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What is an Interest Rate Swap?

3rd January 2012



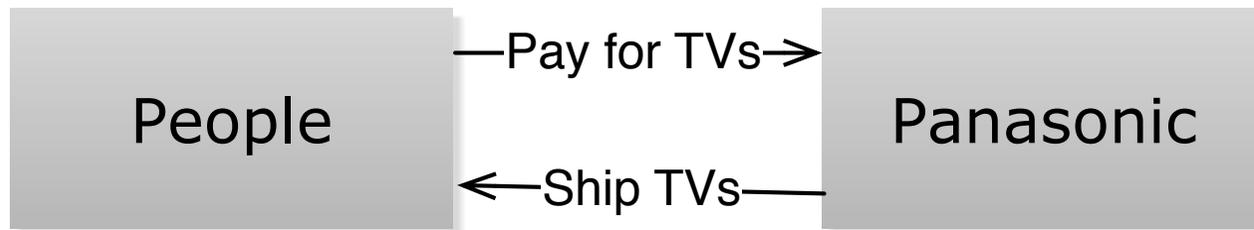
Setting the scene

Let's use Panasonic, a maker of Televisions to start the example

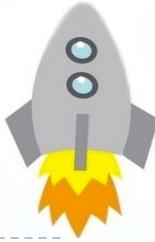
1. Panasonic sell TVs to consumers
2. Panasonic need to make an increased amount of new TVs, so build a factory to make them
3. They borrow money to pay the builders of the factory
4. They then use an Interest Rate Swap to keep their interest payments at a fixed rate

Under normal circumstances step 3 (Borrowing) precedes step 2 (Building), but is easier to show in this order

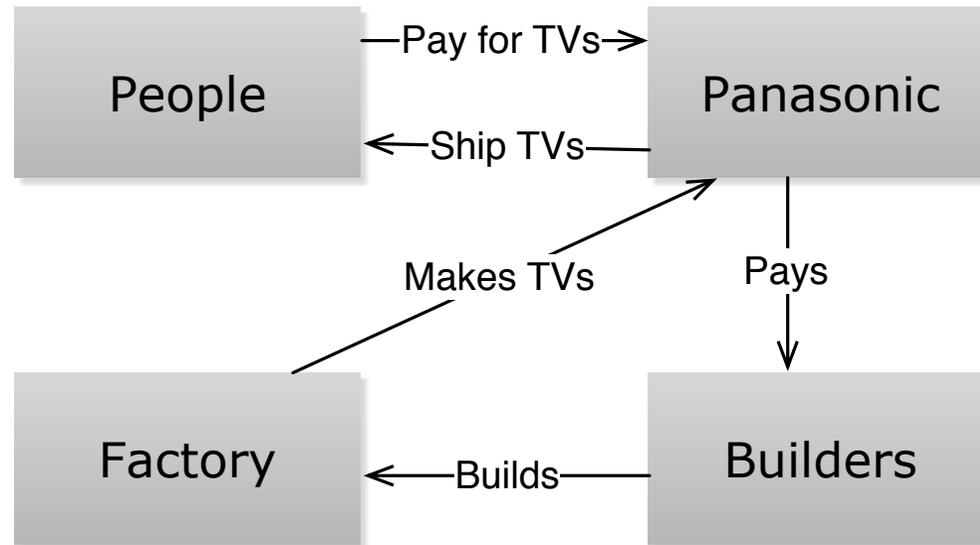
Step 1 – Selling TVs



Hopefully this first diagram is easy enough to understand, it sets the scene

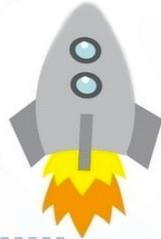


Step 2 – Build a new factory



Panasonic decide to build a new factory to make more TVs. They pay a builder to create the Factory, which makes more TVs, which they then sell.

