction Exposure of a Buy/Sell-Back of collateral securities on which an income payment is due during the life of the transactions, any tax on that income is paid by the Buyer.	■ Net-Paying Securities are those which, when used in repo, are liable to a withholding tax on any manufactured payments. Under the GMRA, the Buyer is responsible for making up any tax on manufactured payments. To protect the Buyer, amendments would have to be made to the proviso in paragraph 5 and sub-paragraph 6(b). Professional tax advice should be sought on this election. ■ These elections are optional. ■ Affirm or delete this provision.
1(c)	■ Do the parties elect to be able to transact Agency repos under this GMRA? ■ And do the parties elect to apply the **Agency Annex** in consequence?	■ These joint elections are optional
1(d)	■ Which, if any, **other annexes** do the parties elect to apply to the GMRA and to which type of repo should each annex apply?	■ Such elections are optional. ■ See Appendix II for a list of product and country annexes published or recognized by the ICMA.
1(e)	■ This election is required by sub-paragraph 2(e) of the main text. ■ Which currency or currencies do the parties elect to be the **Base Currency?**	■ Usually the domestic currency of each party. ■ It could be a different currency for each party, if they are located in different countries and are using the GMRA to transact cross-border repos. ■ There could also be one Base Currency for the purpose of default calculations and another for Cash Margin.

1(f)	■ This election is required by sub-paragraph 2(f) of the main text. ■ Which branches do the parties elect to be recognized as **Designated Offices?**	■ Which branches can include their repos under this GMRA if they transact with the same legal entity or any of its Designated Offices? ■ Check that the inclusion of overseas branches will not cause legal or tax problems, such as requiring the use of Net-Paying Securities as collateral, unless you are content to do so.
1(g)	■ This election is required by sub-paragraph 2(xx) of the main text. ■ Which **Transaction Exposure** calculation method do the parties elect to be applied?	■ This is, in essence, a choice between Margin Ratio (initial margin) and haircut. The choice is purely a matter of preference. ■ **Transaction Exposure method A** calculates Transaction Exposures using Margin Ratios. ■ **Transaction Exposure method B** calculates Transaction Exposures using haircuts.
1(h)	■ This election is required by sub-paragraph 3(b) of the main text. ■ Which of the parties will be obliged to deliver **Confirmations** to the other: the Seller or the Buyer or both?	■ It is best practice for both parties to send Confirmations.
1(i)	■ This election is required by sub-paragraph 4(f) of the main text. ■ What percentage **interest rate** do the parties elect to be paid on Cash Margin in each currency, at what intervals and on which dates?	■ This provision could be changed to name a specific interest rate index (if available) rather than a particular percentage interest rate level. The index could be adopted as a standard source or as a fallback in case the parties cannot agree at some time in the future. In this case, the rate could be the level of the index or the index plus or minus a spread in basis points, if a spread is considered appropriate. ■ A typical payment date would be within a certain number of days after the end of the calendar month.
1(j)	■ This election is required by sub-paragraph 4(g) of the main text. ■ What do the parties elect to be the delivery period for **Margin Transfers?**	■ It is best practice to specify same-day (T+0) payment of Cash Margin. ■ Delivery of Margin Securities should be as fast as practicable, usually faster than the standard securities settlement period and ideally, same day (T+0). ■ Note that, if Repricing or Adjustment is to be used instead of Margin Transfers, the standard payment and securities settlement periods will apply.

	standard election	comments
1(k)	■ This election is required by sub-paragraph 6(j) of the main text. ■ Do the parties elect to apply **condition precedent** to Events of Default?	■ This election is optional. ■ The validity of this provision in the relevant jurisdiction(s) needs to be checked. ■ Affirm or delete this provision.
1(l)	■ This election is required by sub-paragraph 10(a)(ii) of the main text. ■ Do the parties elect to treat **failure to deliver collateral** as an Event of Default?	■ This election is optional. ■ Affirm or delete this provision.
1(m)	■ This election is required by sub-paragraph 10(b) of the main text. ■ Do the parties elect to apply **Automatic Early Termination** to a default by either or both parties where the default is the serving of a winding-up petition or the appointment of a liquidator?	■ This election is optional. ■ It is applied to either party if it is located in a jurisdiction in which the statutory insolvency rules would obstruct the operation of the default provisions of the GMRA should an Act of Insolvency under the agreement by that party occur on the same day as it becomes subject to insolvency proceedings in that jurisdiction. ■ Affirm or delete this provision.
1(n)	■ This election is required by paragraph 14 of the main text. ■ What are the **addresses** of the parties for notices and communications?	■ This section must be filled in. ■ In order to accommodate the risk that a party may change address but neglect to update the GMRA, words such as 'or subsequent business address' could be added. ■ There could be different addresses for different notices or communications, e.g. the legal department for default-related notices and a back-office function for Margin Maintenance matters.
1(o)	■ This election is required by paragraph 17 of the main text. ■ Who are the **agents for service of process** in the UK appointed by the one or both parties?	■ This election is necessary only if one of the parties is located in the UK.

2(a)	■ **Existing Transactions** – do the parties elect to subsume under this GMRA all outstanding repos under a specific previous version of the GMRA?	■ The aim is to maximize the effectiveness of netting by gathering all repos with another party into one agreement. ■ The election is relevant only if you and the other party have a previous version of the GMRA outstanding and repos which will still be outstanding under that agreement when the new one comes into effect. ■ Affirm or delete this provision.
2(b)	■ **Negative rate transactions** – do the parties elect that, in the event of a failure by the Seller to deliver Purchased Securities on the Purchase Date on a repo paying a negative repo rate, (i) the Buyer may by notice terminate the repo and (ii) the Pricing Rate (repo rate) shall be zero while the failure continues?	■ If a Seller delivers late, he still has to pay repo interest for the full term of the repo. If the repo rate is negative, this means the Buyer has to pay the interest to the Seller despite the fact that the Seller failed to deliver. This creates a perverse incentive to Sellers to fail on negative rate repos. This provision removes that incentive. ■ Negative repo rates are not limited to unusual monetary conditions. They can occur in the repo market when other interest rates are positive but a collateral security goes very special. ■ Affirm or delete this provision.

	standard election	comments
2(c)	■ **Forward Transactions** – do the parties elect: ■ 2(c) – to be able to transact forward repos under this GMRA? ■ 2(c)(i) – to adopt the definitions provided of (A) forward repos and (B) the Forward Repricing Date? ■ 2(c)(ii) – to allow forward repos to be transacted on the basis of Purchased Securities being defined (in the Confirmation) in terms of a type or class and a specific issue or issues being agreed (and describes in a second Confirmation) no less than two Business Days before the forward Purchase Date? ■ 2(c)(iii) – to allow (A) the Purchase Price or (B) the quantity of collateral of a forward repo to be changed (by agreement) before the forward Purchase Date but no earlier than the Forward Repricing Date? ■ 2(c)(iv) – to confirm any change under 2(c)(iii) above?	■ 2(c)(i)(A) – This provision defines a forward repo as one with a Purchase Date 'at least [three] Business Days' after the transaction date. Parties are expected to confirm or amend the number to reflect convention in their market. ■ The standard GMRA does not contemplate Margin Maintenance in advance of the forward Purchase Date, despite the fact that a replacement cost can build up before that date (that is, changes in the Market Value of collateral and the Repurchase Price mean that, should one of the parties default before the Purchase Date, the Non-Defaulting Party might have to replace the defaulted repo with a new repo for a worse Purchase Price and repo rate). ■ The GMRA also does not contemplate Repricing or Adjustment for forward repos, only Margin Transfers. ■ 2(c)(i)(B) – This provision defines the Forward Repricing Date, which is the first day on which Margin Maintenance can be called and is fixed so that the earliest Margin Transfer would be on the forward Purchase Date. ■ 2(c)(ii) – This provision is to facilitate collateral management by the Seller by allowing the parties to agree the collateral in general terms on the transaction date (e.g. government bonds with a remaining term to maturity of no more than five years) and to leave agreement about the actual security or securities to be delivered on the forward Purchase Date until the settlement deadline for delivery on that date. This provision is only suitable for general collateral repo. In effect, the parties are trading a basket of eligible securities. Both the initial agreement and the subsequent agreement of the actual security or securities should be confirmed.

■ 2(c)(iii) – This provision provides an alternative to Margin Maintenance. Instead of a Margin Transfer, parties can instead change the Purchase Price to match the pre-agreed Market Value of the collateral (adjusted by any haircut or initial margin) on the forward Purchase Date or change the quantity of collateral so that its Market Value (adjusted by any haircut or initial margin) matches the pre-agreed Purchase Price.

■ Affirm or delete these provisions.

2(d)

■ Do the parties elect to adopt these amendments to sub-paragraphs 2(xx) and 4(c) of the GMRA (respectively, the definition of Transaction Exposure and the inclusion of manufactured payments in the calculation of Net Exposure)?

■ 2(d)(i) – this provision amends the definition of **Transaction Exposure** in sub-paragraph 2(xx) for both:

■ 2(d)(i)(i) – forward repos; and

■ 2(d)(i)(ii)-(iii) – non-forward repos.

In the case of non-forward repos, the definition deals with both:

■ 2(d)(i)(ii) – the period from the Purchase Date to (assuming the Seller fails to deliver on that date) the earlier of either late delivery by the Seller and termination of the repo by the Buyer; and

■ This sub-paragraph is not well-structured nor is it easy to read. 2(d)(i) is particularly complex.

■ 2(d)(i)(i) introduces the concept of Transaction Exposure for forward repos. As the GMRA only contemplates a Margin Transfer on the forward Purchase Date and the calculation of Net Exposure in the immediately preceding period from the Forward Repricing Date, the Transaction Exposure of a forward repo is defined as the difference between the Market Value of collateral at the time of calculation and the Purchase Price (this contrasts slightly with Transaction Exposure for a non-forward repo, which is the difference between the Market Value of collateral at the time of calculation and the Repurchase Price at the time of calculation).

■ 2(d)(i)(i)-(ii) expand the definition of Transaction Exposure for non-forward repos to take into account the impact of a failure to deliver collateral. The amended definition breaks down the life of a non-forward repo into two periods.

	standard election	comments
2(d)	■ 2(d)(i)(iii) – the period from the later of the Purchase Date or (assuming the Seller fails to deliver on that date) either late delivery by the Seller or the termination of the repo by the Buyer to the later of the Repurchase Date or (assuming the Buyer fails to deliver on that date) a mini close-out by the Seller. ■ 2(d)(ii) – this provision is an amendment to sub-paragraph 4(c) to expand the definition of Income (manufactured payments) to be included in the calculation of Net Exposure from payable but unpaid on the date of calculation to include future manufactured payments that will become payable after the date of the calculation up to and including the Margin Transfer deadline. Sub-paragraph 2(d)(ii)(aa) makes this amendment for the party with a Net Exposure and 2(d)(ii)(bb) make the amendment for the other party.	■ 2(d)(i)(i) covers the period from the Purchase Date to (assuming the Seller fails to deliver on that date) the earlier of either late delivery by the Seller or termination of the repo by the Buyer. This period is prior to any delivery of collateral and exchange for cash. During that pre-delivery period, the Buyer is exposed to the risk that, should the Seller default and the Buyer replace the defaulted repo, there will be a replacement cost if the Market Value of the collateral has increased during the fail (the Buyer will have to pay more cash to buy the same quantity of securities) and if the repo rate has decreased (the Buyer would earn less interest from the replacement repo). The Buyer has a Transaction Exposure if (A) the Market Value of the collateral is greater than (B) the Repurchase Price, both on the day of the calculation. This covers the risk of an adverse change in the Market Value but not a fall in the repo rate. But note that, should the Seller default during this period, the Buyer can charge all replacement costs as part of close-out netting (see sub-paragraph 10(l)(i)). Note also that any haircuts and initial margins are ignored. This is because no collateral has been delivered so the Buyer does not need to worry about losses that might be incurred in liquidating collateral. ■ 2(d)(i)(ii) covers the period from the later of the Purchase Date or (assuming the Seller fails to deliver on that date) either late delivery by the Seller or the termination of the repo by the Buyer to the later of the Repurchase Date or (assuming the Buyer fails to deliver on that date) a mini close-out by the Seller. This period is after the initial exchange of cash and collateral. In this period, the Seller is exposed to the risk that should the Buyer default and the Seller seek to replace his securities by buying them in the market, their

Market Value may have increased. The Seller will have a Transaction Exposure if (A) the Repurchase Price adjusted by any initial margin is greater than (B) the Market Value of the securities, both on the day of the calculation. Any initial margin (but not haircut) is taken into account, since the Seller needs to worry about price increases.

2(d)

- Note that, under sub-paragraph 10(h)(ii) and 10(i)(ii), where a failure to deliver is continuing on a repo, the failed party can require the failing party to pay Cash Margin to cover any Transaction Exposures on the failed repo. But there is a contradiction in the terms of the GMRA. On the one hand, under sub-paragraph 4(c), the Transaction Exposure on a failed repo has to be included in the calculation of Net Exposure, which will be covered by a single Margin Transfer. On the other hand, under sub-paragraphs 10(h)(ii) and 10(i)(ii), the Transaction Exposure on a failed repo should be covered by its own Cash Margin.
- The amended definitions of Transaction Exposure are more sophisticated than the standard definition in the main text. The question is whether they are too sophisticated for routine repos or new repo markets. Currently, it is not market practice to implement the special cash margining of failed repos.
- Affirm or delete these provisions.

Appendix I

ANNEX I OF THE GMRA: SUPPLEMENTAL TERMS OR CONDITIONS

sifma

ICMA
International Capital Market Association

Paragraph references are to paragraphs in the Agreement.

1. The following elections shall apply -

[(a) paragraph 1(c)(i). Buy/Sell Back Transactions be effected under this Agreement, and accordingly the Buy/Sell Back Annex apply.]*

[(b) paragraph 1(c)(ii). Transactions in Net Paying Securities be effected under this Agreement, and accordingly the following provisions apply.

(i) The phrase “other than equities and Net Paying Securities” shall be replaced by the phrase “other than equities”.

(ii) In the Buy/Sell Back Annex the following words shall be added to the end of the definition of the expression “IR”: “and for the avoidance of doubt the reference to the amount of Income for these purposes shall be to an amount paid without withholding or deduction for or on account of taxes or duties notwithstanding that a payment of such Income made in certain circumstances may be subject to such a withholding or deduction”.]*

[(c) Agency Transactions be effected under this Agreement, and accordingly the Agency Annex apply.]*

[(d) The following Annex(es) shall apply in respect of specified Transactions -

for__________________________ Transactions, the__________________________ annex shall apply,

for__________________________ Transactions, the__________________________ annex shall apply.]*

* Delete as appropriate

(e) paragraph 2(e). The Base Currency shall be:________________.

(f) paragraph 2(p). [list Buyer's and Seller's Designated Offices]

____

____

(g) paragraph 2(xx): Transaction Exposure method

(h) paragraph 3(b) to deliver Confirmation.

(i) paragraph 4(f). Interest rate on Cash Margin to be _________% for _________ currency.

_________% for _________ currency.

Interest to be payable.

(j) paragraph 4(g). Delivery period for margin calls to be: .

