Chapter 11: ACCOUNTING FOR FOREIGN INVESTMENTS AND FX HEDGING

This chapter shows the impact of FX changes on a firm's reported financial statements, termed *FX accounting exposure*. We compare FX accounting exposure with the impact of FX changes on operating cash flows and intrinsic equity value, as you learned about earlier.

We first review rules for the accounting translation of foreign assets and liabilities for US firms. These rules are laid out in Statement of Financial Accounting Standards No. 52 (*SFAS 52*), *Foreign Currency Translation*, which has been in effect since 1981, and in a series of related subsequent pronouncements under the general framework of SFAS 52. Translation is similar to conversion but refers specifically to accounting items, not intrinsic values or cash flows. *FX translation exposure* is a specific aspect of FX accounting exposure that relates to the impact of FX changes on a firm's reporting of foreign assets, liabilities, and income.

We also give an introduction to some relevant aspects of **Statement of Financial Accounting Standards No. 133** (*SFAS 133*), *Accounting for Derivative Instruments and Hedging Activities*, issued in 1998. Its main requirement is that the mark-to-market value of derivatives, e.g., forward contracts, options, and swaps, be reflected in reported financial statements. The rules also apply to derivatives embedded in other contracts and securities. The impact of the MTM changes of these derivatives on reported financial statements is another aspect of FX accounting exposure.

Since the accounting rules are very detailed and complex, our objective is only to cover main ideas. In particular, we show that although a company may hedge FX exposure with foreign currency debt or a currency swap position, the impact of FX changes on reported current earnings might not reflect their impact on net cash flow. And changes in its reported book value of equity may not reflect the true changes in the intrinsic equity value. As you'll see, reported current earnings can be volatile even when net cash flows are stable, and the reported book value of a firm's equity can change even when the intrinsic value is stable, and vice versa.

The upshot is that some companies may decide they do not want to hedge FX exposure if it means creating FX accounting exposure, especially additional volatility in current reported earnings. **Managers may be willing to tolerate real (intrinsic value) FX exposure rather than have FX accounting exposure**. The managers may think that the market will misinterpret the FX accounting exposure. Moreover, many managers think that the new standards under SFAS 133/IAS 39 have made this problem more acute.

FX Translation and SFAS 52

SFAS 52 deals with two main issues:
1) the restatement of individual accounting items transacted in a foreign currency and
2) the translation of foreign affiliates' financial statements as a precondition for their inclusion in a parent's consolidated statements.

There is a parallel standard under the international accounting standards with similar, albeit not identical rules, International Accounting Standard No. 21 (*IAS 21*).

SFAS 52 requires a US parent to choose a *functional currency* for each overseas affiliate (branch, subsidiary, division, joint venture, and so forth). As defined by SFAS 52, the functional currency is the currency of the primary economic environment in which the entity generates and expends cash. In some cases, the functional currency is the US dollar. A typical example of this is an affiliate in a less developed country that uses cheap labor to assemble parts from the United States and then exports the finished products back to the United States, like a maquiladora in Mexico.

If a foreign entity's functional currency is the US dollar, any asset or liability of that is carried on the entity's local currency books at historical cost is translated into US dollars at the historical FX rate at the time the item was recorded. Any asset or liability that is carried on the entity's local currency books at fair value is translated at the current spot FX rate. This method is the called the *temporal method*. **Under the temporal method, there is FX accounting exposure only for the fair value accounts, and the gains and losses must be included in the parent's current reported earnings**. The economic reasoning behind this treatment is that the US dollar is the primary economic environment in which the entity generates and expends cash, so the impact of FX changes figure directly into the entity's short-run profitability.

For most affiliates, especially those in developed economies, the functional currency is the local currency of the country in which the entity operates. The treatment of translation gains and losses in this case is by the so-called *modified closing rate method*. Under this method, **all the affiliate's assets and liabilities are translated at the current spot FX rate and the equity is translated at historical rates**. This way, the translated values of the affiliate's balance sheet will not equal out. The resulting differences represent FX translation exposure and are booked in a special category of the parent's consolidated equity called the *Cumulative Translation Adjustment* (CTA), which is part of a broader equity account called *Accumulated Other Comprehensive Income (AOCI).*

Example: consider the US parent, MRT Company, of a Eurozone subsidiary, DEP LLC.
The functional currency of DEP is the euro.
The total book value of the DEP's assets is assumed to be €3 million.
DEP has €1 million in euro-denominated debt, and that
MRT owns all of DEP's equity, which has a book value of €2 million.

Assume a **current** spot FX rate of 1 $/€ and a
Historical spot FX rate for DEP's equity of 1.25 $/€.
DEP's assets are translated as $3 million,
DEP's liabilities as $1 million, and
DEP's equity as $2.50 million. Also in its equity section, MRT will show a CTA
(cumulative translation adjustment) for DEP of –$0.50 million.
Looking at the two equity accounts together, the net book value of MRT's equity entries
related to *DEP is $2.50 million – 0.50 million = $2 million*.
We call this the **Book Value Of MRT's Net Investment In DEP**.
It is equal to the net of DEP's translated assets minus its translated liabilities, $3 million
– 1 million *= $2 million.*

If the spot FX price of the euro depreciates to 0.80 $/€ at the next accounting time (time 1),
DEP's assets are translated as $2.40 million,
DEP's liabilities as $0.80 million,
but DEP's equity again as $2.50 million.
Now in its equity section, MRT will show a **CTA for DEP of –$0.90 million**.
Book value of MRT's net investment in DEP is now $**2.50 mill – 0.90 mill = $1.60
million**.
The same answer is found by **$2.40 million – 0.80 million = $1.60 million.**
There is a drop of **$0.40** million from the time 0 net investment of $2 million.
                                    ($2mil - $1.6mil = **$.4mil**)
The **$0.40** million drop is the change in the AOCI (CTA) account, i.e., an **FX translation
loss for the period.** See Exhibit 11.1.

EXHIBIT 11.1: FX TRANSLATION FOR DEP LLC
Time 0   **Balance Sheet Translation (in $)**
    ASSETS   **LIABILITIES & EQUITY**

                                          $ 1 million Debt
                                              –$ 0.50 million AOCI
                                               $2.50 million **Common**
    $ 3 million DEP Assets $ 2 million Total Equity
    $ 3 million $ 3 million
Time 1   **Balance Sheet Translation (in $)**
    ASSETS   **LIABILITIES & EQUITY**

                                          $ 0.80 million Debt
                                              –$ 0.90 million AOCI
                                               $ 2.50 million Common
    $ 2.40 million DEP Assets $ 1.60 million Total Equity
    $ 2.40 million $ 2.40 million

Like pure FX conversion exposure, FX translation exposure is always one-for-one when translation is at the current spot FX rate.