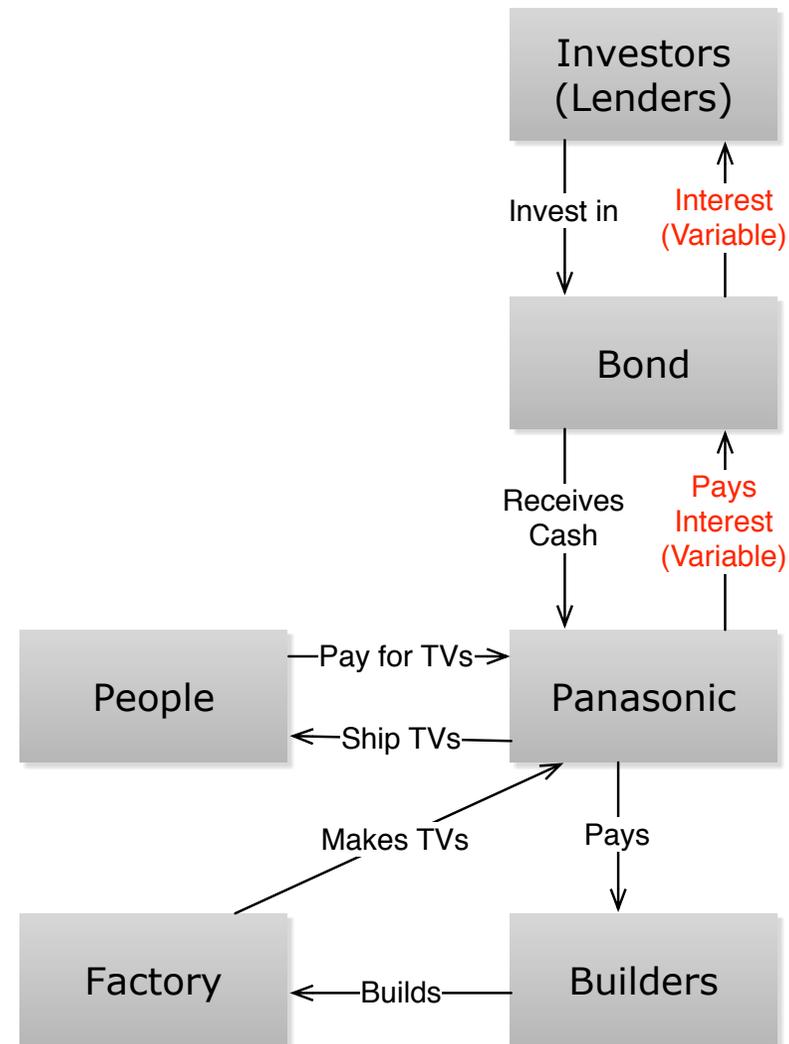
You may ask yourself – how does Panasonic find the money to pay the builder?

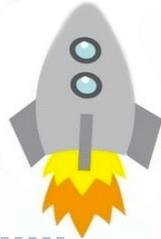


Step 3 – Borrow using a Bond

This gets a little more complicated, but stick with it

- Panasonic borrows money using a Bond.
- A bond is a means of receiving cash from Investors, and paying them interest to reward them for the loan
- The Bond market for investors is competitive, and in this example, they expect Interest Rates to rise, so Panasonic attracts them by offering to pay a variable rate of interest, meeting their expectations should rates go up
- Panasonic issues the Bond, receives the cash from Investors, and pays the Builder
- The interest payments on the Bond happen every few months, and can go on for years until Panasonic repay the original cash from the Investors