[(k) paragraph 6(j). Paragraph 6(j) shall apply.]*

[(l) paragraph 10(a)(ii). Paragraph 10(a)(ii) shall apply.]*

[(m) paragraph 10(b). Automatic Early Termination shall apply with respect to]*

(n) paragraph 14. For the purposes of paragraph 14 of this Agreement –

(i) Address for notices and other communications for Party A -
Address: ____________________________________
Attention: ____________________________________
Telephone: ____________________________________
Facsimile: ____________________________________
Electronic Messaging System: ______________________
Answerback: ____________________________________
Other: ____________________________________

(ii) Address for notices and other communications for Party B -
Address: ____________________________________
Attention: ____________________________________
Telephone: ____________________________________
Facsimile: ____________________________________
Electronic Messaging System: ______________________
Answerback: ____________________________________
Other: ____________________________________

* Delete as appropriate

[(o) paragraph 17. For the purposes of paragraph 17 of this Agreement –

(i) Party A appoints_____________ as its agent for service of process;

(ii) Party B appoints_____________ as its agent for service of process.]*

2. The following supplemental terms and conditions shall apply -

[Existing Transactions

(a) The parties agree that this Agreement shall apply to all transactions which are subject to the Global Master Repurchase Agreement between them dated ____ and which are outstanding as at the date of this Agreement so that such transactions shall be treated as if they had been entered into under this Agreement, and the terms of such transactions are amended accordingly with effect from the date of this Agreement.]*

[Negative rate transactions

(b) In the case of Transactions in which the Pricing Rate will be negative, the parties agree that if Seller fails to deliver the Purchased Securities on the Purchase Date then -

(i) Buyer may by notice to Seller terminate the Transaction (and may continue to do so for every day that Seller fails to deliver the Purchased Securities); and

(ii) for every day that Seller fails to deliver the Purchased Securities the Pricing Rate shall be zero.]*

[Forward Transactions

(c) The parties agree that Forward Transactions (as defined in sub paragraph (i)(A) below) may be effected under this Agreement and accordingly the provisions of sub paragraphs (i) to (iv) below shall apply.

(i) The following definitions shall apply -

(A) “Forward Transaction”, a Transaction in respect of which the Purchase Date is at least [three] Business Days after the date on which the Transaction was entered into and has not yet occurred;

* Delete as appropriate

(B) “Forward Repricing Date”, with respect to any Forward Transaction the date which is such number of Business Days before the Purchase Date as is equal to the minimum period for the delivery of margin applicable under paragraph 4(g).

(ii) The Confirmation relating to any Forward Transaction may describe the Purchased Securities by reference to a type or class of Securities, which, without limitation, may be identified by issuer or class of issuers and a maturity or range of maturities. Where this paragraph applies, the parties shall agree the actual Purchased Securities not less than two Business Days before the Purchase Date and Buyer or Seller (or both), as shall have been agreed, shall promptly deliver to the other party a Confirmation which shall describe such Purchased Securities.

(iii) At any time between the Forward Repricing Date and the Purchase Date for any Forward Transaction the parties may agree either -
(A) to adjust the Purchase Price under that Forward Transaction; or
(B) to adjust the number of Purchased Securities to be sold by Seller to Buyer under that Forward Transaction.

(iv) Where the parties agree to an adjustment under paragraph (iii) above, Buyer or Seller (or both), as shall have been agreed, shall promptly deliver to the other party a Confirmation of the Forward Transaction, as adjusted under paragraph (iii) above.

(d) Where the parties agree that this paragraph shall apply, paragraphs 2 and 4 of the Agreement are amended as follows.

(i) Paragraph 2(xx) is deleted and replaced by the following -

“(xx) “Transaction Exposure” means -

(i) with respect to any Forward Transaction at any time between the Forward Repricing Date and the Purchase Date, the difference between (A) the Market Value of the Purchased Securities at the relevant time and (B) the Purchase Price;

(ii) with respect to any Transaction at any time during the period (if any) from the Purchase Date to the date on which the Purchased Securities are delivered to Buyer or, if earlier, the date on which the Transaction is terminated under paragraph 10(h), the difference between (A) the Market Value of the Purchased Securities at the relevant time and (B) the Repurchase Price at the relevant time;

* Delete as appropriate

(iii) with respect to any Transaction at any time during the period from the Purchase Date (or, if later, the date on which the Purchased Securities are delivered to Buyer or the Transaction is terminated under paragraph 10(h)) to the Repurchase Date (or, if later, the date on which Equivalent Securities are delivered to Seller or the Transaction is terminated under paragraph 10(i)), the difference between (A) the Repurchase Price at the relevant time multiplied by the applicable Margin Ratio (or, where the Transaction relates to Securities of more than one description to which different Margin Ratios apply, the amount produced by multiplying the Repurchase Price attributable to Equivalent Securities of each such description by the applicable Margin Ratio and aggregating the resulting amounts, the Repurchase Price being for this purpose attributed to Equivalent Securities of each such description in the same proportions as those in which the Purchase Price was apportioned among the Purchased Securities) and (B) the Market Value of Equivalent Securities at the relevant time.

In each case, if (A) is greater than (B), Buyer has a Transaction Exposure for that Transaction equal to the excess, and if (B) is greater than (A), Seller has a Transaction Exposure to Buyer equal to the excess."

(ii) In paragraph 4(c) -
(aa) the words "any amount payable to the first party under paragraph 5 but unpaid" are deleted and replaced by "any amount which will become payable to the first party under paragraph 5 during the period after the time at which the calculation is made which is equal to the minimum period for the delivery of margin applicable under paragraph 4(g) or which is payable to the first party under paragraph 5 but unpaid"; and

(bb) the words "any amount payable to the other party under paragraph 5 but unpaid" are deleted and replaced by "any amount which will become payable to the other party under paragraph 5 during the period after the time at which the calculation is made which is equal to the minimum period for the delivery of margin applicable under paragraph 4(g) or which is payable to the other party under paragraph 5 but unpaid".]*

* Delete as appropriate

Appendix II

STANDARD PRODUCT AND COUNTRY ANNEXES TO THE GMRA 2000 AND 2011 PRODUCED OR RECOGNIZED BY THE ICMA

GMRA 2000	GMRA 2011	authors
Agency	Agency	ICMA & SIFMA
Bills of Exchange	Bills	
Buy/Sell-Back	Buy/Sell-Back	
Canadian	Canadian	
Equities	Equities	
Italian	Italian	
Netherlands		
South African		ICMA
Thailand		
Russian	Russian	
AFMA		AFMA
Gilts	Gilts	Bank of England
Japanese Securities	Japanese securities	JSDA
Amendment Agreement	Protocol	ICMA

- The Canadian Annex applies where one of the parties in incorporated or operating in Canada and/or the collateral securities are denominated in Canadian dollars.
- The Italian and Japanese Securities Annexes apply where the collateral securities are issued in Italy or Japan, respectively.
- The Russian Annex applies where one of the counterparties is incorporated in Russia.

Appendix III
AN EXAMPLE OF THE CALCULATION OF NET EXPOSURE

Assume two parties, A and B, have executed two repos under a GMRA. A has repoed to B for 28 days and B has repoed to A for 14 days. In other words, A has a 28-day repo and a 14-day reverse repo and B has the opposite. The details of the transactions are summarised in the following table.

#		transaction 1	transaction 2
1	Seller	A	B
2	Buyer	B	A
3	Purchase Date	12 April 2018	17 April 2018
4	Repurchase Date	10 May 2018	1 May 2018
5	Term [#4 - #3]	28 days	14 days
6	collateral (coupon A/A)	2.5% treasury 4-Jul-2028	1.5% treasury 14-Sep-2023
7	repo rate (A/365)	5.65%	5.25%
8	nominal value	10,000,000.00	5,000,000.00
9	clean price of collateral on Transaction Date	114.06	121.35
10	days accrued to Purchase Date	282 days	215 days
11	accrued interest on Purchase Date	193,150.68	44,178.08
12	dirty price of collateral on Purchase Date	115.9915068	122.2335616
13	Market Value of collateral on Purchase Date [#8 x #12]	11,599,150.68	6,111,678.08
14	haircut	3.0%	1.5%
15	Purchase Price [#13 x (1 - #14)]	11,251,176.16	6,020,002.91
16	final Repurchase Price [#15 x (1+((#7 x #5)/(100 x 365)))]	11,299,941.54	6,032,125.38

Consider the calculation of Net Exposure on 27 April 2018, which is day 15 of the first transaction and day 10 of the second. Assume the following prices are collected by the margin team.

		transaction 1	transaction 2
17	mark-to-market date	27 April 2018	27 April 2018
18	repo days expired [#17 – #3]	15	10
19	current Repurchase Price [#15 x (1 + ((#7 x #18)/(100 x 365)))]	11,277,300.47	6,028,661.82
20	current clean price of collateral	114.26	120.85
21	current days accrued	297 days	225 days
22	current accrued interest	203,424.66	77,054.79
23	current dirty price of collateral	116.2942466	121.7746575
24	current Market Value of collateral [#15 x (1+((#7 x #5)/(100 x 365)))]	11,629,424.66	6,088,732.88
25	current Market Value of collateral less haircut [#24 x (1 - #14)]	11,280,541.92	5,997,401.88

Applying the methodology in the GMRA, and introducing assumptions about overdue manufactured payments (we assume there are none) and gross margin holdings by each of the parties, the following exposures would be calculated.

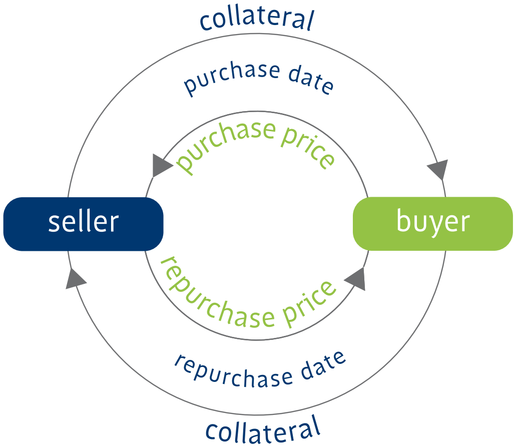
		transaction 1	transaction 2
26	A's Transaction Exposure [(#25 - #19]	3,241.45	
27	B's Transaction Exposure [#19 - #25]		31,259.94
28	manufactured payments overdue	0	0
29	gross margin[1]	5,436.00	10,755.00
30	Net Margin [difference in gross margins held by A and B]		5,319.00
31	gross exposure [#26 + #27 + #28 – #30]	3,241.45	25,940.94
32	Net Exposure [difference in gross exposures for A and B]		**29,182.38**

1 These numbers are assumed. In practice, they will reflect previous Margin Transfers. If these margins included cash, the numbers in the calculation would have to include interest accrued on the cash margin.

Appendix IV
WHAT IS A REPO?

The legal structure and economic character of repo

1. Repo is a generic term for *Repurchase Transactions and Buy/Sell-Backs.* Repos (along with securities lending) are a type of *securities financing transaction (SFT).*
2. In a repo, at the start of the transaction (the *Purchase Date*), one party (the *Seller*) sells assets, typically securities, to another party (the *Buyer*) at one price (the *Purchase Price*) and commits to repurchase the same quantity of assets which are *equivalent* to those sold (see 12.3 below) at a future date or on demand (the *Repurchase Date*) at a different price (the *Repurchase Price*). It is market terminology to refer to the assets in a repo as *collateral* as they can be sold off by the Buyer in order to recover his cash, should the Seller default on his obligation to pay the Repurchase Price on the Repurchase Date (or default on another contractual obligation owed to the Buyer).[1]



1 Legally-speaking, because they have been sold, the assets in a repo are not 'collateral' (that is the traditional term for assets in which a security interest has been vested by a borrower to a lender in order to secure a loan).

3. Although the Seller sells collateral to the Buyer at the start of a repo, his obligation to buy back equivalent collateral in the future means that the Buyer has only temporary possession of the collateral and the Seller has only temporary use of the cash. Therefore, despite a repo being structured legally as a sale and repurchase of collateral, it behaves economically like a secured loan or deposit (i.e. a loan or deposit against a security interest in assets). The Buyer is effectively making a secured loan to the Seller. The Seller is effectively taking a secured deposit from the Buyer.
4. It is market terminology to describe the Buyer as transacting a reverse repo. The Seller is simply said to be transacting a repo.
5. The basic uses of repo are (1) the borrowing and lending of cash on a secured basis and (2) the borrowing and lending of securities (in effect, against cash collateral).
6. The difference between the Purchase Price paid by the Buyer on the Purchase Date and the Repurchase Price received by the Buyer on the Repurchase Date is the return to the Buyer on the cash he is effectively lending to the Seller. This return has nothing to do with any coupons, dividends or other income payments that may be paid on collateral during the term of a repo, which are made separately from the payments of the Purchase Price and Repurchase Price (see 12.7 below).
7. In a repurchase transaction, the difference between the Purchase Price and the Repurchase Price is quoted as a percentage per annum rate of return. In market terminology, this is called a *repo interest*.[2] This means that the Repurchase Price of a repo is equal to the Purchase Price plus repo interest
8. The price of a *Buy/Sell-Back* has traditionally been quoted as the *forward price* of the security being used as collateral. However, *Buy/Sell-Backs* are now often quoted in terms of their implicit repo rates. The differences between Repurchase Transactions and *Buy/Sell-Backs* are explained in paragraphs 24-27.
9. A fundamental characteristic of a loan or deposit is that the principal sum of money lent by one party to the other on the value date is the same sum that will be repaid at maturity. In a repo, the principal sum effectively being lent by the Buyer to the Seller is the Purchase Price. As the Repurchase Price is equal to the Purchase Price plus repo interest, the principal sum effectively to be repaid in a repo is indeed the same as the principal sum that was lent, confirming that a repo behaves like a secured loan or deposit in all economic respects.

2 Legally-speaking, this is not correct as the legal form of a repo is not an interest-paying loan or deposit; the return is just the difference between two prices.

10. The fact that the principal sum effectively being lent in a repo is the same as the principal sum that will effectively be repaid gives rise to a practical problem. The Purchase Price is set by reference to the market value of the collateral at the start of the repo (it will typically be equal to or less than the market value of the collateral (see 14 below)). While the principal sum in a repo does not change, the market value of the collateral does. If the market value falls below the Repurchase Price, the Buyer would not be able to recover his cash by selling-off the collateral, should the Seller default. Equally, if the market value of the collateral rises above the Repurchase Price, the Seller would not have enough cash to be able to buy back all his assets, should the Buyer default. These unsecured credit exposures have to be eliminated by means of additional payments of cash or transfers of collateral, or an equivalent mechanism, in the process called Margin Maintenance (see 14 below).

The importance of transfer of title to collateral

11. It has been explained that repo behaves economically like a secured loan or deposit but is structured legally as a sale and repurchase of securities. There are two reasons for adopting this legal structure.

11.1 First, a sale of collateral means that there has been an outright transfer of legal title to the collateral to the Buyer. In other words, the collateral becomes the unencumbered property of the Buyer, giving him the unfettered right to sell-off the collateral should the Seller default (in fact he can sell at any time during the term of the repo). Transfer of title contrasts with the traditional method of collateralisation, which is by attaching a *security interest* to the collateral (e.g. a *pledge)*. Security interests give the secured lender only limited rights to the collateral. Typically, he can only sell the collateral upon the default of the other party.[3] However, even then, he can only sell if he succeeds in converting his contingent claim on the collateral into outright legal title. The problem is that because the Defaulting Party retains property rights in the collateral, the Non-Defaulting Party may have to participate in the liquidation or restructuring of the Defaulting Party in order to secure his collateral and will probably have to contest his claim against the liquidator or similar insolvency official and other creditors. This usually takes a long time. In addition, the Non-Defaulting Party will typically have had to complete various formalities to create a valid security interest: any mistakes could jeopardize his claim on the collateral. In contrast, in repo, the absolute control over collateral given to the Buyer by the transfer of legal title eliminates the delay in being able to dispose of collateral and minimises the legal risks arising in a default by the Seller. There is therefore less credit risk in a repo.

