CHAPTER 6

REVENUE

This chapter will help you to:

- understand the nature, definition and types of revenue
- deal with the measurement of revenue
- deal with the recognition of sales of goods, rendering of services, interest, royalties, and dividends
- apply the disclosure requirements of Section 23 *Revenue* in MPERS, and
- to appreciate some emerging issues of revenue accounting.

6.1 Nature, Definition and Types of Revenue

Revenue is usually the first line item in the statement of comprehensive income of reporting entities. It represents income of various types that are earned in an accounting period. The types of income that can be grouped and presented under revenue depend upon the nature of the entity's operations. The more common types are revenues from sale of goods and from rendering of services. However, it may also include rental income (of hotel operations), interest income (of financial institutions), royalties, commissions and dividends. Revenue thus represents the gross inflow of cash, receivables or other considerations arising in the ordinary activities of an entity. The ordinary activities of an entity are any activities which are undertaken by an entity as part of its business and such related activities in which the entity engages in furtherance of, incidental to, or arising from those activities.

In the case of a single entity, the identification of "what" constitutes revenue is usually not a problem in practice. For example, in the case of a trading company, revenue will represent sales of goods and rendering of services as these are activities in its ordinary course of business. For such companies, a sale of a property would not be classified as revenue as it is not part of its ordinary activities (the gain or loss arising from the sale of property would be reflected separately in its profit or loss). However, for a property developer, sales of properties would be its revenue as they are activities within the ordinary course of business of a developer. Likewise, interest income is not treated as part of revenue for most entities (but shown separately as interest income), but in the case of banks and financial institutions, interest income is the main source of revenue.

In the case of a group or of an entity with diversified operations, the identification of revenue items may pose some difficulties. For example, a group with operations in trading, property and finance sectors may include various types of revenues, such as sale of goods, sales of properties as well as interest income. Yet within the group, an item such as interest income which is revenue for a finance subsidiary will not be revenue for a property subsidiary. In such cases, the aggregation of items to be included as revenue for the group would depend upon the classification of revenues accorded to each subsidiary. In other words, the revenues of the companies in a group are consolidated as they stand in their respective income statements.

For private entities, Section 23 *Revenue* of MPERS prescribes the accounting treatments of revenue arising from certain types of transactions and events. The Standard identifies the circumstances in which the criteria for revenue recognition are met. It also provides guidance on the application of those criteria.

The Standard defines revenue as the gross inflow of economic benefits during the period arising in the course of the ordinary activities of an entity when these inflows result in increases in equity, other than increases relating to contributions from equity participants. The scope of the Standard covers revenue arising from:

(a) the sale of goods
(b) the rendering of services
(c) construction contracts in which the entity is the contractor, and
(d) the use by others of entity's assets yielding interest, royalties and dividends [MPERS S23.1].

6.2 Measurement of Revenue

MPERS prescribes that revenue shall be measured at the fair value of the consideration received or receivable [MPERS S23.3]. The fair value of the consideration received or receivable takes into account the amount of any trade discounts, prompt settlement discounts and volume rebates. For example, a sale transaction with a gross invoiced amount of RM100,000 and a trade discount of 10% shall be recorded at sales revenue of RM90,000.

An entity shall include in revenue only the gross inflows of economic benefits received and receivable by the entity on its own account. An entity shall exclude from revenue all amounts collected on behalf of third parties such as sales taxes, goods and services taxes (GST) and value-added taxes. In an agency relationship, an entity shall include in revenue only the amount of its commission. The gross amounts collected on behalf of the principal are not revenue of the entity.

Where transactions, such as sales of goods and rendering of services, have been conducted at arm's length and in a competitive free market exchange, the measurement of revenue is usually straightforward by reference to the agreed price or consideration. This will usually consist of cash and cash equivalents received or receivable. In other circumstances, it may be necessary to apply the substance over form consideration to measure the amount of revenue to be recognised. These circumstances include:

(a) transactions which are exchange of non-cash assets such as barter trades
(b) deferred considerations which are in substance financing arrangements, and
(c) transactions which are combination of sales and services, such as a franchise arrangement.

6.2.1 Barter Trades — Exchanges of Goods and Services

MPERS requires that an entity shall not recognise revenue: (a) when goods or services are exchanged for goods or services that are of a similar nature and value, or (b) when goods or services are exchanged for dissimilar goods or services but the transaction lacks commercial substance.

Where the transaction consists of exchanges of non-cash assets, such as a barter arrangement, revenue shall be measured at the fair value of the non-cash assets received or receivable, adjusted for the amount of any cash and cash equivalents transferred. It is, however, important to note that in such circumstances, revenue can only be recognised if it has been earned or realised, and not a mere transfer of assets. For example, a transaction involving a transfer of goods to a third party and receiving in exchange similar goods from the third party to the equivalent value of goods transferred, shall not be recognised as a sales revenue (in which case, it shall be adjusted in the stock account, by decreasing the amount for the goods transferred and increasing the amount for goods received). However, when the goods are sold or services are rendered in exchange for dissimilar goods or services, the exchange is regarded as a transaction which generates revenue.

Example 1

A Sdn Bhd transferred to B Sdn Bhd trading stocks with a cost of RM80,000 for an invoice amount of RM100,000. In return, A Sdn Bhd received from B Sdn Bhd similar trading stocks at a cost of RM90,000 and can be sold at a retail price of about RM110,000. Apart from the exchange of stocks, A Sdn Bhd paid cash of RM10,000 to B Sdn Bhd.

Required

Explain whether the above barter transaction can be recognised as revenue by A Sdn Bhd. Also, show the journal entries to record the above transaction in the accounts of A Sdn Bhd.

Solution 1

In this case, the transaction shall be treated as a mere transfer of stocks and not as a realised sale transaction, because it involves giving up one class of stocks and receiving another similar class of stocks, both of which are for the purpose of A Sdn Bhd's trading operations. The journal entry to record the transaction, assuming a perpetual stock system, would be as follows:

	RM	RM
Dr Stock (new) account	90,000	
Cr Stock (old) account		80,000
Cr Cash account		10,000

However, if the transaction is in the nature of a sale to the third party for which cash or cash equivalents would have been received or receivable, but the entity chooses to receive the consideration in non-cash assets including stocks, the consideration in the form of non-cash asset shall be recognised as revenue on the basis of their fair value.

Example 2

Assume in Example 1 that the transaction represents a sale of goods to B Sdn Bhd, but B Sdn Bhd pays for the goods by transferring to A Sdn Bhd a machine with a fair value of RM100,000.

Required

Explain how the transaction shall be recognised and show the journal entry in the accounts of A Sdn Bhd.

Solution 2

In this case, A Sdn Bhd shall recognise the transaction as sales revenue because the barter trade is for a dissimilar asset. The amount of revenue shall be measured at the RM100,000 fair value of the machine received. The journal entry, assuming a perpetual stock system, would be as follows:

	RM	RM
Dr Machinery account under fixed asset	100,000	
Cr Sales revenue		100,000
Dr Cost of goods sold	80,000	
Cr Stock account		80,000

Sometimes, it may be more difficult to measure reliably the fair value of the non-cash assets received. In such circumstances, revenue may be better measured by reference to the fair value goods sold or services provided. Fair value of the goods sold or services provided shall be based on the selling prices for goods and services.

Example 3

X Sdn Bhd sold goods with a cost of RM100,000 to Y Sdn Bhd at an invoice amount of RM140,000. In payment for the goods received, Y Sdn Bhd transferred to X Sdn Bhd non-cash assets worth about the invoice amount, the fair value of which cannot be determined reliably. The normal selling price of X Sdn Bhd's goods is 50% mark-up on cost.

Required

Explain how the transaction shall be recorded and show the journal entry in the accounts of X Sdn Bhd.

Solution 3

In this case, the transaction shall be recognised as sales revenue and the amount shall be based on the normal selling price less trade discount given. Note that based on the normal selling price, the amount of revenue would have been RM150,000. The difference between this amount and the actual invoice value shall be deemed as a trade discount. Thus, the journal entries would be as follows:

	RM	RM
Dr Sundry assets	140,000	
Cr Sales revenue		140,000
Dr Cost of goods sold	100,000	
Cr Stock account		100,000

6.2.2 Deferred Consideration

Deferred considerations are common for entities which provide credit to customers who buy goods on credit, such as goods purchased under instalment plan or a hire purchase transaction. If the consideration is deferred beyond the normal credit term, the transaction constitutes in effect constitutes a financing component. In such cases, it is necessary to split up the total consideration receivable into revenue from the sale of goods and the interest income for the financing provided. The fair value of revenue from the sale of goods may be measured by discounting all future receipts using an implicit rate of interest in the arrangement. Alternatively, the equivalent cash sales price may be used if this is clearly the more evident. This revenue shall be recognised based on the normal requirement for sale of goods. The interest income can be measured as the difference between the total consideration receivable and the fair value of the sales revenue; and this income shall be spread over the financing period.

Example 4

MNO Sdn Bhd sold a stock item with a cost of RM50,000 to PQR Sdn Bhd on 1 January 19x6. The terms of the sale include a five yearly instalments of RM15,000 each payable at the end of each year. The cash selling price of the stock is RM60,000.

Required

Explain how the transaction above shall be recognised in the accounts of MNO Sdn Bhd.

Solution 4

The total consideration receivable is RM75,000 [ie RM15,000 × 5 years]. The cash selling price of the stock item is RM60,000 and may be used to measure the revenue from the sale of goods. Thus, the difference of RM15,000 shall be treated as deferred interest income and recognised in the income statement over the five-year period using an appropriate basis such as the effective interest rate method. The journal entries to recognise revenue would be as follows:

	RM	RM
Dr Trade receivables account	60,000	
Cr Sales revenue		60,000
Dr Cost of goods sold	50,000	
Cr Stock account		50,000

The interest rate that equates the present value of the future cash payments and the selling price of the stock is 7.93% (ie the IRR in the present value equation). At the end of each year, over the five-year period, interest income is recognised at this effective interest rate, and the amount in each year and the balance of the receivable at the end of each year will be as follows:

Trade Receivable

Year	Opening amount	Interest income at 7.93%	Payment received	Closing amount
	RM	RM	RM	RM
1	60,000	4,758	(15,000)	49,758
2	49,758	3,946	(15,000)	38,705
3	38,705	3,070	(15,000)	26,774
4	26,774	2,123	(15,000)	13,898
5	13,898	1,102	(15,000)	–
		15,000	(75,000)	

6.2.3 Combination of Sales of Goods and Rendering of Services

Transactions which combine sale of goods and rendering of services include sale of computer software plus free after-sale services and technical support, franchise arrangements which cover initial supply of equipment and continuing services, and sale of goods which provide for free after-sale services for some specified periods. Under such circumstances, it is necessary to split up the transactions into two separate components: one for the sale of goods and the other for the services to be rendered, and to account for them separately.

The amount to be allocated to revenue for the services to be provided may be measured at the expected costs of that service plus a reasonable profit on that service, and this revenue is recognised based on an entity's policy for service revenue recognition (which is usually based on the percentage of completion method). The difference between the fair value of the total consideration and the amount recognised for service revenue is the revenue from the sale of goods.

Example 5

W Sdn Bhd enters into a franchise arrangement with X Sdn Bhd for the latter to use and market its patented fried chicken products. The arrangement calls for payment of RM10m upfront to cover initial supply of equipment plus technical support and services for five years.

It is difficult to estimate precisely the value of the technical support and services because W Sdn Bhd products are unique and there is no market equivalent service prices of this nature. However, estimates of the cost to provide the technical support and services, based on the company's similar franchise arrangements in the past, is about RM2m and it is considered that a 50% mark-up on cost is a reasonable profit for services.

Required

Explain how the RM10m franchise fee shall be recognised as revenue in the accounts of W Sdn Bhd.

Solution 5

The fair value of the service revenue shall be measured first. In this case, it can be measured by reference to cost plus a reasonable profit, ie RM2m + RM1m = RM3m. This service revenue of RM3m will be recognised progressively over the five-year period by reference to the stage of completion of the services provided. The difference of RM7m (ie RM10m - RM3m) shall represent revenue from the sale of the franchise equipment.

6.2.4 When there are Measurement Uncertainties

The measurement issue also affects the timing of revenue recognition as revenue must be reliably measured before it can be recognised. When there are uncertainties relating to the measurability of the amount of revenue arising from a transaction, revenue recognition shall be postponed until the uncertainties are resolved. Circumstances of uncertainties relating to the measurement of revenue may include the following:

- Consideration — when consideration is not determinable within reasonable limits, the recognition of revenue shall be postponed
- Costs (including warranties) — when costs and warranties cannot be reasonably determined, revenue recognition shall be postponed. Note that if these costs can be determined reasonably and accrued for, revenue recognition is not postponed, and
- Returns — where an entity is exposed to significant and unpredictable amounts of goods being returned, revenue recognition shall be postponed. Note that if the returns are significant but predictable, adequate provision for the returns shall be made and thus it is not necessary to defer revenue recognition.