Example: when the euro declined by 20%,
MRT's net investment in DEP dropped by 20%, from $2 million to $1.60 million,
Denote the **FX translation exposure (to the euro) of a parent's net investment as** $\xi_{T\epsilon}^{\$}$,
we have equation (11.1):

$$\xi_{T\epsilon}^{\$} = 1 \qquad\qquad (11.1)$$

Extend *the MRT/DEP example:*
The euro appreciates by 10% between time 1 and time 2, from 0.80 $/€ to 0.88 $/€.
What is MRT's net investment in DEP at time 2?

If the spot FX price of the euro appreciates to 0.88 $/€ at time 2, DEP's assets are translated as $2.64 million, liabilities as $0.88 million, but equity again as $2.50 million. Now in its equity section, MRT will show a CTA for DEP of – $0.74 million. The book value of MRT's net investment is now $2.50 million – 0.74 million = $2.64 million – 0.88 million = $1.76 million, a gain of $0.16 million from the time-1 level of $1.60 million. The $0.16 million gain is the change in the AOCI (CTA) account, i.e., an FX translation gain for the period.

Show that the FX translation exposure is 1.

Since the book value of the net investment rises by 10% when the FX value of the euro rises by 10%, we see that the FX translation exposure is 1.

---

1. Consider the MRT/DEP example in the text, but
   assume that MRT's FX intrinsic value exposure to the euro from its investment in DEP is 0.80 (instead of 1).
   Assume that MRT employs 0.80($3 million) **= $2.40 million worth of** euro-denominated debt to **hedge the FX intrinsic** value exposure of its $3 million intrinsic value net investment in DEP.

   - How much of the euro-denom debt can MRT count as a hedge under acct rules?
   - With the debt in place, does MRT have any FX translation exposure?
   - Does MRT have any other FX accounting exposure?
   - Is there any FX equity exposure (in intrinsic value terms)?

There is no FX translation exposure.

The MTM change on $2 million of the $2.40 million in euro-denominated debt will exactly offset the FX translation exposure of the $2 million book value of net investment in DEP.

The remaining $0.40 million of euro-denominated debt is not regarded as a hedge in the accounting sense; thus MTM changes in this portion of the euro-denominated debt will affect reported current earnings each period.

FX value exposure has been hedged.

2. Assume that MRT's FX intrinsic value exposure to its investment in DEP is 0.60
(instead of 0.80 in the previous problem) and that
MRT employs 0.60($3 million) = $1.80 million worth of euro-denominated debt to
hedge the FX intrinsic value exposure of its $3 million intrinsic value net
investment.

- How much of the debt can MRT count as a hedge under accounting rules?
  **Only $1.80 million of the $2 million book value of net investment is
  hedged in the accounting sense. The other $0.20 is subject to FX
  translation exposure, meaning that the translation gains/losses will
  show in the AOCI account.**

- With the debt in place, does MRT have FX translation exposure?
  There is no other FX exposure

- Does MRT have any other FX exposure in the accounting sense?
- Is there any FX equity exposure (in intrinsic value terms)?

**There is no other FX exposure in the accounting sense, no impact on current
reported earnings, and FX value exposure has been hedged.**

Under SFAS 52, **FX translation gains and losses are not included in a parent's
current reported earnings when the US dollar is not the functional currency of the
affiliate**. Basically, the FX translation gains and losses are reserved in the AOCI (CTA)
account until the affiliate gets liquidated (if ever), at which time the accumulated FX
translation gain or loss up to that point will get included in the parent's current reported
earnings.

A **firm's FX translation changes would ideally represent intrinsic value changes**,
but often this is not the case.

Example: when a parent's **net investment in a subsidiary** has a **pure FX conversion
exposure (= 1)**, **but the intrinsic value of the net investment does not equal its book
value**. Although the FX exposure of the intrinsic investment value and the FX translation
exposure of the parent's net investment are both equal to 1, the US dollar changes in the
intrinsic investment value are not equal to the US dollar changes in the book value.

Example: the intrinsic value of DEP's equity at time 0 is €3 million,
higher than the book value of $2 million.
The intrinsic value of DEP's equity is **converted at the spot FX rate** into the intrinsic
value of MRT's net investment in DEP in US dollars: €3 million(1 $/€) = $3 million at
time 0.
The FX exposure of MRT's net investment in DEP is assumed to be 1,
the time-1 intrinsic value of MRT's net investment in DEP (US $) is 0.80($3 mill) = $2.40
mill.
We see that the intrinsic value of MRT's net investment in DEP drops by $0.60 million

when the euro drops by 20%.
This loss in intrinsic investment value is more than the drop in the book value of MRT's net investment, $0.40 million.
The reason is that the intrinsic value of MRT's net investment into DEP is higher at time 0, $3 million, than the book value, $2 million.

In principle:
Intrinsic Values form a better basis for managerial decision-making than accounting values. But intrinsic values are often hard to measure.

Accounting Values, while somewhat arbitrary, are important because **participants in the financial markets may interpret them as estimates of intrinsic values in the absence of other information**.

You need to understand the difference. As the chapter goes on, you'll see more comparisons of intrinsic values and accounting values.

3. Assume DTD Co. is a US owner of TZL, a subsidiary in the Euro Zone with the euro as its functional currency. From the US dollar perspective, DTD's investment in TZL has an **FX Intrinsic Value Exposure of 1.60 to the euro**.
   Assume DTD has no currency swap positions.
   Assume that the euro depreciates by 10%.

   A) What will DTD's new **Intrinsic Value Balance Sheet** and new **Book Balance Sheet** look like under current accounting rules?
   The **US dollar intrinsic value** of the net investment in TZL will **decrease by 1.60 x 10%=16%**. Thus the intrinsic value of TZL will decrease to $2000*(1-.16)=$1680. The book value of TZL decreases by 10%, so the new book value is $2000*(1-.10)=$1800. In US dollars, the value of *the $1000 in euro-denominated debt decreases by 10% to $900*, *both in book value and economic value*. The FX translation loss of $200 on TZL is taken to the AOCI account, but is offset (partially) by the $100 gain on the euro-denominated debt, since the euro-denominated debt qualifies as a net investment hedge.

   B) Ignoring the impact of the FX change on current operating cash flow, what will be the impact of the FX change on reported current earnings?
   DTD's reported earnings will not change, since **all of the euro-denominated debt qualifies for hedge accounting**.