3. In the case of a security interest in the form of a pledge, the pledgee cannot sell collateral unless there has been a default by the pledgor or other than in a default, only if the pledgor has given the pledgee a right of re-hypothecation, in which case, the pledgee can convert the pledge/security interest into a contractual claim to return equivalent assets. Rights of re-hypothecation tend to be limited to relationships between prime brokers and hedge funds.

11.2 Second, an outright transfer of legal title to collateral means that the Buyer has the automatic right to re-use the collateral during the term of the repo, whether or not the Seller defaults. This means he can repo or sell the collateral to a third party at any time (the Buyer only has to make sure he is able to obtain equivalent collateral to return to the Seller by the Repurchase Date). This right of re-use reduces the liquidity risk to which the Buyer is exposed by virtue of having lent his cash, because it means he can liquidate the collateral whenever he needs cash (assuming the collateral is reasonably liquid).

11.3 The reduced credit and liquidity risk to the Buyer means that repo should be a cheaper and more plentiful source of funding than secured loans and deposits.

12. The outright transfer of legal title to collateral in a repo has a number of important consequences for the way that repo functions:

Payments of coupons and dividends

12.1 If during the term of a repo, a coupon, dividend or some other income is paid by the issuer of the collateral, that pay ment must be made directly to the Buyer given that he is the legal owner of the collateral during the term of the repo. However, the Buyer is contractually obliged to make an immediate and equal payment to the Seller (see 12.7 below).

Voting rights and corporate actions

12.2 The voting rights attached to equity being used as collateral belong exclusively to the Buyer as he is the legal owner of the collateral during the term of the repo. However, under the Equities Annex to the GMRA, the right to take decisions on corporate actions in the case of equity being used as collateral is the Seller's provided he gives the Buyer requisite notice of his decision.

What is 'equivalent' collateral?

12.3 As explained already, the Buyer is only obliged to sell back equivalent collateral securities to the Seller at the end of a repo. 'Equivalent' means collateral securities that are economically but not legally identical to that purchased at the start. In other words, the collateral securities to be repurchased need to be from the same issue as the collateral securities sold at the start (making them economically identical) but do not have to be the same part of the same issue (making them legally different). The Buyer needs this flexibility in order to be able to exercise his right to re-use the collateral securities during the term of a repo by repoing or selling the securities to a third party. If the Buyer sells the securities to a third party, he is unlikely to be able to recover the same holding of securities (i.e. legally identical) to be able to return to the Seller on the Repurchase Date, but he should be able to buy back the same type of securities (i.e. economically identical). Consider the following example: Assume party A buys 10 million of a certificated bond issue (say certificate 123) through a repo from party B and sells those bonds outright to party C. At the end of the repo, party A will have to buy 10 million of the same bond issue outright in order to sell back to party B to close-out the repo. Whether party A can buy back from party C or must buy back from a fourth party, party A is highly unlikely to receive exactly the same certificates. However, he should be able to buy back other certificates of the same issue (e.g. certificate 129). In other words, he should be able to buy back economically but not legally-identical collateral. And as Party B should be indifferent between different certificates of the same bond issue, there should be no problem in

The fact that the Seller retains the risk exposure on collateral is essential to the functioning of repo as a financing instrument. All that a Seller wants a repo to do is to provide cash to fund the purchase of an asset and allow him to take a long position in it. The purpose of the long position is to take the risk on the asset, so it would be pointless if that risk was transferred through the repo. The Buyer on the other hand, only wishes to make a secure short-term investment of surplus cash, not make an unsecured investment in the asset being offered as collateral. If he wished to invest in the asset, he would buy it for himself. The only purpose of the collateral for the Buyer is to mitigate the credit and liquidity risks of lending cash to the Seller. Consequently, a key principle in the operation of repo is that only the Seller should be exposed to the risks on the collateral.

12.4 Limiting the obligation of the Buyer to the return of equivalent collateral has practical rather than just legal benefits. For example, if party A repos out shares in company ABC to party B and company ABC is then purchased by company XYZ during the term of the repo, what does party B sell back to party A? The answer is equivalent assets and in this case, whatever XYZ paid for ABC.

The Seller retains the risk exposure and return on collateral

12.5 Because the Seller commits to buy back equivalent collateral on the Repurchase Date at a fixed or calculable Repurchase Price, he is exposed to changes in the market price of the collateral during the term of the repo; even though the Buyer is the legal owner. For example, if a Seller repos out a quantity of bonds at a Purchase Price equal to their current Market Value of 101.50 and commits to repurchase them in one week at a Repurchase Price of 101.55 (= 101.50 plus repo interest of 0.05), he is exposed to the risk that the market price of those bonds may be less than 101.50 at the end of the week. In this case, he will only be able to on-sell them into the market at a loss. Given that the market price of the bond will be driven largely by the perceived creditworthiness of the issuer and fluctuations in relative supply and demand in response to economic and financial news, the Seller remains exposed to the credit, liquidity and market risks on the bond, despite having sold it as collateral in a repo.

12.6 The fact that the Seller retains the risk exposure on collateral is essential to the functioning of repo as a financing instrument. All that a Seller wants a repo to do is to provide cash to fund the purchase of an asset and allow him to take a long position in it. The purpose of the long position is to take the risk on the asset, so it would be pointless if that risk was transferred through the repo. The Buyer on the other hand, only wishes to make a secure short-term investment of surplus cash, not make an unsecured investment in the asset being offered as collateral. If he wished to invest in the asset, he would buy it for himself. The only purpose of the collateral for the Buyer is to mitigate the credit and liquidity risks of lending cash to the Seller. Consequently, a key principle in the operation of repo is that only the Seller should be exposed to the risks on the collateral.

The consequences of coupon, dividend and other income payments on collateral

12.7 If the Seller in a repo is to take the risk on the collateral, he will expect to receive the corresponding return. The return on collateral is paid in various forms.

- The capital gain (loss) from a rise (fall) in the clean price of a fixed-income security or the price of an equity security being used as collateral will automatically accrue to the Seller, given that he has committed to repurchase the security at a fixed or calculable Repurchase Price.
- The coupon interest that accrues on a fixed-income security during the term that it is being used as collateral will also automatically accrue to the Seller. On the Purchase Date, the Seller receives the Purchase Price, which (assuming no initial margin or haircut (see paragraph 13)) is equal to the clean price of the bond plus the accrued interest outstanding on that date. On the Repurchase Date, the Seller pays back the Repurchase Price, which is equal to the Purchase Price plus repo interest, but gets back a bond with the extra coupon interest that has accrued during the term of the repo. For example, if a bond with 100 days accrued interest is repoed out for 7 days, the Seller will pay a Repurchase Price that will include only the original 100 days of accrued interest but will get back a bond with 107 days of accrued interest.

- If a coupon is paid on a fixed-income security or a dividend is paid on an equity security while it is being used as collateral, the issuer is obliged to pay the coupon or dividend to the Buyer as he is the legal owner of the security. But the repo contract obliges the Buyer to pay an immediate and equal sum of money to the Seller. In the UK, this contractual compensatory payment is often called a *manufactured payment*. In a repurchase transaction, the manufactured payment is due on the same day as the coupon or dividend payment by the issuer. In a buy/sell-back, the manufactured payment is deferred until the Repurchase Date (meaning it has to be supplemented by reinvestment interest to compensate the Seller for the delay between the income payment date and the Repurchase Date).

Initial margins, haircuts and margin maintenance

13. If collateral is not very liquid, the Buyer will be exposed to the risk that if he should have to liquidate that collateral following a default by the Seller, the time it takes to complete the liquidation (on top of the delays in discovering and deciding how to respond to the default) may result in unexpected losses. In order to protect himself against this risk, the Buyer can seek an initial margin or haircut on the collateral, i.e. setting the Purchase Price below the market value of the collateral.
14. In addition, as explained in paragraph 10 above, the Buyer and Seller are exposed to the risks that the market value of collateral may respectively fall below or rise above the Repurchase Price, opening up a credit exposure for one of the parties. Any such credit exposures are eliminated by the prompt transfer of variation margins to the exposed party by the other party, in the form of either a cash payment or a transfer of collateral. However, the GMRA offers an alternative procedure that was originally designed for documented Buy/Sell-Backs but is not widely used.

Permission to substitute collateral

15. A Seller is not entitled to receive equivalent collateral until the Repurchase Date. However, many Sellers are active traders of securities, which means that unless they restrict their repos to open transactions or very short-terms, they take the risk of not being able to trade a security when they wish because it might be out on repo. The Seller can overcome this risk by obtaining from the Buyer permission to substitute collateral (one or more times) at any time during the repo, with an alternative asset that is acceptable as collateral to the Buyer.
16. Permissions to substitute are useful to the Seller but may be inconvenient to the Buyer, who may feel constrained in re-using the collateral because of concern that the Seller might exercise his permission and it might prove difficult to buy the collateral back from the market in time to substitute. In order to compensate the Buyer for this risk and for the operational cost of substitution, repos with one or more permissions should pay a higher repo rate than on otherwise equivalent repos.
17. In practice, permission to substitute is rare in the European market outside of tri-party repo (see 34 below) or structured repos.

What happens in a default?

18. Under the ICMA Global Master Repurchase Agreement (GMRA) 2000, when an event of default occurs, the Non-Defaulting Party has to serve a Default Notice on the Defaulting Party unless the event of default is one of two particular acts of insolvency, in which case, the other party is automatically in default. Once any necessary notice has been served on the Defaulting Party, except if the event of default is a 'failure to perform other obligations' (in which case, there is a 30-day delay), the Non-Defaulting Party can 'close-out' all the repos it has outstanding with the defaulter that are documented under the same legal agreement. This means that all these transactions are terminated and their Repurchase Dates accelerated for immediate settlement. Variation margin held by either party are added to these amounts. Acceleration means fixing the values of obligations owed to and by the defaulter, and converting them into the same currency. Then, the value of the obligations owed to the Defaulting Party are netted against the value of obligations owed by the Defaulting Party to leave a residual net amount. This residual may be a net exposure to the defaulter (which has to be pursued by the non-defaulter as an unsecured claim on the defaulter) or a net surplus (which has to be returned to the defaulter). Non-defaulters can add reasonable expenses but cannot seek 'consequential damages' from the defaulter; in other words, compensation for downstream losses incurred because of the default. However, the GMRA 2000 does allow for recovery of the cost of replacing the defaulted repos or if justified, re-hedging or unwinding hedges.

19. To calculate the values of obligations owed to and by the Defaulting Party, the Non-Defaulting Party has to value the collateral held by both parties. The GMRA 2000 offers considerable flexibility to the non-defaulter, in the form of a menu of three alternative valuation methods designed to accommodate illiquid collateral. Thus, the non-defaulter has the choice of using:

    - prices actually realised on the sale of the collateral or other holdings of the same asset; and/or
    - market quotes; or
    - in cases where dealing is not possible and quotes are unavailable or deemed not to be 'commercially reasonable', his own estimation of 'fair value'.

    To allow time to get market quotes or dealing prices or to estimate fair value, the deadline for valuation is five business days after default. However, in exceptional circumstances, fair value can be fixed after this deadline.

20. Under the GMRA 2011, the framework for dealing with a default has been modified in a few ways, mainly to increase the flexibility given to the Non-Defaulting Party. One change is that a party is in default from the date of the event of default. There is no need to serve a Default Notice to put a party into default. If one of the two automatic events of default occurs, the close-out process starts at once. For other events of default, the Non-Defaulting Party can initiate the close-out at its own convenience by issuing a notice to the defaulter of an Early Termination Date up to 20 days in advance. The five-day deadline for valuing collateral is replaced by a requirement to value collateral on or 'as soon as reasonably practicable' after the chosen Early Termination Date.

What happens if a party fails to deliver collateral?

21. In the event of a failure by a Seller to deliver collateral to the Buyer on the Purchase Date, the GMRA provides that:

- If the parties so elected when they negotiated their GMRA (2000 or 2011), a failure to deliver collateral would be an event of default. Under the GMRA 2000, it is up to the Buyer to serve a Default Notice in order to put the Seller into default and trigger the process of closing-out outstanding repos with the defaulter. Under the GMRA 2011, the Buyer decides whether or not to proceed with closing-out. Putting a counterparty into default is a very serious step with potential market and systemic implications and should only be taken by senior management. They need to be sure that the failure to deliver reflects credit problems at the counterparty and not temporary operational problems (at the Seller or its custodian, or within the settlement infrastructure) or market illiquidity beyond the control of the Seller.
- If the Buyer does not put the Seller into default, the Buyer should withhold the Purchase Price from the Seller or if this has been paid, he should immediately require the Seller to repay or if necessary, call for Cash Margin from the Seller.[4]
- Unless the Buyer puts the Seller into default, the contract remains in force until the intended Repurchase Date, unless the Buyer terminates the transaction, which he is entitled to do at any time.
- At any time while the transaction remains in force, the Seller will be able to deliver the collateral to the Buyer and is entitled to receive the Purchase Price in exchange.
- If the Buyer terminates the transaction, the Seller will be obliged to pay the Buyer the difference between the Repurchase Price on the day of termination and the original Purchase Price.[5] The difference is the repo interest that has accrued since the Purchase Date. In other words, the Seller will be liable for repo interest from the very start of the repo even if he delivered the collateral late and therefore only had limited use of the Purchase Price, or even if he never delivered the collateral and therefore never had any use of the Purchase Price.
- If the Buyer terminates the transaction before the Repurchase Date, the Seller will be obliged to pay the Purchase Price to the Buyer and the Buyer will be obliged to pay the Repurchase Price on the date of termination to the Seller.[5] The difference is the repo interest for the period until termination.

4 Ideally, the exchange of cash and collateral securities should be delivery-versus-payment (DVP), so a Seller failing to deliver collateral should not receive the corresponding Purchase Price from the Buyer.
5 Note that while the Repurchase Price is normally taken to mean the payment due from the Seller to the Buyer on the Repurchase Date, the GMRA also applies the term to the sum of the Purchase Price and repo interest accrued up to any date during the term of the transaction.

22. In the event of a failure by a Buyer to deliver collateral back to the Seller on the Repurchase Date, the GMRA provides that:

- If the parties so elected when they negotiated their GMRA (2000 or 2011), a failure to deliver collateral would be an event of default. Under the GMRA 2000, it is up to the Seller to serve a Default Notice in order to put the Buyer into default and trigger the process of closing-out outstanding repos with the defaulter. Under the GMRA 2011, the Seller decides whether or not to proceed with closing-out. As emphasised already, placing a counterparty into default is a very serious step, with potential market and systemic implications, and should only be taken by senior management. They need to be sure that the failure to deliver reflects credit problems at the counterparty and not temporary operational problems (at the Buyer or its custodian, or within the settlement infrastructure) or market illiquidity beyond the control of the Buyer.
- If the Seller does not put the Buyer into default, the Seller should withhold the Repurchase Price from the Buyer or if this has been paid, he should immediately require the Buyer to repay or if necessary, call for cash margin from the Buyer (but if the Seller owes any sums to the Buyer, these will be set off against the Repurchase Price).[6]
- Unless the Seller puts the Buyer into default, the contract remains in force until the Buyer delivers or the Seller terminates the transaction, which he is entitled to do at any time.
- The Seller can trigger a *mini close-out*. This is an informal term used to describe the termination of a failed transaction by the Seller. Under this procedure, the Buyer will be obliged to pay to the Seller the difference between (1) the Default Market Value of the collateral due under the failed transaction (all other repos continue in force) as determined by the Seller, and (2) the Repurchase Price due to the Buyer (see 18 above).