6.3 Identification of the Transaction

6.3.1 Separating the Components in a Single Transaction

The revenue recognition criteria are usually applied separately to each transaction. However, in some circumstances, it may be necessary to assess whether a single transaction consists of identifiable components, which may require separate recognition criteria to be applied to each identifiable component in the transaction. For example, in the case of a transaction that involves both sale of equipment and providing continuing services for a specified period, it is usually necessary to split up the component of sale of equipment from the servicing component and account for them separately. The sale component is recognised based on the criteria for sale of goods while the servicing component is recognised based on the criteria for rendering of services. The latter may require that the sale proceeds allocated to the servicing component be deferred and recognised as revenue over the period of the service using the percentage of completion method. Another example is sale, as a package, of a set of mobile phones with free usage time for a specified period.

Example 6

Bagus Engineering Sdn Bhd enters into an agreement to sell heavy equipment to Lakun Dam Sdn Bhd. The agreement requires Bagus to install and commission the heavy equipment to a dam currently under construction by Lakun. The installation and commissioning is a significant part of the agreement. Also, Bagus is required to service the equipment for a period of three years from the date of completion of the installation and commissioning.

The total consideration in the agreement is RM50m payable upon completion of the installation and commissioning. Bagus estimates that the costs of the heavy equipment, installation and commissioning, and rendering of services are RM25m, RM5m and RM10m, respectively. A 40% mark-up on costs is considered a fair basis to allocate revenue to the installation and commissioning, and the service components.

Required

Explain how Bagus Engineering Sdn Bhd shall account for revenue from the transaction.

Solution 6

Although the agreement is a single transaction, it has three identifiable components, namely, the sale of equipment, the installation and commissioning, and the rendering of services. Bagus shall therefore allocate the total consideration receivable into the three identifiable components in a reasonable and fair manner. One such basis of allocation is to estimate the cost plus a reasonable profit for each of the components of installation and commissioning and rendering of service, and the balance allocated to the sale of goods component. For example, if a 40% mark-up on costs is considered as fair, the allocation may be made as follows:

Component	Estimated costs	40% mark-up	Revenue allocated
	RM	RM	RM
Installation and commissioning	5,000,000	2,000,000	7,000,000
Services	10,000,000	4,000,000	14,000,000
Sale of equipment	25,000,000	–	29,000,000
Total	40,000,000		50,000,000

The installation and commissioning revenue shall be recognised by the percentage of completion method over the period of installation and commissioning. Similarly, the service revenue shall be recognised using the percentage of completion method over the service period. The revenue from the sale of equipment is recognised when the recognition criteria for sale of goods are met (which may be at the point of delivery of the equipment or when the installation or commissioning is completed, depending upon the terms of the agreement).

6.3.2 Customer Loyalty Programmes

MPERS has requirements on customer loyalty programmes which are similar to IC Interpretation 13 *Customer Loyalty Programmes* in the MFRS Framework. This Interpretation applies to an entity that grants to its customers as part of a sales transaction, award credits or points which may, subject to meeting any further conditions, be used to redeem for free or discounted goods or services.

The programmes operate in a variety of ways. Some programmes require customers to accumulate a specified minimum number or value of award credits before they are able to redeem them. Other programmes link the award credits to individual purchases or group of purchases, or to continued custom over a specified period. The entity may operate the customer loyalty programme itself or participate in a programme operated by a third party. The awards offered may include goods and services supplied by the entity itself and/or rights to claim goods and services from a third party.

Award credits are incentives provided to customers to buy goods and services. To qualify as award credits within the scope of this Interpretation, there must be a preceding sales transaction. Thus, discount vouchers and other incentives given to potential customers to attract sales are not award credits.

For example, if a customer purchases RM10,000 worth of goods and is given 100 points that can be used to redeem free equivalent goods of RM1.50 per point, what should be the appropriate accounting treatments?

One possible approach is to recognise the entire RM10,000 as revenue and cost of redeeming the 100 points recognised separately as a provision (liability). Another approach is to treat the sales transaction as having two distinct or identifiable components, the first component is the sale of goods worth RM9,850 and the second component is the award credits of RM150 recognised as a deferred income (liability) until they are redeemed by the customer.

Like IC Interpretation 13, MPERS takes the distinct components approach by requiring that an entity shall apply this Section and account for the award credits as a separately identifiable component of the sales transaction(s) in which they are granted (the initial sale). The fair value of the consideration received or receivable in respect of the initial sale shall be allocated between the award credits and the component of sale.

The consideration allocated to the award credits shall be measured by reference to their fair value, ie the amount which they could be sold separately. For example, in the above case, if the 100 points can be used to redeem equivalent goods worth RM1.50 per point (the selling price of the equivalent goods) the fair value of the total award credits is 100 × 1.50 = RM150. If the fair value is not directly observable, it must be estimated. For example, if the 100 points granted in the above case have no stated value of redemption but they can be used to redeem a range of goods and services, their fair value is not directly observable and must therefore be estimated.

An entity may estimate the fair value of award credits by reference to the fair value of the awards for which they could be redeemed. The estimate of the fair value of award credits shall be made by reference to the fair value of the awards for which they could be redeemed. The fair value of the awards takes into account:

(a) the amount of the discounts and incentives that would otherwise be offered to customers who have not earned award credits from an initial sale, and

(b) the proportion of award credits that are not expected to be redeemed by customers.

If the entity supplies the awards itself, it shall recognise the consideration allocated as revenue when the credit awards are redeemed and it fulfils its obligation to supply awards. The amount of revenue recognised shall be based on the number of award credits that have been redeemed in exchange for awards relative to the total number expected to be redeemed.

Example 7

A grocery retailer grants 100,000 points for customers who purchase goods totalling RM10,000,000 for the month of January 20x1. The management estimates that each point can be redeemed for RM1.25 equivalent groceries. However, it expects that only 80,000 points to be redeemed.

The fair value of each point is RM1.25 × 80,000 / 100,000 = RM1.00.

It defers recognition of revenue of RM100,000. It records the following journal entry:

	RM	RM
Dr Cash	10,000,000	
Cr Revenue		9,900,000
Cr Deferred award credits		100,000

Assume that in the first quarter ended 31 March 20x1, 40,000 points are redeemed in exchange for groceries. Thus, the entity recognises revenue of 40,000 / 80,000 × RM100,000 = RM50,000. The journal entry would be:

	RM	RM
Dr Deferred award credits	50,000	
Cr Revenue		50,000

The balance in the deferred award credits is RM50,000.

Suppose in the second quarter, management revises its estimate and now expects 90,000 points to be redeemed altogether. During the second quarter, 41,000 are redeemed (total to date is 81,000 points). The cumulative revenue the entity recognises is 81,000 / 90,000 × RM100,000 = RM90,000. Thus, the entity recognises revenue of RM40,000 in the second quarter.

If customers can choose from a range of different awards, the fair value of the award credits will reflect the fair values of the range of available awards, weighted in proportion to the frequency with which each award is expected to be selected.

Example 8

For the quarter ended 31 March 20x1, a hotel operator grants customers who have stayed in the hotel a total of 5,000,000 points which can be used to redeem "free stay", free food and beverage, and/or free spa treatment.

The terms of the redemption are as follows:

	No of points for redemption	Normal selling price RM
Free one-night stay	2,000	400
Free food & beverage	1,000	100
Free spa treatment	1,500	180

Based on the operator's past experience, there is a 40% probability that customers will opt for the free one-night stay and a 30% probability for each of the other two awards. It further estimates that 20% of the customers will not redeem their award credits.

The fair value of each point in the award credits is calculated as follows:

(400 / 2,000) × .40 + (100 / 1,000) × .30 + (180 / 1,500) × .30 = RM0.146 per point.

At the end of the first quarter, it defers revenue recognition attributable to the award credits of 5,000,000 × .146 × 80% = RM584,000.

If a third party supplies the awards, the entity assesses whether it is collecting the consideration to the award credits on its own account (ie as the principal in the transaction) or on behalf of the third party (as an agent for the third party). In which case:

(a) if the entity is collecting the consideration on behalf of the third party, it shall:

  (i) measure its revenue as the net amount retained on its own account, ie the difference between the consideration allocated to the award credits and the amount payable to the third party for supplying the awards, and

  (ii) recognise this net amount as revenue when the third party becomes obliged to supply the awards and entitled to receive consideration for doing so. These events may occur as soon as the award credits are granted. Alternatively, if the customer can choose to claim awards from either the entity or a third party, these events may occur only when the customer chooses to claim awards from the third party.

For example, an entity grants 1,000 points to a customer from an initial sale of RM10,000 and each point has a fair value of RM0.50. The points can be redeemed by the customer from a third party. The entity collects the consideration for the points on behalf of the third party.

In this case, the entity records the initial sales transaction as follows:

	RM	RM
Dr Cash	10,000	
Cr Revenue		9,500
Cr Payable to third party		500

(b) If the entity is collecting the consideration on its own account, it shall measure its revenue as the gross consideration allocated to the award credits and recognise the revenue when it fulfils its obligations in respect of the awards.

6.3.3 Combining Multiple Transactions into a Single Transaction

In other circumstances, when two or more transactions are closely related or linked in such a way that the commercial effect cannot be understood without reference to the series of transactions as a whole, it may be necessary to combine the transactions into a single transaction when applying the revenue recognition criteria. For example, an entity may sell an asset and, at the same time, enters into a separate agreement to repurchase the asset at a later date, thus negating the substantive effect of the transaction. In such cases, the two transactions shall be dealt with together.

Example 9

A property developer sells a completed property to a customer for a consideration of RM50m. The price is based on the current market value of the property. The developer immediately enters into an agreement to buy back the property at the end of Year 2 for a price of RM58.32m (calculated at RM50m compounded at 8% per annum for two years).

Required

Explain how the property developer shall account for the sale of the property above.

Solution 9

In this case, the commercial effect of each transaction (the sale and the subsequent buy back) cannot be understood without reference to the two transactions as a whole. Therefore, they shall be assessed as a single transaction.

The arrangement as a whole provides for a return of capital at 8% per annum to the customer. In effect, the customer is lending money to the property developer as risks and rewards incident to ownership are retained by the property developer. For example, if the property value were to drop below RM50m, the developer is still obliged to pay the customer the agreed buy-back price. Accordingly, the transaction as a whole shall be viewed as financing arrangement. Thus, no revenue shall be recognised. Instead, the consideration received shall be treated as a form of borrowing (a financial liability) with interest at 8% per annum.

6.4 Timing of Revenue Recognition

The timing issue is basically concerned with when revenue shall be recognised in the statement of comprehensive income. In accordance with the accrual assumption, revenue shall be recognised when it is earned. Revenue is considered earned when it is realised (for example, in cash) or realisable (for example, in cash equivalents or other assets). The Standard explains that revenue is recognised when it is probable that future economic benefits will flow to the entity and the amount of these benefits can be measured reliably.

In most circumstances, the timing of revenue recognition can be made by reference to the agreement between the parties involved in the transaction. For example, revenue shall be recognised at the point in time when goods are delivered to a customer or when services are provided. However, where uncertainties concerning its ultimate collection exist, it may be necessary to defer the recognition of revenue until the uncertainties are resolved. In such cases, it may be more appropriate to recognise revenue on a cash basis.

Thus, the pre-requisite conditions for revenue recognition are that the revenue is measurable and that at the time of sale of goods or rendering of services, it would not be unreasonable to expect ultimate collection. If at the time of sale or the rendering of the service, it is unreasonable to expect ultimate collection, revenue recognition shall be postponed. These pre-requisite conditions of measurability and reasonable expectation of ultimate collection apply to all types of revenues, be it sale of goods, rendering of services or any other revenue.

In practice, it is more likely that at the time of sale of goods, ultimate collection would be reasonably expected, as the entity would not have made the sale had the ultimate collection been assessed as doubtful. Uncertainties surrounding ultimate collection are more likely to arise after the date of sale or the rendering of services. When the uncertainty arises about the collectability of an amount already recognised in revenue, the uncollectable amount, or the amount in respect of which recovery has ceased to be probable is recognised as an expense (for example, bad debt or doubtful debt expense), rather than an adjustment to the amount of revenue originally recognised.

6.5 Sales of Goods

MPERS requires that revenue from the sale of goods shall be recognised when all the following conditions have been satisfied:

(a) the entity has transferred to the buyer the significant risks and rewards of ownership of the goods

(b) the entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold

(c) the amount of revenue can be measured reliably

(d) it is probable that the economic benefits associated with the transaction will flow to the entity

(e) the costs incurred or to be incurred in respect of the transactions can be measured reliably [MPERS S23.10].

In most cases of sales of goods, the transfer of risks and rewards incident to ownership and the other criteria are satisfied at the same time when the legal title is transferred, which either results in or coincides with the passing of possession, or the transfer of risks and rewards of ownership to the buyer. For example, in the case of a retail sale transaction, the recognition criteria would have been met when the goods are handed over to the buyer. However, in other cases, the transfer of legal title may occur at a different time from the passing of possession or of the risks and rewards of ownership. For example, in the case of a good sold under hire purchase, the transfer of legal title will only occur after the final instalment has been paid by the buyer, but the risks and rewards of ownership are usually transferred at the time when the good is delivered to the buyer.