DTD Company TIME 0 BALANCE SHEETS (in $s)		
REPORTED	*ASSETS*	*LIABILITIES & EQUITY*
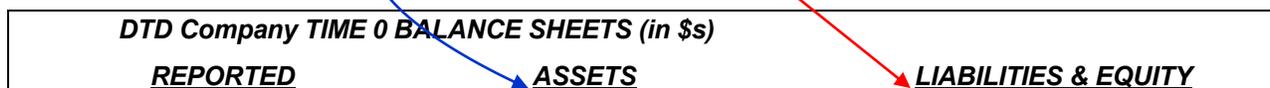
INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 2000 TZL	$ 1000 €-debt
		$ 1000 AOCI
		$ 6000 Other Equity
	$ 6000 Other	$ 7000 Equity
	$ 8000	$ 8000
INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 2000 TZL	$ 1000 €-debt
	$ 6000 Other	$ 7000 Equity
	$ 8000	$ 8000

DTD Company TIME 1 BALANCE SHEETS (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 1800 TZL	$ 900 €-Debt
		$ 900 AOCI
		$ 6000 Other Equity
	$ 6000 Other	$ 6900 Equity
	$ 7800	$ 7800
INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 1680 TZL	$ 900 €-Debt
	$ 6000 Other	$ 6780 Equity
	$ 7680	$ 7680

FX HEDGING AND SFAS 133

Managers who want to hedge FX exposure should know how the hedging would get reflected in their firm's financial statements. The US accounting rules for hedging are laid out in SFAS 133, which retains the FX hedging rules of SFAS 52. There is an international accounting standard that contains rules similar to SFAS 133 called *International Accounting Standard 39* (IAS 39). The basic ideas we cover in this chapter on SFAS 133 also generally apply under IAS 39.

In general, SFAS 133 requires that the MTM value of all derivatives positions appear on the balance sheet and the changes in MTM value be included in the computation of current reported earnings. SFAS 133 also spells out conditions where a derivative position may qualify for *hedge accounting*, i.e., special rules for the treatment of derivatives when hedging in order to achieve a matching of a derivative's gains and losses with those of the underlying hedged item in reported earnings.

SFAS 133 recognizes three categories of hedges:
1. *fair value hedges*, where the company is hedging the fair value of an asset or liability;
2. *cash flow hedges*, where the company is hedging an anticipated cash flow;
3. *net investment hedges*, where the company is hedging the net investment (book value)

of a foreign asset, a foreign subsidiary for example.
(items 2 & 3 are in the following sections)

Fair Value Hedge, (simplest case) the risk being hedged is a change in the fair value of an asset or liability that will affect current reported earnings.

Example: a US company issues a euro-denominated bond as part of a swap driven financing, with the company hedging the FX exposure of the bond by taking a long euro position in a currency swap. In this case, **the swap position may be regarded as a fair value hedge of FX exposure of the euro-denominated bond**. No special hedge accounting treatment applies in this case, but an …

Example: of the accounting treatment is instructive. The accounting for the euro-denominated bond follows the FX transaction rules of SFAS 52. Under SFAS 52, the accounting items for FX transactions are restated each period using the current spot FX rate. **The change in the statement value from the prior period is a gain or loss on that must be included in determining reported earnings for the period**, **unless the transaction hedges a foreign currency commitment or a net investment in a foreign entity**. Thus, the US dollar value of the euro-denominated bond is restated each period using the current spot FX rate and the gains and losses get reported in current earnings.

The accounting for the currency swap position follows the rules of SFAS 133. The MTM value the swap position must be shown on the balance sheet and changes in the MTM value are included in the computation of current reported earnings.

By design of the synthetic US dollar debt, the gain or loss on changes in the value of the bond in US dollars and the MTM gain or loss on the currency swap position tend to offset each other. If the FX price of the euro increases, the fair value of the bond in US dollars increases (a loss for the issuer), while the MTM value of the long euro swap position rises. If the FX value of the euro decreases, the fair value of the bond in US dollars drops (a gain for the issuer), while the MTM value of the swap position drops.

For simplicity, our example will show the offset to be exact, although the actual offset may not be exact due to differences in the credit risk of the counterparties involved, timing differences between the swap payments and debt interest payments, and so forth.

Exhibit 11.2 shows this situation for XYZ Company. SFAS 133 requires that the MTM value of the swap be shown on the balance sheet. The one-sided values of the two notional principal amounts are not shown on the actual balance sheet. Exhibit 11.2 shows them "off". At **time 0**, the swap is at-market, i.e., the one-sided values of the swap are equal, so there is no MTM value on the balance sheet at time 0. When the FX price of the euro drops by 20%, the unrealized MTM loss on the swap position is shown as an unrealized liability on the reported balance sheet in Exhibit 11.2, but the net result is no change in total liabilities because the value of the euro debt is also restated. The unrealized gain on the euro bond and the unrealized MTM loss on the swap position go to current reported earnings, but there is no net impact, since **they are offsetting**. This accounting boils down to being equivalent to the case where the firm has simply issued debt denominated in US dollars, as it should be for synthetic US dollar debt.

EXHIBIT 11.2: FAIR VALUE HEDGE, XYZ Company Reported Balance Sheets, Long Euro Currency Swap Hedging Euro-Denominated Debt

Time 0	**ASSETS**	**LIABILITIES & EQUITY**
(Off)	*$ 200 (Long €, $W_\epsilon^\$$)*	*$ 200 (Short $, $W_\$^\$$)*
	---------------------------------	---------------------------------
		$ 200 €-Debt
	$ 2000 Assets of Firm	*$ 1800 Equity*
	$ 2000	*$ 2000*

If **Euro Drops by 20%** *(Time 1)*

	ASSETS	**LIABILITIES & EQUITY**
(Off)	*$ 160 (Long €, $W_\epsilon^\$$)*	*$ 200 (Short $, $W_\$^\$$)*
	-----------------------------	-----------------------------
		$ 160 €-Debt
		$ 40 MTM Loss on Swap, $M_\epsilon^\$$
		$ 200 Total Liabilities
	$ 2000 Assets of Firm	*$ 1800 Equity*
	$ 2000	*$ 2000*

If **Euro Rises by 20%** *(Time 1)*

	ASSETS	**LIABILITIES & EQUITY**
(Off)	*$ 240 (Long €, W€$)*	*$ 200 (Short $, $W_\$^\$$)*
	$ 40 MTM Gain on Swap, $M_\epsilon^\$$	*$ 240 €-Debt*
	$ 2000 Assets of Firm	*$ 1800 Equity*
	$ 2040	*$ 2040*

If the **euro appreciates by 20%** instead of depreciating, euro debt would be restated at $240. The long side of the swap would be worth $240 and the MTM value of the swap would be $40. In this case the MTM value would show as an asset in the form of an unrealized gain. The unrealized loss on the euro bond and the unrealized MTM gain on the swap position go to current reported earnings, but there again is no net impact, since they are offsetting. This accounting boils down to being equivalent to the case where the firm has simply issued debt denominated in US dollars, as it should be for synthetic US dollar debt.

This period-by-period recognition of the unrealized changes in fair value of the underlying hedged investment is a deviation from normal accounting rules and constitutes hedge accounting in the case of fair value hedges to create a matching of gains and loss.