23. The mini close-out is the parallel process in the repo market to the *buy-in* process used to deal with failed transactions in the cash market. A key difference is that a mini close-out compensates the Seller with net cash compensation, whereas a buy-in aims to supply the security that has not been delivered by the seller and compensate the buyer for the extra cost of buying-in. Another difference is in the methodology applied to the calculation of the payment due to the Seller in a mini close-out compared to that applied in a buy-in by a buyer in the cash market. A mini close-out can use an estimate of fair market value whereas a buy-in depends upon the failed party or an agent purchasing a security from a third party. Therefore, in an illiquid market, a mini close-out can be completed but a buy-in might not. This means that there is a basis risk where a party has purchased a security in the cash market to deliver to another party on the Repurchase Date of a repo but the cash market seller fails to deliver. If the party consequently fails to deliver on the repo and the other party to the repo (the Buyer) triggers a mini close-out and opts to value the collateral at its fair market value in order to calculate the amount owed by the first party (the repo Seller), the first party would be left with a long position in the cash market. Given the illiquidity of the cash market, the position will not be closed-out easily if at all (although some of the market risk might be hedged in the derivatives market).

6 Ideally, the exchange of cash and collateral securities should be delivery-versus-payment (DVP), so a Buyer failing to deliver equivalent collateral should not receive the corresponding Repurchase Price from the Seller.

Repurchase transactions versus buy/sell-backs

24. Repurchase Transactions and Buy/Sell-Backs are alternative forms of repo. Buy/Sell-Backs are economically identical to Repurchase Transactions and just as in a Repurchase Transaction, the collateral in a Buy/Sell-Back is transferred by means of a transfer of legal title.

25. Traditionally the difference between the two forms of repo was that Repurchase Transactions were documented under master agreements such as the GMRA and each purchase and repurchase therefore formed a single contract, while Buy/Sell-Backs were undocumented and therefore each purchase and repurchase constituted a separate legal contract. It is not possible to margin undocumented Buy/Sell-Backs or grant permission to substitute to the Seller. In addition, manufactured payments have to be delayed until the Repurchase Date and incorporated into the Repurchase Price. The master agreements governing Repurchase Transactions set out clear rights of close-out and set off in the event of default by one of the parties and remedies in the event of a failure to deliver collateral, as well as making provision for initial margins and haircuts, margin maintenance and permission to substitute. In the case of undocumented Buy/Sell-Backs, the lack of documented rights, remedies and provisions means they are legally less robust and less flexible.

26. Undocumented Buy/Sell-Backs are giving way to the documented version (using for example, the Buy/Sell-Back Annex of the GMRA) under pressure from regulatory requirements for written legal agreements, Margin Maintenance and express rights of close-out netting. The difference between Repurchase Transactions and documented Buy/Sell-Backs is now only the response to the payment of a coupon, dividend or other income payment on collateral.

27. If coupons, dividends or other income are paid on collateral during the term of a Buy/Sell-Back, there is no manufactured payment. Instead, on the Repurchase Date the amount of the income (including the reinvestment income to compensate for delay between the income payment date and the Repurchase Date) is paid to the Seller by deduction from the Repurchase Price.

General collateral and specials

28. It has been explained already that the basic uses of repo are (1) the borrowing and lending of cash on a secured basis and (2) the borrowing and lending of securities. Where a repo is being used as a means of borrowing and lending cash, the Buyer will require collateral of acceptable quality but will not specify a particular issue of securities. Within a particular class of securities, the pool of equally and generally acceptable collateral is called the **general collateral (GC)** basket. Given that the Seller has some choice about which issue of securities he delivers to the Buyer in a GC repo, GC repos are driven by the supply of and demand for cash, which means there should be a single **GC repo rate** for each currency and term to maturity. As GC repo is a money market instrument, the GC repo rate should be closely correlated with other money market rates, particularly unsecured interbank deposit rates. The spread between the GC repo rate and unsecured money market rates will reflect the credit and liquidity risk premia on unsecured lending.

29. At times, potential Buyers will bid in the repo market for a particular issue of securities as collateral. If demand is strong enough, such bidding pressure will force down the repo rate on that particular issue. In other words, competition between potential Buyers will encourage them to offer cheaper cash to potential Sellers in order to get the security they are seeking. When the repo rate quoted on a particular security falls at least about 10 basis points below the GC repo rate for that currency, the security in question is said to have gone special. The spread between the GC repo rate and the rate on a special reflects the strength of demand for a particular security and other things being equal, should be equal to the borrowing fee that would have to be paid to borrow that security in the securities lending market. When the GC repo rate is low, and/or the borrowing fee is large, it is possible for specials to trade at negative repo rates even when other interest rates are positive.

Market structure and infrastructure

30. Most very short-term repos in Europe are traded across **automatic repo trading systems (ATS)**. The bulk of such electronically-traded repos are 'cleared' across **central clearing counterparties (CCP)**. A CCP is a specialist intermediary that interposes itself as a principal into every transaction registered with it, to become the seller to every buyer and the buyer to every seller. The CCP also nets opposite repos and reverse repos with the same counterparty and thereby reduces the credit risk and operational cost of transactions (although CCP are otherwise more expensive because of the size of the initial margins they impose on collateral).

31. Longer-term and structured repos tend to be traded directly between counterparties using the telephone and electronic messaging systems. Some repos are arranged by agents called **voice-brokers**. Directly-traded and voice-brokered repos can be registered with CCP for clearing after they have been agreed between counterparties.

32. The settlement of repos and the management of post-trade tasks such as margining and manufactured payments, is usually managed by the operations departments of the counterparties. For settlement, they send instructions to deliver and receive securities to the securities settlement systems (SSS) operated by domestic **central securities depositories (CSD) or international central securities depositories (ICSD)**, either directly or via custodian banks acting as settlement agents. ICSD tend to be the preferred securities depository for international investors and global intermediaries.

33. However, some parties outsource the settlement and management of certain directly-traded repos to **tri-party repo agents**. Tri-party agents undertake the settlement, custody and post-trade management of repos. Settlement is made by book-entry transfers between accounts on the books of the tri-party agent and so avoids the cost and occasional difficulty of settling in a CSD. The services of tri-party agents include the automatic selection of collateral from the account of the Seller, subject to the predefined collateral requirements of the Buyer, and the subsequent automatic 'optimisation' of collateral.

34. Optimisation usually means ensuring that the collateral held by the Buyer is always of the lowest quality acceptable to the Buyer (this means the Seller is making the most efficient use of his collateral by using his worst collateral first, while the Buyer is earning the highest return by accepting the riskiest acceptable collateral). Optimisation is achieved by substituting existing collateral with new collateral whenever the Seller purchases a security of lower but still acceptable quality. The tri-party agent will also substitute when the Seller wishes to sell a security he has repoed out as collateral, when collateral is no longer acceptable to the Buyer (e.g. because of a ratings downgrade) and when collateral is due to make an income payment (which might cause tax problems).
35. Tri-party repo is popular with Buyers who lack the operational capability to settle securities and manage collateral and for non-government securities, which tend to be less liquid and trade in smaller amounts and so are more expensive to settle at CSD than government securities.
36. Tri-party agents also provide automated collateral management services to **GC pooling systems** (also known as GC financing systems). These are ATS which are connected to CCP and then to tri-party agents. The systems provide markets in GC baskets, which means that each system offers trading in a number of lists of security issues. Users of the system accept that any of the issues listed in a basket that they are trading and that they happen to hold in their account at a CSD or ICSD, may be selected by the tri-party agent for delivery if they are a Seller. Buyers accept that any of these listed issues may be delivered into their account. Users therefore trade on the basis of price, amount and term only, not the identity of the collateral. This makes trading more efficient. The ATS registers repos and reverse repos transacted by each user with the CCP, which sends the net amounts sold or bought by each user to the tri-party agent. It automatically selects the required amounts of listed securities from the accounts of the net Sellers and instructs the CSD or ICSD to deliver them to the accounts of the net Buyers.

Appendix V
GLOSSARY OF REPO MARKET TERMS

Where terms are from the GMRA, they are indicated by Capital Initials. Reference should always be made to the GMRA for the exact definitions. References to terms defined elsewhere in the glossary are in *italics*.

accrued interest

Part of the *Market Value* of a fixed-income security. On any particular day during the life of a security, accrued interest is the amount corresponding to the share of the next coupon payment that is owed to whoever is the owner of the security on that day but is not yet due for payment by the issuer. Market Value is equal to the agreed *clean price* of the security times its nominal value plus the outstanding accrued interest (see the formula below).

Market Value = nominal value (clean price / 100 + coupon x day count / 100 x annual basis)

The clean price of a security plus accrued interest expressed in price terms (as a percentage of the nominal value of the security) gives the *dirty price* (see the formula below).

dirty price = clean price + coupon x day count / annual basis

Market Value = nominal value (dirty price / 100)

Fixed-income securities being used as *collateral* in the repo market should be valued inclusive of accrued interest (this is called 'full accrual pricing', as opposed to 'flat pricing', which is valuation at the clean price).

It is common market practice, when calculating the Market Value of *Margin Securities* to include accrued interest up to and including their delivery date. However, the *GMRA* specifies accrued interest only up to and including the day of the calculation.

Adjustment

In the *GMRA*, an alternative method of *Margin Maintenance* to *variation margin* (called *Margin Transfer* in the GMRA) as a means of eliminating a *Net Exposure*. Adjustment means terminating a *repo* and creating a Replacement Transaction for the remaining term to maturity, with the quantity of *collateral* increased or decreased to bring its *Market Value* into line with the cash owed by the *Seller*. There are two ways of doing this.

- The first method is to bring the Market Value of the collateral into line with the Repurchase Price on the so-called Adjustment Date plus any haircut or initial margin (called Margin Ratio in the GMRA). The Repurchase Price will be equal to the Purchase Price (how much cash was loaned at the start) plus the repo interest accrued to the Seller by the Adjustment Date.

new Market Value ≈ latest Repurchase Price x Margin Ratio

or

new Market Value ≈ latest Repurchase Price / 1 - haircut

- The second method is to pay off ('clean up') the repo interest owed to the Buyer – by means of a cash payment from the Seller to the Buyer – and bring the Market Value of the collateral into line with the original Purchase Price of the repo plus any haircut or initial margin. This method returns the cash value of the repo to its original amount.

new Market Value ≈ original Purchase Price x Margin Ratio

or

new Market Value ≈ original Purchase Price / 1 - haircut

Note that, where collateral securities are issued in minimum denominations, the new Market Value may have to be slightly larger than the Repurchase Price or Purchase Price being targeted.

Adjustment is applied in turn to each repo outstanding between two parties, starting with the transaction with the largest *Transaction Exposure*, until the Net Exposure between the parties is reduced to an immaterial level. The collateral transfers of the terminated transaction and the Replacement Transaction should be netted where possible, in which case, only the difference between the original and new Market Values of collateral will actually have to be delivered. By netting, Adjustment produces what is in effect a variation margin.

The parties can take the opportunity of an Adjustment to agree a complete or partial substitution of collateral by returning different securities in the Replacement Transaction.

Adjustment was designed for *Buy/Sell-Backs* but can be applied to Repurchase Transactions. The other alternative method called *Repricing*, involves changing the Purchase Price rather than the Market Value of the collateral (see GMRA 2000 paragraph 4(k) and GMRA 2011 4(l)).

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affirmation

A process in which (1) one party contacts the other by telephone or e-mail in order to secure immediate verification from the other party of the key economic terms of one or more selected new transactions and their settlement instructions or (2) both parties report details of all new transactions to a third-party automatic affirmation service, which makes comparisons and identifies mismatches. The function of an affirmation overlaps that of a *Confirmation*.

agency repo

A *repo* executed by an agent with a third party on behalf of one or more customers. The risk on the transaction is between the third party and the customer(s). Where an agent deals on behalf of several customers, shares in the repo with the third party are allocated post trade among the customers, creating separate repos between the third party and each customer. The relationship between the agent and the third party is documented under a single master agreement such as the *GMRA*, signed by the agent and the third party. In the case of the GMRA, the standard agreement has to be supplemented by the Agency Annex. There will be separate agreements between the agent and his customer(s), which may cover more business than just repos. When dealing with an agent, a third party will need to know the identity of the customer(s) in order to be able to calculate his credit exposure and fulfil regulatory requirements such as anti-money laundering checks. However, for commercial reasons, the front office of the third party is usually not told the identity of the customer(s) but is given a codename for each customer. Only the credit department or similar department of the third party is given the key. The same GMRA can be used by a party to deal as an agent and also on its own account. It is vital in this situation, when negotiating a repo, to inform the third party whether one is transacting as a principal or an agent. This is a contractual requirement under the GMRA.

annual basis

The number of days that are conventionally assumed to be in one year for the purpose of calculating the amount of return from an annualised percentage rate of return. The annual basis is conventionally denoted by the letter B and is the denominator of the *day count fraction* (D/B), where the numerator is the *day count* of the term of the transaction. There are often different conventions for the annual basis in the money market and capital market of the same currency.

Business Day

A day on which a transaction can be settled by means of delivering securities and/or making payments of cash. Actions required to fulfil the contractual obligations of a transaction such as the service of notices and other communications, can also only be performed on a Business Day. The ability to deliver securities and/or make payments of cash requires that the relevant securities settlement systems (SSS) and/or cash payment systems be open for business. Weekends are therefore not Business Days. Public holidays are also usually not Business Days. However, in the eurozone, cash payments can be made in euros on any day on which the *TARGET2* inter-central bank payments system is open, regardless of whether payments systems are operating in individual eurozone member states. TARGET2 closes only on New Year's Day, Easter Friday and Monday, May Day, Christmas Day and the day after Christmas Day.

Given that securities may have to be delivered between two SSS or between two custodian banks and given also the possibility of *cross-currency repos*, the Purchase Date and Repurchase Date of a repo may have to be a Business Day in more than one city.

Under the *GMRA 2000* 2(e) and 2011 2(f), a Business Day is defined as:

- for repos to be settled at an SSS, any day on which that system is open for business;
- for repos to be settled by delivery of securities at a custodian bank, any day on which that bank is open for business as well as a day on which banks generally are open for business in the city which hosts the central bank payments system for the currency of payment or, in the case of the euro, any day on which the TARGET2 system is open.

The GMRA does not define what is meant by the close of business. This can be important as notices served after the close of business will not become effective until the next Business Day (which in a crisis might be delayed). It is best practice for parties to agree a time for close of business in the countries in which they operate and where there is uncertainty, record it in Annex I of their GMRA or in *Confirmations*.

Buyer

In the *GMRA*, this is the party to a *repo* who buys *collateral* at the *Purchase Price* on the *Purchase Date* and commits to sell back the same quantity of *equivalent collateral* on the *Repurchase Date* – which will be a fixed maturity date or in the case of *open repo*, on demand – at an agreed or calculable *Repurchase Price*. The Buyer is effectively a lender of cash and is said to be doing a *reverse repo*.

buy-in

A procedure that can be initiated by the buyer of a security in a *cash trade* following a *failure to deliver* that security by the seller on time and/or in full. Under the *ICMA's* Rules and Recommendations (Section 450), a party affected by a *fail* can remedy the problem by arranging to 'buy-in' the security from a third party. He has to give the failing party four to ten *Business Days*' notice of his intention to do so. If the failing party does not remedy the fail within the notice period, the failed party can appoint an agent to buy-in the security in the 'best available market for *guaranteed delivery*' or can do so itself. Any excess in the cost of the buy-in over the price agreed originally with the failing party is charged to the latter (and vice-versa). If party A has failed on party B because party C has failed on party A, party A can pass on the buy-in notice and any costs to party C. In a *repo* under the *GMRA*, the response to a failure to deliver is not a buy-in but termination of the failed repo and cash compensation. In the case of a failure by the Buyer to deliver on the Repurchase Date, the cash compensation procedure is a *mini close-out*.

