



Why/When Hedge
Exposure?

P. Sercu,
International

*Finance: Theory into
Practice*

Overview

Chapter 12

Why—or When— Should we Hedge our Currency Exposure?



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Hedging may Reduce Expected Taxes

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What have we
learned?

◇ **Main Issue:** how can a zero-value contract add value?

- ▷ The PV_t of $\tilde{S}_T - F_{t,T}$ is zero; but
- ▷ the hedge's pay-off may also interact with other cash flows in the firm—e.g. reduce chance of financial distress
- ▷ if this change is beneficial, the interaction caused by hedging adds value

◇ **Won't MM-style home-made hedging do?**

- ▷ shareholder can just buy/sell $\tilde{S}_T - F_{t,T}$, not the interactions it has with the firm's cash flow
- ▷ etc



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What have we
learned?

◇ Direct Costs

- ▷ receivers, lawyers, assessors, and courts
- ▷ destruction of the firm's clientele and reputation

◇ Indirect costs: even the mere risk of future distress is harmful:

- ▷ sales fall, if after-sales service and product warranties matter
- ▷ employees quit—the best first—unless you pay extra
- ▷ credit lines canceled / Loan covenants can trigger repayment / extra spread
- ▷ suppliers cancel credit, demand cash before delivery

Conclusion: If hedging reduces the expected financial distress costs, it adds value

Also agency costs (./.) are often linked to financial distress:



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Hedging May Reduce Agency Costs



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What have we learned?

◇ Shareholders v Bondholders

- ▷ The problem: When close to bankruptcy, shareholders may make decisions that reduce the value of the firm but make *them* better off:
 - undertake negative-NPV risk-increasing projects (gambling)
 - refuse positive-NPV but risk-reducing projects

Example (gambling):

decision	future outcome		resulting PV
don't invest	$V_1 = 60$: bonds 50		bonds 50
	stocks 10		stocks 10
			total = 60
invest	Lucky: $V_1 = 100$	unlucky: $V_1 = 0$	
	bonds 50	bonds 0	bonds 25
	stocks 50	stocks 0	stocks 25
			total = 50

- ▷ Cure: impose restrictions, covenants; monitor firm's decisions
- ▷ Costly—directly & indirectly. So if risk of conflict can be reduced by hedging, that's good



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Example (gambling):

decision	future outcome		resulting PV
don't invest	$V_1 = 60$: bonds 50 stocks 10		bonds 50 <u>stocks 10</u> total = 60
invest	Lucky: $V_1 = 100$ bonds 50 stocks 50	unlucky: $V_1 = 0$ bonds 0 stocks 0	bonds 25 <u>stocks 25</u> total = 50

- ▷ Cure: impose restrictions, covenants; monitor firm's decisions
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Hedging May Reduce Agency Costs (2)

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What have we
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◇ **Managers v Owners**

- ▷ Managers' human wealth is exposed to firm's risks
- ▷ In the absence of hedging they may seek risk-reduction by refusing positive-NPV but risky projects
- ▷ Hedging may reduce the conflict of interest

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What have we learned?

◇ Progressive Taxes

Example: Income ≤ 100 taxed 20%, rest 30%

	income	taxes	E(tax)
no risk	100	20	20
risk	50 or 150	10 or 45	27.7

◇ **Flat tax rate but issue of tax losses:** amount to a convexity at 0

- ▷ tax loss **carry forward**: you wait at least one year for a refund, and maybe forever
- ▷ tax loss **carry back**: you get a refund, but it's limited; rest must be carried forward

Less weighty argument than previous ones



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What have we
learned?

- ◇ One can report profits with less noise \Rightarrow better **internal decisions**
- ◇ Clearer picture is signaled to **outsiders** (financiers)—and Wall Street does like predictable profits
- ◇ There are alternatives, though
 - ▷ internally report profits also on an **as-if-hedged** basis
 - ▷ shift all exchange risk towards a **re invoicing center** (which may/may not hedge)

Note : other gains of a re invoicing center include

- reduce hedging transactions through netting
- economies of scale in costs (e.g. pooling), search costs; division of labor
- use tax havens or special tax status (DDCy, BCC)



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What have we learned?

