Chapter 13

Measuring Exposure to Exchange Rates
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Types of Exposure

Contractual Exposure
  Limitations of ContrExp Hedging
  What about Fuzzy Contracts?
  What About Book Values?

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  Operating Exposure Comes in all Shapes & Sizes
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  General Issues in Linear Cross-Hedging

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  Translating Entire FC Financials
  Closing Remarks
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The Concepts of Risk and Exposure

✧ **Forex Risk**

▷ a measure of uncertainty, like the variance of $\tilde{S}_T$

✧ **Forex Exposure**

▷ a numerical measure of how sensitive the financial position of a firm is to changes in the exchange rate: $B_{t,T} := \frac{\Delta \tilde{V}_T}{\Delta \tilde{S}_T}$.

▷ Note that the changes $\Delta$ are at $T$—comparing two or more possible future time-$T$ outcomes, not changes over time:

– a partial derivative $\frac{\partial \tilde{V}_T}{\partial \tilde{S}_T}$.
– the exposure of an option in a binomial model
– the regression coefficient of $\tilde{V}_T$ on $\tilde{S}_T$ across scenarios
– in contractual exposure: the FC contract size:

**Example**

You hold HC Tbill, 5000 units, and FC Tbill, 7000 units. So

\[ \text{HC value } \tilde{V}_T = 5,000 + 7,000 \tilde{S}_T \]

⇒ exposure is 7,000 units of forex, as $\Delta V_T = 7000 \Delta S_T$. 

Measuring Exposure to Exchange Rates

P. Sercu, *International Finance: Theory into Practice*

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Exposures: *What* is affected by $\Delta S_T$?

- **(Contractual $\sim$ :)** HC *realized cash flow* from FC-denominated contracts
  - For every date: A/R & A/P, other commercial contracts, loans & deposits, forward sales & purchases. $B = \text{net flow that day}$.
  - *(Assumed to be) risk-free in FC, so HC value is linear in $\tilde{S}_T$*

- **(Operations $\sim$ :)** future non-contractual cash flows:
  - there is no known single contractual FC amount: decisions still need to be taken (by us, by others), and may depend on $\tilde{S}_T$ and on other variables
  - relation between HC cashflow and $\tilde{S}_T$ is noisy (⇐ other variables) and—p.t.o.—probably convex in $\tilde{S}_T$

- **(Translation $\sim$ :)** book values, not cash flows
  - Book value of contractual positions in FC
  - Book value of foreign subsidiaries whose books are kept in FC
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Example: VW exporting bugs to the US

- current export price, USD 2000, induces a cashflow in DEM that is linear in $S_T$, ceteris paribus
- If the rate changes enough, VW will change the price ...
  - upward if USD went down, giving up volume to improve shrunken profit margin
  - downward if USD went up, giving up some of the extra margin to increase sales
- Any new pricing policy induces a new cet-par-linear relation with $S_T$
- Optimizing leads to convexity
Exposures—the Movie

- **CONTRACTUAL**
  - outstanding contracts in FC
    - one-to-one, perfect hedge
  - future S

- **OPERATING**
  - economic conditions, home & abroad
    - indirect, imperfect hedge
  - HC cashflow
  - ? taxes

- **TRANSLATION**
  - accounting rules chosen
  - book values
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Viticola de Calabria can avoid ContrExp from its monthly sales of Fine Wines to the US—so what?

- **Constant USD price; hedge every invoice**
  - *cet par*, sales volume in USD will remain constant
  - conditional variance falls: every hedge replaces $\tilde{S}_T$ by a known $F_{t,T}$, which is close to $S_t$
  - even if we hedge each & every A/R, the unconditional risk is unaffected: long-run time series of hedged incomes will remain as variable as the unhedged one
  - So: should we hedge also expected sales?

- **Constant EUR price?**
  - No ContrExp, but
  - USD cost of wine fluctuates, inducing fluctuations in sales volume

So either way there still is Operating Exposure.
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- **Where does “risk-free” stop? (1)**
  - cancellation clauses, default risk: no contract is a 100% sure prospect
  - is a memorandum of understanding or an orally expressed intent, a contract?
  - what about highly likely sales/purchases, even if there is no contract/MOU/talks?

- **Hedging of “expected” future sales** brings up two issues—those of operations exposure:
  - non-linearity:
    - use an approximate linear hedge? if so, which approximation?
      “expected” FC sales (or purchases etc)? will NOT do – see below.
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  - noise: other variables can obscure/upset the likely effect of $S_T$
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Why look at realized cash flows only?