Buy/Sell-back

Another term for a *Sell/Buy-Back*. Strictly-speaking, this is a sell/buy-back from the point of view of the *Buyer*. Sometimes abbreviated to 'buy/sell'. In some countries, there are also domestic names for this type of repo.

Buy/Sell-Backs are economically identical to *Repurchase Transactions*. Just as in a Repurchase Transaction, the *collateral* in a Buy/Sell-Back is given by means of a transfer of legal title. One difference is that Buy/Sell-Backs are not necessarily documented under a *master agreement*. In the case of undocumented Buy/Sell-Backs, the two legs of the transaction form separate contracts. Because of this, it is not possible to *variation margin* undocumented Buy/Sell-Backs or grant *permission to substitute collateral* to the *Seller*. Because of the lack of documentation, there is also no express provision for: *haircuts* and/or *initial margins* at the start; or *close-out netting* in an *Event of Default* by either party.

Since 1995, it has been possible to document Buy/Sell-Backs using the Buy/Sell-Back Annex of the GMRA. Undocumented Buy/Sell-Backs are increasingly giving way to the documented version under pressure from regulatory requirements for written legal agreements, variation margin and express rights of close-out netting.

The only material difference between Repurchase Transactions and documented Buy/Sell-Backs is how coupon, dividend or other income payments made on collateral during the life of a transaction are managed. In a Buy/Sell-Back, there is no *manufactured payment* as in a Repurchase Transaction. Instead the value of the income payment is deducted from the *Repurchase Price* due on the *Repurchase Date* together with an amount of interest to compensate for the delay in compensating the Seller.

Cash Equivalent Amount	Under the *GMRA* 2011, a party making a call for *variation margin* (called a *Margin Transfer* in the GMRA) has the right to call for the return as part of the variation margin, of *Margin Securities* that it had previously given to the party as variation margin. Where a party exercises this right but the other party is unable to immediately return those securities through no fault of their own, the other party has to provide an interest-free *Cash Margin* instead. The other party is then given at least two days to find the Margin Securities being recalled. If the recalled Margin Securities are not returned by the deadline, the other party must substitute the Cash Margin with another cash amount called the Cash Equivalent Amount. But while the Cash Margin is calculated using the securities valuation methodology for *Margin Maintenance*, the Cash Equivalent Amount is calculated using the default methodology of the GMRA (see GMRA 2011 paragraph 4(h)).
Cash Margin	Under the *GMRA*, a *variation margin* (called a *Margin Transfer* in the GMRA) given in the form of cash.
cash trade	An outright sale or an outright purchase of a security (with no obligation as in a *repo,* to buy or sell back that security in the future).
CCP	The acronym for a *central counterparty* or *central clearing counterparty*. A CCP is a specialist intermediary that is part of the infrastructure of the OTC market and which interposes itself into every transaction registered with it by its members. In practice, it becomes the seller to every buyer and the buyer to every seller. The CCP then nets opposite transactions with each counterparty to produce a single *variation margin* call between them as well as net deliveries and payments. *Netting* reduces the credit risk and operational cost of transactions. Unlike the bilateral netting of opposite transactions that is possible between two parties, netting by a CCP is multilateral. For example, if parties A, B and C are members of the same CCP, once cleared, sales by A to B can be netted against purchases by A from C, given that the CCP will step in between A, B and C as the common counterparty. Multilateral netting is therefore more effective in reducing exposures than is bilateral netting. Apart from netting its exposures, the CCP protects itself against a default by a member by taking initial margins from both parties upon the registration of a transaction, transferring variation margins between members to eliminate exposures on at least a daily basis, maintaining its own capital, requiring members to contribute to a default fund and, in the event of a default by one or more members, having the right to share remaining losses among surviving members. The CCP will also require its members to assist in closing out transactions with a defaulting member.
classic repo	Another name for a *Repurchase Transaction.*
clean price	The price of a fixed-income security as generally quoted in the secondary cash market for that security. It measures the capital value of the security in the market but excludes the *accrued interest* on the security.

clearing

A term which means the *netting* by a third party of opposite mutual obligations between two other parties. Netting can be used to reduce (1) operational risk and cost or (2) credit risk.

- Clearing for operational reasons can be performed by *custodian* banks, *CSD* or *ICSD*, acting as agents in order to reduce the volumes of deliveries of securities and payments of cash needed to settle transactions. Clearing for operational reasons is sometimes called *technical netting*. It is not legally binding so does not reduce credit risk.
- Clearing to reduce credit risk is performed by a *CCP*, acting as principals by means of 'novation' or by 'open offer'. Netting by novation as performed by a CCP means the creation of two new contracts from an original. The original contract is that between the original parties to a transaction. When this contract is registered with the CCP, the original contract is replaced by two new contracts: a new contract between the seller and the CCP; and a new contract between the CCP and the buyer. In this way, the CCP becomes the buyer to every seller and the seller to every buyer. Under open offer, when the buyer and seller transact, contracts are automatically and immediately created between each party and the CCP. At no stage under open offer is there a contract directly between the buyer and seller.

close-out netting

A contractual provision under which, upon the occurrence of a pre-defined *Event of Default* in relation to one of the parties, the mutual obligations of both parties under the contract, whether due and payable or not, are automatically or at the election of the other party reduced to or replaced by a single net obligation, which is thereupon immediately due and payable by one party to the other. Under the *GMRA*, the Non-Defaulting Party terminates the agreement by accelerating all outstanding transactions with the defaulter for immediate settlement, along with any *variation margins* (called *Margin Transfers* in the GMRA) still held by the parties. Alternatively, if the Event of Default is an Act of Insolvency that is either the filing of an insolvency petition or the appointment of a liquidator or similar events, the termination is automatic. The obligations are valued and converted into the same currency by the Non-Defaulting Party. Then, the gross value of the accelerated obligations owed to the defaulting party is netted against the gross value of the accelerated obligations owed by the defaulting party to leave a residual net amount. This residual 'close-out' amount may be a net exposure to the defaulter (that has to be pursued by the Non-Defaulting Party as an unsecured claim on the defaulter) or a net surplus (that has to be returned to the defaulter). Close-out netting should be quicker, less expensive and more certain than the statutory insolvency process (see GMRA paragraph 10).

collateral	Legally-speaking, collateral is an asset owned by a borrower to which a *security interest* has been attached in order to provide security to a lender. A security interest is a property interest in the asset that entitles the lender to seize and liquidate the collateral in the event that the borrower defaults, although only usually after its claim has been validated by an insolvency court. The borrower retains a property interest in the asset, which means that absent a default by the borrower, the asset cannot be sold by the secured lender unless the borrower has given him a right of *re-hypothecation*. Upon discharge of the debt by the borrower, the secured lender must return the same asset. A *pledge* is a type of security interest in which the asset acting as collateral is transferred from the pledgor into the control and possession of the pledgee. The term 'collateral' is used colloquially in the repo market to describe an asset sold in a repo. This is not legally correct as a repo transfers full legal title to the asset from the *Seller to the Buyer* for the term of the transaction. The Seller retains no property interest in the asset and the Buyer has the unfettered right to sell the asset to a third party at any time and without the permission of the Seller. The term is not used in the *GMRA*.
Collateral Assets (CA)	A type of *collateral* in a categorisation by the BIS Committee on the Global Financial System (CGFS). CA is the broadest of three categories and encompasses all assets that qualify for use in collateralised funding transactions, such as in covered bonds, agency and private-label mortgage-backed and asset-backed securities. The other CGFS categories are *High Quality Assets (HQA)* and *High Quality Liquid Assets (HQLA).*
Collateral downgrade trade	Either: ■ A securities loan of an asset or basket of assets from party A to party B against collateral from party B of another asset or basket of assets of lower liquidity and sometimes lower credit quality in return for the payment of a fee by party B. ■ A combination of (1) a short-term *repo* of an asset or basket of assets from party A *to* party B and (2) a *reverse repo* of another asset or basket of assets of lower liquidity and sometimes lower credit quality to party A from party B for the same maturity date. The net result is an exchange by party A of higher quality collateral for lower quality collateral (a downgrade for A). The reduction in quality will be reflected in a spread to party A between the lower repo rate it pays and the higher reverse repo rate it receives (repo rates reflecting among other things, the quality of the collateral). A collateral downgrade trade is an example of *collateral transformation*. A collateral downgrade trade for one party is a *collateral upgrade trade* for the other.

Collateral upgrade trade	Either: ■ A securities loan of an asset or basket of assets to party A from party B against collateral from party A of another asset or basket of assets of lower liquidity and sometimes lower credit quality in return for the payment of a fee by party A. ■ A combination of (1) a short-term *reverse repo* of an asset or basket of assets to party A from party B and (2) a *repo* of another asset or basket of assets of lower liquidity and sometimes lower credit quality from party A to party B for the same maturity date. The net result is an exchange by party A of lower quality collateral for higher quality collateral (an upgrade for A). The increase in quality will be reflected in a spread paid by party A that is the difference between the lower reverse repo rate it receives and the higher repo rate it pays (repo rates reflecting among other things, the quality of the collateral). A collateral upgrade trade is an example of *collateral transformation*. A collateral upgrade trade for one party is a *collateral downgrade trade* for the other.
collateral swap	Also known as a *liquidity swap.* An exchange of an asset or basket of assets for another asset or basket of assets of lower liquidity and sometimes lower credit quality, either (1) directly through a *securities lending* transaction, or (2) via a combination of a *repo* of the lower quality asset or assets and a matching *reverse repo* of the higher quality asset or assets between the same parties. A collateral swap is an example of *collateral transformation*. It differs from *collateral downgrade* or *upgrade trades* in that it is for longer than one year.
Collateral transformation	Exchanging assets of different liquidity and sometimes different credit, usually through *collateral/liquidity swaps* or collateral *downgrade/upgrade trades*, which can take the form of *securities lending* transactions or combinations of *repos* and matching r*everse repos* between the same parties.

Confirmation	A Confirmation is a comprehensive record in writing (that can be electronic) setting out: ■ the economic terms of a transaction (price, term, amount, etc); ■ any ad hoc terms (not already included in or different from those in the *master agreement* between the parties); and ■ settlement accounts and addresses (to and from which deliveries and payments should be made). A Confirmation may also have to include statements required by local regulation or law. A Confirmation should be sent promptly as soon as possible after a transaction has been agreed, preferably on the same day. It should be sent by one party to another or by each party to the other. Parties receiving Confirmations should urgently cross-check in order to identify mistakes in recording the terms or disagreements about what has been agreed. Mistakes or disagreements should be promptly notified by the recipient to the other party and mutual action initiated to resolve the problem. A Confirmation plays a key role in the legal construction of the transaction. Whereas the *GMRA* and Annex I set out the general terms and conditions of the business relationship between the parties, a Confirmation describes terms and conditions specific to the transaction. A Confirmation is prima facie evidence of the terms and conditions of a transaction unless promptly challenged with stronger contrary evidence. Moreover, any ad hoc terms or conditions set out in a Confirmation take precedence for the transaction being confirmed over any conflicting standard terms or conditions set out in the master agreement. The essential terms which should be included in a repo Confirmation are set out in GMRA paragraph 3(b) and a sample Confirmation is given in Annex II of the GMRA. For transactions executed over an automatic repo trading system, traditional Confirmations tend to be substituted by the notifications generated by the trading system. The function of a Confirmation overlaps that of an *affirmation.*
corporate value date	In a *repo,* the *Purchase Date* on which cash and *collateral* are exchanged is usually a money market value date rather than a capital market settlement date. However, where one party (typically a customer) cannot manage this earlier settlement, the value date of the repo may be deferred until the capital market settlement date, which is then referred to as a 'corporate value date'. Thus, if non-forward repos are settled at T+2, a corporate value date would be T+3.
cost of carry	The difference between the amounts of *accrued interest* and *repo interest* earned over the term of a *repo*. A positive (negative) cost of carry means that a long position in a security will earn more (less) accrued interest than it costs to finance that position by repoing out that security. The cost of carry is required to calculate the *forward price of a security.* cost of carry ≈ (nominal value couponxday court / 100 x annual basis) – (Purchase Price repo rate x day count / 100 x annual basis)

credit repo	A repo against *collateral* other than government securities. On the cusp between government and credit repos are 'high grade' repos, which are transactions in high-quality collateral such as supranational, sovereign and agency securities (SSA).
cross-currency repo	A *repo* of a *Purchase Price* in one currency against *collateral* with a *Market Value* denominated in another currency.
CSD	The acronym for a central *securities depository*. A CSD is a specialised domestic institution that is part of the market infrastructure and that records (1) holdings of domestic securities by providing accounts for the holders or their agents, and (2) changes in holdings, nowadays usually by means of opposite entries in these accounts (book-entry transfer) rather than by the movement of physical certificates. To allow book-entry transfer, securities are either 'dematerialised' or 'immobilised'. Most CSD are linked to independent large value payment systems operated by central banks. Cf *ICSD*.
custodian	A bank managing the delivery and receipt of securities and any exchanges of cash, as an agent on behalf of other institutions. The custodian may settle deliveries and receipts with *CSD, ICSD* or other custodians. Deliveries between two customers of a custodian may be settled within the custodian by book-entry transfer of ownership between accounts.
day count	The number of days that are conventionally assumed to be in the term of a transaction, from and including the value date up to but excluding the maturity date and for the purpose of calculating the amount of return from an annualised percentage rate of return. The day count is conventionally denoted by the letter D and is the numerator of the *day count fraction* (D/B), where the denominator is the *annual basis.* There are often different conventions for the day count in the money market and capital market of the same currency.
day count fraction	The ratio of the *day count* (D) to the *annual basis* (B). The day count fraction is used to calculate the amount of return from an annualised percentage rate of return. It is the assumed fraction of the year over which a transaction runs. repo interest = Purchase Price (repo rate x day count / 100 x annual basis)
default	A failure by one party to a transaction to perform one of the obligations to which it is contractually committed and for which the parties have agreed that failure would constitute an Event of Default. The most important *Events of Default* are acts of insolvency.
delivery repo	A *repo* in which the *collateral* moves from the control and possession of the *Seller* or its agent to the control and possession of the *Buyer* or its agent for the term of the transaction. Delivery is required in some jurisdictions to prove that title to the collateral has been transferred. Only delivery repos are covered by the EU Financial Collateral Directive and delivery is a regulatory condition for the re-use of collateral under the EU Securities Financing Transaction Regulation (SFTR). Cf *hold-in-custody repo* and *tri-party repo.*

dirty price	The price of a fixed-income security including *accrued interest*, from which the *Market Value* of the security can be directly calculated. Cf *clean price.* dirty price = clean price + coupon x day count / annual basis
DVP	The acronym for 'delivery-versus-payment', which means delivery of a security against a simultaneous exchange for cash. Cf *FOP.*
End/End rule	The convention that normally applies in the foreign exchange and money markets for periods that are multiples of one month and for which the value date is the last *Business Day* of a calendar month. The End/End rule specifies that the maturity date is the last Business Day of the calendar month at the end of the period. For example, a 3-month deposit for value on 28 February (in a non-leap year) matures not on 28 May but on 31 May (or if that is not a Business Day, then the nearest preceding Business Day in May). See also the *Modified Following Business Day convention*.
equivalent	On the *Repurchase Date* or termination date of a repo, the Buyer is obliged to return equivalent *collateral* to the *Seller*. Equivalent collateral is economically but not legally identical to that sold to the Buyer on the *Purchase Date*, that is, it is from the same security issue (e.g. same ISIN) but not the same part of the same issue (if the securities took the form of physical certificates, the Buyer would be able to sell a certificate back to the Seller with a number different to the one he had bought from the Seller at the start). This flexibility is needed because during the term of the repo, the Buyer should have the right to sell the securities to a third party, and in which case, he would subsequently have to buy back the securities from the market in order to settle with the Seller on the Repurchase Date. The securities obtained by the Buyer are very unlikely to be the same part of the issue received on the *Purchase Date*. The use of the term 'equivalent' allows the Buyer to return another part of the same issue. This flexibility makes it practicable for the Buyer to sell to a third party, which is important in allowing him to exercise his property rights as the legal owner of the collateral. If this was not possible, the character of a repo as a sale and repurchase could be challenged. The use of the term 'equivalent' also allows the legal definition of collateral in a repo to accommodate collateral in the form of equity, which can be transformed during the term of a repo by corporate events such as take-overs, rights issues, etc. The terms 'fungible', 'substantially the same' and 'same or similar' are sometimes used instead of 'equivalent'.
ERCC	The acronym for the European Repo and Collateral Council (ERCC), which is a regional sub-committee of the International Repo and Collateral Council established by *ICMA* to represent member firms active in the repo and/or collateral markets in Europe. Among other things, the ERCC provides guidance on the maintenance of the *GMRA*, publishes the *Guide to Best Practice in the European Repo Market,* organises a semi-annual survey of the European repo market and runs educational events. It also represents the market in consultations by regulatory authorities and in discussions with service providers to improve market infrastructure. Membership of the ERCC is open to all ICMA members who among other things, have a dedicated repo and/or collateral management activity. Details of the European repo market survey and the other activities of the ERCC can be found on the ICMA website: www.icmagroup.org.