That is, **hedge accounting in the case of a fair value hedge involves an acceleration of the recognition as earnings of the changes in value of the hedged investment, while the hedge position is treated as it would be if it were not considered to be a hedge**.

Could a **foreign currency debt or swap position** that a firm uses to hedge FX value exposure **qualify as a fair value hedge**? This might be difficult for a firm establish because changes in the intrinsic value of an on-going operation may be difficult to measure. But if a firm were able to establish a hedge of **intrinsic value changes** as **a fair value hedge** under SFAS 133, **the accounting treatment would require the changes in fair (intrinsic) value of the underlying investment be reflected on the firm's balance sheet (not historical book value or translated net investment value)**. Then **the change in the fair (intrinsic) value of the underlying investment must be included in the computation of reported current earnings along with the MTM changes of the hedge instrument**.

   5. DOM Co. is a purely domestic US company with no foreign sales or subsidiaries. At **time 0**, DOM expects **operating cash flows** of $1 million per year into perpetuity. The company's **cost of capital** is 10%, so the **firm intrinsic value** is $10 million, and The **FX Intrinsic Value Exposure** to the yen is 0.75.
Assume that the **Spot FX Rate** at time 0 is 100 ¥/$.
Assume that at **time 0** DOM's **Intrinsic Value** and **Book Values** are the same, $10 million.
DOM has ¥750 million of 5% yen-denominated debt outstanding at par at time 0.
Between time 0 and **time 1**, the yen appreciates by 20%.
If the **Operating Cash Flow** at time 1 turns out to be $1 million, under current accounting requirements, …

A)   What will be the current reported earnings?
–$0.95 million

B)   What are the intrinsic and book values of DOM's equity at time 1?
The intrinsic value of DOM at time 1 is $11.50 million. Intrinsic equity value is $2.50 million; book equity value is $1 million.

CASH FLOW HEDGES

Another type of hedge position in SFAS 133 is a hedge of an ==ANTICIPATED CASH FLOW==, i.e., a ==CASH FLOW HEDGE==. In terms of accounting, if a firm gets a hedge position qualified as a cash flow hedge under SFAS 133, **the benefit is that hedge position receives hedge accounting treatment**. In the case of cash flow hedges, **hedge accounting treatment means that the MTM changes on the hedge position are deferred from inclusion in current reported earnings until the underlying cash flow being hedged is included in current earnings**.

To qualify as a hedge of an anticipated cash flow ==under SFAS 133==, a hedge position must pass a test for ==HEDGE EFFECTIVENESS==. The firm must file written documentation, prior to taking a hedge position, if it wants the position to qualify as a cash flow hedge.

Formal documentation must include:
1. **identification** of the hedging instrument and the hedged item or transaction;
2. the **nature of the risk** being hedged, including proof of a high probability that the cash flow will occur;
3. the **risk management objective** or strategy; and
4. how **hedging effectiveness** will be assessed.

Hedge effectiveness must be reviewed frequently; **if a hedge position no longer passes the test, changes in the MTM value of the position must be immediately and fully recorded in current earnings**. A complication is that a hedge position might only partially hedge some underlying risk. In this case, **the hedge ineffective portion must be measured and included in current reported earnings**.

Example: a simple cash flow hedge in the context of hedging FX transaction exposure with a forward FX position.
You expect to pay €2000 to buy a machine in two years.
Although the outlay is planned, it is not a legal obligation, so it is not a liability on your books.
The two-year **Forward FX Rate** is: $F_2^{\$/€}$ = 1.25 \$/€.
To hedge the FX transaction exposure:
you take a long two-year forward position on euros with a **Contract Size** of $Z^€$ = €2000.
The **Contract Amount** is $A^\$$ = €2000(1.25 \$/€) = \$2500.
Assume a year passes and there is one year left until the delivery time.
Assume that the spot FX rate is 1 \$/€,
the one-year US dollar interest rate is 5% and
the one-year euro interest rate is 3%.
The MTM value of the long forward FX position taken a year earlier is:

$$\text{Long Forward FX Position MTM Value} = (1\frac{\$}{€}) \times \left(\frac{€2000}{1.03}\right) - \frac{\$2500}{1.05} = -\$439 \text{ (eq. 3.4).)}$$

Regardless of whether the forward FX position qualifies as a cash flow hedge, **SFAS 133 requires that the \$439 MTM loss that must now appear as an unrealized liability on the firm's reported balance sheet, and the firm's reported equity will be lower by \$439 than it otherwise would have been**.

If the firm filed the proper documentation at time 0, including evidence that the anticipated cash outflow of €2000 was highly probable, and if that is still the case a year later, then the forward FX position is very likely to qualify as a cash flow hedge under SFAS 133.

In such case, **the \$439 MTM loss receives hedge accounting treatment**, **where the loss does not have to be reported as part of the company's current earnings**. Instead, –\$439 is regarded as other comprehensive income and added to the AOCI account in the equity section. The AOCI for the hedge will be reclassified into current earnings when the cash flow being hedged is included in current earnings.

If none of the forward FX position qualifies as a hedge under SFAS 133, the entire MTM loss is included in the computation of current reported earnings. On the balance sheet, the firm's reported equity is still lower by $439, but this time it is the Accumulated Retained Earnings account that is lower, not the AOCI account.

Exhibit 11.3 shows the changes in the accounts on the company's reported balance sheet when accounting for the forward FX contract. The firm is assumed to have assets and equity of $50,000 at time 0. The firm's equity consists of $30,000 of common stock, $20,000 of accumulated retained earnings, and 0 of AOCI. Assume that reported current earnings would be $5000 (all cash) at time 1 ignoring the MTM loss. Assume the firm pays no dividends, so that the cash earnings are reinvested into the firm's assets. At time 1, the firm has assets of $55,000, an unrealized liability of $439, and equity of $54,561.

Under the hedge accounting treatment, the MTM loss is not included in current earnings and is taken to the AOCI account.

Without hedge accounting treatment, the MTM loss is included in current earnings and taken to the accumulated retained earnings account. [There are no tax implications because the cash flow and the hedge outcome have not been realized.]

The reported balance sheets in Exhibit 11.3 do not consider the change in the intrinsic value of the future cash flow being hedged. If changes in the intrinsic value of the anticipated cash flow were also marked-to-market and reflected in the reported financial statements, then these changes would tend to offset those of the forward FX position. In that case, the accounting treatment would be consistent with the economic function of the hedge. Often, however, the changes in the intrinsic value of the underlying hedged item cannot be reflected in the reported balance sheet.