What about (marked-to-market) book value of e.g. A/R and A/P—i.e. unrealized gains/losses that do reflect genuine changes in value?

if the answer is yes, then what about the value of participations in foreign firms in consolidated A/L.

New issues if we bring in unrealized gains/losses (translation exposure):

- hedging of cash-flows v hedging of PVs:
  - in principle, value hedging is an alternative to cash-flow hedging. Don’t do both.
  - issue 1: how to estimate value changes of individual assets and liabilities
  - issue 2: risk arising from time mismatches between hedge cashflow and exposed asset

- hedging an unlisted company:
  - same problems—only worse
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◊ **Multiple sources:**

▷ Exporting firms—whether invoicing in HC or not
▷ Importing firms
▷ “Domestic” firms with foreign competitors
▷ “Domestic” firms with *potential* foreign competitors
▷ Closed-industry firms: via general economic activity

◊ **Typical issues:**

▷ Difficult to identify the relationship between CF and $\tilde{S}_T$
▷ Conclusions often surprising or counter-intuitive
▷ How to handle nonlinearity and noise?

◊ **Three examples (below):**

▷ (1) pure binomial: pseudo-linear, no noise
▷ (2) two possible values for $\tilde{S}_T$, and noise added to $E(\tilde{V}_T | S_T)$
▷ (3) multiple possible exchange rates
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A Non-linearity: the Option to Export

\[ CF_T \]

Export

\[ ST \]

Sell at home
An Indirect Exposure via General Activity

Example: your Freedonian Subsidiary

- CF depends on economic conditions: boom/funk (prob 50/50)
- but boom/funk depends on Xrate (120 or 80, prob 50/50)
- modeled as 35% chance of boom when FRK is cheap (>25%)

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Exposure?

- \( B = 0? \) (“CF does not depend on Xrate but on business conditions”)
- \( B = 125? \) (“\( E(CF^*) = 125 \)”)
- \( B = 75 \) (the right answer)
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- Belgium’s Android MetaProducts has a UK marketing affiliate
- 1992. GBP has been at BEF/GBP 60 for 2 years now, despite UK’s high inflation
- Soros: “unsustainable”. HM’s Government may react by
  - devaluing to BEF/GBP 55: $CF^* = 1.80m$
  - start a deflationary policy: $CF^* = 1.55m$

Exposure?

- $B = GBP 1.675m$? (“$= (1.80m+1.55m)/2$”)
- “we have no probability data—but $B$ must be somewhere between 1.80m and 1.55m”?
- $B = −1.2m$? (the right answer)
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The General Linear Hedge

Dumas’ regression approach:

◦ **Step 1** Come up with a table containing
  ▶ a column of representative possible $\tilde{S}_T$’s,
  ▶ a column showing their probabilities, and
  ▶ a column showing the expected CF in HC for each such scenario ($\Rightarrow$ talk to marketing and production people—sorry)

◦ **Step 2** Decompose the (HC) CF’s into
  ▶ a part perfectly correlated with $\tilde{S}_T$ and
  ▶ a part uncorrelated with $\tilde{S}_T$

  This is done via regression across possible time-$T$ scenarios:

  \[
  \tilde{V}_T = A_{t,T} + B_{t,T}\tilde{S}_T + \tilde{e}_{t,T} = A_{t,T} + \tilde{e}_{t,T} + B_{t,T}\tilde{S}_T.
  \]

  uncorr with $\tilde{S}_T$  \hspace{1cm} linear in $\tilde{S}_T$

  uncorr with $\tilde{S}_T$  \hspace{1cm} risk-free

◦ **Step 3** Sell forward FC $B$ (i.e. buy $-B$ if $B < 0$)

  \[
  \tilde{V}_T^h = A_{t,T} + \tilde{e}_{t,T} + B_{t,T}\tilde{S}_T + B_{t,T}[F_{t,T} - \tilde{S}_T],
  \]

  \[
  = A_{t,T} + \tilde{e}_{t,T} + B_{t,T}F_{t,T}.
  \]
Dumas’ regression approach:

- **Step 1** Come up with a table containing
  - a column of representative possible $\tilde{S}_T$’s,
  - a column showing their probabilities, and
  - a column showing the expected CF in $HC$ for each such scenario ($\Rightarrow$ talk to marketing and production people—sorry)