Event of Default	An adverse event, action or failure to act which parties to a master agreement accept will constitute a breach of the contract between them. The *GMRA* lists a set of standard Events of Default. The most important are acts of insolvency. Under the GMRA, upon an Event of Default by one party, the other party can initiate *close-out netting* (see GMRA 10).
Evergreen repo	An open or a fixed-term transaction where both parties have an option to terminate the transaction on any Business Day subject to a notice period to terminate that is longer than the conventional non-forward settlement period. The extended notice period means that the Seller has funding for a guaranteed minimum term (the notice period). Common termination notice periods are 15 or 31 days.
exposure threshold	The *Net Exposure* below which the parties to a *repo* may agree not to call for *Margin Maintenance*. When Net Exposure reaches or breaches the exposure threshold, the convention in the repo market is for the Net Exposure to be completely eliminated. For this reason in the repo market, the threshold is often also called a *minimum transfer amount*. In the derivatives market, exposure threshold and minimum transfer amount are different.
extendible repo	A fixed-term transaction under which: ■ the Seller has the option to defer the Repurchase Date for an agreed further term, subject only to an agreed and short notice period (no more than the conventional non-forward settlement period, i.e. T+0, T+1 or T+2); ■ the Seller can exercise the option to extend either (1) on any Business Day during the original term or (2) only on certain agreed Business Days within the original term; ■ *repo interest* is to be paid on (1) the original Repurchase Date if the transaction is not extended, and/or (2) the new Repurchase Date if the transaction is extended; ■ both parties can on the Business Day on which notice is given of an extension, request a change in the repo rate for the additional term to maturity; ■ the Seller can on the Business Day on which notice is given of an extension, request to substitute the collateral with an alternative acceptable to the Buyer for the additional term to maturity. Extendibles are described using three numbers, e.g. 4-3-4; ■ The first number is the initial term of the repo in terms of round months (4 months in the case of a 4-3-4). This is the minimum term of the repo; ■ The second number gives the number of round months before the Repurchase Date which fixes the date on which the Seller can exercise his option to extend the repo (3 months before the Repurchase Date in the case of a 4-3-4). If the repo is not extended, then there may be other opportunities to extend, perhaps each month thereafter until the option is exercised or the repo matures unexercised; ■ The third number is the number of months for which the repo can be extended (4 months in the case of a 4-3-4 repo).

failure to deliver The failure by one party to a *cash trade* or *repo* to deliver the full amount of securities to the other party on the agreed settlement date. Failure to deliver therefore includes partial delivery and late delivery. In a *repo*, failure to deliver can occur on the *Purchase Date* (the *Seller* fails) or on the *Repurchase Date* (the *Buyer* fails). Under the *GMRA*, the parties can agree in advance when they negotiate their agreement, to treat failure to deliver as an *Event of Default*. If failure to deliver is not chosen, the remedy is termination of the failed repo and cash compensation. In the case of a failure by the Buyer to deliver on the Repurchase Date, the cash compensation procedure is a *mini close-out.* Failure to deliver on a *cash trade* may result in a *buy-in*.

floating-rate repo A *Repurchase Transaction* in which the repo rate is periodically re-fixed by reference to an interest rate index such as EONIA (in the case of EONIA or other *overnight* or *tom/next* index, the repo rate would be re-fixed daily). Accordingly, the final *Repurchase Price* of a floating-rate repo will not be known until the *Repurchase Date* or later, when the final floating-rate is fixed. The repo rate may incorporate a spread under or over the index (e.g. EONIA minus 3 basis points). Floating-rate repos are term repos in that they are transacted for more than one day. Open repo resemble floating-rate repo, given that an open repo rate can in principle, be re-fixed on any Business Day but this is not scheduled as it would be in a floating-rate repo.

FOP The acronym 'free of payment', which means the delivery of a security without a simultaneous exchange of cash. Transfers of *Margin Securities* are made FOP. Cf *DVP*.

forward price The traditional method of quoting *Buy/Sell-Backs*, although many are now quoted in terms of their *repo rate.* The forward rate is the forward break-even price of the *collateral* on the *Repurchase Date* of the repo and is equal to the final *Repurchase Price* of the collateral minus its *cost of carry*, quoted as a percentage of the *nominal value* of the collateral. The forward price shows the level above which the *clean price* of a security needs to be trading on the Repurchase Date of a repo for the Seller to make a profit by selling-off the collateral when he gets it back at the end of the repo. There are two alternative formulae for the calculation of the forward price.

Formula (1)

forward price = R – (N x C x D / 100 x B) / N x 100

where

R Repurchase Price

N nominal value of the collateral

C coupon on the collateral

D number of days according to the applicable convention from and including the last coupon payment date to but excluding the Repurchase Date

B annual basis for the collateral

Worked example: calculating the forward price of a sell/buy-back

Consider a 1-week sell/buy-back against EUR 100 million nominal of the DBR 2½% of 4 January 20XX. The Purchase Date is 23 February 20XX. The security is trading at a clean price of 93.985 and has 89 days of accrued interest. The dirty price is therefore 94.59458904 and the Purchase Price of the sell/buy-back is EUR 94,594,589.04. An equivalent repurchase transaction is quoted at 1.00% and would have a Repurchase Price of EUR 94,612,982.43. The forward price of the sell/buy-back is:

$$\text{forward price} = R - (N \times C \times D / 100 \times B) / N \times 100$$

$$= 94{,}612{,}982.43 - (100{,}000{,}000.00 \times 2.5 \times 96 / 100 \times 365) / 100{,}000{,}000.00 \times 100 = 93.95544819$$

Formula (2)

$$\text{forward price} = (N \times M / 100) - ((N \times C \times D / (100 \times B_c)) - (P \times R \times D / (100 \times B_r)) / N \times 100$$

where

M clean price of the collateral as quoted in the appropriate *cash market*

N nominal value of the collateral

C coupon on the collateral

D day count according to the applicable convention from and including the Purchase Date to but excluding the Repurchase Date

B_c annual basis for the collateral

P Purchase Price of the sell/buy-back (see the Guide 2.7)

R repo rate on equivalent repurchase transactions

B_r annual basis for the repo

Worked example: calculating the forward price of a sell/buy-back

Consider the previous example. The forward price using the second formula is:

$$\text{forward price} = (N \times M / 100) - ((N \times C \times D / (100 \times B_c) - (P \times R \times D / 100 \times B_r)) / N \times 100$$

$$= (100{,}000{,}000 \times 93.985 / 100) - ((10{,}000{,}000 \times 2.5 \times 7 / 100 \times 365) - (94{,}594{,}589.04 \times 1.0 \times 7 / 100 \times 360)) / 100{,}000{,}000 \times 100 = 93.95544819$$

forward repo	A *repo* with a *Purchase Price* on a forward date (that is, a date after the latest conventional date for delivery or payment for present value) and a *Repurchase Price* on a later forward date.
general collateral (GC)	Where the *Seller* in a *repo* has some choice about precisely what *collateral* to deliver to the *Buyer*, e.g. which issue of a security. For example, a Buyer may be willing to accept any of a number of government bond issues as collateral. GC repos are therefore driven by the need to borrow and/or lend cash, rather than the precise identity of the collateral. For this reason, GC repo is sometimes described as 'cash-driven' repo. The cash imperative also means that there will be a common GC repo rate for each currency and term to maturity. Securities qualifying as 'general collateral' are substitutes with each other for the purpose of collateralization, which means they come from the same class of securities. GC repos constitute money market transactions and the GC repo rate should therefore be highly correlated with other money market rates. The spread between the GC repo rate and unsecured money market rates will reflect the credit and liquidity risk premia on unsecured lending.
GMRA	The acronym for the *Global Master Repurchase Agreement,* which is the *master agreement* for *Repurchase Transactions* published by the *ICMA*. It can be extended to include *Buy/Sell-Backs* by applying the *Buy/Sell-Back Annex.* The latest version of the GMRA was published in 2011, and superseded that published in 2000, which superseded the 1995 version. See www.icmagroup.org.
GMSLA	The acronym for the *Global Master Securities Lending Agreement*, which is the *master agreement* for *securities lending* transactions published by ISLA. The latest version of the GMSLA was published in 2010, and superseded the 2000 version, which superseded master agreements such as OSLA. See www.isla.co.uk.
guaranteed delivery	A commitment sought by a buyer of a security that a seller is in possession of that security (and has not repoed or otherwise lent them out) and is therefore certain of his ability to deliver.
haircut	An agreed percentage discount applied to the *Market Value* of *collateral* to fix the *Purchase Price* on the *Purchase Date* of a *repo.* A haircut is expressed as the percentage difference between the initial Market Value and the Purchase Price. Haircut = (Market Value of collateral – Purchase Price / Market Value of collateral) x 100
High-Quality Assets (HQA)	A type of *collateral* in a categorisation by the BIS Committee on the Global Financial System (CGFS). HQA is the second of three categories and comprises assets that market participants can use to meet collateral demand from derivatives transactions. The other categories are *Collateral Assets (CA)* and *High-Quality Liquid Assets (HQLA).*

High-Quality Liquid Assets (HQLA)	A type of *collateral* in a categorisation by the BIS Committee on the Global Financial System (CGFS). HQLA is the narrowest of three categories and follows the Basel Committee on Banking Supervision, including assets eligible for the Level 1 and Level 2 definitions of assets suitable for the Basel Liquidity Coverage Ratio (LCR). Assets that qualify for the LCR are expected to have low credit and market risk and be easy to value, exchange-listed, traded in active markets, unencumbered, liquid during times of stress and ideally central bank-eligible. The other categories are *Collateral Assets (CA)* and *High-Quality Assets (HQA)*. Demand for HQLA is the primary driver of *collateral transformation.*
hold-in-custody (HIC)	A *repo* in which the *Seller* retains control and possession of the *collateral* even though legal title has passed to the *Buyer*. HIC repos are used where there are practical difficulties or high costs in moving collateral. However, a HIC repo exposes the Buyer to the risk of 'double-dipping' by the Seller; that is, the Seller selling the same piece of collateral in more than one repo. In some jurisdictions, the transfer of title to a security may require delivery. And HIC repos are not covered by the EU Financial Collateral Directive, while the EU Securities Financing Transaction Regulation (SFTR) makes the delivery of collateral a regulatory condition for its re-use. Cf *delivery repo* and *tri-party repo*.
ICMA	The acronym for the 'International Capital Market Association', which represents financial institutions active in the international capital markets worldwide and has members in over 50 countries. ICMA's market standards and conventions have been pillars of the international debt market for over 50 years, providing the framework of rules governing market practice which facilitate the orderly functioning of the market.
ICSD	The acronym for an 'International Central Securities Depository'. An ICSD is a specialised international bank, part of the market infrastructure to which international securities (traditional eurobonds) are issued and that provides accounts for holders of these and many domestic securities; and which records changes in holdings by means of entries between these accounts. As they are banks, ICSD provide cash accounts to members and can therefore offer DVP settlement of securities transactions. They also provide *tri-party* services. Cf *CSD.*
Income	In the *GMRA*, coupons, dividends and other non-capital payments made by the issuer of a *collateral* security.

initial margin	An agreed premium applied to the *Purchase Price* of a *repo* to determine the required *Market Value* of the *collateral* to be delivered on the *Purchase Date.* It is also applied each day during the term of a repo as part of the process of *Margin Maintenance,* to the *Repurchase Price* on that day to calculate the Market Value of collateral required subsequently in order to maintain adequate collateralisation. Under the *GMRA*, if there is a material difference between (1) the Repurchase Price of a repo plus any initial margin and (2) the current Market Value of collateral, that repo has a *Transaction Exposure.* This will go into the calculation of *Net Exposure,* which determines if either party has the right to call for Margin Maintenance. An initial margin can be expressed either as (1) the Market Value as a percentage of the Purchase Price or (2) a ratio of the two amounts. In the GMRA, an initial margin is called a *Margin Ratio* and is defined as a ratio but the market tends to quote a percentage. A percentage initial margin of 100% or ratio of one means there is no initial margin. initial margin (percentage) = (Market Value of collateral / Purchase Price) 100 initial margin (ratio) = (Market Value of collateral / Purchase Price)
ISLA	The acronym for the 'International Securities Lending Association', a trade association established in 1989 to represent the common interests of participants in the European securities lending market. ISLA publishes the Global Master Securities Lending Agreement (*GMSLA*). See www.isla.co.uk.
liquidity swap	Another term for a *collateral swap.*
manufactured payment	A term common in the UK for a contractual payment in a *Repurchase Transaction* made by the *Buyer* to the *Seller,* which is triggered by the payment of a coupon, dividend or other income on *collateral* by the issuer to the Buyer (the issuer pays the Buyer because the Buyer has the legal title to the collateral during the term of the repo). A manufactured payment compensates the Seller for the risk he continues to take on the collateral as a result of his commitment to repurchase at a fixed or calculable price. The manufactured payment should be made on the same day as and be equal in value to the income payment. In a *Buy/Sell-Back*, there is no manufactured payment. Instead, the value of the income payment is deducted from the *Repurchase Price* due on the *Repurchase Date* together with an amount of interest to compensate for the delay in compensating the Seller.
Margin Maintenance	Under the *GMRA,* the process of calling on a repo counterparty to provide *variation margin* (called *Margin Transfer* in the GMRA) either by making a cash payment (*Cash Margin*) or by delivering additional *collateral (Margin Securities)*, in order to eliminate a *Net Exposure* in the portfolio of *repos* between two parties that have been documented under the same agreement. Alternatively, Margin Maintenance can be performed under the GMRA using the alternative mechanisms of *Repricing* or *Adjustment,* whereby transactions are terminated early and replaced by new transactions in which cash and collateral are brought back into line. The calculation of Net Exposure requires the marking to market of the collateral or in the case of illiquid collateral, marking to model.

