Background

- Tokyo Disneyland, opened in 1983, was operated by an unrelated Japanese company and paid royalties to Walt Disney Company.
- With the growing cash inflows of yen royalty receipts from Tokyo Disneyland, Disney was concerned about the FX exposure.
- However, the motive of Mr. Anderson's concern was whether the trend of the recent depreciation of the yen against the dollar would continue.

Exhibit 4 Historical Summary of Average Yen/Dollar Exchange Rates and Price Indexes

Year	Yen/Dollar	U.S. CPI	Japan CPI
1980	225.70	100.0	100.0
1981	220.10	110.4	104.9
1982	248.30	117.1	107.8
1983	237.40	120.9	109.9
1984:			
I	230.80	125.0	111.4
II	229.70	125.6	112.3
III	243.60	126.6	112.2
IV	246.10	128.3	113.5
Average 1984	237.30	126.1	112.3
1985:			
I	257.50	128.6	113.7
II	250.80	130.2	114.7

Sources: *Economic Report of the President and International Financial Statistics*

Comments on the FX Trend

- The JPY depreciated against the USD from the 2nd quarter of 1984 (229.70 yen/$) through the 1st quarter of 1985 (257.50 yen/$); however, it has appreciated in the quarter since then. See Exhibit 4.
- If the trend of inflation rates in both countries continued, then the *USD was expected to depreciate* based on the International Fisher Effect (or the relative PPP).
- Exhibits 5 confirms that the market agreed with the above assessment. The forward rates summarized the market consensus.

Exhibit 5 Yen Long-Dated Foreign Exchange Forwards

Years	Outright Forwards	
	Bid	Offer
Spot	247.95	248.05
1	242.05	242.65
2	235.95	239.05
3	227.95	231.55
4	217.95	222.55
5	208.95	213.55
6	200.95	210.55
7	192.95	204.05
8	185.95	199.05
9	178.95	192.55
10	172.95	189.05

Hedging Tools

- The usual suspects:
  - FX options;
  - FX forward and futures;
  - The problems were: the liquid markets for FX options and futures existed only for maturities of two years or less. Disney had a longer horizon to hedge the FX exposure.
  - Although it got indicative quotes for long-term forward rates, the banks would consider the FX forwards as a part of their overall Disney exposure, thus tying up *credit lines*. Also the bid-ask spreads for long-term forward contracts were too large.

Money Market Hedging

- It looks like the way to go was to create a yen liability through a yen denominated loan and construct an artificial “natural” hedge.
  - Ineligible to issue Euroyen bonds (i.e. Yen denominated debt outside Japan) under the Japanese regulation.
  - Did not have long-term Eurodollar debt to swap into the yen liability. Disney only had Eurodollar notes matured in one to four years and ruled out a longer maturity Eurodollar debt issue.
  - The only viable choice appeared to create a yen liability through a term loan from a Japanese bank at the Japanese long-term prime rate.