- **Step 2** Decompose the ($HC$) CF’s into
  - a part perfectly correlated with $\tilde{S}_T$ and
  - a part uncorrelated with $\tilde{S}_T$

  This is done via regression across possible time-$T$ scenarios:
  \[
  \tilde{V}_T = A_{t,T} + B_{t,T} \tilde{S}_T + \tilde{e}_{t,T} = A_{t,T} + \tilde{e}_{t,T} + B_{t,T} \tilde{S}_T .
  \]
  - uncorr with $\tilde{S}_T$
  - linear in $\tilde{S}_T$

- **Step 3** Sell forward FC $B$ (i.e. buy $-B$ if $B < 0$)
  \[
  \tilde{V}^h_T = A_{t,T} + \tilde{e}_{t,T} + B_{t,T} \tilde{S}_T + B_{t,T} [F_{t,T} - \tilde{S}_T],
  \]
  \[
  = A_{t,T} + \tilde{e}_{t,T} + B_{t,T} F_{t,T} .
  \]
  - uncorr with $\tilde{S}_T$
  - risk-free
The General Linear Hedge

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Comments on the Regression Approach

- This approach minimizes the remaining variance (the variance of the hedged cash flow)
  - Remaining risk is uncorrelated with $\tilde{S}_T$, so cannot be picked up by forward contract

- in a pure binomial case: regr coeff collapses to the familiar two-point exposure

- in a binomial case with noise added: collapses to a two-point exposure, using conditional expected cash flows

- in general: provides a linear projection of expected cashflows onto $\tilde{S}_T$
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Example 1: Android and the Pound

CF* = 1.8m or 1.55m, but B = GBP−1.2m!

<table>
<thead>
<tr>
<th>$S_1$</th>
<th>CF* GBP</th>
<th>CF*S BEF</th>
<th>hedge payoff BEF</th>
<th>CF hedged BEF</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>1.80m</td>
<td>99m</td>
<td>$1.2m \times (55 - 58) = -3.6m$</td>
<td>$99m - 3.6m = 95.4m$</td>
</tr>
<tr>
<td>60</td>
<td>1.55m</td>
<td>93m</td>
<td>$1.2m \times (60 - 58) = +2.4m$</td>
<td>$93m + 2.4m = 95.4m$</td>
</tr>
</tbody>
</table>

$\Delta S = 5$  \hspace{1cm} $\Delta V = -6m$

$\Rightarrow \Delta V / \Delta S = -6m / 5 = -1.2m$

Let $F = 58$. 
Example 2: You and the Crown

Step 1: Identify Exposure: \( B = \text{FDK} \ 75. \)

| \( S_T \) | unhedged cash flows | \( E(\tilde{V}_T|S_T) \) |
|-----------|---------------------|--------------------------|
| \( S_T = 1.2 \) | \( 150 \times 1.2 = 180 \) \( p = 0.15 \) \( 100 \times 1.2 = 120 \) \( p = 0.35 \) | \( \frac{180 \times 0.15 + 120 \times 0.35}{0.15 + 0.35} = \text{GBP} \ 138 \) |
| \( S_T = 0.8 \) | \( 150 \times 0.8 = 120 \) \( p = 0.35 \) \( 100 \times 0.8 = 80 \) \( p = 0.15 \) | \( \frac{120 \times 0.35 + 80 \times 0.15}{0.35 + 0.15} = \text{GBP} \ 108 \) |
| \( \Delta S = 0.4 \) | | \( \Delta E(V) = 30 \) \( \Rightarrow B = \frac{30}{0.4} = \text{FDK} \ 75 \) |
Example 2: You and the Crown

Step 2: Verify the Hedge.

Let $F = 0.96$, so hedge pays off either $-75 \times (1.2 - .96) = -18$

or $-75 \times (.80 - .96) = +12$

| $S_T$ | boom: $\text{CF}^* = 150$ | bust: $\text{CF}^* = 100$ | $E(\tilde{V}_T|S_T)$ |
|------|--------------------------|--------------------------|-------------------|
| 1.2  | $150 \times 1.2 = 180$  | $100 \times 1.2 = 120$  | $\frac{180 \times 0.15 + 120 \times 0.35}{0.15 + 0.35} = \text{GBP 138}$ |
| 0.8  | $150 \times 0.8 = 120$  | $100 \times 0.8 = 80$   | $\frac{120 \times 0.35 + 80 \times 0.15}{0.35 + 0.15} = \text{GBP 108}$ |

unhedged cash flows

<table>
<thead>
<tr>
<th>$S_T$</th>
<th>hedged cash flows</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>$180 - 18 = 162$</td>
</tr>
<tr>
<td>0.8</td>
<td>$120 + 12 = 132$</td>
</tr>
</tbody>
</table>
Example 3: $E(CF|S)$ non-linear in $S$

![Graph showing non-linear exposure with S on the x-axis and V(S_T) on the y-axis.]