Margin Percentage	In the *GMRA* 2011, the term for a *haircut* applied to the *Market Value* of *Margin Securities*. See GMRA 2011 paragraph 2(aa).
Margin Ratio	In the *GMRA*, the term for an *initial margin.* See GMRA 2000 2(z) and GMRA 2011 paragraph 2(bb).
Market Value	In the *GMRA,* the value of the *collateral* for the purposes of *Margin Maintenance,* calculated using 'a generally recognised source agreed to by the parties'. See GMRA 2000 paragraph 2(cc) and GMRA 2011 paragraph 2(ee).
master agreement	A written legal contract between two parties that sets out the terms and conditions governing all transactions between them (unless specifically excluded) in the same financial instrument (e.g. *repo*) or class of instrument (e.g. derivatives) as well as their rights and obligations, including remedies available in an *Event of Default.* The *GMRA* was designed to provide a standard master agreement under English law for cross-border repos but is also used in many domestic repo markets. It consists of: ■ the main agreement, which sets out a framework of terms and conditions generic to the market in short-term *Repurchase Transactions* in government securities; ■ Annex I, which sets out terms and conditions specific to the business relationship between two parties, consisting of various standard elections that are required by the main agreement and any supplemental terms and conditions that the parties agree to add to customize the main agreement; ■ other annexes, which are sets of standardized amendments to the main agreement to incorporate *Buy/Sell-Backs*, equity collateral, *agency repos* and repo business in some specific markets and jurisdictions; and ■ *Confirmations,* which set out the terms and conditions specific to individual transactions. A master agreement reduces credit risk by setting out clearly the contractual terms and conditions accepted by the parties in order to provide legal certainty; standardises operational procedures, which reduces operational risk and cost; and further facilitates risk reduction by providing procedures such as *Margin Maintenance,* the *technical netting* of opposite payments and transfers and, in an Event of Default, *close-out netting* procedures. Up to date master agreements are a requirement for the reduction of regulatory risk capital. The *ICMA* keeps the GMRA up to date by commissioning legal opinions on the enforceability of the GMRA in over 60 jurisdictions.

mini close-out	An informal term for the remedy available to the *Seller* under the *GMRA*, in the event that there is a *failure to deliver* by the *Buyer* on the *Repurchase Date.* The undelivered *collateral* is valued using the default valuation methodology rather than at the *Market Value* that is used for *Margin Maintenance.* The Seller will receive the difference on the termination date, between the Default Market Value and the *Repurchase Price* of the failed repo (how much is owed by the Seller). This contrasts with the *buy-in* procedure used in the cash market, in which the aim is to acquire the missing security for the Seller. See GMRA 2000 paragraph 10(h) and GMRA 2011 paragraph 10(i).
minimum transfer amount	A common alternative term in the *repo* market for an *exposure threshold.* This term emphasises the point that when *Net Exposure* reaches or breaches the exposure threshold, it should be completely eliminated.
Modified Following Business Day Convention	This is the rule that is most commonly applied in the foreign exchange and money markets including the repo market, to determine the maturity date of an instrument. The convention is that for terms to maturity that are multiples of one month, the maturity date will fall in the month that is the same number of calendar months after the month in which the value date falls. For example, if the value date of a 3-month transaction is in March, then the maturity date will fall three calendar months later, which means in June. Furthermore, the maturity date will be the same date as the value date, unless this date is not a *Business Day* and, in that case, it will be the next Business Day in the same calendar month. However, if the next Business Day would fall in the following calendar month, the maturity date will be the last Business Day in the same calendar month. For example, if the value date of a 3-month transaction is 29 March, the normal maturity date would be 29 June. If however, the 29 June is not a Business Day, then the maturity date would be 30 June. If 30 June is also not a Business Day, then the maturity date would be 28 June and so on. See also the *End/End rule.*
Net Exposure	In the GMRA, the term for an uncollateralised credit exposure (taking account of any haircuts and initial margins) of one party to another on a portfolio of repos documented under the same agreement. Specifically, the Net Exposure is the difference between: ■ the aggregate of the *Transaction Exposures* of party A to party B plus any unpaid manufactured payments due to party A, less the *Net Margin* if that is held by party A; and ■ the aggregate of the Transaction Exposures of party B to party A plus any unpaid manufactured payments due to party B, less the Net Margin if that is held by party B. If (1) is greater than (2), the first party has a Net Exposure and may call for *Margin Maintenance.* See paragraphs 2(dd) and 4(c) of the GMRA 2000 and paragraphs 2(ff) and 4(c) of the GMRA 2011.
netting	The process of aggregating mutual obligations between two parties to calculate a net obligation. See *close-out netting* and *technical netting.*

one week	The term from and including the value date of a transaction up to but excluding a maturity date seven days later or if that day is not a *Business Day,* the next Business Day thereafter. If the next *Business Day* is in the next calendar month, it still becomes the maturity date. In other words, the following business day convention applies not the *Modified Following Business Day Convention.*
open repo	A transaction that is terminable on demand by either party and therefore has no *Repurchase Date* and *Repurchase Price* until notice is given of termination. Under the terms of such a transaction: ■ Both parties have an option to terminate the transaction on any *Business Day,* subject only to an agreed termination notice period. In the case of a standard open repo, this is no more than the conventional non-forward settlement period, i.e. T+0, T+1 or T+2. In the *evergreen* type of open repo, it is a longer agreed period. ■ Both parties have the right to request a change (*re-rate*) in the *repo rate* on (1) any Business Day until the transaction is terminated, or (2) any Business Day within an agreed period during the life of the transaction, or (3) at any of an agreed series of dates, subject only to an agreed re-rate notice period. This notice period is usually the same as the termination notice period but does not need to be. If the other party refuses the request or agreement cannot be reached on a new rate, either party can terminate the transaction. It is possible for the repo rate on an open repo to be linked to an *overnight, tom/next* or *spot/next* interest rate index, which means it would change automatically each Business Day. ■ *Repo interest* is accrued daily without compounding. Interest can be paid on (1) the *Repurchase Date,* if the transaction is terminated, or (2) an agreed number of days after the last Business Day of each calendar month, while the transaction continues, or (3) on dates when the repo rate is changed.
overnight (O/N)	The term from and including today, up to but excluding the next *Business Day* or, if that day is not a Business Day, the next Business Day thereafter. If the next Business Day is in the next calendar month, it still becomes the maturity date. In other words, the following business day convention applies, not *the Modified Following Business Day Convention.*

overnight indices (OI) In many currencies, an interest rate index is calculated and published daily for actual overnight wholesale funding over the entire course of the *Business Day* by:

- all banks obliged to report to the central bank (e.g. the Bank of England's reformed SONIA); or
- a selected panel of banks (e.g. EONIA); or
- bank clients of voice-brokers (the original Fed funds Effective Rate);

OI are weighted-average rates where each rate is weighted by the total amount of deposits transacted at that rate. Traditionally, OI were unsecured interbank deposit rates. However, they can be secured (e.g. the SNB's SARON rate). They can be rates on transactions are both interbank and also between banks and other wholesale market participants (e.g. the ECB's ESTER). They can also include the cost to banks of borrowing by issuing securities into the wholesale money market (e.g. reformed SONIA). Because OI are based on transactions across the whole Business Day, they are published after the close of business.

In addition to OI, there are tom/next (TN) indices that are similar to OI in measuring the cost of one-day funds to banks except for the later value date.

The current OI for euro-denominated interbank overnight deposits is called EONIA (Euro Overnight Index Average). EONIA is the volume-weighted average of the rates on all unsecured deposits borrowed in the interbank market in euros by the EURIBOR panel of banks. It is fixed by the ECB between 6:45pm and 7:00pm CET on each *TARGET2* business day. The precise specification for EONIA is available on www.emmi-benchmarks.eu. The ECB plans to replace EONIA with ESTER, which is the weighted-average cost to banks' borrowing euros in the wholesale money market, in 2020.

pair-off This is the action of *netting instructions* to and from another party for opposite payments of cash or opposite deliveries of securities. Pair-offs are agreed between the parties case by case. The payments being paired-off must be in the same currency and due on the same date. The deliveries being paired-off must be of the same security held at the same custodian or *CSD*. The aim of pair-offs is to eliminate or reduce operational cost and risk. Pair-offs are not legally binding so do not reduce credit risk. Pair-offs are therefore a type of *technical netting*. Pair-offs are particularly helpful when rolling over a transaction.

partialling	The practice of not rejecting delivery of less than the contracted amount of a security purchased in a *cash trade* or *repo.* However, a partial delivery does not satisfy the contractual obligation of the *Seller*. It just reduces the adverse economic impact of a failure to deliver the full amount. The *Seller* remains obliged to complete full delivery. Partialling should not be confused with *shaping*, which is an operational mechanism by which a large delivery of securities is broken up into smaller deliveries by the *Seller* or his agent. Like partialling, shaping is intended to reduce the economic impact of a failure to deliver. The difference is that partialling is a decision by a *Buyer* and shaping is an action by a *Seller* or its agent.
pledge	A type of *security interest* that is a property interest in an asset, given by a cash borrower (pledgor) to a lender (pledgee or secured lender) to secure a debt. This interest gives the secured lender the right to seize and dispose of the asset in the event that the borrower defaults. Until then, the borrower retains ownership of the asset, which means that the asset cannot be sold by the secured lender unless the borrower has given him a right of *re-hypothecation*. Upon the discharge of the debt by the borrower, the secured lender must return the original asset (not the *equivalent*). Sometimes called a 'pawn'.
Purchase Date	In the *GMRA*, the term for the value date of a *repo.*
Purchase Price	In the *GMRA*, the term for the sum of money paid by the *Buyer* to the *Seller* on the *Purchase Date* of a *repo*. It is equal to the initial *Market Value* of the collateral less any *haircut* or *initial margin* (called *Margin Ratio* in the GMRA).
regular dates or round dates or fixed dates	Terms to maturity of one week, two weeks, three weeks, one month, two months, three months, four months, five months, six months, seven months, eight months, nine months, 10 months, 11 months and one year, or some sub-set (a minimum definition would include only one week, one month, three months, six months and one year). These dates derived from 'brokers' runs', which were the terms for which voice-brokers would automatically provide quotes when asked for an indication of prices in the inter-bank forward foreign exchange or deposit markets.
re-hypothecation	The right which a pledgor can give to a pledgee to sell or *repo* pledged assets to a third party. Without this right, the pledgee can only dispose of pledged assets in an *Event of Default* by the pledgor and usually only after its claim has been validated by an insolvency court. If the pledgee exercises a right of re-hypothecation, the pledgor's right to recover the pledged asset is replaced by an unsecured contractual right to receive an *equivalent asset*. Re-hypothecation is typically given by hedge funds to their prime brokers in return for cheaper funding. Re-hypothecation is not relevant to *repos* based on the transfer of legal title. In this case, the *Buyer* has an automatic right to re-use the collateral since it is his property.

repo	The generic term for *Repurchase Transactions* and Buy/Sell-Backs. Repos (along with securities lending) are a type of *securities financing transaction (SFT).* In a repo, at the start of the transaction (the *Purchase Date*), one party (the *Seller*) sells assets (the *collateral*, typically securities) to another party (the *Buyer*) at one price (the *Purchase Price*) and commits to repurchase the same quantity of assets that are *equivalent* to those sold at a future date or on demand (the *Repurchase Date*) at an agreed or calculable price (the *Repurchase Price*). The Buyer's side of a repo is often called a *reverse repo.*
repo interest	The market term for the return to the *Buyer* on the cash he effectively lends through a *reverse repo.* Legally-speaking however, the term is a misnomer as the legal form of a repo is not an interest-paying loan or deposit. Rather, the return is just the difference between two securities prices. In the *GMRA*, repo interest is called the Pricing Differential.
repo rate	The market term for the annualised percentage rate of interest on the cash in a *repo*. Legally-speaking however, the term is a misnomer as the legal form of a repo is not an interest-paying loan or deposit. Rather, the return is just the difference between two securities prices. In the *GMRA*, the repo rate is called the Pricing Rate. Traditionally, the repo rate was the price of a *Repurchase Transaction* but *Buy/Sell-Backs* are now often quoted in the same way.

Repricing

In the *GMRA*, an alternative mechanism for *Margin Maintenance* to *variation margin* (called *Market Transfer* in the GMRA) as a means of eliminating a *Net Exposure*. Repricing accelerates the *Repurchase Date* of a *repo,* which effectively terminates it and replaces it with a new so-called Repriced Transaction for the same date. The Repriced Transaction will have a new *Purchase Price* that is calculated by applying the market price of the *collateral* on the so-called Repricing Date to the original *nominal value* plus any agreed *haircut* or *initial margin* (called *Margin Ratio* in the GMRA) to calculate a new *Market Value.*

new Purchase Price = new Market Value / Margin Ratio

or

new Purchase Price = new Market Value (1 - haircut)

The new Purchase Price is the cash amount which the *Buyer* is obliged to pay to the *Seller* in the Repriced Transaction. In other words, the Purchase Price is brought into line with the latest Market Value of the collateral. The nominal amount of collateral does not change. As cashflows should be netted where possible, only the difference between the Repurchase Price of the original repo on the Repricing Date and the Purchase Price of the Repriced Transaction should actually have to be paid. This difference is equal to (1) the change in the Market Value of the collateral plus (2) the repo interest accrued to the Buyer up to the Repricing Date. So, in respect of the change in the Market Value of the collateral, Repricing produces what is in effect, a cash *variation margin* (called a *Margin Transfer* in the GMRA).

Repricing was designed for *Buy/Sell-Backs* but can be applied to *Repurchase Transactions*. The related method of *Adjustment* involves changing the Market Value of the collateral rather than the Purchase Price. 'Repricing' is commonly but incorrectly used in the market as a generic term to describe both Adjustment and the above method. See GMRA 2000 paragraph 4(j) and GMRA 2011 paragraph 4(k).