◇ The crucial part is missing

- ▷ Shareholder just adds/eliminates $\tilde{S}_T - F_{t,T}$, and
- ▷ misses the interactions that are the whole point of hedging

◇ Even if hedging were just additive home-made hedging would not work equally well:

- ▷ Shareholders have imprecise knowledge about exposures
- ▷ Scale economies make corporate hedging superior
- ▷ Short-selling forex may be difficult for small players



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What have we learned?

- ◇ **Radical Young Turks' point of view:** “currency of invoicing is immaterial”

Giovanni wants to import a Toyota:

- ▷ Mr Toyota ask JPY 2m 60 days.

Giovanni agrees and immediately hedges at JPY/EUR 125 60 days, thus locking in $2\text{m}/125 = \text{EUR } 16,000$ 60 days.

- ▷ Mr Toyota could ask EUR 16,000 60 days.

If Giovanni agrees, Mr Toyota immediately hedges at JPY/EUR 125 60 days, and locks in $16,000 \times 125 = \text{JPY } 2\text{m}$ 60 days.

- ◇ **Conclusion:** currency of invoicing does not matter if
 - there is no delay between price quote and decision to buy
 - both sides have access to the same rates

By implication, the currency of invoicing may matter if/because of delays or differential costs



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What have we learned?

◇ Delays?

▷ **Catalog or List Price:** you cannot hedge perfectly because you do not know who will buy how much at what time

◇ Delays and costs: the international tender

▷ Traditionally: in buyer's currency

– if bidder hedges, the risk is that ...

– if bidder does not, the risk is that ...

– forward-to-tender contract is costly

▷ Alternative: let every supplier choose his/her HC; the buyer chooses and immediately hedges using a regular forward—no delay issue!

Example

supplier	price	forward rate	CAD cost
Oetker & Kölner, Bonn	EUR 120,000	CAD/EUR 1.65	CAD 198,000
Johnson Kleinwortsz, PA	USD 150,000	CAD/USD 1.35	CAD 195,000
Marcheix & Fils, Québec	CAD 200,000	—	CAD 200,000



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- ▷ Alternative: let every supplier choose his/her HC; the buyer chooses and immediately hedges using a regular forward—no delay issue!

Example

supplier	price	forward rate	CAD cost
Oetker & Kölner, Bonn	EUR 120,000	CAD/EUR 1.65	CAD 198,000
Johnson Kleinwortsz, PA	USD 150,000	CAD/USD 1.35	CAD 195,000
Marcheix & Fils, Québec	CAD 200,000	—	CAD 200,000



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What have we learned?

◇ Delays?

- ▷ **Catalog or List Price:** you cannot hedge perfectly because you do not know who will buy how much at what time

◇ Delays and costs: the international tender

- ▷ Traditionally: in buyer's currency
 - if bidder hedges, the risk is that ...
 - if bidder does not, the risk is that ...
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What have we learned?

Whom to believe?: “*You said forward hedging is free, but my accountant tells me that it has cost me 2.17m.*”

- ▷ 2.17m may be the *ex post* loss from hedging.
 - This is just bad luck—not a cost with an *ex ante* PV.
- ▷ 2.17m may be the forward discount on a hedged A/R (or the premium on a hedged liability).
 - Not a cost either, just an accounting fiction that follows from translation at the spot rate.

Example

		using $S_t = 0.90$		using $F_t = 0.88$	
– at t :	A/R (Fc 2,500)	2,250		2,200	
	COGS		1,500		1,500
	operating income		750		700
– at T :	bank	2,200		2,200	
	hedging cost (D) or gain (C)	50		—	—
	A/R		2,250		2,200

- ▷ (unlikely:) 2.17m is to be the extra bid-ask spread on a hedge
 - Genuine cost.



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What have we learned?

- ◇ Borrow EUR at 3% versus borrow RUR at 15% to hedge A/R: isn't there a bigger tax shield too?
- ◇ Fallacy: The likely capital gain on RUR probably affects taxes too.
- ◇ If taxes are neutral, capgain and interest differential wash out *ex ante*.



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