What is Global Banking and Capital Markets?

The International Financial Markets

◆ Money and foreign exchange; derivatives; international bonds & equities; loan trading

◆ The Global Banking Business

◆ Lending; trading and transactions; underwriting; M&A; project financing; asset management; advisory services; etc
What are the Global Financial Markets?

- The Foreign Exchange Market
- Domestic and International Money Markets
- Domestic and International Capital Markets
- The Derivatives
- International Equity and M&A
- Using the Global Capital Markets: Global Banking Strategy and Implementation

Where the Eurocurrency Market Fits In

- US Domestic Market
- Eurodollar Market
- Foreign Exchange Market
- Euro-Deutsche Mark Market
- Euro-Yen Market
- Euro-Commercial Paper Market
- Euro-Floating Rate Note Market
- Straight Eurobond Market
- German Domestic Market
- Japanese Domestic Market
**Interest Rate Linkages in the International Money Market**

Two stories to tell:
- Domestic vs. Euro
- Eurocurrency A vs. Eurocurrency B

---

**To Fix or To Float, That is the Question**

Floating
- Economic circumstances, and Economic policies
- Independent free float
- Managed float
- Frequent devaluations or revaluations
- Crawling peg
- Tied by formula to inflation index
- Basket peg

Fixed
- Pegged to one currency
- Absolutely fixed to one currency
**Implication of EMU**

- Only Eurofed creates money
- Central banks can no longer print money to finance public deficits
- Only a nation's creditworthiness determines ability to run a fiscal deficit

**Deviations from Purchasing Power Parity**

Source: JP Morgan. Index of real effective exchange rate versus 18 industrial country currencies, adjusted for change in relative wholesale price of domestic manufactures. A fall in the index indicates improved international competitiveness.
**Turkey, 1995**

- **Turkish prices:** up 83.8%!
- **Turkish Lira:** Down 33.5%

**Foreign Exchange Dealing**

- **Mercados financieros**
  - Foreign Exchange Advisory Services?
**Tools for Hedging**

- Petrobras has to pay for equipment from Japan, in Japanese yen, in 3 months
  - Borrow and pay now?
  - Use a forward contract/FX swap?
  - Pay later at spot?

---

**Cost of Hedging**

<table>
<thead>
<tr>
<th>Type of Hedge</th>
<th>Cost of Hedging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward</td>
<td>Forward premium</td>
</tr>
<tr>
<td>Money Market Hedge</td>
<td>Interest rate differential</td>
</tr>
<tr>
<td>(Borrow to match assets)</td>
<td></td>
</tr>
<tr>
<td>Do nothing</td>
<td>Expected rate of change of exchange rate</td>
</tr>
</tbody>
</table>
**Forwards vs Futures vs Options**

- Good credit: Forward usually best
- Sometimes, Money Market Hedge better
  - Perfect market: same (covered int. arb.)
  - Imperfect market: MMH may be better
- Credit problem: Futures
  - But: limited and standardized
  - Requires margin and daily settlement
- Uncertain future cash flows:
  - Liquid instrument (futures/forwards to assure flexibility)
  - Options sometimes advisable

**Diagram of a Dealing Room**

Foreign exchange and Eurocurrency dealing are interrelated activities and so are done on the same trading floor.

**The Dealing Room**
Foreign exchange and Eurocurrency dealing are interrelated activities and so are done on the same trading floor.

**Diagram of a Dealing Room**

The Dealing Room

CUS- TOMER  SPOT  FORWARD

FUNDING  EUROCURRENCY

**Linkages Between Eurocurrency Rates**

Covered interest rate parity  Interest rate differential  Uncovered interest rate parity

Forward premium  Expected % change in exchange rate  Unbiased forward rate
The Normal Distribution

Money & Capital Market
Instruments
**Present Values: Summary**

**Single amount:**
the amount times the present value of interest factor, or PVIF\(_{r,n}\):

\[
PV_{r,n} = FV \times PVIF_{r,n} = FV \times \frac{1}{(1 + r)^n}
\]

**Annuity:**
the periodic payment times the present value of annuity factor, or PVIFA\(_{r,n}\):

\[
PVA_{r,n} = PMT \times PVIFA_{r,n} = PMT \times \frac{1 - 1/(1 + r)^n}{r}
\]

**Returns on Money Market Instruments**

- **Bank discount rate method**
  \[
  BDR = \frac{Discount}{\frac{360}{Days}}
  \]

- **Add-on yield**
  \[
  AOV = \frac{Interest}{\frac{100}{Days}}
  \]

- **Bond equivalent yield or yield to maturity**
  solve the following equation for \( r \), the yield to maturity:
  \[
  P = \frac{C + m[1 - (1 + r/m)^{-rn}]}{r/m} + \frac{FV}{(1 + r/m)^{mn}}
  \]
**Floating-Rate Notes**

- While all FRNs have a coupon that is reset at fixed interval in accordance with some preset formula, there are many variations on this theme.
- Major common features include:
  - The Reference Rate. (usually LIBOR)
  - The Margin. The margin is the spread between the coupon payment and LIBOR.
  - The Reference Rate Period.
  - Frequency of Reset. The period between coupon reset dates. Normally coincides with the reference rate period.
  - Coupon-payment Frequency. The interval between coupon payments. Normally coincides with the coupon reset periods.
  - Maturity.