Also, in some other cases, it may be necessary to assess the circumstances of the transaction to determine whether risks and rewards have been transferred to the buyer. An entity may retain a significant risk of ownership in a number of ways. Examples of situations in which the entity may retain the significant risks and rewards of ownerships are:

(a) when the entity retains an obligation for unsatisfactory performance not covered by normal warranty provisions

(b) when the receipt of the revenue from a particular sale is contingent on the derivation of revenue by the buyer from its sale of the goods

(c) when the goods are shipped subject to installation, and the installation is a significant part of the contract which has not yet been completed by the entity, and

(d) when the buyer has the right to rescind the purchase for a reason specified in the sales contract and the entity is uncertain about the probability of return [MPERS S23.13].

In the circumstance when only an insignificant risk and reward of ownership is retained, the transaction is a sale and revenue is recognised. This includes circumstances when a seller retains the legal title to the goods sold solely to protect the collectability of the amount due, sales of goods subject to installation but the installation is a simple process (such as installation of a TV antennae that comes together with the sale of the TV set), sales of goods subject to returns (for example, money-back guarantee sales) but the returns can be estimated and provided for.

In some rare cases, significant uncertainties may exist at the point of sale concerning probable inflows of future economic benefits from a sale transaction. In such cases, when the inflows of future economic benefits are not probable, revenue is recognised only when the uncertainties are resolved. Where the uncertainties continue, revenue is recognised only when the consideration is received (ie recognised on the cash basis).

The Appendix to Section 23 provides examples for interpreting when risks and rewards have been transferred in some circumstances of sale of goods. These are summarised as follows:

Type of Sale Transaction	Revenue Recognition
1. "Bill and hold" sales in which delivery is delayed at the buyer's request but the buyer takes title and accepts billing.	When the buyer takes title, provided: (a) delivery is probable (b) item is on hand, identified and ready for delivery (c) buyer acknowledges the deferred delivery instruction, and (d) the usual payment terms apply.
2. Goods shipped subject to conditions of:	
(a) Installation and inspection.	When the buyer accepts delivery and installation and inspection are complete. Recognise immediately upon the buyer's acceptance when: (i) the installation is simple in nature, for example, installation of a factory tested television receiver, or (ii) the inspection is performed only for the purposes of final determination of contract prices, for example, shipments of oil, tin ore, sugar and soya beans.
(b) On approval when the buyer has negotiated for a limited right of return.	If uncertain about the possibility of return, revenue is recognised when the shipment has been formally accepted by the buyer or the goods have been delivered and the time period for rejection has lapsed.
(c) Consignment sales where the recipient (consignee) undertakes to sell the goods on behalf of the shipper (consignor).	When the goods are sold by the recipient (consignee) to a third party.
(d) Cash on delivery sales.	When delivery is made and cash is received by the seller or its agents.

Type of Sale Transaction	Revenue Recognition
3. Lay away sales where the goods are delivered only when the buyer makes the final payment in a series of instalments.	When the goods are delivered. When experience indicates that most such sales are consummated, revenue may be recognised when a significant deposit is received, provided the goods are on hand, identified and ready for delivery to the buyer.
4. Orders when payment (or partial payment) is received in advance of delivery of goods not presently held in inventory, for example, the goods are still to be manufactured or will be delivered directly to the buyer from a third party.	When the goods are delivered to the buyer.
5. Sale and repurchase agreements (other than swap transactions) where the seller concurrently agrees to repurchase the same goods at a later date, or when the seller has a call option to repurchase, or the buyer has a put option to require the repurchase, by the seller, of the goods.	Need to ascertain whether, in substance, the seller has transferred the risks and rewards of ownership to the buyer and hence revenue recognised. When the risks and rewards of ownership are retained, the transaction is a financing arrangement and does not give rise to revenue.
6. Sales to intermediary parties, such as distributors, dealers or others for resale.	When risks and rewards of ownership have passed. However, when the buyer is acting in substance as an agent, the sale is treated as a consignment sale.
7. Subscriptions to publications and similar items.	Straight-line basis over the period in which the items are despatched, for items of similar value in each period. Basis of the sales value of the item despatched in relation to the total estimated sales value of all items covered by the subscription, for items that vary in value from period to period.
8. Instalment sales, where the consideration is receivable in instalments.	At date of sale, revenue is recognised based on sale price. Sale price is the present value of instalments receivable, discounted at an imputed rate of interest (equivalent cash sale price may be used). Interest element is recognised as revenue as it is earned, using the effective interest method.

6.6 Rendering of Services

Services cover performance of contractually agreed tasks such as installation, consultation, service of architect, engineers, accountants, lawyers and other professionals, financial service such as a loan syndication, franchise, etc. In some cases, the performance of a service is a one-off transaction and generally short-term in nature. In other cases, the performance may stretch over several accounting periods.

6.6.1 Recognition of Service Revenue

An essential feature of any service contract is performance. Thus, revenue shall be recognised as the service is performed. MPERS requires that when the outcome of a transaction involving the rendering of services can be estimated reliably, revenue associated with the transaction shall be recognised by reference to the stage of completion of the transaction at the end of the reporting period. The outcome of a transaction can be estimated reliably when all the following conditions are satisfied:

(a) the amount of revenue can be measured reliably

(b) it is probable that the economic benefits associated with the transaction will flow to the entity

(c) the stage of completion of the transaction at the balance sheet date can be measured reliably

(d) the costs incurred for the transaction and the costs to complete the transaction can be measured reliably [MPERS S23.14].

The recognition of service revenue by reference to the stage of completion of a transaction is commonly referred to as the *percentage of completion method*. Under this method, revenue is recognised in the accounting periods in which the services are rendered. The stage of completion may be measured by a variety of methods and these include:

(a) surveys of work performed

(b) services performed to date as a percentage of total services to be performed, or

(c) the proportion that costs incurred to date bear to the estimated total costs of the transaction.

An entity shall select the method that measures reliably the services performed. Progress payments and advances received from customers often do not reflect the services performed.

Example 10

Information Management Sdn Bhd is a management company that provides consultancy services to its clients. On 1 January 20x2, it secured a contract to provide IT consultancy to one of its client for a period of three years. The total consultancy fee receivable is RM20,000,000. The costs of providing the service are mainly professional fees, staff costs, supplies and materials used and allocation of overheads. As at 31 December 20x2, the following costs incurred and costs estimate were made:

	RM'000
Costs incurred to date	5,000
Estimate of further costs to complete service	9,000

The company uses costs incurred as a basis to measure the stage of completion of a service contract.

Required

Determine the amount of service revenue that shall be recognised by the company for the year ended 31 December 20x2.

Solution 10

Stage of completion = Costs incurred to date / Estimated total costs

= RM5,000,000 / (RM5,000,000 + RM9,000,000)

= 35.71%

Therefore, the amount of revenue that shall be recognised is 35.7% × RM20,000,000 = RM7,142,000. The income statement would show the following result:

	RM
Consultancy fee revenue	7,142,000
Costs of service provided	(5,000,000)
Service profit	2,142,000

The estimated total profit is RM6,000,000 and based on a 35.71% completion as at 31 December 20x2, the amount of profit recognised can be reconciled as 35.71% × RM6,000,000 = RM2,142,000.

The percentage of completion method has been argued as more useful information because revenue is recognised based on the extent of service activity and performance during a period. It is thus a fairer method to reflect performance of services. However, there could be uncertainties surrounding the ultimate outcome, such as on the amount recoverable from the customers and the uncertainties on the cost estimates.

When services are performed by an indeterminable number of acts over a specified period of time, an entity recognises revenue on the straight-line basis over the specified period unless there is evidence that some other method better represents the stage of completion.

For example, an engineering entity enters into a transaction to provide a bundle of services to a customer. The bundle of services is not specified but based on the needs of the customer over three years. The number of acts cannot be determined at the inception of the contract. The total consideration over three years is RM3m. In this case, revenue is recognised on the straight-line basis of RM1m per year.

6.6.2 When the Outcome is Uncertain

The Standard requires that when the outcome of the transaction involving the rendering of services cannot be estimated reliably, revenue shall be recognised only to the extent of the expenses recognised that are recoverable [MPERS S23.16]. Thus, when the outcome of a service contract cannot be estimated reliably, no profit is recognised.

Example 11

Halia Engineering Sdn Bhd provides engineering services to its clients. For two of its engineering contracts (ie Contract A and Contract B), management has concluded that the outcome cannot be estimated reliably. The total fees receivable for Contract A and Contract B are RM10m and RM15m, respectively. For Contract A, the expenses incurred to date are RM2m, all of which are recoverable from the customer. For Contract B, expenses incurred to date totalled RM5m of which RM1m is not recoverable from the customer.

Required

Determine the amount of revenue that shall be recognised for Contract A and Contract B, and the corresponding profit or loss.

Solution 11

	Contract A	Contract B
	RM	RM
Service revenue	2,000,000	4,000,000
Expenses incurred	(2,000,000)	(5,000,000)
Profit/(loss)	nil	(1,000,000)

The Appendix A to Section 23 provides examples of revenue recognition for some services and these are summarised below:

	Type of Service	Revenue Recognition
1	Installation fees.	Recognised by reference to the stage of completion of the installation, unless they are incidental to the sale of a product, in which case, they are recognised when the goods are sold.
2	Servicing fees included in the price of a product.	An identifiable amount for subsequent servicing (eg after sales support and product enhancement of the sale of software) included in the selling price shall be deferred and recognised as revenue over the period during which the service is performed. The amount to be deferred shall cover the expected costs of the services under the agreement plus a reasonable profit on those services.
3	Advertising commissions.	Media commissions are recognised when the related advertisement or commercial appears before the public. Production commissions are recognised by reference to the stage of completion of the project.
4	Insurance agency commissions.	If the agent does not have to render further service, agency commissions are recognised on the effective commencement or renewal dates of the related policies. If it is probable that the agent will be required to render further services during the life of the policy, the commission, or part thereof, is deferred and recognised as revenue over the period during which the policy is in force.
5	Admission fees.	Revenue from artistic performances, banquets and other special events is recognised when the event takes place. When a subscription to a number of events is sold, the fee is allocated to each event on a basis which reflects the extent to which services are performed at each event.
6	Tuition fees.	Recognised over the period of the instruction.
7	Initiation, entrance and membership fees: (i) If the fee permits only membership, and all other services or products are paid for separately, or if there is a separate annual subscription. (ii) If the fee entitles member to services or publications to be provided during the membership period, or to purchase goods or services at prices lower than those charged to non-members.	The fee is recognised as revenue when no significant uncertainty as to its collectability exists. The fee is recognised on a basis that reflects the timing, nature and value of the benefits provided.

	Type of Service	Revenue Recognition
8	Franchise fees. These may cover the supply of initial and subsequent services, equipment and other tangible assets and know-how.	Recognised as revenue on a basis that reflects the purpose for which the fees were charged.
(a)	Supplies of equipment and other tangible assets.	The amount, based on the fair value of the assets sold, is recognised as revenue when the items are delivered or title passes.
(b)	Supplies of initial and subsequent services.	Fees for the provision of continuing services, whether part of the initial fee or a separate fee, are recognised as revenue as the services are rendered.
	(i) When the separate fee does not cover the costs of continuing services together with a reasonable profit.	Part of the initial fee, sufficient to cover the costs of continuing services and to provide a reasonable profit on those services, is deferred and recognised as revenue as the services are rendered.
	(ii) When franchise agreement provides for franchisor to supply equipment, inventories, or other tangible assets, at a price that does not provide a reasonable profit on those sales.	Part of the initial fee, sufficient to cover estimated costs in excess of that price and to provide a reasonable profit on those sales, is deferred and recognised over the period the goods are likely to be sold to the franchisee. The balance of the initial fee is recognised as revenue when performance of all the initial services and other obligations required by the franchisor has been substantially completed.
	(iii) Area franchise agreement covering a number of individual outlets.	Fees attributable to the initial services are recognised as revenue in proportion to the number of outlets for which the initial services have been substantially completed.
(c)	Continuing franchise fee.	Fees charged for the use of continuing rights granted by the agreement, or for other services provided during the period of the agreement, are recognised as revenue as the services are provided or the rights used.
(d)	Agency transactions.	Transactions between the franchisor and the franchisee, which in substance, involve the franchisor acting as agent for the franchisee. For example, the franchisor may order supplies and arrange for their delivery to the franchisee at no profit. Such transactions do not give rise to revenue.
9	Fees for development of customised software.	Recognised as revenue by reference to the stage of completion of the development, including completion of services provided for post-delivery service support.

6.7 Interest, Royalties and Dividends

Revenue arising from the use by others of entity assets yielding interest, royalties and dividends shall be recognised when:

(a) it is probable that the economic benefits associated with the transaction will flow to the entity, and

(b) the amount of the revenue can be measured reliably [MPERS S23.28].

The rationale for prescribing different treatments on borrowing costs for public and private entities is unclear. If public entities using the MFRS Framework are required to capitalise borrowing costs on qualifying assets, there is no justification to deny private entities using MPERS the same treatment.