<table>
<thead>
<tr>
<th>S</th>
<th>0.80</th>
<th>0.82</th>
<th>0.84</th>
<th>0.86</th>
<th>0.88</th>
<th>0.90</th>
<th>0.92</th>
<th>0.94</th>
<th>0.96</th>
<th>0.98</th>
<th>1.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>42181</td>
<td>42821</td>
<td>43607</td>
<td>44572</td>
<td>45754</td>
<td>47203</td>
<td>48977</td>
<td>51148</td>
<td>53805</td>
<td>57054</td>
<td>61026</td>
</tr>
<tr>
<td>p</td>
<td>0.02</td>
<td>0.04</td>
<td>0.06</td>
<td>0.10</td>
<td>0.16</td>
<td>0.24</td>
<td>0.16</td>
<td>0.10</td>
<td>0.06</td>
<td>0.04</td>
<td>0.02</td>
</tr>
</tbody>
</table>
General Issues in Linear Cross-Hedging (1)

◇ Getting data

▷ Past data on stock returns? Not recommended:
  - data are at firm level, not project level
  - is recent past representative for future? e.g. real rate changed?
  - poor precision (weak link from $dS/S$ to $dV/V$)
  - shaky transition from elasticity ($dS/S$ vs $dV/V$) to exposure ($dS$ vs $dV$)

▷ Alternative scenarios for future cash-flows
  - GIGO risk, like using accounting costs and mechanical mark-ups

◇ Identifying the Distribution of $\tilde{S}_T$

▷ Why needed?
  - this is not a random sample, but a constructed population
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Sometimes the exposure turns out to be quite different from what one would guessed—the expected value of $CF^*$?—and may even have a different sign.

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▷ If the sign of $B$ differs from that of $C^*$, then a naive hedge would have increased the risk!

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Does not solve long-run problems. Still, it’s quite useful to

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Limitations of ContrExp Hedging
What about Fuzzy Contracts?
What About Book Values?

Operations Exposure
Operating Exposure Comes in all Shapes & Sizes
The General Linear Hedge
Examples
General Issues in Linear Cross-Hedging

Translation Exposure
Translating Individual FC Items
Translating Entire FC Financials
Closing Remarks
Translating Individual FC Items (1)

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  - economic logic says: m2m using forward rate, not spot
  - ideally: also discount (as you should for HC counterparts)
  - these are *unrealized* gains/losses

- **Futures**
  - book all m2m inflows from Clearing Corp as Bank Account (A) and gains (L)
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Translating Individual FC Items (2)

Forwards

Logic: m2m using F. So report $F_{t,T} - F_{t_0,T}$—probably undiscounted, in practice

unrealized

Second issue: how to m2m a participation in a foreign subsidiary.

- should we report unrealized gains on long-term assets, liabilities?
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  ▶ taxation of foreign income
  ▶ consolidated financial statements
  ▶ performance evaluation across subsidiaries
  ▶ bonuses
  ▶ valuation

◊ **How translate foreign financials?**
  ▶ current/non-current
  ▶ temporal
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Foreign Equity Stakes shown as two parts:
(i) original HC book value, and
(ii) m2m (called equity adjustments)

Example: Maltese investment in Australia:

- AUD 2.10m or, then (at 3.3333), MTL 700,000 15 months ago
- AUD 1.00m or, then (at 3.3113), MTL 302,000 10 months ago
- parent's balance sheet now shows the participation at MTL 1.002m, the historic value (until the next capital increase)

Equity Adjustments?