Repurchase Transaction

Also known as a *classic repo,* US-style repo or all-in repo. In some countries, there are also domestic names for this type of repo. A Repurchase Transaction is a type of repo that is documented under a *master agreement*, in consequence of which, both legs of the transaction are part of a single contract. Among other things, a master agreement makes provision for: *haircuts* and/or *initial margins* at the start of a repo; *Margin Maintenance* during the term of a repo to eliminate or reduce material uncollateralized exposures; the ability of the *Buyer* to grant permission to substitute collateral to the *Seller* without terminating and replacing the transaction; the immediate making of a *manufactured payment* to the *Seller* upon the payment of a coupon, dividend or other income on the collateral during the term of a transaction; and close-out netting in an *Event of Default* by either party. Cf *Buy/Sell-Back.*

Repurchase Date	In the *GMRA*, the term for the maturity date of a repo.
Repurchase Price	In the *GMRA,* the term for the sum of money to be paid by the *Seller* of a *repo* to the *Buyer* on the *Repurchase Date* to buy back *equivalent collateral.* It is equal to the *Purchase Price* plus *repo interest.* This term also applies to the value of the cash owed to the *Buyer* on any day during the term of a repo, that is, the *Purchase Price* plus repo interest accrued up to that particular date. In the case of *Buy/Sell-Backs*, the *Repurchase Price* is net of the amount of any coupon, dividend or other income on the collateral paid to the Buyer during the life of the transaction plus reinvestment income to compensate for the delayed payment.
re-rate	Market terminology for re-fixing the *repo rate* on an *open repo.*
reverse repo	The *Buyer's* side of a *repo.* The *Buyer* is said to 'reverse in' *collateral* (whereas the *Seller* is said to 'repo out' collateral).
securities financing transaction (SFT)	The family of financial instruments in which a security is provided against a payment of cash. SFT include *repo, securities lending,* commodities lending and margin lending but not the collateralisation of derivatives or lending against a security interest.
security interest	An umbrella term for a property interest in an asset, given by a cash borrower to a lender to secure a debt. This interest gives the secured lender the right to dispose of the asset in the event that the borrower defaults but only usually after its claim has been validated by an insolvency court. During the secured loan, the borrower retains a property interest in the asset, which means that absent a default by the borrower, the asset cannot be disposed of by the secured lender unless the borrower has given him a right of *re-hypothecation.* Upon the discharge of the debt by the borrower, the secured lender must return the same asset (not an equivalent). A common type of security interest is a *pledge.* Others include charges, liens and mortgages.

securities lending	Securities loans are a type of *securities financing transaction (SFT)*. In a securities loan, one party (the Lender) transfers title to a security or basket of securities to another party (the Borrower) usually in exchange for *collateral* in the form of either (1) title to another security or basket of securities, or (2) cash and commits to either (a) transfer title to *equivalent collateral* or (b) repay cash plus agreed interest at a future date or on demand plus a fee for the loan in exchange for title to a security or basket of securities equivalent to the one it transferred at the start. Despite securities lending counterparties being called Lenders and Borrowers, title to securities is transferred (at least outside the US) as in repo. However, it is possible for the collateral to be pledged instead of using title transfer. Securities lending transactions and repos are analogous instruments in legal and economic terms. The main differences are that: securities lending does not necessarily involve cash (it can be security against security); is more often than repo driven by the demand to borrow specific securities (rather than cash); and often involves equity and as a result of the corporate actions and votes that characterise equity, tends to be transacted on an open basis in order to allow the original holder to retrieve the security or securities in order to be able exercise those rights. The standard master agreement for securities lending is the *ISLA GMSLA*.
Sell/Buy-Back	Another term for a *Buy/Sell-Back*. Strictly-speaking, this is a Buy/Sell-Back from the point of view of the *Seller.* Sometimes abbreviated to ‘sell/buy’.
Seller	In the *GMRA,* the party to a repo who sells *collateral* for cash in the form of the *Purchase Price* on the *Purchase Date* and commits to buy back the same quantity of *equivalent collateral* on the *Repurchase Date* – that will be a fixed maturity date or in the case of *open repo,* on demand – at an agreed or calculable *Repurchase Price*. The *Seller* is effectively borrowing cash. Cf *Buyer.*
set-off	A classic legal technique for reducing the size of mutual obligations between two parties. One party’s obligations to another are extinguished to the extent of the other party’s mutual obligations to the first party. Set-off is traditionally limited to due and payable obligations between solvent parties. Set-off is often distinguished from *netting* but has a similar effect and is frequently used as a basis for introducing *close-out netting* into law.
shaping	The operational practice of dividing a large delivery of securities into smaller deliveries before instructing a securities settlement system (SSS). The aim is to minimise the economic impact of any settlement failure. Some SSS and CCP automatically shape deliveries. A standard ‘shape’ in the European repo market is currently 50 million. Shaping should not be confused with *partialling,* where the *Buyer* waives his contractual right to refuse an incomplete delivery. Like shaping, partialling is intended to reduce the economic impact of a failure to deliver. The difference is that shaping is an action by a *Seller* or its agent, whereas partialling is a decision by a *Buyer*.
short dates	Terms to maturity of one month or less.

short-selling	A sale in a *cash trade* of securities that are not owned by the *Seller*. The *Seller* should borrow the securities in order to be able to fulfil his commitment to deliver those securities to the *Buyer* (without off-setting the sale by buying). He can borrow securities in the *repo* or *securities lending* markets. The short-seller will have to purchase the securities at a later date in order to return to the *Seller/*lender in the repo or securities lending transaction. In the meantime, he will be exposed to the risk of a theoretically unlimited rise in the price of the security as well as any positive *cost of carry* and the risk that it may not in practice, be possible to buy the security because of market illiquidity or competing demand. Short positions may be established in order to profit from over-valuation, to hedge long positions in similar securities or related derivatives, or to arbitrage against the mispricing of similar securities. Short-selling with no intention of delivering is called 'naked short-selling' and represents market abuse. In the EU, the Short Selling Regulation among other things, requires short-sellers of EU government securities and equities trading on an EU venue to borrow before selling, to make an arrangement to borrow after selling or to locate a borrowing source that is reasonably certain.
special collateral	*Collateral* on which the *repo rate* is materially below the *GC repo rate* for the same term. This differential is caused by the demand for a particular piece of collateral which is manifest in offers of cheap cash from potential *Buyers* in the repo market. Cf *GC repo.*
spot-next (S/N)	The term from and including the spot value date up to but excluding the next *Business Day* or if that day is not a *Business Day*, the next Business Day thereafter. If the next Business Day is in the next calendar month, it still becomes the maturity. In other words, a following business day convention applies, not *the Modified Following Business Day Convention.*
substitution of collateral	The ability that may be given by the *Buyer* to the *Seller,* usually agreed in advance during the negotiation of a *repo,* to recall *collateral* during the term of that transaction and substitute collateral of equal quality and value that is reasonably acceptable to the *Buyer.* Permission can also be given to substitute *Margin Securities*. The *GMRA* envisages substitution as a modification of the terms of a contract rather than the replacement of the contract with a new one. See GMRA paragraph 8. However, in some jurisdictions or for operational reasons, it may not be possible to modify the terms of a repo to implement the substitution of collateral. In these cases, substitution can be effected by early termination of a contract and its replacement with a new contract against different collateral.
synthetic repo	A combination of instruments to replicate the risk/return profile of a *repo*. A synthetic repo is constructed from a *cash trade* in a security and a total return swap or a futures contract or a combination of options. The derivative(s) replace the repurchase leg of a repo by performing the function of transferring the risk and return on the security back to the *Seller.* As in a normal repo, during the transaction, one party has the use of cash and the other has the use of the security. At the end of a synthetic repo, the parties usually agree to sell the security back to the original holder at the current price.

TARGET2	The acronym for the Trans European Automated Real Time Gross Settlement Express Transfer system. This is a real-time gross settlement system operated by the ECB for large-value cash payments in euros between the national central banks of the eurozone. It is used to settle the money market operations of the ECB and large-value payments between the domestic payments systems of the eurozone. It was upgraded to TARGET2 (T2) in 2007.
T2S	The acronym for TARGET2 Securities. This is the real-time gross securities settlement system for euro-denominated securities and securities in some other currencies operated by the ECB. It connects *CSD, ICSD* and custodian banks as well as investors who wish to be connected directly. T2S is connected to T2 to allow *DVP* settlement in central bank money.
technical netting	Another term for 'operational netting' or 'payments netting'. Technical netting is the off-setting of opposite payments in the same currency due on the same day between the same two parties and the off-setting of opposite deliveries of the same security held at the same custodian or *CSD* that are due on the same day between the same parties. The purpose is to reduce operational cost and risk. Technical netting is not legally binding so does not reduce credit risk like *close-out netting. Pair-offs* are an example of technical netting.
term repo	'Term repo' has a number of related meanings. It is commonly used in the market to describe transactions with a term to maturity beyond one Business Day but is sometimes applied to all fixed-term transactions (as opposed to *open repo*). However, in a legal context, 'term *repo*' is often used to describe *repo* with terms to maturity of one year or more. These longer-term repos are often used in *collateral swaps.* They are structured and floating-rate, and have deep *haircuts* and enhanced 'rights' of *substitution.*
terminable on demand	Of an *open repo*, in which either party has the right to terminate the transaction by providing due notice.
tom-next (T/N)	The term to maturity from and including the next *Business Day* up to but excluding the following Business Day or if that day is not a Business Day, the next Business Day thereafter. If the next Business Day is in the next calendar month, it still becomes the maturity date. In other words, the Following Business Day convention applies, not the *Modified Following Business Day Convention*.
trade-matching	The comparison of settlement instructions from two parties to a transaction by a *custodian* bank acting as securities settlement agent for one or both, or by a *CSD* or *ICSD*, in order to ensure that the settlement of that transaction across a securities settlement system at the CSD or ICSD will not fail because of differences in the instructions from the two parties. Trade-matching is different from *affirmation* and *Confirmation*, which should take place as soon as possible after the execution of a transaction at the start of the post-trade process and are intended to verify the terms and conditions of the transaction, whereas trade-matching takes place just before settlement near the end of the post-trade process and is narrower in scope than affirmation and Confirmation as it only verifies the information needed for settlement.

trade repository	A specialised institution, part of the infrastructure of the over-the-counter (OTC) market, to which market users report the details of their transactions in a particular instrument or class of instruments and/or the resulting positions, typically to satisfy regulatory requirements (e.g. the EU Securities Financing Transaction Regulation or SFTR). The repository validates, matches and stores these data and provides access to supervisors and certain other official agencies to assist the regulation of individual firms, the supervision of markets and the monitoring of systemic risk. The repository may also publish aggregated statistics in order to enhance market transparency for users.
Transaction Exposure	In the *GMRA*, this is the difference between the *Repurchase Price* (adjusted by any *initial margin*) on the date of the calculation and the *Market Value* of the collateral (adjusted by any *haircut*) on the same day. In other words, Transaction Exposure measures the current uncollateralized credit exposure of one party to another on an individual *repo.* See GMRA 2000 paragraph 2(ww) and GMRA 2011 paragraph 2(xx).
transfer of title	The transfer of the full property rights to an asset from one party to another. The result is that the new owner has the unfettered right to do what he wishes with the asset and the right to receive any and all benefits of ownership (e.g. coupons). In repo, transfer of title takes place through a true sale of the asset. Cf *security interest.*
tri-party repo	A *Repurchase Transaction* in which a third-party agent (who is the *custodian bank* or *CSD* for both parties) undertakes the settlement, custody and post-trade management of the transaction. Settlement is made by book-entry transfers between accounts on the books of the agent and so avoids the cost of settling across a *securities settlement system* but ensures a change of control and possession. The services of tri-party agents include the automatic selection of *collateral* from the account of the *Seller*, subject to the collateral eligibility criteria, concentration limits and *haircuts* or *initial margins* pre-defined by the *Buyer*; variation margining; management of *manufactured payments;* and the 'optimisation' of collateral. The most common type of optimisation is ensuring that the collateral held by the Buyer is always of the lowest quality acceptable to the Buyer (this means the Seller is making the most efficient use of his collateral, while the Buyer is earning the highest return). Optimisation is achieved by substituting existing collateral with new collateral whenever the Seller purchases a security of lower but still acceptable quality. The tri-party agent will also substitute when the Seller wishes to sell a security that has been repoed out as collateral, or when collateral is no longer acceptable to the Buyer (e.g. because of a ratings downgrade), or when collateral is due to make an coupon, dividend or other income payment that might cause tax problems or when there is a corporate action. Because the collateral is selected by the agent, tri-party repo can only be used for funding and not for borrowing or lending specific securities. In other words, tri-party repo is *GC repo.* Tri-party repos are governed by a combination of a bilateral *master agreement* plus terms and conditions agreed with the tri-party agent. Cf *delivery repo* and *HIC repo.*

two weeks	The term from and including the value date of a transaction up to but excluding a maturity date 14 days later or if that day is not a *Business Day*, the next Business Day thereafter. If the next Business Day is in the next calendar month, it still becomes the maturity date. In other words, a following business day convention applies, not the *Modified Following Business Day Convention.*
three weeks	The term from and including the value date of a transaction up to but excluding a maturity date 21 days later or if that day is not a Business Day, the next *Business Day* thereafter. If the next Business Day is in the next calendar month, it still becomes the maturity date. In other words, a following business day convention applies, not the *Modified Following Business Day Convention*.
variation margin	The term often applied to a cash payment or delivery of collateral made by one party in response to a call by the other to eliminate a material uncollateralized credit exposure between them. Called a *Margin Transfer* in the *GMRA.* Margin Transfers can be made in *Cash Margin* or *Margin Securities* or both. Under the GMRA, either party is entitled to call for a Margin Transfer to eliminate a *Net Exposure.* Instead of a Margin Transfer, it is also possible under the GMRA to trigger the alternative mechanisms of *Repricing* or *Adjustment.* Margin Transfers and the alternative mechanisms are part of the process known in the GMRA as *Margin Maintenance.*
voice-broker	An agent who matches parties, typically financial intermediaries, who wish to transact financial instruments. The voice-broker collects prices from customers willing to quote and broadcasts the best bid price and the best offer price back and an indication of amounts to all his customers, without revealing who is quoting these prices (pre-trade anonymity). When genuine interest is expressed in one of these quotes, the voice-broker puts the party expressing interest in touch with the party quoting (‘name give-up’) and if they are acceptable names to each other, the two parties settle the transaction between themselves. The voice-broker is not a principal intermediary in the transaction and earns a commission rather than a bid/offer spread. Although voice-brokers originally broadcast prices over dedicated loudspeaker systems installed in customers’ offices, they now tend to broadcast prices on dedicated screens carried by market information vendors. Voice-brokers are a significant but declining part of the repo market in Europe.

Appendix VI

THE GENERIC FUNCTIONAL ORGANIZATION OF FIRMS TRADING REPOS

Front office	Trading	Funding & short-covering of firm's cash transactions & customer orders. Decisions to terminate open repos. Selection of collateral for allocation to GC repos & variation margin. Decisions to substitute collateral. Allocation of collateral across (I)CSDs.
	Sales	Funding & short-covering of customer orders.
	Treasury	Liquidity management (of shortfalls & surpluses) using unsecured & FX swap markets.
Operational middle office	Trader support	Sending, receiving & checking confirmations; resolving confirmation mismatches; affirmation of selected transactions. Reporting primary dealer activity to DMOs
	Trader assistance	Executing substitutions of collateral & termination of transactions at request of front office.
	Margin team	Variation margin calculation & transfers; resolving margin disputes.
	Product control	Forecasting P&L, comparing to actual outturn; reconciling differences.
	Financial control	Forecasting payments of cash & deliveries of collateral; comparing to actual outturn; reconciling differences.

Back-office	Income collection: coupons	Notification of income payments on collection; sending, receiving & reconciling payments.
	Income collection: corporate actions	Responding to corporate action notices.
Other	Risk management function	Setting & monitoring market risk limits.
	Credit department	Setting & monitoring credit risk limits.
	Regulatory reporting	Reporting to the regulator.
	Accounting	Compiling the general ledger.
	Compliance	Ensuring conformity with law, regulation & internal policies.
	Internal audit	Confirming the efficacy of policies, procedures, systems & records.

ABOUT THE AUTHOR

Richard Comotto has been Senior Visiting Fellow at the ICMA Centre at the University of Reading in England since 1999, consultant to the International Capital Market Association (ICMA) and its European Repo and Collateral Council (ERCC), and a technical expert to the International Monetary Fund and other international financial institutions on money market and repo market development as well as to Frontclear. Richard has advised and trained in Armenia, China, Egypt, Hong Kong, India, Indonesia, Malawi, Nigeria, Philippines, Russia, Rwanda, Singapore, South Africa, Tanzania, Uganda, Vietnam and Zimbabwe as well as in Europe and the US. He has worked with Frontclear in Georgia, Ghana, Honduras, Kenya, Mongolia, Tanzania, Uganda and Zambia, and has published a study for Frontclear on exchange-traded repo. Richard is author of the ICMA's Repo FAQs and Guide to Best Practice in the European Repo Market, course director for the ICMA's Professional Repo Market Course and ICMA-ISLA GMRA-GMSLA Legal and Documentation Workshop, and Director of the ICMA semi-annual survey of the European repo market. Richard also acts as an independent consultant providing research, support and training on the institutional money, securities and derivatives markets to a wide range of clients, including professional market associations, government agencies, regulatory authorities, multilateral development banks, banks, brokers and information services, both in the City of London and outside the UK. Special interests include securities financing, collateral management and electronic trading in OTC markets. He served for 10 years in the Bank of England, including the Bank's Foreign Exchange Division and on secondment to the IMF in Washington DC.

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