EXHIBIT 11.3: CASH FLOW HEDGE

Time 0	*ASSETS*	*LIABILITIES & EQUITY*
		$30,000 Common
		$20,000 Acc Ret Earnings
	$ 50,000 Assets of Firm	*$ 50,000 Equity*
	$ 50,000	*$ 50,000*

After Euro Drops by 20% (Time 1), Forward FX Position Qualifies as a Cash Flow Hedge

	ASSETS	*LIABILITIES & EQUITY*
		$ 439 Unrealized MTM Loss
		$30,000 Common
		$25,000 Acc Ret Earnings
		– $439 AOCI
	$ 55,000 Assets of Firm	*$ 54,561 Equity*
	$ 55,000	*$55,000*

Reported Current Earnings: $5000

Forward FX Position Does NOT Qualify as a Cash Flow Hedge

	ASSETS	*LIABILITIES & EQUITY*
		$ 439 Unrealized MTM Loss
		$30,000 Common
		$24,561 Acc Ret Earnings
	$ 55,000 Assets of Firm	*$ 54,561 Equity*

$ 55,000	*$55,000*
Reported Current Earnings: $4,561	

The box on Kashima Oil shows what can happen when the MTM changes on hedging instruments must be included in current earnings but changes in the intrinsic value of the hedged item cannot be.

Kashima Oil
unting for MTM changes in FX derivative positions, when the FX exposure being hedged is not reported in earnings, produces volatility in earnings for a firm. The effect can create severe problems. An example is Kashima Oil, which refines imported oil for the Japanese market. In the early 1990s, the strong yen meant cheap inputs and high profits. Concerned that the US dollar would appreciate, and thus that the price of oil would rise in yen terms, Kashima took long forward FX positions on the US dollar to hedge its anticipated future oil purchases. Then the US dollar instead continued to depreciate against the yen. While this depreciation was good news in terms of Kashima's anticipated future operating costs and operating cash flows, it was bad news in terms of its forward FX positions.

When the US dollar depreciated, Kashima had unrealized losses of ¥153 billion ($1.50 billion) on the forward FX positions, which dwarfed the company's total current annual pretax profit of ¥12.5 billion. While this was an unrealized accounting loss that did not require cash at that point (but would later), the accounting loss was measured, but the corresponding economic gain on the present value of the anticipated future revenue stream being hedged was not (and could not be) accounted for on paper. The circumstances required the firm to sell ¥100 billion worth of property and securities, and four parent firms and 29 banks had to infuse fresh capital.

If a company's FX exposure is to a foreign currency that does not have liquid trading in hedging instruments, the firm may be able to ***cross-hedge*** with instruments denominated in a different foreign currency that is highly correlated with the actual currency of the FX exposure. SFAS 133 requires that the **company be able to prove the correlation** between the actual currency of the exposure and the currency selected as the hedging vehicle, and it is likely that only a portion of the hedge position will pass the effectiveness test.

If a firm wants to use a **currency swap position** to hedge the FX exposure of foreign currency debt, the firm can generally get the position qualified as a **cash flow hedge** instead of a fair value hedge if it wants. We can see this in the box containing Footnote 17 to Altria Group's 2002 Financial Statements. The impact on financial statements is generally the same as if the situation was a fair value hedge, although there may be some preferred short-run accounting consequences of one or the other.

The usual application for cash flow hedge accounting for multinationals is when they hedge the FX exposure of their anticipated, i.e., budgeted, FX cash flows over a relatively short-term planning horizon. Hedge accounting for **positions that hedge the long-term FX operating exposure of a stream of future cash flows may be possible under SFAS 133**, as long as the cash flows are somewhat predictable. This predictability may be difficult to establish under the SFAS 133 rules, in which case the manager may be able to obtain hedge accounting for the position, or at least part of it, as a net investment hedge,

as we cover next.

NET INVESTMENT HEDGES

SFAS 52 permits the MTM gains and **losses on positions that hedge the FX translation changes** of a parent's net investment in foreign operations **to receive the same accounting treatment as the translation changes themselves**. SFAS 133 retains this accounting structure under ***net investment hedges***. Foreign currency denominated debt and currency swap positions (naked swap positions or those in synthetic foreign currency debt) are examples of positions that will qualify as net investment hedges.

We think in terms of hedging the FX exposure of the intrinsic value of a foreign investment to reduce the uncertainty in intrinsic equity value. From the point of view of SFAS 52 and SFAS 133, **foreign currency debt** or **currency swap positions** will be regarded as net investment hedges only against the book value of the net investment in the foreign operation. The excess of a firm's hedge position over the net investment book value does not qualify as a net investment hedge.

The treatment of gains and losses on actual foreign currency denominated debt that does not qualify as a hedge is covered under SFAS 52, while the treatment of MTM gains and losses on currency swap positions that do not qualify as a hedge are covered under SFAS 133. **The effect in both cases is the same: the gains and losses on foreign currency debt and currency swap positions that do not qualify as hedges must be reported in current earnings**.

> **Example**: MRT wants to **hedge 100% of the FX exposure of its net investment in DEP**
> with euro-denominated debt or a short currency swap position on euros.
> The intrinsic value of MRT's net investment in DEP is **$3 million** and
> MRT has an FX exposure to the euro equal to 1,
> **$3 million** in euro-denominated debt will hedge the FX exposure to the euro at time 0.
> For simplicity, we net DEP's translated asset and liability accounts into one account,
> the net investment in DEP.
> At time 0, the book value of the net investment in DEP is **$2 million**.
> Assume MRT has **$6 million** in other assets.
> Assume MRT has the **$3 million** in euro-denominated debt that hedges the FX exposure and has no other debt.
> Thus **Equity Book Value** at time 0 is $8 million – 3 million = **$5 million**.

The **Intrinsic Value** of MRT's equity is $9 million – 3 million = **$6 million** at time 0.

At time 0, SFAS 52 rules would allow only up to $2 million worth of MRT's euro-denominated debt to qualify as a net investment hedge, that is, they would allow only the amount equal to the book value of MRT's time-0 net investment in DEP. The MTM gains or losses on the $2 million of euro-denominated debt issued to hedge this net investment book value are taken to the AOCI account, matching the FX translation gain or loss on the net foreign investment. The MTM gains/losses of this $2 million of euro-denominated debt bypass the current earnings statement, just as the FX translation

gains/losses on the book value of the net foreign investment.

The other $1 million worth of its euro-denominated debt does not qualify as a net investment hedge because it does not match to a book value of net foreign investment. This $1 million would be regarded under SFAS 52 as a **_foreign currency transaction_**. The MTM changes on $1 million of euro debt must figure into the computation of current reported earnings.

Assume the euro depreciates by 20% between time 0 and time 1. For clarity, we assume that MRT's net cash flow is paid out to shareholders as dividends. At time 1, the intrinsic value of MRT's net investment in DEP is $2.40 million, so that the intrinsic value of MRT as a whole is $8.40 million. The $3 million in euro-denominated debt is worth $2.40 million, so that the time-1 intrinsic value of MRT's equity is $8.40 million – 2.40 million = $6 million, the same as at time 0. **The stability of the intrinsic value of MRT's equity is the point of using the euro-denominated debt as a hedge**, as you learned in Chapter 9.