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- compute, from the translated A&L, Net Worth
- difference between Net Worth of translated items and original AUD 3.1m is equity adjustment
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Equity and Equity Adjustments

\[ EqAdj = (\text{Translated Assets} - \text{Debt}) - \text{original equity} \]  

(1)

depends on method chosen

<table>
<thead>
<tr>
<th>Assets</th>
<th>Value in AUD</th>
<th>values in MTL after translation at 0.333 or 0.300</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>curr/noncurr (at .333)</td>
</tr>
<tr>
<td>cash, securities</td>
<td>1,000</td>
<td>2,624</td>
</tr>
<tr>
<td>A/R</td>
<td>1,000</td>
<td></td>
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<tr>
<td>inventory</td>
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<td></td>
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<tr>
<td>plant, equipment</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>Total assets (a)</td>
<td>8,000</td>
<td>2,624</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Liabilities</th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A/P</td>
<td>500</td>
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<td>995.0</td>
<td>984.3</td>
<td>1,080.0</td>
<td>1,032.3</td>
<td>930.0</td>
</tr>
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<td>Short-term debt</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term debt</td>
<td>2,400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Total Debt (b)</td>
<td>4,900</td>
<td>1,612.5</td>
<td>1,530</td>
<td>1,631.7</td>
<td>1,470</td>
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</tr>
<tr>
<td>Net worth (a)–(b)</td>
<td>3,100</td>
<td>1,011.5</td>
<td>995.0</td>
<td>984.3</td>
<td>1,080.0</td>
<td>1,032.3</td>
<td>930.0</td>
</tr>
</tbody>
</table>

of which:

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Retained</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Equity</td>
<td>3,100</td>
<td>1002.0</td>
<td>1002.0</td>
<td>1002.0</td>
<td>1002.0</td>
<td>1002.0</td>
<td>1002.0</td>
</tr>
<tr>
<td>Eq Adjustment</td>
<td>—</td>
<td>9.5</td>
<td>-7.0</td>
<td>-17.7</td>
<td>78.0</td>
<td>30.3</td>
<td>-72.0</td>
</tr>
</tbody>
</table>
The Current/Non-current Method

diamond What?

- “When FC devalues, losses on short-term (ST) assets (and gains on ST debt) are quite likely; but greater uncertainties for LT items”
- So we deem LT A&L to be unexposed — keep historic value
- $\Rightarrow$ Exposure = ST assets – ST liabilities = net working capital

diamond Evaluation

- (this) exposure is usually positive; $><<$ economically the sign of the value change isn’t that obvious, a priori, and definitely depends on mkt & environment
- Implicit view of mean-reversion is wrong: S is close to random walk.
- consolidated accounts not compatible with the subsidiary’s accounts ?!?
- mixture of H(istoric) and C(urrent) is confusing
The Current/Non-current Method

◇ **What?**

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# Measuring Exposure to Exchange Rates

P. Sercu, *International Finance: Theory into Practice*

## Risk and Exposure: Concepts

## Contractual Exposure

## Operations Exposure

## Translation Exposure

### Translating Individual FC Items

### Translating Entire FC Financials

### Closing Remarks

---

## The Current/Non-current Method

### Example

<table>
<thead>
<tr>
<th></th>
<th>Value in AUD</th>
<th>values in MTL after translation at 0.333 or 0.300</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>curr/noncurr (at .333)</td>
<td>mon/nonmon (at .3)</td>
</tr>
<tr>
<td>Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cash, securities</td>
<td>1,000</td>
<td>333</td>
</tr>
<tr>
<td>A/R</td>
<td>1,000</td>
<td>333</td>
</tr>
<tr>
<td>inventory</td>
<td>1,000</td>
<td>333</td>
</tr>
<tr>
<td>plant, equipment</td>
<td>5,000</td>
<td>1,625</td>
</tr>
<tr>
<td>Total assets (a)</td>
<td>8,000</td>
<td>2,624</td>
</tr>
<tr>
<td>Liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A/P</td>
<td>500</td>
<td>166.5</td>
</tr>
<tr>
<td>Short-term debt</td>
<td>2,000</td>
<td>666.0</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>2,400</td>
<td>780.0</td>
</tr>
<tr>
<td>Total Debt (b)</td>
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<td>1,612.5</td>
</tr>
<tr>
<td>Net worth (a)–(b)</td>
<td>3,100</td>
<td>1,011.5</td>
</tr>
</tbody>
</table>

**of which:**

- Retained 0 0 0
- Equity 3,100 1002.0 1002.0
- Eq Adjustment — 9.5 −7.0

**exposure of net worth**

\[
\begin{align*}
0.333 & - 0.300 \\
& = \text{AUD 500} \\
& = \text{nt wrkng cntl}
\end{align*}
\]
the Monetary/Non-monetary Method

◇ What?