CHAPTER 15

OTHER FINANCIAL INSTRUMENTS ISSUES

CHAPTER 15

OTHER FINANCIAL INSTRUMENTS ISSUES

This chapter will help you to:

- understand derivative instruments and the accounting for such instruments
- understand financial risks
- understand the basic principles of hedging and deal with hedge accounting, and
- apply the disclosure requirements on derivatives and hedge accounting.

15.1 Introduction — Scope of Section 12

This Chapter covers the requirements of Section 12 *Other Financial Instruments Issues* of MPERS that deals with other, more complex financial instruments and transactions that are not basic financial instruments. The main areas dealt with in this Section are derivative instruments, other complex instruments and hedge accounting. The Section would not be applicable if a private entity applying MPERS has only basic financial instruments, which are covered in Section 11.

15.1.1 Contracts to Buy or Sell Non-Financial Items

Most contracts to buy or sell a non-financial item such as a commodity, inventory or property, plant and equipment (PPE) are excluded from this Section 12 because they are not financial instruments. However, this Section applies to contracts that impose risks on the buyer or seller that are not typical of contracts to buy or sell tangible assets. For example, this Section applies to contracts that could result in a loss to the buyer or seller as a result of contractual terms that are unrelated to changes in the price of the non-financial item, changes in foreign exchange rates, or a default by one of the counterparties [MPERS S12.4].

Example 1

Entity K purchases crude palm oil (CPO) from plantation entities and processes the CPO into consumer products. On 30 November 20x8, Entity K has contracted to purchase 10,000 tonnes of CPO from various plantation entities, the price of which will be determined when the CPOs are delivered in three months' time. As at 30 November 20x8, the commitment date, the price per tonne of CPO is RM2,500. At 31 December 20x8, the company's year-end date, the price of CPO increases to RM3,200 per tonne. Based on the selling prices of the consumer products at year-end, Entity K estimates that there will be loss of RM300 per tonne of CPO when the CPOs are processed into finished consumer products and sold.

Although the contract to purchase CPO is not a financial item, it has become onerous at the end of the reporting period. Hence, Entity K shall recognise the loss as follows:

	RM	RM
Dr Loss on onerous contract in profit or loss	3,000,000	
Cr Provision for onerous contract (300 × 10,000)		3,000,000

– to recognise loss on an onerous contract.

15.1.2 Non-Financial Contracts with Net Settlement in Cash

This Section also applies to contracts to buy or sell non-financial items if the contract can be settled net in cash or another financial instruments, or by exchanging financial instruments as if the contract were financial instruments, with the following exception: contracts that were entered into and continue to be held for the purpose of the receipt or delivery of a non-financial item in accordance with entity's expected purchase, sale or usage requirements are not financial instruments for the purpose of this Section [MPERS S12.5].

There are various ways in which a contract to buy or sell a non-financial item can be settled net in cash or another financial instrument or by exchanging financial instruments. These include:

(a) when the terms of the contract permit either party to settle it net in cash or another financial instrument or by exchanging financial instruments

(b) when the ability to settle net in cash or another financial instrument, or by exchanging financial instruments, is not explicit in the terms of the contract, but the entity has a practice of settling similar contracts net in cash or another financial instrument, or by exchanging financial instruments (whether with the counterparty, by entering into offsetting contracts or by selling the contract before it is exercised or lapses)

(c) when, for similar contracts, the entity has a practice of taking delivery of the underlying and selling it within a short period after delivery for the purpose of generating a profit from short-term price fluctuations in price or dealer's margin, and

(d) when the non-financial item that is the subject of the contract is readily convertible into cash.

Example 2

If a manufacturing entity enters into a forward contract with a plantation entity to purchase 10 tonnes of CPO three-month forward, and it takes delivery of the CPO at the end of the three-month period for its usage in processing, the forward contract, though a commodity-based derivative, is not within the scope of derivative accounting in MPERS. Similarly, for a commodity producer that enters into forward contracts to sell its commodity forward and makes delivery of the commodity on maturity, such contracts are for the purpose of delivery of the commodity in accordance the entity's expected sale requirements and are thus outside the scope of MPERS. Note that although such forward contracts are outside the scope of MPERS, it may be necessary to assess whether any of such contracts has become onerous (where the eventual costs would exceed the benefits expected), and if so, recognise a provision (as explained in Example 1).

For commodity-based contracts that are cash-settled, they shall be accounted for as if they were financial instruments. This would typically apply to most commodity futures contracts. For example, if an entity enters into CPO futures contracts on the futures exchange to buy or sell CPOs, whether for trading or for hedging purposes, those contracts are accounted for as financial instruments, regardless of whether the CPO contracts traded are cash-settled contracts or physical delivery contracts.

For commodity forward contracts that an entity trades on and takes a short-term profit margin, they shall also be accounted as financial instruments within the scope of MPERS.

Example 3

An entity enters into a forward contract to purchase a commodity with a counterparty. It takes delivery of the commodity and within a short period sells the commodity forward to another counterparty. In this case, both the forward contracts to buy and to sell the commodity shall be accounted for as financial instruments notwithstanding that there is gross physical delivery of the underlying commodity. The exception applies only if the gross physical delivery is for the purpose of meeting the entity's expected purchase, sale or usage requirements.

15.2 Recognition Principles

The recognition requirement in this Section is the same as that applied for basic financial instruments, ie recognised a financial asset or a financial liability only when the entity has become a party to the contractual provisions of the instrument. As the principle for recognition is based on the rights and obligations approach, an entity recognises all of its derivative contracts on the date it enters into a contract with a counterparty.

For example, in a forward contract where there is no initial outlay, the entity recognises its rights and obligations in the contract even if the net fair value is nil. Recognition of a nil amount is conceptually different from no recognition because the fair value of the contract may change subsequently and the entity recognises the change in fair value in the contract in the subsequent remeasurement. With this requirement, all derivative contracts will be on-balance sheet (in the previous PERS framework derivatives were off-balance sheet).

15.2.1 Derivatives

Derivatives are instruments that derive their values from changes in values of their underlying primary instruments. A *derivative* as a financial instrument or other contracts:

(a) whose value changes in response to the change in a specified interest rate, security price, commodity price, foreign exchange rate, index of prices or rates, a credit rating or credit index, or similar variable (sometimes called the "underlying")

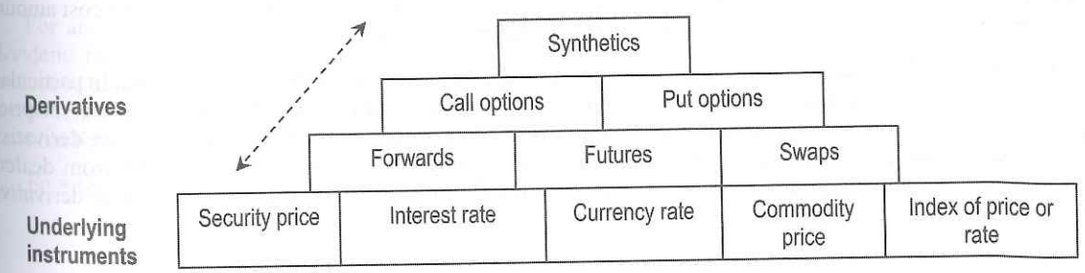
(b) that requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in the market conditions, and

(c) that is settled at a future date.

Derivative instruments create rights and obligations that have the effect of transferring one or more of the financial risks inherent in an underlying primary financial instrument. They do not necessary result in a transfer of the underlying primary financial instrument on inception of the contract and such a transfer does not necessarily takes place on maturity of the derivative instrument.

Examples of derivative instruments are forward contracts, futures contracts, swap contracts, option contracts, hybrid or synthetic instruments that combine options in swap contracts or other host contracts, such as caps, floors or collars in debt instruments.

The diagram below provides a simplified view of the building blocks to derivatives and financial instruments.



15.2.2 Financial Risks

In the study of this Section, an understanding of financial risks is crucial, particularly in the area of hedging and hedge accounting. *Financial risks* refer to the volatility or variability of the fair values or future cash flows of financial instruments. Financial risks are classified into the following types:

(a) *market risk*, which is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risks:
   (i) *currency risk*, which is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates
   (ii) *interest rate risk*, which is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates
   (iii) *other price risk*, which is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk or currency risk), whether those changes are caused by factors specific to the individual financial instrument or its issuer, or factors affecting all similar financial instruments traded in the market

(b) *credit risk*, which is the risk that one party to the financial instrument will cause a financial loss for the other party by failing to discharge an obligation

(c) *liquidity risk*, which is the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities.

15.3 Measurement Principles

15.3.1 Initial Measurement

When a financial asset or financial liability is recognised initially, an entity shall measure it at its fair value, which is normally the transaction price [MPERS S12.7]. In the absence of any evidence to indicate otherwise, an entity may presume that the transaction price is fair value. For example, the price paid to acquire a private debt instrument is presumed to be its fair value without having to subject it to a present value calculation.

Transaction costs are excluded in the initial measurement if the financial asset or financial liability is measured at fair value which changes in fair value recognised in profit or loss.

15.3.2 Subsequent Measurement

At the end of each reporting period, an entity shall measure all financial instruments within the scope of Section 12 at fair value and recognise changes in fair value in profit or loss, except as follows: equity instruments that are not publicly traded and whose fair value cannot otherwise be measured reliably, and contracts linked to such instruments shall be measured at cost less impairment [MPERS S12.8].

If a reliable measure of fair value is no longer available for an equity instrument that is not publicly traded but is measured at fair value through profit or loss, its fair value at the last date the instrument was reliably measurable is treated as the cost of the instrument, the entity shall measure the instrument at this cost amount less impairment until a reliable measure of fair value becomes available.

Thus, for non-basic financial instruments, the measurement preference is the fair value basis. In particular, all derivative instruments must be measured at fair value because they have active market prices or price quotations from dealers. In this Book, we provide some basic valuation techniques of common derivative instruments. In practice, a private entity applying MPERS may refer to the price quotations from dealers and the periodic valuations provided by counterparty bankers to determine the fair value of its derivative instruments.

15.4 Understanding Derivatives and Basic Derivative Accounting

15.4.1 Forward Contracts

A forward contract is a non-standardised contract between two parties to buy or sell an asset at a specified time in the future and at a price agreed today (ie on the origination date of the contract). There is no upfront payment or receipt on the date of the contract. The party that agrees to buy the underlying asset in the future assumes a long position while the party that agrees to sell the asset in the future assumes a short position. The price agreed upon is called the delivery price, which is equal to the forward price at the time the contract is entered into.

A forward contract can be on any underlying asset. The more common ones are forward contract on:

(a) an investment asset (such as gold, equity securities and bond securities)
(b) a consumption asset (such as jet fuel, crude oil and CPO, and metal)
(c) a foreign currency (such as a forward USD currency contract), and
(d) a reference interest rate (such as a forward rate agreement referenced to KLIBOR).

The relationship between the forward price and the spot price is explained by the "Spot-Forward Parity", as follows:

$Fo = So\ (1 + C)^T$ ---------- with simple compounding, or
$Fo = So\ e^{CT}$ ---------- with continuous compounding

Where: Fo is the forward price
So is the spot price
C is the cost of carry
T is the time to maturity, express in years or fraction of a year
e is the base of the natural logarithms = constant of 2.71828.

15.4.1.1 Forward Contract on an Investment Asset

For an investment that provides no income (for example, an equity share that pays no dividend), the cost of carry is the risk-free rate of return. Thus, $Fo = So\ (1 + Rf)^T$ or $Fo = So\ e^{RfT}$, where Rf is the risk-free rate of return, such as the quoted Treasury Bill rate with the same time period to maturity.

For example, if the current market price of a non-dividend paying equity share is RM10 and the six-month Treasury Bill is quoted at 4%, a six-month forward contract price of the equity share is determined as follows:

$Fo = 10\ (1.04)^{0.5} = 10.19804$ ---------- with simple compounding
$Fo = 10\ (2.71828)^{(.04)(0.5)} = 10.202$ ---------- with continuous compounding

For an investment asset that pays dividends, the dividend income is factored into the equation. If the dividend income to be paid on the investment asset is known, the present value of that discrete known income is subtracted from the spot price in the equations above. Intuitively, if an asset pays dividend, there are benefits for holding the asset rather than the forward. For example, using continuous compounding, the formula for Fo is:

$Fo = (So - D)\ e^{RfT}$ where D is the present value of the known dividend income.

However, if dividend income is not known in advance, the dividend yield (based on past dividend yield of the equity share) may be used. Thus, for a dividend paying investment asset, the forward price is as follows:

$Fo = So\ (1 + Rf - Y)^T$ ..... with simple compounding

Or

$Fo = So\ e^{(Rf - Y)T}$ ..... with continuous compounding

Where Y is the % annualised dividend yield.

On the maturity of a forward contract, the forward price would converge to the spot price. The forward price in the equation above, forms the basis for setting the agreed price (contracted price) in a forward contract at the contract date. As there is no cash exchange on the contract date, the fair value of the forward contact on contract date is nil. Subsequently, after the contract date, the fair value of the forward may change if the spot price changes. For example, the forward price of a six-month forward contract is agreed at Fo = RM10 $(1+.06 - .02)^{.5}$ = RM10.1980. If after three months, the spot price increases to RM10.50, the fair value of the forward contract per item is determined as follows:

FV of forward contract = $[10.50\ (1+.06 - .02)^{.25}]$ - [contracted price]
= 10.6035 - 10.1980 = RM0.4055

The fair value of RM0.4055 per item would be a gain to the buyer (long position) while the corresponding amount would be a loss to the seller (short position). The fair value calculation above ignores the effect of discounting for the time value of money. As the actual cash flows will only be paid at the agreed future date, the effect of discounting in the above valuation is FV = RM.4055 / $(1 + .06)^{.25}$ = RM.3996.