By SFAS 52 rules, the translation loss on MRT's net investment into DEP, $0.40 million, bypasses the current earnings statement and would be taken directly to the AOCI (CTA) account. There is also a gain of $0.40 million on the $2 million of MRT's euro-denominated debt that qualifies as a net investment hedge, and is thus also taken to the AOCI (CTA) account, offsetting the translation loss of $0.40 million on the net investment into the subsidiary.

The remaining $1 million of MRT's euro-denominated debt that does not match with the net investment book value is worth $0.80 million at time 1, representing an MTM gain (non-cash) of $0.20 million. Since this portion of MRT's euro-denominated debt does not hedge a net investment book value and is thus considered a foreign currency transaction for accounting purposes, the $0.20 million gain must be reported in current earnings and get taken to accumulated retained earnings.

The new book value of MRT's total assets is $7.60 million. Since the debt will appear on the reported balance sheet in US dollars as $2.40 million, the time-1 book value of MRT's equity is $7.60 million – 2.40 million = $5.20 million, which is equal to the time-0 book value of equity, $5.00 million, plus the addition to accumulated retained earnings of $0.20 million. Note that current reported earnings and book value of equity are higher by $0.20 million when the euro depreciates, the opposite direction of the firm's FX exposure. This is because the hedge position of $3 million for the intrinsic exceeds the amount allowed as an accounting hedge, $2 million.

Exhibit 11.4 summarizes this example.

EXHIBIT 11.4: MRT COMPANY (US Parent of DEP)
FX Exposure (to the euro) of Investment in DEP: **1**
MRT Hedges with $3 million Actual Euro-Denominated Debt
Time 0 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 2 million DEP	$ 3 million €-Debt
	$ 6 million Other	$ 5 million Equity
	$ 8 million	$ 8 million

INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 3 million DEP	$ 3 million €-Debt
	$ 6 million Other	$ 6 million Equity
	$ 9 million	$ 9 million

Time 1 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 1.60 million DEP	$ 2.40 million €-Debt
	$ 6 million Other	$ 5.20 million Equity
	$ 7.60 million	$ 7.60 million

INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 2.40 million DEP	$ 2.40 million €-Debt
	$ 6 million Other	$ 6 million Equity
	$ 8.40 million	$ 8.40 million

ABC Co. is a US owner of the Eurozone subsidiary, TZL who's functional currency is €.
US $ perspective; ABC's net investment in TZL has an FX value exposure to the euro of 2. ABC has no currency swap positions.
ABC's current reported and intrinsic value balance sheets are shown below.
ABC's euro-denominated debt does not qualify as a cash flow hedge,
ABC may use some of the euro-denominated debt as a net investment hedge up to the book value of its net investment in TZL.
Assume that the euro appreciates by 10%.

ABC TIME 0 BALANCE SHEETS (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 2000 TZL	$ 4000 €-Debt
		$ 1000 AOCI
		$ 3000 Other
Equity		
	$ 6000 Other	$ 4000 Equity
	$ 8000	$ 8000
INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 2000 TZL	$ 4000 €-Debt
	$ 6000 Other	$ 4000 Equity
	$ 8000	$ 8000

A) What will ABC's time-1 *REPORTED* and *INTRINSIC VALUE* balance sheets look like?

The intrinsic value of TZL will increase by 2 x 10%, or 20%, so the time-1 intrinsic value is $2400. The book value of TZL increases by 10%, so the time-1 book value is $2200. In US dollars, the value of the $4000 in euro debt increases by 10% to $4400, both in book value and intrinsic value. Thus, there is a $400 loss on the euro-denominated debt. Since $2000 of the euro debt qualifies as a net investment hedge, $200 of the $400 loss on the euro-denominated debt offsets the FX translation gain on the net investment book value of TZL, so the AOCI does not change.

B) (B) Ignoring the impact of the FX change on current operating cash flow, what will be the impact on ABC's reported current earnings?

Current reported earnings will be lower by $200, since only half ($2000) of the euro-denominated debt qualifies as a hedge, and thus the MTM gains on the non-qualifying portion go to current earnings. Ignoring taxes, this results in a drop in Accumulated Retained Earnings (here part of Other Equity).

ABC TIME 1 BALANCE SHEETS (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 2200 TZL	$ 4400 €-Debt
		$ 1000 AOCI
		$ 2800 Other
Equity		
	$ 6000 Other	$ 3800 Equity

INTRINSIC VALUE	$ 8200 FIRM VALUE	$ 8200 LIABILITIES & EQUITY
	$ 2400 TZL $ 6000 Other $ 8400	$ 4400 €-Debt $ 4000 Equity $ 8400

The same results occur if MRT tries to hedge the FX exposure with a short euro position in a currency swap that has a notional principal of $3 million, instead of with the euro-denominated debt.

- If MRT is otherwise all equity, the swap position is naked;
- if MRT couples the swap position with US dollar debt of $3 million, the company has synthetic euro debt.

Either way, if the euro drops by 20%, the MTM gain on the swap position is $0.60 million. This gain is shown as an asset on MRT's reported balance sheet under SFAS 133. Since it is an economic gain, we also conceive of it on MRT's intrinsic value balance sheet.

At time 0, $2 million of the notional principal of the swap position qualifies as a net investment hedge under SFAS 133, while the other $1 million is regarded as a foreign currency transaction. If the euro drops by 20%, the MTM gain on the first $2 million ($0.40 million) matches the route of the FX translation loss on the net investment book value through to the AOCI (CTA) account, while the MTM gain on the other $1 million of notional principal ($0.20 million) is included in current reported earnings and goes to the accumulated retained earnings account. In effect, the accounting implications of the currency swap are the same as those of euro-denominated debt, by design of SFAS 133.

Exhibit 11.5 shows the swap scenario assuming that MRT has $3 million in US dollar debt. The off balance sheet one-sided swap values are not shown, but the swap's MTM gain at time 1 is shown.

EXHIBIT 11.5: MRT COMPANY (US Parent of DEP)
FX Value Exposure of Investment in DEP: 1
MRT Hedges with $3 million Short Euro Currency Swap Position
   Time 0 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 2 million DEP $ 6 million Other $ 8 million	$ 3 million $-Debt $ 5 million Equity $ 8 million
INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 3 million DEP $ 6 million Other $ 9 million	$ 3 million $-Debt $ 6 million Equity $ 9 million

   Time 1 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 0.60 million Swap MTM $ 1.60 million DEP	$ 3 million $-Debt

	$ 6 million Other	$ 5.20 million Equity
	$ 8.20 million	$ 8.20 million
INTRINSIC VALUE	**FIRM VALUE**	**LIABILITIES & EQUITY**
	$ 0.60 million Swap MTM	$ 3 million $-Debt
	$ 2.40 million DEP	
	$ 6 million Other	$ 6 million Equity
	$ 9 million	$ 9 million

The MRT/DEP examples show that:

The MTM changes on a position that hedges FX exposure can create FX accounting exposure.