**Pricing FRNs**

At each reset period, the rate is raised or lowered to match the prevailing market rate. So credit risk changes aside, its price should return to 100.
Interest-Rate Parity

$$1 \left(1 + \text{i}_{\text{ES}}\right) = \left(\frac{1}{S_t}\right)(1 + \text{i}_{\text{EBP}}) \ F^n_t$$

where $S_t$ is the spot exchange rate (dollars per British Pound) and $F^n_t$ is the forward rate.

Or, to a close approximation,

$$(\text{i}_{\text{ES}} - \text{i}_{\text{EBP}}) = \frac{[(F^n_t - S_t)/S_t]}{(365/n) 100}$$

Interest-rate differential = forward premium or discount

Trading and Transferring Loans

ASSIGNMENT

FULL ASSIGNMENT
The sale of all of the originating lender’s or assignor’s rights and interest in a credit facility to a purchaser or assignee.

ASSIGNMENT WITH NOVATION

PARTICIPATION

PARTICIPATION
Participants have derivative rights, not direct rights against (or obligations to) the borrower.

- LIMITED VOTING PARTICIPATION
- FULL VOTING PARTICIPATION
- FULL PASS-THROUGH PARTICIPATION
**Note Issuance Facilities**

A Note Issuance Facility has two tiers:
- Tender panel members (who provide funds)
- Underwriters (commit to the availability of credit)

**Comparison of RUF to Put Option**

- Gain or loss relative to having no underwritten facility
- Market spread relative to LIBOR at which the borrower can issue short term paper.
- Borrower issues Euronotes
- Borrower draws on underwritten facility

Legend:
- "STRIKE PRICE"
- LIBOR FLAT
- CAP SPREAD
- FEES
Raising Capital for Emerging Market Companies

- Debt
  - Domestic market
  - Foreign market
  - Euromarket
- Equity
  - Domestic market
  - Foreign market
  - Euromarket

Can globally mobile investors capture value & control?

<table>
<thead>
<tr>
<th>Macro Factors</th>
<th>Structural Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Currency overvaluation</td>
<td></td>
</tr>
<tr>
<td>• Capital restrictions</td>
<td></td>
</tr>
<tr>
<td>• Acctg &amp; disclosure requirements</td>
<td></td>
</tr>
<tr>
<td>• IAS compliance</td>
<td></td>
</tr>
<tr>
<td>• Bankruptcy regime</td>
<td></td>
</tr>
<tr>
<td>• Creditor rights</td>
<td></td>
</tr>
<tr>
<td>• Govt-corporate nexus</td>
<td></td>
</tr>
<tr>
<td>• Trading infrastructure</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Firm-level Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Price-Value ratio, Sharpe ratio, EVA</td>
</tr>
<tr>
<td>• D/E ratio</td>
</tr>
<tr>
<td>• Currency &amp; maturity mismatch</td>
</tr>
<tr>
<td>• IAS conformity</td>
</tr>
<tr>
<td>• Insider control</td>
</tr>
<tr>
<td>• Objective research coverage</td>
</tr>
<tr>
<td>• Trading liquidity</td>
</tr>
</tbody>
</table>
Brady Bonds

- Origin?
- Types?
- Ecuador's Bradies
  - Discount
  - Par
  - Past due interest
  - Interest equalization
- What next?

International Bond Markets are Linked

- Issuers and investors compare terms in the domestic and Eurobond markets, which are linked across currencies via currency swaps
Characteristics of Eurobonds

- Issued outside country of currency
- Not subject to domestic registration or disclosure requirements
- In most cases take form of private placements
- Placed through syndicates in many countries who sell principally to nonresidents
- Bonds are structured so as to be free of withholding tax
- Bearer form

But...