Thus, the formula for determining the fair value of forward contract on a dividend-paying investment at valuation date, time (t) is as follows:

$FVt = (Ft - Fo) / (1+Rf)^T$ ---------- with simple compounding
$FVt = (Ft - Fo)\ e^{-RfT}$ ---------- with continuous compounding

Where Ft = Forward price at time (t)
Fo = Contracted price

FVt = $[10.50\ (1 + .06 - .02)^{.25} - 10.1980] / (1 + .06)^{.25}$
= $[10.6035 - 10.1980] / (1.06)^{.25}$ = RM.3996
FVt = $0.4055\ (2.71828)^{-(.06)(.25)}$ = RM.4048

Example of forward contract on an investment asset

Example 4

Aman Bhd enters into a forward contract with Damai Bhd to purchase 1,000,000 shares of Solo Bhd in anticipation that the share price of Solo Bhd will rise in the next six months due to a reduction of gaming tax on Solo Bhd's operations.

The following information is available at the date of transaction:

(i)

Contract date	: 1 April 20x3
Maturity date	: 30 September 20x3
Share price of Solo Bhd	: RM3.00 per share
6-month risk-free rate	: 4% (annualised)

Dividend yield of Solo Bhd shares is 2% (annualised).

(ii) The financial year-end of Aman Bhd is 30 June 20x3.

(iii) Assume that the market price of Solo Bhd increases to RM3.10 on 30 June 20x3 and closes at RM3.30 on maturity date.

Required

(a) Compute the forward price of the forward contract on: (i) contract date, (ii) year-end date of Aman Bhd (30 June 20x3), and (iii) the maturity date. Also, determine the fair value of the forward contract (gain or loss) on 30 June 20x3 and 30 September 20x3.

(b) Assume a net cash settlement basis, record the accounting entries to account for the forward purchase.

(c) Show the journal entries required to record the forward purchase, assuming gross physical settlement.

Solution 4

(a) The fair value of the forward contract.

At 1 April 20x3 (contract date):

Forward price agreed, Fo = RM3.00 $(1 + 0.04 - 0.02)^{1/2}$ = RM3.030

Fair value of forward contract is nil.

At 30 June 20x3 (reporting date):

Forward price at time (t), Ft = RM3.10 $(1 + 0.04 - 0.02)^{1/4}$ = RM3.115

Fair value of forward contract = $(3.115 - 3.030) / (1.04)^{1/4}$ (1,000,000) = RM84,171.

At 30 September 20x3 (maturity date):

Forward price on maturity Ft = RM3.30$(1 + 0.04 - 0.02)^0$ = RM3.30

Fair value of forward contract = (3.30 - 3.03) (1,000,000) = RM270,000.

(b) Accounting entries to record the above transaction and events:

1 April 20x3:

On contract date, the forward contract has a nil fair value.

Fair value of forward recognised in the statement of financial position = Nil.

Note that one can also record the journal at a net nil amount as follows:

	RM	RM
Dr Forward Solo shares (derivative asset)	0	
Cr Forward liability		0

In this case, the principal amount of RM3,030,000 is recorded separately in a memorandum account. Note that in practice, it is not necessary to make a journal entry in the books when the net fair value of a derivative on initial recognition is nil.

30 June 20x3:

	RM	RM
Dr Forward Solo Shares (derivative asset)	84,171	
Cr Gain on Forward (profit or loss)		84,171

– to recognise gain on change in fair value of forward contract.

Forward contract in the statement of financial position (asset) = 84,171

30 September 20x3:

Dr Forward Solo Shares (derivative asset)	185,829	
Cr Gain on Forward (profit or loss)		185,829

– to recognise gain on change in fair value of forward contract.

Forward contact in the statement of financial position (asset) = 270,000

(b) Net cash settlement basis:

30 September 20x3 (on settlement):

Dr Cash	270,000	
Cr Forward Solo Shares (derivative asset)		270,000

– to record net cash settlement of forward contract.

(c) Gross physical settlement:

Dr Investments at FIFVPL	3,300,000	
Cr Cash		3,030,000
Cr Forward Solo Shares (derivative asset)		270,000

– to record purchase of investment and gross settlement of forward contract.

Example 5

Assume the same information as in Example above. The year-end of Damai Bhd is also 30 June.

Required

What would be the accounting treatment for Damai Bhd? Also, show the journal entries for the above forward contract.

Solution 5

1 April 20x3:

Forward sale contract is recognised at net fair value of nil.

Derivative on statement of financial position = nil

30 June 20x3:

	RM	RM
Dr Loss on forward contract in profit or loss	84,171	
Cr Forward Liability (Solo Shares)		84,171

– to recognise loss on forward contract.

Derivative in the statement of financial position (liability) = 84,171

30 September 20x3:

Dr Loss on forward contract in profit or loss	185,829	
Cr Forward Liability		185,829

– to record loss on forward contract.

Derivative in statement of financial position (liability) = 270,000

30 September 20x3 Net cash settlement:

Dr Forward Liability	270,000	
Cr Cash		270,000

– to record net cash settlement of forward contract.

30 September 20x3 Gross physical settlement:

Dr Forward Liability	270,000	
Dr Cash	3,030,000	
Cr Investment in Solo shares		3,300,000

– to record sale of investment and gross settlement of forward contract.

15.4.1.2 Forward Contract on a Consumption Asset

For consumption assets such as commodities, there are storage costs for holding the assets. The forward price of a consumption asset considers these storage costs as an additional cost of holding the asset because storage costs make the final price of the commodity higher.

The cost of carry is the sum of the risk-free rate and the storage costs. The forward price of a consumption asset is thus:

$Fo = So\ (1 + Rf + U)^T$ ---------- with simple compounding

$Fo = So\ e^{(Rf+U)T}$ ---------- with continuous compounding

Where U is the annualised % storage cost proportional to the price of the asset.

Example 6

Bam Soon Bhd purchases CPO for processing of oil related products. On 31 October 20x2, it enters into a forward contract to purchase 1,000 metric tonnes of CPO from KKK Plantation Bhd for delivery on 31 January 20x3. Bam Soon Bhd's financial year ends on 31 December.

On 31 October 20x2, the spot CPO price is RM3,000 per metric tonne. The three-month treasury bill rate on this date is quoted at 3.5%. The storage cost a year for a metric tonne is about RM60.

On 31 December 20x2, the spot CPO price is RM3,400 per metric tonne. The reference one-month treasury bill rate on this date is 3.6%.

On 31 January 20x3, the 1,000 metric tonnes of CPO are delivered by KKK Plantation Bhd and the spot CPO price on this date is RM3,600 per metric tonne.

Required

(a) Compute the price in the forward contract above.

(b) Assuming that the computed price is the actual contracted price between both parties, show the journal entries in the books of Bam Soon Bhd.

Solution 6

(a) Forward price in the contract:

The % storage cost per year = 60 / 3,000 = 0.02 or 2%. The forward is a three-month contract and the time to maturity is 3 / 12 = 0.25. Thus, the forward price is:

$Fo = 3{,}000\ e^{(.035+.02)(0.25)} = 3{,}042.$

You can calculate the above directly using a scientific calculator or operationalise it in Excel as follows:

Spot price		3,000
e		2.71828
Cost of carry	.035 + .02	0.055
Time	3 months	0.25
CxT		0.01375
Set = power (e,ct)		1.013845
Forward price		3,042

(b) Journal Entries

If Bam Soon Bhd does not apply hedge accounting, the above forward contract on a commodity is not within the scope of MPERS because the contract is entered into for meeting the entity's purchase or usage requirements. Note that had the spot price decreased at the reporting date (31 December 20x2), Bam Soon Bhd needs to consider whether that contract has become onerous and if so recognises a provision.

The above contract is not recognised. When the CPO is delivered on 31 January 20x3, Bam Soon Bhd records the purchase using the contracted price as follows:

	RM	RM
Dr CPO inventory (1,000 × 3,042)	3,042,000	
Cr Cash		3,042,000

If Bam Soon Bhd regularly trades on such contracts or if it applies hedge accounting, then the above contract is within the scope of MPERS. The accounting requirements are as follows:

On contract date (31 October 20x2):

Recognise the forward contract at net fair value of nil —

(No entries required)

On the reporting date (31 December 20x2):

Forward price of the forward contract, is as follows:

$Ft = 3{,}400\ e^{(.036+.02)(1/12)} = 3{,}416.$

Using Excel, the Ft is derived as follows:

Spot price		3,400
e		2.71828
Cost of carry	.036 + .02	0.056
Time	1 month	0.083333
CxT		0.004667
Set = power (e,ct)		1.004678
Forward price		3,416

The fair value change of the forward contract per tonne = (3,416 - 3,042) / $(1.036)^{1/12}$ = 373. Total gain on the forward contract is RM373,000. Bam Soon recognises this gain as follows:

	RM	RM
Dr Derivative asset (forward CPO contract)	373,000	
Cr Other comprehensive income (hedge reserve)		373,000

On maturity and delivery date (31 January 20x3), the forward price converges to the spot price. The fair value of the forward contract per tonne = 3,600 - 3,042 = RM558. Bam Soon recognises the change in the fair value of the contract as follows:

	RM	RM
Dr Derivative asset (forward CPO contract)	185,000	
Cr Other comprehensive income (hedge reserve)		185,000

When the CPO is delivered, Bam Soon records the purchase as follows:

	RM	RM
Dr CPO inventory	3,600,000	
Cr Cash (paid based on the contracted price)		3,042,000
Cr Derivative asset (forward CPO contract)		558,000

Depending on its accounting policy, it may release the OCI hedge reserve as an adjustment (a basis adjustment) to the cost of CPO inventory (in which case, the carrying amount of the inventory will be adjusted to RM3,042,000) or reclassify (as a reclassification adjustment) the hedge reserve to profit of loss when the inventory is sold subsequently.

15.4.1.3 Forward Currency Contracts

A common forward contract that many Malaysian companies enter into is the forward currency contract. A forward currency contract is basically an agreement between two parties to exchange one currency for another currency at an agreed exchange rate (the forward rate) on the date of the contract but the actual exchange (settlement) is at an agreed or specified date in the future.

Such contracts may be entered into to hedge currency risks of trade receivables and trade payables denominated in foreign currencies. For example, if an entity has a trade payable denominated in the USD$, it may enter into a forward currency contract to purchase the USD$ forward (the entity is "short" on the USD$ and needs to purchase the USD$ forward). Similarly, if an entity is "long" on the USD$ (for example, when it has a trade receivable denominated in the USD$), it may enter into a forward currency contract to sell the USD$ forward.

The forward price of a currency forward contract is computed as follows:

$Fo = So\ [1 + (r - rf)]^T$ ..... with simple compounding
$Fo = So\ e^{(r - rf)T}$ ..... with continuous compounding

Where: Fo = forward price
So = spot price
r = domestic risk-free interest rate
rf = foreign risk-free interest rate
T = time period to maturity expressed in years or fraction of a year.

The (r - rf) is the interest rate differential between the domestic interest rate and the foreign interest rate that exists between the two markets. If r is more than rf, the forward price will be higher than the spot price (forward is at a premium). Conversely, if r is less than rf, the forward price will be lower than the spot price (forward is at a discount). However, on maturity of a contract, the forward price will converge to the spot price. For example, if the current spot price per USD is RM3.030, the six-month domestic treasury bill rate is 3.5% and the six-month US treasury bill rate is 0.5%, the forward price of a six-month forward USD currency is:

$Fo = 3.030\ (2.71828)^{(.035 - .005)(.5)} = RM3.0758.$

If the six-month US treasury bill rate is 5%, the forward price of a six-month USD currency is:

$Fo = 3.030\ (2.71828)^{(.035 - .050)(.5)} = RM3.0074.$

The forward price computed above is the agreed rate for the exchange of the currencies in the specified future date. In practice, quotes by dealer-bankers would include the "bid-ask" spread, in which case, the forward price is the forward rate quoted by the bank and agreed upon.

At the inception of a forward currency contract, the fair value of the contract is nil (no cash outlay is required). However, subsequently, the fair value may change due to movements in exchange rates and interest rates. Intuitively, if the USD spot rate increases after the contract date, a buyer of the forward USD currency (long position) would have a gain while the seller of the forward USD currency forward (short position) would have a loss.

The fair value of the currency forward contract at the time of the valuation (t) can be estimated as the difference between the spot rate at time (t) discounted at the foreign interest rate over the remaining life of the contract and the present value of the forward (contracted) rate at expiration discounted at domestic risk-free rate. The valuation formula at time (t) is as follows:

$Vt = St / (1 + rf)^T - Fo / (1 + r)^T$ ---------- with simple compounding
Or $Vt = St\ e^{-rfT} - Fo\ e^{-rT}$ ---------- with continuous compounding
Where: Vt is the value of the contract at time t
St is the spot rate at time t
Fo is the forward rate agreed in the contract.