The FX Accounting Exposure in these examples is the MTM change on the portion of the hedge position that does not qualify for Hedge Accounting.

That MTM change is a gain of $0.20 million, which we said is reported in current earnings and which we saw resulted in an increase in the reported book value of the firm's equity.

The reason for the FX accounting exposure in this case is that changes in Intrinsic Value cannot be accurately measured and thus cannot be reported on accounting statements.

The impact of FX changes on the book value of the assets underlying an exposed investment are accounted for, but **when the book value changes are not equal to the intrinsic value changes, some FX accounting exposure will result when the firm hedges the FX value changes.**

Before SFAS 133, the accounting treatment for currency swaps, and thus synthetic foreign currency debt, was different than the accounting treatment for actual foreign currency debt. Accounting rules required the reporting of only realized gains or losses on derivatives, rather than the MTM gains or losses. For positions with longer maturities than the current reporting period, the MTM gains or losses were treated as contingent liabilities, required to be disclosed in the aggregate in the notes to the financial statements, but not required to be reported in current earnings or in balance sheet accounts. It was thus possible for a firm to hedge FX value exposure with currency swaps and simultaneously avoid FX accounting exposure.

At one time, *currency-indexed debt* was another way for firms to avoid FX accounting exposure when trying to hedge FX value exposure. Currency-indexed debt is technically denominated in an issuer's base currency, but the interest and/or principal are a variable amount that is indexed on an FX rate. If both the principal and interest are indexed in direct proportion to an FX rate, then currency-indexed debt is economically the same as foreign currency debt. Alternatively, **currency-indexed debt is economically equivalent to synthetic foreign currency debt**, constructed out of base currency debt and a currency swap. **If MRT were to have US dollar debt, with interest and principal indexed to the $/€ FX rate, this bond would behave economically the same as an actual euro-denominated bond.** Such a bond would

function as a hedge of the FX value exposure. Now, SFAS 133 makes clear that embedded derivatives like this must be accounted for separately as if they were stand-alone derivatives.

FX INTRINSIC VALUE EXPOSURE VERSUS FX ACCOUNTING EXPOSURE

In this section, we further **compare FX intrinsic value exposure and FX accounting exposure** using several scenarios **where a firm's hedge position does not match the net investment book value and the non-matching portion does not qualify for hedge accounting**.

First, assume XYZ Company has an **FX intrinsic value exposure of 0.40 to the euro** because of its investment in Lenox S.A., a subsidiary in the Eurozone with the euro as its functional currency. Assume that **the intrinsic value of XYZ's net investment in Lenox is $10 million**. We know that **XYZ can use 0.40($10 million) = $4 million in euro-denominated debt to put on a hedge that eliminates its FX equity exposure** (in intrinsic value terms).

As long as the book value of XYZ's net investment in Lenox is not less than $4 million, the full amount of the debt will qualify as a net investment hedge, since the debt amount would be less than the net investment book value. But **there will be no hedge of the FX translation exposure on the portion of the net investment book value above $4 million**.

Example: assume that the book value of XYZ's net investment in Lenox is $6 mill, higher than the principal of the euro debt that hedges the FX intrinsic value exposure of $4 mill.

net investment book value not matched = $6 million – 4 million = $2 million

The translation gains or losses for the amount of the net investment book value not matched will have to be reflected on XYZ's reported balance sheet as changes in the AOCI (CTA) account. Thus there will be an FX translation exposure, a change in the book value of the XYZ's reported equity whenever the FX rate changes.

If the spot FX value of the euro rises, the book value of XYZ's equity increases, and vice versa. Current reported earnings are unaffected by FX changes, since the FX translation changes avoid the current earnings statement, and since the MTM changes on the euro-denominated debt qualify as a net investment hedge.

Exhibit 11.6 shows the time-1 balance sheets in this case for a 20% decline in the FX value of €. The book value of the net investment into Lenox drops from $6 million to $4.80 million.

The FX translation loss on this net investment, $1.20 million, goes to the AOCI (CTA) account. The debt value drops from $4 million to $3.20 million.

Since all of the debt qualifies as a hedge of net investment, the $0.80 million gain goes to the AOCI (CTA) account.

The net change in the AOCI (CTA) account is a drop of $1.20 million – 0.80 million = $0.40 mill. Although there is no impact on current earnings, XYZ does have FX accounting exposure to the euro in the book value of its equity because of the changes in the AOCI (CTA) account.

EXHIBIT 11.6: XYZ COMPANY (US Parent of Lenox)
  $4 MILLION IN EURO DEBT
 Lenox FX Intrinsic Value Exposure = 0.40;
 Lenox Book Value = $6 million

   Time 0 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 6 million Lenox	$ 4 million €-Debt
	$ 5 million Other	$ 7 million Equity
	$11 million	$ 11 million

INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 10 million Lenox	$ 4 million €-Debt
	$ 5 million Other	$ 11 million Equity
	$ 15 million	$ 15 million

   Time 1 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 4.80 million Lenox	$ 3.20 million €-Debt
		$7 million Common
		– $ 0.40 million AOCI
	$ 5 million Other	$ 6.60 million Equity
	$ 9.80 million	$ 9.80 million

INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 9.20 million Lenox	$ 3.20 million €-Debt
	$ 5 million Other	$ 11 million Equity
	$ 14.20 million	$ 14.20 million

What if XYZ decides to have $6 million in euro-denominated debt? This would eliminate the FX accounting exposure, but would create some FX equity exposure (in intrinsic value terms). The scenario in this case when the spot FX price of the euro drops by 20% is shown in Exhibit 11.7. There is no FX accounting exposure because the $6 million in euro debt is an exact hedge of the book value of XYZ's net investment in Lenox. But since more euro debt is used than is needed to hedge the FX value exposure, a negative FX equity exposure to the euro has been created.

EXHIBIT 11.7: XYZ COMPANY (US Parent of Euro Zone Subsidiary Lenox)

$6 MILLION IN EURO DEBT

Lenox FX Intrinsic Value Exposure = 0.40; Lenox Book Value = $6 million

Time 0 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 6 million Lenox	$ 6 million €-Debt
	$ 5 million Other	$ 5 million Equity
	$11 million	$ 11 million

INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 10 million Lenox	$ 6 million €-Debt
	$ 5 million Other	$ 9 million Equity
	$ 15 million	$ 15 million

Time 1 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 4.80 million Lenox	$ 4.80 million €-Debt
	$ 5 million Other	$ 5 million Equity
	$ 9.80 million	$ 9.80 million

INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 9.20 million Lenox	$ 4.80 million €-Debt
	$ 5 million Other	$ 9.40 million Equity
	$ 14.20 million	$ 14.20 million

Let us now consider an example of ==negative FX value exposure==. **A negative FX value exposure could characterize a foreign subsidiary that is an exporter of goods to the United States (see Chapter 6) or competes in the foreign market against a firm exporting from the United States**.