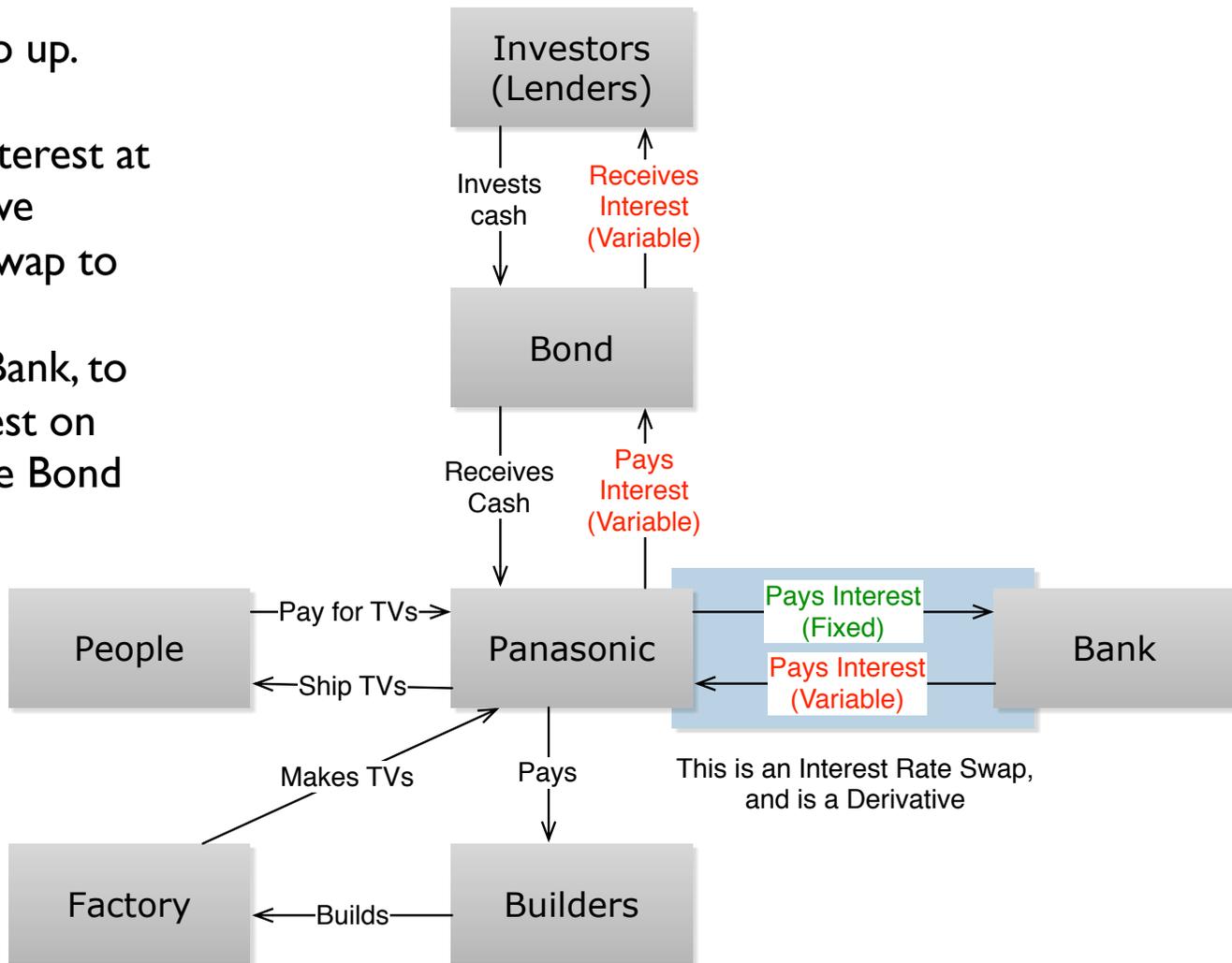




Step 4 – Fix the interest payments

Time goes by and Interest Rate go up.

- Panasonic want to avoid paying Interest at increasing rates, so use a Derivative contract called an Interest Rate Swap to fix the rate
- They make an agreement with a Bank, to pay the Bank a fixed rate of interest on the amount they borrowed via the Bond
- The Bank agrees to pay Panasonic the exact same variable interest payments, they currently pay out to the Bond investors



The Rate Swap – win / lose



Scenario 1

- ▶ Variable rate is 6%
- ▶ Fixed rate is 5%
- ▶ Bond pay-out
 - ▶ Panasonic pay 6% interest to Bond investors
- ▶ Rate Swap pay-out
 - ▶ Bank pays Panasonic the exact same 6% interest that Panasonic pay Investors, so net zero cost to Panasonic
 - ▶ Panasonic pays Bank 5% interest
 - ▶ So from Panasonic's point of view they pay 5% and receive 6%, so win a 1% rate

Scenario 2

- ▶ Variable rate is 4%
- ▶ Fixed rate is 5%
- ▶ Bond pay-out
 - ▶ Panasonic pay 4% interest to Bond investors
- ▶ Rate Swap pay-out
 - ▶ Bank pays Panasonic the exact same 4% interest that Panasonic pay Investors, so net zero cost to Panasonic
 - ▶ Panasonic pays Bank 5% interest
 - ▶ So from Panasonic's point of view they pay 5% and receive 4%, so lose a 1% rate

Rate Swap Amounts - \$100m Bond



All amounts are assumed to be the total annual payments, even if paid monthly or quarterly

Scenario 1

- ▶ Variable rate is 6%
- ▶ Fixed rate is 5%
- ▶ Bond pay-out
 - ▶ 6% of \$100m = \$600k
- ▶ Rate Swap pay-out
 - ▶ Panasonic pays Bank 5% of \$100m = \$500k
 - ▶ Bank pays Panasonic 6% of \$100m = \$600k
 - ▶ So from Panasonic's point of view they pay \$500k and receive \$600k so win \$100k per year

Scenario 2

- ▶ Variable rate is 4%
- ▶ Fixed rate is 5%
- ▶ Bond pay-out
 - ▶ 4% of \$100m = \$400k
- ▶ Rate Swap pay-out
 - ▶ Panasonic pays Bank 5% of \$100m = \$500k
 - ▶ Bank pays Panasonic 4% of \$100m = \$400k
 - ▶ So from Panasonic's point of view they pay \$500k and receive \$400k so lose \$100k per year



What is a Rate Swap?

- ▶ A Rate Swap is a contract, signed by both parties
- ▶ It sets out who pays what amounts
- ▶ It says how the amounts are calculated
- ▶ It says when the amounts are paid
- ▶ The template for a rate swap contract is supplied to the International Swaps and Derivatives Association (ISDA) which makes it simpler to draft and complete the contract
- ▶ Firms like Panasonic join ISDA to get access to a legal framework making Derivatives 'easier'



Conclusion

- ▶ The Rate Swap enables a corporation to switch from an outgoing variable rate of interest, to a fixed rate
- ▶ As shown in the two scenarios, as the variable rate goes above or below the fixed rate, the user of the Rate swap wins or loses money
- ▶ Professional users of Derivatives have additional ways of managing these situations:
 - ▶ The ability to terminate the swap early
 - ▶ The ability to buy options on Rate Swaps
 - ▶ The ability to use Rate Caps & Floors



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