Example 7

On 30 September 20x1, Entity K enters into six-month forward currency contract with its banker to buy forward USD1,0000,000 with settlement on 31 March 20x2. On this date, the spot rate is RM3.050 per USD, the six-month domestic risk-free rate is 3.8% while the six-month US risk-free rate is 0.5%.

On 31 December 20x1, the financial year-end of Entity K, the spot rate is quoted at RM2.9500. The three-month domestic risk free rate is 3.5% and the three-month US risk-free rate is 0.4%.

On 31 March 20x2, the spot rate closes at RM2.8800.

Required

(a) Determine the forward price of the USD currency on the contract date.

(b) Assuming that the forward price in (a) is the contracted price, determine the fair value of the forward currency contract on 31 December 20x1. Show the journal entries.

(c) Determine the fair value of the contract on settlement date and show the journal entries.

Solution 7

(a) Forward price calculation

$Fo = 3.050\ (1 + .038 - .005)^5 = RM3.0999$

On contract date, the fair value of forward currency contract is nil.

(b) Fair value of forward currency contract on 31 December 20x1:

$FVt = 2.9500 / (1 + .004)^{(.25)} - 3.0999 / (1 + .035)^{(.25)} = RM-0.1263$ per USD

Total fair value of the forward currency contract is a loss of RM126,300

Entity K recognises the loss as follows:

	RM	RM
Dr Loss in profit or loss	126,300	
Cr Derivative liability (forward currency)		126,300

(c) On settlement date, the forward price would converge to the spot price on that date. The fair value of the contract (cumulative total loss) on that date is USD1,000,000 × (3.0999 - 2.8800) = RM219,900. Entity K records the change in fair value as follows:

	RM	RM
Dr Loss in profit or loss	93,600	
Cr Derivative liability (forward currency)		93,600

Entity K records the settlement as follows:

	RM	RM
Dr USD Cash — USD 1,000,000 × 2.880	2,880,000	
Dr Derivative liability (foreign currency)	219,900	
Cr RM Cash — USD 1,000,000 × 3.0999		3,099,900

15.4.2 Futures Contracts

A futures contract is a standardised contract between two parties (buyer and seller) to exchange a specified asset (the underlying) of a standardised quantity and quality at a price agreed today (known as the futures price or the strike price) for delivery at a specified future date (the delivery date). It is therefore quite similar to a forward contract except that futures contracts are traded on futures exchanges and the contracts are standardised in quantity (such as 25 metric tonnes of CPO per contract) and quality (such as the grade of CPO). The party that agrees to buy the underlying asset (the buyer) in the future is in a long position while the counterparty seller is in a short position.

The underlying assets in futures contracts are traditionally on commodities (known as commodity futures), such as futures on gold, crude oil, CPO, rubber, metal, etc. However, from the 1970s onward, more and more futures contracts are on financial items (known as financial futures) such as futures on securities, currencies, referenced interest rates or stock indexes.

The forward price of the underlying in a futures contract represents the expected future value of the underlying discounted at the cost of carry. The formula is the same as the one used for a forward contract, as follows:

$Fo = So\ (1 + C)^T$ .....with continuous compounding
$Fo = So\ e^{CT}$ .....with continuous compounding

Where: Fo is the forward price at time (o)
So is the spot price at time (0)
C is the cost of carry (is the risk-free rate adjusted for storage cost and dividend yield, if applicable)
T is the time period to maturity expressed in years or fraction of a year.

As futures contracts are traded on futures exchanges, there is usually no need for a separate valuation in the accounting for such instruments. The future price at the date of the contract is simply the traded market price. Similarly, the future price at any other date is the closing market price on that other date (marked to market).

The fair value of a futures contract at any valuation date is the difference between the forward price at time (t) less the contacted price and discounting it for the time value of money. As future prices are quoted daily and the futures position in the contact is marked to market daily (with gain or loss being credited or debited to the performance margin account), there is no need to discount the difference for the time value of money as the quoted future prices would have factored in the time value of money. Thus, the fair value of a futures contract (the gain or loss) can be determined directly as the difference between the quoted futures price at time (t) and contracted price. Thus, the value at time (t).

V(t) = Quoted futures price at time (t) - Contracted price at time (0).

For example, if an entity purchases 1,000 tonnes of CPO in a three-month futures contract at RM3,200 per tonne. If after one month, that futures contract with a remaining period of two months is quoted at RM3,500 per tonne. The fair value of the futures contact is a gain of 1,000 (3,500 - 3,200) = RM300,000.

15.4.2.1 Commodity Futures

Commodity producers and users may enter into commodity futures to hedge their expected sales and purchases. For example, a producer of CPO may want to hedge against a price decline by selling forward in the CPO futures. The producer is in a long position on the CPO and needs to short or sell it forward when he expects price to decline. Similarly, a user of CPO may want to hedge against a price increase by buying forward in the CPO futures. The user is in a short position on the CPO and needs to long or buy it when he expects price to increase.

The two CPO futures traded on the Bursa Malaysia Derivatives Bhd are the MYR-denominated CPO futures (FCPO) and the USD-denominated CPO futures (FUPO). Each contract of the CPO futures is equivalent to buying or selling 25 metric tonnes of CPO at the price established on trade date. The MYR-denominated FCPO futures contract is a physically settled contract, which means that upon expiry of the contract, the buyer would have to take delivery of the physical CPO. The buyer can always close out the contract before expiry by entering into a reverse trade. The USD-denominated FUPO futures contract is a cash settled contract upon expiry. As the FUPO contract is denominated in the USD, there will be USD currency risk to the buyer and the seller.

The future price of a *consumption asset* is determined as follows:

$Fo = So\ (1 + Rf + U)^T$ .....with simple compounding, or
$Fo = So\ e^{(Rf+U)T}$.....with continuous compounding

Where: Fo = Future price
So = Spot price
Rf = Risk-free rate
U = Storage cost expressed as % of the value of consumption asset, and
T = Time period to maturity expressed in years or fraction of a year.

Example 8

Soilcorp Bhd processes CPO into various finished products for sales. On 30 September 20x1, Soilcorp Bhd forecasts that it needs to purchase 10,000 tonnes of CPO in each of the months of January 20x2 and April 20x2.

On 30 September 20x1, the current spot price of CPO is RM2,050 per tonne. Anticipating that the price of CPO would increase in the next six months and thereby would increase its cost of inventory, Soilcorp Bhd enters into CPO futures contracts, as follows:

(i) Purchase 10,000 tonnes three-month forward — 400 December 31-01 futures contracts (25 tonnes per contract), and

(ii) Purchase 10,000 tonnes six-month forward — 400 March 31-02 futures contracts (25 tonnes per contract).

The risk-free rate per annum is 4% and the storage cost per annum is 5%, both with quarterly compounding. The spot prices on 31 December 20x1 and 31 March 20x2 are RM2,250 and RM2,500, respectively.

Required

(a) Compute the future prices in the futures contracts.

(b) Assuming that these are the contracted prices and the quoted futures prices in the futures contracts, show the journal entries required at each applicable date (Ignore accounting for performance margin account).

Solution 8

In this question, the risk-free rate and the storage cost are compounded quarterly. To convert to the equivalent continuous compounding rate, Rc = mLN (1 + Rm/m), where m is the no of times compounded per year, Rm is the rate compounded quarterly and LN is the natural logarithm.

Rc = 4 LN (1 + 0.09 / 4) = 0.089 or 8.9%

Contract Date: 30 September 20x1

CPO futures			December 31-01 Futures	March 31-02 Futures
	Spot price	So	2,050	2,050
		e	2.71828	2.71828
	Carry Cost	Rf + C	0.089	0.089
	Time period	T	0.25	0.50
		e = (Rf + C)T	0.02250609	0.044501218
	Power	= power (e, x)	1.022499985	1.045506219
Contract price	Forward	Fo = Soe** (Rf + C)T	2,096.125	2,143.2xx
Futures contract recognised at nil fair value.			Nil	Nil
No journal entry is required.				

Year-end Date: 31 December 20x1

CPO futures			December 31-01 Futures	March 31-02 Futures	Total
	Spot	So	2,250	2,250	
		e	2.71828	2.71828	
	Carry cost	Rf + C	0.089	0.089	
	Time	T	0	0.25	
		(Rf + C)T	0	0.022250609	
	Power	= Power (e, x)	1	1.22499985	

CPO futures			December 31-01 Futures	March 31-02 Futures	Total
Valuation	Forward	Fo	2,250.000	2,300.625	
Gain per tonne			153.875	157.337	
No of tonne purchased			10,000	10,000	
Total gain			1,538,750	1,573,372	
Journal	Dr Derivative asset		(1,538,750)	(1,573,372)	(3,112,122)
	Cr Gain in profit or loss		1,538,750	1,573,372	
No hedge accounting applied					
Close out December 31-01 futures contract					
	Dr Cash		(1,538,750)	–	
	Cr Derivative asset		1,538,750	–	1,538,750
Derivative asset carried forward in the statement of financial position				(1,573,372)	(1,573,372)

Hedge accounting is applied:

	December 31-01 Futures	March 31-02 Futures
Dr Derivative asset	(1,538,750)	(1,573,372)
Cr Other comprehensive income	1,538,750	1,573,372
– Record gain in hedge reserve		
Dr Inventory	(22,500,000)	–
Cr Cash	22,500,000	
– Record purchase in January 20x2		
Dr Other comprehensive income	(1,538,750)	–
Cr Inventory	1,538,750	–
– Release hedge reserve to inventory		
Net cost of inventory	(20,961,250)	–
Cost per tonne	(2,096.125)	–

CHAPTER 23

LIABILITIES AND EQUITY

This chapter will help you to:

- understand the principles for classifying liabilities and equity instruments
- deal with the classification of compound financial instruments
- understand the legal requirements on the issuance of ordinary shares and preference shares
- understand the legal requirements on distribution of profits to owners
- deal with some measurement issues of liabilities and equity instruments, and
- apply the disclosure requirements on liability and equity instruments.

23.1 Scope of Section 22 *Liabilities and Equity*

Section 22 *Liabilities and Equity* of MPERS establishes principles for classifying financial instruments as either liabilities or equity and addresses accounting for equity instruments issued to individuals or other parties acting in their capacity as investors in equity instruments (ie in their capacity as owners). It applies to classifying all types of financial instruments except:

(a) those in interests in subsidiaries, associates and joint ventures

(b) employees' rights and obligations under employee benefit plans

(c) contracts for contingent consideration in a business combination (exemption applies to the acquirer only), and

(d) financial instruments, contracts and obligations under share-based payment transactions.

23.2 Classification of an Instrument as Liability and Equity

23.2.1 Substance over Form Consideration

MPERS uses the substance over form consideration to require an issuer of a financial instrument shall classify the instrument, or its component parts, on initial recognition as a financial liability or an equity instrument in accordance with the substance of the contractual arrangement and the definitions of a financial liability and an equity instrument.

The classification of a simple financial instrument as a liability or an equity is a straightforward matter. For example, ordinary shares issued by an entity shall normally be classified as equity while straight bonds issued shall be classified as financial liabilities. In such cases, the legal form and the substance of the financial instruments are consistent.

There are, however, some financial instruments, which take the legal form of equity but are liabilities in substance. Such instruments should be classified as financial liabilities in accordance with the guidance of MPERS. For example, a preference share which provides for mandatory redemption (commonly called redeemable preference share) by the issuer for a fixed or determinable future amount and at a fixed or determinable future date is a financial liability because the issuer is obliged to pay the redemption amount at the maturity date. Similarly, if the preference share gives the holder the right to require the issuer to redeem the shares at or after a particular date for a fixed or determinable amount (eg preference share with a put option), it meets the definition of a financial liability (although in form, it is a share capital). For a preference share to be classified as equity, dividend payments or redemption must be discretionary, ie at the discretion or option of the issuer.

In determining whether a financial instrument is a financial liability or an equity instrument, the instrument is an equity instrument if, and only if, both conditions (a) and (b) below are met:

(a) the instrument includes no contractual obligation:
   (i) to deliver cash or another financial asset to another entity, or
   (ii) to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the issuer, and

(b) if the instrument will or may be settled in the issuer's own equity instrument, it is: (i) a non-derivative that includes no contractual obligation for the issuer to deliver a variable number of its own equity instrument, or (ii) a derivative that will be settled by the issuer exchanging a fixed amount of cash or another financial asset for a fixed number of its own equity instrument.

23.2.2 Puttable Instruments

A financial instrument that gives the holder the right to put the instrument back to the issuer for cash or another financial asset (a "puttable" instrument) is a financial liability of the issuer. When an issuer has an obligation to purchase its own shares for cash or another financial asset, there is a liability for the amount that the issuer is obliged to pay.

Example 1

Entity H is an investment trust fund. On 1 January 20x7, it issues 10,000,000 units at a price of RM2.00 per unit to an external third party. The third party has a put option to sell back 5,000,000 units at the end of Year 5 at a strike price of RM2.50 per unit. Entity K's cost of borrowing is 8%.