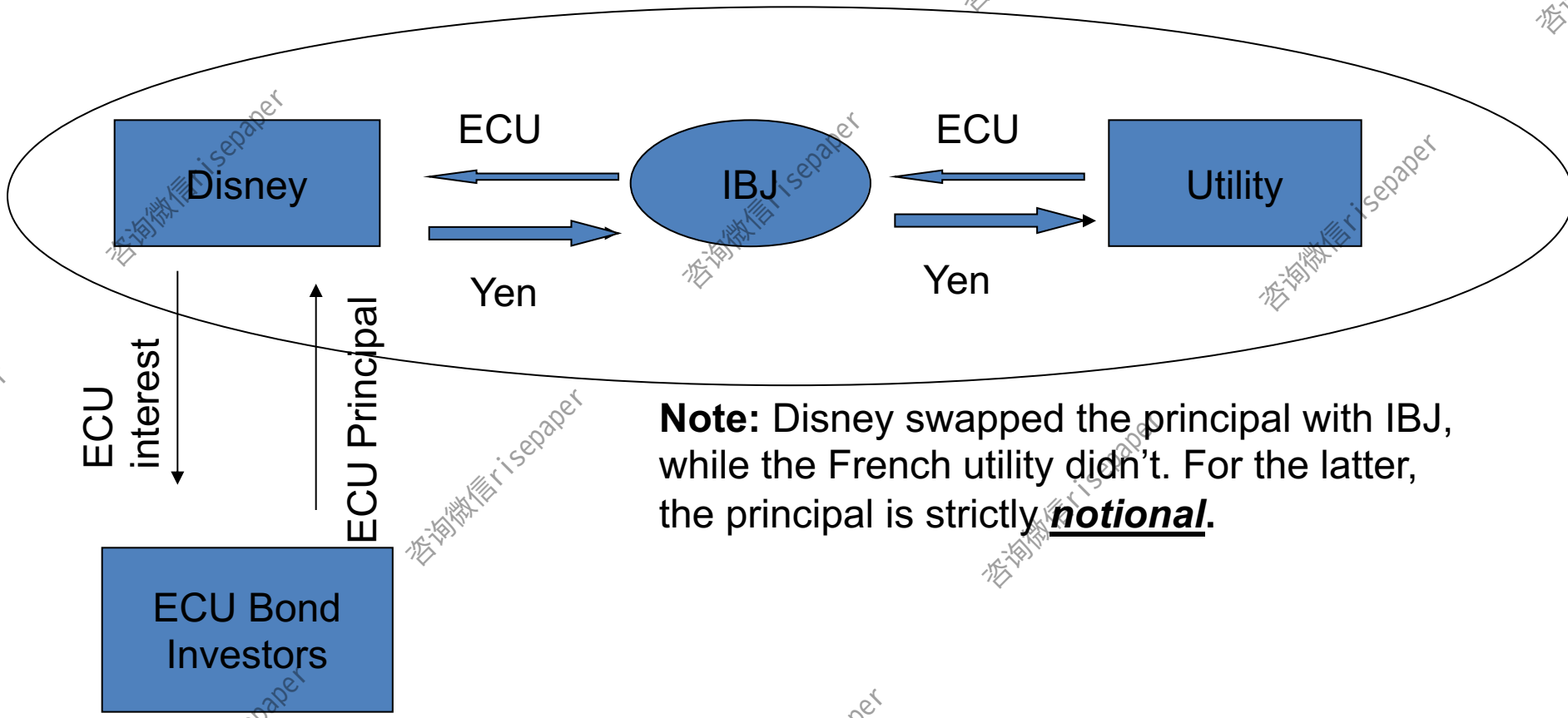
The term of the Yen Loan

- JPY 15 billion 10-year bullet loan
  - 7.5% p.a. coupon paid semiannually
  - 0.75% front end fee.

Goldman Sachs' Proposal

- Goldman Sachs believed there was a better approach:
  - Disney issue 10-yr ECU 80 million bonds with sinking fund, and enter into an ECU/Yen swap with a French Utility, intermediated by IBJ.
  - The key numbers are in Exhibit 7.

Cash Flow Diagram



Note: Disney swapped the principal with IBJ, while the French utility didn't. For the latter, the principal is strictly ***notional***.

Comparison of the Two Options

- To compare the interest costs between the borrowing through YEN term loan and through SWAP for Disney, we use the Internal Rate of Return (IRR).
  - In the capital budgeting process, higher IRR is desired because it indicates higher investment returns.
  - From the borrower's (Disney) point view, lower IRR is preferred.
  - Here we need to account for the costs as well.

JPY Term Loan: Terms

- JPY 15 billion principal
- 10-year term
- 7.50% annual percentage rate
- .75% front-end fees
- Bullet loan - semiannual interest payments and principal paid at maturity.

IRR of the YEN Term Loan

- Given the previous terms, we can calculate the IRR as:
- $100 - 0.75 = \frac{3.75}{(1+r)} + \frac{3.75}{(1+r)^2} + \cdots + \frac{103.75}{(1+r)^{20}}$.
- One can calculate (for example, using excel) r = 3.8%.
- The effective annual rate is $(1+3.8\%)^2 - 1 = 7.75\%$.

ECU-YEN Swap All-In Cost for Disney

- The cash flows from the swap transaction were given from column (b) in Exhibit 7.
- Similar calculation shows that the semi-annual All-In Cost: IRR= 3.445%.
- Effective annual All-In Cost: 7.01% ((1+.03445)^2-1)
- For Disney, *there was a cost saving of 0.74% by using the swap over Yen term loan.*

Currency Swap

- Recall in the last lecture, a QSD must exist for the swap to benefit both parties. Here we will provide a sample calculation of the costs for Disney and the French utility firm in ECU and YEN market.
- The respective number for the French utility firms are 9.37% and 6.83% respectively, and we have just calculated Disney's YEN term loan IRR is 7.75% p.a.

IRR for Disney's ECU Loan

- Exhibit 6 gives the cash flows
  - The initial cash flow ECU 78.499m is calculated as follows:
    - The proceeds of selling at 100.25% price
    - 2% underwriting fee
    - USD 75,000 expense: At rate of 0.7420 USD/ECU and ECU 80m par value, it is a cost of 0.126%
    - So the initial cash flow = ECU 80m X (100.25% - 2% - 0.126%).
  - One calculate the IRR as 9.473% p.a.

QSD/Comparative Advantage

- Combining the previous results, we get the following familiar table:

	ECU	YEN
Disney	9.47%	7.75%
French Utility	9.37%	6.83%
Difference	.10	.92

Savings for the Three Parties

- The possible savings are 82 basis points.
- Recall that Disney saves 75 basis points
  - It had the majority of the pie!!
- Neither the French utility nor IBJ got much from this swap transaction.
  - You can confirm this yourself by checking the numbers from exhibit 7 column C and A.
    - Be careful though since for the French utility, ECU 80 m is only notational.

Finally The Big Question

- Should Disney hedge?
- Note exhibit 4 and 5 both indicated a strong *undervaluation* of YEN in 1985.
  - Disney is a conservative company at the time.
  - One might also argue that this conservatism might be damaging shareholders' value.
  - Ultimately the policy depends on the manager's attitude about risk.

Outcome

- As the case would lead one to expect, Disney elected the ECU note offering matched with a YEN-for-ECU currency swap.
  - The deal was sufficiently well received that it was followed by a second ECU note offering (8 ¾%, due Feb 25, 1994) in Dec 1985.
- These offerings in 1985 coincided with a dramatic rise in YEN over the next several years.
  - Second guessing the hedging decision.

Outcome

- Disney remained steadfast to lower its forex risk in the long run.
  - Refinanced its YEN term loan to lower its cost to 6.4% while extending its maturity to 1996.
  - Issued a 10-year, 4.75% Swiss franc note *swapped into yen* at an all-in cost of 6.05%.
  - Issued a 3-year, 14.50% AUD note *swapped into yen* at an all-in cost of 4.25%.
  - In Apr 1988, Disney entered into a long-term agreement with a group of banks led by Citicorp and the Long-Term Credit Bank of Japan.
    - Disney receives USD 723m from the bank in return for (undisclosed fixed) YEN.
    - Disney claimed in 1988 annual reported a 20-year deal.