- Eurobonds usually influenced de facto by government and banks of country of currency

Who Gets What

<table>
<thead>
<tr>
<th>Fees, percent</th>
<th>Fees, amount</th>
<th>Net price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price paid by investor (in theory)</td>
<td>60%</td>
<td>0.90</td>
</tr>
<tr>
<td>Price paid by member of selling group</td>
<td>60%</td>
<td>0.90</td>
</tr>
<tr>
<td>Price paid by member of underwriting group</td>
<td>60%+20%</td>
<td>0.90+0.30</td>
</tr>
<tr>
<td>Price paid by managers (plus &quot;praecipium&quot; paid to lead manager)</td>
<td>60%+20%+20%</td>
<td>0.90+0.30+0.30</td>
</tr>
</tbody>
</table>
**Equity-Linked Eurobonds**

- Eurobonds with warrants
  - Marui
- Convertible Eurobonds
  - Battle Mountaingold
- Index-linked Eurobonds
  - Bank of Montreal

---

**Three Parts of a Currency Swap**

<table>
<thead>
<tr>
<th>FMC</th>
<th>GBP 100</th>
<th>Fixed GBP 12%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>USD 150</td>
<td>Floating USD Libor s.a.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BANK</th>
<th>USD 150</th>
<th>GBP 100</th>
</tr>
</thead>
</table>
### How Swaps are Quoted

#### US$ Interest Rate Swaps

<table>
<thead>
<tr>
<th>Years</th>
<th>Treasury Curve Benchmark</th>
<th>Spread [b.p.] to AA Semi-Annual Yields</th>
<th>Counterparties DEM/USD Annual</th>
<th>JPY/USD Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>8.02</td>
<td>62-66</td>
<td>7.00-7.10</td>
<td>5.35-5.45</td>
</tr>
<tr>
<td>3</td>
<td>8.01</td>
<td>70-75</td>
<td>7.00-7.10</td>
<td>5.35-5.45</td>
</tr>
<tr>
<td>4</td>
<td>8.01</td>
<td>72-76</td>
<td>7.00-7.10</td>
<td>5.35-5.45</td>
</tr>
<tr>
<td>5</td>
<td>8.02</td>
<td>78-81</td>
<td>7.00-7.10</td>
<td>5.35-5.45</td>
</tr>
<tr>
<td>7</td>
<td>8.13</td>
<td>77-81</td>
<td>7.02-7.12</td>
<td>5.40-5.50</td>
</tr>
<tr>
<td>10</td>
<td>8.14</td>
<td>78-81</td>
<td>7.02-7.12</td>
<td>5.45-5.53</td>
</tr>
</tbody>
</table>

#### Currency Swaps

<table>
<thead>
<tr>
<th>Years</th>
<th>CHF/USD Annual</th>
<th>GBP/USD Annual</th>
<th>ECU/USD Annual</th>
<th>AUD/USD Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>6.05-6.10</td>
<td>11.90-12.00</td>
<td>9.10-9.20</td>
<td>15.1515.30</td>
</tr>
<tr>
<td>5</td>
<td>6.00-6.10</td>
<td>11.75-11.85</td>
<td>9.05-9.15</td>
<td>14.78-15.13</td>
</tr>
<tr>
<td>7</td>
<td>5.95-6.05</td>
<td>11.50-11.60</td>
<td>9.05-9.15</td>
<td>NA</td>
</tr>
<tr>
<td>10</td>
<td>5.95-6.05</td>
<td>11.26-11.36</td>
<td>9.05-9.15</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Kalamazoo

**Fixed EURO 8.35%+0.73%=9.08%**

- Euro revenues
- Floating USD Libor +0.75%
- **K’ZOO**
- Fixed ECU 8.35%
- Fixed USD Libor +0.75%
- **DRESDNER**

- 75bpUSD=73bpEuro; swapped cost is 9.08%
- ST rate: no effect. LT rate rise: value of swap will change by duration. K’zoo gains, Dresdner loses.
- Amortize the up-front fee of 0.75% over the period of the financing, and add it to swapped cost.
The International Capital Market

- Floating rate notes
- Eurobonds, foreign bonds and global bonds
- “A Day in the Life”
  - The secondary market
  - The primary market
- The international equity market

International Portfolio Optimization: Passive vs Active Portfolios

(Let the proportions of all possible assets vary until the optimal proportions are found.)

The results of letting the computer find the best proportions for various levels of return:

- Same risk as 100% USA, but higher return
- Minimum risk portfolio
- Market capitalization weighted portfolio
- 100% USA portfolio
- 100% Japan
Summary: International Capital Market

- Floating rate notes
- Eurobonds, foreign bonds and global bonds
- “A Day in the Life”
  - The secondary market
  - The primary market
- The international equity market
- Next: Structured securities issuance

Principles of Innovation Through Financial Engineering

- Bundling and unbundling basic instruments
- Exploiting market imperfections (sometimes temporary)
- Creating value added for investor and issuer by tailoring securities to their particular needs

Key: For the innovation to work, it must provide value added to both issuer and investor.
Anatomy of a Deal

Deutsche sells 3-year floating rate note paying LIBOR - 3/8% for an additional 3/4% p.a., Deutsche buys three-year put option on 5-year fixed-rate 8.35% note to SL in 3 years.

For 1% p.a., Deutsche sells CSFB a swaption (the right to pay fixed 8.35% for 5 years in 3 years).

CSFB sells the swaption to a corporate client seeking to hedge its funding cost against a rate rise.

The Deal in Detail
Client-Arena-Product Matrix: Citigroup

Complementarity and Cross-Selling