Required

Explain and show the accounting requirements in the above case.

Solution 1

In this case, Entity H has issued a compound instrument. The liability component shall be measured at the present value of the amount of cash payable to the third party when the 5,000,000 units are repurchased at the end of Year 5. The cash payable of RM12,500,000 at the end of Year 5 discounted at 8% is RM8,507,290. Entity H shall record the following journal entry:

	RM	RM
Dr Cash account (10m × 2)	20,000,000	
Cr Financial liability — put option		8,507,290
Cr Equity units		11,492,710

– to record issuance of 10 million units with a put option.

The financial liability shall subsequently be carried at amortised cost effective interest method as follows:

Financial Liability at Amortised Cost Model			
Year	Opening balance RM	Interest expense at 8% RM	Closing balance RM
1	8,507,290	680,583	9,187,873
2	9,187,873	735,030	9,922,903
3	9,922,903	793,832	10,716,735
4	10,716,735	857,339	11,574,074
5	11,574,074	925,926	12,500,000
		3,992,710	

When the put option is exercised by the third party at the end of Year 5, Entity H shall record the following settlement:

	RM	RM
Dr Financial liability — put option	12,500,000	
Cr Cash account		12,500,000

– to record settlement of put option.

Note: The above example would not be applicable for a private company because the *Companies Act 2016* does not permit a private company to repurchase or buy back its own shares by private arrangement. The restriction, however, does not apply to other business entities that are not incorporated under the Act.

23.2.3 Some Exceptions

MPERS clarifies that some instruments that meet the definition of a liability are classified as equity because they represent the residual interest in the net assets of the entity, examples include:

(a) A puttable instrument that has all of the following features is classified as an equity instrument:
   (i) It enables the holder to a pro rata share of the entity's net assets in the event of the entity's liquidation. The entity's net assets are those assets that remain after deducting all other claims on its net assets.
   (ii) The instrument is in the class of instruments that is subordinate to all other classes of instruments.
   (iii) All financial instruments in the class of instruments that is subordinate to all other classes of instruments have identical features.
   (iv) Apart from the contractual obligation for the issuer to repurchase or redeem the instrument for cash or another financial asset, the instrument does not include any contractual obligation to deliver cash or another financial asset to another entity, or to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity, and it is not a contract that will or may be settled in the entity's own equity instruments.
   (v) The total expected cash flows attributable to the instrument over the life of the instrument are based substantially on the profit or loss, the change in the recognised net assets or the change in the fair value of the recognised and unrecognised net assets of the entity over the life of the instrument (excluding any effects of the instrument).

(b) Instruments, or components of instruments, that are subordinate to all other classes of instruments are classified as equity if they impose on the entity an obligation to deliver to another party a pro rata share of the net assets of the entity only on liquidation.

For example, unit holders' capital in open ended trust funds contains a put option to the unit holders, who may put back their units for cash redemption by the fund. The redemption amount is calculated based on the proportionate share of the asset value per unit. Hence, unit holders' capital is presented as equity rather than a financial liability.

23.2.4 Examples of Financial Liabilities

MPERS also provides examples of instruments that are classified as liabilities rather than equity, as follows:

(a) An instrument is classified as a liability if the distribution of net assets on liquidation is subject to a maximum amount (a ceiling). For example, if in liquidation the holders of the instrument receive a pro rata share of net assets, but this amount is limited to a ceiling and the excess net assets are distributed to a charity organisation or the Government, the instrument is not classified as equity.

(b) A puttable instrument is classified as equity if, when the put option is exercised, the holder receives a pro rata share of the net assets of the entity measured in accordance with this Standard. However, if the holder is entitled to an amount measured on some other basis (such as local GAAP), the instrument is classified as a liability.

(c) An instrument is classified as a liability if it obliges the entity to make payment to the holder before liquidation, such as a mandatory dividend.

(d) A puttable instrument that is classified as equity in a subsidiary's financial statements is classified as a liability in the consolidated group financial statements.

(e) A preference share that provides for mandatory redemption by the issuer for a fixed or determinable amount at a fixed or determinable future date, or gives the holder the right to require the issuer to redeem the instrument at or after a particular date for a fixed or determinable amount, is a financial liability.

23.3 Classification of Compound Instruments by an Issuer

23.3.1 Separating the Components

A compound financial instrument is an instrument that contains identifiable components of liability and equity. Examples of compound financial instruments are convertible securities, such as convertible unsecured loan stocks (CULS) and convertible preference shares, and bonds issued with warrants.

The Standard requires that the issuer of a non-derivative financial instrument shall evaluate the terms of the financial instrument to determine whether it contains both a liability and an equity component. Such components shall be classified separately as financial liabilities or equity instruments in accordance their respective definitions in the Standard. In other words, the debt component should be classified as a financial liability and the equity component should be classified as an equity instrument [see MPERS S22.13].

Example 2

At the beginning of Year 1, ABC Bhd issued RM10,000,000 CULS of RM1,000 per unit at its nominal value. The loan stocks carry a coupon interest rate of 3% per annum and have a term of five years. Each unit of loan stock is convertible at any time up to maturity into 250 ordinary shares of RM1 each. Loan stocks not converted by that date will be redeemed in cash at their nominal value. On the date of the issue, the prevailing market interest rate for similar risk class loan stocks without the conversion option was 10%.

Required

Show how the proceeds of the loan stocks shall be allocated to the liability component and the equity component.

Solution 2

The liability component is measured by using the discounted cash flow model as follows:

$$\text{Bond value (liability)} = \sum_{t=1}^{5} \frac{\text{RM300,000}}{(1+.10)^t} + \frac{\text{RM10,000,000}}{(1+.10)^5}$$

$$= \text{RM7,346,449}$$

Therefore the equity value (residual) = Proceeds - Bond value

= RM10,000,000 - RM7,346,449 = RM2,653,551

On initial recognition, ABC Sdn Bhd records the following journal:

	RM	RM
Dr Bank — cash received	10,000,000	
Dr Bond discount — contra account	2,653,551	
Cr Bond liability — nominal value		10,000,000
Cr Equity component of CULS		2,653,551

The liability component is presented on the net amount (net of bond discount) at RM7,346,449. The subsequent measurement of the liability component is at amortised cost effective interest method as shown below:

Year	Opening liability RM	Interest expense at 10% RM	Coupon interest paid RM	Closing liability RM
1	7,346,449	734,645	(300,000)	7,781,094
2	7,781,094	778,109	(300,000)	8,259,204
3	8,259,204	825,920	(300,000)	8,785,124
4	8,785,124	878,512	(300,000)	9,363,636
5	9,363,636	936,364	(300,000)	10,000,000
		4,153,551	(1,500,000)	

At the end of Year 1, the journal entry to recognise the interest expense and the amortisation of the bond discount of the liability component would be as follows:

	RM	RM
Dr Interest expense in profit or loss	734,645	
Cr Cash — coupon interest paid		300,000
Cr Bond discount — amortisation		434,645

The carrying amortised cost amount of the liability component at the end of Year 1 is RM7,781,094. This procedure is repeated at the end of each subsequent year until maturity, by which time the carrying amount of the liability component would be equal to the redeemable amount if there were no conversion.

23.3.2 On Conversion of a Convertible Instrument at Maturity

On conversion of a convertible instrument at maturity, the entity derecognises the liability component and recognises it as equity. The original equity component remains as equity (although it may be transferred from one line item within equity to another). There is no gain or loss on conversion at maturity.

The liability component of a compound instrument is carried at the amortised cost effective interest method. Thus, on maturity and if there were no conversion prior to the maturity date, the carrying amount of the liability should be equal to the redemption amount. The equity component, on the other hand, remains at the original amount on initial recognition. Thus, if the compound instrument is not converted, the balance in the equity component may be transferred directly to retained profits (movement within equity).

Example 3

Assume that in the Example 2 above, all the loan stocks are converted into ordinary shares at maturity.

Required

(a) Show the journal entry required on conversion of the loan stocks at maturity.

(b) Show the journal entry required if the loan stocks are not converted but redeemed at maturity.

Solution 3

(a) At maturity, the carrying amounts of the liability component and the equity component are RM10,000,000 and RM2,653,551, respectively. The journal entry on conversion is as follows:

	RM	RM
Dr Loan stocks — liability component	10,000,000	
Dr Loan stocks — equity component	2,653,551	
Cr Contributed share capital		12,653,551

(b) At maturity, if the share price does not exceed the conversion price (the conversion option is "out of the money", and holders of the loan stocks would choose settlement in cash), the journal entry is as follows:

	RM	RM
Dr Loan stocks — liability component	10,000,000	
Dr Loan stocks — equity component	2,653,551	
Cr Cash account		10,000,000
Cr Retained profits		2,653,551

23.3.3 Effect of Transaction Costs

There are numerous costs involved in the issuance of a compound financial instrument, such as legal and other professional fees, commissions and underwriting fees, etc. MPERS requires that the transaction costs shall be allocated between the liability component and the equity component on the basis of their relative fair values [MPERS S22.13].

The effect of including the transaction costs in the initial measurement of the liability component is an increase in the effective interest rate.

Example 4

On 1 January 20x1, Alpha Sdn Bhd issues 100,000,000 convertible bonds at an issue price of RM1 per unit. Transaction costs that include underwriting fees amount to RM2,000,000. The bonds carry a coupon interest rate of 2% payable at the end of each year over the term of five years. The bonds can be converted into ordinary shares at any time after the issue at a conversion price of RM2 per ordinary share. The fair value of the ordinary shares at the time of the issue of the bond is RM1.60 per share. Bonds not converted by the end of Year 5 will be redeemed at the nominal value of RM1 per unit on maturity.

On 1 January 20x1, market interest rate for similar risk-class bonds without a conversion feature is 8%.

Required

Explain and show the accounting requirements for the bond issue in the accounts of Alpha Sdn Bhd.

Solution 4

Measurement of the liability and equity components:

The liability component is measured at the present value of the interest payable and redemption sum as if there were no conversion, as follows:

$$PV = \sum_{t=1}^{5} \frac{2{,}000{,}000}{(1.08)^t} + \frac{100{,}000{,}000}{(1.08)^5} = RM76{,}044{,}000$$

The equity component = 100,000,000 - 76,044,000 = RM23,956,000.

The measurement and the allocation of the transaction costs, on a pro rata basis, are as follows:

	Year	Cash flows	Transaction costs	Net allocation
		RM'000	RM'000	RM'000
	1	2,000		
	2	2,000		
	3	2,000		
	4	2,000		
	5	102,000		
Liability	NPV	76,044	(1,521)	74,523
Equity	(balance)	23,956	(479)	23,477
		100,000	(2,000)	98,000

On initial recognition, the journal entry to record the issuance of the bond would be as follows:

	RM'000	RM'000
Dr Cash account — gross proceeds	100,000	
Cr Bond account — liability component (net)		76,044
Cr Bond account — equity component		23,956

– record issuance of convertible bond and allocation of proceeds.

	RM'000	RM'000
Dr Bond account — liability component	1,521	
Dr Bond account — equity component	479	
Cr Cash — transaction cost paid		2,000

– to allocate transaction to liability and equity components.

If there were no conversion, the equity component would remain constant over the term of the issue. For the liability component which is carried at the amortised cost method, the carrying amount would accrete to the redemption sum on maturity. With the inclusion of the transaction costs in the initial measurement of the liability component, the effective interest rate would be higher than the current market interest rate. This can be determined using the IRR formula, as shown below:

$$74{,}523{,}000 = \sum_{t=1}^{5} \frac{2{,}000{,}000}{(1+r)^{t}} + \frac{100{,}000{,}000}{(1+r)^{5}}$$

where r is the effective interest rate = 8.458%

You may also determine the effective interest directly by using the IRR function in an Excel programme, as follows:

Year	Cash Flows RM'000
0	(74,523)
1	2,000
2	2,000
3	2,000
4	2,000
5	102,000
IRR	8.4582%

The carrying amount of the liability component and the effective interest expense in each year are shown below:

Liability at Amortised Cost				
Year	Opening amount	Interest expense at 8.458%	Coupon interest	Closing amount
	RM'000	RM'000	RM'000	RM'000
1	74,523	6,303	(2,000)	78,826
2	78,826	6,667	(2,000)	83,493
3	83,493	7,062	(2,000)	88,555
4	88,555	7,490	(2,000)	94,045
5	94,045	7,955	(2,000)	100,000
		35,477	(10,000)	

At the end of Year 1, the journal entry to recognise interest expense and accretion of carrying amount would be as follows:

	RM'000	RM'000
Dr Interest expense	6,303	
Cr Cash — coupon interest paid		2,000
Cr Bond account — liability component		4,303

– to recognise interest expense and accretion of bond account.

Assuming there was no conversion exercised over the term of the issue, the above entry would be repeated each year. The carrying amount of the liability component at maturity would be RM100,000,000. If the bonds are redeemed, the journal entry would be as follows:

	RM'000	RM'000
Dr Bond account — liability component	100,000	
Dr Bond account — equity component	23,477	
Cr Cash account — redemption sum paid		100,000
Cr Retained profits		23,477

– to record redemption and close bond accounts.