Assume ABC Co. is a US owner of SNC, a subsidiary in the Eurozone with the euro as its functional currency. Assume that the **intrinsic value** of ABC's net investment in SNC has a negative FX exposure of **–1.60** to the euro. In this case, ABC may use a long euro swap position to hedge the FX exposure. But **such a hedge position will not be regarded as a hedge of ABC's net investment under SFAS 52 and SFAS 133, because the MTM gains and losses on the swap position will move in the same direction as the FX translation gains and losses on the book value of ABC's investment in SNC**. Similarly, the hedge position would not qualify as a cash flow hedge.

Assume ABC's net investment in SNC has a **book value of $2000** and **intrinsic value of $2000**. Assume that ABC hedges at time 0 with an at-market long euro currency swap position with **notional principal of $3200**, which we know should hedge the FX exposure since **1.60($2000**) = **$3200**. Assume the euro depreciates by 10%. The **intrinsic value** of ABC's net investment in SNC **changes** by **–1.60(–10%) = 16%, to $2000(1.16) = $2320**. The **book value** of ABC's net investment in SNC **decreases by 10%**, so the new book value is **$1800**. The FX translation loss of $200 on SNC is taken to the AOCI account. The MTM change on the long euro swap position is $2880 – 3200 = –$320. Reported current earnings and Other Equity are lower by $320, since the swap position is not viewed as a hedge of the net investment. Combining the translation loss and the MTM loss, book equity is lower by $520. The impact of the euro's drop on current earnings and book equity is negative, even though the impact on the firm's intrinsic value is positive. See Exhibit 11.8.

EXHIBIT 11.8: ABC COMPANY (US Parent of Euro Zone Subsidiary SNC)
FX Intrinsic Value Exposure = –1.60; Hedge is Long Euro Currency Swap
Time 0 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 2000 SNC	
	$ 6000 Other	$ 8000 Equity
	$ 8000	$ 8000
INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 2000 SNC	
	$ 6000 Other	$ 8000 Equity
	$ 8000	$ 8000

Time 1 Balance Sheets (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 1800 SNC	$ 320 Unrealized MTM Loss
		– $ 200 AOCI
		$ 7680 Other Equity
	$ 6000 Other	$ 7480 Equity
	$ 7800	$ 7800

–$320 Included in Current Reported Earnings

INTRINSIC VALUE	FIRM VALUE	LIABILITIES & EQUITY
	$ 2320 SNC	$ 320 MTM Loss
	$ 6000 Other	$ 8000 Equity
	$ 8320	$ 8320

Next, consider briefly a domestic company that has no operating transactions in foreign currencies and its assets and sales are 100% located in the US and denominated in US dollars. **Although the company's sales are assumed to be totally on US soil, its revenues are assumed to be sensitive to changes in the $/£ FX rate because of actions of British competitors operating in the United States**. That is, the company is **assumed** to have a **competitive FX revenue exposure** to the British pound.

The company wants to **hedge its FX intrinsic value exposure** to the pound by having **pound-denominated debt or a short pound currency swap position**. But because the company has no pound-denominated foreign assets, the hedge does not qualify as a net investment hedge. And because the company's cash flows are in US dollars, there is no way for the hedging strategy to qualify as a **cash flow hedge of FX risk**.

This is another case where the **MTM changes in instruments that hedge the intrinsic value of a firm have no matching changes in the book value of the firm's assets**. It is therefore not possible to prove these hedge positions are highly effective, and thus they will not qualify for hedge accounting. Then the changes in MTM values of the FX hedging instruments must be included in current earnings, with the undesirable side effect that **current earnings will be more volatile**.

Finally, assume that the US parent's investment in a foreign subsidiary has an **FX exposure of 0** to the foreign currency, as in the case of Vulcan in Chapter 9. **With an FX value exposure of 0, the parent's intrinsic value would not change as FX rates change, and no hedging by the parent is necessary to protect the intrinsic value of its equity**. Yet the parent is still subject to the same FX translation exposure as in the MRT example **if the euro is the functional currency of the subsidiary**. Here it is useful for the parent that **SFAS 52 does not require the translation gains or losses on the net investment in the subsidiary to be represented on the parent's current reported earnings**. At the same time, the equity section of the parent's balance sheet does reflect the FX translation exposure through the AOCI account. Since the FX value exposure is 0, these FX translation changes do not have any economic meaning.

4. Assume ABC Co. is a US owner of SNC, a subsidiary in the Eurozone with the euro as its functional currency. From the **US dollar perspective**, ABC's net investment in SNC has an

FX Intrinsic Value Exposure = –1.20 to the euro. Assume **ABC hedges its FX intrinsic value exposure** with a long euro currency swap position with **Notional Principal** of **$3600**.
The swap is an **At-Market Swap** at time 0. Assume that the **euro depreciates by 10%.**

A) What will ABC's new intrinsic value balance sheet and new book balance sheet look

like under current accounting rules?
The **Intrinsic Value** of SNC will **change (INCREASE)** by **–1.20(–10%) = 12%**.
Thus the **Intrinsic Value** of SNC will **increase by 12% to $3360**.
The **book value** of SNC **decreases by 10%**, to the new book value of **$2700**.
In US dollars, the **MTM** value of the **$3600** long euro swap position is $3240 – 3600 = **–$360**. **The FX translation loss of $300** on SNC is taken to the **AOCI** account.

B) Ignoring the impact of the FX change on current operating cash flow,
    What will be the impact of the FX change on **reported current earnings**?
Reported earnings will be lower by $360, since a long swap position is not viewed as a hedge of the net investment (book value) or of the cash flows of SNC, and thus does qualify for hedge accounting

---

ABC Company TIME 0 BALANCE SHEETS (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 3000 SNC	
	$ 5000 Other	$ 8000 Equity
	$ 8000	$ 8000
INTRINSIC VALUE	**FIRM VALUE**	**LIABILITIES & EQUITY**
	$ 3000 SNC	
	$ 5000 Other	$ 8000 Equity
	$ 8000	$ 8000

ABC Company TIME 1 BALANCE SHEETS (in $s)

REPORTED	ASSETS	LIABILITIES & EQUITY
	$ 2700 SNC	$ 360 Unrealized MTM
Loss		
		–$ 300 AOCI
		$ 7640 Other Equity
	$ 5000 Other	$ 7340 Equity
	$ 7700	$ 7700
INTRINSIC VALUE	**FIRM VALUE**	**LIABILITIES & EQUITY**
	$ 3360 SNC	*$ 360 MTM Loss*
	$ 5000 Other	$ 8000 Equity
	$ 8360	$ 8360