▷ ‘PPP: real items are unexposed”; so recognize only gains/losses on monetary items;

▷ ⇒ Exposure = financial assets – debt

◇ Evaluation

▷ (this) exposure is usually negative; >>>< economically etc etc

▷ PPP just says the AUD and MTL values are identical (in the long run), not that (AUD or) MTL value is constant

▷ Empirically, PPP is a joke anyway

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<tr>
<th>Value in AUD</th>
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<th>current rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(at .333)</td>
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</tr>
<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Net worth (a)−(b)</strong></td>
<td>3,100</td>
<td>1,011.5</td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained</td>
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<tr>
<td>Equity</td>
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</tr>
<tr>
<td>Eq Adjustment</td>
<td>—</td>
<td>9.5</td>
</tr>
<tr>
<td><strong>exposure of net worth</strong></td>
<td>1,011.5−955.0</td>
<td>984.3−1,080.0</td>
</tr>
<tr>
<td>= AUD 500</td>
<td></td>
<td>0.333−0.300</td>
</tr>
<tr>
<td>= nt wrkng cplt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>= nt mon. assets</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Current-rate Method

◊ **What?**

- Intent: maximal consistency with conventional accounting, and maximum consistency of the consolidated balance sheet with the parent’s and subsidiary’s accounts:
- So translate all assets and debts at the “current” rate
- ⇒ the implied net worth (in MTL) equals net worth $\text{AUD} \times \tilde{S}_T$, so its exposure = net worth in FC ($\text{AUD}$)

◊ **Evaluation**

- (this) exposure is usually positive; $\geq <$ economically etc etc
- Prediction that a 10% devaluation means a 10% loss is economically correct iff host economy is fully (choose:) closed/open ??!
The Current-rate Method

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Evaluation

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### Example

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<td>1,665 1,500</td>
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<td>2,664 2,400</td>
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</table>

<table>
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<td>2,400</td>
<td>780.0 780.0</td>
<td>799.2 720.0</td>
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</tr>
</tbody>
</table>

| of which:    |              |                                             |              |
| Retained     | 0            | 0 0                                          | 0 0          |
| Equity       | 3,100        | 1002.0 1002.0                                 | 1002.0 1002.0|
| Eq Adjustment| —            | 9.5 − 7.0                                    | 30.3 − 72.0  |

exposure of net worth

\[
\text{exposure of net worth} = \begin{cases} 
1011.5—955.0 & 0.333—0.300 \\
0.333—0.300 & = \text{AUD 500} \\
1002.0 & = \text{net working capital} \\
984.3—1080.0 & 0.333—0.300 \\
0.333—0.300 & = \text{AUD—2,900} \\
1002.0 & = \text{net mon. assets} \\
1032.3—930.0 & 0.333—0.300 \\
0.333—0.300 & = \text{AUD 3,100} \\
1002.0 & = \text{net worth}
\end{cases}
\]
Closing Remarks

What Method to Choose?

Many regulating bodies favor the Current Rate method: US (FASB #52, 1982); UK and Canada; IASC #21, 1983 (and hence IFRS): simplicity, consistency.

EC 1983 7th Directive (implemented early 90s), imposes consolidation but does not specify translation method. Firm should simply disclose the method that was used.

Choice of valuation method is as (ir)relevant as choice between, say, LIFO/FIFO or straight-line/accelerated depreciation: it doesn’t affect any real cashflow except for taxes.
### Closing Remarks

#### Relevance?

<table>
<thead>
<tr>
<th>Economic</th>
<th>Accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward looking : future cashflows</td>
<td>FinStatements reflect past decisions</td>
</tr>
<tr>
<td>Involves genuine cashflows</td>
<td>No cash is involved—except possibly taxes</td>
</tr>
<tr>
<td>Relates to changes in the economic value</td>
<td>Changes the firm’s book value</td>
</tr>
<tr>
<td>Depends on the firm’s outstanding contracts, the environment and the firm’s strategic response</td>
<td>Depends on the accounting rules chosen: (i) subsidiary’s own internal rules (e.g., type of depreciation, inventory valuation) and (ii) the translation process itself</td>
</tr>
<tr>
<td>Also exists for firms without foreign subsidiaries or FC FS items</td>
<td>Accounting exposure only exists if there are foreign subsidiaries or FC BS items</td>
</tr>
</tbody>
</table>
What did we Learn in this Section?

- Translation of subsidiaries’ FC financial statements can be done in many ways.
- The result does not affect cashflows except, possibly, through taxes.
- Economic reality and economic exposure are more important than the translation result.