If assuming that the bonds were all converted into ordinary shares on maturity and at the conversion price of RM2 per share, Alpha Sdn Bhd would need to issue 50,000,000 new shares to the bond holders. The journal entry for the conversion would be as follows:

	RM'000	RM'000
Dr Bond account — liability component	100,000	
Dr Bond account — equity component	23,477	
Cr Contributed share capital		123,477

– to record conversion of bond and issuance of 50 million shares.

23.3.4 Conversion before Maturity

A conversion option in a convertible bond is a call option that gives the holder the right (but not the obligation) to convert his bond into ordinary shares under specified terms and conditions. Holders of convertible bonds may choose to convert their bonds into ordinary shares before the maturity date.

When the conversion option is exercised before maturity, a similar derecognition is applied to the liability component and equity component, and the issuer records the issuance of shares on conversion. For this purpose, it would be necessary for the issuer to allocate the total amounts of the liability component and equity component to the total units issued and monitor the conversion on a per unit basis, ie a pro rata allocation. In the Example 4 above, the allocation per unit of RM1,000 bond on initial recognition would be RM745.23 for the liability component and RM234.77 for the equity component.

Example 5

Assume in the Example 4 above, 50% of the bonds were converted into ordinary shares at the end of Year 3. The journal entry to record the conversion of the bonds is as follows:

	RM	RM
Dr Bond — liability component (50% × 88,555)	44,277.5	
Dr Bond — equity component (50% × 23,477)	11,738.5	
Cr Contributed share capital		56,016.0

– to record conversion of bond and issuance of 25 million shares.

23.3.5 Bonds Issued with Free Warrants or Options

Some bonds are issued as a package with warrants. Warrants are call options that entitle the holders to acquire ordinary shares of the issuer under specified terms and conditions. Although issued as a package, the warrants are normally detachable from the bonds issued. MPERS requires that an entity shall apply the principles for issuance of shares to any equity issued by means of sales of options, rights, warrants and similar equity instruments [MPERS S22.11].

In this case, the issuer is effectively issuing two separate instruments, ie a bond instrument as a liability and a warrant instrument as equity. If they are each priced separately, then each is accounted for separately as a financial liability and an equity instrument respectively in accordance with MPERS.

However, if the bonds are issued as a package with free warrants for single proceeds, the issuer shall allocate the proceeds into the liability component (for the bonds) and the equity component (for the warrants) in accordance with principles for compound financial instruments.

Example 6

Entity K issues RM10,000,000 bonds of RM1 each with free 10,000,000 detachable warrants for net proceeds of RM10,000,000. The bonds have a term of 5 years and the coupon interest rate is 3% per year payable at the end of each year. The bonds are redeemable at the nominal amount of RM1 each at the end of Year 5. Market interest rate of similar risk-class bonds at the time of issue is 6%.

Each warrant entitles the holder to acquire one ordinary share of Entity K at an exercise price of RM2 per share. Transaction costs of the issue amount to RM200,000.

Required

(a) Show how the proceeds shall be allocated between the bond and the warrant components

(b) Show the carrying amount of the bond component at the end of each year before redemption

(c) If all the warrants were exercised at the end of Year 5, show the journal entry to record the exercise of the warrants.

Solution 6

(a) The proceeds and the transaction costs shall be allocated as follows:

Year	Cash Flows	Transaction Costs	Allocated Amount
	RM	RM	RM
1	300,000		
2	300,000		
3	300,000		
4	300,000		
5	10,300,000		
Bonds NPV (6%)	8,736,291	(174,726)	8,561,565
Warrants	1,263,709	(25,274)	1,238,435
Total	10,000,000	(200,000)	9,800,000

On initial recognition, Entity K shall record the following journal entries:

	RM	RM
Dr Cash account	10,000,000	
Cr Bonds — liability		8,736,291
Cr Warrants — equity		1,263,709

– to allocate proceeds between liability and equity components.

Dr Bonds — liability	174,726	
Dr Warrants — equity	25,274	
Cr Cash account		200,000

– to allocate transaction costs pro rata.

(b) The effective interest rate of the bond component is determined as follows:

Year	Cash Flows
	RM
0	(8,561,565)
1	300,000
2	300,000
3	300,000
4	300,000
5	10,300,000
IRR	6.4574%

The carrying amount of the bonds at amortised cost effective interest method would be as follows:

Year	Opening balance	Interest expense at 6.4574%	Coupon interest paid	Closing balance
	RM	RM	RM	RM
1	8,561,565	552,854	(300,000)	8,814,419
2	8,814,419	569,182	(300,000)	9,083,600
3	9,083,600	586,564	(300,000)	9,370,164
4	9,370,164	605,068	(300,000)	9,675,232
5	9,675,232	624,768	(300,000)	10,000,000
Total		2,938,435	(1,500,000)	

At the end of Year 5, Entity K shall derecognise the bond liability of RM10,000,000 upon payment of the redemption amount.

(c) If all the warrants were exercised at the end of Year 5, the journal entry would be as follows:

	RM	RM
Dr Cash — 10,000,000 × RM2	20,000,000	
Dr Warrants — equity	1,238,435	
Cr Contributed share capital		21,238,435

– to derecognise warrants and record issuance of shares.

23.3.6 Shares Issued with Free Warrants or Options

When an entity issues ordinary equity shares with free warrants attached, it essentially issues two separate equity instruments. Since both are equity instruments, such free warrants issued as a package with ordinary shares (such as in a rights issue of ordinary shares to shareholders) are not within the scope of compound instruments in MPERS. The issue, therefore, is whether the proceeds of the rights issue of ordinary shares should be allocated between the two equity instruments.

In 2008, the MIA issued FRSIC 8/2008 to provide guidance on accounting for free warrants with rights issue. It clarifies that although the legal form is that the warrants are issued free of consideration, the substance and economic reality is that there is a value attached to the warrants, and investors who subscribe for the share issue pay for both the ordinary shares and the warrants. The consensus of the FRSIC is that warrants issued as package with the rights issue should be accounted for in accordance with the substance and economic reality of the transaction and not merely in accordance with their legal form. Thus, a value should be assigned to the warrants. The proceeds received by the issuer should be allocated to the two types of equity instruments using a reasonable and appropriate method of allocation. The FRSIC does not recommend a method of allocation but requires, as best practice, disclosure of the method used.

The methods that may be used include the following:

(a) Relative fair value method — For example, if the two equity instruments have been valued separately (by the underwriter) in the pricing of the issue, the values determined may be used to allocate the proceeds of the issue.

(b) Fair value the warrants (for example, using an option pricing model) first and then allocate the balance of the proceeds to the ordinary shares.

Example 7

On 1 January 20x0, Company A issues, in a rights offer, 10 million ordinary shares to its shareholders at an offer price of RM1 per share. As a package with the rights issue, it also issues 10 million free warrants that entitle the shareholders to subscribe for ordinary shares at an exercise price of RM1.50 per shares within 5 years of the issue.

The proceeds of the rights issue amounts to RM10m. At the date of the issue, the fair value of the ordinary shares and warrants are RM0.80 and RM0.20, respectively.

Required

Explain how Company A should account for the rights issue with free warrants.

Solution 7

The proceeds of the rights issue should be allocated to the two equity instruments as follows:

	RM	RM
Dr Cash account	10,000,000	
Cr Contributed share capital		8,000,000
Cr Warrants — equity component		2,000,000

– to allocate proceeds to two equity components.

The warrants, being an equity component, are not subsequently remeasured to fair value. If all the warrants are subsequently exercised, Company A records the issuance of shares and derecognise the warrants, as follows:

	RM	RM
Dr Cash (10,000,000 × RM1.50)	15,000,000	
Dr Warrants — equity component	2,000,000	
Cr Contributed share capital		17,000,000

– to record issuance of shares on exercise of warrants.

By the end of Year 5, if the warrants are not exercised (for example, when the exercise price is higher than the fair value of the shares), the carrying amount is derecognised and transferred back to the contributed share capital account, ie a transfer within the statement of changes in equity.

23.3.7 Irredeemable Convertible Bonds

Some convertible bonds are issued without a redemption feature (known as irredeemable convertible loan stocks or bonds). If a irredeemable convertible bond carrying a mandatory interest payment, it is a compound financial instrument within the scope of MPERS. In this case, the liability component is measured at the present value of the interest payable over the term of the instrument without any redemption. There is no obligation for redemption of the bond because on maturity, the bond would be automatically converted to ordinary shares.

Example 8

At the beginning of Year 1, Entity M issues 20 million irredeemable convertible unsecured bonds at RM1 each for net proceeds of RM20m. The bonds pay a coupon interest rate of 6% at the end of each year over a term of 5 years. At the end of Year 5, the bonds are automatically converted into ordinary shares at a conversion price of RM2 per share. At the time of the bond issue, the prevailing market interest rate of similar risk-class bonds is 8%.

Required

(a) Show how the proceeds shall be allocated between the liability and equity components.

(b) Show the carrying amount of the liability component at the end of each year over the 5-year term (assume no earlier conversion).

(c) Show the journal entry on maturity and conversion of the bonds.

Solution 8

(a) The liability component is measured first using the DCF method and the balance of the proceeds is allocated to the equity component as follows:

	Year	Cash Flows
		RM
	1	1,200,000
	2	1,200,000
	3	1,200,000
	4	1,200,000
	5	1,200,000
Liability	NPV (8%)	4,791,252
Equity	(balance)	15,208,748
Total		20,000,000

	RM	RM
Dr Cash account	20,000,000	
Cr Bonds — liability component		4,791,252
Cr Bonds — equity component		15,208,748

– to allocate proceeds of bond issue.

(b) Subsequent carrying amortised cost amount of the liability component:

Year	Opening balance	Interest expense at 8%	Coupon interest paid	Closing balance
	RM	RM	RM	RM
1	4,791,252	383,300	(1,200,000)	3,974,552
2	3,974,552	317,964	(1,200,000)	3,092,516
3	3,092,516	247,401	(1,200,000)	2,139,918
4	2,139,918	171,193	(1,200,000)	1,111,111
5	1,111,111	88,889	(1,200,000)	–
Total		1,208,748	(6,000,000)	

(c) At the end of Year 5, the carrying amount of the liability component is nil. On conversion, the journal entry would be as follows:

	RM	RM
Dr Bonds — equity component	15,208,748	
Cr Contributed share capital		15,208,748

– to record conversion of bonds into 10 million ordinary shares.

23.4 Measurement of Equity

The original $MPERS_{(2014)}$ requires that an entity shall measure equity instruments issued at the fair value of cash or other resources received or receivable, net of transaction costs. Other resources may include net assets acquired in a business combination. In accordance with Section 19 *Business Combinations and Goodwill*, shares issued to acquire a business (such as a subsidiary) shall be measured at their fair value rather than at the fair value of the net assets acquired, as there may be a control premium paid for the acquisition. There is thus a potential conflict of the standards in the original $MPERS_{(2014)}$. The amendments to this Section 22 provide an exception from the initial measurement requirements for equity instruments issued as part of a business combination, including business combinations of entities under common control.

For example, assume Entity P acquires a 100% interest in the equity shares of Entity S. For the purchase consideration, Entity P issues 10 million of its equity shares with a fair value of RM2.00 per share. The fair value of the net assets of Entity S on the acquisition date is RM15m.

Based on the original $MPERS_{(2014)}$, Entity P records the shares issued at RM15m, being the fair value of the resources (net assets) received. In this case, there will be no goodwill on combination. Based on the amended $MPERS_{(2015)}$ and Section 19 *Business Combinations and Goodwill*, Entity P shall record the shares issued at their fair value of RM20m. Goodwill on combination of RM5m is recognised on consolidation of Entity S.

23.4.1 Debt to Equity Swap

The amended $MPERS_{(2015)}$ adds guidance on debt and equity swaps when a financial liability is renegotiated and the debtor extinguishes the liability by issuing equity instruments, which is based on the requirements in IC 19 *Extinguishment Financial Liabilities with Equity Instruments* in the MFRS Framework.

23.4.1.1 Full Extinguishment of Debt

The amendment requires that the equity instruments issued shall be measured at their fair value. However, if the fair value of the equity instruments issued cannot be measured reliably without undue cost or effort, the equity instruments issued shall be measured at the fair value of the financial liability extinguished [MPERS S22.15A].

Example 9

Entity M has a private debt instrument carried at amortised cost amount of RM9,201,000. The debt instrument was issued five years ago with a nominal value of RM10,000,000 and carries a coupon interest rate of 6% payable at the end of each year. It is redeemable at the nominal value at the end of Year 10. The effective interest rate of the debt instrument is 8%.

Entity M issues 5,000,000 of its ordinary shares to the holders of the debt instrument as settlement of the financial liability. The current market interest rate of a similar risk-class debt instrument is 7.4%. Using a price-earnings ratio method, Entity M determines that the fair value of the ordinary shares on the date of issue at RM1.90 per share.

Entity M records the following:

	RM'000	RM'000
Dr Financial liability — debt instrument	9,201	
Dr Loss on settlement of liability	299	
Cr Contributed share capital (5,000 × RM1.90)		9,500